Government of Western Australia
Department of Environment Regulation

Licence

Licence Number	L7085/1997/13
Licence Holder	Shire of Narrogin
Registered business address	89 Earl Street Narrogin WA 6312
Duration	30 June 2011 to 29 June 2031
Prescribed Premises	Category 61: Liquid Waste Facility Category 62: Solid Waste Facility Category 64: Class II or III Landfill
Premises	Narrogin Waste Management Facility White Road NARROGIN WA 6312 Lot 1633 on Plan 217001 Certificate of Title Volume 3146 Folio 400

This Licence is granted to the Licence Holder, subject to the following conditions, on 19 May 2017, by:

Date signed: 19 May 2017
Alan Kietzmann
MANAGER LICENSING - WASTE INDUSTRIES

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Explanatory Notes

These Explanatory Notes do not form part of this Licence.

Defined terms

Definition of terms used in this Licence can be found at the end of this Licence. Terms which are capitalised are defined terms.

Department of Environment Regulation

The Department is the agency responsible for administering Part V of the *Environmental Protection Act 1986* (WA) (EP Act) for the regulation of Prescribed Premises. The Department also monitors and audits compliance with licences, takes enforcement action and develops and implements licensing and industry regulation policy.

Licence

Section 56 of the EP Act provides that an occupier of Prescribed Premises commits an offence if Emissions are caused or increased or permitted to be caused or increased, or Waste, noise, odour or electromagnetic radiation is altered or permitted to be altered from Prescribed Premises, except in accordance with a works approval or licence.

Categories of Prescribed Premises are defined in Schedule 1 of the *Environment Protection Regulations 1987* (WA).

This Licence does not authorise any activity which may be a breach of another approval by another authority. For example, if the Premises have been assessed under Part IV of the EP Act, the Licence Holder is still required to comply with any conditions imposed by the Minister for Environment under Part IV.

It is the responsibility of the Licence Holder to ensure that any action or activity referred to in this Licence is permitted by, and is carried out in compliance with, statutory requirements.

The Licence Holder must comply with the Licence. Contravening a Licence Condition is an offence under section 58 of the EP Act.

Responsibilities of Licence Holder

Separate to the requirements of this Licence, general obligations of Licence Holders are set out in the EP Act and the regulations made under the EP Act. For example, the Licence Holder must comply with the following provisions of the EP Act:

- the duties of an occupier under section 61; and
- 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 (section 53).

Strict penalties apply for offences under the EP Act.

Reporting of incidents

The Licence Holder has a duty to report to the Department all Discharges of Waste that have caused or are likely to cause Pollution, Material Environmental Harm or Serious Environmental Harm, in accordance with section 72 of the EP Act.

Offences and Defences

The EP Act and its regulations set out a number of offences including:

- Offence of emitting an Unreasonable Emission from any Premises under section 49;
- Offence of causing Pollution under section 49;

- Offence of dumping Waste under section 49A;
- Offence of discharging Waste in circumstances likely to cause pollution under section 50;
- Offence of causing Serious Environmental Harm (section 50A) or Material Environmental Harm (section 50B);
- Offence of causing Emissions which do not comply with prescribed standards (section 51);
- Offences relating to emissions or discharges under regulations prescribed under the EP Act, including materials discharged under the *Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA);*
- Offences relating to noise under the *Environmental Protection (Noise) Regulations 1997 (WA).*

Defences to certain offences may be available to a Licence Holder and these are set out in the EP Act.

Section 74A(b)(iv) provides that it is a defence to an offence for causing Pollution, in respect of an Emission, or for causing Serious Environmental Harm or Material Environmental Harm, or for discharging or abandoning Waste in water to which the public has access, if the Licence Holder can prove that an Emission or Discharge occurred in accordance with a Licence.

This Licence specifies the Emissions and Discharges, and the limits and Conditions which must be satisfied in respect of Specified Emissions and Discharges, in order for the defence to offence provision to be available.

Authorised Emissions and Discharges

Section 56 of the EP Act provides that the occupier of any prescribed premises who -

(a) causes or increases, or permits to be caused or increased, an emission; or

(b) alters or permits to be altered the nature of the waste, noise, odour, or electromagnetic radiation emitted,

from the prescribed premises commits an offence unless he is the holder of a Licence issued in respect of the prescribed premises and so causes increases or permits or alters in accordance with any condition to which that Licence is subject.

The Specified and General Emissions and Discharges from Primary Activities conducted on the Prescribed Premises are authorised to be conducted in accordance with the Conditions of this Licence.

Emissions and Discharges caused from other activities not related to the Primary Activities at the Premises have not been Conditioned in this Licence. Emissions and Discharges from other activities at the Premises are subject to the general provisions of the EP Act.

Amendment of Licence

Section 53 of the EP Act provides that a Licence Holder commits an offence if Emissions are caused, or altered from a Prescribed Premises unless done in accordance with a Licence.

The Licence Holder can apply to amend the Conditions of this Licence under section 59 of the EP Act. An application form for this purpose is available from the Department.

The CEO may also amend the conditions of this Licence at any time on the initiative of the CEO without an application being made.

Duration of Licence

The Licence will remain in force for the duration set out on the first page of this Licence or until it is surrendered, suspended or revoked in accordance with section 59A of the EP Act.

Suspension or Revocation

The CEO may suspend or revoke this Licence in accordance with s59A of the EP Act.

Fees

The Licence Holder must pay an annual licence fee. Late payment of annual licence fees may result in the Licence ceasing to have effect.

Conditions

Emissions

1. The Licence Holder must not cause any Emissions from the Premises except for Specified Emissions and General Emissions described in Column 1 of Table 1, subject to the exclusions, limitations or requirements specified in Column 2, of Table 1.

If the Licence Holder proves that it has acted in accordance with this Condition, it may be a defence under s 74A of the EP Act to proceedings for offences under the EP Act.

Table 1: Authorised Emissions Table

Column 1	**Column 2**
Emission Type	**Exclusions/Limitations/Requirements**
Specified Emissions	
Leachate and Liquid Waste Emissions	Subject to compliance with Conditions 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27
Odour Emissions	Subject to compliance with Conditions 12, 13, 14, 15, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27
Dust emissions	Subject to compliance with Conditions 14, 15, 28
Pathogen and Asbestos Emissions	Subject to compliance with Conditions 12, 13, 14, 15, 18, 19, 22, 23, 24,
Smoke Emissions	Subject to compliance with Conditions 12, 13, 14, 15, 18, 20, 24
Windblown Waste Emissions	Subject to compliance with Conditions 12, 13, 14, 15, 18, 21, 22, 25
General Emissions **(excluding Specified Emissions)**	
Emissions which: • arise from the Primary Activities set out in the General Description in Schedule 2; or • arise from a Material Change (except where Condition 4 applies).	Emissions excluded from General Emissions are: • Unreasonable Emissions; or • Emissions that result in, or are likely to result in, Pollution, Material Environmental Harm or Serious Environmental Harm; or • Discharges of Waste in circumstances likely to cause Pollution; or • Emissions that result, or are likely to result in, the Discharge or abandonment of Waste in water to which the public has access; or • Emissions or Discharges which do not comply with an Approved Policy; or • Emissions or Discharges which do not comply with prescribed standard; or • Emissions or Discharges which do not

Column 1	Column 2
Emission Type	**Exclusions/Limitations/Requirements**
	comply with the conditions in an Implementation Agreement or Decision; or • Emissions or Discharges the subject of offences under regulations prescribed under the EP Act, including materials discharged under the Environmental *Protection (Unauthorised Discharges) Regulations 2004*.

Notification of material change

2. The Licence Holder must notify the CEO of any Material Change within 14 days of a Material Change occurring and such notification (which the CEO will make publicly available) must:

(a) be in writing;

(b) include details of the changes, including duration, infrastructure details (if any); and

(c) include risk analysis of the changes, including proposed controls to mitigate risks.

Nothing in this Condition constitutes a defence to offences under the EP Act.

3. The Licence Holder must provide to the CEO any additional information the CEO may reasonably require to assess the Material Change under Condition 4 and in order for the CEO to determine if an amendment is required under the EP Act.

4. The Licence Holder must cease carrying out, or modify, a Material Change in the manner and at the time required by the CEO if:

(a) the CEO forms the view, acting reasonably, that the Material Change has or may have an unacceptable impact on public health, amenity or the environment; and

(b) the CEO has provided written notice (which the CEO will make publicly available) to the Licence Holder specifying the grounds for the CEO's views.

Nothing in this Condition prevents the Licence Holder subsequently submitting an amendment in relation to the Material Change.

Information

5. The Licence Holder must record the type and volume of wastes (as specified by Condition 12) incoming and outgoing from the Premises.

6. The Licence Holder must provide to the CEO at the end of each Annual Period a summary of the data collected in accordance with Condition 5.

7. The Licence Holder must maintain accurate and auditable Books including the following records, information, reports and data required by this Licence:

(a) the calculation of fees payable in respect of this Licence;

(b) the maintenance of infrastructure required to ensure that it is kept in good working order in accordance with Condition 14 of this Licence;

(c) complaints received under Condition 8 of this Licence;

(d) any Material Change

and the Books must:

(a) be legible;

(b) if amended, be amended in such a way that the original and subsequent amendments remain legible and are capable of retrieval;

(c) be retained for at least 3 years from the date the Books were made; and

(d) be available to be produced to an Inspector or the CEO on demand.

8. The Licence Holder must record the number and details of any complaints received by the Licence Holder relating to its obligations under this Licence and its compliance with Part V of the EP Act at the Premises, and any action taken by the Licence Holder in response to the complaint. Details of complaints must include:

(a) an accurate record of the concerns or issues raised, for example a copy of any written complaint or a written note of any verbal complaints made;

(b) the name and contact details of the complainant, if provided by the complainant;

(c) the date of the complaint; and

(d) the details and dates of the actions taken by the Licence Holder in response to the complaints.

9. The Licence Holder must submit to the CEO by 1 June, an Annual Audit Compliance Report indicating the extent to which the Licence Holder has complied with the Conditions in this Licence for the previous Annual Period.

10. The Licence Holder must comply with a Department Request, within 14 days from the date of the Department Request or such other period as agreed to by the Inspector or the CEO.

11. The Licence Holder must submit to the CEO by 31 May 2019, a Landfill Closure Management Plan including but not limited to:

(a) The final contours of the landfill cells;

(b) Details of the proposed capping system, including details of the composite liner materials, including justification and rationale;

(c) A stormwater management plan designed for a 1:20 storm event, with additional management for a 1:100 year event;

(d) Timeframes for the completion of waste disposal and proposed closure and capping works.

Waste Acceptance

12. The Licence Holder must only accept waste at the Premises if:

(a) it is of a type specified in Column 1 of Table 2;
(b) it meets any specification or quantity limit specified in Column 2 or Column 3 of Table 2; and
(c) meets the waste acceptance criteria specified for Class II landfills as detailed in the Landfill Definitions.

Table 2: Waste Types acceptance

	Column 1		Column 2	Column 3
	Material		**Specification**	**Quantity Limit**
	Solid wastes			
1	Clean Fill		N/A	N/A
2	Inert Waste Type 1		Waste containing visible asbestos or ACM shall not be accepted as Inert Waste Type 1	Combined total of 8,000 tonnes per annual period for Category 62 activities. Combined total of 7,500 tonnes per annual period for Category 64 activities (excluding hazardous waste, green waste and tyres).
3	Inert Waste Type 2		Tyres and plastics only	
4	Putrescible Waste		N/A	
5	Special Waste Type 1 (Asbestos Waste)		Waste must only be accepted if double wrapped in heavy duty polyethylene (0.2mm thick) or otherwise contained to prevent airborne fibres and labelled appropriately.	
6	Special Waste Type 2 (Biomedical Waste)		Waste must only be accepted in sealed and labelled plastic bags.	
7	Green waste		N/A	
8	Hazardous waste		Limited to household hazardous wastes, waste oils, batteries and empty oil and chemical containers.	
	Liquid wastes			
9	Septage wastes	Controlled waste type: K210	N/A	Combined total of 1,000 tonnes per annual period for Category 61 activities.
10	Waste from grease traps	Controlled waste type: K110	N/A	
11	Storm water/pond water	N/A	N/A	

13. The Licence Holder must not accept any solid or liquid wastes containing Perfluoroalkyl and polyfluoroalkyl substances (PFAS) above the Interim screening guidelines as specified in Attachment 1, (being Table 4 in the DER PFAS Interim Guideline).

Specified infrastructure and equipment controls

14. The Licence Holder must ensure that the infrastructure and equipment specified in Column 1 of Table 3, is maintained and operated in good working order and in accordance with the requirements specified in Column 2 of Table 3.

15. The Licence Holder must install and undertake the Works for the infrastructure and equipment:

(a) specified in rows 1, 2 and 3 of Column 1 of Table 3;
(b) to the requirements specified in Column 2 of Table 3; and
(c) at the location specified in Schedule 1 (Site Map)

Table 3: Infrastructure and equipment controls table

	Column 1	**Column 2**
	Premises infrastructure and equipment	**Description**
1	Waste drop-off area	Asphalt or bitumen surface Including a 1.7 m high concrete retaining wall for waste drop-off into bins Must capture stormwater on the hardstand area and retain this on the Premises
2	Hook Bins	Designed and constructed with lids or otherwise enclosed to minimise windblown waste, odours and the entrance of stormwater Must be constructed to prevent leakage
3	Storage containers hazardous goods, batteries, waste oil and used oil and chemical containers	Weather proof, bunded, and suitably constructed to prevent leakage
4	Landfill area	In-situ clay lined The tipping face must be no wider than 30 metres, and no higher than 2 metres No landfilling can occur within 35 metres of the Premises boundary
5	Designated green waste burning area	Is at least 50 metres from the Premises boundary Has no flammable material on it, other than the green waste and live trees, for a radius of 50 metres Is positioned in the area of the site where waste (other than green waste to be burned) has not been deposited, or where waste has been deposited there is at least a 1 metre cover of inert material.
6	Designated asbestos and biomedical waste burial areas	Appropriately fenced to restrict access to designated burial areas
7	Perimeter fencing	At least 1.2 metres high, surrounding the Premises and able to be securely locked when the Premises is unattended
8	Tipping face fencing	At least 1.8 metres high, surrounding the active tipping face. Designed and constructed to capture windblown waste arising from the active tipping area.
9	3 x Liquid waste treatment ponds	In-situ clay lined Maintain a freeboard of 300 mm at all times

	Column 1	Column 2
	Premises infrastructure and equipment	**Description**
10	Vehicles	1 x Track dozer (CAT D8C or equivalent) 1 x Front end loader (CAT 980 or equivalent) 1 x Excavator
11	Signage	Clearly displays the following information: • Hours of operation • Contact telephone number for information and complaints or notification of fires • A list of materials accepted • The types of waste that must not be deposited on the Premises and a contact telephone number for alternative disposal options; and • A warning, indicating penalties for people lighting fires

16. The Licence Holder must not depart from the requirements specified in Column 2 of Table 3 except:

(a) Where such departure does not increase risks to public health, public amenity or the environment; and
(b) All other Conditions of the Licence are still satisfied.

17. Subject to condition 14, within 21 days of the completion of the Works specified by Condition 15, the Licence Holder must provide to the CEO a report confirming each item of infrastructure or component of infrastructure specified in Rows 1, 2 and 3 of Column 1 of Table 3 has been constructed with no material defects and to the requirements specified in Column 2.

18. Where departure from the requirements specified in Column 2 of Table 3 occurs and is of a type allowed by Condition 16 the Licence Holder must provide to the CEO a description of, and explanation for the departure along with the report required by condition 17.

Operational controls

19. The Licence Holder must only store the materials specified in column 1 of Table 4 in accordance with the requirements specified in column 2 of Table 4.

Table 4: Storage requirements

	Column 1		Column 2
	Material		**Storage Requirements**
1	Septage wastes	Controlled waste type: K210	Directed immediately to liquid waste treatment ponds
2	Waste from grease traps	Controlled waste type: K110	

	Column 1		Column 2
	Material		**Storage Requirements**
3	Storm water	N/A	
4	Pond water	N/A	
5	Clean Fill		N/A
6	Inert Waste Type 1		Must not be crushed or screened on the Premises
7	Inert Waste Type 2		Less than 100 tyres may be stored at any one time Stockpile to be stored at least 5m from combustible materials Tyres must not be landfilled
8	Putrescible Waste		Must be stored within hook bins or other impermeable container with lids that are kept closed unless waste is being deposited or removed Putrescible waste for burial must be landfilled no later than 48 hours after being received
9	Special Waste Type 1 (Asbestos Waste)		Any asbestos waste stored prior to burial must be double wrapped in black plastic, clearly labelled and stored in a dedicated area that is clearly signposted
10	Special Waste Type 2 (Biomedical Waste)		Must not store waste at the premises (requires immediate burial)
11	Green waste		Green waste must be stored in windrows to a maximum length of 50 m, width of 10 m and height of 5 m Stockpiles to be separated from other combustible material by a mineral earth break minimum 5 m wide.
12	Hazardous waste		Must be stored in weatherproof bunded tanks or cages

20. The Licence Holder must divert stormwater from areas of the Premises where waste is stored, and any stormwater which has come into contact with waste storage areas is to be retained on the Premises.

21. The Licence Holder must immediately clean any spills of waste outside of a vessel/container or infrastructure specified by Table 4.

22. The licence holder must manage the liquid waste treatment ponds during operation by:

(a) Preventing vegetation from growing in the pond wastewater, or on the pond embankments.

(b) Preventing stormwater runoff from causing erosion of the outer pond embankments.

(c) Discharging liquid wastes to the ponds in a manner which does not disrupt the anaerobic crust.

23. The Licence Holder must manage the landfilling activities by:

(a) Covering waste with a minimum of 100 mm of inert cover or 300 mm of sand daily;

(b) Compacting disposed waste in 500 mm layers;

(c) Covering surfaces which have not received final cover for more than 90 days with an intermediate cover of at least 300 mm with a graded slope of at least 2% to promote run-off away from the active tipping face;

(d) Removing the intermediate cover when landfilling recommences to prevent perched water accumulating in the landfill; and

(e) Covering waste with a final cover of at least one metre.

24. The Licence Holder must manage biomedical waste, asbestos and ACM by:

(a) Only disposing of biomedical waste, asbestos and ACM within the designated areas of the landfill, under the supervision of a person nominated by the Licence Holder;

(b) Covering biomedical waste, asbestos and ACM by the end of the working day with a dense, insert and incombustible material to a depth of at least one metre;

(c) Maintaining a register of burials of biomedical waste, asbestos and ACM stating the date, the person's name, that the waste has been covered in accordance with the licence conditions, and where more than one square metre of waste was covered, grid coordinates with reference to the plan of the landfill site so that the position of the waste can be easily and accurately ascertained.

(d) Operating the landfill in such a way that existing biomedical waste, asbestos and ACM which has been buried remains undisturbed.

25. The Licence Holder must ensure that waste is not burnt at the Premises, other than green waste which is burnt in accordance with the following conditions:

(a) It is dry and seasoned for at least 2 months before it is burnt;

(b) It is free from any non-green waste contaminants;

(c) It is burnt in the designated burning area of the landfill site;

(d) It is burnt in trenches or windrows;

(e) Burning does not commence before 8 am and the Fire Control Officer for the landfill site declares the area safe by 12 noon on the same day; and

(f) There is present in the area from the time burning commences until the Fire Control Officer for the landfill site declares the area safe –

(i) A fire fighting vehicle varying at least 500 litres of water, fitted with at least 30 metres of 19 mm diameter rubber hose and with a pump capacity capable of delivering a minimum of 250 litres of water per minute at a minimum of 700 kPA through a nozzle capable of projecting water by spray or by jet; and

(ii) 2 persons, who have such qualifications in fire-fighting as are approved.

26. The Licence Holder must collect windblown waste that has blown away from the tipping area and return it to the tipping area on at least a weekly basis.

27. The Licence Holder is not permitted to clear any native vegetation on the Premises under this licence.

28. The Licence Holder must restrict vehicle speeds on the premises to below 30 km per hour.

Definitions and Interpretation

Definitions

In this Licence, the following terms have the following meanings:

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

Act means the *Environmental Protection Act 1986*.

Anniversary Date means 1 April of each year.

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

Annual Period means a 12 month period commencing from 1 April to 31 March in the next year.

Approved Policy has the same meaning given to that term under the EP Act.

Asbestos means the asbestiform variety of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals and includes actinolite, amosite, anthophylite, chrysotile, crocidolite, tremolite and any mixture containing 2 or more of these.

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

Biomedical waste has the meaning defined in the Landfill Definitions

Books has the same meaning given to that term under the EP Act.

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

CEO for the purposes of notification means:

Director General
Department Administering the *Environmental Protection Act 1986*
Locked Bag 33 Cloisters Square
PERTH WA 6850
info@der.wa.gov.au

Clean Fill has the meaning defined in the Landfill Definitions

Condition means a Condition to which this Licence is subject under s 62 of the EP Act.

Controlled waste has the same meaning given to that term under the *Environmental Protection (Controlled Waste) Regulations 2004*.

Cover material means subsoil or other approved inert waste used for covering of waste

Department means the department established under section 35 of the Public Sector Management Act 1994 and designated as responsible for the administration of Part V,

Division 3 of the EP Act.

Department Request means a request for Books or other sources of information to be produced, made by an Inspector or the CEO to the Licence Holder in writing and sent to the Licence Holder's address for notifications, as described at the front of this Licence, in relation to:

(a) compliance with the EP Act or this Licence;
(b) the Books or other sources of information maintained in accordance with this Licence; or
(c) the Books or other sources of information relating to Emissions from the Premises.

DER PFAS Interim Guideline means DER published Guideline: *Interim Guideline on the Assessment and Management of Perfluoroalkyl and Polyfluoroakyl Substances (PFAS), Contaminated Sites Guidelines, January 2017.*

Designated Burning Area means an area of the Premises that has been designated by the licensee as a designated burning area

Discharge has the same meaning given to that term under the EP Act.

Emission has the same meaning given to that term under the EP Act.

Environmental Harm has the same meaning given to that term under the EP Act.

EP Act means the *Environmental Protection Act 1986* (WA).

EP Regulations means the *Environmental Protection Regulations 1987* (WA).

Fire Control Officer means a person who holds current and recognised qualifications in fire fighting and fire control as are specified in the licence and that person is appointed to the position of Fire Control Officer by the licensee

General Description means the description of activities and operations carried out on the Premises as set out in Schedule 2 of this Licence.

General Emission has the meaning set out in Condition 1 of this Licence.

Green waste means biodegradable waste comprising plants and their component parts such as flower cuttings, hedge trimmings, branches, grass, leaves, plants, seeds, shrub and tree loppings, tree trunks, tree stumps and similar materials and includes any mixture of those materials.

Household hazardous waste means domestic volumes (up to 20 litres or 20kg per package) of products used in and around the home that are flammable, toxic, explosive or corrosive.

Inert Waste Type 1 has the meaning defined in the Landfill Definitions.

Inert Waste Type 2 has the meaning defined in the Landfill Definitions.

Inspector means an inspector appointed by the CEO in accordance with section 88 of the EP Act.

Implementation Agreement or Decision has the same meaning given to that term under the EP Act.

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 refers to this document, which evidences the grant of Licence by the CEO under s 57 of the EP Act, subject to the Conditions.

Licence Holder refers to the occupier of the Premises being the person to whom this

Licence has been granted, as specified at the front of this Licence.

Material Change means a change to the activities carried out on the Premises as described in the General Description set out in Schedule 2 and:

(a) that may result in an increased risk to public health, amenity or the environment; and

(b) includes the types of changes specified in Schedule 2; and

(c) does not include the excluded changes specified in Schedule 2.

Material Environmental Harm has the same meaning given to that term under the EP Act.

Pollution has the same meaning given to that term under the EP Act.

Premises refers to the Premises to which this Licence applies, as specified at the front of this Licence and as shown on the Premises Map in Schedule 1 to this Licence.

Primary Activities refer to the Prescribed Premises activities on the front of this Licence, at the locations provided in Schedule 1 and the description provided in Schedule 2 of this Licence**.**

Putrescible waste has the meaning defined in the Landfill Definitions.

Serious Environmental Harm has the same meaning given to that term under the EP Act.

Special Waste Type 1 has the meaning defined in the Landfill Definitions.

Special Waste Type 2 has the meaning defined in the Landfill Definitions.

Specified Emission has the meaning set out in Condition 1 of this Licence.

Tipping area means the area of the premises where waste currently being brought to the Premises is being deposited.

Unreasonable Emission has the same meaning given to that term under the EP Act.

Waste has the same meaning given to that term under the EP Act.

Interpretation

In this Licence:

(a) the words ‘including’, ‘includes’ and ‘include’ will be read as if followed by the words ‘without limitation’;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

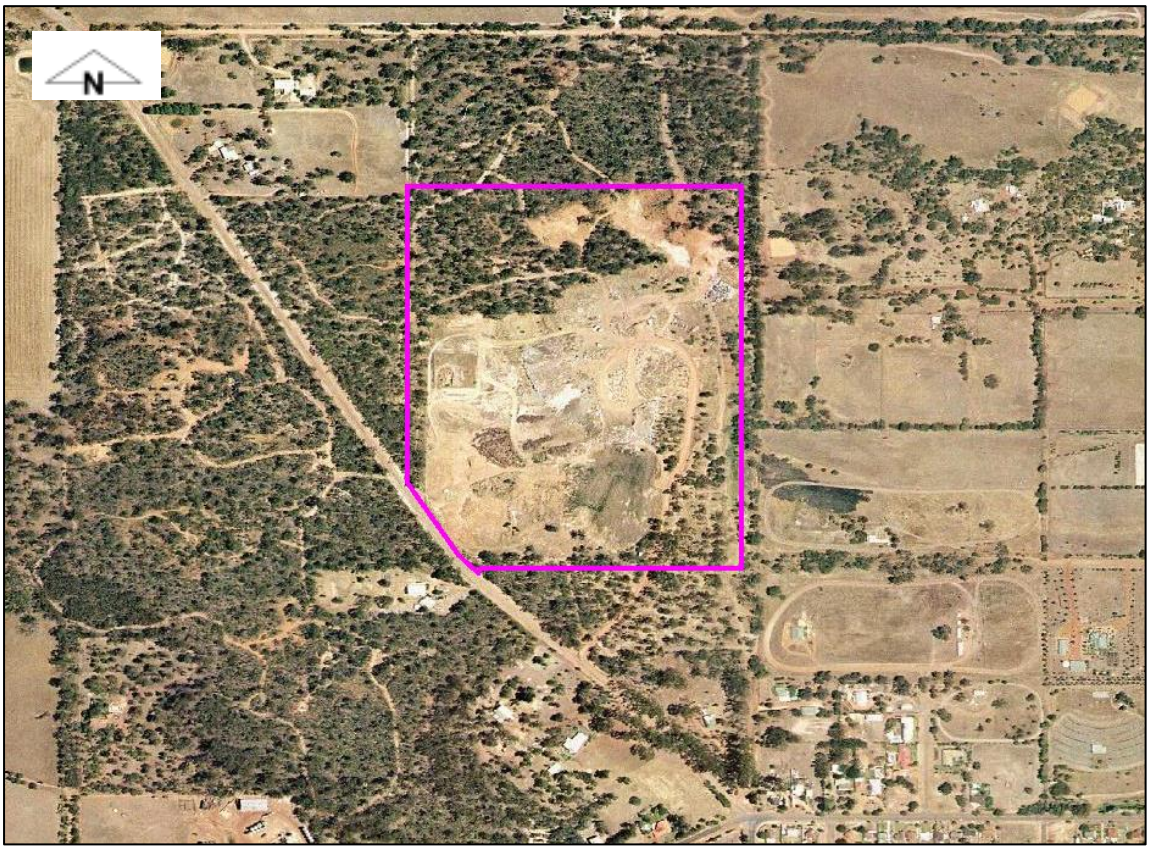
(c) where tables are used in a Condition, each row in a table constitutes a separate Condition; and

(d) any reference to an Australian or other standard, guideline or code of practice in this *Licence* means the version of the standard, guideline or code of practice in force at the time of granting of this Licence and includes any amendments to the standard, guideline or code of practice which may occur from time to time during the course of the Licence.

Schedule 1: Maps

Premises Map

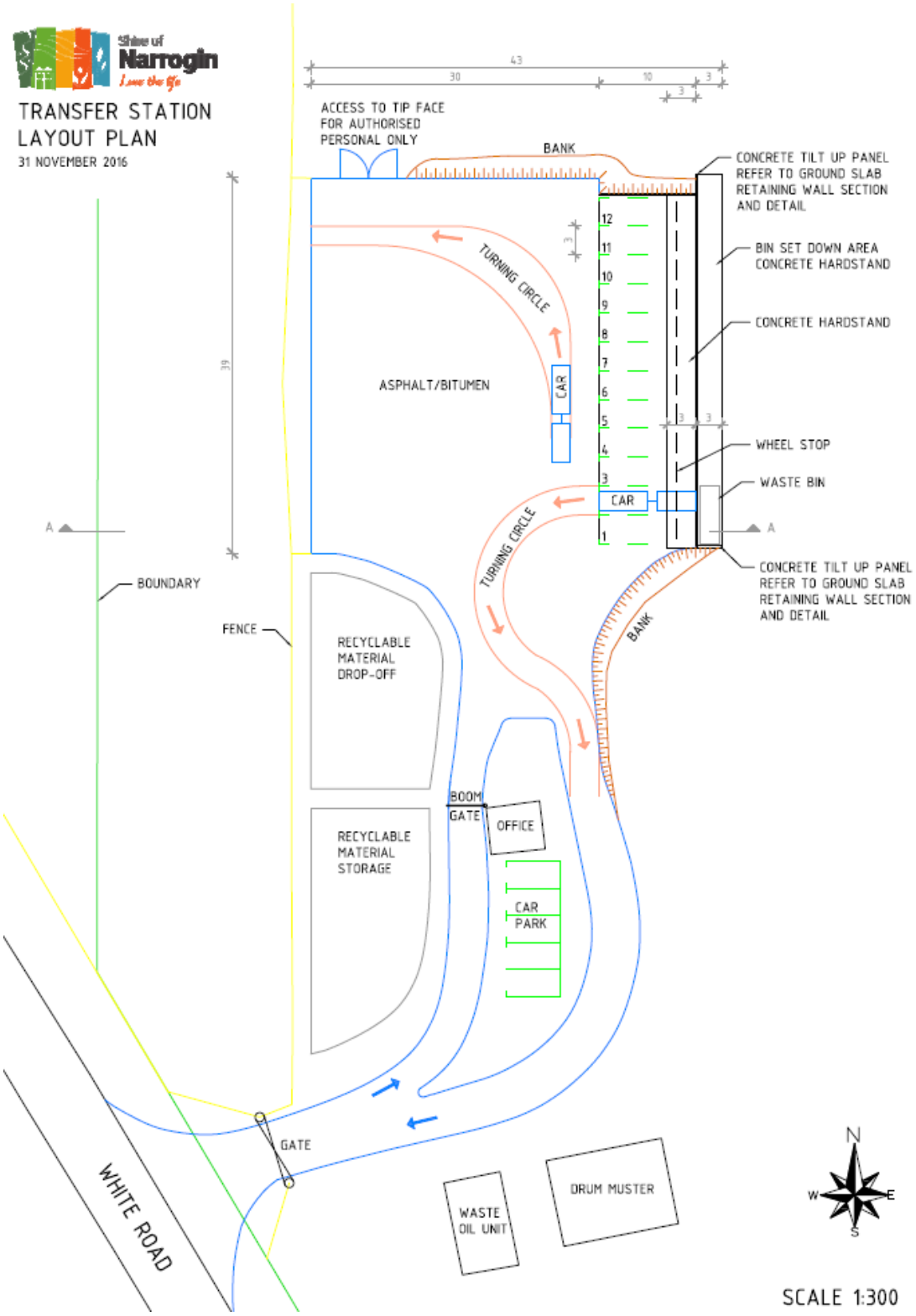
The Premises is shown in the map below. The pink line depicts the boundary to the Premises.



Premises Layout Map

The Premises layout is shown in the map below.

The transfer station layout is shown in the map below



Schedule 2: General Description

At the time of assessment, Emissions and Discharges from the following Primary Activities were considered in the determination of the risk and related Conditions for the Premises. The Primary Activities are listed in Table 5:

Table 5: Primary Activities

Primary Activity	Premises Production or Design Capacity
Category 61 – Liquid waste facility: Premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	1,000 tonnes per annual period
Category 62 – Solid waste depot: Premises on which waste is stored, or sorted, pending final disposal or re-use.	8,000 tonnes per annual period
Category 64 – Class II or III putrescible landfill site: Premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial.	7,500 tonnes per annual period

The Premises is open for waste acceptance 9:00am to 5:00pm weekdays (excluding Tuesdays) and 10:00am to 4:00pm Saturday and Sunday. Activities within the Premises including the application of final cover material may continue until 7:00pm daily.
The Premises is staffed at all times while open for waste acceptance, and is fenced and locked after hours to prevent unauthorised access.

Liquid wastes are discharged to the first anaerobic liquid waste pond to allow settling. Once the pond has reached capacity the liquid waste travels into a second storage pond for evaporation, with a third pond available should the second pond reach capacity. Sludge is removed from the ponds, dried and landfilled when required.

The Licence Holder has specified that the Transfer Station will accept the following recyclable/recoverable items in designated areas: used oil, household hazardous wastes, chemical Drums, white goods, sheet metal, scrap metals and fencing wires, gas bottles, non-ferrous metals, hot water services, radiators, alloy metals, batteries, tyres, timber, fire extinguishers, paints, cardboard, newspapers, glass, aluminium cans, plastics and Inert materials (concretes, soils, rubbles and bricks). These materials will be stockpiled on the Premises in specified containers or stockpiles prior to removal for recovery or recycling purposes.

All other waste types will be considered as 'general waste' and will be directed to a 1.7m concrete bunded wall which drops into 30 m^3 hook lift bins for disposal in the landfill.

Customers disposing of asbestos waste will be directed to the asbestos disposal area for direct disposal of the asbestos waste.

The Licence Holder accepts municipal solid wastes, commercial and industrial waste, tyres, asbestos and biomedical wastes (carcasses) for burial at the Premises. The method of landfilling at the Premises is above ground (i.e. no excavation into the natural ground to create landfill cells). Waste material is placed using the area fill method of landfilling, which involves progressively filling the site in layers. Waste is deposited on the base of a new landfill area and then spread out until reaching a height of 2 metres and this is undertaken in a staged approach. The final contour of the Premises is to be determined in a closure plan.

Infrastructure and equipment

The Infrastructure and equipment situated on the Premises are listed in Table 3 of Condition 12.

Site layout

The infrastructure and equipment are set out on the Premises in accordance with the site layout specified on the Premises Layout Map in Schedule 1.

Examples of material change

- New waste types accepted or stored at the premises.
- Changes to the landfilling area, wastewater treatment ponds or methods of waste storage
- An increase in the volume of waste accepted or landfilling exceeding 10%;
- changes to the control or ownership of the infrastructure or equipment within the premises; and
- Changes to the site layout of infrastructure and equipment specified on Premises Layout Map in Schedule 1.

Attachment 1: Interim PFAS Screening levels for soil, surface water and groundwater.

Extract of Table 4 (page 12) from DER published guideline entitled *Interim Guideline on the Assessment and Management of Perfluoroalkyl and Polyfluoroakyl Substances (PFAS), Contaminated Sites Guidelines, January 2017.*

Exposure Scenario	PFOS / PFHxS	PFOA	Land use / environmental value
Soil†			
Health-based screening levels	4 mg/kg (sum of PFOS and PFHxS)	40 mg/kg	Residential*
	100 mg/kg (sum of PFOS and PFHxS)	1000 mg/kg	Commercial and Industrial*
Surface water and groundwater			
Drinking water*	0.5 µg/L (sum of PFOS and PFHxS)	5 µg/L	All land uses
Non-potable and recreational uses*	5 µg/L (sum of PFOS and PFHxS)	50 µg/L	All land uses
Ecological – freshwater+	0.00023 µg/L	19 µg/L	High conservation value systems (99 per cent species protection)
	0.13 µg/L	220 µg/L	Slightly – moderately disturbed systems (95 per cent species protection)
	2.0 µg/L	632 µg/L	Highly disturbed systems†† 90 per cent species protection
	31 µg/L	1,824 µg/L	80 per cent species protection

Notes to Table 4

* Based on interim tolerable daily intake values of 0.15 µg/kg/d for PFOS/PFHxS and 1.5 µg/kg/d for PFOA: www.health.gov.au/internet/main/publishing.nsf/content/A12B57E41EC9F326CA257BF0001F9E7D/$File/PFAS-interim-health-reference-values-june2016.pdf.

** An area of ecological significance is one where the planning provisions or land use designation is for the primary intention of conserving and protecting the natural environment (Schedule B1 of the NEPM). This includes national parks and designated conservation areas.

+ Draft Australian and New Zealand Water Quality Guidelines applicable to aquatic organisms. The draft guidelines recommend that the 99 per cent level of protection be used for slightly to moderately disturbed systems, as PFOS and PFOA have been shown to bioaccumulate and biomagnify in wildlife.

†Site assessment must include assessment of leaching potential.

††Ninety per cent species protection level applies to screening assessments (the 80 per cent value is provided for context in assessing any exceedances).

Government of Western Australia
Department of Environment Regulation

Decision Report

Application for Amendment

Division 3, Part V *Environmental Protection Act 1986*

Applicant:	**Shire of Narrogin**
Licence	**L7085/1997/13**
File Number:	**DEC7497**
Premises:	**Narrogin Waste Management Facility** **White Road** **NARROGIN WA 6312** **Lot *1633* on Plan 217001** **Certificate of Title Volume *3146* Folio *400*** **Crown Reserve 8410**
Date of report:	**19 May 2017**
Status of Report	**Final**

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Definitions of terms and acronyms

Term	**Definition**
AACR	Annual Audit Compliance Report
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).
AMR	Annual Monitoring Report
Asbestos	means the asbestiform variety of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals and includes actinolite, amosite, anthophylite, chrysotile, crocidolite, tremolite and any mixture containing 2 or more of these.
Asbestos Fibres	has the meaning defined in the Guidelines for Assessment, Remediation and Management of Asbestos Contaminated Sites, Western Australia (DOH, 2009).
Category/Categories (Cat.)	categories of prescribed premises as set out in Schedule 1 of the EP Regulations
Cover material	means subsoil or other approved inert waste used for covering of waste
CS Act	*Contaminated Sites Act 2003* (WA)
DER	Department of Environment Regulation
Decision Report	this document
Delegated Officer	An officer under section 20 of the EP Act.
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
Green waste	means biodegradable waste comprising plants and their component parts such as flower cuttings, hedge trimmings, branches, grass, leaves, plants, seeds, shrub and tree loppings, tree trunks, tree stumps and similar materials and includes any mixture of those materials.
Licence Holder	Shire of Narrogin
Litter Act	*Litter Act 1979 (WA)*
m^3	cubic metres
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)

Occupier	is defined in the EP Act to mean a person who is in occupation or control of a premises, or part of a premises, whether or not that person is the owner of the premises or part of the premises.
PFAS	Perfluoroalkyl and polyfluoroalkyl substances. Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are two of the most well-known PFAS.
Premises	Narrogin Waste Management Facility
Prescribed Premises	Premises prescribed under Schedule 1 to the EP Regulations
Primary Activities	is defined in DER's *Guidance Statement: Risk Assessments* to include the primary activities which fall within the description of the category of prescribed premises in Schedule 1 to the EP Regulations.

1. Purpose and scope of assessment

On 16 December 2016, the Licence Holder submitted a concurrent works approval and licence amendment application to permit the construction and operation of a Category 62 Solid Waste Depot within the Premises, and to increase the throughput of Category 64 landfilling activities from 5,000 tonnes per annual period to 7,500 tonnes per annual period. In line with DER *Guidance Statement: Decision Making* the proposed works will be assessed as a licence amendment application and a separate Works Approval will not be granted.

As the amendment is to increase the throughput of activities at the Premises, and the Premises Licence L7085/1997/13 has not been reviewed since being issued in 2011, the Delegated Officer has determined that a full risk assessment is required for the proposed amendment. This assessment is documented through this Decision Report.

This Review has been undertaken in accordance with DER's published regulatory risk-based framework, including *Guidance Statement: Decision Making* and *Guidance Statement: Risk Assessment.*

2. Background

The Premises is currently a Class II landfill and liquid waste facility operating under licence L7085/1997/13. Table 1 details the Prescribed Premises Categories and throughputs that are proposed to be held by the Licence Holder for the Premises, and are the subject of this assessment.

Table 1: Prescribed Premises Categories

Classification of Premises	Description	Approved premises throughput
Category 61	Liquid waste facility: premises on which liquid waste produced on other premises (other than sewage waste) is stored, reprocessed, treated or irrigated.	1,000 tonnes per annual period
Category 62	Solid waste depot: premises on which waste is stored, or sorted, pending final disposal or re-use	8,000 tonnes per annual period
Category 64	Class II or III putrescible landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial	7,500 tonnes per annual period.

3. Overview of Premises

3.1 Infrastructure

The current and proposed Premises infrastructure, as it relates to Category 61, 62 and 64 activities, is detailed in Table 2 and with reference to Figures 1 and 2.

Table 2: Premises Infrastructure

	Infrastructure
	Prescribed Activity Category 61 (existing)
1	3 x Liquid waste treatment ponds (in-situ clay lined) • Pond 1: Approximately 10m x 20m x 2m (340m^3 plus freeboard) • Pond 2: Approximately 15m x 20m x 2m (510m^3 plus freeboard) • Pond 3: Approximately 15m x 20m x 2m (510m^3 plus freeboard)
	Prescribed Activity Category 62 (proposed under amendment application)
2	Asphalt/bitumen drop-off area (approximately 43m x 39m) including a 1.7 m high concrete retaining wall for waste drop-off.
3	10 x 30m^3 hook bins
4	Separate weather proof and bunded storage containers for hazardous goods, batteries, waste oil and used oil and chemical containers.
	Prescribed Activity Category 64 (existing)
5	Landfill area (in-situ clay lined) approximately 180m x 240m.
6	Designated green waste storage and burning area approximately 20m x 80m
7	Designated asbestos burial area approximately 40m x 15m
8	Designated biomedical waste burial area approximately 40m x 15m
9	1 x CAT D8C track dozer
10	1 x Front end loader (CAT 980 equivalent)
11	1 x Excavator
	Other Infrastructure
12	Perimeter Fencing (at least 1.2 m high, surrounding the premises and able to be locked)
13	Fencing (at least 1.8 m high, surrounding the active landfill area)

Figure 1: Premises site map indicating location of proposed transfer station

3.2 Operational aspects

The Premises is open for waste acceptance 9:00am to 5:00pm weekdays (excluding Tuesdays) and 10:00am to 4:00pm Saturday and Sunday. Activities within the Premises including the application of final cover material may continue until 7:00pm daily.

The Premises is staffed at all times while open for waste acceptance, and is fenced and locked after hours to prevent unauthorised access.

3.2.1 Category 61 Liquid Waste activities

The Premises currently receives up to 1,000 tonnes of liquid waste per annual period. The Licence Holder is currently permitted to accept the following liquid wastes:

- Septage wastes (Controlled waste type K210)
- Waste from grease traps (Controlled waste type K110)
- Storm water
- Pond water

Liquid wastes are discharged to the first anaerobic liquid waste pond to allow settling. Once the pond has reached capacity the liquid waste travels into a second storage pond for evaporation, with a third pond available should the second pond reach capacity. Sludge is removed from the ponds, dried and landfilled when required.

No changes have been proposed by the Licence Holder in regards to the liquid waste acceptance or throughput.

3.2.2 Category 62 Solid Waste Depot

The Licence Holder proposes to construct a transfer station at the Premises to permit the Shire and members of the public to dispose of waste, and to provide infrastructure to separate and store recyclable and recoverable materials.

The Licence Holder has specified that the Transfer Station will accept the following recyclable/recoverable items in designated areas: used oil, household hazardous wastes, chemical drums, white goods, sheet metal, scrap metals and fencing wires, gas bottles, non-ferrous metals, hot water services, radiators, alloy metals, batteries, tyres, timber, fire extinguishers, paints, cardboard, newspapers, glass, aluminum cans, plastics and Inert materials (concretes, soils, rubbles and bricks). These materials will be stockpiled on the Premises in specified containers or stockpiles prior to removal for recovery or recycling purposes.

All other waste types will be considered as ‘general waste’ and will be directed to a 1.7m concrete bunded wall which drops into 30 m^3 hook lift bins for disposal in the landfill.

Customers disposing of asbestos waste will be directed to the asbestos disposal area for direct disposal of the asbestos waste.

3.2.3 Category 64 Landfill

The Licence Holder accepts municipal solid wastes, commercial and industrial waste, tyres, asbestos and biomedical wastes (carcasses) for burial at the Premises. The method of landfilling at the Premises is above ground (i.e. no excavation into the natural ground to create landfill cells). Waste material is placed using the area-fill method of landfilling, which involves progressively filling the site in layers. Waste is deposited on the base of a new landfill area and then spread out until reaching a height of 2 metres and this is undertaken in a staged approach. The final contour of the Premises is to be determined in a closure plan.

A daily cover of 100 mm of inert material is applied prior to the end of operations each day (or if sand is used at least 300 mm). A weekly cover of 230 mm is applied. The landfill cells are periodically compacted using a dozer and front end loader.

Tyres, asbestos and biomedical wastes are buried in designated areas with asbestos and biomedical wastes being covered immediately with a 1 metre layer.

The Licence Holder also accepts green waste for storage and disposal via burning.

The Licence Holder proposes to increase the throughput of this activity from 5,000 tonnes per annual period to 7,500 tonnes per annual period.

With the establishment of the solid waste depot, the public will no longer have access to the landfill area.

4. Legislative context

4.1 Contaminated sites

The Premises is currently *'awaiting classification'* under the ***CS Act***.

4.2 Other relevant approvals

4.2.1 Occupancy and Planning approvals

The Premises is located on Crown Reserve 8410 with the management order allocated to the Shire of Narrogin. The Premises is zoned as 'public purposes – Waste Disposal' under the Shire of Narrogin Local Planning Scheme No. 3.

4.3 Part V of the EP Act

4.3.1 Guidance Statements

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

DER Guidance Statements which inform this assessment are:

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Land Use Planning (February 2017)*
- *Guidance Statement: Licence Duration (November 2015)*
- *Guidance Statement: Publication of Annual Audit Compliance Reports (May 2016)*
- *Guidance Statement: Decision Making (November 2016)*
- *Guidance Statement: Risk Assessment (November 2016)*
- *Guidance Statement: Environmental Siting (November 2016)*

4.3.2 Works approvals and licence amendments.

Table 3 provides a list of licences granted for the Premises since 2000. DER has no records of any works approvals being held for the Premises from this date, and no amendments have been made to the licence L7085/1997/13 since being issued in 2011, aside from an extension of the expiry date in April 2016.

Table 3: Instrument log

Instrument	Issued	Description
L7085/1997/4	01/08/2000	Licence Reissue
L7085/1997/5	30/06/2001	Licence Reissue
L7085/1997/6	30/06/2002	Licence Reissue
L7085/1997/7	30/06/2003	Licence Reissue
L7085/1997/8	08/07/2004	Licence Reissue

Instrument	Issued	Description
L7085/1997/9	30/06/2005	Licence Reissue
L7085/1997/10	30/06/2006	Licence Reissue
L7085/1997/11	20/07/2007	Licence Reissue
L7085/1997/12	30/06/2008	Licence Reissue
L7085/1997/13	30/06/2011	Licence Reissue
L7085/1997/13	29/04/2016	Licence amendment to extend expiry date
L7085/1997/13	25/05/2017	Licence amendment to include category 62, increase approved throughput and licence review

4.3.3 Compliance inspections

The following compliance inspections were conducted by DER between 2012 and 2017.

Compliance inspection 31 January 2012

DER conducted a compliance inspection of the Premises on 31 January 2012. The compliance inspection report noted several non-compliance findings. The Licence Holder provided information to address the issues raised as shown in Table 4.

Table 4: Issues raised at 31 January 2012 inspection

Issue raised	How issue was addressed
The Premises had no defined trench or earthen bunds to place waste in accordance with condition 5 (ii) and the tipping area was more than 30 metres.	The Licence Holder confirmed that fencing has been erected to define the tipping area and restrict the tipping face to 30 metres.
There was exposed waste on the active tipping area and the waste is not covered as per condition 4 (iv).	The Licence Holder confirmed that appropriate levels of cover are being placed on the tip face as required by the conditions.
The municipal waste is not covered within 24 hours, or with a final soil cover of 1 metre.	
Windblown waste was observed over the entire site.	The Licence Holder confirmed that actions are being taken to collect loose material from around the Premises.
Failure to report in the AACR the extent to which licence conditions were complied with.	No further action required at the time of inspection.
Failure to divert storm water away from portions of the Premises which are or have been used for waste deposition.	The Licence Holder confirmed that the drainage system is no longer abutting the tip face.
Failure to provide evidence for liquid waste acceptance and Controlled Waste Tracking Form receipts to DEC as requested by the inspector during inspection.	This matter has been closed by DER.

Failure to take measures to minimise floating debris or vegetation in the ponds or on the pond embankments.	The Licence Holder confirmed that weed killer has been used within the ponds and material is being removed.

Compliance inspection 5 February 2014

DER conducted a compliance inspection of the Premises on 5 February 2014. The compliance inspection report noted several non-compliance findings as detailed in Table 5. DER records show the final inspection report was not sent to the Licence Holder and therefore no response was requested following this inspection.

Table 3: Issues raised at 5 February 2014 inspection

Issue raised	How issue was addressed
Asbestos was sighted in the burial pit to be unwrapped and not sufficiently covered	The compliance matters were not formally raised subsequent to the inspection.
Fencing around active landfilling area is less than 1.8 m in height	
Fencing around the Premises is less than 1.2 m in height	
Annual monitoring report and Annual Audit Compliance report had been received late	
Tyres were not stacked in rows with at least 6 m separating each row	

Compliance inspection 8 December 2015

DER conducted a compliance inspection of the Premises on 8 December 2015. The compliance inspection report noted several non-compliance findings. The Licence Holder provided information to address the issues raised as shown in Table 6.

Table 6: Issues raised at 8 December 2015 inspection

Issue raised	How issue was addressed
Insufficient waste covering	A response from the Licence Holder was received providing evidence of actions taken to address the issues raised including cleaning up of spills and adding additional cover.
Windblown waste	
Spills of hazardous material	
Exposed asbestos	
More than 100 tyres are being stored	

4.3.4 Annual Monitoring Reports

The annual monitoring reporting period for the licence is the calendar year, with AMRs due for submission to DER on or before 31 March in each year. No emissions monitoring is required by the reports.

2014 Annual Monitoring Report

The 2014 AMR was submitted on the 21 March 2015 and addressed all of the items required

by the licence conditions.

The Licence Holder reported that there were no changes to the site. The report repeats that a new asbestos disposal area which has been established in the same area as the previous trench.

2015 Annual Monitoring Report

The 2015 AMR was submitted on the 14 March 2016 and addressed all of the items required by the licence conditions.

The Licence Holder reported that there were no changes to the site.

2016 Annual Monitoring Report

The 2016 AMR was submitted on the 24 March 2017 and addressed all of the items required by the licence conditions.

The Licence Holder reported that there were no changes to the site.

4.3.5 Annual Audit Compliance Reports

The annual audit compliance period for the licence is the 1 April to 31 March in the following year, with AACRs due for submission to DER on or before 1 June in each year.

2013-2014 Annual Audit Compliance Report

The 2013-2014 AACR submitted by the Licence Holder on 28 March 2014 but was not filled in correctly. It is uncertain whether the documentation was resubmitted.

2014-2015 Annual Audit Compliance Report

The 2014 AACR was submitted on the 7 May 2015. The Licence Holder reported that:

- Adequate cover is not applied to the active tip face;
- Adequate cover is not applied to the old asbestos trench;
- Municipal waste was not disposed in a defined trench due to adequate bunding of the tip face;
- Failure to maintain appropriate fencing;
- Storage of more than 100 tyres;
- Windblown waste on the Premises; and
- Vegetation growing on the banks of treatment ponds, and floating debris in the ponds

The Licence holder reported that they have advised their contractor to take measures to address each of these non-compliances.

2015-2016 Annual Audit Compliance Report

The 2015-2016 AACR was submitted on the 4 May 2016. The Licence Holder reported that:

- adequate cover is not applied to the active tip face;
- adequate cover is not applied to the old asbestos trench;
- Plastic cover on the disposed asbestos was damaged and not covered immediately;
- Municipal waste was not disposed in a defined trench due to adequate bunding of the tip face;
- Small amounts of hydrocarbon spills were not removed and disposed of;
- Storage of more than 100 tyres;

- failure to maintain appropriate fencing;
- Windblown waste on the Premises; and
- vegetation growing on the banks of treatment ponds.

The Licence holder reported that they have advised their contractor to take measures to address each of these non-compliances.

4.3.6 Site Visit

DER Officers undertook a site visit on the 18 April 2017 to inform the licence amendment. Appendix 3 contains photographs from the site visit, and the following observations were noted:

- Mild putrescible and hydrocarbon odours were noted near the landfill area.
- There is no discernible tipping face, and wastes were deposited throughout the landfilling area.
- There was no fencing around the tipping face.
- The asbestos burial area contained a significant amount of asbestos sheeting which was partially unburied.
- A strong biosolid odour was noted near the liquid waste ponds
- Vegetation was sighted to be growing in the embankment of the liquid waste ponds
- Numerous pieces of windblown waste were sighted throughout the Premises.
- Waste is deposited within the native vegetation area to the North of the Premises.
- The waste oil and container infrastructure appeared clean and tidy.
- The tip shop area appeared clean and tidy.
- At the time of the inspection a site representative confirmed that no records are kept of asbestos or biomedical waste disposal areas.
- At the time of the inspection a site representative confirmed that tyres are not buried at the Premises and are removed off-site.
- At the time of the inspection a site representative confirmed that stormwater typically follows the natural contour of the land and pools towards the centre of the Premises (Greenwaste storage area).

Key findings

The Delegated Officer has reviewed the information regarding the site visit of the Premises and has found:

1. *The observations noted on the 18 April 2017 are similar to observations from previous site inspections and demonstrate continued issues with site management.*
2. *The presence of uncovered asbestos and failure to maintain records of asbestos and biomedical waste disposal areas increases the likelihood of emissions from these sources.*
3. *The lack of a discernible tipping face and the failure to implement controls imposed by the licence increases the likelihood of emissions from this source.*
4. *Vegetation growing within the pond embankments compromises the integrity of*

the pond lining and increases the likelihood of emissions from this source.

4.3.7 Compliance history check

All correspondence between DER and the Licence Holder in regards to non-compliances were in relation to the above compliance inspections and annual reports.

DER records do not show any formal enforcement action taken against the Licence Holder for the operation Premises.

Key findings

The Delegated Officer has reviewed the information regarding the compliance history of the Licence Holder and has found:

5. *The Licence Holder has a history of repeated non-compliance with multiple licence conditions as reported in annual reports and observed during site inspections.*

4.3.8 Complaint history check

DER has received one complaint in regards to the Premises in the past three years. On the 9 October 2014 a complaint was made in regards to the burning of green waste 80 metres from their property. DER's investigation of the complaint found that the Licence Holder did conduct a controlled burn on this date and they believed that all licence conditions had been complied with. The Complaint was closed out with a recommendation for the location of the green waste burning area to be reviewed at the next available opportunity. As the licence has not been reviewed since this date, the location of the green waste burning area will be considered as part of this review.

5. Consultation

The applicant was provided a copy of the decision report and licence on the 5 May 2017. The Licence Holder responded on 18 May 2017 with comment (see Attachment 2).

6. Location and siting

6.1 Siting context

The Premises is located in the Shire of Narrogin, 160 km south east of Perth and approximately 2 km north east of the of Narrogin town centre. The Premises location is shown in Figures 2 and 3.

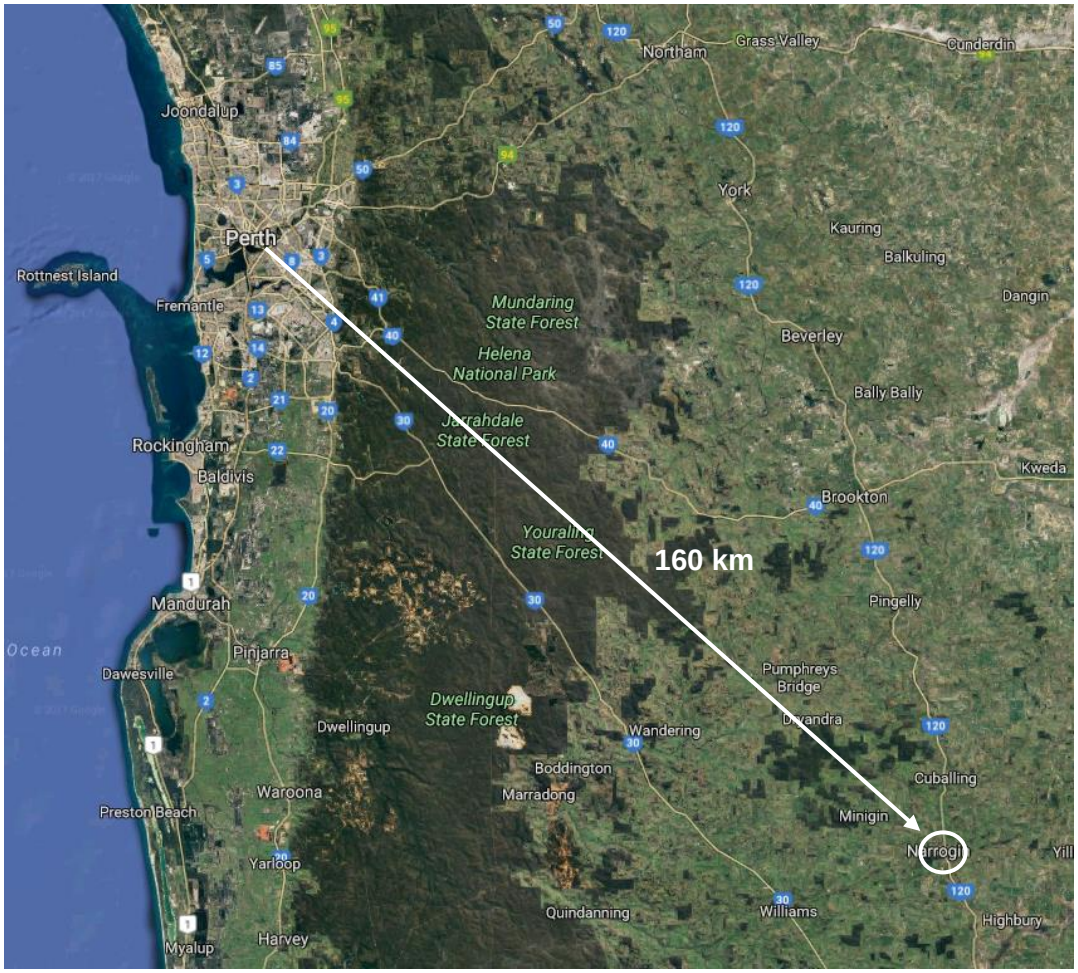

Figure 2: Location of Premises

6.2 Residential and sensitive premises

The immediate surrounding land is zoned as general agriculture and recreation and open space under the Shire of Narrogin Local Planning Scheme No. 3. The distances to residential receptors are shown in Table 7 and Figure 3.

Table 7: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Crown Reserve 16789 (Designated as recreational land use)	Immediately adjacent to the north of the Premises
Crown Reserves 39293, (Designated as parklands land use)	Immediately adjacent to the east of the Premises
Crown Reserve 22722 (Designated as sand quarry land use)	Immediately adjacent to the south of the Premises
Nearest Residential Properties	60 metres south of the Premises boundary
Residential Properties	11 properties within 200 metre radius of the Premises
Dense Residential Development (Clayton	Approximately 370m south of the Premises boundary

Road and Lefroy Street)	
Remnant vegetation (woodlands)	Immediately surrounding the Premises, 1km to the north west, north east and south.

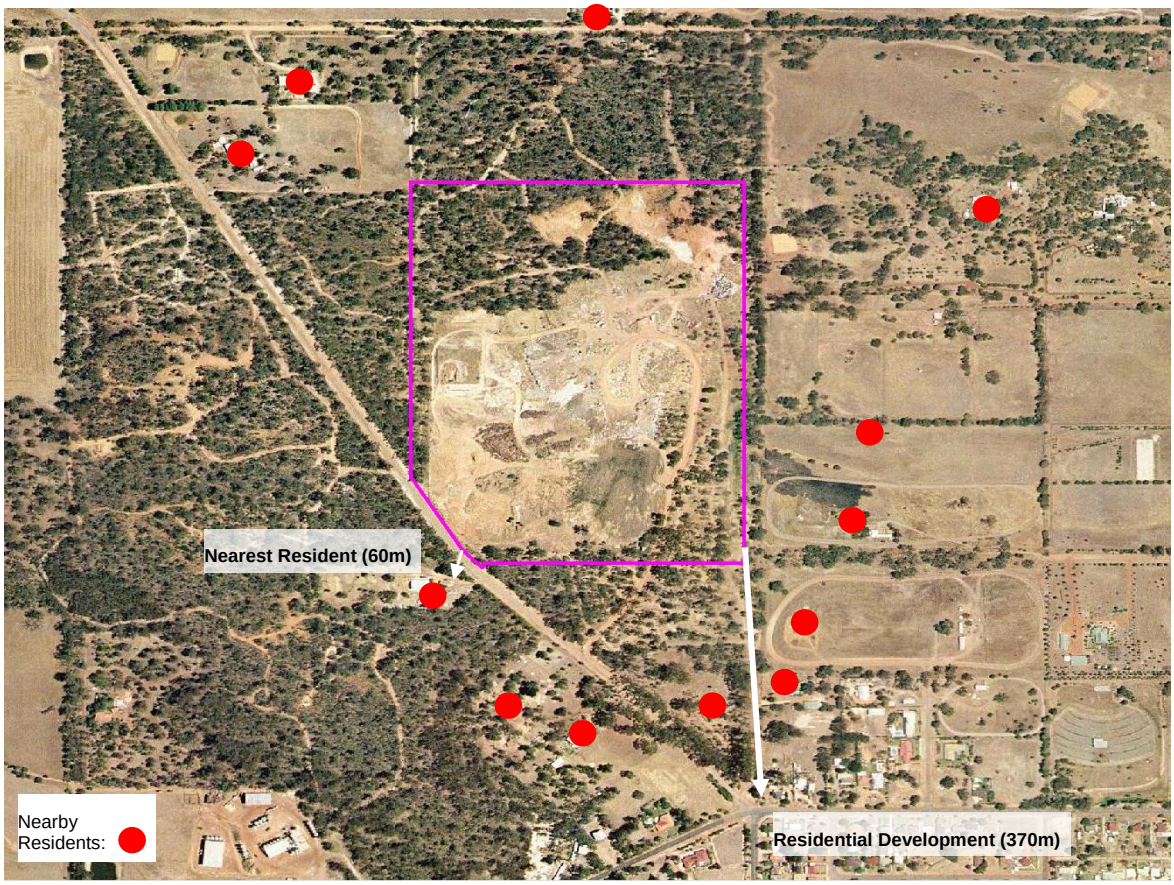

Figure 3: Distance to residential receptors

Sensitive receptors within 1,000 m of a putrescible landfill site are likely to be subject to increased risk of impact from emissions and discharges associated with the activities if appropriate regulatory controls are not imposed.

6.3 Specified ecosystems

The distances to specified ecosystems are shown in Table 8 and Figure 4.

Table 8: Specified ecosystems

Specified ecosystems	Distance from the Premises
Declared Rare Flora (DRF). Verbal advice provided by the Wheatbelt Regional Manager, Department of Parks and Wildlife, that there is no DRF in the vicinity of the landfill.	DRF habitat approximately 480 metres south-west of the Premises.

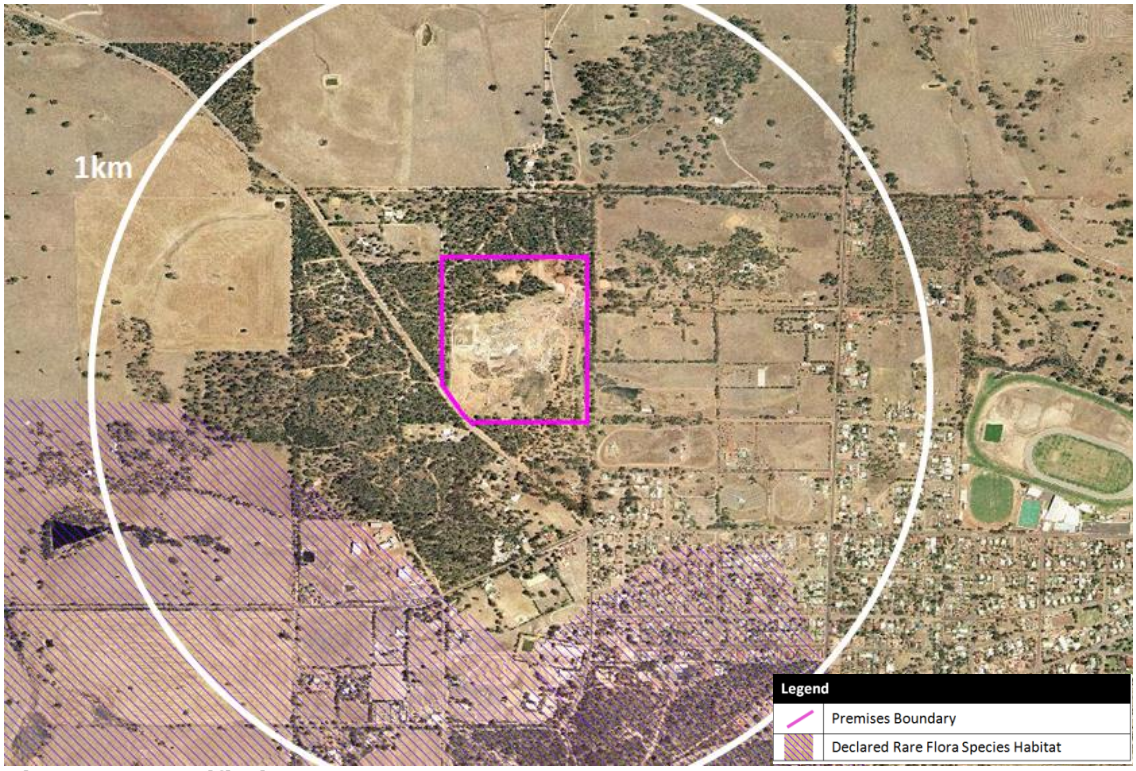

Figure 4: Specified Ecosystems

6.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 9.

Table 9: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental Value
Groundwater	Depth to groundwater at the Premises is unknown. Recent excavation at the Premises has not found groundwater at a depth of 6 metres. Department of Water bore logs from 1946 show groundwater in a bore 1.5km east of the Premises was reached at 9.1 metres below ground level. A 2004 Department of Agriculture study found groundwater at a depth of 3.6 metres below ground level at a bore 500 metres south east of the Premises. (Crossley, 2004)	DER's GIS mapping system indicates that groundwater in the area has TDS values of 7000 to 14000 mg/L which is considered to be saline. Groundwater is therefore not considered suitable for potable water with limited use for livestock watering. Groundwater does not feed any sensitive ecosystems.
Minniging Brook	1.4 km north-west	Significant Stream
Bottle Creek	1.9 km south	Major Tributary

6.5 Soil type

There are no records of bore logs for the premises which can confirm the specific geology below the Premises.

The Premises is located on the Yilgarn Craton, which is generally characterised predominately by granite rock overlain by weathered clay soils. The Licence Holder provides the following description in the application documentation:

“The geology is primarily fine to coarse-grained granite with some mica-rich granites. Remnants of lateritic duricrust (cemented ironstone gravel) occur and is interspersed with outcropping granite and dolerite. The landfill has a mix of granite and gneiss. The rocks are of low permeability, highly fractured and weathered. The geology is from the Archaean age and has a Granitoid lithology. The bedrock that underlays the landfill is a mix of granite and dolerite."

Department of Water's Water Information Reporting system provides information on two bores drilled in 1942 at the Narrogin Sporting Grounds (1.5km east of the Premises). The bore logs describe predominately clay soils with granite, with stiff or heavy clays reached within 3 metres.

6.6 Meteorology

6.6.1 Wind direction and strength

The following wind roses (Figure 5) provide the annual wind direction and strength (km/h) for 9am and 3pm between the years 1965 and 2010 in Narrogin (BoM 2016). The region is characterised by predominately low-speed winds with morning winds from the south-east tending to west and north-westerly winds in the afternoons.

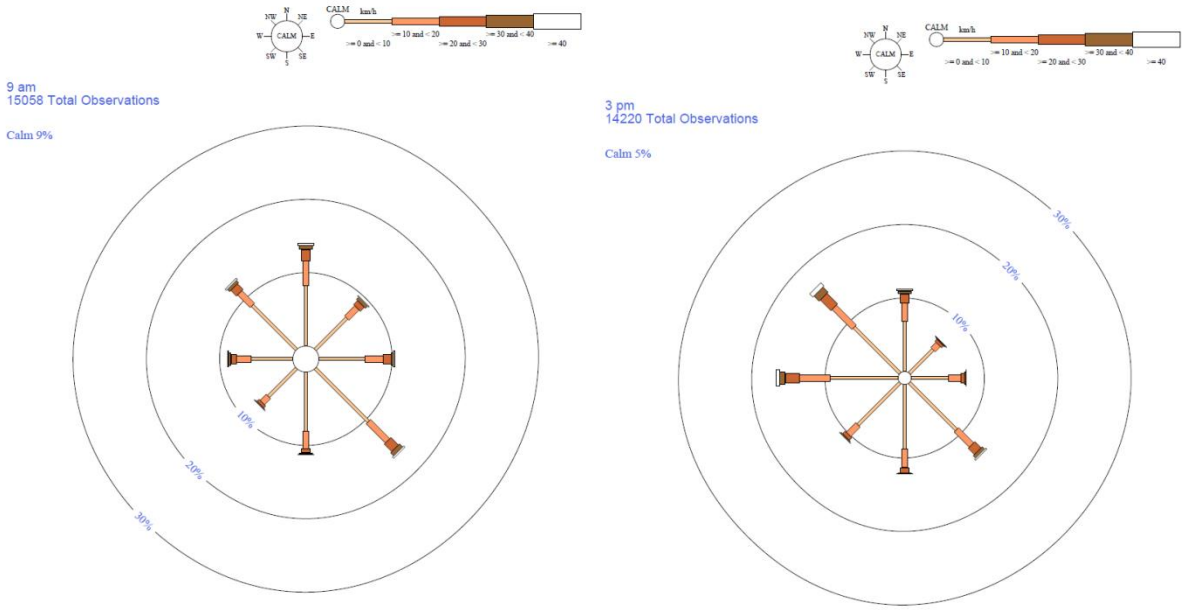

Figure 5: Wind roses for Narrogin at 9am and 3pm (BoM 1965-2010)

6.6.2 Rainfall and temperature

The Narrogin locality experiences mild, wet winters, and hot, dry summers. Figure 6 shows the mean rainfall for Narrogin for the period of 1891 to 2017 and maximum temperatures for Narrogin for the period 1913 to 2017. Narrogin receives an annual rainfall of approximately

491.8 mm.

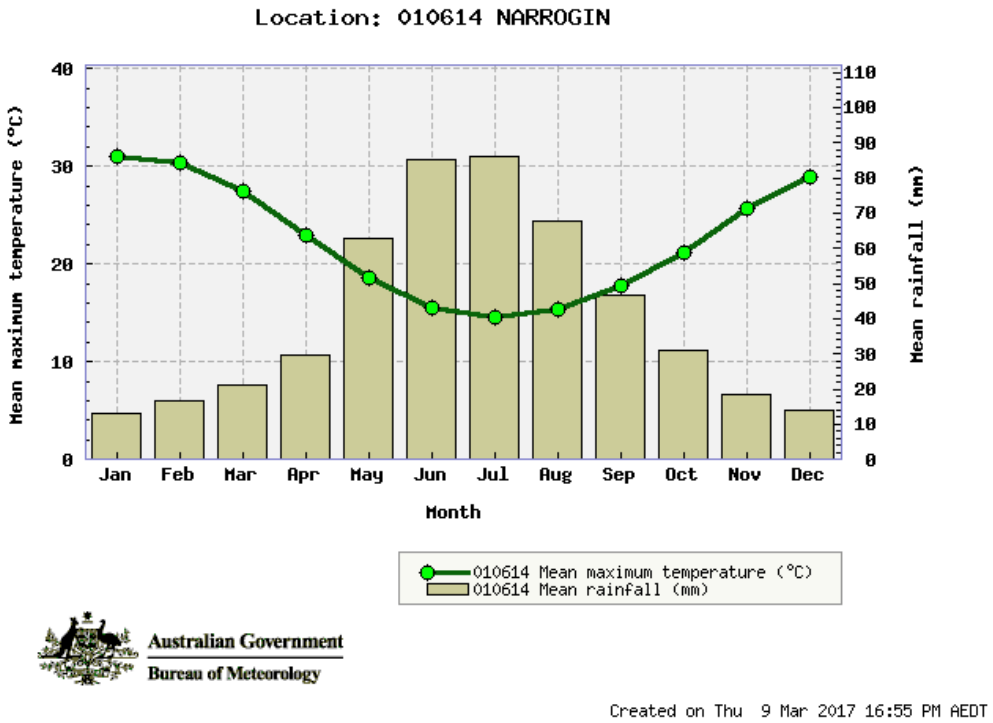

Figure 6: Mean temperature and rainfall at Narrogin

7. Risk assessment

7.1 Confirmation of potential impacts

Identification of key potential emissions, pathways, receptors and confirmation of potential impacts are set out in Tables 10 and 11 below. Tables 10 and 11 also identify which potential emissions will be progressed to a full risk assessment. Some potential emissions/impacts may not receive a full risk assessment where a potential receptor or pathway cannot be identified.

Table 10: Identification of key emissions during construction

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Construction of transfer area**	Earthworks Laying of concrete slab Sealing access roads Line marking Fencing and gates	Noise emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.6
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.6
			Dust emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.7
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.7

Table 11: Identification of key emissions during operation

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Category 61: Liquid Waste Facility**	Acceptance and storage of liquid waste	Leachate emissions	On site Premises and adjoining land	Direct emission to land Seepage Overtopping Transported in storm water	Contamination of land	Yes	See section 7.4
				Groundwater (abstraction bores)	Seepage	Contamination of waters Amenity and health impacts to groundwater users	No	Groundwater is saline not used for potable water. The soil type and estimated distance to groundwater limits pathway for seepage.
				Minniging Brook	Transported in groundwater Transported in storm water	Eutrophication and algal blooms which can disrupt ecosystem function.	No	The soil type and estimated distance to groundwater limits pathway for seepage. Distance to receptor and south to south-eastern gradient of the landscape limits pathway for transportation in storm water
				Bottle Creek	Transported in groundwater Transported in storm water	Eutrophication and algal blooms which can disrupt ecosystem function.	No	As above
Source	**Category 61: Liquid Waste Facility**	Acceptance and storage of liquid waste	Leachate emissions	Remnant vegetation (including vegetation on Crown Reserves)	Direct emission to land Seepage Overtopping Transported in storm water Transported in groundwater	Further degradation of vegetation, impacts on fauna habitat.	Yes	See section 7.4

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
	Category 61: Liquid Waste Facility (continued)	Acceptance and storage of liquid waste (continued)	Leachate emissions (continued)	Declared Rare Flora	Transported in storm water Transported in groundwater	Impact on the biological diversity of sensitive ecological communities	No	The soil type and estimated distance to groundwater limits pathway for seepage. Distance to receptor and south to south-eastern gradient of the landscape limits pathway for transportation in storm water
			Odour emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.5
				Recreational users of Crown Land reserves	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.5
Source	**Category 61: Liquid Waste Facility**	Acceptance and storage of liquid waste	Pathogens from septage waste.	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Overtopping or spilling direct to land and then transported in storm water Transported by vermin	Amenity and Public health impacts to residents	Yes	See section 7.8

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
				Recreational users of Crown Land reserve	Overtopping or spilling direct to land Transported in storm water Transported by vermin	Amenity and public health impacts to recreational users of Crown Land reserve	Yes	See section 7.8
	Category 62: Solid Waste Depot	Acceptance and storage of wastes including oils and hydrocarbons.	Leachate emissions	On site Premises and adjoining land	Direct emission to land Seepage Overtopping Transported in storm water	Contamination of land	Yes	See section 7.4
				Groundwater (abstraction bores)	Seepage	Contamination of waters Amenity and health impacts to groundwater users	No	Groundwater is saline and not used for potable water. The soil type and estimated distance to groundwater limits pathway for seepage.
				Minniging Brook	Transported in groundwater Transported in storm water	Contamination of waters Amenity and health impacts to surface water users	No	The soil type and estimated distance to groundwater limits pathway for seepage. Distance to receptor south to south-eastern gradient of the landscape limits pathway for transportation in storm water
Source	**Category 62: Solid Waste Depot**	Acceptance and storage of wastes including oils and hydrocarbons.	Leachate emissions	Bottle Creek	Transported in groundwater Transported in storm water	Contamination of waters Amenity and health impacts to surface water users.	No	As above

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
	Category 62: Solid Waste Depot (continued)	Acceptance and storage of wastes including oils and hydrocarbons. (continued)	Leachate emissions (continued)	Remnant vegetation (including vegetation on Crown Reserves)	Direct emission to land Seepage Overtopping Transported in storm water	Further degradation of vegetation, impacts on fauna habitat.	Yes	See section 7.4
				Declared Rare Flora	Transported in groundwater Transported in storm water	Impact on the biological diversity of sensitive ecological communities	*No*	The soil type and estimated distance to groundwater limits pathway for seepage. Distance to receptor and south to south-eastern gradient of the landscape limits pathway for transportation in storm water
			Odour	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.5
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.5

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Category 62: Solid Waste Depot**	Acceptance and storage of wastes including oils and hydrocarbons.	Windblown waste	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.9
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.9
			Pathogens from municipal waste	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Transported by vermin	Amenity and Public health impacts to residents	Yes	See section 7.8
				Recreational users of Crown Land reserve	Transported by vermin	Amenity and Public health impacts to recreational users of Crown Land Reserve	Yes	See section 7.8

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Category 62: Solid Waste Depot**	Acceptance and storage of wastes including oils and hydrocarbons.	Asbestos (non-conforming waste)	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Public health impacts to residents	Yes	See section 7.10
				Recreational users of Crown Land reserve	Air	Public health impacts to recreational users of Crown Land reserve	Yes	See section 7.10
	Category 64: Class II Putrescible Landfill	Acceptance and burial of wastes including asbestos, biomedical wastes and tyres.	Landfill gas emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity and Public health impacts to residents	Yes	See section 7.12
				Recreational users of Crown Land reserve	Air	Amenity and Public health impacts to recreational users of Crown Land reserve	No	See section 7.12

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Category 64: Class II Putrescible Landfill**	Acceptance and burial of wastes including asbestos, biomedical wastes and tyres.	Odour emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.5
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.5
			Landfill leachates	On site Premises and adjoining land	Seepage Transported in groundwater Transported in storm water	Contamination of land	Yes	See section 7.4
				Groundwater (abstraction bores)	Seepage	Contamination of waters Amenity and health impacts to groundwater users	No	Groundwater is not used for potable water. The soil type and estimated distance to groundwater limits pathway for seepage.
				Minniging Brook	Seepage Transported in groundwater	Elevated nutrients and metals can disrupt ecosystem function.	No	The soil type and estimated distance to groundwater limits pathway for seepage. Distance to receptor south to south-eastern gradient of the landscape limits pathway for transportation in storm water

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Category 64: Class II Putrescible Landfill**	Acceptance and burial of wastes including asbestos, biomedical wastes and tyres.	Landfill leachates	Bottle Creek	Seepage Transported in groundwater	Elevated nutrients and metals can disrupt ecosystem function.	No	As above
				Remnant vegetation (including vegetation on Crown Reserves)	Direct emission to land Seepage Overtopping Transported in storm water	Further degradation of vegetation, impacts on fauna habitat.	Yes	See section 7.4
				Declared Rare Flora	Transported in groundwater Transported in storm water	Impact on the biological diversity of sensitive ecological communities	No	The soil type and estimated distance to groundwater limits pathway for seepage. Distance to receptor and south to south-eastern gradient of the landscape limits pathway for transportation in storm water
			Pathogens from municipal waste and biomedical waste	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Direct contact with biomedical waste Transported by vermin	Amenity and Public health impacts to residents	Yes	See section 7.8
				Recreational users of Crown Land reserve	Direct contact with biomedical waste Transported by vermin	Amenity and public health impacts to recreational users of Crown Land reserve	Yes	See section 7.8

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Category 64: Class II Putrescible Landfill**	Acceptance and burial of wastes including asbestos, biomedical wastes and tyres.	Asbestos	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Public health impacts to residents	Yes	See section 7.10
				Recreational users of Crown Land reserve	Air	Public health impacts to recreational users of Crown Land reserve	Yes	See section 7.10
		Burning of green waste. Potential ignition of waste types including tyres.	Windblown waste	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.9
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.9

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**Category 64: Class II Putrescible Landfill**	Burning of green waste. Potential ignition of waste types including tyres.	Smoke emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity and Public health impacts to residents	Yes	See section 7.11
				Recreational users of Crown Land reserve	Air	Amenity and Public health impacts to recreational users of Crown Land reserve	Yes	See section 7.11
	General Premises operations	Vehicle movements throughout Premises on sealed and unsealed roads	Noise emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.6
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.6

			Potential Emissions	Potential Receptors	Potential Pathway	Potential Impacts	Continued to detailed risk assessment?	Reasoning
Source	**General Premises operations**	Vehicle movements throughout Premises on sealed and unsealed roads	Dust emissions	Numerous farmhouses around the Premises, the nearest being 60 metres south west of the Premises. Residential subdivision located 370 metres south of the Premises.	Air	Amenity impacts to residents	Yes	See section 7.7
				Recreational users of Crown Land reserve	Air	Amenity impacts to recreational users of Crown Land reserve	Yes	See section 7.7

7.2 Risk Criteria

During the assessment the risk criteria in Table 12 below will be applied to determine a risk rating set out in this section 7.

Table 12: Risk Criteria

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

Likelihood		Consequence		
The following criteria has been used to determine the likelihood of the risk / opportunity occurring.		**The following criteria has been used to determine the consequences of a risk occurring:**		
			Environment	**Public Health* and Amenity (such as air and water quality, noise, and odour)**
Almost Certain	The risk event is expected to occur in most circumstances	Severe	• **on-site impacts**: catastrophic • **off-site impacts local scale**: high level or above • **off-site impacts wider scale:** mid level or above • Mid to long term or permanent impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are significantly exceeded	• Loss of life • **Adverse health effects:** high level or ongoing medical treatment • Specific Consequence Criteria (for public health) are significantly exceeded • **Local scale impacts:** permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	• **on-site impacts**: high level • **off-site impacts local scale**: mid level • **off-site impacts wider scale**: low level • Short term impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are exceeded	• **Adverse health effects:** mid level or frequent medical treatment • Specific Consequence Criteria (for public health) are exceeded • **Local scale impacts**: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	• **on-site impacts**: mid level • **off-site impacts local scale**: low level • **off-site impacts wider scale**: minimal • Specific Consequence Criteria (for environment) are at risk of not being met	• **Adverse health effects:** low level or occasional medical treatment • Specific Consequence Criteria (for public health) are at risk of not being met • **Local scale impacts:** mid level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	• **on-site impacts**: low level • **off-site impacts local scale**: minimal • **off-site impacts wider scale**: not detectable • Specific Consequence Criteria (for environment) likely to be met	• Specific Consequence Criteria (for public health) are likely to be met • **Local scale impacts:** low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	• **on-site impact**: minimal • Specific Consequence Criteria (for environment) met	• **Local scale**: minimal to amenity • Specific Consequence Criteria (for public health) met

^ Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting.*

* In applying public health criteria, DER may have regard to the Department of Health's, *Health Risk Assessment (Scoping) Guidelines* **"on-site"** means within the prescribed premises boundary.

7.3 Risk Treatment

DER will treat risks in accordance with the Risk Treatment Matrix in Table 13 below:

Table 13: Risk Treatment

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk event will not be tolerated. DER may refuse application.
High	Acceptable subject to multiple regulatory controls.	Risk event will be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled	Risk event is acceptable and will generally not be subject to regulatory controls.

7.4 Risk Assessment – Leachate Impacts

7.4.1 General hazard characterisation and impact

There are no point source emissions of leachates to land associated with the operation of the Premises. However, it is possible that leachate may be generated from the storage of wastes and buried (landfilled) putrescible wastes which may cause unintended leachate emissions. These leachates can potentially contain high nutrient levels, high sediment levels, hydrocarbons and other chemicals.

Fire water containing Perfluoroalkyl and polyfluoroalkyl substances (PFAS), or solid wastes contaminated with PFAS accepted as liquid waste, or for burial is an international contaminant of concern according to the DER publication *Interim Guideline on the Assessment and Management of Perfluoroalkyl and Polyfluoroalkyl, January 2017.* The DER interim guideline states PFAS are fluorosurfactants and have complex and unique properties. Perfluorooctane sulfonate (PFOS) and Perfluorooctanoic acid (PFOA) are two of the most well-known PFAS which are known to be persistent, bio-accumulative and toxic and, due to their persistence in the environment and moderate solubility, can be transported long distances in water and air, and transfer between different media (for example soil, sediment, surface water and groundwater). This hazard characterisation and impacts has not been specifically considered in this application as the applicant has specified that they no longer accept fire wash waters and debris, and will be subject to a separate risk assessment should the Licence Holder wish to accept PFAS.

The soil at the Premises is predominately clay which is considered likely to significantly slow any seepage to groundwater which is estimated to be at least 3-6 metres below ground level.

The geology does not inhibit overland flow from either the solid waste depot, overtopping of the ponds or the base of the landfill (ground level). Leachates may travel in storm water and contaminate soils at the Premises or on neighbouring residential properties or public land (including crown land reserved for recreational use). The slope of the land is generally in a south, south-easterly direction and any surface run-off is expected to travel in this direction.

Potential sources of leachate emissions are described in Table 14. Previous AACRs submitted by the Licence Holder as well as compliance inspections carried out by DER Officers have identified that spills of hazardous wastes were not immediately cleaned up.

Table 4: Potential sources of leachate

Source	Potential event
Liquid waste acceptance and storage in treatment ponds	• Direct spill of liquid waste • Overtopping of ponds
Acceptance and storage of solid wastes (includes waste oils, household hazardous waste and batteries)	• Direct spill of waste • Storm water contact with waste • Storm water collection in waste bins and subsequent overtopping
Landfilling of wastes	• Storm water contact with un-buried wastes • Seepage of leachates from the base of the landfill area at ground level

7.4.2 Key findings

The Delegated Officer has reviewed the information regarding the leachate impacts from the Premises and has found:

1. *The Licence Holder has previously failed to clean up spills of hazardous materials at the Premises which will inform the likelihood of future impacts.*
2. *This hazard characterisation and impacts of PFAS has not been specifically considered in this Licence Amendment and will need to be subject to a separate risk assessment should the Licence Holder wish to accept PFAS, which will include greater regulatory control, including establishing an ambient ground water monitoring program. Given the nature of the material and potential impacts, acceptance is currently not authorised at levels above specified screening levels in the Interim PFAS guideline.*
3. *All three categories of activities at the Premises may give rise to leachate emissions*
4. *The geology of the area acts as a natural containment system, and any seepage from the Premises will be very slow.*
5. *There are multiple receptors present. For the purpose of this assessment, the remnant vegetation within the Premises and immediately adjacent to the premises is considered to be the most affected receptor.*

7.4.3 Criteria for assessment

The criteria for assessing emissions to land is the *Assessment levels of soil, sediment and water* (Department of Environment and Conservation, February 2010) ecological investigation

levels.

7.4.4 Proponent controls

The Licence Holder's controls are set out in Table 15:

Table 5: Proponent infrastructure controls for leachate emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Liquid waste treatment ponds	Freeboard	A minimum freeboard of 300 mm will be maintained on the ponds	Site Map
	Maintenance of infrastructure	Storm water shall be directed away to prevent erosion of pond embankments Prevention of vegetation growing in the pond or on pond embankments	Site Map
Acceptance and storage of solid wastes	Containment infrastructure	Used oil and chemical containers will be stored in a weatherproof bunded tank and mesh cage General waste and most recyclables will be stored in 30 m^3 hook bins	Site Map
Landfilling of wastes	Operational management	Daily cover of waste to minimise exposure to storm water infiltration, reducing leachate generation Intermediate cover for surfaces exposed more than 90 days with a graded slope of at least 2% to promote run-off away from the active face Removal of Intermediate cover when filling recommences to prevent perched water layer	-
All	Storm water management	Uncontaminated storm water is directed away from landfilling areas	-

7.4.5 Consequence

Based upon the sensitivity of receptors the Delegated Officer has determined that the impact of leachate emissions may be low level off site impacts. Therefore, the Delegated Officer considers the consequence to be **Moderate.**

7.4.6 Likelihood of consequence

Based upon the Licence Holder's controls, compliance history and the distance to the sensitive receptors the Delegated Officer has determined that the likelihood of moderate impacts could occur at some time. Therefore, the Delegated Officer considers the consequence to be **Possible.**

7.4.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of leachate impacts on sensitive receptors during operation is **Medium.**

7.5 Risk Assessment – Odour Impacts

7.5.1 General hazard characterisation and impact

Individual responses to odour emissions may vary depending on age, health status, sensitivity, and odour exposure patterns. Perceived odour intensity may increase or decrease on exposure. Community response to an odour can include annoyance, potentially leading to stress and loss of amenity. Exposure to repeated odour events can create a nuisance effect.

Exposure times and frequency of odour emissions depend on day to day activities and weather conditions.

Sources of odour at the Premises include the liquid waste treatment ponds, the acceptance and storage of solid wastes, particularly loads with a high putrescible content and landfilling of wastes (placement prior to covering) including biomedical wastes.

The nearest resident is located 60 metres south-west from the Premises boundary, however the dominant wind directions are expected to direct impacts to the north-west in the mornings, moving to west and south-westerly in the afternoons. Residences in these directions are at least 100 metres from the Premises boundary, and at least 200 metres from areas where activities are occurring. Odour complaints have not been reported to DER from existing operations.

7.5.2 Criteria for assessment

The general provisions of the EP Act make it an offence to cause or allow unreasonable emissions which includes emissions of odour that unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person.

7.5.3 Proponent controls

The Licence Holder's proposed controls are detailed in Table 16.

Table 6: Proponent infrastructure controls for odour emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Liquid waste treatment ponds	Anaerobic ponds maintained with a crust.	Liquid waste is discharged to the ponds in a manner which does not disrupt the crust. Liquid waste will be discharged with a pH above 6.5 by the use of lime where necessary.	Site Map

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
		Ponds are maintained at a minimum depth of 3 metres.	
Acceptance and storage of solid wastes	Waste acceptance procedures	General waste bins will be emptied and waste placed within the landfill on a daily basis or at least within 48 hours of the waste being received.	-
Landfilling of wastes	Operational management	Daily cover of waste with a minimum 100 mm cover Intermediate covering of surfaces not receiving final cover within 90 days. Surface area of tipping face will be kept as small as possible. Deposited waste will be compacted in 500 mm layers using a minimum of five passes by the compactor.	-
All	Operational management	Wastes delivered to the Premises will be contained in a covered vehicle to minimise potential odour emissions.	-

7.5.4 Consequence

Based upon the sensitivity of residential receptors the Delegated Officer has determined that the impact of odour emissions will be low level impact to amenity. Therefore, the Delegated Officer considers the consequence to be **Minor.**

7.5.5 Likelihood of consequence

Based upon the distance to sensitive receptors, site observations and there being no history of odour complaints made in regards to the Premises, the Delegated Officer has determined that the likelihood of minor odour emissions is that they could occur at some time. Therefore, the Delegated Officer considers the consequence to be **Possible.**

7.5.6 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 13) and determined that the overall rating for the risk of odour impacts on sensitive receptors during operation is **Medium.**

7.6 Risk Assessment - Noise Impacts

7.6.1 General hazard characterisation and impact

Construction

Noise may be generated during construction from earthworks, installation of infrastructure, vehicle movements and other construction activities. Potential impacts of noise emissions include amenity impacts to nearby residents, the closest of which is located 60 metres from the boundary of the Premises. Recreational users of the adjoining Crown Land may also experience amenity impacts.

Construction is expected to occur for approximately three months, and the premises will continue to operate during this timeframe.

Operation

Noise may be generated from the vehicle movements and the movement of waste on the Premises. The Premises is open for waste acceptance 9:00am to 5:00pm weekdays (except Tuesdays), and 10:00am to 4:00pm Saturdays and Sundays. Vehicles may still operate outside of these hours, for example when applying the final daily cover (up to 7:00pm).

Potential impacts of noise emissions include amenity impacts to nearby residents, the closest of which is located 60 metres from the boundary of the Premises. Recreational users of the adjoining Crown Land may also experience amenity impacts.

7.6.2 Criteria for assessment

The Criteria for assessment of noise emissions is the Noise Regulations and the premises activities will be subject to these regulations.

7.6.3 Proponent controls

The Licence Holder's proposed controls are detailed in Table 17. The licence holder has not proposed any specific controls during operation.

Table 7: Proponent infrastructure controls for noise emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Operation			
Vehicle movement at the Premises	Maintenance	All mobile site equipment will be regularly maintained including exhaust mufflers.	Site Map
	Speed limits	Vehicle speeds will be restricted to less than 30 km/hr on site access roads.	-

7.6.4 Consequence

Based upon the sensitivity of nearby residential receptors the Delegated Officer has determined that the impact of noise emissions will be low level impacts to amenity. Therefore, the Delegated Officer considers the consequence to be **Minor.**

7.6.5 Likelihood of consequence

Construction

Based upon the short construction timeframe (3 months) the Delegated Officer has determined that the likelihood of slight noise impacts during construction will probably not occur in most circumstances. Therefore, the Delegated Officer considers the consequence to be **Unlikely.**

Operation

Based upon the lack of complaints regarding noise sources at sensitive receptors, the Delegated Officer has determined that the likelihood of slight noise impacts during operation will probably not occur in most circumstances. Therefore, the Delegated Officer considers the consequence to be **Unlikely.**

7.6.6 Overall rating

Construction

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of noise emissions on sensitive receptors during construction is **Medium.**

Operation

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of noise emissions on sensitive receptors during operation is **Medium.**

7.7 Risk Assessment - Dust Impacts

7.7.1 General hazard characterisation and impact

Construction

Fugitive dust may arise from vehicle movements on unsealed roads at the Premises, the excavation and stockpiling of soils, and the construction of infrastructure. Construction is expected to take approximately three months.

Dust may cause reduced local air quality and potential nuisance impacts to nearby residential properties and Crown Land used for recreational purposes. The nearest resident is located 60 metres south-west from the Premises boundary. Winds throughout the day are variable, predominantly from the south-east in the mornings toward bushland and from the west in the afternoon, which could impact residences, in the east. Residences in these directions are at least 100 metres from the Premises boundary, and at least 200 metres from areas where activities are occurring, and may be subject to dust under certain weather conditions.

Operation

Fugitive dust may arise from vehicle movements on unsealed roads at the Premises. Current operations at the Premises direct members of the public over unsealed roads to the landfill tipping face, however following construction of the transfer station area, the public will no longer have access to the landfilling area which will decrease the volume of vehicles travelling on the unsealed road.

Dust may cause reduced local air quality and potential nuisance impacts to nearby residential properties and Crown Land used for recreational purposes. The nearest resident is located 60 metres south-west from the Premises boundary. Winds throughout the day are variable, predominantly from the south-east in the mornings toward bushland and from the west in the afternoon, which could impact residences, in the east. Residences in these directions are at least 100 metres from the Premises boundary, and may be subject to dust under certain weather conditions.

7.7.2 Criteria for assessment

There are no specific criteria for assessment of fugitive dust. The general provisions of the EP Act make it an offence to cause or allow unreasonable emissions that unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person.

7.7.3 Proponent controls

The Licence Holder's proposed controls are detailed in Table 18.

Table 8: Proponent infrastructure controls for fugitive dust emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Construction			
Earthworks and movement on unsealed roads	Operational management	Materials excavated as part of the earthworks will be stockpiled and stabilised.	-
		Exposed soils will be regularly watered down.	-
		Additional measures may be implemented such as mulching, hydro seeding, chemical crusting agents or additional water trucks.	-
Operation			
Vehicle movements	Infrastructure	All public access roadways will be sealed with asphalt, bitumen or concrete.	Site Plan
	Operational management	Speeds restricted to less than 30 km/hr on site access roads	-

7.7.4 Consequence

Based upon the sensitivity of neighbouring residential properties, the Delegated Officer has determined that the impact of dust emissions will be low level impacts to amenity. Therefore, the Delegated Officer considers the consequence to be **Minor.**

7.7.5 Likelihood of consequence

Construction

Based upon the Licence Holder's controls, the limited duration of construction, and the local setting and weather patterns, Delegated Officer has determined that the likelihood of slight dust emissions during construction could occur at some time. Therefore, the Delegated Officer considers the consequence to be **Unlikely.**

Operation

Based upon the Licence Holder's controls, limiting public access to the landfill area even

though municipal truck traffic may cause dust, covering of waste at the end of the day, the local setting and weather patterns, the Delegated Officer has determined that the likelihood of low level dust emissions during operation could occur in most circumstances even though no dust-related complaints have been received. Therefore, the Delegated Officer considers the consequence to be **Possible.**

7.7.6 Overall rating

Construction

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of dust emission impacts on sensitive receptors during construction is **Medium**.

Operation

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of dust emission impacts on sensitive receptors during operation is **Medium**.

7.8 Risk Assessment - Pathogen Impacts

7.8.1 General hazard characterisation and impact

The Licence Holder is permitted to accept biomedical wastes and general municipal waste for burial at the Premises, as well as septage waste for treatment in the liquid waste treatment ponds. These waste types can potentially host pathogens that may be harmful to public health. Pathogen emissions may occur due to incorrect handling of the waste product that causes a direct emission to land, or through damage of containment/burial site by landfilling operations or unauthorised access to the Premises by humans or livestock. Pathogens may also be transported in storm water which has come into contact with the waste types.

The storage of waste also attracts vermin and pests such as rats and flies which provide a pathway to transport pathogens and diseases from the Premises, as well as causing amenity impacts.

A compliance inspection carried out by DER officers on 8 December 2015 determined that no vermin were sighted at the time of inspection and current operational controls appeared sufficient to minimise vermin habitat.

7.8.2 Criteria for assessment

There are no specific criteria for assessment of pathogen impacts.

7.8.3 Proponent controls

The Licence Holder's proposed controls are detailed in Table 19.

Table 9: Proponent infrastructure controls for pathogen emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Acceptance and treatment of septage waste	Freeboard	A minimum freeboard of 300 mm will be maintained on the ponds	-

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
	Maintenance of infrastructure	Storm water shall be directed away to prevent erosion of pond embankments Prevention of vegetation growing in the pond or on pond embankments	-
Acceptance and burial of biomedical wastes	Operational management	Burial in a separate pit that has restricted access, with immediate cover to 1m of material	-
		Waste is only accepted in a manner so that wastes are prevented from release during transport with the use of a plastic type bag and labelled.	-
		A register is kept of any biomedical waste disposed at the landfill, and filled in within two hours after disposal.	-
Acceptance, storage and burial of solid wastes	Operational management	Maintenance of one small tipping face to minimise vermin habitat Daily cover of landfill cell to minimise vermin habitat Deposited waste will be compacted in 500 mm layers using a minimum of five passes by the compactor.	-
All	Infrastructure	Perimeter fencing around the Premises to prevent livestock entering the Premises and to prevent unauthorised or accidental access to buried biomedical waste	Site Map

7.8.4 Consequence

Based upon the potentially toxic or infectious nature of pathogens the Delegated Officer has determined that the impact of pathogen emissions could have mid-level health impacts. Therefore, the Delegated Officer considers the consequence to be **Major.**

7.8.5 Likelihood of consequence

Based upon the limited throughput at the Premises, the Licence Holder controls and compliance inspection observations the Delegated Officer has determined that the likelihood of severe pathogen impacts may only occur in exceptional circumstances. Therefore, the

Delegated Officer considers the consequence to be **Rare.**

7.8.6 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of pathogen emissions on sensitive receptors during operation is **Medium.**

7.9 Risk Assessment - Windblown Waste Impacts

7.9.1 General hazard characterisation and impact

Wastes stored at the Premises may be blown from their storage locations or from the face of the landfill and be transported to threatened ecological communities on the Premises, onto Crown Land adjacent to the Premises or to residential properties located in close proximity of the Premises.

Multiple AACRs submitted by the applicant, compliance inspections and site visits carried out by DER have identified that windblown waste is regularly sighted throughout the Premises, and there has been inadequate cover applied to the landfill.

7.9.2 Criteria for assessment

The Criteria for assessment of windblown emissions is the Litter Act.

7.9.3 Proponent controls

The Licence Holder's proposed controls are detailed in Table 20.

Table 20: Proponent infrastructure controls for windblown waste emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Acceptance, storage and burial of solid wastes	Infrastructure	Perimeter fencing at least 1.2 metres high around the Premises boundary. Litter screen fencing at least 1.8 metres high around the active landfilling areas.	Site Map
	Operational Management	Wastes delivered to the Premises will be contained in a covered vehicle. General waste is directed to and stored in enclosed bins, with paper, cardboard and plastic film stored in lidded bins. Maintenance of one small tipping face. Daily cover of deposited waste. Intermediate cover for surfaces exposed more than 90 days. Deposited waste will be	-

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
		compacted in 500 mm layers using a minimum of five passes by the compactor. Staff will collect windblown waste from around the Premises.	

7.9.4 Key findings

The Delegated Officer has reviewed the information regarding the windblown waste impacts from the Premises and has found:

1. *The Licence Holder has a history of windblown waste present at the Premises, and non-compliance with licence conditions requiring the removal of windblown waste which will inform the likelihood of future impacts.*

7.9.5 Consequence

Based upon the sensitivity of residential properties in close proximity to the Premises, the Delegated Officer has determined that the impact of windblown waste will be low level impacts to amenity. Therefore, the Delegated Officer considers the consequence to be **Minor.**

7.9.6 Likelihood of consequence

Based upon the Licence Holder's controls, and the previous non-compliances with licence conditions in relation to windblown waste the Delegated Officer has determined that the likelihood of minor windblown waste impacts could occur at some time. Therefore, the Delegated Officer considers the consequence to be **Possible.**

7.9.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of windblown waste impacts on sensitive receptors during operation is **Medium.**

7.10 Risk Assessment - Asbestos Impacts

7.10.1 General hazard characterisation and impact

Asbestos and asbestos containing materials (ACM) are accepted onto the Premises for disposal, and may therefore fibrous ACM be emitted from the Premises if not stored and buried correctly. Disturbance of previously buried asbestos materials may similarly cause asbestos fibres to become airborne. The Premises also accepts construction and demolition (C&D) wastes which have the potential to be contaminated with asbestos fibres. No processing of C&D material is undertaken on site.

Asbestos fibres may travel through the air to impact residential properties (the nearest of which is located 60 metres from the Premises boundary). Recreational users of the adjacent Crown Land may also inhale fibres. Asbestos poses a significant public health risk and may cause asbestosis and other diseases in people who breathe in the fibres.

The previous two AACRs submitted by the Licence Holder as well as previous inspections by DER officers noted that asbestos has not been appropriately stored or buried at the Premises. A site inspection conducted on the 18 April 2017 noted many pieces of asbestos sheeting exposed in the asbestos burial area.

7.10.2 Criteria for assessment

There are no specific consequence criteria for asbestos impacts.

7.10.3 Proponent controls

The Licence Holder's proposed controls are detailed in Table 21.

Table 10: Proponent infrastructure controls for asbestos emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Asbestos brought onto the Premises for burial	Acceptance procedures	Only accept asbestos which is separate from other materials, double wrapped in heavy duty polyethylene (0.2mm thick) or otherwise contained to prevent airborne fibres and labelled appropriately.	-
	Operational management	Burial in a separate area, with a cover of at least 1 metre as soon as practical after disposal. Records are kept of the asbestos burial location.	-
Asbestos fibres in other solid waste (non-conforming)	Operational management	Visual inspection of loads prior to acceptance. Records kept of customers who bring in non-conforming waste types, and exclusion of customers who repeatedly do so.	-

7.10.4 Key findings

The Delegated Officer has reviewed the information regarding the asbestos impacts from the Premises and has found:

1. *The Licence Holder has a history of non-compliance with asbestos management licence conditions, which will inform the likelihood of future impacts.*

7.10.5 Consequence

Based upon the sensitivity of nearby residents and recreational users of the adjacent Crown Land, the Delegated Officer has determined that the impact of asbestos emissions could potentially be loss of life. Therefore, the Delegated Officer considers the consequence to be

Severe.

7.10.6 Likelihood of consequence

Based upon the Licence Holder's controls and history of non-compliance the Delegated Officer has determined that the likelihood of severe impacts will probably not occur in most circumstances. Therefore, the Delegated Officer considers the consequence to be **Unlikely.**

7.10.7 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of asbestos emissions on sensitive receptors during operation is **High.**

7.11 Risk Assessment - Smoke Impacts

7.11.1 General hazard characterisation and impact

Green waste is accepted at the Premises and burnt in a designated green waste burning area. The burning of green waste has the potential to release smoke which can cause amenity impacts and public health impacts. The inhalation of particulate matter can cause respiratory distress.

A fire at the Premises may also spread to nearby flammable material, including tyres which are accepted at the Premises. In the event of a fire spreading, particularly if tyres are also burnt, this would significantly increase the intensity, composition and duration of the smoke impacts.

The one complaint received by DER in regards to the Premises was in relation to the burning of green waste within 80 metres of the Premises.

7.11.2 Criteria for assessment

There are no specific criteria for smoke emissions. The general provisions of the EP Act make it an offence to cause or allow unreasonable emissions that unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person.

7.11.3 Proponent controls

The Licence Holder's proposed controls are detailed in Table 22.

Table 22: Proponent infrastructure controls for smoke emissions

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
Burning of green waste	Operational management	Green waste will be dry and seasoned for at least two months prior to burning. Green waste will be burnt in a designated burning area, either as a trench or a windrow in a position that is no closer than 100 m from the tyre storage facility. Burning does not commence	-

Source	Control(s)	Operation details	Reference to Issued Licence Plan (Attachment 1)
		before 8am, and must be declared safe by the Fire Control Officer by 12 noon on the same day. There is present in the area from the time burning commences until the Fire Control Officer for the landfill site declares the area safe – a fire fighting vehicle varying at least 500 litres of water, fitted with at least 30 metres of 19 mm diameter rubber hose and with a pump capacity capable of delivering a minimum of 250 litres of water per minute at a minimum of 700 kPA through a nozzle capable of projecting water by spray or by jet; and 2 persons, who have such qualifications in fire fighting as are approved.	

7.11.4 Consequence

Based upon the sensitivity of the residential receptors, the Delegated Officer has determined that the impact of smoke emissions could be mid-level impact to amenity and occasional medical treatment. Therefore, the Delegated Officer considers the consequence to be **Moderate.**

7.11.5 Likelihood of consequence

Based upon the distance to the sensitive receptors the Delegated Officer has determined that the likelihood of moderate smoke impacts could occur at some time. Therefore, the Delegated Officer considers the consequence to be **Possible.**

7.11.6 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of smoke impacts on sensitive receptors during operation is **Medium.**

7.12 Risk Assessment – Landfill Gas Impacts

7.12.1 General hazard characterisation and impact

Landfill gas (predominately methane and carbon dioxide) may be generated due to the decomposition of wastes disposed of at the landfill. Landfills may continue to produce gas for over 50 years from closure. Due to the small throughput of waste buried at the landfill the Premises is not considered to generate significant volumes of landfill gas.

Landfill gas can be odorous and cause short term health impacts such as coughing and irritation of the eyes nose and throat, and may be flammable or cause asphyxiation when

accumulating in enclosed spaces. People who already have medical conditions may be more easily affected.

Landfill gas can travel through air (vertically) or may migrate through soil (laterally). In highly developed areas roads and houses may prevent vertical migration and extend the distance that the gas can travel laterally. The geology of the Premises provides limited pathways for gas to migrate through the soil and the undeveloped nature of the surrounding land uses provides opportunity for gas to be released into the air.

7.12.2 Criteria for assessment

There are no specific criteria for landfill gas emissions. The general provisions of the EP Act make it an offence to cause or allow unreasonable emissions that unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person.

7.12.3 Proponent controls

The Licence Holder has not proposed any controls for landfill gas emissions.

7.12.4 Consequence

Based upon the sensitivity of the residential receptors, the Delegated Officer has determined that the impact of landfill gas emissions could be low level impact to amenity. Therefore, the Delegated Officer considers the consequence to be **Moderate.**

7.12.5 Likelihood of consequence

Based upon volume of material landfilled at the Premises the Delegated Officer has determined that the likelihood of moderate landfill gas emissions will probably not occur in most circumstances. Therefore, the Delegated Officer considers the consequence to be **Rare.**

7.12.6 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above for the Risk Criteria (Table 12) and determined that the overall rating for the risk of landfill gas impacts on sensitive receptors during operation is **Low.**

7.13 Summary of risk assessment and acceptability

A summary of the risk assessment and the acceptability of the risks with treatments are set out in Table 23 below. Controls are described further in section 8.

Table 23: Risk assessment summary

	Emission		Pathway and Receptor	Proponent controls	Impact	Risk Rating	Acceptability with treatment (conditions on instrument)
	Type	**Source**					
1	Leachates	Solid and liquid waste acceptance and storage. Landfilling of wastes	Direct emissions to land, transported via storm water	As detailed in section 7	Impacts to sensitive ecological communities	Moderate consequence Possible **Medium risk**	Acceptable, generally subject to regulatory controls
2	Odour	Solid and liquid waste acceptance and storage Landfilling of wastes	Transported through air to nearby residents and recreational users of Crown Land	As detailed in section 7	Amenity Impacts	Minor consequence Possible **Medium risk**	Acceptable, generally subject to regulatory controls
3	Noise	Vehicle movements, movement of wastes	Transported through air to nearby residents and recreational users of Crown Land	As detailed in section 7	Amenity Impacts	Minor Consequence Unlikely **Medium Risk**	Acceptable. Noise emissions are adequately regulated under the Noise Regulations
4	Dust	Vehicle movements	Transported through air to nearby residents and recreational users of Crown Land	As detailed in section 7	Amenity Impacts	Minor Consequence Possible **Medium Risk**	Acceptable, generally generally subject to regulatory controls
5	Pathogens	Acceptance, storage and burial of solid wastes including biomedical wastes Acceptance and treatment of septage waste	Direct emission Transported by vermin or storm water to nearby residents and recreational users of Crown Land	As detailed in section 7	Public Health Impacts	Major consequence Rare **Medium Risk**	Acceptable, generally subject to regulatory controls

	Emission		Pathway and Receptor	Proponent controls	Impact	Risk Rating	Acceptability with treatment (conditions on instrument)
	Type	**Source**					
6	Windblown waste	Acceptance, storage and burial of solid wastes	Transported through air to nearby residents, recreational users of Crown Land and adjoining bushland	As detailed in section 7	Amenity Impacts Impacts to sensitive ecological communities	Minor consequence Possible **Medium Risk**	Acceptable, generally subject to regulatory controls
7	Asbestos	Acceptance of asbestos for burial, and acceptance of non-conforming waste	Transported through air to nearby residents and recreational users of Crown Land	As detailed in section 7	Public Health Impacts	Severe consequence Rare **High Risk**	Acceptable subject to multiple regulatory controls
8	Smoke Emissions	Burning of green waste	Transported through air to nearby residents and recreational users of Crown Land	As detailed in section 7	Amenity and Public Health Impacts	Moderate consequence Possible **Medium Risk**	Acceptable, generally subject to regulatory controls
9	Landfill gas emissions	landfilling and encapsulating of waste.	Transported through air to nearby residents and recreational users of Crown Land	As detailed in section 7	Amenity and Public Health Impacts	Moderate consequence Rare **Low Risk.**	Acceptable, generally not controlled

8. Determined Regulatory Controls

A summary of the risks with corresponding controls are set out in Table 24. The risks are set out in the assessment in section 7 and the controls are detailed in this section 8. Controls will form the basis of conditions in the licence set out in Attachment 1.

Table 24: Summary of regulatory controls to be applied

		Controls		
		8.2 Waste Acceptance Controls	8.3 Infrastructure and equipment	8.4 Operational controls
Risk Items (see risk analysis in section 7)	1. Leachate emissions		●	●
	2. Odour emissions		●	●
	3. Dust emissions		●	●
	4. Pathogens	●	●	●
	5. Windblown Waste		●	●
	6. Asbestos emissions	●	●	●
	7. Smoke emissions		●	●

8.1 Waste Acceptance

The Licence Holder will have the following restrictions on waste acceptance:

- Quantity limits of 8,000 (Category 62), 7,500 (Category 64) and 1,000 (Category 61) tonnes per annual period apply.
- Waste containing visible asbestos or material containing asbestos must not be accepted as Inert Waste Type 1.
- Inert Waste Type 2 is limited to tyres and plastics only.
- Only asbestos waste or material containing asbestos which is sealed in double-lined or double bagged, heavy duty plastic sheeting of at least 0.2 mm thickness may be accepted.
- Only biomedical waste that is sealed in a plastic bag may be accepted.
- Hazardous wastes acceptance is limited to household hazardous wastes, waste oils, batteries and empty oil and chemical containers.

- Only the following liquid waste types may be accepted: septage wastes, wastes from grease traps, storm water and pond water.
- No wastes containing Perfluoroalkyl and polyfluoroalkyl substances (PFAS) will be permitted to be accepted.

  Grounds: *Waste types and volumes which may be accepted at the Premises are limited to those which have been proposed by the Licence holder and have been assessed as part of this review. Variation of the waste type or volume will require a new risk assessment of the premises.*

  DER has imposed the specification that that waste containing visible asbestos or material containing asbestos must not be accepted as Inert Waste Type 1. The Delegated Officer considers that this minimises the likelihood of asbestos emissions by requiring that all asbestos materials are stored and handled with the appropriate controls.

  The Delegated Officer has determined that due to the high risk posed by asbestos and biomedical emissions, additional controls on waste acceptance are required, and therefore requirements for individually wrapping or sealing these waste types are considered appropriate.

  The Delegated Officer has determined that due to the environmental and public health risks posed by PFAS materials the acceptance of this material is not permitted under the licence. The acceptance of PFAS materials may be risk assessed under future licence amendments at the request of the Licence Holder.

8.2 Infrastructure and Equipment

The following infrastructure and equipment should be maintained and operated onsite:

- Asphalt or bitumen waste drop-off area including a 1.7 m high concrete retaining wall which drops into hook bins. Must be capable of capturing any stormwater on the hardstand area and retaining on the Premises.

  Grounds: *The waste drop-off area directs the disposal of recyclable and general waste types to the specified storage locations and prevents public access to the tipping face of the landfill. The proposed construction of this waste drop off area was considered by the Delegated Officer in determining asbestos, pathogen, leachate and odour emission impacts. The requirement for the hardstand area to be capable of capturing stormwater and retaining it on the Premises minimises potential impacts from leachate run-off. The Delegated Officer also considered the asphalt or bitumen surface in determining a low impact risk from dust emissions at the premises. This infrastructure was proposed by the Licence Holder in their application.*

- Hook bins which are capable of being lidded or otherwise enclosed to minimise windblown waste, odours and the ingress of storm water. Bins must be suitably constructed to prevent leakage.
- Separate weather proof and bunded storage containers for hazardous goods, batteries, waste oil and used oil and chemical containers.

  Grounds: *The requirement for hook bins and weatherproof bunded storage containers for a number of waste types minimises the likelihood of leachate emissions, and the requirement for the hook bins to be lidded further minimises potential odour emissions. The bins and storage containers must be suitably constructed to prevent leakage to minimise leachate emissions. This infrastructure was proposed by the Licence Holder in their application.*

- In-situ clay lined landfill area, with a tipping face no wider than 30 metres and no higher than 2 metres. No landfilling can occur within 35 metres of the Premises boundary.

  Grounds: *The specifications for the landfill tipping face minimise pathogen, leachate and odour emissions by limiting the area of exposed waste. The requirement for no landfilling to occur within 35 metres of the Premises boundary further mitigates odour emissions. This control is imposed by DER.*

- Designated green waste burning area, which is at least 50 metres from the Premises Boundary, has no flammable material other than green waste and live trees for a radius of 50 metres and is positioned where other waste has not been deposited. Where burning occurs on an area where waste has been deposited, there is at least a 1 metre cover of inert material.

  Grounds: *The specifications for the green waste burning area location minimises the likelihood of fire spreading and causing an increase in smoke impacts. This control was specified by the Licence Holder in their application. The Delegated Officer has determined that if Greenwaste burning is to occur on an area where waste was previously deposited, a minimum cover of at least 1 metre of inert material is appropriate.*

- Designated asbestos and biomedical waste burial area which is appropriately fenced to restrict access.

  Grounds: *The Delegated Officer has determined that specifying the requirement to maintain a designated asbestos and biomedical burial site with restricted access minimises the likelihood of asbestos and pathogen emissions through accidental disturbances of the buried waste. The requirement to fence these areas is imposed by DER.*

- At least 1.2 m high fencing surrounding the Premises and capable of being locked with the Premises is unattended.

- Fencing around the active tipping face capable of preventing windblown waste

  Grounds: *The maintenance of perimeter fencing is considered necessary to prevent the unauthorised dumping of non-conforming materials which may cause additional odour or leachate emissions. Perimeter fencing also prevents unauthorised access by people or livestock to biomedical and asbestos burial locations, which may prevent the accidental exposure and emission of these waste types. Fencing around the active tipping face provides a control for windblown waste to be retained within the tipping area. These controls are specified by the Licence Holder in their application.*

- Two liquid waste treatment ponds (in-situ clay lined) with a minimum freeboard of 300 mm at all times.

  Grounds: *The treatment ponds constructed with in-situ clay with a minimum freeboard minimises the likelihood of overtopping or leachate emissions. This control is proposed by the Licence Holder in their application.*

- Vehicles including a track dozer, front end loader and excavator.

  Grounds: *The maintenance of vehicles at the Premises is considered necessary for the compaction of wastes which minimises pathogen and odour emissions. The types of vehicles used at the Premises and the regular maintenance of these vehicles were also considered by the Delegated Officer in determining a low impact from odour emissions. This infrastructure is specified by the Licence Holder in their application.*

- Signage which displays hours of operation, contact phone numbers for information and complaints or notification of fires, a list of materials accepted, types of waste that must

not be deposited on the Premises and a contact phone number for alternative disposal options, and a warning indicating penalties for people lighting fires.

Grounds: *The Delegated Officer considers that the requirement for signage minimises the likelihood of illegal dumping or disposal of non-conforming waste types and the lighting of fires, therefore minimising the likelihood of leachate, odour or smoke emissions. This infrastructure is specified by the Licence Holder in their application.*

The Licence Holder is permitted to carry out works for the construction of the waste drop-off area, hook bins and storage containers. The Licence Holder will not be permitted to depart from the requirements of the licence conditions unless doing so does not increase risks to public health, public amenity or the environment and all other conditions of the licence are still satisfied. The Licence Holder will also be required to provide a report to the CEO within 21 days of completion of the works, confirming each item of infrastructure has been constructed with no material defects.

Grounds: *The infrastructure specified generally replicates the infrastructure proposed by the Licence Holder as part of the amendment application. Notification that works are complete is considered necessary for DER records and for determining compliance with licence conditions.*

8.3 Operational Controls

8.3.1 Storage requirements

The Licence Holder will have the following restrictions on waste storage at the Premises:

- All liquid wastes for treatment must be directed immediately to the liquid waste treatment ponds.

  Grounds: *The requirement to immediately direct liquid waste to the treatment ponds minimises the likelihood of liquid waste spills and leachate emissions due to insufficient storage elsewhere on the Premises. This control is imposed by DER and replicates activities currently occurring at the Premises.*

- Inert Waste Type 1 must not be crushed or screened on the Premises.

  Grounds: *Due to the potential for Inert Waste Type 1 to contain asbestos or asbestos fibres, the Delegated Officer considers that specifying this waste type must not be crushed or screened minimises the likelihood of asbestos emissions from the Premises. This control is imposed by DER.*

- No more than 100 tyres can be stored at any one time, and must be stockpiled at least 5 metres from combustible materials. Tyres are not to be landfilled.

  Grounds: *The requirement store no more than 100 tyre equivalents at the Premises limits the storage to below the threshold for Category 57 Used Tyre Storage. The Licence Holder has not applied to be licensed as a used tyre storage facility, however previous AACRs submitted by the Licence Holder and compliance inspections carried out by DER officers have identified that more than 100 tyres are stored at the Premises. The Delegated Officer has determined that storage of 100 tyres or more or the burial of tyres would require additional risk assessment and is therefore restricted in this licence.*

  The requirement to stockpile tyres at least 5 metres from combustible material decreases the likelihood of tyres being burnt if there is a fire at the premises as the burning of tyres would increase the severity of smoke impacts. These controls are imposed by DER.

- Putrescible waste is to be stored within hook bins or other impermeable container with

lids that are kept closed unless waste is being deposited or removed.

Grounds: *The storage of putrescible wastes in lidded bins reduces the likelihood of windblown waste and odour emissions, and prevents storm water from accumulating within the bins. The specification to keep lids closed unless waste is being deposited or removed further minimises these impacts by ensuring the waste is not unnecessarily exposed for extended periods of time. This control is imposed by DER.*

- Putrescible wastes for burial must be landfilled no later than 48 hours after being received.

  Grounds: *The requirement to direct putrescible waste for burial to the landfill within 48 hours reduces the likelihood of odour emissions by reducing the time waste may be exposed to air. This control is imposed by DER.*

- Asbestos waste stored prior to burial must be double wrapped in black plastic, clearly labelled and stored within a dedicated signposted area.

  Grounds: *The requirement for storing asbestos prior to burial reduces the likelihood of asbestos impacts by ensuring asbestos material is appropriately contained and signposted. This control is imposed by DER.*

- Biomedical waste must not be stored within the Premises, and must be buried immediately.

  The requirement to immediately bury biomedical waste reduces the likelihood of pathogen emissions by ensuring that they are appropriately deposited under at least 1 metre of soil. Immediate burial also reduces the likelihood of odour emissions from biomedical waste left to become putrid. This control is imposed by DER.

- Green waste must be stored in windrows to a maximum length of 50 metres, width of 10 metres and height of 5 metres. Stockpiles must be separated from other combustible material with a minimum or 5m mineral earth break.

  Grounds: *The green waste storage specifications are recommended to minimise the likelihood of spontaneous combustion as outlined by Department of Fire and Emergency Services: Bulk Green Waste Storage Fires (September 2014). An uncontrolled green waste fire at the premises may increase impacts from smoke emissions. This control is imposed by DER.*

- Hazardous wastes must be stored in weatherproof bunded tanks or cages.

  Grounds: *The requirement to store hazardous wastes in weatherproof bunded tanks or cages minimises the likelihood of spills and leachate emissions. This control is proposed by the Licence Holder in their application.*

8.3.2 Leachate and odour emission controls

The Licence Holder must divert storm water from areas of the site where there is waste, and water that has come into contact with waste is to be retained on the Premises.

Grounds: *The Delegated Officer considers that while the Rural Landfill Regulations do not apply to the Premises, conditions which generally replicate section 10 (a) and (b) of the Rural Landfill Regulations are appropriate for controlling the risk of leachate emission impacts from the Premises. This control is imposed by DER.*

The Licence Holder must immediately clean spills of waste outside of a vessel or container or infrastructure specified by Table 4.

Grounds: *The requirement to clean spills immediately minimises the potential for storm water contamination and the movement of leachates from the Premises. This control is imposed by DER.*

The Licence Holder must manage the ponds during operation by:

- Preventing vegetation from growing in the pond wastewater, or on the pond embankments.
- Preventing storm water runoff from causing erosion of the outer pond embankments.
- Discharging liquid wastes to the ponds in a manner which does not disrupt the crust

  Grounds: *The Delegated Officer has considered these Licence Holder controls in determining leachate and odour emission risk and has determined that given the Medium risk posed by these emissions it is appropriate to condition the controls within the licence.*

  The prevention of vegetation growing in the pond or on the pond embankments, and preventing erosion of the embankments ensures the integrity of the pond is maintained and minimises the likelihood of leachate emissions. The Delegated Officer has noted that in previous licence inspections and AACR's submitted by the Licence Holder vegetation in and around the ponds was sighted, and therefore a specific control in relation to this is considered necessary.

  The discharging of waste in a way that does not disturb the crust is considered necessary for the ongoing operation of an anaerobic pond system. The proper maintenance of the pond system is considered necessary to minimise odour emissions from liquid waste treatment ponds. This control is imposed by DER.

The Licence Holder must manage the landfilling activities by:

- Covering waste with a minimum of 100 mm of inert material cover, or 300 mm of sand daily
- Compacting disposed waste in 500 mm layers
- Covering surfaces which have not received final cover for more than 90 days with an intermediate cover of at least 300 mm with a graded slope of at least 2% to promote run-off away from the active tipping face.
- Removing the intermediate cover when landfilling recommences to prevent perched water accumulating in the landfill.
- Covering waste with a final cover of at least one metre.

  Grounds: *The Delegated Officer has considered these Licence Holder controls in determining leachate and odour emission risk and has determined that given the Medium risk posed by these emissions it is appropriate to condition the controls within the licence.*

  The compaction and daily covering of waste also minimises potential vermin habitat and therefore minimises pathogen emission risk. These controls are specified by the Licence Holder in their application.

8.3.3 Dust Controls

The Licence Holder will be required to speed restrictions on the premises to reduce lift-off

Grounds*: Restricting speed on the premises will reduce scope of dust lift-off from internal and access roads.*

Note*: Speed restrictions controls are derived from the Licence Holder proposed controls.*

8.3.4 Asbestos and pathogen emission controls

The Licence Holder will be required to:

- Dispose of biomedical waste or material containing asbestos only within areas of the landfill specified for biomedical or asbestos waste, under the supervision of a person nominated by the Licence Holder.
- Cover the waste by the end of the working day with a dense, inert and incombustible material to a depth of at least one metre.
- Maintain a register of burials stating the date, the person's name, that the waste has been covered in accordance with the licence conditions, and where more than one square metre of waste was covered, grid coordinates with reference to the plan of the landfill site so that the position of the waste can be easily and accurately ascertained.
- Operate the landfill in such a way that existing asbestos or biomedical waste which has been buried remains undisturbed.

  Grounds: *The Delegated Officer considers that while the Rural Landfill Regulations do not apply to the Premises, conditions which generally replicate section 16 (1), (2) (3), (4)and (5) of the Rural Landfill Regulations are appropriate for controlling the risk of pathogen and asbestos emission impacts from the Premises. The requirement to only bury wastes within designated areas and to operate the landfill such that buried wastes are not disturbed further mitigates the risk of pathogen and asbestos emissions.*

  Note: *In addition to generally replicating the Rural Landfill Regulations, these conditions generally replicate Special Waste Type 1 and 2 conditions on the previous licence, and the Licence Holder's proposed controls in their application.*

8.3.5 Smoke emission controls

The Licence Holder must ensure that waste is not burnt at the Premises, other than green waste which is burnt in accordance with the following conditions:

- It is dry and seasoned for at least 2 months before it is burnt;
- It is free from any non-green waste contaminants;
- It is burnt in a designated burning area of the landfill site;
- It is burnt in trenches or windrows;
- Burning does not commence before 8 am and the Fire Control Officer for the landfill site declares the area safe by 12 noon on the same day; and
- There is present in the area from the time burning commences until the Fire Control Officer for the landfill site declares the area safe –
  - A fire fighting vehicle varying at least 500 litres of water, fitted with at least 30 metres of 19 mm diameter rubber hose and with a pump capacity capable of delivering a minimum of 250 litres of water per minute at a minimum of 700 kPA through a nozzle capable of projecting water by spray or by jet; and
  - 2 persons, who have such qualifications in fire fighting as are approved.

  Grounds: *The Delegated Officer considers that while the Rural Landfill Regulations do not apply to the Premises, conditions which generally replicate section 13 (1) and (2) of the Rural Landfill Regulations are appropriate for controlling the risk of smoke emission*

impacts from the Premises. Specifications for the green waste burning area are included above in Infrastructure requirements.

The requirement for green waste to be free from contaminants is also specified as non-green waste products may alter the composition and severity of any smoke emission impacts.

These controls are considered in conjunction with tyre storage controls specified within the infrastructure table.

***Note:** These conditions generally replicate green waste burning conditions on the previous licence, and the controls proposed by the Licence Holder in their application.*

8.3.6 Windblown waste controls

The Licence Holder must collect windblown waste that has blown away from the tipping area and return it to the tipping area on at least a weekly basis.

***Grounds:** The requirement to return waste to the tipping area on at least weekly basis minimises the impacts of windblown waste and prevents accumulation of windblown waste.*

***Note:** These conditions generally replicate the controls proposed by the Licence Holder in their application.*

8.3.7 Clearing controls

The Licence Holder must not clear any native vegetation within the Premises under the licence.

***Grounds:** The northern and south-eastern areas of the Premises consist of native vegetation, which the Licence Holder has not applied to clear. The Delegated Officer has not assessed any clearing activities at the Premises, and therefore this control ensures that no unauthorised clearing occurs at the Premises under the licence. This control does not prevent the Licence Holder from applying to DER for a clearing permit or undertaking clearing via another authorised method.*

9. Appropriateness of Licence conditions

The conditions in the Issued Licence in Attachment 1 have been determined in accordance with DER's *Guidance Statement on Setting Conditions*.

The Expiry date of the Licence has not been changed as part of this amendment.

Condition Ref	Grounds
Emissions 1,	This condition is valid, risk-based and consistent with the EP Act.
Notification of Material Change 2, 3 and 4	These conditions are valid, risk-based and enable flexibility in operations.
Information 5, 6, 7, 8 ,9, 10	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.
Waste Acceptance 11	These conditions are valid, risk-based and contain appropriate controls (see section 8).
Infrastructure and Equipment 12, 13	These conditions are valid, risk-based and contain appropriate controls (see section 8).
Operational Controls 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28	These conditions are valid, risk-based and contain appropriate controls (see section 8).

DER notes that it may review the appropriateness and adequacy of controls at any time, and that following a review, DER may initiate amendments to the Licence under the EP Act.

10. Applicant's comments

The Applicant was provided with the draft decision report and draft issued licence on 08 May 2017. The Applicant's comments are summarised in Attachment 2.

11. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this decision report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Revised Licence will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Alan Kietzmann

MANAGER LICENSING – WASTE INDUSTRIES

Delegated Officer
under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Application Form: Narrogin Waste Management Facility	N/A	DER records [A1344203]
2	DER Correspondence to Shire of Narrogin 2013 AACR unsigned - 7 May 2014.	N/A	DER records [A756609]
3	DER Guideline: *Assessment and management of contaminated sites,* December 2014.	N/A	accessed at http://www.der.wa.gov.au
4	DER *Guidance Statement on Decision Making*, February 2017	N/A	
5	DER *Guidance Statement on Licence duration,* November 2014	N/A	
6	DER *Guidance Statement on Regulatory principles,* July 2015	N/A	
7	DER *Guidance Statement on Risk Assessments, February 2017*	N/A	
8	DER *Guidance Statement on Setting conditions,* September 2015	N/A	
9	DER Controlled waste category list: Conversion guide, July 2014	N/A	
10	DER Assessment and management of contaminated sites	N/A	
11	Department of Water groundwater bore information	N/A	Accessed at http://www.water.wa.gov.au and DER records [A1390546 and A1390544]
12	Licence L7085/1997/13	L7085/1997/13	accessed at http://www.der.wa.gov.au
13	Narrogin Waste Management Facility AACR 2015-2016	N/A	DER records [A1095181]

14	Narrogin Waste Management Facility AMR 2015	N/A	DER records [A1069938]
15	Narrogin Waste Management Facility AACR 2014-2015	N/A	DER records [A909163]
16	Narrogin Waste Management Facility AMR 2014	N/A	DER records [A887300]
18	Narrogin Waste Management Facility – DER Final Inspection Report, 23 August 2016	N/A	DER records [A115412]
19	Narrogin Waste Management Facility – Inspection documents 31 January 2012	N/A	DER records [A539072]
20	Notice of amendment – 21 March 2016	N/A	DER records [A1079900]
21	Crossley, E K. (2004), *Groundwater study of the Narrogin townsite.* Department of Agriculture and Food, Western Australia. Report 256, 69p.	Crossley, 2004	accessed at http://researchlibrary.agric.wa.gov.au/rmtr/240/

Appendix 2: Summary of Applicant's Comments on Risk Assessment and Draft Conditions

Condition	Summary of Licence Holder comment	DER response
-	Details to be amended to Shire of Narrogin instead of Town of Narrogin.	All references to the Town of Narrogin have been replaced with reference to Shire of Narrogin.
Condition 11	Increase time frame to submit Closure Plan from 12 months to 24 months.	Timeframe changed to 24 months (31 May 2019). Should the Shire require additional time to secure funding, a plan of actions carried out to date and proposed new timeframes may be submitted to DER at any time in the future for consideration of an extended submission date.
Table 2	Septage Waste should be K210.	Updated.
Table 2	Fire Debris and wash water are not currently accepted at the site and will not be accepted in accordance with Condition 13.	Fire Debris and wash water is removed from the acceptance table.
Table 3	Clarification if the burning area can be on top of areas of previous waste placement.	The Delegated Officer considers that burning Greenwaste on top of an area of previous waste placement is acceptable provided a minimum cover of 1 metre is maintained. The condition and decision report have been updated to clarify this activity.
Condition 18	Error in numbering.	Updated.
Table 4	Removal of requirement to move asbestos from the transfer area within 48 hours. Asbestos will be removed and buried once sufficient volumes are collected.	Removal of requirement to bury waste within 48 hours. The Delegated Officer has determined that the burial of asbestos within 48 hours does not alter the risk of asbestos emissions, provided the rest of the asbestos controls specified in the licence are maintained.
Condition 27	Insert additional text "*unless the appropriate approval has been obtained from the Native Vegetation Branch*."	The Delegated Officer considers that amending the condition to state "*The Licence Holder is not permitted to clear any native vegetation on the Premises under this licence*" is a more enforceable condition with the same intent. The decision report grounds have been updated to clarify that the condition does

Condition	Summary of Licence Holder comment	DER response
		not limit the Licence Holder in applying for clearing approval in the future.

Appendix 3: Photographs from Site Visit 18 April 2017

	
Photo 1 – Uncovered waste in landfill area	Photo 2 – Empty plastic container disposal area

	
Photo 3 – Uncovered waste in landfill area	Photo 4 – Recently deposited waste on top of landfill area

	
Photo 5 – Waste deposited in the north of the Premises	Photo 6 – Partially unburied asbestos material in asbestos disposal area

	
Photo 7 – Unburied asbestos material in asbestos disposal area.	Photo 8 - Unburied asbestos material in asbestos disposal area.

	
Photo 9 – Partially unburied asbestos material in asbestos disposal area	Photo 10 – Liquid waste pond (pond 2) with vegetation on embankment

Attachment 1: Amended Licence L7085/1997/13