Decision Report

Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number	W6231/2019/1
Applicant	Drainflow Services Pty Ltd
ACN	101546918
File Number	DER2019/000072
Premises	Drainflow 414 Douglas Road Lot 403 on Deposited Plan 68671 Certificate of Title Volume 2754 Folio 531 As defined by the coordinates in Schedule 1 of the Licence
Date of Report	3 July 2019
Status of Report	Final

Table of Contents

1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
ACN	Australian Company Number
AER	Annual Environment Report
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department Administering the *Environmental Protection Act 1986* Locked Bag 10 JOONDALUP DC WA 6919 info@dwer.wa.gov.au
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
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.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the *Public Sector Management Act 1994* and is responsible for the administration of the *Environmental Protection Act 1986* along with other legislation.
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
m^3	cubic metres
NEPM	National Environmental Protection Measure

Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
Occupier	has the same meaning given to that term under the EP Act.
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report
Primary Activities	as defined in Schedule 2 of the Revised Licence
Risk Event	As described in *Guidance Statement: Risk Assessment*
UDR	*Environmental Protection (Unauthorised Discharges) Regulations 2004* (WA)

2. Purpose and scope of assessment

An application for Works Approval (***Application***) was received from Drainflow Services Pty Ltd (***Applicant***) to construct a compost and liquid waste facility located within Lot 403 Douglas Road, Beermullah (***Premises***).

This ***Decision Report*** presents an assessment of potential environmental and public health risks from emissions and discharges from the construction and operation of the Premises

2.1 Application details

Table 2 lists the documents submitted during the assessment process.

Table 2: Documents and information submitted during the assessment process

Document/information description	Date received
DWER Application Form including following supporting information 1. Attachment 1A - Proof of occupier status 2. Attachment 1B – ASICS Company Extract 3. Attachment 2 – Premises maps 4. Attachment 3A – Proposed Activities 5. Attachment 3B – Map of area proposed to be cleared 6. Attachment 5 – Other approvals and consultation documentation 7. Attachment 6A – Emissions and Discharges 8. Attachment 6B – Waste Acceptance 9. Attachment 7 – Siting and Location 10. Attachment 8 – Other DWER approvals 11. Attachment 9 – Proposed Fee Calculation	22 January 2019
Correspondence: Response from Gino Dichiera to request for further information.	19 March 2019

3. Background

On 22 January 2019, Drainflow Services Pty Ltd (DSPL) submitted an application for a works approval under the EP Act to set up a compost and liquid waste facility. DSPL proposes to construct a composting and liquid waste facility for the production of approximately 20,000 tonnes of compost per year and then gradually increasing to a maximum of 50,000 tonnes per year.

The Delegated Officer considered that further information was required to validate the application. This was provided to DWER on 19 March 2019.

Following a review of the additional information provided, the Delegated Officer considered that sufficient information had been provided to validate the application and commence with the risk assessment.

Following the completion of the works DSPL proposes to apply for a licence to operate the compost facility.

Table 3 lists the prescribed premises categories that have been applied for.

Table 3: Prescribed Premises Categories in the Existing Licence

Classification of Premises	Description	*Approved Premises production or design capacity or throughput*
Category 67A	Compost manufacturing and soil blending; premises on which organic material (excluding silage) or waste is stored pending processing, mixing, drying or composting to produce commercial quantities of compost or blended soils.	50,000 tonnes per year
Category 61A	Solid waste facility	40, 000 tonnes per year
Category 61	Liquid waste facility	10,000 tonnes per year

4. Overview of Premises

4.1 Operational aspects

The following information in relation to the premises has been summarised from the application.

Raw materials:

- Raw materials (refer to table 4 below) that will go on the compost will include a mixture of organic waste such as leaves, plant clippings, hay, saw dust, cow and sheep manure, olive extract, gully eduction and road sweeping materials;
- The gully eduction and road sweeping materials will be put through a screen, wash and tested as being free of heavy metals prior to delivery;
- Greenwaste, hay, saw dust, cow and sheep manure, olive extract and liquid waste (vegetable, fruit processing effluent, animal effluent and residues and industrial wash waters) will be sourced locally;

Outdoor area:

- Organic waste arriving in the yard will be placed on a 200mm rolled gravel hardstand in the material separating area;
- All twigs, leaves and other organics are put through a shredder ready to blend together for composting which will be carried out on the 150mm concrete hardstand, all draining to a leachate pond;
- The composting process of blending all of the ingredients together and composting will be done on a concrete hardstand utilizing the aerated floor system that uses an electrically driven and computer-controlled fan that will force air through the pipes underneath the compost piles to control moisture and temperature;

Blending shed:

- Manure and liquid waste will be contained and stored inside the blending shed;
- Cow and sheep manure will be placed inside the shed where it will be kept moist by overhead sprinklers;
- The materials will be placed in various blending bays for blending;

- Once ready it will be used in the composting process outside for various grades of compost;
- The blending shed concrete floor will drain to three grated sealed concrete sumps all interconnected to one sealed sump with submersible pump to recycle water and used for the composting process

Leachate pond:

- Water from the leachate pond will be drawn out and used in the composting process if required;
- Super sucker trucks that will be capable of vacuuming/sucking leachate will be employed
- Manure and liquid waste will be contained and stored inside the blending shed;
- Cow and sheep manure will be placed inside the shed where it will be kept moist by overhead sprinklers;
- The materials will be placed in various blending bays for blending;
- Once ready it will be used in the composting process outside on the contrete composting pad to produce various grades of compost.

4.2 Infrastructure

The Applicants infrastructure, as it relates to Category 67A activities, is detailed in Table 4 and with reference to the Site Plan (attached in the Works Approval).

Table 4 lists infrastructure associated with each prescribed premises category.

Table 4: Drainflow facility Category 61, 61A and 67A infrastructure

	Infrastructure	**Site Plan Reference**
	Prescribed Activity Infrastructure Category 61, Category 61A and Category 67A	
Compost manufacturing		
1	Concrete hardstand for the blending and composting processes	Site plan
2	Rolled gravel or limestone sorting and processing hardstand area	Site plan
3	Infrastructure for the collection of leachate	Site plan
4	Leachate pond	Site plan
5	Blending shed	Site plan
6	Impermeable liquid waste storage tanks	Blending shed
	Other infrastructure	
1	Concrete hardstand installed with electrically aerated floor system fitted with computer controlled fan	Concrete hardstand

	Infrastructure	Site Plan Reference
2	Reticulated sprinklers and spray system	Concrete hardstand and blending shed
3	Shredder – shred organic materials into fine particles	Sorting and processing hardstand area

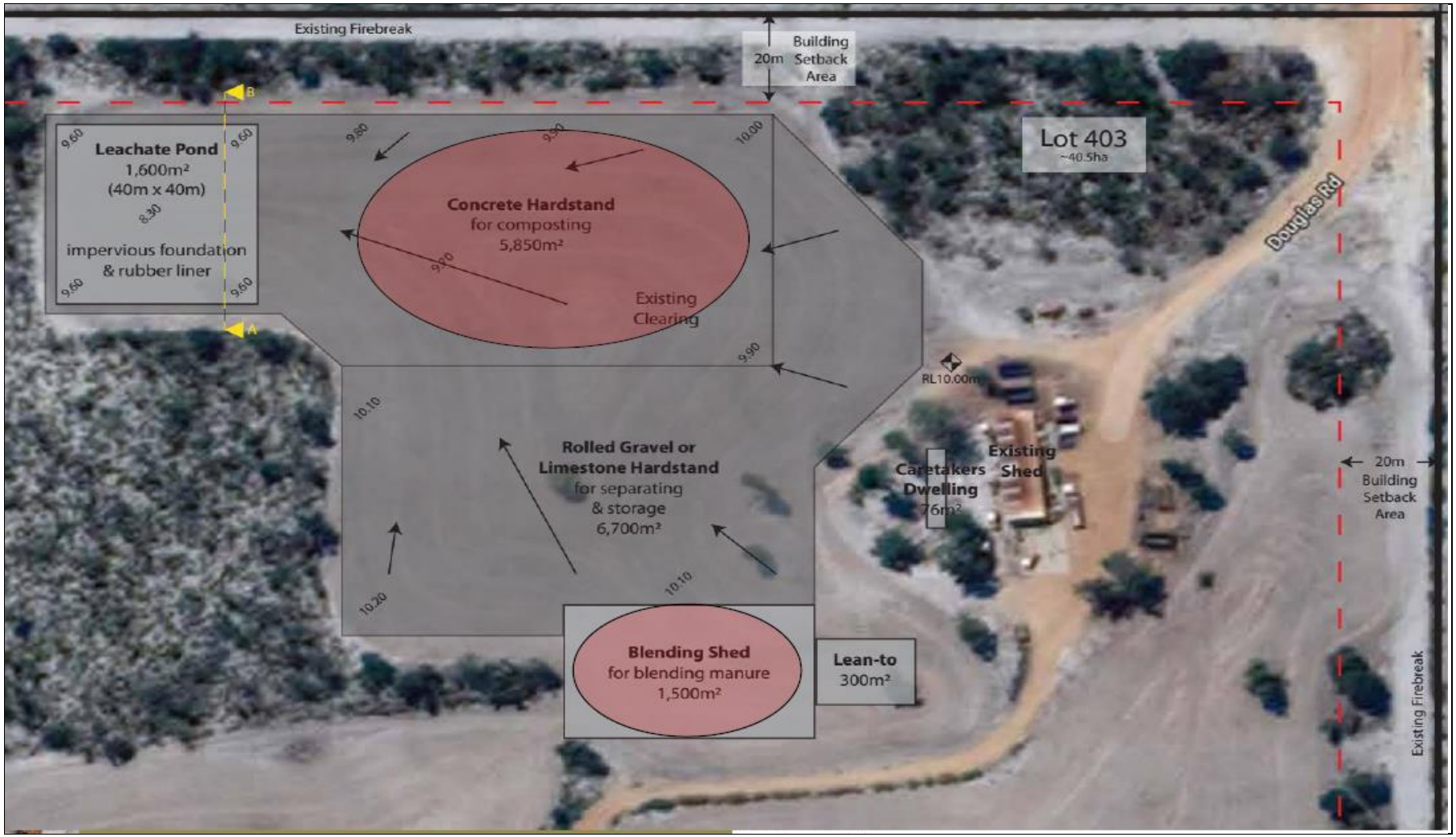

Figure 1: Proposed site layout

4.3 Contaminated sites

Lot 403 on Deposited plan 68671, 414 Douglas Road, Beermullah is not listed on DWER's contaminated sites database

4.4 Other relevant approvals

4.4.1 Planning approvals

The Shire of Gingin granted an approval to commence development for the works on 21 December 2018. The following approvals in relation to the site has been granted by the Shire:

- Agriculture intensive approval for the Avacado plantation; and
- Noxious industry approval for the composting facility.

4.5 Part V of the EP Act

4.5.1 Applicable regulations, standards and guidelines

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

The 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 (August 2016)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Guidance Statement: Environmental Siting (November 2016)*

4.5.2 Works approval and licence history

Table 5 summarises the works approval and licence history for the premises.

Table 5: Works approval and licence history

Instrument	Issued	Nature and extent of works approval, licence or amendment
W6231/2019/1	TBA	New works approval for category 67A (compost facility), category 61A (solid waste facility) and category 61 (liquid waste facility)

4.5.3 Clearing

The applicant confirmed that some trees will be cleared onsite during the construction phase and that an application was submitted to DWER on 21 May 2019. Advice received from DWER's Native Vegetation Regulation division on 22 May 2019 was that the clearing can be conducted under Regulation 5, item 1 exemption as the proposed clearing is outside an environmentally sensitive area (ESA).

5. Consultation

The application for a Works Approval was referred to the Shire of Gingin on 31/05/2019. The Application was also advertised for public comment in The West Australian newspaper on 1 April 2019.

DWER received the following advice from Shire of Gingin on 26 June 2019 regarding the composting and liquid waste facility:

- On 21 December 2018 the Shire issued development approval for a Noxious Industry (Composting Purposes) on Lot 403 (414) Douglas Road, Beermullah;
- The development approval was issued on advice that the site may accept liquid organic wastes, but not any liquid wastes classed as Listed Waste, Radioactive Waste or Hazardous Waste;
- The development approval issued appears to be consistent with the information referred to the Shire as part of the proposed works approval;
- Based on the above, the Shire raises no objection.

6. Location and siting

6.1 Siting context

The facility will be located in a farming zone and is approximately 130 kilometres (km) north of Perth and 26.5km northwest of the Gingin town site, Western Australia. There is approximately 50 acres of cleared land which was previously used for growing Geraldton Wax plant species prior to a bush fire that destroyed the property in 2015.

Figure 2: Aerial view showing no residential premises in the close proximity

6.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 6.

Table 6: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Poultry Farm	Approximately 4km from the south west premises boundary

6.3 Specified ecosystems

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at or Emissions and Discharges from the Premises. The distances to specified ecosystems are shown in Table 7. Table 7 also identifies the distances to other relevant ecosystem values which do not fit the definition of a specified ecosystem.

The table has also been modified to align with the *Guidance Statement: Environmental Siting.*

Table 7: Environmental values

Specified ecosystems	Distance from the Premises
Beermulah Lake	Approximately 6km from the south west premises boundary

6.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 8.

Table 8: Groundwater and water sources

Groundwater and water sources	Distance from Premises	Environmental value
Groundwater	Depth to groundwater encountered at approximately 4.0 mbgl 2 metered bores are located within 1km of Premises (based on the information provided with the application.	Water will be for agricultural use only (300-1000 avocado plants and for the lawns and the garden) Slightly saline and traces of iron in the groundwater therefore not for portable use.

6.5 Soil type

Table 9 details soil types and characteristics relevant to the assessment.

Table 9: Soil and sub-soil characteristics

Groundwater and water sources	Distance from Premises	Environmental Value
Soil type classification	The site is underlain by Dandaragan sands- light grey sand to depth between 90-150cm overlaying pale yellow to	This soil type may be prone to some water repellence

	yellow sand and bleached sand.	

6.6 Meteorology

6.6.1 Wind direction and strength

Wind speed and wind direction are important factors influencing the pathway of emissions. It effects noise propagation and transport of fugitive dust. The closest available wind data for the area can be sourced from the Gingin aero weather station (number 009178). The Bureau of Meteorology (BoM) provides the 9am and 3pm wind speed and direction for Gingin aero weather station. Prevailing winds are to the east and south easterly in the mornings, and to the west in the afternoons.

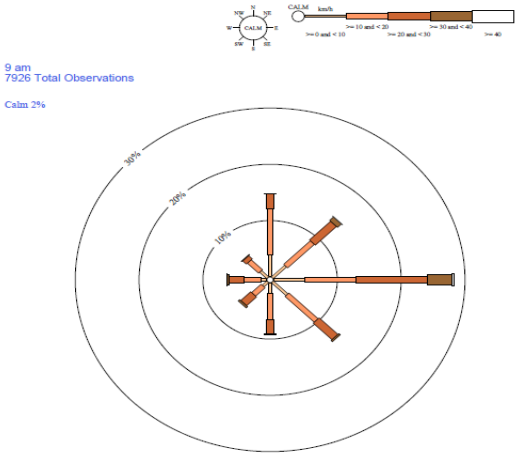

Figure 3: Gingin aero weather station 9 am average wind speed and direction showing bias to easterly and south easterly winds

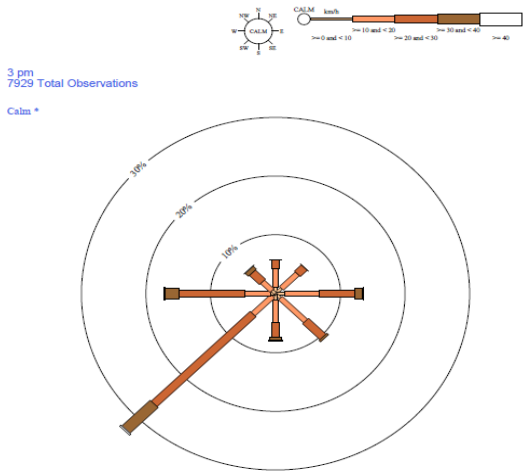

Figure 4: Gingin aero weather station 3 pm average wind speed and direction showing

bias to westerly and south westerly winds

6.6.2 Regional climatic aspects

Gingin area has a Mediterranean-type climate with hot dry summers and cool wet winters. The mean rainfall varies from over 750 mm to about 620mm. The mean maximum temperature in summer ranges from 29ºC to 32ºC. The mean minimum temperatures in winter are between 9 and 18ºC. During summer and winter, morning winds are predominantly east to north-east and in the afternoons, winds are frequently south-westerlies.

6.6.3 Rainfall and temperature

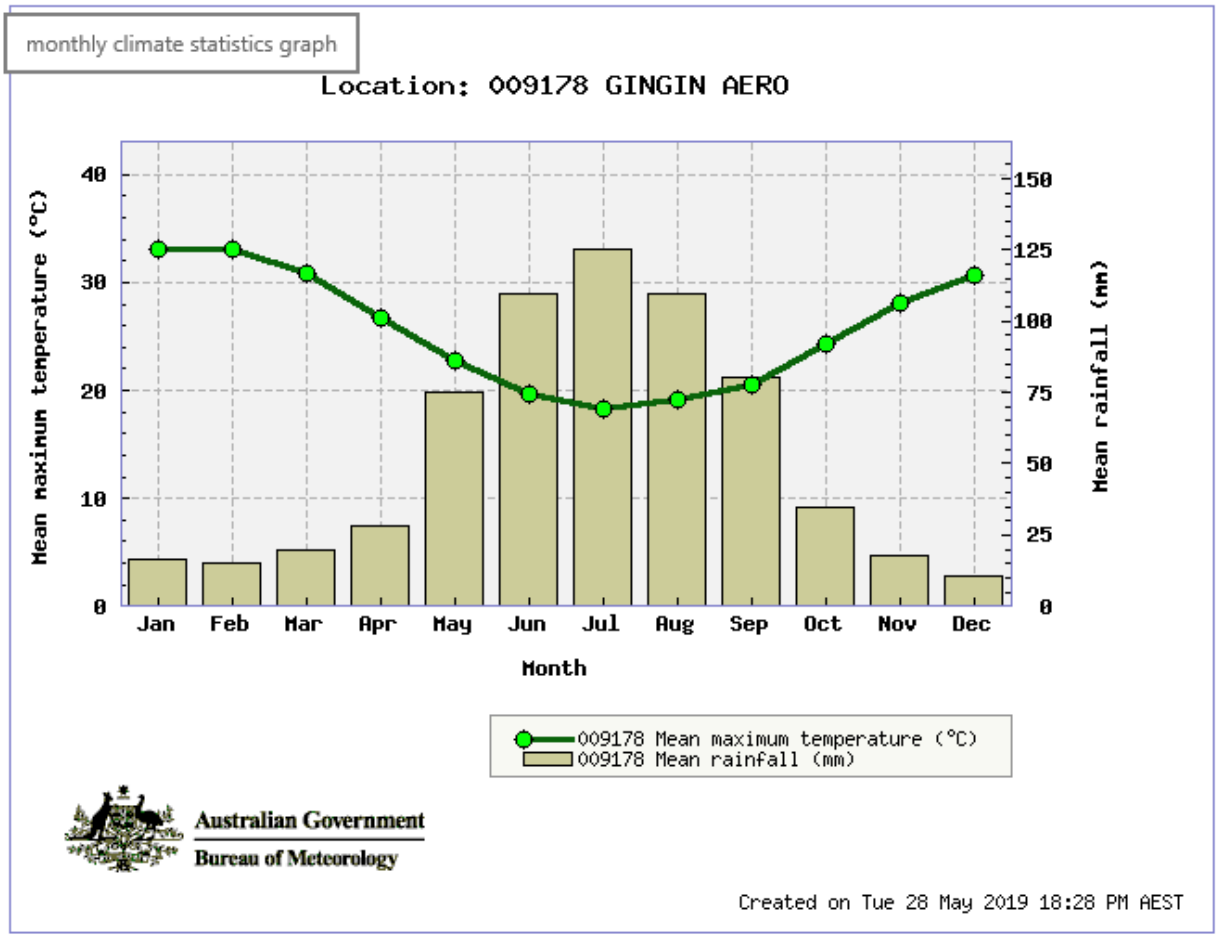

Figure 5: Mean maximum temperature and mean rainfall for Gingin aero weather station

7. Risk assessment

7.1 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

To establish a Risk Event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 11.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Tables 10 and 11 below.

Table 10: Identification of emissions, pathway and receptors during construction

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**		
Ground works, truck movements, installation and placement of equipment and infrastructure.	*Vehicle movements on unsealed access roads*	*Noise*	*No residences or other sensitive receptors in proximity*	*Air / wind dispersion*	*None*	*No*	*No receptor present* Noise Regulations apply.
		Dust			*None*	*No*	*No receptor present* *The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*
	Construction of new buildings, plant and infrastructure	*Noise*	*No residences or other sensitive receptors in proximity*	*Air / wind dispersion*	*None*	*No*	*No receptor present* *Noise Regulations apply.*
		Dust			*Potential to be*	*No*	*No receptor present.*

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
			Flora and vegetation		*deposited on vegetation and may prevent photosynthesis and plant respiration*		*The Delegated Officer considers the minor amount of dust potentially generated will not cause vegetation impacts. There are also no Declared Rare Flora, Threatened Ecological Communities or Priority Ecological Communities within or in a 30 km radius of the Premises.*
		Hydrocarbon spill	*Soil, surface water drainage and vegetation adjacent to the areas of spill or breach.*	*Stormwater runoff* *Direct discharges to land*	*Potential contamination of soil/groundwater inhibiting vegetation growth and survival, and health impacts to fauna*	*No*	*Minor fuel spillage is adequately regulated by the Environmental Protection (Unauthorised Discharges) Regulations 2004.*

Table 11: Identification of emissions, pathway and receptors during operation*

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**		
Composting activity	*Waste acceptance and composting* *Vehicle movement*	*Dust*	*No residences or other sensitive receptors in close proximity*	*Air / wind dispersion*	*None*	*No*	*No receptor present* *The Delegated Officer considers that the provisions of section 49 of the EP Act is sufficient to regulate dust emissions during construction.*
		Noise	*No residences or other sensitive receptors in close proximity*	*Air / wind dispersion*	*None*	*No*	*No receptor present* Noise Regulations apply
	Composting- Application of liquid wastes, animal manure and other raw materials *Storage of leachate in a leachate pond*	*Leachate*	*Groundwater*	*Overland flow, seepage and groundwater discharge*	*Reduction in soil and groundwater quality impacting upon dependent vegetation*	*Yes refer to section 7.4*	*Potential soil and groundwater contamination inhibiting vegetation growth and temporary loss of habitat*
			Premises lot and adjoining land	*Overland flow, seepage into groundwater*	*Reduction in soil and groundwater quality impacting upon dependent vegetation*	*Yes refer to section 7.4*	*Potential soil and groundwater contamination inhibiting vegetation growth and temporary loss of habitat*
			Contaminated stormwater runoff from feed stock areas, waste storage areas, the concrete mixing pads and other operational areas	*Soil, surface water drainage and vegetation adjacent to the areas*	*Stormwater runoff may contain elevated metals, nutrients and other contaminants which may cause contamination of on and off-site and surface water drainage systems if leachate is not properly contained*	*Yes refer to section 7.4*	*Soil contamination inhibiting vegetation growth and survival, and health impacts to fauna*

		Odour	*No residences or other sensitive receptors in close proximity*	*Air / wind dispersion*	*None*	*No*	*No receptor is present in the nearest proximity*
	Compost fires- Uncontrolled biogas emissions can create an explosion or fire risk at the facility and the surrounding land	*Air emissions- particulates. noxious gases and smoke.*	*Bushfire prone area*	*Air/wind dispersion; wind speed and direction can change the level of smoke generated*	*Destruction of flora and fauna*	*Yes refer to 7.6*	*The site is located within a bushfire prone area.* *A Bushfire Attack Level (BAL) assessment prepared by Bushfire Prone Planning and endorsed by the Shire of Gingin will be implemented and maintained to comply with a maximum BAL-29 rating. Further additional planning and building requirements will be managed by the Shire of Gingin*
	Compost not meeting the Australian Standard is taken off-site for sale or used on-site- avocado orchard.	*Elevated pathogens and contaminant levels*	*Human receptors, land, groundwater and surface water where compost will be applied*	*Direct application of compost*	*Any product supplied for off-site or on-site use may contain contaminant levels or pathogenic microorganisms including bacteria, viruses and helminths may cause contamination of off-site land, groundwater and surface water and/or health impacts to end users*	*Yes refer to 7.5*	*Composting and testing of final products to AS 4544 standards*

**The works approval that accompanies this Report authorises construction only. A licence is required for operations.*

7.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 12 below.

Table 12: Risk rating matrix

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

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 13 below.

Table 13: Risk criteria table

Likelihood		**Consequence**		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		**The following criteria has been used to determine the consequences of a Risk Event 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	• **onsite impacts**: catastrophic • **offsite impacts local scale**: high level or above • **offsite 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	• **onsite impacts**: high level • **offsite impacts local scale**: mid-level • **offsite 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	• **onsite impacts**: mid-level • **offsite impacts local scale**: low level • **offsite 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	• **onsite impacts**: low level • **offsite impacts local scale**: minimal • **offsite 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	• **onsite 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, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines.*
"onsite**"** means within the Prescribed Premises boundary.

7.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 14 below:

Table 14: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may 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 and contaminated runoff (Operations)

7.4.1 Description of Leachate and contaminated runoff

The proposed activities represents a significant potential for leachate and contaminated stormwater runoff generation from the concrete mixing and composting pad, the blending shed and from the overflow/seepage of the leachate pond.

7.4.2 Identification and general characterisation of emission

Stormwater at the Premises has the potential to become contaminated with leachate from the composting operation.

7.4.3 Description of potential adverse impact from the emission

Composts are produced on site from feedstocks which includes leaves, plant clippings, hay, saw dust, cow and sheep manure, olive extract, gully eduction and road sweeping materials which may contain elevated metals, nutrients and other contaminants which may cause contamination of on and off-site land, surface water drainage system and groundwater if not properly contained.

7.4.4 Criteria for assessment

ANZECC and ARMCANZ, 2000 provide recommended trigger values for environmental water quality and the *Assessment and management of contaminated sites* provides ecological and human health assessment levels for soil.

7.4.5 Applicant/Licence Holder controls

This assessment has reviewed the controls set out in Table 15 below.

Table 15: Applicant's/Licence Holder's proposed controls for leachate and contaminated runoff

Site infrastructure	Description	Operation details	Reference to issued licence plan (Schedule 1)
Controls for leachate and contaminated runoff			
Concrete mixing and composting pad	*1) hardstand base (minimum 150 mm) to achieve a permeability of no greater than $1x10^{-9}$ m/s; and* *2) impervious ($1x10^{-9}$ m/s) 150mm kerb bunding around the perimeter of the concrete hardstand to retain any run off from the hardstand prior to discharge into the leachate pond;*	*Infrastructure on site will be maintained in good condition.* *Freeboard level for leachate pond will be monitored.* *Leachate pond to be maintained without leaks and water held for evaporation or recycling through the composting process.* *Sludge and sediment removed from pond using a vacuum truck annually or when required.*	*Site Plan*
Blending shed-animal manure and liquid waste storage and blending	*1) hardstand base (minimum 150 mm) to achieve a permeability of no greater than $1x10^{-9}$ m/s; and* *2) wastewater/leachate runoff from the blending shed will drain to three grated sealed concrete sumps all interconnected to one sealed sump with submersible pump so the water can be recycled and used for the composting process.*		
Leachate pond	*1) Capacity to store a 24-hour duration, 1 in 100 year ARI critical rainfall event without overflow;* *2) The water level in the leachate pond will be maintained at 0.75m deep at all times. 750mm freeboard level.*		

7.4.6 Key findings

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

1. *Detailed plans or specifications of the proposed works were not provided in the application therefore design and performance specifications have been set as a requirement in the works approval- condition 1.*
2. *That all leachate collection infrastructure and leachate dams on the premises should be designed to contain a 1 in 20 year ARI rainfall event, which provides a suitable level of containment for the risk of leachate/runoff impacts.*
3. *Composting hardstand, leachate dams and other waste containment areas must be designed and constructed so as to not present an unacceptable risk of contamination of the surrounding land.*
4. *A licence for the operation of the premises will include conditions where relevant to the risks identified in this assessment.*

7.4.7 Consequence

If Leachate and contaminated runoff risk event occurs, *then* the Delegated Officer has determined that the impact of Leachate and contaminated runoff will be most likely limited to off-site impacts at a local scale. Therefore, the Delegated Officer considers the consequence to be **moderate**.

7.4.8 Likelihood of Risk Event

The Delegated Officer has determined that based upon the proposed infrastructure and management actions the likelihood of Leachate and contaminated runoff risk event occurring will be unlikely. Therefore, the Delegated Officer considers the likelihood to be **unlikely**.

7.4.9 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 13) and determined that the overall rating for the risk of Leachate and contaminated runoff risk event is **medium**.

7.5 Risk Assessment – Export of elevated pathogens and contaminant levels (Operations)

7.5.1 Description of export of elevated pathogens and contaminant levels

Based upon the inputs to the composting process any product supplied for off-site or on-site use may contain contaminant levels or pathogenic microorganisms including bacteria, viruses and helminths.

7.5.2 Description of potential adverse impact from the emission

Any products supplied for off-site use with elevated pathogen or contaminant levels may cause contamination of offsite land, groundwater and surface water and/or health impacts to end users.

7.5.3 Criteria for assessment

The criteria for quality of compost are those set out in Australian Standard AS 4454 *Composts, soil conditioners and mulches*.

7.5.4 Applicant/Licence Holder controls

This assessment has reviewed the following controls:

- The road sweeping and gully eduction to be used in the composting process will be tested for hydrocarbons and other contaminants before it is sent to the composting facility;
- Regular testing of the finished product at the end of the 12 week cycle once the compost has matured to ensure the contaminant levels and pathogens are below the criteria;
- Following parameters will be monitored continuously during the process: oxygen levels, moisture, heat and acidity levels; and
- The compost pile will be monitored 24 hours since the computerised system will be programmed to inform staff if the levels are not right and corrective action should be taken.

7.5.5 Key findings

The Delegated Officer has reviewed the information regarding export of elevated pathogens and contaminant levels and has found:

1. *That the criteria for quality of compost are those set in Australian Standard AS 4454-Composts, soil conditioners and mulches;*
2. *A licence for the operation of the premises will include conditions relating to the composting process and product testing to ensure that the final products pathogen and contaminant levels are in compliance with Australian Standard AS 4454-Composts, soil conditioners and mulches.*

7.5.6 Consequence

The Delegated Officer has determined that potential impacts to may include end user health impacts requiring low-level or occasional medical treatment or low level, localised contamination. Therefore, the Delegated Officer considers the consequence to be **moderate**.

7.5.7 Likelihood of Risk Event

The Delegated Officer has determined that the likelihood of activities affecting human health and the environment is that it will occur only in extreme circumstances. Therefore, the Delegated Officer considers the likelihood to be **rare**.

7.5.8 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 13) and determined that the overall rating for the risk of exporting elevated pathogens and contaminants off-site from sale of compost is **medium**.

7.6 Risk Assessment – Compost fires (Operations)

7.6.1 Description of compost fires and air emissions

Methane emissions from poorly managed composting process and uncontrolled biogas emissions can create an explosion or fire risk at the facility and the surrounding land. The facility will be located within a bushfire prone area. The area

7.6.2 Identification and general characterisation of emission

Fire at composting and related organics processing facilities can attract public and industry concern about the perceived risks of composting activities, threaten damage and loss of equipment, and present potential dangers to workers and firefighters (www.epa.nsw.gov.au/-composting-guidelines).

7.6.3 Description of potential adverse impact from the emission

The fires pose a threat to injury and human life. Smoke containing hazardous chemicals can be particularly dangerous, as it can be inhaled by members of the community relatively far from the incident.

7.6.4 Criteria for assessment

The National Environment Protection (Ambient Air Quality) Measure (NEPM) 2018 recommends air quality standards that must be maintained. The smoke that is being emitted during a fire contains mostly very fine particles that can cause significant health impacts. The NEPM contains a criterion for these fine particles ($PM_{2.5}$).

7.6.5 Applicant/Licence Holder controls

This assessment has reviewed the following controls:

- The computerised ASP system will maintain correct heat and moisture levels to avoid any fire risk;
- The ASP technology allows the control of oxygen and moisture levels continuously.
- Following parameters will be monitored continuously during the process: oxygen levels, moisture, heat and acidity levels; and
- The compost pile will be monitored 24 hours since the computerised system will be programmed to inform staffs if the levels are not right and corrective action would be taken.

7.6.6 Key findings

The Delegated Officer has reviewed the information regarding compost fires and has found:

1. *That the fire management plan must be implemented by the facility to the satisfaction of the Shire;*
2. *Licence condition will be included to ensure the operational guidelines and preventative requirements of the Fire Management Plan is adhered to at all times.*
3. *Licence conditions such as maintaining adequate moisture levels in the composting piles, size of a compost pile, and maintaining firebreaks around green waste and compost piles will be included*

7.6.7 Consequence

If emissions are released from a fire within the premises or from adjacent land, then the Delegated Officer has determined that the impact of the emissions of this fire will be of a mid-level local scale impact to amenity with low level health effects. Therefore, the Delegated Officer considers the consequence of air emissions during fire to be **moderate**.

7.6.8 Likelihood of Risk Event

The Delegated Officer has determined that the likelihood of air emissions during a fire causing negative health impacts will probably not occur in most circumstances. Therefore, the Delegated Officer considers the likelihood of air emissions during a compost fire causing negative health impacts to be **unlikely**.

7.6.9 Overall rating

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 13) and determined that the overall rating for the risk of compost fires is **medium**.

7.7 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 16 below. Controls are described further in section 11.

Table 16: Risk assessment summary

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	**Source**	**Pathway/ Receptor (Impact)**			
1.	*Leachate and contaminated runoff*	*Concrete mixing pad, the blending shed and from the leachate pond.*	*Direct from the infrastructure*	*150mm high bunds around the concrete floors to capture liquid waste and direction to holding ponds.* *Hardstand base (minimum 150 mm) to achieve a permeability of no greater than 1x10^{-9} m/s.* *Wastewater/leachate runoff from the blending shed will drain to three grated sealed concrete sumps all interconnected to one sealed sump with submersible pump so the water can be recycled and used for the composting*	*Moderate consequence* *Unlikely likelihood* ***Medium Risk***	*Acceptable subject to regulatory controls*

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	**Source**	**Pathway/ Receptor (Impact)**			
				process. *Capacity to store a 24-hour duration, 1 in 100 year ARI critical rainfall event without overflow;* *The water level in the leachate pond will be maintained at 0.75m deep at all times. 750mm freeboard level.*		
2.	High contaminant and pathogenic levels	Compost from the facility sold off-site	Direct application of compost to land	Continuous online monitoring- optimisation of the composting process	Moderate consequence Rare likelihood **Medium risk**	Acceptable subject to proponent controls and monitoring
3	Compost fires- air emissions, bush fire prone area	Compost from the facility emitting methane/ biogas- spontaneous combustion	Air/wind	maintain the right heat and moisture levels to avoid any fire risk;	Moderate consequence Unlikely likelihood **Medium risk**	Acceptable subject to proponent controls, continuous online monitoring and management actions.

8. Regulatory controls

A summary of regulatory controls determined to be appropriate for the Risk Event is set out in Table 17. The risks are set out in the assessment in section 7 and the controls are detailed in this section. DWER will determine controls having regard to the adequacy of controls proposed by the Applicant. The conditions of the Licence will be set to give effect to the determined regulatory controls.

Table 17: Summary of regulatory controls to be applied

		Controls (references are to sections below, setting out details of controls)				
		8.1.1 Throughput and processing restrictions	**8.1.2 Infrastructure and equipment**	**8.1.3 Specified action**	**8.1.4 Monitoring**	**8.1.5 Reports**
Risk Items (see risk analysis in section 7)	**1. Leachate and contaminated run-off**	●	●	●	●	●
	2. Contaminants and pathogens	●			●	●
	3. Compost fire			●		

8.1 Licence controls

The following controls will be imposed as conditions on the Licence to manage the risk of emissions from operating the composting facility. It should be noted that these controls are not final and will be subject to compliance with conditions of the Works Approval and may change if additional information becomes available to further inform the risk assessment (as per *Guidance Statement: Risk Assessments*).

8.1.1 Throughput and processing restrictions

The licence holder shall be subject to total annual limits on throughput of raw materials. Indicative quantities proposed are shown below:

Table 18: Composting inputs

Waste type	Controlled waste code	Maximum annual tonnage
Industrial wash water (restricted to low risk wastes only)	J120	100 tonnes
Animal effluent and residue	K100	5,000 tonnes
Food and beverage	K200	30,000 tonnes

Gully eduction material	NA	15,000 tonnes
Road sweepings	NA	5,000 tonnes
Garden greens	NA	10,000 tonnes
Hay/straw	NA	5,000 tonnes
Olive husk/extract	NA	2,000 tonnes
Jarrah Woodchips/ saw dust	NA	3,000 tonnes

8.1.2 Infrastructure and equipment to control contaminated runoff

The following environmental controls, infrastructure and equipment should be maintained and operated onsite for control of contaminated runoff:

- impervious ($1x10^{-9}$ m/s) 150mm kerb bunding around the perimeter of the concrete hardstand;
- lined impervious ($1x10^{-9}$ m/s) leachate collection infrastructure for directing potentially contaminated water to the settling pond;
- lined impervious ($1x10^{-9}$ m/s) leachate pond with minimum freeboard level of 750mm;

8.1.3 Specified actions

The following management actions will be included in the licence to prevent leachate/contaminated runoff:

- Maintaining leachate collection infrastructure free of debris and accumulation of sediment;
- Removing vegetation growing inside leachate ponds; and
- Ensure the operational guidelines and preventative requirements of the Fire Management Plan is adhered to at all times

8.1.4 Monitoring requirements

The licence will include the following monitoring conditions to ensure that off-site application of compost does not cause health or environment damage:

- Composting and testing of final products to AS 4454 standards

8.1.5 Monitoring reports

An Annual Audit Compliance Report will be required to be submitted as a condition of the future Licence.

9. Determination of Works Approval conditions

The conditions in the issued Works Approval in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

The issued works approval expires in 5 years from date of issue.

Table 19 provides a summary of the conditions to be applied to this works approval.

Table 19: Summary of conditions to be applied

Condition Ref	Grounds
Infrastructure and Equipment 1, 2, 3, and 4	These conditions are valid, risk-based and contain appropriate controls.
Emissions 5	This condition is valid, risk-based and consistent with the EP Act.
Information 6, and 7	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

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

10. Applicant's comments

The Applicant was provided with the draft Decision Report and draft issued Works Approval on 1 July 2019. The Applicant advised on 2 July 2019 that they have no further comments on the draft Works Approval and waived the remaining consultation period.

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 Issued Works Approval will be granted subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Digitally signed
by Steve Checker
Date: 2019.07.03
17:02:03 +08'00'

Steve Checker
MANAGER WASTE INDUSTRIES
Delegated Officer under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	Works Approval application and supporting information received on 22/1/2019; 1. Attachment 1A - Proof of occupier status 2. Attachment 1B – ASICS Company Extract 3. Attachment 2 – Premises maps 4. Attachment 3A – Proposed Activities 5. Attachment 3B – Map of area proposed to be cleared 6. Attachment 5 – Other approvals and consultation documentation 7. Attachment 6A – Emissions and Discharges 8. Attachment 6B – Waste Acceptance 9. Attachment 7 – Siting and Location 10. Attachment 8 – Other DWER approvals 11. Attachment 9 – Proposed Fee Calculation	W6231/2019/1	DWER records (A1758009)
2.	Correspondence: Response from Gino Dichiera to request for further information received.	Supporting information	DWER records (A1773621)
3.	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
4.	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.	DER 2015b	
5.	DER, August 2016. *Guidance Statement: Licence duration.* Department of Environment Regulation, Perth.	DER 2016a	
6.	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	DER 2016b	
7.	DER, November 2016. *Guidance Statement: Decision Making*. Department of Environment Regulation, Perth.	DER 2016c	

Attachment 1: Issued Works Approval W6231/2019/1