



Application for Works Approval

Part V Division 3 of the *Environmental Protection Act 1986*

Works Approval Number	W6613/2021/1
Applicant	Eastern Metropolitan Regional Council
File number	DER2021/000570
Premises	Red Hill Waste Management Facility 1094 Toodyay Road, RED HILL WA 6056 Legal description Lot 1 on Diagram 15239, Lot 2 on Diagram 68630, Lot 11 on Diagram 69105 and Lot 12 on Deposited Plan 26468 As defined by the premises maps attached to the issued works approval
Date of report	01 April 2022
Decision	Works approval granted

**MANAGER WASTE INDUSTRIES
REGULATORY SERVICES**

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

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of infrastructure on the premises. As a result of this assessment, works approval W6613/2021/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the Department of Water and Environmental Regulation (the department; DWER) has considered and given due regard to its regulatory framework and relevant policy documents which are available at <https://dwer.wa.gov.au/regulatory-documents>.

2.2 Application summary

On 29 September 2021, the Eastern Metropolitan Regional Council (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The application is to undertake construction works relating to an expansion of the interim Food Organics and Garden Organics (FOGO) processing facility at the premises. The acceptance of FOGO and operation of the interim FOGO facility were approved under an amendment to the premises' operational licence (L8889/2015/1) dated 26 June 2020.

The premises relates to the categories and assessed production capacity under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in licence L8889/2015/1. This application is limited to proposing works relating to category 67A compost manufacturing and soil blending activities at the premises, as defined in works approval W6613/2021/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6613/2021/1.

The key aspects of the application include:

- Extension of the approved operating period of the interim FOGO facility from two and a half years (ceasing 31 December 2022) to four years (ceasing 30 June 2024).
- Increase in the authorised rate of acceptance of FOGO from 10,000 tonnes per annum (tpa) to 15,500 tpa.
- Construction of a new hardstand adjacent to the existing Stage 1 FOGO area hardstand on Lot 11.
- Installation of a new mobile aerated floor (MAF) at the Stage 1 FOGO area and relocation of an existing MAF from the green waste processing hardstand to the Stage 1 FOGO area.
- Relocation of the trommel screen from the Stage 2 area to the Stage 1 FOGO area and addition of a second trommel screen to the premises.
- Relocation of the later phases of FOGO processing (Stage 2) from the green waste processing hardstand to the Stage 1 FOGO area.
- Changes in the FOGO processing method and odour emission controls to be implemented at the Stage 1 FOGO area.

The application does not propose to increase the category 67A production capacity on licence

L8889/2015/1 from the current assessed capacity of 50,000 tpa.

2.3 Existing FOGO processing facility

The interim FOGO facility was approved to process 10,000 tonnes of FOGO per annum for a limited duration of two and a half years, until 31 December 2022. The following section provides a summary of the overall FOGO receipt and processing method that was approved through the licence amendment granted on 26 June 2020.

There are two locations used for the receipt, composting and storage of FOGO as follows (Figure 1):

- **Stage 1 area on Lot 11:** Comprises a hardstand and leachate sump. FOGO is received at this location and undergoes at least the first three weeks of composting here. This area is located over the western portion of the previously landfilled area and is at a lower terrain elevation than the Stage 2 location. The closest sensitive receptor is located about 920 m to the south-east.
- **Stage 2 area on Lot 12:** Comprises the green waste processing hardstand and leachate pond. FOGO is transferred here after at least three weeks at Stage 1. FOGO is screened on arrival, undergoes at least three weeks of composting and is then screened for a second time. This area is to the east and south of previously landfilled areas and at an elevated location, near a natural topographical high on the premises. The closest sensitive receptors are located approximately 550 m to the east of the pond and 680 m to the north-west of the hardstand.



Figure 1: Layout of existing and proposed infrastructure for FOGO receipt, storage and processing

Composting is undertaken on mobile aerated floors (MAFs) which can operate in forward and reverse aeration modes. Two MAFs are installed at the Stage 1 area and one MAF is installed at the Stage 2 area. Each MAF system comprises three units, with each unit comprising one blower and four pipes.

Reverse aeration mode is used at the Stage 1 area during acceptance onto each MAF unit (approximately one week duration). During reverse aeration mode, extracted air is pumped to a biofilter housed in a 30 m³ hook lift bin. The biofilter is designed to treat odorous air by passing it through a woodchip, bark or compost medium before emission to the atmosphere.

Once each MAF unit is full, it is switched to forward aeration mode. Once each Stage 1 MAF system (comprising three units) is full, it is kept in forward aeration mode for an additional three weeks and then transferred to the Stage 2 area. This results in the Stage 1 composting duration ranging from three to six weeks. The MAF located at the Stage 2 area is operated in forward aeration mode for three weeks. The total duration of the aerated composting process achieved across the Stage 1 and 2 areas ranges from six to nine weeks.

FOGO is screened twice, between Stage 1 and Stage 2 and again at the completion of the Stage 2 composting process. A 50 mm trommel screen is used to remove oversized organic matter and residual physical contaminants. The applicant does not undertake picking of contaminants from feedstocks before or after composting.

The applicant aims to produce a final product that meets the requirements of *Australian Standard 4454-2012 Composts, soil conditioners and mulches* (AS 4454) and/or the *Australian Certified Organic Standard 2019*. The licence requires final compost products generated from FOGO to meet the pasteurisation and chemical, physical and biological contamination concentration limits specified in AS 4454.

The applicant's main odour controls for the interim FOGO facility (both Stage 1 and 2 areas) are summarised as follows:

- Siting of FOGO receipt and early stages of composting at the Stage 1 area, at a lower elevation and further from sensitive receptors than the Stage 2 area.
- Use of MAFs to maintain FOGO in an aerobic state during Stage 1 and 2 processing.
- Operation of MAFs in reverse mode during feedstock receipt with extracted air treated via a biofilter before release to the atmosphere.
- Application of an odour control solution (bin bomb or ODOROV) to FOGO as required.
- Covering windrows with a synthetic permeable membrane cover system during composting.
- Odour monitoring by on-site personnel and implementation of corrective actions (e.g. ceasing transfer from Stage 1 to Stage 2) in response to detected odours.

For noting: During the previous licence amendment assessment, the Delegated Officer determined that the effectiveness of some of the proposed odour controls (i.e. reverse mode of MAFs and synthetic permeable covers) was uncertain. This uncertainty was factored into the risk assessment for odour emissions from the proposed interim FOGO facility.

In its assessment of the previous licence amendment application, the department determined that odour emissions from the interim FOGO facility presented a high risk to the amenity of sensitive receptors. This risk was considered acceptable, subject to regulatory controls on the licence such as the limited duration of the interim FOGO facility (two and a half years) and a requirement for Odour Field Assessments (OFAs) to be undertaken to address uncertainties

about odour emissions at the premises.

Key findings:

- 1) In information provided to support the works approval application, the applicant indicated that their current FOGO processing operation deviates from what was previously assessed by DWER. These deviations are summarised as follows:
 - The premises received about 12,500 tonnes of FOGO during the 2021 annual period which exceeded the approved acceptance rate of 10,000 tpa specified in condition 1 of the licence.
 - The synthetic permeable membrane covers which the applicant proposed to place over composting windrows were not used.
 - A significant portion of the composting process is now undertaken with FOGO in windrows without forced aeration from MAFs. Condition 5 of the licence requires FOGO waste to be stored on MAFs at all times, except for a period of up to 48 hours before being transferred to the Stage 2 area.
- 2) The deviations outlined above may have contributed to odour emissions from the first eighteen months of operations of the interim FOGO facility being greater than was considered in the department's risk assessment for the previous licence amendment.
- 3) The 2020 Annual Environmental Report for the premises indicates that batches 1 to 4 of compost products generated from FOGO waste did not reach AS 4454 certification due to various physical, biological and chemical exceedances and were therefore not dispatched from the premises.

2.4 Proposed activities

2.4.1 Operation of the interim FOGO facility

The applicant indicated in supporting documentation for the works approval application that a high volume of odour complaints have been received since FOGO processing activities have commenced at the premises. The applicant attributes the movement of material from the Stage 1 area to the Stage 2 area and the processing of material at the Stage 2 area as the principal causes of existing odour impacts.

To facilitate the continued implementation of an interim FOGO facility at the premises, the applicant proposes to move the entire FOGO operation to the Stage 1 area (Figure 1). This will allow FOGO to be received and composted at one location, eliminating the need to move the partially processed FOGO across the premises whilst it is still malodourous. Storage of finished FOGO compost products will continue to occur at the Stage 2 area following the proposed changes.

The different phases in the applicant's proposed interim FOGO facility are outlined in the flowchart in Figure 2.

The applicant intends to receive FOGO onto MAF 1, which will be operated in reverse aeration mode (vacuum). FOGO will remain on MAF 1 until it is full, which is estimated to take about one week. When MAF 1 is full, FOGO will be transferred to either MAF 2, 3 or 4, which will be operated in forward aeration mode. Windrows of FOGO will be turned once while on MAFs 2, 3 and 4. Overall, FOGO will be subjected to forced aeration on a MAF for between six and eight weeks.

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After this stage of processing is complete, FOGO will be screened, then windrowed (without forced aeration) for an additional eight to 16 weeks. At the completion of this phase of processing, the material will be screened again.

Final compost products will be temporarily stored at the Stage 1 area and eventually relocated to the green waste processing hardstand for ease of access for sale to the public.

The applicant proposes to operate the interim FOGO facility using the process outlined above until June 2024. This is when the applicant anticipates having completed construction and commissioning of the permanent FOGO processing facility at the premises.

The applicant is also seeking an increase in the current authorised rate of FOGO acceptance of 10,000 tpa to 15,500 tpa. The applicant advised as part of their works approval application that this increase in throughput reflects the current FOGO waste tonnages being accepted at the premises (about 1,150 tonnes per month). The applicant anticipates that the proposed increased throughput will be sufficient to accommodate anticipated FOGO tonnages until the end of life of the interim FOGO facility in June 2024.

Key findings:

- 4) The Delegated Officer considers that achieving pasteurisation during composting is essential to treat biological contaminants likely to be present in FOGO waste, such as faecal pathogens and plant pathogens. However, the application did not indicate whether the proposed FOGO processing method will achieve the process criteria required for pasteurisation of higher risk materials as outlined in Section 3.2.1(b) of AS 4454, or an alternative process that guarantees the same level of pathogen reduction as outlined in Section 3.2.1(c) of AS 4454.

The process criteria set out in AS 4454 for pasteurisation of higher risk materials requires the core temperature of the compost mass to be maintained above 55°C for 15 days or longer, and during this period the composting mass is turned a minimum of five times to ensure the whole mass is subjected to the required temperature/process conditions. Windrows of FOGO on MAFs should be able to reach the minimum temperature of 55°C and the applicant proposes to keep FOGO on the MAFs for a minimum of six weeks. However, it was uncertain from the application whether the proposed processing method will be appropriate to ensure the entire composting mass is subjected to pasteurisation. Further discussion of this matter is provided in Section 6.3 and Appendix 2.

- 5) The Delegated Officer considers that residual physical contaminants screened out of FOGO and compost products are not suitable for use as cover material on waste in the putrescible landfill cells on the premises. Cover material in the licence is defined as *'clean fill, other approved inert waste or proprietary alternative daily cover (ADC) treatments or other materials that satisfies the requirement to mitigate against any environmental health impacts from landfilled waste'*. Residual physical contaminants do not meet this definition as this material would contain putrescible waste, plastics, and other general household rubbish that commonly ends up in FOGO bins due to poor waste sorting. This type of material would not mitigate against potential environmental health impacts from landfilled waste such as odour emissions, vector/vermin attraction or ignition of fire, and should not be used as cover material on the putrescible landfill cells.

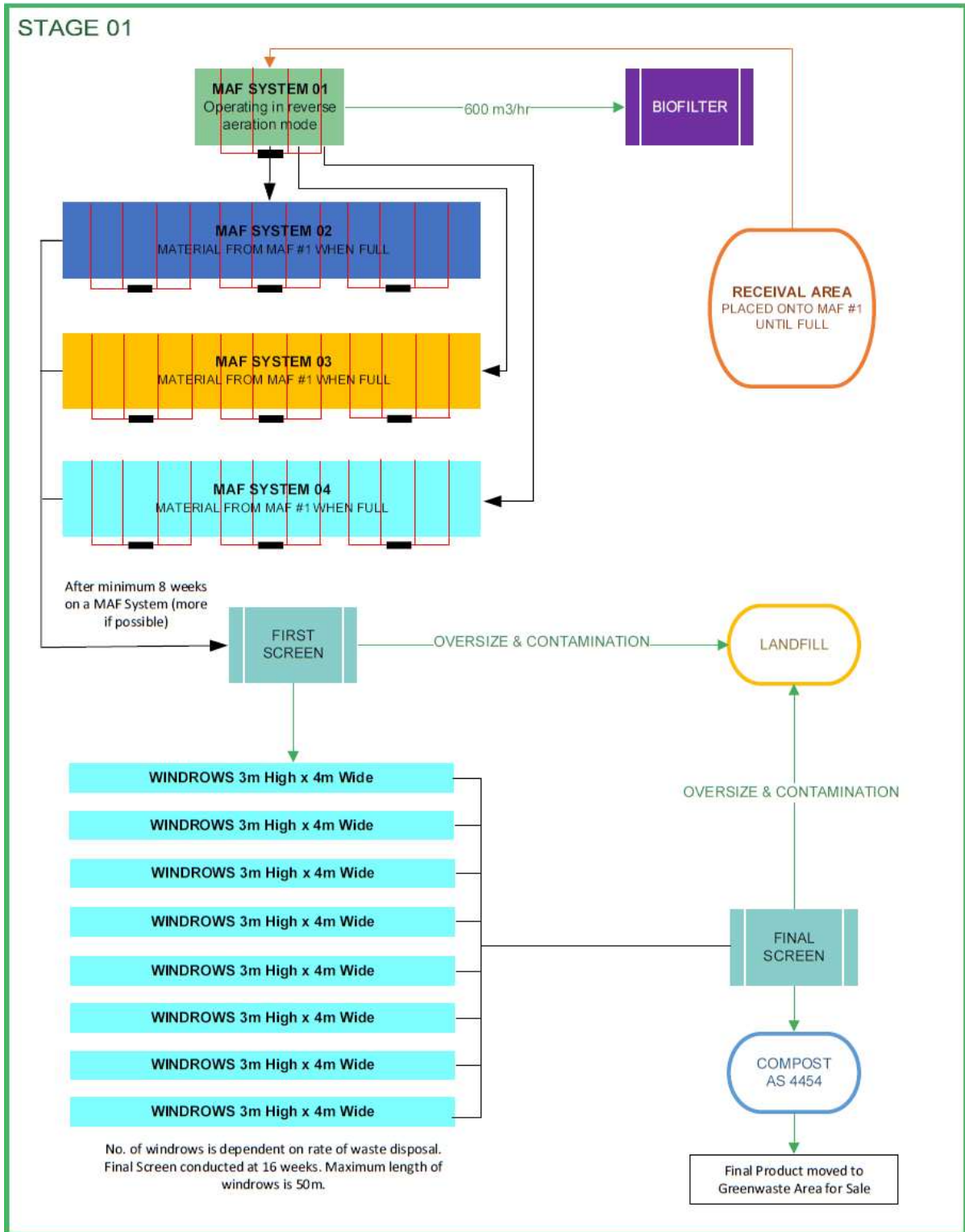


Figure 2: FOGO processing flowchart

2.4.2 Infrastructure

Figure 1 shows the overall layout of infrastructure proposed to be used for the receipt, composting and storage of FOGO at the premises. Figure 3 shows the proposed layout for activities across the expanded Stage 1 area.

To accommodate the relocation of all FOGO processing activities to one location, the applicant proposes to install a new hardstand to the south of the existing Stage 1 area. This new hardstand will provide an additional 1.22 ha of operational area for FOGO receipt, processing and storage. The existing Stage 1 area hardstand and proposed extension area are located above previously filled and capped landfill cells but the thickness and type of the capping layer used are not known.

The new hardstand will be constructed using a similar profile and materials as the existing Stage 1 hardstand and, as shown in Figure 4, will comprise (from bottom to top):

- a subgrade of gravels, sandy gravels or gravelly clays;
- a clay leachate barrier, with a minimum thickness of 500 mm, compacted to 95% of maximum dry density;
- a ferricrete protective layer with a thickness of 200 mm, compacted to 95% of maximum dry density;
- a ferricrete bund with a height of 500 mm and width of 1000 mm around the perimeter of the hardstand.

The hardstand is proposed to be graded to the south with a fall of about 1.3%. Cross-sections showing the hardstand design are shown in Figure 4.

Key findings:

- 6) Construction quality assurance (CQA) documentation was submitted to the department in 2020 to demonstrate that the existing Stage 1 clay hardstand achieved a coefficient of permeability less than 1×10^{-9} m/s and a maximum dry density of at least 95%. The proposed new hardstand comprises a similar design to the existing Stage 1 hardstand. If constructed appropriately, the new hardstand should achieve similar permeability and compaction specifications to the existing Stage 1 hardstand and provide a suitable leachate barrier to prevent infiltration of leachate.
- 7) The fall of the proposed hardstand is shallower than the existing Stage 1 hardstand area. The conditions of the licence required the Stage 1 hardstand to achieve a minimum fall of 2% to provide adequate drainage and ensure leachate does not pool on the hardstand surface. The Stage 1 hardstand was constructed with a fall of 2.3-2.4% towards the sump in the south-western corner.
- 8) As the new hardstand will be constructed above the existing ground surface (refer to Figure 4), the department understands that the proposed works should have a minimal impact on the capping layer installed over historical landfill cells in this area.

The new hardstand will be graded to the south to direct leachate and contaminated stormwater towards an existing Class III landfill leachate pond (referred to as L9). A drain will be constructed to direct run off from the new hardstand to the leachate pond for retention. The drain will be lined by HDPE and geotextile with stone pitching (200-300 mm spalls) installed over the geotextile.

The existing L9 Class III landfill leachate pond to the south of the new hardstand was constructed between 2007 and 2009 and comprises (from bottom to top):

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- an underlying compacted clay liner;
- a geosynthetic clay liner (GCL);
- an electrical leak detection system; and
- a 1.5 mm high density polyethylene (HDPE) liner.

The applicant has advised that the liner system of the Class III landfill leachate pond remains in good condition. An electronic leak detection survey using the in-built leak detection system was undertaken in 2017 and identified one minor hole in the HDPE that was subsequently repaired.

The pond has a capacity of 3,322 m³ and contains an automatic pump system, which can relocate leachate to other leachate ponds on the premises should its maximum capacity be reached. Deployment of the automatic pump will also ensure that the minimum freeboard of 500 mm specified in the licence will be maintained and will not be compromised by the increased leachate and contaminated stormwater input from the new hardstand.

Most of the premises' leachate holding capacity is provided by the three main Class III leachate holding and evaporation ponds located on Lot 12 which have a total operational capacity (while maintaining freeboard) in excess of 85,000 m³. The conditions of the licence allow leachate in the Class III leachate collection system to be evaporated, including by mechanical evaporation, or recirculated to the active Class III landfill cell.

Key findings:

- 9) The liner of the Class III leachate pond is a suitable leachate barrier to prevent infiltration of leachate to the historical landfill cells below this pond.
- 10) The deployment of an automatic pump to transfer leachate in the Class III leachate pond to other landfill leachate ponds on the premises is a suitable control to prevent overtopping. This is a similar approach to how leachate generated on the existing Stage 1 hardstand and retained in the adjacent sump has been managed.
- 11) Based on the proposed leachate management approach, the Delegated Officer considers that a water balance of inputs and outputs to the Class III leachate pond is not necessary to inform the works approval assessment. However, the potential for overtopping of the pond in the case of pump failure will be considered in the risk assessment for leachate emissions.



Figure 3: Proposed layout of infrastructure in the expanded Stage 1 area

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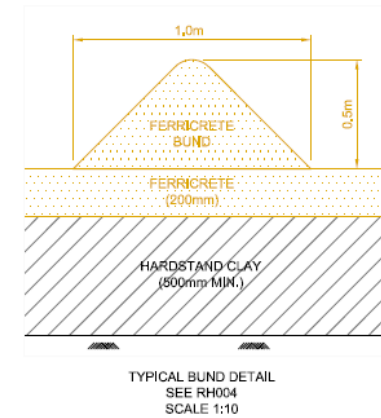
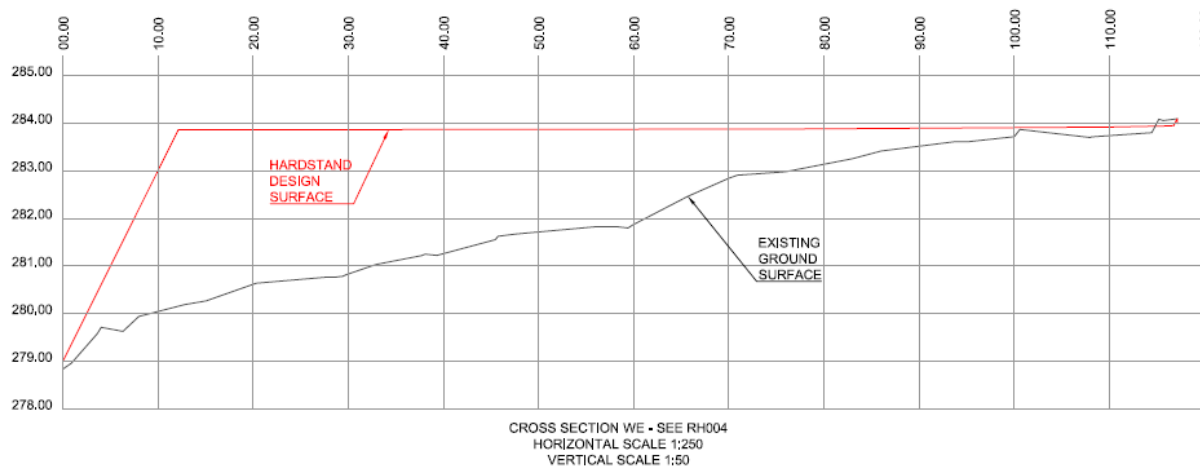
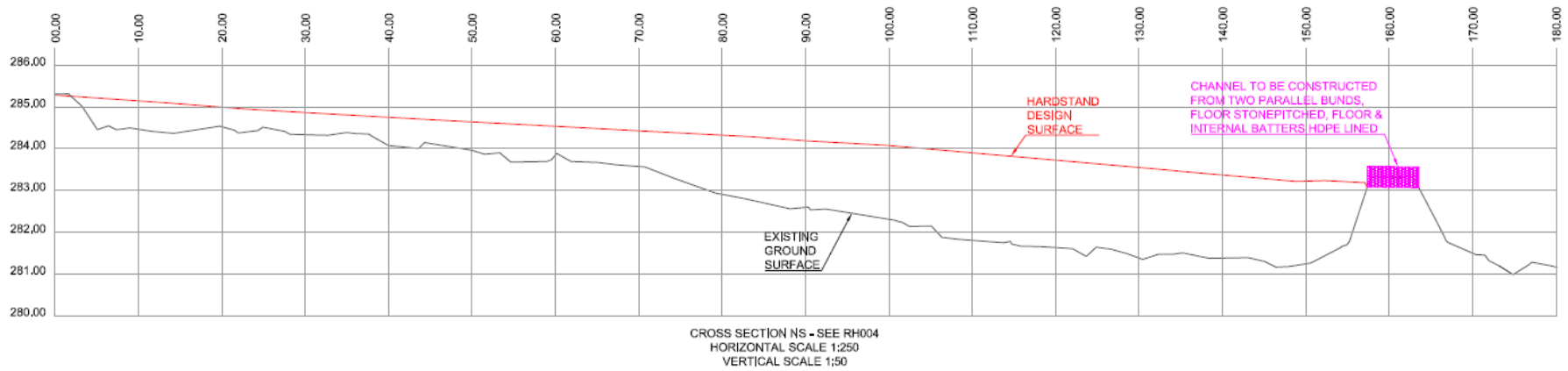


Figure 4: New hardstand design cross-sections

2.4.3 Equipment

The applicant proposes to use the following equipment in connection with the processing of FOGO at the Stage 1 area:

- Four MAFs powered by a generator. These will comprise of two MAFs currently at the Stage 1 area, one MAF currently at the Stage 2 area and one new MAF. MAFs will aerate FOGO during the first six to eight weeks of composting.
- One existing biofilter to treat air extracted by the operation of MAF 1 in reverse mode.
- One existing trommel screen, relocated from the Stage 2 area, and a second new trommel screen to remove oversize material during processing.
- An OdourPro Vapourgard odour defense system. This system will disperse a non-hazardous, non-toxic and biodegradable deodorizer solution around the expanded FOGO processing area via a piped distribution network. The deodorizer is delivered in vapour form and is intended to treat odorous compounds such as organic acids, mercaptans and reduced sulfur compounds.
- An automatic pump in the L9 Class III leachate pond to direct excess leachate to other leachate ponds.

The proposed layout of mobile equipment on the Stage 1 area is shown in Figure 3.

2.5 Odour complaints

There is a history of odour complaints being made about the premises, both to the department and via the applicant's internal complaints management system. There are multiple potential odour sources at the premises and complaints are not always able to be attributed to a specific source. Table 1 presents a summary of odour complaints received by the applicant and the department about the premises from 2018 to 2021.

Table 1: Summary of odour complaints 2018 to 2021

Year	Number of complaints ¹		Odour sources for complaints as identified by the applicant
	Received by applicant	Received by DWER	
2018	11	1	<ul style="list-style-type: none"> • Active tip face • Green waste operations • Drilling of landfill gas extraction wells • Blasting of cap rock
2019	21	13	<ul style="list-style-type: none"> • Active tip face • Green waste operations
2020	25	6	<ul style="list-style-type: none"> • Transfers of mulch or FOGO across the premises (Stage 1 area to Stage 2 area or Stage 2 area to landfill cell) • Screening of FOGO at the Stage 2 area • Green waste operations at the Stage 2 area (green waste processing hardstand) • Active tip face and uncapped landfill cells • Repairs to landfill gas extraction wells • Biosecurity burials • Off-site sources

Year	Number of complaints ¹		Odour sources for complaints as identified by the applicant
	Received by applicant	Received by DWER	
2021	At least 28 ²	3	<ul style="list-style-type: none"> • Transfers of FOGO across the premises (Stage 1 area to Stage 2 area) • FOGO operations at the Stage 2 area • Breach in methane pipe

Note 1: There may be duplication between some complaints received by the applicant and the department, if the complainant contacted both parties to register their complaint.

Note 2: This figure is based on the applicant's 2021 complaints register provided on 5 November 2021 and does not include complaints received after this date.

Since FOGO receipt commenced at the premises in July 2020, the applicant has attributed most odour complaints to landfilling at the active tip face or activities involving the movement and disturbance of FOGO and green waste (i.e. transfers between Stage 1 and Stage 2 areas, screening etc). The source of odour emissions causing complaints could not be determined in some cases and the applicant could not detect an odour issue coming from the premises at the time of some complaints.

Recent odour complaints have come from at least five separate residences to the north and east of the premises. These residences are generally down-slope and down-wind of the premises based on the regional prevailing south-westerly and westerly afternoon wind direction. These residences are located within about 900 m of the Stage 2 area (green waste processing hardstand) and within about 1,500 m of the tip face active during 2020 to 2021 (Stage 14 and 15 landfill cells), but generally more than 1,500 m from the Stage 1 area.

Key findings:

- 12) The history of odour complaints from multiple residences close to the premises indicates that odour emissions from current operations are likely to be adversely impacting the amenity of sensitive receptors.
- 13) The history of regular odour complaints about the premises prior to the commencement of FOGO receipt in July 2020 suggests that this waste stream and related processing activities are not the only significant source of odour impacts to sensitive receptors.

2.6 Odour field assessments

The requirement to undertake Odour Field Assessments (OFAs) at the premises was specified as a regulatory control on the licence when the licence was amended on 30 March 2020. The purpose of the OFAs was to resolve uncertainty about the nature and extent of existing odour impacts from the premises.

Four OFAs were conducted at the premises during November 2020, February 2021, May 2021 and August 2021. All OFAs were conducted after FOGO receipt commenced at the premises in July 2020. The OFAs identified the following activities as the main potential sources of odour at the premises (in no particular order):

- active landfill tip face;
- green waste processing at the Stage 2 area;
- fugitive emissions of landfill gas (biogas) resulting from biogas extraction from filled and capped landfill cells and the on-site biogas powered power plant; and

- FOGO receipt and composting.

The OFAs were conducted using a field-based technique that recorded the presence, intensity (strength) and frequency of observations of odours, downwind of odour sources at the premises. Field odours were detected by a panel of three field technicians (assessors) that were calibrated for their olfactory sensitivity according to the *Australian/New Zealand Standard AS/NZS 4323.3 Stationary source emissions: Determination of odour concentration by dynamic olfactometry*.

Locations selected for odour monitoring during the OFAs were focused along the northern and eastern premises boundary. Selection of these locations was informed by knowledge of the main potential odour sources at the premises and measurement of local wind direction using a portable meteorological station during each OFA. None of the OFAs included monitoring locations in Parkerville to the south of the premises or Red Hill to the west of the premises.

The results of each OFA are briefly summarised in Table 2.

Table 2: Summary of OFA results

OFA event	Time of day	Wind direction	Summary of results	Odour description
Nov 2020	Morning (7:36 to 10:13)	Southerly, south-westerly and westerly	Distinct to strong odours were observed at locations up to about 150 m from the northern premises boundary and about 200 m from the eastern premises boundary.	Tip face
Feb 2021	Morning (7:17 to 9:32)	South-westerly	Nil odours were observed to the north and east of the eastern portion of the premises. Some negligible, very weak odours were observed to the north of the western portion of the premises.	Tip face
May 2021	Afternoon (16:10 to 18:02)	Southerly and south-westerly	Distinct to strong odours were observed at a location close to the northern premises boundary and directly north of the tip face; observable odours persisted at this location throughout the monitoring period. Negligible, very weak or nil odours were observed at other locations (all to the north or north-west of the premises).	Strong compost/pine and parmesan cheese/vomit
Aug 2021	Afternoon (15:13 to 17:55)	South-westerly	Distinct odours were observed at a location close to the north-eastern premises boundary. Negligible, very weak or nil odours were observed at other locations (north and east of the premises).	Strong compost/pine and parmesan cheese/vomit

Key findings:

- 14) The OFAs provide evidence that current operations at the premises are causing observable odours at off-site sensitive receptor locations to the north and north-east

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of the premises. These results generally support the veracity of past odour complaints from residents in these areas.

- 15) The findings of the OFAs are consistent with the primary odour sources being located to the east of the central landfill mound. The OFAs concluded that the tip face and/or fugitive losses of biogas were the main source of odours observed off-site from the premises and no FOGO odours were observed off-site. This finding is inconsistent with the applicant's complaint records over the same period (November 2020 to August 2021) which attributed most complaints to the FOGO operations at the Stage 2 area or transfers of FOGO from the Stage 1 area to the Stage 2 area. Based on these conflicting conclusions, the main source of off-site odour impacts at the premises remains uncertain.

3. Other approvals

3.1 Part IV of the EP Act

The premises is currently subject to six Ministerial Statements (MS) under Part IV of the EP Act. In regulating the premises under Part V, Division 3 of the EP Act, the department will seek to avoid duplication of requirements imposed under Part IV. Pursuant to section 59B(7) of the EP Act, the department will also not amend a Part V licence that is contrary to, or otherwise than in accordance with, an implementation agreement or decision.

A summary of the respective Ministerial Statements is provided below:

- MS 274 (15 July 1992) and MS 1140 (1 July 2020) – Relate to the Red Hill Waste Management Facility Extension;
- MS 462 (21 November 1997) – Relates to the establishment of Class IV waste disposal cells at the Red Hill Waste Management Facility; and
- MS 976 (9 July 2014), MS 1092 (5 March 2019) and MS 1122 (20 January 2020) – Relate to the proposal to construct and operate a resource recovery facility at the Red Hill Waste Management Facility, for the processing of waste to produce energy, using either anaerobic digestion or gasification technology.

MS 274 and 462 are the main statements that relate to the construction, operation and post closure management of waste handling and landfilling aspects at the Red Hill Waste Management Facility. The existing Stage 1 area and proposed new hardstand are encompassed within the authorised extent of MS 274.

MS 976 includes the following conditions which relate to odour impacts and controls at the premises:

- 6-1 The proponent shall reduce the cumulative odour levels prior to operation of the anaerobic digestion or gasification facility. In order to demonstrate this, the proponent shall comply with the requirements of conditions 6-2 to 6-4.
- 6-2 The proponent shall prepare a Cumulative Odour Reduction Report.
- 6-3 The Cumulative Odour Reduction Report required pursuant to condition 6-2 shall:
 - (1) investigate options and propose measures to reduce the cumulative odour impact from the Red Hill Waste Management Facility by management measures such as relocating the greenwaste windrows; and
 - (2) provide a re-run of the model (SLR Consulting Australia 2012 'Resource

Recovery Facility: Odour Impact Assessment for Lot 8 (Site E) Toodyay Road' Report) to demonstrate that the chosen measures from 6-1(1) provides an overall improvement in predicted cumulative odour impacts,

to the satisfaction of the CEO on advice of the DER.

- 6-4 Prior to operation of the anaerobic digestion or gasification facility the proponent shall implement management measures approved by the CEO to meet condition 6-1.

Key findings:

- 16) The changes proposed within the scope of the works approval application relate to the operation and short-term extension of the interim FOGO facility at the premises. These changes will allow the applicant to continue to receive and process FOGO at the premises while they design, obtain approvals, and construct a permanent FOGO processing facility. Based on advice from the Environmental Protection Authority Services Branch of the department, the Delegated Officer considers that the changes proposed in the application can be adequately assessed and regulated under Part V of the EP Act.

3.2 Native vegetation clearing

Implementation of the proposed changes requires clearing of a 1.22 ha area of revegetated area over a capped landfill cell.

Regulation 5, Item 1 under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* provides an exemption for a clearing permit in these circumstances because the clearing is to construct a structure. No separate clearing permit or assessment of clearing under this works approval application is required.

The department is uncertain if the hardstand will be used temporarily and removed once the permanent FOGO processing facility is complete or if it will be retained for a different purpose. If the hardstand is removed in the future, leaving the area bare may be detrimental to the environment and the department would recommend that the area be revegetated in these circumstances.

4. Risk Assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

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.

4.1 Source-pathways and receptors

4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and operation which have been considered in this decision report are detailed in Table 3 below. Table 3 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 3: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Dust	Construction of the new hardstand and drain	Air / windborne pathway	No controls proposed by applicant.
Noise			
Operation			
Dust (including bioaerosols)	Truck/loader movements of FOGO, final compost products and residual physical contaminants across the premises	Air / windborne pathway	No controls proposed by applicant.
Noise			
Odour			Relocation of the later phases of FOGO composting from Stage 2 area to Stage 1 area to eliminate the need to transport FOGO between these locations while it is still odorous.

Emission	Sources	Potential pathways	Proposed controls
Odour	FOGO receipt, composting and screening at Stage 1 area Collection and storage of leachate and pumping to other leachate ponds	Air / windborne pathway	Relocation of the later phases of FOGO composting from Stage 2 area to Stage 1 area. FOGO received at the premises will be stored on MAF 1 for about one week when received on-site. MAF 1 operating in reverse mode (vacuum) and pumping extracted air to a biofilter. FOGO stored on MAFs 2, 3 and 4 operating in forward mode to maintain aerobic conditions for at least six weeks after relocation from MAF 1. Turning of windrows on MAFs 2, 3 and 4 will occur during relatively calm wind conditions. Oxygen and moisture levels in windrows optimised to promote biological degradation and prevent anaerobic conditions. Installation of an OdourPro Vapourgard odour defense system around the FOGO processing area.
Leachate		Discharge to surface water or infiltration to groundwater	Construction of new clay lined hardstand for composting, screening and storage of FOGO and temporary storage of final compost products. Hardstand graded towards new drain and surrounded by perimeter bund to contain leachate and contaminated stormwater. Construction of a HDPE lined and stone pitched drain to direct runoff from the hardstand extension area to an existing leachate pond (L9) which is lined by GCL and HDPE and has a leak detection system installed between these layers. Use of an automatic pump to pump leachate from L9 to the main leachate ponds on Lot 12 of the premises, maintain a 500 mm freeboard and prevent overtopping of the leachate pond.
Dust (including bioaerosols)		Air/windborne pathway	Relocation of the later phases of FOGO composting from Stage 2 area to Stage 1 area. FOGO composting to be conducted using MAFs which reduces the need to disturb the waste by turning. Turning of windrows on MAFs 2, 3 and 4 will occur during relatively calm wind conditions and when the material is sufficiently wet down. FOGO waste is kept in a damp state.
Noise			Relocation of the later phases of FOGO composting from Stage 2 area to Stage 1 area.

Emission	Sources	Potential pathways	Proposed controls
Smoke from fire			<p>Relocation of the later phases of FOGO composting from Stage 2 area to Stage 1 area.</p> <p>Residual physical contaminants are disposed to the landfill within 24 hours of being screened from the FOGO waste or compost.</p> <p>FOGO waste is kept in a damp state.</p> <p>Windrows on MAFs (early phases of composting) are maintained within the maximum dimensions of 30 m long, 16 m wide and 5 m high.</p> <p>Windrows not on MAFs (later phases of composting) are maintained within the maximum dimensions of 3 m high and 4 m wide.</p>
Vectors/ vermin		Attraction and harbouring of pests which may act as vectors for pathogens	<p>Relocation of the later phases of FOGO composting from Stage 2 area to Stage 1 area.</p> <p>Residual physical contaminants are disposed to the landfill within 24 hours of being screened from the FOGO waste or compost.</p> <p>Windrows on MAFs 2, 3 and 4 will be turned at least once to deter fly infestations in outer material.</p> <p>Deployment of fly baiting stations around the FOGO area.</p>

Emission	Sources	Potential pathways	Proposed controls
Contamination or poor quality of products	Sale of final compost product to public	Discharge of contaminants to land by application of poor-quality products	<p>Maximise the total processing time of FOGO to produce a higher quality final compost product. The minimum processing time will comprise at least six weeks on MAFs and at least eight weeks in windrows without forced aeration.</p> <p>Windrows on MAFs 2, 3 and 4 will be turned at least once to move outer material into the core of the windrow and help pasteurise of the whole composting mass.</p> <p>Two phases of screening to remove residual physical contaminants.</p> <p>Production of final compost products to comply with AS 4454.</p> <p>The licence specifies the following additional controls for product quality:</p> <ul style="list-style-type: none"> • Composting products produced from FOGO waste are processed to achieve pasteurisation as defined in AS 4454. • Composting products produced from FOGO waste meet the maximum chemical, physical and biological contaminant concentrations set out in in the licence (based on AS 4454). • Composting products produced from FOGO waste must be monitored for chemical, physical and biological contaminant concentrations and remain on the premises until the monitoring results verify compliance with the specified concentration limits. • Irrigation water used at the Stage 1 area is sourced from the Stage 1 FOGO leachate sump. • Irrigation water used at the green waste processing hardstand is sourced from siltation/water ponds.

4.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the Delegated Officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 4 and Figure 5 below provide a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises (*Guideline: Environmental Siting* (DWER 2020)).

Table 4: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	Distance from prescribed activity
Residential premises	<p>Parkerville rural residential area to the south of the premises comprising multiple residences about 800 m or more from the expanded Stage 1 area and 1,200 m or more from the green waste processing hardstand.</p> <p>These lots are separated from the premises by a vegetation buffer (about 360-440 m wide) located on Lot 501 on Plan 40105 and Lot 82 on Plan 18309, Parkerville (owned by the applicant), and a conservation reserve (about 50-125 m wide) on Lot 62 on Plan 23731 and Lot 15403 on Deposited Plan 40033, Parkerville (vested in the Department of Planning, Lands and Heritage and located in the Shire of Mundaring).</p> <p>Gidgegannup rural residential area immediately to the east of the premises, comprising multiple residences about 1,830 m or more from the expanded Stage 1 area and about 740 m or more from the green waste processing hardstand.</p> <p>Gidgegannup rural residential area to the north, north-west and north-east of the premises, multiple residences about 1,120 m or more from the expanded Stage 1 area and 680 m or more from the green waste processing hardstand. These lots are separated from the premises by Toodyay Road.</p>
Recreational users of John Forrest National Park	The national park is adjacent to the southern boundary of the premises, about 160 m south of the expanded Stage 1 area and 980 m south-west of the green waste processing hardstand.
Industrial premises	The site office for the Hanson Construction Materials quarry is located about 1,400 m north-west of the expanded Stage 1 area and about 2,350 m west of the green waste processing hardstand.
Visitors to the Red Hill Auditorium venue	The Red Hill Auditorium is an events venue located about 1,620 m west of the expanded Stage 1 area and about 2,700 m west of the green waste processing hardstand.
Environmental receptors	Distance from prescribed activity
Parks and Wildlife Management Lands and Waters	John Forrest National Park is adjacent to the southern boundary of the premises, about 160 m south of the expanded Stage 1 area and 980 m south-west of the green waste processing hardstand.

Groundwater	<p>There are two distinct water bearing layers underlying the premises:</p> <ul style="list-style-type: none"> • The upper layer comprises a perched water table associated with shallow lateritic sediments mainly on low lying areas which have developed above pallid zone clays (impermeable layer of kaolinitic clays). Perched aquifers are reported to be limited in their lateral extent and considered ephemeral during and post winter. • The lower layer comprises the regional groundwater table within granite bedrock (fracture systems) or overlying extensive saprolite grits (porous, weathered bedrock) often semi confined by pallid zone clays. <p>Based on a groundwater contour map in the 2020 Annual Environmental Report, the regional groundwater table is estimated to be at an elevation of about 264-268 m Australian Height Datum (AHD) in the vicinity of the expanded Stage 1 area. The elevation of the new hardstand is 283 m AHD, so it is estimated that there is a separation distance of about 15 m or more between the hardstand surface and regional groundwater table. Groundwater flow direction in this area is inferred to be in a south-westerly to southerly direction.</p> <p>The Premises is not located within a <i>Rights in Water and Irrigation Act 1914</i> proclaimed Groundwater Area.</p>
Surface water	<p>Christmas Tree Creek is a minor perennial watercourse in John Forrest National Park that flows in a westerly direction parallel to the southern boundary of the premises and is a tributary to the Jane Brook and Swan River. This watercourse is about 550 m south of the expanded Stage 1 area and about 1,050 m south of the green waste processing hardstand.</p> <p>Strelley Brook is an ephemeral tributary of Jane Brook that flows away from the western premises boundary. This watercourse is about 260 m north-west of the expanded Stage 1 area.</p> <p>Susannah Brook is an ephemeral stream which drains from the Darling Scarp into the upper reaches of the Swan River. This watercourse is about 1,460 m north-east of the green waste processing hardstand.</p> <p>The premises is within the Swan River System which is a proclaimed surface water area under the <i>Rights in Water and Irrigation Act 1914</i>.</p>
Threatened/Priority Fauna	<p>The following species were identified within about 2,000 m of the expanded Stage 1 area:</p> <ul style="list-style-type: none"> • One endangered species (Baudin's cockatoo) • One vulnerable species (forest red-tailed black cockatoo) • One species of migratory bird protected under an international agreement (fork-tailed swift) • One Priority 4 species (quenda) • One species of special conservation interest (south-western brush-tailed phascogale)

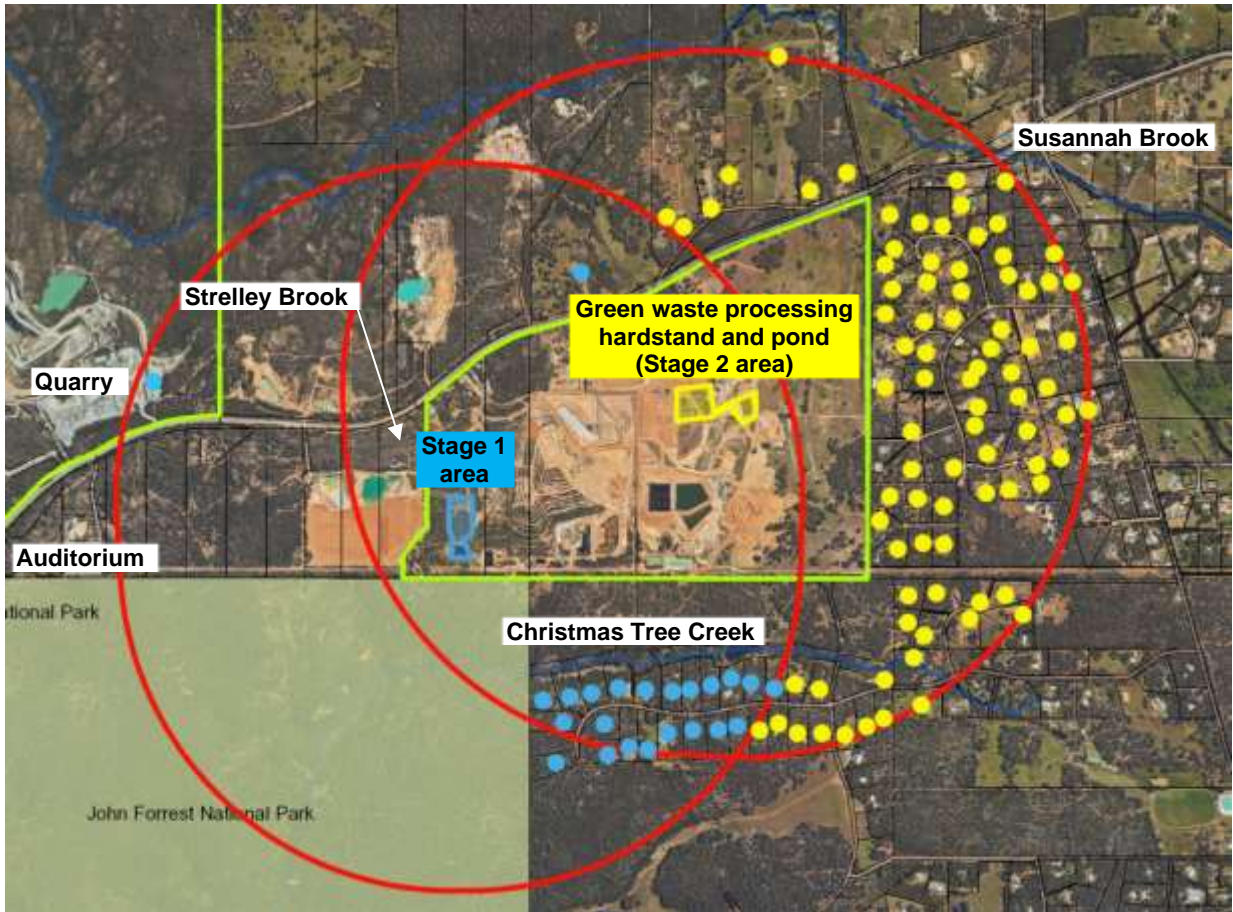


Figure 5: Stage 1 area and Stage 2 area in relation to receptors

Red circles show 1.5 km buffer areas around the proposed expanded Stage 1 area and the existing Stage 2 area. Blue dots show sensitive receptors within 1.5 km of the expanded Stage 1 area and yellow dots show sensitive receptors within 1.5 km of the existing Stage 2 area.

4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and take into account potential source-pathway and receptor linkages as identified in Section 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 4.1), these have been considered when determining the final risk rating. Where the Delegated Officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Works approval W6613/2021/1 that accompanies this decision report authorises construction and time limited operations. The conditions in the issued works approval, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence amendment to the premises operational licence L8889/2015/1 will be required following the time limited operations phase authorised under the works approval to authorise emissions associated with the ongoing operation of the premises i.e. the interim FOGO facility. A risk assessment for the operational phase has been included in this decision report, however licence conditions will not be finalised until the department assesses the licence amendment application.

Table 5: Risk assessment of potential emissions and discharges from the premises during construction and operation

Risk events					Risk rating ¹	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood			
Construction								
Construction of the new hardstand and drain Installation and relocation of equipment (MAFs, screen, odour defense system)	Dust	Air / windborne pathway causing impacts to health and amenity	Residences about 800 m south-east and 1,120 m north-east of the new hardstand	Refer to Section 4.1	C = Minor L = Unlikely Medium Risk	N	Condition 1	Application of dust suppression water using a water cart is required during construction of the hardstand to mitigate the likelihood of dust emissions during construction.
	Noise		Recreational users of John Forrest National Park about 160 m south of the new hardstand	Refer to Section 4.1	C = Slight L = Unlikely Low Risk	Y	None specified	N/A
Operation (including time limited operations)								
Truck/loader movements of FOGO, final compost products and residual physical contaminants across the premises	Dust (including bioaerosols)	Air / windborne pathway causing impacts to health and amenity	Residences about 800 m south-east and 1,120 m north-east of the expanded Stage 1 area, and 680 m east and 740 m north-west of the green waste processing hardstand Recreational users of John Forrest National Park about 160 m south of the expanded Stage 1 area	Refer to Section 4.1	C = Minor L = Unlikely Medium Risk	Y	Condition 9	N/A
	Noise			Refer to Section 4.1	C = Slight L = Unlikely Low Risk	Y	None specified	N/A
	Odour			Refer to Section 4.1	C = Minor L = Unlikely Medium Risk	Y	Condition 9	N/A
FOGO receipt, composting and screening at Stage 1 area Collection and storage of leachate and pumping to other leachate	Odour	Air / windborne pathway causing impacts to health and amenity	Residences about 800 m south-east, 1,120 m north-east and 1,830 m east of the expanded Stage 1 area Recreational users of John Forrest National Park about 160 m south of the expanded Stage 1 area	Refer to Section 4.1	Refer to Section 4.3	N	Conditions 8 and 9 Condition 1	Refer to Section 4.3

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Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
ponds	Leachate	Discharge to surface water or infiltration to groundwater causing degradation of water quality and potential impacts to down-gradient ecosystems	Christmas Tree Creek about 500 m south of the expanded Stage 1 area Strelley Brook about 260 m north-west of the expanded Stage 1 area	Refer to Section 4.1	C = Minor L = Unlikely Medium Risk	N	Conditions 2, 9 <u>Condition 1, 8</u>	The proposed construction requirements for the leachate drain were incomplete as they did not specify the thickness of the HDPE and the type of geotextile to be used below the stone pitching. The works approval specifies that a 2 mm HDPE geomembrane and cushion geotextile are used. The works approval also specifies that stone pitching is placed in a manner that does not cause damage to the underlying cushion geotextile and HDPE geomembrane. The leachate drain to L9 is required to be kept clear of waste (litter/debris) to allow effective drainage of leachate to the pond.
	Dust (including bioaerosols)			Refer to Section 4.1	C = Minor L = Unlikely Medium Risk	N	Condition 9 <u>Condition 8</u>	Materials are required to be damp before screening to reduce the potential for dust/bioaerosols to be generated. This control is consistent with an existing control under the licence.
	Noise	Air / windborne pathway causing impacts to health and amenity	Residences about 800 m south-east, 1,120 m north-east and 1,830 m east	Refer to Section 4.1	C = Slight L = Unlikely Low Risk	Y	Conditions 8 and 9	N/A
	Smoke from fire		Recreational users of John Forrest National Park about 160 m south	Refer to Section 4.1	C = Minor L = Unlikely Medium Risk	N	<u>Condition 9</u>	The applicant did not specify a maximum length for windrows without forced aeration. The works approval requires that these windrows are no more than 50 m long to limit the potential spread of a windrow fire and provide adequate access for fire response. The separation distance between windrows was increased from 4.5 m proposed in the application to 5 m for consistency with the existing controls under the licence.

Risk events					Risk rating ¹ C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Sources / activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls				
	Vectors/vermin	Attraction and harbouring of pests which may act as vectors for pathogens, potentially causing health and amenity impacts	Residences about 800 m south-east, 1,120 m north-east and 1,830 m east Recreational users and ecosystem of John Forrest National Park about 160 m south Threatened fauna	Refer to Section 4.1	C = Minor L = Possible Medium Risk	Y	Condition 9	N/A
Sale of final compost product to public	Contamination or poor quality of products	Discharge of contaminants to land by application of poor quality products	Private and commercial compost users becoming exposed to contaminants (e.g. pathogens) in poor quality products.	Refer to Section 4.1	C = Moderate L = Unlikely Medium Risk	N	Condition 9 Also regulated under conditions 21, 22, 23, 31 and 32 of the licence	Leachate from the early phases of composting may contain pathogens from FOGO waste so controls are required to prevent pasteurised materials being recontaminated by irrigation with leachate. The works approval therefore specifies that leachate from the FOGO leachate sump can only be used for irrigation of MAF 1 which is used to receive FOGO when it arrives on the premises. Irrigation water for MAF 2, MAF 3, MAF 4 and windrows without forced aeration must be sourced from the siltation/water ponds on the premises which should only contain clean stormwater and present a minimal risk of recontamination.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

4.3 Detailed risk assessment for odour emissions

4.3.1 Description of risk event

FOGO waste is a malodorous material which has a high potential to generate odour emissions in its raw state on receipt and during processing at the premises. The applicant proposes to increase the authorised rate of FOGO acceptance and extend the operating period of the interim FOGO facility at the premises. Both of these changes have the potential to increase the overall impact of odour emissions relating to FOGO receipt and processing. The applicant also proposes to implement changes in how FOGO will be managed and processed on-site which may help to mitigate odour impacts compared to the current operations.

4.3.2 Identification and general characterisation of emission

The Delegated Officer has identified the highest risk sources of odour emissions relating to the revised interim FOGO facility to be as follows:

Feedstock acceptance

FOGO waste is known to be highly malodorous on receipt at waste facilities. This is due to the putrescible nature of wastes disposed to FOGO bins (e.g. fruits and vegetables, meat, pet poo and garden organics) and the anaerobic conditions in bins and collection trucks prior to collection and during transport to the waste facility. Due to these factors, the receipt of FOGO is likely to be one of the highest risk phases for generation of odour emissions.

Early phases of composting

FOGO waste is likely to still be malodorous during the early phases of composting. If not appropriately managed by forced aeration or turning, windrows may become anaerobic which would be likely to increase the generation of offensive odours. Windrows may also become anaerobic from over-wetting from irrigation or pooling of leachate on the hardstand.

Transfers of partially processed FOGO across the premises

The applicant proposes to eliminate this source of odour emissions by relocating the later stages of FOGO processing from the green waste processing hardstand to the Stage 1 area. Under the proposed regime, the entire composting process will occur at the expanded Stage 1 area and FOGO waste will not be moved from this location until it is fully processed and transformed into the final compost product.

The Delegated Officer has identified additional, but less significant, sources of odour emissions relating to the revised interim FOGO facility to be as follows:

Later phases of composting

FOGO waste undergoing the later phases of composting presents a lower risk of generating odour emissions than raw feedstocks or early phase material. However, there is still the potential for this material to generate odour emissions, including if it becomes anaerobic through saturation or lack of aeration.

Storage of leachate

Nutrient rich leachate has the potential to generate odours, particularly when it becomes anaerobic. Leachate from the early composting phase presents the highest risk of odour generation.

Storage of final compost products

If processed appropriately, final compost products should present a minimal risk of generating odour emissions. Poor quality products that have not been adequately pasteurised, composted and matured may retain some odour generation potential.

4.3.3 Description of potential adverse impact from the emission

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. Nuisance and interference with amenity may include disturbance of normal day to day activities and recreation, and inconvenience in the enjoyment of one's surroundings.

Records of complaints about the premises (as summarised in Section 2.5) provide evidence that the amenity of sensitive receptors in the vicinity of the premises has already been adversely impacted by odour. At least one complainant suggested that odour emissions from the premises caused them to feel nauseous, move inside their home and close windows and doors.

Individual responses to odour emissions may vary depending on age, health status, sensitivity, and odour exposure patterns. Perceived odour intensity may increase or decrease based on the exposure history.

The prevailing regional wind directions are south-westerlies and westerlies in the afternoon and easterlies to north-easterlies in the morning. Due to the complex and uneven terrain present within the vicinity of the premises, the dispersal of odour emissions via wind is highly likely to be influenced by the local topography.

Based on odour complaints and the findings of OFAs, it appears that sensitive receptors to the north and east of the premises are most prone to experiencing odour impacts from the premises. The expanded Stage 1 area is much further from these sensitive receptors than the green waste processing hardstand where Stage 2 FOGO processing currently occurs. As shown in Figure 5, there are significantly more sensitive receptors within 1.5 km of the green waste processing hardstand than the expanded Stage 1 area.

4.3.4 Criteria for assessment

Amenity impacts from odour emissions are assessed against the general provisions of the EP Act, specifically whether odour emissions unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person.

4.3.5 Key findings

Key findings:

- 17) The interim FOGO facility will be a temporary FOGO processing solution with a limited duration until 30 June 2024 by which time the applicant intends to transfer FOGO processing activities to a new, permanent facility on the premises.
- 18) Based on recent odour complaints about the premises and the findings of OFAs completed at the premises from November 2020 to August 2021, odour emissions from current operations at the premises are likely to be causing adverse impacts to the amenity of nearby sensitive receptors to the north and east of the premises.
- 19) There is uncertainty about the nature and extent of odour impacts in the Parkerville area to the south of the premises, which is the location of the closest sensitive receptors to the expanded Stage 1 area. This is based on the following key considerations:
 - The OFAs did not monitor odour emissions within the Parkerville area.
 - Only a small number of odour complaints were received from residents in the Parkerville area from 2018 to 2021. Odour complaints have been more frequently received by residents to the north and east of the premises.
 - Parkerville is not down-wind of the Stage 1 area based on the regional

prevailing wind directions, however the effect of topography on the dispersal of odour plumes at the premises is not well-understood. The Parkerville residential area is across the Christmas Tree Creek valley from the Stage 1 area.

- 20) There is uncertainty about which activities at the premises are the main source of odour emissions impacting sensitive receptors. However, the findings of the OFAs are consistent with the main source(s) being located to the east of the central landfill mound rather than the Stage 1 area that is further west.
- 21) The Delegated Officer considers that the Stage 1 area is likely to be a superior location for odour generating activities than the Stage 2 area. This is due to its greater separation distance to sensitive receptors and the influence of intervening landscape features which may have a plume blocking effect. If recent odour impacts are the result of the Stage 2 FOGO processing and related transfers across the premises, relocating these activities and eliminating the need for transfers to the Stage 2 area would be expected to reduce odour impacts. However, if recent odour impacts are the result of the active tip face or fugitive biogas emissions, as speculated in the OFA reports, moving the Stage 2 FOGO operations is unlikely to reduce odour impacts.
- 22) The Delegated Officer considers that moving Stage 2 FOGO processing to an expanded Stage 1 area appears likely to either reduce or make no change to off-site impacts at nearby sensitive receptors. This will be considered in the assessment of likelihood in the risk assessment for odour emissions.
- 23) The effectiveness of the following proposed odour controls is uncertain, and this will be factored into the risk assessment for odour emissions:
 - Whether operation of MAF 1 in reverse mode can effectively drawdown and contain odour emissions from raw FOGO. This is especially uncertain while the unit is partially uncovered during FOGO receipt, as air could be preferentially drawn in from uncovered parts of the pipework.
 - Whether the existing biofilter is of an appropriate design and size to effectively treat odorous air extracted from MAF 1.
 - Whether the OdourPro Vapourgard odour defense system can effectively treat odour emissions from composting at the interim FOGO facility. The efficiency of this system was not demonstrated within the application.

4.3.6 Consequence

If odour emissions are generated from the premises and transported to receptors, the Delegated Officer has determined that the amenity impacts could be high level for nearby sensitive receptors. Therefore, the Delegated Officer considers the consequence of impact due to exposure to odour emissions to be **major**.

4.3.7 Likelihood

Following implementation of the revised interim FOGO facility, the Delegated Officer has determined that odour impacts to sensitive receptors could occur at some time. Therefore, the Delegated Officer considers the overall likelihood of odour impacts occurring to be **possible**.

4.3.8 Overall risk rating

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix and determined that the overall rating for the risk of odour emissions

is **high**.

4.3.9 Justification for additional regulatory controls

The Delegated Officer considers that the changes to the FOGO processing method proposed in this application are likely to result in overall reduction in odour impacts to sensitive receptors from operation of the interim FOGO facility. The relocation of the later phases of composting further from sensitive receptors and elimination of the need to transfer FOGO across the premises while it is still malodorous is the key control proposed by the applicant to mitigate odour impacts.

Although the effectiveness of some of the odour controls proposed by the applicant are uncertain, the combination of relocating Stage 2 activities and implementation of the additional controls is considered appropriate to mitigate potential odour impacts from the interim FOGO facility. The interim FOGO facility will only operate until 30 June 2024.

The applicant proposed to construct the new hardstand with a fall of 1.3%. The Delegated Officer considers that the new hardstand should have a minimal fall of at least 2% towards the leachate drain to ensure that leachate does not pool on the hardstand surface. This control is required to achieve effective leachate drainage and prevent odour emissions from stagnant pools of leachate or anaerobic conditions caused by saturation of FOGO. This control is consistent with past requirements for construction of the existing Stage 1 hardstand.

5. Consultation

Table 6 provides a summary of the consultation undertaken by the department.

Table 6: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website 23/11/2021	None received	N/A
Local Government Authority advised of proposal on 29/11/2021	The City of Swan replied on 7/12/2021 confirming that they raised no objection to the proposal.	N/A
Nine other direct interest stakeholders advised of proposal on 29/11/2021	One direct interest stakeholder responded on 7/12/2021, refer to Appendix 1 for a summary of their comments.	Refer to Appendix 1
Applicant was provided with draft documents on 28/02/2022	Refer to Appendix 2	Refer to Appendix 2

6. Conclusion

Based on the assessment in this decision report, the Delegated Officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

A six month (180 days) time limited operations (TLO) phase is authorised in the works approval. This will allow the applicant to use the new hardstand and associated FOGO processing

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equipment once the Environmental Compliance Report has been submitted, and while they apply for a licence amendment to authorise the ongoing operation of the revised interim FOGO facility under the licence.

6.1 Regulatory requirements of the licence and works approval

The Delegated Officer notes that activities at the premises will continue to be regulated by the licence while the works and TLO phase are carried out under the authorisation of W6613/2021/1. Existing conditions in the licence stipulate controls for FOGO waste processing (condition 5), operation of FOGO-related infrastructure/equipment (condition 4), FOGO leachate management (condition 6) and composting product quality for products generated using FOGO (conditions 21, 22, 23, 31 and 32).

As the applicant has proposed changes to how FOGO processing will occur on the premises, some of the TLO conditions in W6613/2021/1 are inconsistent with the FOGO processing conditions in L8889/2015/1. During the authorised TLO phase (as per conditions 5 and 6 of the works approval) the applicant should undertake FOGO processing in accordance with the conditions of the works approval, rather than the requirements set out in condition 5 in the licence.

During the TLO phase, the applicant should operate the new hardstand, new leachate drain, mobile aerated floors, odour defense system, compost trommel screens and automatic leachate pump in accordance with the conditions of the works approval.

The Delegated Officer has determined to not specify conditions relating to the following matters within the TLO conditions in the works approval because they are adequately regulated by the conditions of the licence:

- Operation of the biofilter, L9 landfill leachate pond, existing Stage 1 FOGO hardstand and Stage 1 FOGO leachate sump which are regulated by condition 4 of the licence.
- Compost product quality and monitoring which are regulated by conditions 21, 22, 23, 31 and 32 of the licence.
- Management of leachate from the existing Stage 1 FOGO hardstand which is regulated by condition 6 of the licence.
- Waste input and output monitoring which are regulated by condition 24 of the licence.

6.2 Odour field assessments

While the works approval does not include a requirement for the applicant to undertake further OFAs during construction or the TLO phase, the Delegated Officer recommends that the applicant continue to undertake OFAs at the premises for the following reasons:

- There remains considerable uncertainty about the cause of odour emissions currently impacting nearby sensitive receptors. Further OFAs in combination with complaints analysis will improve the applicant's understanding of odour sources at their premises and help them determine how effective the operational and infrastructure changes proposed in this application are in reducing current odour impacts.
- An improved understanding of odour sources at the premises will help the applicant to remedy any ongoing odour impacts and plan for future development of the premises in a manner which minimises potential odour impacts to sensitive receptors.
- The information gained from further OFAs may assist the applicant in fulfilling their obligations under MS 976, as summarised in Section 3.1 of this report.

6.3 Achieving pasteurisation

Achieving pasteurisation of the entire composting mass is an important control to treat biological contaminants commonly associated with FOGO, like pathogens and plant propagules, and mitigate the potential for pathogen regrowth. Condition 21 of the licence requires that composting products produced from FOGO waste are processed to achieve pasteurisation as defined in AS 4454.

As outlined in Appendix 2, the applicant's proposed FOGO processing method will not meet the standard pasteurisation criteria for higher risk materials set out in Section 3.2.1(b) of AS 4454. The applicant will therefore need to demonstrate that pasteurisation is achieved by following the alternative process criteria in Section 3.2.1(c) of AS 4454. Following these alternative process criteria will require the applicant to have composting products analysed for *Escherichia coli* and viable plant propagules, in addition to other analysis specified under condition 32 of the licence.

Following completion of the proposed works and once the applicant has submitted an application to amend their licence, the department will consider amending the composting product quality and monitoring conditions under the licence to reflect the additional analysis that is required to demonstrate that FOGO-derived products have been appropriately pasteurised.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. DWER 2020, *Guideline: Odour emissions*, Perth, Western Australia.
5. Natural Resource Management Ministerial Council (NRMMC) 2004, *Guidelines for Sewage Systems Biosolids Management*, Canberra, Australia.
6. Standards Australia 2001, *Australian/New Zealand Standard AS/NZS 4323.3 Stationary source emissions: Determination of odour concentration by dynamic olfactometry*, Sydney, Australia.
7. Standards Australia 2012, *Australian Standard AS 4454 Composts, soil conditioners and mulches*, Sydney, Australia.
8. US EPA 2003, *Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge*, Cincinnati USA.

Appendix 1: Summary of stakeholder comments during public comment period

Stakeholder	Summary of comments	Department's response
Gidgegannup resident	<p>Summary of comments received on 7/12/2021:</p> <ul style="list-style-type: none"> The stakeholder has lived at their current address in Gidgegannup for over 18 years and in that time has had very few problems with the Red Hill Waste Management Facility. The stakeholder would like to express concern about the extension of the FOGO hardstand because this will bring material that may cause potential odour and pest problems closer to their property and affect their lifestyle. The stakeholder feels that it is unlikely the EMRC will take any problems seriously if they advise there is a problem based on their lack of response to a previous complaint. The stakeholder had a fly problem during winter 2021 and contacted EMRC to advise them of the problem. The stakeholder was not satisfied with EMRC's response and felt they did not take the issue seriously. The stakeholder suggested that it was not coincidental that properties around the Red Hill Waste Management Facility were experiencing a fly problem at the time that EMRC were receiving and composting FOGO. The stakeholder suggested that other residents of Gidgegannup, further from the premises, were not experiencing a fly problem at the time. The stakeholder considers that if the expansion is to go ahead, EMRC need to take more responsibility for pest problems including flies and must undertake to take complaints seriously and be willing to provide solutions to the problems. 	<p>The department has insufficient information to assess whether the increased fly activity observed by this stakeholder can be attributed to activities on the premises, and in particular the receipt and processing of FOGO. While decomposing organic material could increase fly activity by serving as a breeding site for fly larvae, there are a range of other potential factors such as weather that could also have contributed to the observed increase in fly activity.</p> <p>The Delegated Officer notes that the applicant recorded at least three complaints from three separate complainants that referenced flies during the 2021 annual period. The applicant's complaints registers from previous years (2018-2020) did not record any complaints about flies.</p> <p>The works proposed in this application will result in the applicant moving FOGO processing activities further away from Gidgegannup residents to the east and north of the premises. This change should help to reduce the potential for residents in these areas to be impacted by odours or increased fly activity associated with FOGO wastes. The applicant also indicated in their comments on the draft works approval (Appendix 2) that they use baiting stations to help control fly activity around the FOGO area.</p> <p>Conditions in the works approval and licence (L8889/2015/1) require the applicant to record complaints and any actions taken to investigate or respond to the complaints. Records of these complaints are required to be reported to the department within the time limited operations Compliance Report and within each Annual Environmental Report required under the licence. Members of the public can also submit complaints about the premises directly to the department's Pollution Watch hotline (1300 784 782 and pollutionwatch@dwer.wa.gov.au).</p> <p>The Delegated Officer considers that relocation of the entire FOGO composting process to the Stage 1 area is an appropriate control to mitigate the potential for sensitive receptors to be impacted by odours and flies associated with FOGO processing.</p> <p>If the applicant observes significant fly activity in FOGO windrows in the future or continues to receive complaints from residents about increased fly activity around the premises, they should implement additional control measures to reduce fly infestations in FOGO windrows. The department will continue to monitor complaints about fly activity near the premises and may consider imposing additional regulatory controls in the licence to mitigate these impacts in the future if required.</p>

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response
1, Table 1 – Design and construction requirements	Cross referencing error	Error corrected to refer to Figure 1
2, Table 2 – CQA requirements	<i>In response to the department's request for the applicant to confirm whether welding of HDPE geomembrane panels will be required as part of the drain construction, the applicant responded:</i> No welding will be required.	As no welding of the HDPE geomembrane panels in the drain are required no additional CQA requirements are needed in this table.
2, Table 2 – CQA requirements	<i>In response to the department's request for the applicant to confirm whether any seaming or other CQA measures are proposed for the cushion geotextile installation, the applicant responded:</i> No seaming of geotextile will be required.	As no seaming of the cushion geotextile or other CQA measures are proposed, no CQA requirements for the cushion geotextile are needed in this table.
8, Table 4 – Infrastructure and equipment requirements during time limited operations	This table should refer to two compost trommel screens rather than one.	This condition has been edited to provide for two compost trommel screens to be operated at the interim FOGO facility. This change is not considered to significantly increase the risk of emissions from FOGO processing. Condition 1 of the works approval has also been edited to clarify that two trommel screens are authorised to be installed at the interim FOGO facility during the construction phase.
9, Table 5 – Waste processing	Remove the requirement for windrows to be covered in at least 300 mm of composting products. The applicant instead proposes to turn the windrows to ensure the whole composting mass achieves pasteurisation.	The purpose of the 300 mm covering layer of composting products over the windrows on MAFs 2, 3 and 4 was to insulate the windrows and ensure that the whole composting mass could be pasteurised without the turning regime specified in the pasteurisation criteria for higher risk materials in AS 4454. This approach is consistent with guidance on effective ways to achieve pasteurisation of windrows on aerated static piles from the US EPA (2003).
N/A – Section 2.4.1 of the decision report	Please note regarding the use of the synthetic covers or covering the FOGO processing piles in 300mm of final compost material on MAFs 2, 3 & 4 is not operationally practical. Installing covers over the piles 3-5m high is a significant OSH issue. Similarly the addition of a 300mm layer	The applicant described a processing method that achieves five turns of the composting mass over a period of about four months. However, most of these turning stages cannot be counted towards achieving the five turns required during

Condition	Summary of applicant's comment	Department's response
	<p>of final compost product over the entire surface area is also considered impractical due to the volume of material required to be used for this task and also the additional material will be required to be rescreened which will be mixed through again during screening.</p> <p>As such, please add 'at around the 3-4 week period the FOGO material stored on MAFs 2, 3 & 4 will be turned additionally once to facilitate pasteurisation and minimise fly breeding. This material only be turned when it is wet down sufficiently and the prevailing wind is at its minimum. It should also be noted that fly breeding is also controlled through baiting stations located around the FOGO area'.</p> <p>Please also add 'significant odour control equipment is now in place. These units operate 24 hours a day 7 days per week and include 3 small solar powered odour eliminating units were installed and 4th larger trailer mounted unit has been recently purchase in Jan 2022'.</p>	<p>pasteurisation (Section 3.1.2(b) of AS 4454) because they will occur outside the pasteurisation phase, as outlined below:</p> <ul style="list-style-type: none"> • Turn 1 will occur before the controlled pasteurisation phase. FOGO is not held on MAF 1 for a minimum duration but is transferred to MAFs 2, 3 or 4 as soon as MAF 1 is full. This means that FOGO may be stored on MAF 1 for less than one day so there is no assurance that the material on MAF 1 has achieved and been maintained at 55°C or higher for three days before turn 1, as is the intent of Section 3.1.2(b) of AS 4454. • Turns 4 and 5 will occur after at least 14 weeks of aerobic composting by which stage biological activity is likely to have slowed and the pasteurisation phase should be complete. As turn 3 will occur after at least six weeks of aerobic composting it could also potentially be after the completion of the active pasteurisation phase. <p>The applicant's proposed turning regime is likely to result in windrows of FOGO being turned only once or twice during the pasteurisation phase so it will not meet the standard pasteurisation criteria for higher risk materials in Section 3.1.2(b) of AS 4454.</p>
<p>N/A – Section 2.4.1 of the decision report (Key finding 4))</p>	<p><i>In response to the department's request for the applicant to confirm if they intend to turn FOGO windrows stored on MAF 2, MAF 3 and MAF 4 or if these windrows will remain undisturbed for the six week period that FOGO is stored on one of these MAFs, the applicant responded:</i></p> <p>The material will be turned 5 times during the entire FOGO process.</p> <ol style="list-style-type: none"> 1) Removed from MAF 1 and placed on MAFs 2, 3 or 4. 2) Turned once either on its own MAF or between MAFs 2, 3 or 4. 3) Screened through first trommel screen and windrowed. 4) Screened through the final trommel screen and windrowed. 5) The final compost product is relocated to Stage 2 for storage. <p>It should be noted that due to the presence of the MAFs, pasteurisation of the FOGO material would be assisted by the</p>	<p>Section 3.1.2(c) of AS 4454 allows for an alternative process to be used to achieve pasteurisation where it can guarantee the same level of pathogen reduction specified for Grade P1 within <i>Guidelines for Sewage Systems Biosolids Management</i> (NRMCC 2004) and can be confirmed by testing of pathogens and viable plant propagules. The Grade P1 pathogen criteria set out in the NRMCC (2004) guidelines are:</p> <ul style="list-style-type: none"> • <1 Salmonella per 50 g (undetected); and • <100 <i>E. coli</i> (or Thermotolerant Coliforms) per gram. <p>The department reviewed the pathogen analytical results from 11 samples of FOGO-derived products generated at the premises and sampled between October 2020 and March 2022. The results are summarised as follows:</p> <ul style="list-style-type: none"> • All samples reported non-detections of Salmonella. • Two samples collected in October 2020 and January 2021 reported Thermotolerant Coliforms concentrations of 200 (no units were reported in the laboratory certificate but it is assumed that these detected concentrations were reported as MPN/g). • The eight most recent samples reported non-detections or very low concentrations of Thermotolerant Coliforms and <i>E. coli</i> that were less than 100 MPN/g. <p>The applicant did not report the results of any testing of viable plant propagules.</p>

Condition	Summary of applicant's comment	Department's response
	<p>positive pressure and aeration from the variable speed blowers, thus reducing the requirement for turning the material five times. Similarly the significant reduction in moisture content reduces the probability of organism regrowth, as well as the fact that the product would be blended for wholesale and not be bagged for the domestic market. All lab analysis undertaken both previously in 2021 and 2022 has complied with associated sampling analysis levels for pasteurisation in licence condition 23, Table 7 Maximum pathogen indicator concentrations for Salmonella being 0 in 50g and Faecal coliforms 1000 MPN/g. These results are attached for your records.</p>	<p>The applicant indicated that the 11 analysed samples came from batches of FOGO-derived products that had been generated using a similar method proposed in this application, with the exception that they were not subjected to as many turns as are now being proposed and the batches had been stockpiled for about four weeks after processing before being sampled.</p> <p>The applicant's past product quality results demonstrate that the proposed composting method may be able to achieve pasteurisation in accordance with the alternative criteria in Section 3.1.2(c) of AS 4454, without the addition of an insulating cover layer during pasteurisation. The Delegated Officer has therefore determined to revise the works approval conditions as follows:</p> <ul style="list-style-type: none"> • remove the requirement for an insulating covering layer to be used over the windrows on MAFs 2, 3 and 4 • remove the requirement that windrows on MAFs 2, 3 and 4 are managed to maintain a core temperature of 55°C or higher for at least three days • require that windrows on MAFs 2, 3 and 4 are turned at least once between 14 and 28 days after being moved to this location <p>The product quality monitoring and specifications in the licence provide additional controls to ensure that FOGO-derived products are appropriately treated to achieve pasteurisation. As discussed in Section 6.3 of this report, the applicant will need to conduct additional composting product analysis in the future to demonstrate compliance with Section 3.1.2(c) of AS 4454 and condition 21 of the licence.</p> <p>If the applicant identifies that future FOGO-derived products do not comply with requirements for pathogens and plant propagules in Section 3.1.2(c) of AS 4454, they will need to implement additional measures to remediate these batches and improve the effectiveness of the pasteurisation process. The department will continue to monitor future FOGO-derived product quality results from the premises and may consider imposing additional regulatory controls in the licence if required.</p>
9, Table 5 – Waste processing	Cross referencing error	Error corrected to refer to Figure 1
N/A – Section 2.4.1 of the decision report	Section 2.4.1 states that material will be received onto MAF 1 for an estimated two weeks but this should be changed to one week.	This information is inconsistent with the process description provided to the department during the works approval assessment. The duration that FOGO material is stored on MAF 1 is not critical to the effectiveness of the biological composting process or product quality outcomes. Therefore, this change has been made in the decision report and no changes to the time limited operations

Condition	Summary of applicant's comment	Department's response
		conditions under the works approval are required.
N/A – Figure 2 of the decision report	<p>The applicant provided a replacement Figure 2 FOGO processing flowchart that has been amended as follows:</p> <ul style="list-style-type: none"> The size of MAF 1 is shown as only one third of the size of the other MAF systems. The reference to oversize and contaminated material being used on tip face 'as daily cover to landfill' is removed. 	Figure 2 in the decision report has been updated to show the revised flowchart. Section 2.4.1 of the decision report has been edited to remove the reference to the applicant using residual physical contaminants screened out of FOGO for daily cover material on the landfill.
N/A – Figure 3 of the decision report	The applicant provided a replacement Figure 3 that shows the revised layout of infrastructure in the expanded Stage 1 area.	Figure 3 in the decision report has been updated to show the revised layout.
N/A – Section 2.4.3 of the decision report	<p><i>In response to the department's request for the applicant to confirm what the estimated rate of air extraction from MAF 1 will be and whether the existing biofilter is of an adequate size to treat this volume, the applicant responded:</i></p> <p>This has not been changed from the existing system and the flow chart (Figure 2) has been corrected. MAF 1 is only 1 unit being 4 pipes (one third the size of a MAF).</p>	<p>The applicant has clarified that only one MAF unit (one third of a MAF system) will be extracting air from MAF 1 to the biofilter at one time. This means that the rate of airflow into the biofilter should be similar to the rate used to inform the design and installation of the biofilter in 2020 (600 m³/hr). Based on this, the Delegated Officer considers that the existing biofilter is of an appropriate size to treat odorous air from MAF 1.</p> <p>Condition 1 of the works approval has been revised to specify that MAF 1 comprises one unit and MAFs 2, 3 and 4 comprise three units.</p>
N/A – Section 2.4.3 of the decision report	<p><i>In response to the department's request for the applicant to confirm whether the existing trommel screen at the Stage 2 area will be relocated to the Stage 1 area or that a second trommel screen will be brought to the premises, the applicant responded:</i></p> <p>Yes trommel screen will be relocated to Stage 1 area.</p>	Based on this response and the applicant's other comments, the Delegated Officer understands that two trommel screens will be used during FOGO processing and both will be located at the interim FOGO facility (Stage 1 area). The decision report has been revised accordingly but this is not considered to affect the outcome of the risk assessment.
N/A – Section 2.4.3 of the decision report	<p><i>In response to the department's request for the applicant to confirm whether references to a shredder in supporting documents were a mistake and should have referred to a trommel screen, the applicant responded:</i></p> <p>Yes this should be referred to as a trommel screen, not a shredder. 2 x trommel screens will be used in Stage 1 area. See updated Figure 3 attached.</p>	The decision report has been revised accordingly.

Appendix 3: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)	
Application type	
Works approval	<input checked="" type="checkbox"/>
Date application received	29 September 2021
Applicant and premises details	
Applicant name/s (full legal name/s)	Eastern Metropolitan Regional Council
Premises name	Red Hill Waste Management Facility
Premises location	1094 Toodyay Road, Red Hill WA 6056
Local Government Authority	City of Swan
Application documents	
HPCM file reference number:	DER2021/000570
Key application documents (additional to application form):	<p>Attachment 3B – FOGO Stage 1 Processing Area Increase – Specification – BoQ August 2021</p> <p>Attachment 3C – FOGO expansion clearing plan</p> <p>Attachment 3D – Flora and Fauna Survey Report</p> <p>Attachment 4 – RH004-07 Lot 11 FOGO expansion rev E</p> <p>Attachment 6A – Red Hill FOGO Calpuff OIA</p> <p>Attachment 7 – ESR</p> <p>Attachment 8A – EAQ20025 EMRC (Red Hill) Odour Field Assessment – Executive Summary</p> <p>Calculation of works approval fee</p>
Scope of application/assessment	
Summary of proposed activities or changes to existing operations.	<p>Works approval application to authorise the extension of the FOGO Stage 1 area hardstand and the relocation of FOGO processing activities.</p> <p>The hardstand shall consist of a subgrade of gravels, sandy gravels or gravelly clays and a 200mm thick layer of lateritic gravel, with all materials obtained from site. A stone pitched drain will also be constructed to allow liquid to drain directly into the existing leachate pond.</p> <p>An increase in throughput for accepted FOGO waste permitted at the premises under the site's existing Licence (L8889/2015/1) is also being sought under time limited operational conditions of the works approval.</p>

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Assessed production or design capacity	Proposed changes to the production or design capacity (authorised through works approval)
Category 67A: compost manufacturing and soil blending	50,000 tonnes per annual period currently authorised on the site's active Licence L8889/2015/1	Increase of FOGO acceptance from 10,000 tpa to 15,500 tpa. But this will be incorporated without any change to the total design capacity of Cat 67A (being 50,000 tpa)

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Part V referral to the EPA Managed under Part V <input checked="" type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Ministerial statement No: MS274, MS462, MS976, MS1092, MS1122 and MS1140
Has the proposal been referred and/or assessed under the EPBC Act?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Reference No:
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Certificate of title <input checked="" type="checkbox"/> General lease <input type="checkbox"/> Expiry: Mining lease / tenement <input type="checkbox"/> Expiry: Other evidence <input type="checkbox"/> Expiry:
Has the applicant obtained all relevant planning approvals?	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approval: Expiry date: Planning approval not required – exemption for public works
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	CPS No: N/A Clearing will be carried out in accordance with an exemption under the <i>Environmental Protection (Clearing) Regulations 2004</i> – clearing to construct a building or structure
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Application reference No: N/A Licence/permit No: N/A

Works Approval: W6613/2021/1

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SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)

<p>Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Application reference No: Licence/permit No: Licence / permit not required.</p>
<p>Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No point source discharges but potential for fugitive discharges.</p>	<p>Name: Swan River System Type: Proclaimed Surface Water Area Has Regulatory Services (Water) been consulted? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/> Regional office: Swan Avon</p>
<p>Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	<p>Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input checked="" type="checkbox"/></p>
<p>Is the Premises subject to any other Acts or subsidiary regulations (e.g. <i>Dangerous Goods Safety Act 2004</i>, <i>Environmental Protection (Controlled Waste) Regulations 2004</i>, <i>State Agreement Act xxxx</i>)</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises within an Environmental Protection Policy (EPP) Area?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises subject to any EPP requirements?</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>	
<p>Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i>?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>	<p>Classification: Contaminated - remediation required Date of classification: Oct 27, 2015</p>