

Decision Report

Application for Works Approval

Part V Division 3 of the Environmental Protection Act 1986

Works Approval Number	W6519/2021/1	
Applicant	City of Greater Geraldton	
File Number	DER2021/000029	
Premises	Meru Waste Disposal Facility Landfill Road, NARNGULU WA 6532	
	Legal description Lot 203 on Deposited Plan 403161; Lot 204 on Deposited Plan 403161; and Lot 2268 on Deposited Plan 250829 As defined by the Premises map attached to the issued works approval	
Date of Report	23/07/2021	
Decision	Works approval granted	

MANAGER WASTE INDUSTRIES REGULATORY SERVICES An officer delegated by the CEO under section 20 of the EP Act

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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 time limited operation of the Premises. As a result of this assessment, Works Approval W6519/2021/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Decision Report, the department has considered and given due regard to its Regulatory Framework and relevant policy documents which are available at https://www.der.wa.gov.au.

2.2 Application summary and overview of Premises

On 12 January 2021, the City of Greater Geraldton (the applicant) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act). The proposal is in relation to the Meru Waste Disposal Facility located at Landfill Road, NARNGULU WA 6532 which is currently licenced under L9127/2018/1.

The application is to undertake construction works at the Premises relating to:

- the expansion of a FOGO composting pad to increase throughput to 1,750 tonnes per annum.
- the construction of a Community Waste Transfer Station consisting of a Recycling Drop off Area, Multi-Tier Drop off Facility, Mulch Collection Area and Hazardous Household Waste Shed.

The Premises relates to the categories and assessed production/design capacities under Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations) which are defined in Works Approval W6519/2021/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guidance Statement: Risk Assessments* (DER 2017) are outlined in Works Approval W6519/2021/1.

2.2.1 Composting extension

Based on the composting trial previously conducted under W6309/2019/1, the applicant proposes to increase the number of households participating in the FOGO trial to 3,000. To fulfil this increased trial, the applicant wishes to expand the existing pad infrastructure to accept and process the increased volume of materials. The extension will provide an additional 676 m² for the acceptance, storage and processing of approximately 1,500 tonnes per annum (tpa) of FOGO and green waste.

The extension will be constructed in accordance with the specifications listed within Figure 1, which duplicate the specifications of the existing composting pad constructed under W6309/2019/1.

Figure ²	1. Co	mpos	tina	pad	specifications
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Subgrade	 Subbase shall be placed in layers not exceeding 250mm A minimum standard compaction during placement of 95% using a nuclear densometer to AS 1289 5.8.1 Californian Bearing Ratio exceeding 7% Penetration Index less than 15 Minimum dry density ratio of 95% relative to Standard compaction using AS 1289 5.8.1 and AS 1289 5.1.1 to a depth of 150 mm below the finished surface A moisture variation of -3.0% to +2.0% of the Standard Optimum Moisture Content (SOMC) AS 1289 5.4.1 Subgrade is to be proof rolled using a smooth drum roller of 12 tonne capacity or greater using a minimum of six (6) passes over the entire prepared surface Field density testing conducted in accordance with AS 3798
Hardstand	 Constructed in accordance with the Drawings provided in APPENDIX B Manufactured using type N40 MPa concrete, 20 mm aggregate, 80 mm slump concrete reinforced with one layer of SL92 mesh with minimum 50 mm of cover Slab to be 150 mm in thickness (same as existing slab) Slab to have 1:50 and 1:75 slopes

Note: Figure supplied as part of application

2.2.2 Community Waste Transfer Station

The applicant also proposes to develop a new Community Waste Transfer Station (Transfer Station), comprising a Recycling Drop off Area, Multi-Tier Drop off Facility, Mulch Collection Area and Hazardous Household Waste (HHW) Shed.

The waste types and estimated annual volumes and number of individual items to be accepted at the Transfer Station are shown in Figure 2.

Waste Type	Estimated Annual Volume (tonnes)
HHW	2
E-waste	200
White goods and scrap metal	2,500
C&D	65
Green waste	4,000
General waste	6,000
Total tonnes	12,000
Individual items	Estimated number of items
Mattresses	1,800
Tyres	2,400

Figure 2. Estimated waste volumes at Transfer Station

Note: Figure supplied as part of application

Hazardous Household Waste Shed

The HHW shed will be fully enclosed, ventilated and self-bunded, providing for the acceptance and storage of hazardous materials. The facility has been designed in accordance with the DER Guidelines for the design and operation of facilities for the acceptance and storage of Hazardous Household Waste, 2013.

The building occupies an area of 187 m² and includes four areas separated by prefabricated 180 mm thick concrete walls and a metal roof. Each area has lockable access gates to ensure the separation of incompatible HHWs for the purpose of safety and fire management. Each compartment has ventilation via an aluminium louvre, with the shed also including a drainage sump to collect any leaks or spills areas.

The proposed HHW types to be accepted will remain the same as those currently accepted which include the following:

Acids and alkalis

• Batteries (household)

• Fire extinguishers –

Engine coolants and

non halon (red) only

Unknown chemicals (must be in sealed. chemical resistant

Aerosols

glycols

•

Flares •

• Flammables

- Fluorescent lamps and tubes
- Gas cylinders (small • household)
- Household chemicals (e.g. cleaners)

- Paint
- Pesticides/herbicides
- Poisons/toxics
- Pool chemicals
- Smoke detectors

Recycling Drop off Area

mattresses

container)

The Recycling Drop off Area consists of concrete sealed surfaces, sealed asphalt, containment systems and surface water management. Member of the public can pull over and park in the bays alongside the Recycling Drop off Area to drop off the following materials:

e-waste tyres

•

white goods

•

•

C&D waste

gas cylinders

- bulky electrical items
- light globes
- car batteries •

A range of containment systems will be provided for the appropriate acceptance and temporary storage of these materials. The first area consists of a 11 m x 10 m concrete hardstand area and cages for the acceptance of e-waste. Once the cages are full, a contractor will transport them offsite for recycling.

Light globes/bulbs will be placed in the 2 m³ bin for recycling.

A self-bunded containment system is provided for the acceptance of batteries. The container will consist of an acid proof and ultraviolet (UV) resistant low density polyethylene portable container, stored on the sealed asphalt surface.

A large cage will be provided for the collection of empty gas cylinders. The cylinders will be removed from the premises by a contractor for refilling or recycling, as required.

A 20 m x 12 m sealed asphalt area will be provided for the acceptance of bulk electrical items and white goods. When sufficient quantities of these materials have accrued, they will be removed from the premises for recycling.

Tyres will be placed in 15 m³ or 30 m³ hook lift bins on a 22 m x 10 m concrete hardstand. Once

the bins are full, tyres will be taken to the existing tyre storage area within the premises and stored in accordance with Licence L9127/2018/1.

Mattresses will be stockpiled in the mattress collection area prior to removal and recycling offsite.

Inert or C&D waste from the community will be stockpiled on a 20 m x 12 m hardstand area. Once sufficient volumes of C&D are amassed the material will be removed to the existing inert stockpile area within the premises.

Multi-Tier Drop Off Facility

The Multi-Tier Drop off Facility will allow the community to drop off materials including green waste, scrap metal and general mixed waste. The facility will consist of an undercover saw tooth configuration to allow the community to back cars and trailers into designated bays to manually drop off materials.

The facility has been designed to cater for ten 30 m³ skip bins, which will be clearly signed to ensure materials are dropped off in the correct receptacles. A 1,100 mm safety wall and wheel stop will be installed to ensure the safety of the customer and vehicle when reversing and depositing materials into the hook lift bins.

Once the bins are full, the materials will then be collected from the service lane at the rear and lower floor. The green waste and scrap metal will be taken to the designate stockpile areas within the premises and the refuse transported to the landfill for disposal.

Mulch Collection Area

A dedicated Mulch Collection Area has been included in the proposal to allow for the stockpiling of processed green waste. The area is 37 m x 20 m, unsealed and has a 1% slope towards a stormwater soakaway. The mulch will be available for free pick up by the community upon exiting the facility.

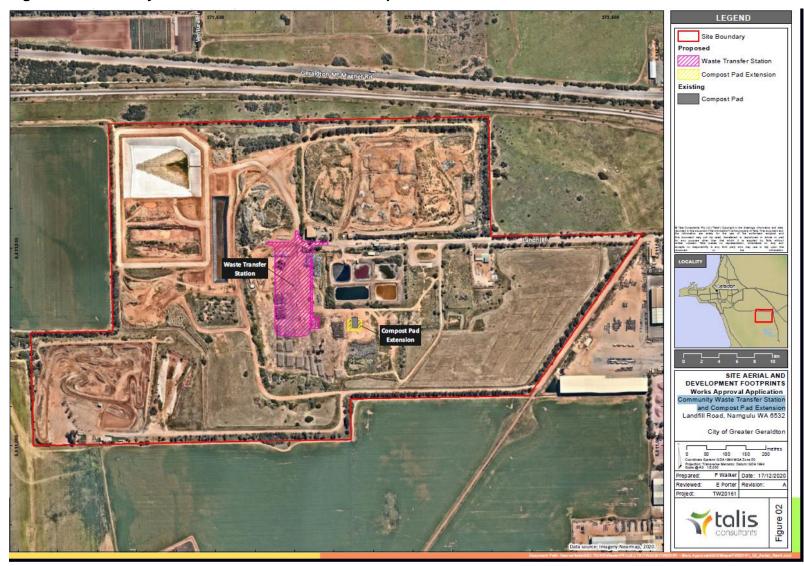


Figure 3. Community Waste Transfer Station and Compost Pad Extension locations

Note: Figure supplied as part of application

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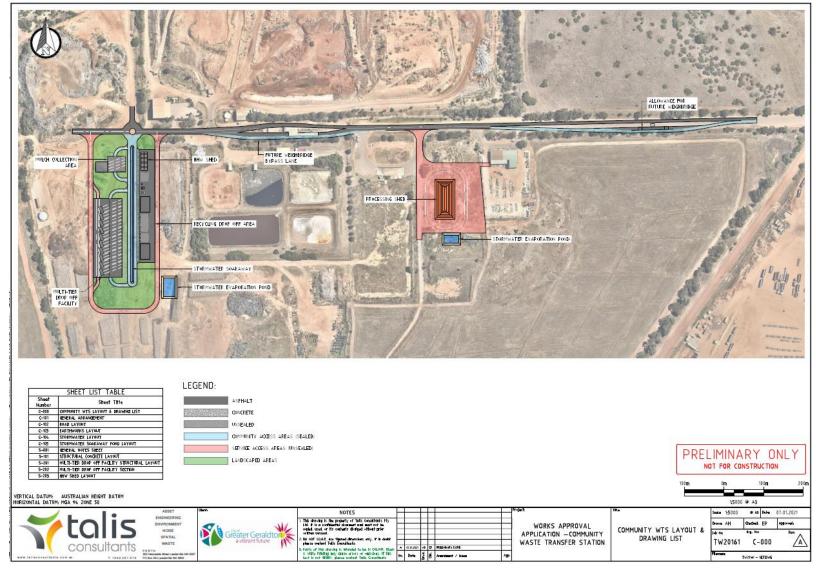
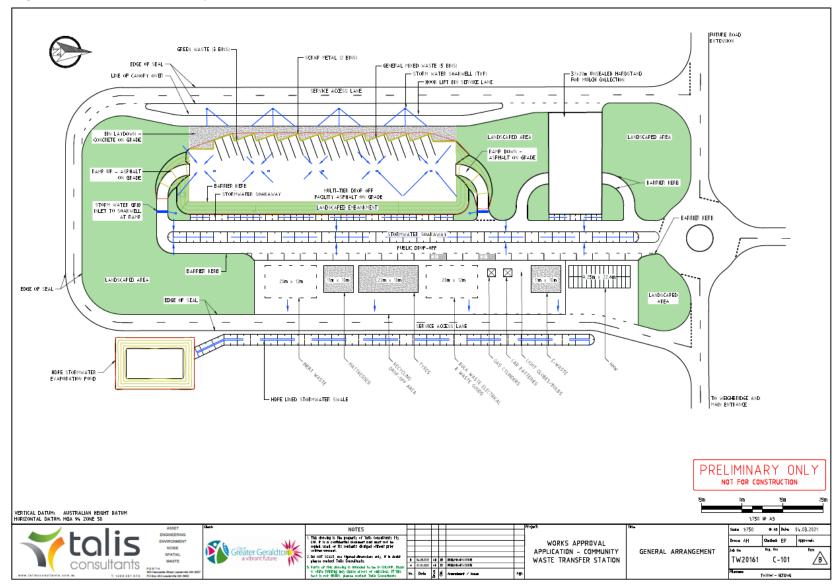


Figure 4. Community Waste Transfer Station location

Note: Figure supplied as part of application

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2.3 Planning Approval

The Prescribed Premises is zoned 'Public Purpose' under the City's Local Planning Scheme No. 1 (LPS1). The LPS1 also includes a buffer around the Meru Waste Disposal site, which is defined as 'Special Control Area 4 – Meru Waste Disposal Facility'.

The purpose, objectives and additional provisions with regard to SCA 4 have been outlined within the LPS1 and state that *"in considering any application the local government shall have regard to the need to protect the facility from encroachment..."*

In 2010, the Western Australian Planning Commission (WAPC) released the 'Narngulu Industrial Area Strategic Land Use Directions', which provided planning directions for government agencies, the City and landowners. The Narngulu Industrial Estate buffer, in which the Site is located, was established to prevent sensitive and incompatible land uses encroaching on industry.

The WAPC's 'Narngulu Industrial Area Strategic Land Use Directions', provides the following in relation to the buffer surrounding the Meru Community Waste Transfer Station: "*The Narngulu waste disposal site buffer is reflected as a special control area in the Local Planning Scheme No. 5. The Schemes' provisions prohibit residential land uses and other sensitive land uses in the waste disposal site buffer.*"

DWER notes that the Environmental Assessment Guidelines 'Separation Distances between Industrial and Sensitive Land Uses' August 2015 is currently in draft format and therefore the proposed separation distance of 1,000 m has not been formally endorsed. Given this, the document 'Separation Distances between Industrial and Sensitive Land Uses' published in June 2005 is still applicable and has been used by the Applicant to determine separation distances.

3. 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 *Guidance Statement: Risk Assessments* (DER 2017).

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.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and time limited operation which have been considered in this Decision Report are detailed in Table 1. Table 1 also details the proposed control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Emission	Sources	Potential pathways	Proposed controls
Construction			
Noise	Ground works, truck movements, installation and placement of equipment and infrastructure	Air/windborne pathway	Environmental Protection (Noise) Regulations 1997
Dust	Ground works, truck movements, installation and placement of equipment and infrastructure	Air/windborne pathway	 Materials excavated as part of the earthworks activities will be stockpiled within specific locations identified as causing minimum dust emission at the site boundary. The surface of the hardstand will be sealed. Unsealed roads, exposed areas and earthworks will be watered down regularly, or as required, to minimise windblown dust migration. All site traffic will, unless authorised, adhere to the site speed limit of 10 km/hr to minimize dust generated by vehicle movements.
Unforeseen hydrocarbon spill	Ground works, truck movements, installation and placement of equipment and infrastructure	Direct discharge to ground	- Environmental Protection (Unauthorised Discharges) Regulations 2004.
Operation - T	ransfer station	1	
Odour	Waste acceptance, storage and processing	Air/windborne pathway	 General mixed waste accepted at the Multi-Tier Drop Off Facility will disposed to the Class III landfill regularly. Green waste will be removed on a regular basis and taken to the green waste processing area. Stockpiled mulch will be removed regularly by customers. A complaints register will be maintained.
Dust	Waste acceptance, storage and processing	Air/windborne pathway	 The Community WTS will contain hardstand surfaces and sealed access roads. Monitoring of the metrological conditions on site and operations will cease during periods of unsuitable weather conditions. Vehicles will be restricted to a maximum speed of 10km/hr. All waste loads are to be covered during transport. Dust reducing workplace procedures will be adopted such as slow unloading of materials from the lowest height possible.
Noise	Waste acceptance, storage and processing	Air/windborne pathway	 All trucks and mobile equipment are fitted with broadband noise reversing alarms. Waste acceptance and the operation of equipment and machinery will be restricted to operational hours only.

Table 1: Proposed applicant controls

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Emission	Sources	Potential pathways	Proposed controls
	Truck movements		- Vehicles will be restricted to a maximum speed of 10km per hour (km/hr) unless otherwise signed.
			- Noise reducing workplace procedures will be adopted such as slow unloading of materials from the lowest height possible.
			- All materials handling will be confined to the designated areas.
			 All equipment and machinery will be maintained in good working condition.
Windblown waste	Waste acceptance,	Air/windborne pathway	- The existing site boundary fence will continue to be inspected and maintained.
	storage and processing		- All waste loads entering the Site will be covered.
			- Unloaded waste and recyclable materials will be confined to the designated drop-off areas.
			- Monitoring of the metrological conditions on site and operations will cease during periods of unsuitable weather conditions.
			- Any litter generated around the Site and along the fence lines will be collected on a regular basis as part of routine general housekeeping procedures.
Leachate	Waste acceptance, storage and	Direct discharge to ground	- A permanent canopy will prevent rainfall entering hook lift bins and mixing with waste in the Multi-Tiered Drop-Off Facility.
	processing		- All refuse to be held within receptacles.
			- Temporary bin covers will be applied to containers in the Recycling Drop off Area during periods of inclement weather.
			- All surfaces will be sealed (including both concrete and bitumen) with appropriate gradient to divert stormwater away from waste areas.
			- All stormwater to be captured in the stormwater managements devised for the Site which is capable to cater for a 1 in 10 year event.
			- HHW will be stored in an enclosed building thereby avoiding interaction with stormwater.
			- Weekly inspections of the stormwater management system.
			- Monitoring of the metrological conditions on site and operations will cease during periods of unsuitable weather conditions.
Vermin	Waste acceptance,	Transmission by vectors	- Daily removal of general mixed waste and green waste within the Community WTS.
	storage and processing		- Existing fencing around the site will continue to be maintained.
			- Should any vermin issues be experienced, professional services will be utilised to eradicate vermin at the site.
Hazardous spills	Waste acceptance, storage and	Direct discharge to ground	- HHW shed has been design in accordance with the 2013 DER Guidelines for the design and operation of facilities for the acceptance and storage of household hazardous waste.
	processing		- HHW to be stored in a fully enclosed storage shed with separate areas for acceptance and storage and drainage

Emission	Sources	Potential pathways	Proposed controls
			sumps for capturing spills and leaks.
			- Batteries will be stored in a self-bunded, acid proof and UV resistant containment system.
			- Sealed and concrete hardstand areas have been adopted across the Community WTS.
			- Use of spills kits in unsealed areas (service lane).
			- Safe handling and storage of hazardous materials in accordance with AS 1940-2017: Flammable Liquids Storage and Handling.
			- Regular maintenance of equipment and mobile machinery.
			- Staff training and inductions.
Fire event	Ignition of waste	Air/wind	- Appropriate signage for waste types accepted at the facility.
		dispersion	- Inspection of waste loads at the weighbridge.
			- Fire extinguishers positioned in suitable locations.
			- Regular maintenance of equipment and plant.
			- Regular maintenance/testing of firefighting equipment.
			- Appropriate staff training and inductions.
			- Security fence around the perimeter of the site.
			- Four (4) compartments within the HHW will separate incompatible waste types with 180mm thick concrete walls.
			- Use of water cart for fire suppression if required.
			- The surface water swale and surface water evaporation pond will be lined with High Density Polyethylene (HDPE).
			- Emergency management measures outlined in the Operational Management Measures.
Operation -	Composting		
Odour	Application and composting of	Air/windborne pathway	- The facility will be limited to the acceptance of FOGO and green waste only.
	waste materials Storage of leachate in a leachate pond		- All material accepted on the composting pad will be carefully screened to extract any potential contamination or undesirable materials.
			- A 500 mm thick layer of greenwaste to act as a bio-filter over the FOGO waste to treat the exhaust air emanating from the composting pile. The layer of greenwaste provides a medium for aerobic bacteria to break down the odours before emission to atmosphere.
			- The composting process will use a mobile modular aeration system which pushes air through the compost material via an on-ground pipe system, ensuring aerobic conditions are maintained.
			- The aerator pipes will run the length of concrete pad parallel to each other.
			- De-contaminated FOGO material will be place on the aeration pipes in windrows.
			- Windrows will be no more than 1000 tonnes by weight.
			- Windrows will be turned at intervals of no less than 14 days.

Emission	Sources	Potential pathways	Proposed controls
			- Daily meteorological monitoring to assess the conditions onsite.
			- Daily aeration of stockpiles or when windrow temperature is <30°C.
			- The moisture content in the bio-filter media will be maintained at 50% to 60% of dry weight. If moisture levels are detected to be below 50%, water will be sprayed manually over the surface area of the bio-filter medium.
			- FOGO will be stored no longer than 24 hours prior to being mixed.
			- Odour emitting activities will cease or be limited during periods of high wind.
			- Maintain restriction on compost stockpile sizes.
			- A complaints register will be maintained.
			- Odour levels will be continuously monitored, and action taken, if required.
			- Turning of the feedstock will occur after week two to blend the bio-filter material into the feedstock.
			- Mixing of compost piles will be conducted only once a week
Leachate	Application and composting of waste materials Storage of	Overland runoff	- The hardstand is manufactured using type N40 MPa concrete, 20 mm aggregate, 80 mm slump concrete reinforced with one layer of SL92 mesh with minimum 50 mm of cover.
	leachate in a leachate pond		- The concrete slab is 150 mm in thickness (minimum thickness).
			- The hardstand slab is to have 1:50 and 1:75 slopes for leachate diversion.
			- The leachate sump is 1.6 m in depth with a run-off platform of 15 m by 4.5 m wide and a 1:10 slope to allow for leachate overflow to be contained within the drainage area and flow towards the sump.
			- The sump is constructed of reinforced concrete of type N40 MPa.
			- The walls and base are 200 mm thick with a single layer of SL92 mesh with minimum 65 mm cover.
			- Composting leachate is collected within the leachate sump and returned to the composting process or removed to a septage pond.
			- The leachate sump will be visually inspected daily for contamination, erosion, leaks, damage, and pump operation, and to ensure that there is freeboard in the leachate sump at all times.
			- The leachate sump level is controlled using a float switch on the pump. When a critical level is reached the leachate will be recirculated into the maturing piles or pumped to the leachate ponds.
Dust	Waste acceptance,	Air/windborne pathway	- Stockpile and windrow heights maintained at a height of 5 m or less.
	composting and vehicle	causing impacts to health and	- Moisture content is maintained between 40 and 65 per cent in stockpiles/windrows during pasteurization.

Emission	Sources	Potential pathways	Proposed controls
	movement	amenity	- Materials will be wet down before processing.
			 Dust reducing workplace procedures will be adopted such as slow unloading of materials from the lowest height possible.
			 All feedstock materials delivered to the premises will be contained in a covered vehicle.
			- The surface of the hardstand will be sealed.
			 Unsealed roads and exposed areas will be watered down regularly, or as required, to minimise windblown dust migration.
			- All site traffic will, unless authorised, adhere to the site speed limit of 10 km/hr.
Pathogens	Compost not meeting Australian	Direct application of	 The facility will be limited to the acceptance of FOGO and selected green waste materials only.
	Standard AS 4544 is taken off- site after sale	compost	 All material accepted on the composting pad will be carefully screened to extract any potential contamination or undesirable materials.
			- All contaminated loads will be recorded to help target future waste educational efforts.
			- The contamination of incoming loads will be visually inspected to ensure that materials will comprise greater than 95% volume/volume (v/v) of organic waste and the maximum contamination would be limited to 5% v/v.
			 Greenwaste will be visually inspected by a trained employee and any contaminated loads will be recorded with appropriate action taken by the Facility Supervisor.
			- If incoming feedstock appears to be heavily contaminated it will not be used and sent to landfill for disposal.
			- Materials considered to be contaminants include metals, plastics, other non-organic materials, treated organic materials unsuitable for composting, asbestos, materials contaminated with chemicals or petroleum, clinical waste, and other hazardous wastes.
			- Testing of final products in accordance with Australian Standard AS 4454 Compost, soil conditioners and mulches.
			- Recording of feedstock and product volumes.
Noise	Waste acceptance, composting and vehicle movement	Air/windborne pathway causing impacts to health and amenity	 All trucks and mobile equipment are fitted with broadband noise reversing alarms to minimise the impact of vehicle reversing noise.
			 Waste acceptance and the operation of equipment and machinery will be restricted to operational hours only.
			- Vehicles will be restricted to a maximum speed of 10km per hour (km/hr) unless otherwise signed.
			 Noise reducing workplace procedures will be adopted such as slow unloading of materials from the lowest height possible.
			- All materials handling will be confined to the designated areas.
			 All equipment and machinery will be maintained in good working condition.

Emission	Sources	Potential pathways	Proposed controls
			- The provisions of the <i>Environmental Protection (Noise)</i> <i>Regulations</i> 1997 apply.
Vermin	Composting- Application of liquid wastes, animal manure and other raw materials	Transmission by vectors causing impacts to health and amenity	 Regular turning of compost stockpiles. Regular cleaning and maintenance of composting pad. Slope profile of hardstand designed to prevent pooling and stagnation of water. FOGO deliveries are to be processed as soon as possible and not stored for more than 24 hours. The composting facility is located within the L9127/2018/1 Meru Waste Disposal Facility premises, which maintains a fence and lockable gate around the perimeter of the premises. The security gate will be locked after hours to prevent foxes, cats and other larger pests from entering the premises. Detection of a pest problem will be followed quickly by action to get rid of the pests and to prevent similar future pest
			infestations. Actions may include chemical sprays, disposal of an infested batch of waste or other material to the active landfill, baiting, trapping and installing special covers or fences around problematic areas.
Fire event	Composting- Application of liquid wastes, animal manure and other raw materials	Air/wind dispersion; wind speed and direction can change the level of smoke generated	 The site is not located within a bushfire prone area. The Licence Holder retains a Compost Facility Fire Procedure within its Composting Operations Management Plan. Fire extinguishers positioned in suitable locations. Security fence around the perimeter of the site. Appropriate management of FOGO and green waste to ensure: Maximum stockpile dimensions of 50 m long, 10 m wide and 5 m high. Individual stockpiles/windrows separated by at least 6 m. Stockpiles/windrows not located within 6m of premises boundary. Regular aeration of stockpiles by regular turning. Monitoring temperature and moisture levels within stockpiles stored for periods greater than 3 months. All ignition sources kept away from compost area (i.e.no smoking, fuel storage etc).
Windblown waste	Waste acceptance, handling and storage	Air/wind dispersion of waste causing visual amenity and nuisance impacts	 All feedstock materials delivered to the premises will be contained in a covered vehicle. The composting facility is located within the L9127/2018/1 Meru Waste Disposal Facility premises, which maintains a fence and lockable gate around the perimeter of the premises. Any litter generated around the Site and along the fence

Emission	Sources	Potential pathways	Proposed controls
			lines will be collected on a regular basis as part of routine general housekeeping procedures.

3.1.2 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the applicant from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 2 and Figure6 provides 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 (*Guidance Statement: Environmental Siting* (DER 2016)).

Table 2: Sensitive human and environmental receptors and distance from prescribed	
activity	

Human receptors	Distance from prescribed activity			
Residential receptor (rural)	Approximately 1.1 km north-east from the proposed activities			
Industrial receptors	Adjacent and east of premises boundary (within 'general industry' zoned area)			
Groundwater bore user (Number: 20002600)	Approximately 900 m north of the prescribed premises boundary			
Groundwater bore user (Number: 2000601)	Approximately 1.15 km south west of the prescribed premises boundary			
Environmental receptors	Distance from prescribed activity			
Priority 1 Ecological Community: Coastal sands dominated by Acacia rostellifera, Eucalyptus oraria and Eucalyptus obtusiflora (Geraldton area)	2.5 km to the south-west of the Premises			
Groundwater (Arrowsmith Groundwater Area)	Groundwater monitoring bore data for the premises has determined that depth to groundwater varies across the premises from 14.60 – 17.50 mBGL.			
	Soil within the Premises is described as level to very gently undulating prior alluvial depositional plain (1-3% slope), with red sandy and loamy duplex soils with Brown deep sands (Geraldton Rural-residential Land Capability Study).			
Major river - Nonperennial	3.7 km to the north-east of premises			

(Chapman River)	
Minor river - Nonperennial (Greenough River)	1.9 km to the south of the premises
Surface water (Indian Ocean)	Approximately 4 km west of the prescribed premises boundary



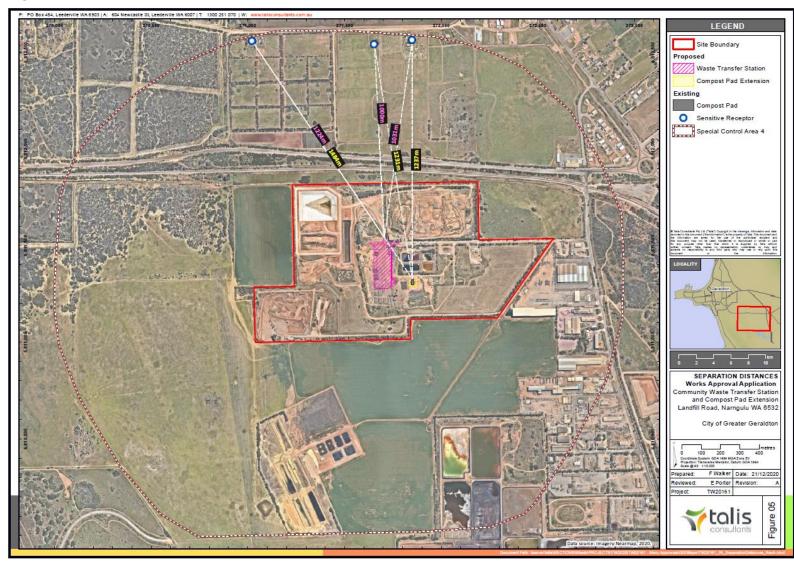


Figure supplied as part of the application

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3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 3.1. 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 3.1), 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 3.

Works Approval W6519/2021/1 that accompanies this Decision Report authorises construction and time-limited operations. The conditions in the issued Works Approval, as outlined in Table 3 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required following the time-limited operational phase authorised under the works approval to authorise emissions associated with the ongoing operation of the Premises. 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 application.

Risk Event	Risk Event							
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Construction								
Ground works, truck movements, installation and placement of equipment and infrastructure	Noise	Air/windborne pathway causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east from the proposed composting activity	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	N/A	Noise is not considered likely to cause any distinguishable impacts at this distance. The Delegated Officer considers that the provisions of the <i>Environmental</i> <i>Protection (Noise) Regulations 1997</i> are sufficient to regulate noise emissions from construction activities
Ground works, truck movements, installation and placement of equipment and infrastructure	Dust	Air/windborne pathway causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east from the proposed composting activity	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	Condition 11	Dust is not considered likely to cause any distinguishable impacts at this distance. The Delegated Officer considers that the provisions of section 49 of the EP Act and the addition of a dust outcome condition are sufficient to regulate dust emissions from construction activities.
Ground works, truck movements, installation and placement of equipment and infrastructure	Unforeseen hydrocarbon spill	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality. Seepage to groundwater	Beneficial users of groundwater Greenough River 1.9 km to the south of the premises	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	N/A	Minor fuel spillage is adequately regulated by the Environmental Protection (Unauthorised Discharges) Regulations 2004.
Operation (including time-limited-operations operations)								
Transfer station					-			
Waste acceptance, storage and processing	Odour	Air/windborne pathway causing impacts	Nearest resident is approximately	Refer to Section 3.1	C = Moderate L = Possible	Y	Conditions 1, 7 and 10	The Delegated Officer considers the Applicant's controls to be sufficient to mitigate odour emissions generated by

Table 3: Risk assessment of potential emissions and discharges from the Premises during construction and time limited operation

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Risk Event	Risk Event				Risk rating ¹	Applicant		
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
		to health and amenity	1.1 km north- east		Medium Risk		Conditions 3, 4 8 and 9	 waste storage activities. Condition 3 and 4 require the submission of an Environmental Compliance Report to verify the works have been constructed in accordance with the relevant requirements. Condition 8 and 9 have been added to ensure waste that does not meet the waste acceptance criteria is not accepted to the premises.
Waste acceptance, storage and processing	Leachate	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality. Seepage to groundwater.	Groundwater and surface water drainage systems	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Conditions 1, 7 and 10 <u>Conditions 3 and 4</u>	The Delegated Officer considers the Applicant's controls to be sufficient to mitigate leachate emissions generated by waste storage activities. Condition 3 and 4 require the submission of an Environmental Compliance Report to verify the works have been constructed in accordance with the relevant requirements.
Waste acceptance, processing and vehicle movement	Dust	Air/windborne pathway causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	Condition 11	Dust is not considered likely to cause any distinguishable impacts at this distance. The Delegated Officer considers that the provisions of section 49 of the EP Act and the addition of a dust outcome condition are sufficient to regulate dust emissions associated with waste storage activities.
Waste acceptance, processing and vehicle movement	Noise	Air/windborne pathway causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east from the proposed composting activity	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	N/A	Noise is not considered likely to cause any distinguishable impacts at this distance. The Delegated Officer considers that the provisions of the <i>Environmental</i> <i>Protection (Noise) Regulations 1997</i> are sufficient to regulate noise emissions from waste storage activities

Risk Event					Risk rating ¹	A		
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
Waste acceptance, storage and processing	Hazardous spills	Overland runoff potentially causing ecosystem disturbance or impacting surface water quality. Seepage to groundwater.	Groundwater and surface water drainage systems	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Conditions 1, 7 and 10 <u>Conditions 3 and 4</u>	The Delegated Officer considers the Applicant's controls to be sufficient to mitigate the potential for hazardous spills generated by waste storage activities. Condition 3 and 4 require the submission of an Environmental Compliance Report to verify the works have been constructed in accordance with the relevant requirements.
Waste acceptance, storage and processing	Vermin	Transmission by vectors causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east	Refer to Section 3.1	C = Moderate L = Unlikely Medium Risk	Y	Conditions 1, 7 and 10	The Delegated Officer has determined that the transmission of pathogens by vectors causing low level adverse health effects may only occur in exceptional circumstances.
Waste acceptance, storage and processing	Windblown waste	Air/wind dispersion of waste causing visual amenity and nuisance impacts	Nearest resident is approximately 1.1 km north- east	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	Conditions 1, 7 and 10	The Delegated Officer considers the Applicant's controls to be sufficient to mitigate windblown waste emissions.
Waste acceptance, storage and processing (fire event)	Smoke and fire washwaters	Air/wind dispersion; wind speed and direction can change the level of smoke generated Land and waters causing impacts to underlying groundwater and surface waters	Adjacent properties Groundwater and surface water drainage systems	Refer to Section 3.1	C = Major L = Rare Medium Risk	Y	Conditions 1, 7 and 10 <u>Conditions 3 and 4</u>	The Delegated Officer considers the Applicant's controls relating to the transfer station, in addition to existing firefighting capability conditions, to be sufficient to mitigate the risk of fire events
Composting	1	1	L	<u> </u>	1	L	1	L

Risk Event	Risk Event					Applicant				
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls		
Waste storage and composting activities Storage of leachate in a leachate pond								The original composting application determined that odour emissions generated during composting operations are likely to represent low risk due to the low volumes of FOGO waste handled. The increase in volume for this proposal in unlikely to alter the initial assessment.		
	O de un	Air/windborne pathway	Nearest resident is approximately 1.1 km north-	Refer to	C = Moderate	Y	Condition 7, 10 <u>Conditions 3, 4, 8,</u> <u>9, 12</u>	Condition 3 and 4 require the submission of an Environmental Compliance Report to verify the works have been constructed in accordance with the relevant requirements.		
		causing impacts to health and amenity	east from the	Section 3.1	3.1 L = Possible Medium Risk			Condition 8 and 9 require the applicant to inspect waste to ensure it meets waste acceptance criteria and remove non- conforming waste to avoid other odourous waste types being accepted at the Premises.		
								The Delegated Officer considers that maintaining the composting piles within specific ranges of temperature and moisture are important in reducing the likelihood of odour impacts occurring, and therefore Condition 12 has been included.		
Waste storage and composting activities Storage of leachate in a leachate pond	Leachate poten causi ecosy distur impac surfar qualit Seep	chate disturbance or and surface water drainage		surface er Section 3.1			C = Moderate L = Unlikely	Y	Conditions 1, 7 and 10	The water balance for the expanded compost hardstand operations indicated that there would not be an ongoing accumulation of leachate year-on-year within the pond system. Therefore, the pond system is sufficiently sized to manage the additional leachate from the expansion of the composting hardstand.
			drainage systems		Medium Risk		Conditions 3 and 4	The pump currently utilised at the Premises has a peak efficiency pump rate of 3.5L/s, which is considered effective for managing storm events in addition to leachate for use at the expanded compost hardstand.		
								Condition 3 and 4 require the submission		

Risk Event					Risk rating ¹	Applicant		
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
								of an Environmental Compliance Report to verify the works have been constructed in accordance with the relevant requirements.
Waste acceptance, composting and vehicle movement	Dust	Air/windborne pathway causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east from the proposed composting activity	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	Condition 11	Dust is not considered likely to cause any distinguishable impacts at this distance. The Delegated Officer considers that the provisions of section 49 of the EP Act and the addition of a dust outcome condition are sufficient to regulate dust emissions associated with composting activities.
Waste acceptance, composting and vehicle movement	Noise	Air/windborne pathway causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east from the proposed composting activity	Refer to Section 3.1	C = Minor L = Rare Low Risk	Y	N/A	Noise is not considered likely to cause any distinguishable impacts at this distance. The Delegated Officer considers that the provisions of the <i>Environmental</i> <i>Protection (Noise) Regulations 1997</i> are sufficient to regulate noise emissions associated with composting activities.
Waste storage and composting activities	Vermin	Transmission by vectors causing impacts to health and amenity	Nearest resident is approximately 1.1 km north- east from the proposed composting activity	Refer to Section 3.1	C = Moderate L = Rare Medium Risk	Y	Conditions 1, 7 and 10	The Delegated Officer has determined that the transmission of pathogens by vectors causing low level adverse health effects may only occur in exceptional circumstances.
Waste acceptance, handling and storage	Windblown waste	Air/wind dispersion of waste causing visual amenity and nuisance impacts	Nearest resident is approximately 1.1 km north- east from the proposed composting activity	Refer to Section 3.1	C = Minor L = Possible Medium Risk	Y	Conditions 1, 7 and 10	The Delegated Officer considers the Applicant's controls to be sufficient to mitigate windblown waste emissions.
Composting activities	Fire event and fire washwaters	Air/wind dispersion; wind speed and	Adjacent properties Groundwater	Refer to Section 3.1	C = Major L = Rare	Y	Conditions 1, 7 and 10	The Delegated Officer considers the Applicant's controls relating to composting activities, in addition to existing firefighting

Risk Event	Risk Event					Annlinent		
Source/Activities	Potential emission	Potential pathways and impact	Receptors	Applicant controls	C = consequence L = likelihood	Applicant controls sufficient?	Conditions ² of works approval	Justification for additional regulatory controls
		direction can change the level of smoke generated Land and waters causing impacts to underlying groundwater	and surface water drainage systems		Medium Risk		Conditions 3 and 4	capability conditions, to be sufficient to mitigate the risk of fire events
Compost not meeting Australian Standard AS 4544 is taken off-site after sale	Elevated pathogens and contaminant levels	Direct application of compost	Human receptors, land, groundwater and surface water where compost will be applied	Refer to Section 3.1	C = Moderate L = Rare Medium Risk	Ν	Condition 10 Conditions 12, 13 and 14	Provided that the product is sold for the appropriate end use based on the product's pathogen grade, the Delegated Officer has determined that pathogens in the compost product causing high level adverse health effects for product users may only occur in exceptional circumstances. Conditions 12, 13 and 14 outline product testing requirements in line with the applicant's proposed controls.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Guidance Statement: Risk Assessments (DER 2017).

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

4. Consultation

Table 4 provides a summary of the consultation undertaken by the department.

Table 4: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website (19/05/2021)	No comments received	N/A
Applicant was provided with draft documents on 2/6/2021	Refer to Appendix 1	Refer to Appendix 1

5. 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.

References

- 1. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
- 2. DER 2017, Guidance Statement: Risk Assessments, Perth, Western Australia.
- 3. DER 2015, Guidance Statement: Setting Conditions, Perth, Western Australia.
- 4. Department of Water and Environmental Regulation (DWER) 2019, Guideline: Decision Making, Perth, Western Australia
- 5. DWER 2019, Guideline: Industry Regulation Guide to Licensing, Perth, Western Australia
- 6. Standards Australia 2012. Australian Standard AS 4454-2012 Compost, soil conditioners and mulches.

Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of applicant's comment	Department's response		
1	It has been noted that a permeability of 1×10^{-9} m/s has been specified for the concrete hardstand areas throughout the facility. Due to the extremely low permeability rating of concrete, specifying a permeability value is deemed irrelevant and unnecessary.	DWER notes that concrete hardstand areas area likely to meet a permeability of less than 1×10^{-9} m/s where they are constructed appropriately, including using steel reinforcements within the concrete and where all joints are sealed appropriately.		
	Generally, three factors impact concrete permeability; cement to water ratio, compaction and curing time. Therefore, to achieve the highest permeability a high cement to water ratio will be used. The concrete will then be compacted and allowed to cure for a suitable duration to ensure sufficient cement hydration.	The requirement to confirm the permeability of the concrete hardstand areas has been removed from the works specifications. However, the construction specifications (e.g. strength and thickness) of the concrete hardstand areas will still require quality assurance verification, through conditions 3 and		
	The general process for the construction of the concrete hardstand areas is as follows:	4, to demonstrate compliance with the specifications of the technical drawings within the application. Where the risk profile for leachate emissions is higher, being the composting		
	 Preparation of subbase using appropriate soil material and compaction; 	hardstand, further verification is required through quality assurance of the subgrade.		
	Installation of plastic membrane;			
	Pouring of concrete (approximately 200mm thick);			
	Installation of steel reinforcement within the concrete; and			
	Sealing of concrete joints with joint sealer.			
	The risk is also mitigated as these are areas where waste receptacles will be placed or inert materials will predominantly be stored temporarily.			
10	As a part of the FOGO trial the City would like to include the use of aerators for the composting process. The system will be undertaken in conjunction with the current process to allow for a comparison between the two systems and to identify which process is better suited for the Geraldton Region.	The Delegated Officer considers that the use of aerators does not pose an increased environmental risk, specifically in relation to odour emissions, to the previously assessed composting process. The use of a forced aeration process to maintain an aerobic state within the compost stockpiles is consistent with the recommended controls in the draft <i>Guideline: Better practice</i> <i>composting (May 2020)</i> .		

Condition	Summary of applicant's comment	Department's response
		The details of the aeration process have been included within the Decision Report, and the Works Approval has been amended as required.
10	The Draft Works Approval specifies the requirement for 3 m maximum height for compost piles however within Table 1 of the Draft Decision Report the proposed controls for dust specifies a maximum height of 5 m for compost piles.	The height of compost piles has been amended to reflect the proposed controls and is consistent with section 9.3.2 of the draft <i>Guideline: Better practice composting (May 2020)</i> .

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY								
Application type								
Works approval	X							
Licence		Relevant works approval number:		None				
		Has the works approval been complied with?		Yes 🗆 No 🗆				
		Has time limited operations under the works approval demonstrated acceptable operations?		Yes 🗆	No 🗆 N/A 🗆			
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?		Yes 🗆 No 🗆				
		Date Report received:						
Renewal		Current licence number:						
Amendment to works approval		Current works approval number:						
Amendment to licence		Current licence number:						
		Relevant works approval number:		N/A				
Registration		Current works approval number:		None				
Date application received		12 January 2021						
Applicant and Premises details								
Applicant name/s (full legal name/s)		Greater City of Geraldton						
Premises name		Meru Waste Disposal Facility						
Premises location		Lot 2268 on Plan 250829, and Lot 2227 on Plan 254811 Landfill Lane, Narngulu WA 6532						
Local Government Authority		City of Greater Geraldton						
Application documents								
HPCM file reference number:		DER2021/000029						
Key application documents (additional to application form):		Environmental Assessment and Management Plan						
Scope of application/assessment								
Summary of proposed activities or changes to existing operations.		Expansion of composting pad infrastructure to accommodate an increase in the existing FOGO trial being run.						
		Construction of a new waste transfer station including a household hazardous waste shed.						

Table 1: Prescribed premises categorie	es						
		ssed production or design city	Proposed changes to the production or design capacity (amendments only)				
Category 62: Solid waste depot	N/A		20, 000 tonnes per year				
Category 67A: Compost manufacturing and soil blending	20, 000 tonnes per year		20, 000 tonnes per year (within this limit proposing to increase the FOGO composting trial from an estimated throughput of 500 tonnes to 1,750 tonnes)				
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 🗆 No 🛛	Referral decision No: Managed under Part V □ Assessed under Part IV □				
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?		Yes 🗆 No 🛛	Ministerial statement No: EPA Report No:				
Has the proposal been referred and/or assessed under the EPBC Act?		Yes 🗆 No 🛛	Reference No:				
Has the applicant demonstrated occupancy (proof of occupier status)?		Yes 🗆 No 🛛	Certificate of title General lease Mining lease / tenement Expiry: Other evidence Expiry:				
Has the applicant obtained all relevant planning approvals?		Yes 🗆 No 🗆 N/A 🛛	Approval: Expiry date: If N/A explain why?				
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?		Yes 🗆 No 🛛	CPS No: N/A No clearing is proposed.				
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?		Yes 🗆 No 🛛	Application reference No: N/A Licence/permit No: N/A No clearing is proposed.				
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?		Yes 🗆 No 🛛	Application reference No: Licence/permit No: Licence / permit not required.				

Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes □ No ⊠	Name: N/A Type: Has Regulatory Services (Water) been consulted? Yes I No I N/A I Regional office:
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes □ No ⊠	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes I No I N/A I
Is the Premises subject to any other Acts or subsidiary regulations (e.g. Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx)	Yes ⊠ No □	Licence includes categories 61 – liquid waste facility and category 57 – used tyre storage (general)
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes 🗆 No 🛛	
Is the Premises subject to any EPP requirements?	Yes 🗆 No 🛛	
Is the Premises a known or suspected contaminated site under the <i>Contaminated Sites Act 2003</i> ?	Yes ⊠ No □	'Incomplete report' Classification: N/A Date of classification: N/A