



Application for works approval

Division 3, Part V *Environmental Protection Act 1986*

Works approval number	W6976/2024/1
Applicant	Central Stockcare Pty Ltd
DWER file number	DER2024/000567
Premises	Sendem Feedlot "Sendem Downs" 2530 Coalara Road BADGINGARRA WA 6521
Date of report	7 January 2025
Status of report	Final

Purpose and scope of assessment

Central Stockcare Pty Ltd (CSC, the applicant) proposes to construct a new cattle feedlot at their existing farming property near Badgingarra. An application for works approval was submitted under Division 3 Part V of the *Environmental Protection Act 1986* (EP Act) on 25 October 2024.

This report sets out the delegated officer's assessment of potential risk events arising from emissions and discharges during construction and operation of infrastructure relating to the prescribed activity.

In completing the assessment documented in this report, the department 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>.

Application details

Overview

CSC is the owner of "Sendem Downs", a broadacre farming property in the rural locality of Badgingarra, about 190 km north of Perth.

In mid-2021, CSC was granted works approval W6492/2021/1 for the "Coalara Feedlot" proposal, a large 8,000 standard cattle unit (SCU) feedlot development on the Sendem property; this development has not yet commenced due to current market conditions.

In the interim, CSC has determined to develop a scaled-down version of the Coalara proposal, known as the "Sendem Feedlot", being a 2,500 SCU feedlot in a different location on the Sendem property, in which time it is hoped the market conditions will improve and the Coalara proposal can be developed.

The proposed Sendem feedlot will be operated in conjunction with an existing backgrounding facility on the premises, which is restricted to 499 head by a planning approval.

The below describes the prescribed premises category that the application is subject, as defined in Schedule 1 of the Environmental Protection Regulations 1987.

Classification of premises	Assessed design capacity (as per application)
Category 68: Cattle feedlot: premises on which the watering and feeding of cattle occurs, being premises – (a) situated more than 100 metres from a watercourse; and (b) on which the number of cattle per hectare exceeds 50.	2,500 SCUs at any one time

Proposal details

The Sendem proposal is a scaled-down version of the Coalara proposal, which has been previously assessed and approved by the department under W6492.

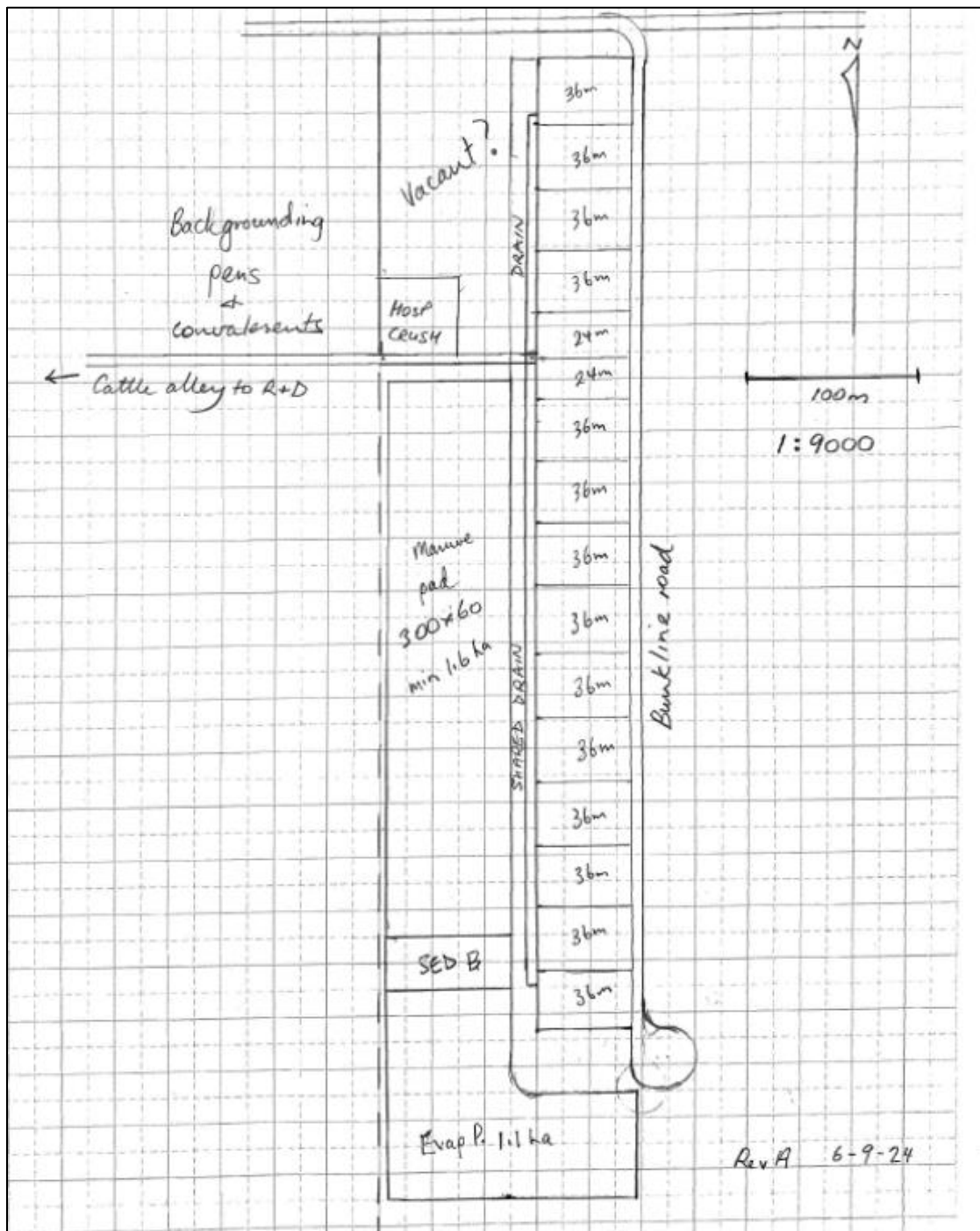
Feedlot design and layout

The proposed Sendem feedlot will be laid out in a single row of pens serviced by a single feed road and a single cattle alley, with much reduced earthworks requirements compared to the Coalara proposal.

The row will comprise a total floor area measuring 552 m long and 45 m wide (24,840 m²), with 14 individual pens each measuring 45 x 36 m and two "close out" pens, each measuring 45 x 24 m. For the proposed design capacity of 2,500 SCUs, this equates to a maximum stocking density of 9.7 m²/SCU, which is consistent with the *National Guidelines for Beef Cattle Feedlots in Australia* (MLA 2012a) (National Guidelines).

The feed pens will be sloped to facilitate surface runoff to an effluent drain constructed at the

lowest point, that will direct effluent to a sedimentation basin for settling of solids, prior to transfer to an evaporation pond (Figure 1).



▲ **Figure 1: Proposed Sendem feedlot design and layout**

Key infrastructure and specifications

All key feedlot infrastructure will be located within a controlled drainage area, in which all surface runoff and effluent will be contained and diverted to a sedimentation basin.

All manured surfaces will be capped and compacted with local subgrade materials, in 2 x 150 mm layers, to achieve 95% standard compaction at optimum moisture ($\pm 2\%$) added by watercart.

- An earthen catch drain will be constructed along the foot of the pens, which is designed to carry the peak flow rate resulting from a 20-year ARI design storm, which CSC has

estimated to be 0.18 m³/sec (15,800 kL/d), using the formula outlined in the National Guidelines.

Based on the National Guidelines, an earthen channel with a 4 m bed width, 1:5 batter flowing 0.1 m deep with a 0.75% slope would be sufficient for the estimated peak flow rate. The actual drain to be constructed will exceed these requirements, with a 5 m bed width, 1:10 m batter and 0.2 m deep, which will enable drain line maintenance and management during the summer months.

The drain will be constructed with local materials that have been tested to indicate a permeability in the order of 7.941×10^{-9} m/s (95% standard compaction at optimum moisture ($\pm 2\%$)), with subsequent testing indicating the possibility of achieving 1×10^{-9} m/s with the addition of bentonite.

- Two shallow, flat sedimentation basins will be constructed for settlement of entrained solids. The system has been designed to cater for the peak flow from a 5% AEP (annual exceedance probability) event (equivalent to a 1 in 20-year ARI storm), which CSC has estimated the required volumetric capacity to be 571 m², using the formula outlined in the National Guidelines. This estimation assumes the entire controlled drainage area of 6.7 ha is draining to the sedimentation system, including the manure storage area.

The dimensions of each basin will measure 60 m x 12 m, 1:3 batter and 0.8 m depth, which provides an effective volume of 576 m³ – at least two basins of this size are required to allow one pond to be closed off for drying out and maintenance.

A slatted concrete weir discharge assembly will be constructed on the discharge point of each basin, to enable release of the cleaner surface layer and longer retention of loaded lower layers of water and solids.

Both basins will be constructed with the same material and to the compaction and permeability standard of the feedlot pens (see above).

- A single evaporation pond is proposed to be constructed for storing water from the sedimentation system.

The pond will be constructed with a holding capacity of 13,200 kL, with the pond design and required storage capacity based on the annual water balance for a 95-percentile wet year. Water is proposed to be used in composting operations.

The pond will be constructed with the same material and to the compaction and permeability standard of the feedlot pens (see above), however, if final permeability of $<1 \times 10^{-9}$ m/s cannot be achieved, a polymer plastic lining will be installed.

- A manure storage area is proposed to be constructed, for the storage and processing (composting) of manure and deceased animals.

A pad with total area of 1.8 ha (300 m x 60 m) is proposed to be constructed adjacent to the pens, on the opposite side of the effluent catch drain. The pad will be constructed with the same materials and to the compaction and permeability standard of the feedlot pens (see above).

The pad will be constructed with a long fall of at least 1.0%, to facilitate drainage of effluent and surface runoff to the sedimentation system.

Construction schedule

The development will take place in a single stage. CSC anticipates construction will take about 24 months, with operations to commence shortly after.

Operational aspects

Feedlot operations

Purchased feeder cattle will be brought onto the premises and unloaded into the receival-

dispatch pens, where they will be inspected for fitness and grouped into feeding lots, before being placed in pens with other animals of similar weight and fed and watered for an average of 112 days. Animals will initially start on high fibre rations, prior to transitioning over 3 weeks to a nutrient-dense finisher ration. Rations will be prepared daily according to the appetite of the pens lots on feed.

Entry weight will be about 400 kg and average exit weight about 635 kg, depending on market requirements. Once the animals have grown to the required criteria, they will be trucked off-site directly to clients for slaughter.

Surface water management

- Clean water diversion – CSC advises the controlled drainage area will have upgradient diversion banks and channels constructed to ensure clean surface water runoff does not flow to the effluent holding ponds.
- Effluent runoff and capture – runoff effluent from all manured surfaces and trough wastewaters will be contained within the controlled drainage area and diverted to the sedimentation system for settling of solids, prior to transfer to the effluent holding pond. Stored water will be allowed to evaporate and be used in the composting process.

The basin to be constructed will measure 60 m long by 12 m wide (720 m² surface area), with a maximum depth of 0.8 m (1:3 batters) and total holding capacity of 576 m³.

- Water balance – the controlled drainage area, which encompasses the feedlot pens, bunks, feed row, cattle alley, effluent catch drain, manure storage pad, sedimentation system and evaporation pond, covers a total area of 6.7 ha.

CSC has provided rainfall runoff calculations, based on the 95th percentile rainfall year for the nearest town of Watheroo (576.6 mm), which indicate the estimated storage capacity to ensure the holding pond spills less than an average of one in 20 years is 12,970 kL, with a pond surface area of 11,000 m². The proposed holding pond to be constructed will provide a total storage capacity of 13,400 kL; however, it is noted the calculations are relatively conservative, being based on a pond system that relies solely on evaporation to control water volumes.

CSC proposes to use stored effluent to supplement water use in the manure compost production process. In an average rainfall year, about 10,000 kL will be used in composting operations, while in the 95th percentile year, up to 13,400 kL will be used. Water balance calculations provided indicate the pond will be fully evaporated and empty by the end of the summer period.

Solid waste management

- Manure generation and feed pen cleaning – CSC has calculated an annual total solids (TS) manure harvest from the pen floors to be about 410 kg TS/SCU, based on the proposed design feedlot pen floor interface layer being well maintained and there being no bedding used.

Based on this, CSC expects TS manure harvested annually to be about 840 t/yr. With an average harvest moisture of 50% and a bulk density of 0.6 t/m³, this equates to about 2,799 m³/yr.

Feedlot pens will be cleaned on a frequency to ensure the depth of dry manure does not exceed 50 mm. Tractor-drawn box scrapers and front-end loaders will be the primary equipment used to mound manure and clean pens, in addition to skid-steer loaders.

On the nominated design criteria stocking density for the feedlot on a continuous stocking regime, the pens will be cleaned about every 13 weeks, including in autumn to ready the yard for winter, and in spring to clean up after winter. Heat hazard manure load will be reduced in another concerted campaign prior to the end of December each year.

- Manure storage and processing – manure will be harvested from the feedlot pens in dry conditions and stored on the manure storage pad where it will be processed into a composted product. A base of at least 100 mm of manure will be maintained on the pad floor at any one time. Manure windrows as ‘composting work in progress’ toward production of compost, will sit upon this base pad as they are watered and turned.

Manure will initially be stacked in low profile windrows (150 cm x 3 m spaced 5 m apart – 8 m centre to centre) and processed with a windrow turner using effluent additions from the holding ponds to ensure the product is processed and produced to optimum moisture specifications. Once friable and stable, the composted manure will be stacked in larger profile windrows (250 cm x 10 m spaced 5 m apart – 10 m centre to centre) for storage, until it can be used for spreading over cropland on the premises.

In addition, provision has been made for composting deceased animals in a designated area on the manure storage pad. CSC estimates that manure windrows with a profile 230 cm x 6 m will be required to hold dead animals for composting. Providing 1.15 m per head/year of linear windrow for each dead animal, about 50 m for 30 dead animal composting windrows will be allowed on the pad area.

The below table provides details of planned windrows to be laid out on the manure storage pad, which will cover up to 8,300 m² on a pad with a total size of 19,500 m².

Windrows within the proposed manure storage pad

Windrow type	Depth (cm)	Width (m)	Linear length (m)	No. rows	Total footprint
Processing	150	5	1,000	13	5,000 m ²
Storage	250	10	200	3	2,000 m ²
Dead animal composting	230	6	50	1	300 m ²
Total					8,300 m²

CSC intends to retain at least 2,240 m³ of windrowed manure and stored compost on the manure storage pad at any one time during operations, however, provision has been made for the area to hold up to double this amount (4,480 m³).

- Manure utilisation – this aspect of the proposal was previously assessed in detail as part of the Coalara Feedlot proposal, refer to the Decision Report for W6492.

In summary:

- the premises includes about 1,056 ha of dryland cropping land, in which CSC proposes to crop cereal grains and hay as base ingredients in the feed rations for the feedlot operation;
- an application rate of 8.2 t/ha/yr of manure/compost for an oat crop yielding 7 t/ha is the most appropriate method to maintain the soil’s capacity to absorb nutrients and to limit water repellence, which can affect the agronomy of crops and pastures;
- the feedlot at the developed capacity of 2,500 SCUs will generate about 546 tonnes of aged manure or compost per year. To use the tonnage generated annually for a crop such as oats for hay will require about 150 ha of land to sustainably utilise the available nutrients.

Exclusions to this assessment

The following matters are out of the scope of this assessment and have not been considered within the risk assessment detailed in this report:

- other general farming activities being conducted on the premises, outside of the feedlot complex and manure utilisation areas (excludes staging or backgrounding);
- vehicle (i.e., livestock truck) movements on private or public roads; and
- land use zoning and compatibility with surrounding land uses.

The works approval is related to category 68 activities only and does not offer the defence to offence provisions in the EP Act (see sections 74, 74A and 74B) relating to emissions or environmental impacts arising from prescribed and non-prescribed activities, including those listed above.

Location and siting

The siting context (land use and sensitive receptors, climate, physiography, soils and landscape), groundwater, surface water, and separation distances has previously been assessed in detail as part of the Coalara Feedlot proposal, refer to the Decision Report for W6492.

Consultation

The application was referred to relevant public authorities and advertised for public comment on the department's website during November 2024. No public submissions were received in the timeframe specified.

Public authorities

The Shire of Dandaragan advises it granted development approval for the Sendem feedlot proposal in October 2024.

The Department of Primary Industries and Regional Development, who previously provided technical advice on the Coalara proposal, advised that based on the nutrient output data provided in the application, more than 133 ha of cropping area will be required to remove all nutrients applied; however, as the applicant has sufficient land available to dispose of nutrients, it is suggested there is a simple recalculation of the waste management plan. Additionally, monitoring for infestation of stable fly is recommended, due to the composting of cattle carcasses.

Risk assessment

Determination of emission, pathway and receptor

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.

Risk ratings

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

Where the applicant has proposed mitigation measures/controls, 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 the below table.

Risk assessment table

The table below describes the risk events associated with the proposal consistent with the *Guideline: Risk Assessments* (DWER 2020). The table identifies whether the risk events are acceptable and tolerated, or unacceptable and not tolerated, and the appropriate treatment and degree of regulatory control, where required.

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Construction works								
Construction of feedlot pens, internal roads, effluent drains and controlled drainage areas, dams and manure holding/storage/compost infrastructure, etc.	Noise and fugitive dust associated with construction civil excavation, earthworks, construction works, etc.	Unreasonable interference with the health, welfare, convenience, comfort or amenity of nearby sensitive receptors (>6 km)	Adequate separation to nearby receptors (>6 km)	Minimal impacts to amenity on local scale Slight	May only occur in exceptional circumstances Rare	Low Acceptable, not subject to controls	The delegated officer considers there is sufficient separation in place (>6 km to nearest rural dwelling, >28 km to nearest town), and therefore does not reasonably foresee that noise and dust from construction works will impact on the amenity or health of off-site human receptors.	<u>Works approval controls:</u> None specified.
Time limited operations and full operations								
Category 68: Cattle feedlot operations								
Holding, feeding and watering of animals within uncovered pens	Nutrient-laden leachate from manure, urine, mobilised by surface water runoff	Seepage/infiltration causing groundwater contamination	Pens constructed with compacted clay floors (95% MDD at 2% moisture) Effluent drain to be constructed to divert leachates to lined sedimentation system, which will settle out solids Supernatant water from sedimentation basin overflows into lined holding pond for storage, pending evaporation and use in composting process	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	In order to protect the underlying groundwater resource, the feedlot has been designed in accordance with the requirements outlined in the National Guidelines (MLA 2012a), namely: - Pen and yard surfaces and cattle alleys will be capped and compacted in layers to achieve 95% standard compaction at optimum moisture ($\pm 2\%$); - Effluent catch drain, sedimentation basin, holding pond floor and manure storage pad will be constructed and tested to achieve a permeability of at least 1×10^{-9} m/s; and - If compaction criteria cannot be achieved for the holding pond floor, a polymer plastic liner will be installed. The delegated officer considers the above controls will ensure the risk of groundwater contamination from feedlot activities is acceptable. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are critical for maintaining an acceptable level of risk, they will be imposed on the works approval and required to be maintained on the licence as minimum infrastructure requirements.	<u>Works approval controls:</u> - Pen and yard surfaces and cattle alleys must be capped and compacted in accordance with prescribed standards; - Effluent catch drain, sedimentation basin, holding pond and manure storage pad must be constructed as per design plans, and demonstrated through testing the permeability of the surface achieves 1×10^{-9} m/s or less; <u>Licence controls:</u> - All infrastructure within controlled drainage area must be maintained to ensure integrity is sustained.
		Uncontrolled discharge, causing soil contamination or groundwater contamination	Feedlot infrastructure constructed within a controlled drainage area, comprising a bunded hardstand that diverts surface water runoff to the sedimentation system	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	All feedlot infrastructure will be located within a bunded controlled drainage area, which will comprise a sloped hardstand in which all contaminated or potentially contaminated surface water runoff will be contained and diverted to a sedimentation system and holding ponds that combined will have sufficient capacity to contain the volume of runoff from a 95 th percentile rainfall year. The delegated officer considers the above controls will ensure the risk of uncontrolled discharges, resulting in soil or groundwater contamination, is acceptable. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are critical for maintaining an acceptable level of risk, they will be imposed on the works approval and required to be maintained on the licence as minimum infrastructure requirements.	<u>Works approval controls:</u> - Controlled drainage area must be constructed, with bunded hardstand area containing all key feedlot infrastructure; - CDA must be sloped to facilitate drainage to a sedimentation system and holding ponds. <u>Licence controls:</u> - Controlled drainage area must be maintained to ensure all contaminated surface water runoff is fully contained within.
		Overtopping of sedimentation basin or holding pond, causing soil contamination or groundwater contamination	Sedimentation basin and holding pond designed with sufficient storage capacity during a 95 th percentile rainfall year	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The sedimentation system will comprise a single basin that is designed to cater for the peak flow from a 20-year ARI design storm. The holding pond will have sufficient design capacity to cater for the volume of surface water runoff from the entire controlled drainage area during a 95 th percentile rainfall year. The delegated officer considers the above controls will ensure the risk of overtopping of containment infrastructure, resulting in soil or groundwater contamination, is acceptable. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are critical for maintaining an acceptable level of risk, they will be imposed on the works approval and required to be maintained on the licence	<u>Works approval controls:</u> - Containment infrastructure must be constructed in accordance with National Guidelines, with minimum design capacity specified. <u>Licence controls:</u> - Operational freeboard requirement of 0.5 m must be maintained on holding pond, 0.8 m on sedimentation basin.

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
							as minimum infrastructure requirements.	
	Odour, from manure accumulated in feedlot pens	Unreasonable interference with the health, welfare, convenience, comfort or amenity of nearby sensitive receptors (>6 km)	Stocking density 10.8 m ² /SCU Pens cleaned about every 13 weeks, to ensure manure build up does not exceed 50mm	Low level impacts to amenity on local scale Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, based on applicant controls being implemented	The delegated officer considers there is sufficient separation in place (>6 km to nearest rural dwelling, >28 km to nearest town). Providing the stocking density in pens does not exceed the National Guidelines (10.8 m ² /SCU) and pens are cleaned in accordance with the National Guidelines (i.e. at least once every 13 weeks, to ensure manure build up does not exceed 50 mm), the delegated officer considers it unlikely that odour from feedlot operations will significantly impact on the amenity or health of off-site human receptors. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are necessary for maintaining a low level of risk, they will be imposed on the works approval and the licence as operational controls.	<u>Works approval controls:</u> - Stocking density must not exceed 10.8 m ² /SCU in pens; - Pens must be cleaned once the depth of dry manure on the pen surface exceeds 50 mm, or at least once every 13 weeks, whichever is sooner. <u>Licence controls:</u> As above.
	Odour, from manure and nutrient-laden leachate build up in effluent catch drain and sedimentation basin		Effluent catch drain constructed with at least 0.75% long fall to facilitate drainage during rainfall events	Low level impacts to amenity on local scale Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, based on applicant controls being implemented	The delegated officer considers there is sufficient separation in place (>6 km to nearest rural dwelling, >28 km to nearest town). Providing the effluent catch drain is maintained in accordance with the National Guidelines (i.e. all leachate and surface water runoff from the feedlot pens can freely flow to the sedimentation system without scouring), the delegated officer considers it unlikely that odour from effluent catch drain or the sedimentation system will significantly impact on the amenity or health of off-site human receptors. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are necessary for maintaining a low level of risk, they will be imposed on the works approval and the licence as operational controls.	<u>Works approval controls:</u> - Effluent catch drain must be maintained to ensure all leachate and surface water runoff from the feedlot pens is diverted to the sedimentation system without scouring. <u>Licence controls:</u> As above.
	Odour, from effluent holding pond		Sedimentation system in place to settle solids, to ensure cleaner water is stored within holding ponds	Low level impacts to amenity on local scale Minor	Likely to occur only in exceptional circumstances Rare	Low Acceptable, based on applicant controls being implemented	The delegated officer considers there is sufficient separation in place (>6 km to nearest rural dwelling, >28 km to nearest town). Providing the sedimentation system is maintained in accordance with the National Guidelines (i.e. basins flow freely after rainfall events, basins cleaned of solids before sludge takes up more than 10% of the basin capacity), the delegated officer considers it unlikely that odour from the effluent holding pond will significantly impact on the amenity or health of off-site human receptors. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are necessary for maintaining a low level of risk, they will be imposed on the works approval and the licence as operational controls.	<u>Works approval controls:</u> - Sedimentation system must be maintained to ensure basin is free flowing after rainfall; - Basin must be cleaned of solids before 10% buildup of sludge; <u>Licence controls:</u> As above.
	Noise, from animals and machinery movements	Sufficient separation distance in place to nearby human receptors	Minimal impacts to amenity on local scale Slight	Likely to occur only in exceptional circumstances Rare	Low Acceptable, not subject to controls	The delegated officer considers there is sufficient separation in place (>6 km to nearest rural dwelling, >28 km to nearest town), and therefore does not reasonably foresee that noise and dust from vehicle movements as part of feedlot operations will impact on the amenity or health of off-site human receptors.	<u>Works approval controls:</u> None specified. <u>Licence controls:</u> None specified.	
	Fugitive dust, from truck movements on gravel/unsealed roads							
Category 68: Manure storage / composting operations								
Transfer of manure and dead animals from feedlot pens, generation of manure and composting windrows, disturbance of stockpiles and windrows, etc.	Nutrient-laden leachate from manure, urine, mobilised by surface water runoff	Uncontrolled discharge, causing soil contamination or groundwater contamination	Manure storage pad to be constructed within a controlled drainage area, comprising a bunded hardstand that diverts surface water runoff to the sedimentation system	Mid-level on-site impacts Low-level off-site impacts on local scale Moderate	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The manure storage area will comprise a bunded hardstand pad that slopes toward the sedimentation system, to ensure all surface water runoff is contained. The delegated officer considers the above controls will ensure the risk of uncontrolled discharges, resulting in soil or groundwater contamination, is acceptable. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are critical for maintaining an acceptable level of risk, they will be imposed on the works approval and required to be maintained on the licence as minimum infrastructure requirements.	<u>Works approval controls:</u> - Manure storage area must be constructed, with bunded hardstand area within the controlled drainage area; - Area must be sloped to facilitate drainage to the sedimentation basin; <u>Licence controls:</u> - Manure storage area must be maintained to ensure all contaminated surface water runoff is fully contained within.

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/ Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
	Odour, from manure storage area (stockpiled manure, composting operations, etc.)	Unreasonable interference with the health, welfare, convenience, comfort or amenity of nearby sensitive receptors (>6 km)	Manure stockpiled in low profile windrows, consistent with National Guidelines Composting manure and dead animals in accordance with National Guidelines	Low level impacts to amenity on local scale Minor	Not likely to occur in most circumstances Unlikely	Medium Acceptable, subject to regulatory controls	The delegated officer considers there is sufficient separation in place (>6 km to nearest rural dwelling, >28 km to nearest town). Providing the manure is handled, stockpiled and composted in accordance with the National Guidelines (i.e. using an aerobic composting process, turning and aerating the material, maintaining suitable moisture levels and temperature, having a suitable C:N ratio, etc.), the delegated officer considers it unlikely that odour from manure storage or composting operations will significantly impact on the amenity or health of off-site human receptors. This also assumes that only low risk feedstocks are brought onto the premises for incorporating into the composting process, such as green waste, untreated timber and natural fibrous organics, which all have low odour potential. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are necessary for maintaining a low level of risk, they will be imposed on the works approval and the licence as operational controls.	<u>Works approval controls:</u> - Optimum conditions for rapid composting, as per National Guidelines; - Only low risk feedstocks brought onto the premises for incorporating into composting process <u>Licence controls:</u> - As above.
Category 68: Manure/compost spreading operations								
Spreading of composted manure over 1,056 ha of dryland cropping land	Leaching or runoff of nutrients from spread compost / manure	Contamination of soil, particularly in sand-filled valleys, causing contamination of shallow groundwater Soil acidification Excessive build-up of soil P	Manure / compost to be evenly spread at yearly application of 8.2 t/ha	Mid-level on-site impacts Moderate	Could occur at some time Possible	Medium Acceptable, subject to regulatory controls	The delegated officer has considered the advice provided by DPIRD on the Coalara Feedlot proposal to spread composted manure on the premises (see Decision Report for W6492) and has determined the yearly application of up to 8.2 t/ha over the available 1,056 ha of cropping land is the most appropriate method to maintain the soil's capacity to absorb nutrients and to limit water repellence. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are critical for maintaining an acceptable level of risk, they will be imposed on the works approval for time limited operations, and on the licence as ongoing operational controls. In addition, the delegated officer considers the suggestion by DPIRD for soil testing before and after the application of manure has merit, to allow the ability to track movement of P and other nutrients down the soil profile and indicate if there is leaching at greater depth.	<u>Works approval controls:</u> - Composted manure must only be spread at an application rate of no more than 8.2 t/ha/yr; - Composted manure must only be spread across Waste Utilisation Area 1, with even distribution and only onto areas growing crops or pasture; - Must conduct soil testing of nutrients, before and after first application; - Soil testing must be conducted at regular depths down the soil profile; <u>Licence controls:</u> As above.
	Odour, from spread manure / compost	Unreasonable interference with the health, welfare, convenience, comfort or amenity of nearby sensitive receptors (>6 km)	Manure stockpiled in low profile windrows, consistent with National Guidelines Composting manure and dead animals in accordance with National Guidelines	Minimal impacts to amenity on local scale Slight	Not likely to occur in most circumstances Unlikely	Low Acceptable, based on applicant controls being implemented	The delegated officer considers there is sufficient separation in place (>6 km to nearest rural dwelling, >28 km to nearest town). Providing the manure is incorporated into cultivation as soon as possible after application, the delegated officer considers it unlikely that odour from the spreading of composted manure will significantly impact on the amenity or health of off-site human receptors. In accordance with the <i>Guide to Licensing</i> (DWER 2019), as the proposed controls are necessary for maintaining a low level of risk, they will be imposed on the works approval and the licence as operational controls.	<u>Works approval controls:</u> - Composted manure must be incorporated into the soil profile within 7 days of spreading; <u>Licence controls:</u> As above.

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

Decision

The delegated officer has determined the proposal to construct and operate an intensive open-air cattle feedlot on the premises, with an assessed design capacity of 2,500 SCUs, does not pose an unacceptable risk of impacts to on- and off-site receptors. This determination is based on the siting, design and proposed construction and management being consistent with the National Guidelines (MLA 2021a):

- sufficient separation to nearby (human) sensitive receptors, groundwater and surface water features;
- proposed stocking density of 10.8 m²/SCU;
- feedlot pens, bunks, cattle alleys, effluent catch drains, sedimentation basins and effluent holding ponds to be constructed with an impermeable barrier (clay liner with maximum permeability of 1x10⁻⁹ m/s);
- an appropriate controlled drainage system, including an effluent catch drain and sedimentation basin designed to cater for the peak flow from a design storm having an ARI of 20 years;
- effluent holding pond being designed with sufficient storage capacity so that it spills no more frequently than an average of one in 20 years;
- manure and carcass composting to be conducted on a suitably constructed composting pad within the controlled drainage area, with compost to be prepared for spreading on the premises; and
- finished compost and stockpiled manure being spread at acceptable application rates, once per year during the dry period.

The above controls proposed by the applicant are considered critical for maintaining an acceptable level of risk of environmental impacts, and in accordance with the *Guide to Licensing* (DWER 2019), they will be imposed on the works approval and infrastructure controls.

The delegated officer has also considered advice provided by DPIRD regarding the proposal to spread composted manure on the premises and has imposed additional controls based on that advice to ensure the risk of that activity is acceptable and sustainable.

Works approval and licence

Works Approval W6976/2024/1 that accompanies this report authorises construction of the new feedlot infrastructure and following the submission of compliance certification reports, the provision for a time-limited operational period. The conditions in the issued works approval, as outlined in the above risk table have been determined in accordance with the *Guidance Statement: Setting Conditions* (DER 2015).

A licence is required to authorise emissions associated with the ongoing operation of the premises, i.e., cattle feedlotting activities. A risk assessment for the operational phase has been included in this report, however licence conditions will not be finalised until the department assesses the licence application. Conditions will be imposed to ensure day-to-day operations do not pose an unacceptable risk of impacts to on- and off-site receptors.

Applicant comments on draft decision

The applicant was provided with drafts of the works approval and this report on 18 December 2024 and waived the consult period with no further comment.

Conclusion

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

References

1. Department of Primary Industries and Regional Development (DPIRD) 2021, Soil Landscape Mapping (DPIRD-027). Accessed from www.data.wa.gov.au.
2. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 2019, *Guideline: Industry Regulation Guide to Licensing*, Perth, Western Australia.
4. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
5. MLA 2012a, *National Guidelines for Beef Cattle Feedlots in Australia, 2nd Ed.* Meat & Livestock Australia Limited.
6. MLA 2012b, *National Beef Cattle Feedlot Environmental Code of Practice, 2nd Ed.* Meat & Livestock Australia Limited.