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Review of Existing Licence

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

Licence Number	L7352/1989/10
Licence Holder	Derby Industries Pty Ltd
ACN	009 033 612
File number	DER2017/000118-1
Premises	Linley Valley Pork Linley Valley Road WUNDOWIE WA 6560 Legal description - Lot 7 on Diagram 45818, Lot 8 on Diagram 43110, Lot 10 on Plan 12508, Lot 421 on Plan 300357 and Lot 5485 on Plan 114980 As defined by the premises map attached to the issued licence
Date of report	30/08/2023
Decision	Licence granted

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1. Purpose and scope of assessment

1.1 CEO initiated licence review

The Chief Executive Officer (CEO) of the Department of Water and Environmental Regulation (DWER, the department) determined to undertake a review of licence L7352/1989/10 (the 'existing licence') held by Derby Industries Pty Ltd (the licence holder) under Division 3, Part V of the *Environmental Protection Act 1986* (EP Act). The review was initiated in accordance with section 59(1) of the EP Act to ensure accuracy and adequacy of existing licence conditions in response to concerns that the current wastewater treatment and storage system (ponds) at Linley Valley Pork (the premises) may not be fit for purpose and may pose a risk to the environment due to its close proximity to the Wooroloo Brook, a tributary that confluences with the Avon River to form the Swan River.

An additional concern is that all wastewater generated from the premises relies on off-site disposal at the El Cabello Golf Course a site that is currently unlicensed and not under the control of Derby Industries Pty Ltd. DWER is also unaware of any contingency for disposal should the golf course premises not be able to accept the wastewater for any reason.

1.2 Regulatory framework

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.

2. Premises overview

2.1 Prescribed premises categories

Currently, Licence L7352/1989/10 contains the following prescribed premises categories as per Schedule 1 of the Environmental Protection Regulations 1987:

Table 1: Prescribed Premises Categories in the Existing Licence

Classification of Premises	Description	Approved design capacity
Category 2	Intensive piggery: premises on which pigs are fed, watered and housed in pens	3,500 animals per day
Category 15	Abattoir: premises on which animals are slaughtered	80,000 tonnes per annual period (liveweight)

The delegated officer considers category 2 not applicable to this licence as the holding of pigs is considered temporary and ancillary to the operation of an abattoir, even in the potential case of abattoir equipment failure and the temporary need for feeding, watering and housing of pigs. Category 2 will therefore be removed from the licence.

2.2 Premises operations

The licence holder operates Linley Valley Pork (LVP), a pig abattoir situated on Linley Valley Road, Wooroloo. Prior to slaughtering, pigs are delivered and housed in the lairage located at the south-east corner of the abattoir. The lairage consists of a series of pens and is reported to hold a maximum of 2,962 pigs. The abattoir slaughters approximately 14,000 pigs per week. In the 2022-2023 annual period, LVP slaughtered 744,939 pigs.

Based on an average live carcass weight of 90 kg, the total tonnage of throughput for this annual period was estimated to be 67,045 liveweight tonnes. Other abattoir operations include dehairing, boning, chilling and freezing of the pork products. Animal by-products include blood, tallow, offal, paunch, skins, bone, hair, manure and unfit carcasses which are collected and transported to various off-site premises for processing and/or disposal.

2.2.1 Wastewater generation, treatment and containment

Wastewater generation sources on the premises include abattoir cleaning operations, pig delivery truck washing activities and potentially contaminated stormwater in contact with outdoor surfaces that may have been exposed to pig related waste materials. A large portion of water unnecessarily entering the wastewater stream is 'clean' stormwater from the extensive yard areas due to a lack of stormwater diversion bunding and drains.

All wastewater streams are directed via drainage channels and pipework to a primary treatment wastewater collection pit that includes a hydro-sieve and a series of settling tanks and a settling pond to reduce solid wastes in the wastewater. A flow meter is located at the end of this primary treatment system to record the amount of wastewater being pumped out of this system. Wastewater is then pumped through a pipeline that crosses over the Wooroloo Brook towards a secondary treatment system that includes a series of connected wastewater treatment ponds that were constructed approximately 50 years ago – two anaerobic (ponds 2 and 3) and five aerobic ponds (ponds 4, 5, 6, 7 and 9). The ponds have been constructed by local cut to fill earthworks most likely with limited material selection and compaction control.

A pump house and flow meter are located at the final pond in the series (pond 9) which records the amount of semi-treated wastewater pumped out towards another series of wastewater ponds at the neighbouring El Caballo Golf Course. The operation of these ponds prior to irrigation onto land is managed by the golf course owner which was previously licensed as a liquid waste facility L6736/1993/12, however this licence has expired, and the golf course is no longer authorised to receive wastewater from LVP. DWER understands that a new licence application is being prepared. LVP currently have an agreement in place with Skank Boy Pty Ltd (the golf course) to send all their wastewater to the golf course.

Wastewater treatment ponds

Following a breach of Pond 1's embankment in the wastewater treatment system on 10/01/2014, a geotechnical risk assessment of wastewater treatment ponds 2 - 9 was conducted by CMW Geosciences Pty Ltd. The subsequent report – Embankment Dam Stability Assessment, noted that several pond embankment dams were considered to provide a high level of risk with respect to slope instability. The report included recommendations for pond repair and management to which works were subsequently completed by the licence holder. These included:

- Ensuring elevated pond water levels do not develop within ponds 2 and 3 and that levels are adequately maintained.
  - A secondary overflow pipe was installed on these ponds.

- Installation of a toe buttress to halt toe instability and control groundwater seepage from pond embankment 4.
  - These construction works were completed using a geotextile underlay and a rockfill buttress at the base of pond embankment 4.

- Decommissioning of Pond 8 or install stabilising buttress around the downstream embankment toe.
  - As this pond embankment provided the highest risk of instability, the licence holder has decommissioned this pond indefinitely and capped the wastewater pipe inflow.

- Construct rockfill batter along the immediate downstream toe and at isolated locations where instability has occurred in the past and over-steepened batters exist.
  - Remedial works on most pond walls and buttressing has been constructed where higher risk areas have been considered possible.

- Ensuring freeboard is increased as much as possible at ponds 4 to 9 (to say 1.0m or similar) to improve the level of stability and provide a water volume buffer to extreme rainfall events.
  - Ponds 4-9 have had pond walls built up to allow for a 1m freeboard.

- Construct robust overflow spillway to provide a controlled secondary outlet from the pond system in the event of power and generator failure coinciding with an extreme rainfall event.
  - A spillway has been constructed on pond 9 using a heavy-duty geotextile liner and rockfill.

2.2.2 Monitoring of Wooroloo Brook water quality

The existing licence requires the licence holder to monitor surface water quality within Wooroloo Brook where it enters and exits the premises for pH, TSS, TDS, BOD5, TN and TP.

The licence holder's annual reports from 2014 – 2023 include surface quality monitoring data from the Wooroloo Brook. Results from this monitoring is shown in Table 2:

Table 2: Water quality within Wooroloo Brook

Parameter	Units	January 2014 – March 2023[1]				ANZECC 2000[2]
		Up-stream range of sampling results	Down-stream range of sampling results	Up-stream average sampling result	Down-stream average sampling result	
pH	pH units	**6.1 – 13.5**	**6.4 – 11.7**	7.8	7.4	6.5 – 8.0[3]
TSS	mg/L	1 - 96	3.2 - 106	19.6	19	-
TDS	mg/L	1,300 - 11,000	2,400 – 16,000	5,003	8,474	-
BOD	mg/L	3 - 9	5 – 37	5.09	6.47	-
TN	mg/L	0.2 – 2.2	0.2 – 11.9	0.46	**1.37**	1.2[3]
TP	mg/L	0.01 – 0.4	0.01 – 1.29	0.06	**0.12**	0.065[3]
Electrical conductivity	uS/cm	**2,393 – 13,005**	**2,665 – 25,513**	**8,105**	**15,830**	120 – 300[3]

Note 1: Wooroloo Brook sampling results. Data taken from annual reports submitted by the licence holder.

Note 2: National Water Quality Management Strategy Paper No. 4 – Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Volume 3 Primary Industries, 2000, ANZECC and ARMCANZ (ANZECC 2000).

Note 3: Default trigger values for south-west Australia for slightly disturbed ecosystems – lowland rivers (Table 3.3.6 and Table 3.3.7).

Based on these surface water quality results, The delegated officer notes that the Wooroloo Brook appears to be picking up a nutrient load whilst the water flows through the prescribed premises. This could indicate that traces of wastewater are entering the waterway either through loss of containment/leaching from the wastewater treatment ponds or directly from wastewater producing processes on the premises.

2.2.3 Monitoring of ground water quality

Licence L7352/1989/10 does not currently require groundwater monitoring at the premises. The licence holder currently has 5 groundwater monitoring bores on the premises which are situated in various locations that surround the wastewater treatment ponds.

Requests for information from the licence holder and previous wastewater treatment pond reports have noted the following:

- the licence holder has been sampling the monitoring bores on an annual basis;
- no bore completion logs are available;
- bore screening depths are unknown;
- there is possibility that the existing monitoring bores are screened within perched aquifers due to proximity to the Wooroloo Brook and/or potential seepage from the wastewater treatment ponds;
- the wastewater ponds were constructed approximately 50 years ago using local cut to fill earthworks most likely with limited material selection and compaction control; and
- wastewater pond construction materials and permeability is unknown.

It is therefore unclear whether the data gathered from monitoring of these bores is useful for determining whether any impacts or not to groundwater from wastewater on the premises has occurred.

3. Scope of assessment

3.1.1 Licence review background

Licence L6736/1993/12 for operation of the El Caballo Golf Course was due to expire on 14 June 2023. To ensure regulatory consistency between this licence and the LVP licence, the CEO has decided to undertake this licence review.

To better understand site infrastructure and operations associated with wastewater management, treatment and disposal systems on the LVP and El Caballo Golf Course premises, a joint site visit was conducted by DWER officers accompanied by the Department of Health on 26 October 2022. The following potential licence non-compliances and the licence holder's subsequent actions were noted relating to LVP wastewater treatment pond management:

1. Wastewater treatment pond 9 was observed to be in breach of the 1m freeboard licence requirement. A freeboard of approximately 300mm below the spillway was observed including evidence of scouring on the spillway indicating that wastewater may have discharged into the environment. In response, the licence holder has reported that:
    a. a marker is installed in wastewater pond 9 to show water level and freeboard;
    b. a float in wastewater pond 9 has been adjusted to activate the pump at a lower water level; and
    c. freeboard inspections are conducted daily on pond 9 including recording on a daily inspection checklist.
2. Wastewater treatment pond 8 was observed to be actively receiving wastewater which the licence does not currently permit due to a high risk of pond embankment instability that was reported in an embankment dam stability assessment conducted in July 2014. In response, the licence holder reported that they had ceased the discharge of wastewater to pond 8 and permanently capped the discharge pipeline.

3. Wastewater treatment pond 9 was observed to have significant erosion along the southern side of the ponds embankment which also appeared to be impacted by large tree roots. Evidence of significant dampness was also noted at the base of the pond embankment which could indicate that the ponds liner could be compromised and/or overtopping has occurred. In response, the licence holder advised the inspection of pond embankments has been added to the daily inspection checklist, all pond embankments have been inspected for erosion and/or tree root impact and repairs made where required.
4. Evidence of livestock intrusion onto the pond embankments was observed. In response, the licence holder advised that additional fencing was to be installed to prevent cattle access to the pond embankments.
5. The pipework between ponds 3 and 4 appeared to be leaking from an elbow join and tree branches had fallen onto the pipeline. In response, the licence holder reported they have inspected all pond pipework for visible leaks, added the inspection of pipework onto the daily inspection checklist and pruned all tree branches overhanging pond pipework.

As a part of this licence review, requests for information have been made to the licence holder to ensure the department has enough information to allow a sufficiently informed risk assessment can be undertaken on the premises current operations. These requests and the licence holder's subsequent responses are noted in Table 2:

Table 2: Information requests and licence holder's responses

Date sent to licence holder	Request for information and DWER document ID	Date received by DWER	Licence holder response document ID
21/06/2022 and 07/09/2022	Licence review notification and request for information on site operations and infrastructure (A2108284 and DWERDT807718)	13/09/2022	Response documents (A2125664)
09/11/2022	Request for information in relation to site visit conducted on 25/10/2022	30/11/2022	Response document (DWERDT717116)
25/01/2023	Request for information and clarification on licence holder's site visit response information (DWERDT717116)	15/02/2023	Response document (DWERDT746058)
25/05/2023	Request for information and clarification on licence holder's information on animal truck washing wastewater emissions (DWERDT783800)	02/06/2023	Response email and documents (DWERDT788287)
07/06/2023 and 20/06/2023	Request for clarification on licence holder's response information on animal truck washing (DWERDT789032 and DWERDT794541)	20/06/2023 and 27/06/2023	Response emails and documents (DWERDT797895 and DWERDT801408)

3.1.2 Administrative changes

As part of this licence review package, the department has incorporated administrative changes to the licence. The department has not undertaken any additional risk assessment of the premises related to these changes.

In updating the licence, the CEO has

- updated the format and appearance of the licence;
- revised licence condition numbers, removed any redundant conditions and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

The full consolidation of the licence conditions as they relate to the revised licence are detailed in Section 7.1.

4. Risk assessment

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

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

4.1 Source-pathways and receptors

4.1.1 Emissions and pathways

The key emissions and associated actual or likely pathway during premises operation which have been considered in this decision report are detailed in Table 3 below. Table 3 also details the control measures the licence holder currently implements in controlling these emissions, where necessary.

Table 3: Licence holder's controls

Emission	Sources	Potential pathways	Existing controls
Operation			
Dust	Loading and unloading of animals	Air/windborne pathway causing impacts to health and amenity	No controls proposed.
Noise	Animals and machinery/vehicle movement and operation		No controls proposed. Premises subject to the Environmental Protection (Noise) Regulations 1997.
Odour	Accumulation of manure, urine, animal by-products in holding pens, lairage and abattoir Wastewater treatment ponds and pond maintenance activities		- Daily cleaning of lairage and abattoir. - Screened manure is contained in an enclosed steel silo. Silo is emptied via a contractor truck at least weekly. - Animal by-products and (fat, offal, hair, bones, paunch) and deceased pigs are transferred via conveyor belt directly into contractor trucks prior to offsite processing/disposal several time per day during operations. - If pond-desludging is required in the future, DWER will be consulted and a program of works will be scheduled.

Emission	Sources	Potential pathways	Existing controls
Solid waste	Accumulation of manure from delivery of pigs and pig movements Accumulation of manure and pig wastes/by-products from abattoir operations	Loss of containment leading to seepage/ infiltration into the environment, causing soil/ groundwater contamination and ecosystem disturbance	- Animal by-products (fat, offal, hair, bones, paunch) and deceased pigs are transferred via conveyor belt directly into contractor trucks prior to offsite processing/disposal several time per day during operations. - Screened manure is contained in a steel silo located over hardstand with bunding underneath the hydro-sieve. Silo is emptied via a contractor truck at least weekly. - Built up solid waste is periodically removed from the wastewater collection pits where required and contained within the manure storage. - Truck washing area has a concrete floor and screened drainage to the wastewater collection pit. Screens are manually cleaned of solid waste daily.
Leachate/wastewater	Washdown of lairage and abattoir Stock truck washing Containment loss and leakage of blood storage or wastewater treatment system infrastructure		- Concrete slatted flooring over a cavity with concrete flooring below to convey wastewater to the wastewater collection pit (lairage and abattoir) - Storm water collected on the truck washing area and lairage area is captured via drainage channels and directed to the wastewater collection pit. - Wastewater generated from the premises truck washing and washdown of the abattoir and lairage is directed over concrete flooring and concrete/PVC drainage lines towards the wastewater collection pit. - Blood collection truck tank is sealed and situated over a concrete hardstand prior to daily offsite processing/disposal. - A high-level alarm is situated below the level of the overflow pipes on each wastewater collection pit. Alarm activation will cease slaughtering activities until overfilling fault is investigated and rectified. - An automated backup pump system is available for use in case of wastewater collection pit pump failure. - 0.6m freeboard on wastewater treatment ponds 2 and 3 and 1m freeboard on ponds 4,5,6,7 and 9. - Wastewater treatment ponds 1 and 8 are decommissioned. - Fencing to be installed surrounding the wastewater treatment ponds to prevent livestock access. - Daily inspections of wastewater treatment pond infrastructure and freeboard.

4.1.2 Receptors

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

Table 4 and Figure 1 below 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 *(Guideline: Environmental Siting* (DWER 2020)).

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

Receptor ID	Human receptors	Distance from prescribed activity
H1	El Caballo Lifestyle Village, 51 Jocoso Rise, Wundowie WA	Approximately 400m east of the premises wastewater treatment ponds
H2	Rural residence on Werribee Road, WOOROLOO WA	Approximately 550m north of the premises wastewater treatment ponds
H3	Rural residences on Linley Valley Road, WOOROLOO WA	Approximately 650m west of the premises abattoir
H4	El Caballo Resort, 3349 Great Eastern Hwy, WOOROLOO WA	Approximately 850m east of the premises abattoir
H5	El Caballo Golf Course Pro Shop, 88 Great Eastern Hwy, WOOROLOO WA	Approximately 890m east of the premises abattoir
H6	Rural residence on Harper Road, WOOROLOO WA	Approximately 950m west of the premises wastewater treatment ponds
H7	Wooroloo Swimming Pool off Linley Valley Road (restricted usage road), WOOROLOO WA	Approximately 990m south-west of the premises abattoir
H8	Rural residences on Jocoso Rise and Bodeguero Way, WUNDOWIE WA	Between 1km and 2km north-east of the premises wastewater treatment ponds
H9	Wooroloo Prison Farm off Great Eastern Highway, WOOROLOO	Approximately 1km south-west of the premises abattoir
H10	Loosefoot Saloon restaurant and bar, 3381 Great Eastern Highway, WUNDOWIE WA	Approximately 1.25km east of the premises abattoir
H11	Wooroloo townsite	Approximately 2.7kms west of the premises wastewater treatment ponds

Receptor ID	Environmental receptors	Distance from prescribed activity
E1	Wooroloo Brook	This major non-perennial watercourse runs directly through the prescribed premises boundary and is down-gradient of the wastewater treatment pond infrastructure. The watercourse flows from south-east to north-west.
E2	Native fauna	Within premises
E3	Keaginine Nature Reserve	This nature reserve is located approximately 700m south-east of the prescribed premises boundary.
-	Swan River System – RIWI Act 1914	Located within this proclaimed surface water area
-	Groundwater	Monitoring bores MW1 – MW5 surrounding the wastewater treatment ponds indicate a groundwater flow from north-east to south-west towards the Wooroloo Brook Catchment. MW1 and MW2 indicate seasonal groundwater depths of between 6.95 to 10.25mbgl indicating the groundwater flow towards MW4 and MW5 which indicate depths of between 0.39 to 2.19mbgl. Salinity for this area is mapped at 1000 – 3000 TDS.

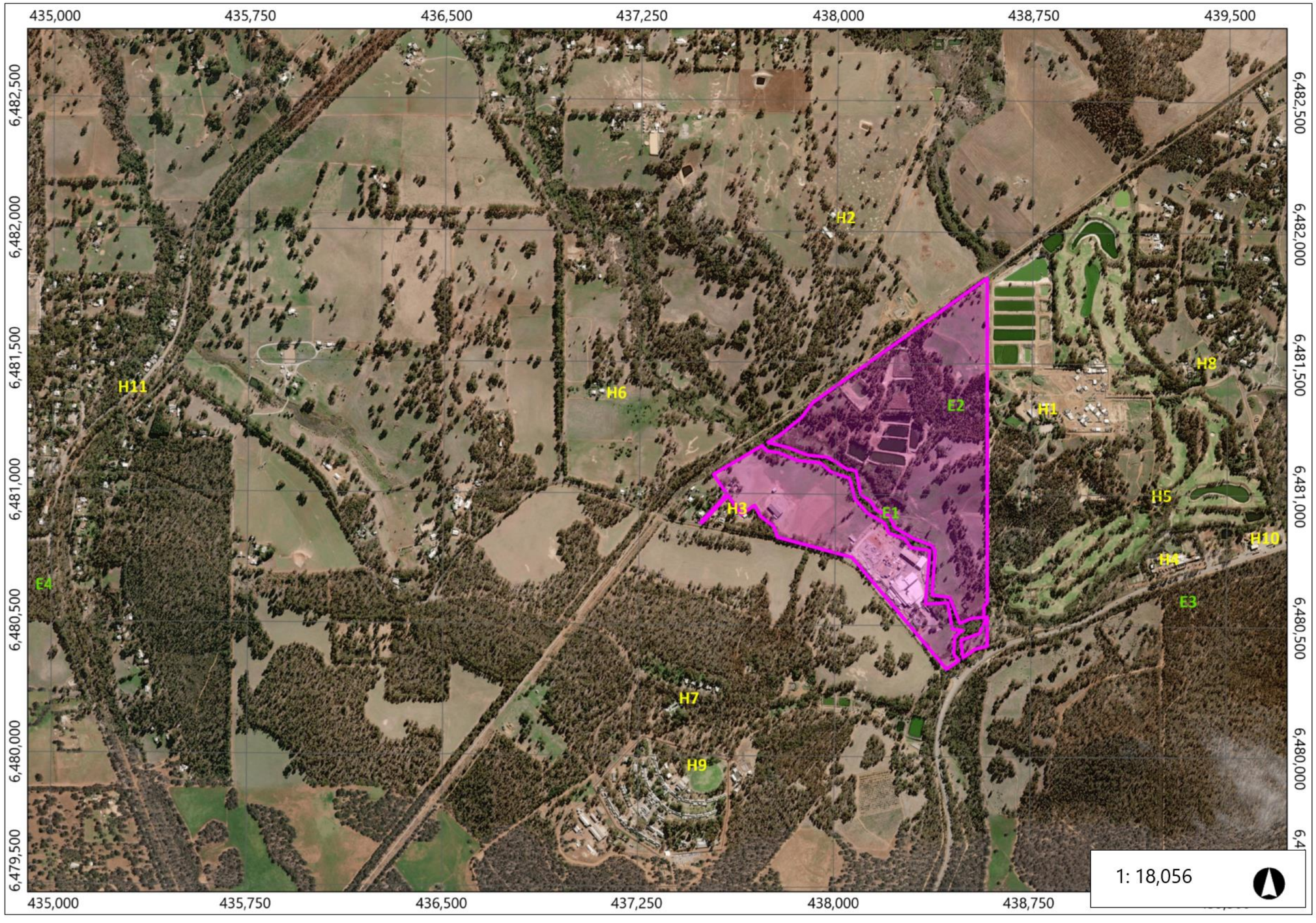

Figure 1: Distance to sensitive receptors (prescribed premises boundary shaded in pink)

4.2 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 potential source-pathway and receptor linkages as identified in Section 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

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

Additional regulatory controls may be imposed where the licence holder's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 4.

Licence L7352/1989/10 that accompanies this decision report authorises emissions associated with the operation of the premises

The conditions in the issued licence, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

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

Risk events					Risk rating [1] C = consequence L = likelihood	Reasoning	Conditions [2] of licence
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder controls**			
Lairage operations including: - Loading, unloading, holding and watering of pigs in the lairage and covered holding pens Abattoir operations including: - Storage of organic by-products/waste - Washdown, cleaning and sterilisation of abattoir - Animal delivery truck washdown	Dust from loading/ unloading and holding of animals	Air/windborne pathway causing impacts to health and amenity	Refer to Table 3	Refer to Table 2	C = Minor L = Rare **Low Risk**	Minimal dust is expected to be generated from this activity as the loading/unloading of pigs takes place primarily on bituminised ground. The delegated officer considers the risk of dust to receptors is low and therefore no regulatory controls have been placed on the licence. General provisions of the *EP Act* apply.	N/A
	Odour from animals and accumulated manure, urine, animal by-products in holding pens, lairage and abattoir				C = Minor L = Unlikely **Medium Risk**	The licence holder currently implements various odour prevention controls relating to cleaning and enclosed waste storage that would minimise the likelihood of odour becoming a nuisance to nearby human receptors. These controls have been included on the licence as regulatory conditions to ensure the risk of odour emissions remains acceptable. In addition, the delegated officer has included standard conditioning expected of abattoirs concerning deceased animals and animal by-products to prevent the potential for odour generation. Standard notification requirements for any scheduled pond de-sludging works have also been included as odour generation from this activity is expected to be significant.	- Manure in the lairage and abattoir is to be removed on a daily basis and stored in an enclosed steel silo prior to weekly removal offsite. - **Deceased animals, afterbirth and foreign materials in lairage pens and sheds to be removed offsite daily.** - **Animal carcasses, skins, offal, paunch, fat and bone are not to be stored longer than 24 hours prior to storing in cold storage or disposed of offsite.** - Blood to be disposed offsite each day after animal processing. - **Notification requirements for scheduled wastewater treatment pond de-sludging.**
	Noise, from animals, vehicle/machinery movements and operation				C = Minor L = Unlikely **Medium Risk**	Some noise is expected during abattoir operations, with the nature of animal noise and machinery movements consistent with that expected from general farming activities in a rural area. The delegated officer considers noise emissions from premises operations are unlikely to impact surrounding human receptors and is subject to the Environmental Protection (Noise) Regulations 1997.	N/A
	Leachate/ runoff from accumulated manure and urine in covered holding pens, lairage and truck washing bay	Seepage/ infiltration, causing soil and groundwater contamination and ecosystem disturbance			C = Moderate L = Possible **Medium Risk**	As per the licence holder's responses to the department's requests for information for the licence review, regulatory controls have been added to the licence to ensure wastewater from the abattoir and associated activities is adequately contained and directed into the wastewater treatment system. In addition, the licence holder has advised that animal delivery trucks are washed down onsite in an area located next to the lairage. As this activity has not been previously risk assessed for wastewater emissions by the department, additional information was requested by the department to ensure an acceptable level of risk to the environment for this activity. Information provided by the licence holder has indicated: – The truck washdown area ground surface is concrete and has visible signs of cracking and chipping that may allow wastewater to infiltrate the ground surface; – The licence holder has some uncertainty over the floor grading across the truck washing area and lairage. The licence holder has advised the fall of the stock yard across the truck wash is approx. 1m towards the concrete apron drain and fall across the lairage towards the concrete apron drain is approx. 2m. There is no bunding specific to the truck washdown area. – The licence holder has advised that approximately 12 trucks are washed down each operational day taking about 1.5 hours for each washdown using about 15L of water used per minute - producing approximately 16,200L of wastewater per operational day. As this washdown areas infrastructure has not previously been assessed by the department, works conditions have been included in the licence to ensure wastewater and contaminated stormwater is contained on the premises and directed towards the wastewater treatment system. As additional pollution control infrastructure is required to enable an acceptable level of risk, additional regulatory controls have been added to ensure the licence holder submits a works approval for these infrastructure works.	- **Requirement to submit a works approval application to the department for upgrades and repairs to the truck washing bay to ensure infrastructure is able to capture and direct all wastewater to the wastewater treatment system.** - **Truck washing bay repairs and upgrades to be completed within 90 days of a works approval being granted.** - Flooring and drainage in the lairage and abattoir to be maintained to contain and direct wastewater to the wastewater treatment system. - Solids screens in the lairage, abattoir and truck washing area to capture all solids from wastewater stream. - Manure in the lairage to be cleaned daily and manure in the truck washing area cleaned after each truck wash. - All wastewater from the lairage, abattoir and truck washing area to be directed to the wastewater treatment system. - Blood waste to be separated and directed to designated sealed blood collection and removal tank that is stored over a bunded concrete hardstand. - All leachate from screened wastewater must be directed to the wastewater treatment system. - Only trucks associated with pig delivery's to be washed onsite. - **Licence holder must not allow discharge of raw, stabilised, or potentially contaminated wastewater or manure directly or indirectly into the Wooroloo Brook or its tributaries.**

Risk events					Risk rating [1] C = consequence L = likelihood	Reasoning	Conditions [2] of licence
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder controls**			
						As the licence holder will be continually operating and is likely to continue truck washing, the delegated officer has included a condition for the works to be completed within 90 days of a works approval being granted. Associated conditions have been added to ensure the licence holder is only washing trucks associated with the activities of the abattoir as advised by the licence holder, for solid waste to be screened and cleaned up between truck washes and wastewater to be contained and captured by the wastewater treatment system.	
Wastewater treatment system including: Collection of wastewater from abattoir and related operations	Direct discharge to land of nutrient-laden wastewater via loss of containment (e.g., pond/tank overtopping event, spills or leak from pipework)	Loss of containment leading to seepage/ infiltration, causing soil, groundwater contamination and ecosystem disturbance			C = Major L = Possible **High Risk**	The delegated officer considers the loss of containment poses a high risk due to the following: - Wastewater is conveyed in a pipeline over the Wooroloo Brook has the potential to be damaged during storm events from floating debris down the Brook. - The lack of surveyed freeboard markers in all wastewater treatment ponds which does not allow accurate inspection of water levels and freeboard. - The licence holder's water balance provided assumes the constant availability of the neighbouring golf course operated under Licence L6736/1993/12 to accept wastewater from the LVP premises. If the golf course's wastewater treatment system is unable to accept wastewater at any stage, the capacity of the wastewater storage system would not be sufficient in containing the amount of wastewater produced by the abattoirs current operations. - The premises site visit on 26 October 2022 indicated the presence of trees growing within pond embankments with some visible evidence of impact to the pond 9 embankment by large root systems. A likely breach of freeboard and some scouring was also observed on the pond 9 spillway indicating that there may have been some recent discharge of wastewater into the environment. - The proximity of the Wooroloo Brook to the wastewater treatment system. The delegated officer therefore considers it necessary to apply additional regulatory controls to the licence including a surveyed freeboard marker in wastewater treatment pond 9, a stock proof fence around the ponds, record keeping and reporting requirements on water usage at the premises, additional sampling of the Wooroloo Brook if any discharge to the environment is observed during daily inspections and notification to DWER, anytime the El Caballo Golf Course cannot receive wastewater from LVP, pond freeboard breaches and any wastewater discharges to the environment at the premises. The delegated officer has also removed the requirement for freeboard on all wastewater treatment ponds apart from pond 9 as they are all gravity feeding in sequence. This is dependent on an added condition that the licence holder confirm during daily inspections that each ponds interconnecting wastewater pond pipeline is not blocked.	– **A surveyed freeboard marker to be installed in wastewater treatment pond 9.** – Maintenance of all hardstands, sumps, drains, pipes and ponds to prevent leakage. – Operation and maintenance of a high-level water alarm on the wastewater collection pit. – Flow meters to be operational and maintained on the collection pit and wastewater pond 9. – Automated backup pump system to be available for use at the wastewater collection pit. – Minimum freeboard of 1m on all wastewater treatment ponds. – No wastewater to be discharged into wastewater ponds 1 and 8. – Stormwater run-off must be prevented from eroding outer pond embankments. – Integrity of all containment infrastructure to be maintained to prevent overflow and leakage of wastewater. – Vegetation on inner pond embankments must not interfere with pond wall integrity or mask leakage or overtopping. – Vegetation on anerobic ponds 2 and 3 must not interfere with the integrity of the crust. – Aerobic ponds to be kept clear of floating matter and algal mats. – **A stock proof fence must be maintained around the wastewater treatment ponds and groundwater bores to prevent damage.** – **Record keeping of flow meter readings of premises water usage.** – **Record keeping of trucks washed and estimated volumes of water usage.** – **Additional surface water sampling event in the event of pond or pipework containment failure.** – Daily inspections of wastewater pipeline, wastewater treatment ponds, pond 9 freeboard **and interconnecting pond pipeline for blockages.** – **Notification to DWER anytime El Caballo Golf Course cannot accept wastewater from Linley Valley Pork and what actions will be taken to ensure wastewater is not discharged to the environment.**

Risk events					Risk rating [1] C = consequence L = likelihood	Reasoning	Conditions [2] of licence
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence holder controls**			
	Seepage or leakage of wastewater through wastewater pond lining				C = Major L = Possible **High Risk**	The delegated officer considers the seepage of wastewater through the wastewater pond systems liners pose a high risk due to the following: - The licence holder has advised that the wastewater treatment ponds liner integrity and liner permeability are unknown. - Surface water sampling conducted up-stream and down-stream of the Wooroloo Brook reported in annual environmental reports by the licence holder from January 2014 – March 2023 indicates the Brook is picking up a nutrient load whilst the water flows through the prescribed premises. This could indicate that traces of wastewater may be entering the Brook through loss of containment through the wastewater treatment ponds. - The licence holder has advised that there are no construction logs for the existing monitoring bores onsite and it is unknown if the bores are screened within perched aquifers. - The infrequent schedule of groundwater monitoring which has not been a requirement on the licence does not provide a reliable data source on the quality of the groundwater source over time and if it is being impacted from possible seepage of wastewater from the wastewater treatment ponds. - Large trees with extensive root systems observed during a site visit of the premises on 26 October 2022 growing in and close to pond embankments. - The proximity of the Wooroloo Brook to the wastewater treatment system. The delegated officer therefore considers it necessary to apply additional regulatory controls to the licence. These controls include the installation of a new groundwater monitoring bore network with quarterly monitoring to monitor the potential impact of wastewater seepage from the wastewater treatment ponds and an increase in sampling of the Wooroloo Brook when flowing.	– **Installation of 4 new monitoring bores, 2 up-gradient and 2 down-gradient of the wastewater treatment ponds.** – Integrity of all containment infrastructure to be maintained to prevent overflow and leakage of wastewater. – **Quarterly groundwater monitoring and reporting of these results in the annual environmental report.** – **Increase in surface water sampling of the Wooroloo Brook from quarterly to monthly when flowing**
	Odour from ponds	Air/windborne pathway causing impacts to health and amenity			C = Minor L = Possible **Medium**	The delegated officer considers odour from the wastewater treatment system ponds poses a medium risk, particularly during any future de-sludging works. The licence holder has advised that pond de-sludging has not occurred to date and is considered unlikely in the near future. If de-sludging were required in the future, the requirement to de-sludge would be discussed with DWER and a program of works would be put in place. The delegated officer considers pond de-sludging licence notification requirements necessary so that the risk of odour to neighbouring properties can be minimised during any future scheduled works.	- Notification to DWER of any scheduled de-sludging works, the scheduled contractor's details and the intended facility the pond sludge will be taken to.

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

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

5. Decision

Based on the above risk assessment, the delegated officer has determined that the overall rating of the risk of wastewater release into the environment, impacting on environmental receptors in terms of nutrient and hydraulic loading, is high and requires additional regulatory controls as outlined in the above risk assessment and in the granted instrument. The delegated officer has taken into account the following factors in this decision:

- Previous containment failure of wastewater treatment pond 1 and the high-risk of failure of wastewater treatment pond 8 (CMW 2014);
- The premises site visit conducted on 26 October 2022 and licence non-compliances observed (See Section 3.1.1);
- The unknown specifications of the wastewater treatment ponds liner and permeability;
- The lack of construction logs and screening depths of the current groundwater monitoring bores
- The licence holder's sampling results of the Wooroloo Brook (See Section 2.2.2); and
- The proximity of the wastewater treatment system to the Wooroloo Brook.

6. Consultation

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

Table 6: Consultation

Consultation method	Comments received	Department response
Licence review advertised on the department's website from 30/09/2022 to 23/10/2022.	None received	N/A
Local Government Authority advised of proposal on 24/06/2022.	None received	N/A
Department of Primary Industries and Regional Development (DPIRD) advised of proposal on 24/06/2022.	DPIRD responded on 13 July 2022 advising that they are not aware of any factors that would lead them to question the adequacy and/or appropriateness of the current premises activities (DWERDT630565)	Noted.
Skank Boy Pty Ltd advised of proposal on 24/06/2022.	None received	N/A
Licence holder was provided with draft documents on 25/07/2023	The licence holder responded on 18 August 2023 confirming they are ok to proceed with the amended licence and are comfortable with the amendments. All requested work is being quoted up and works approvals will be submitted once works are confirmed.	Noted.

7. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that this reviewed licence will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

7.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and will act as a record of implemented changes. All proposed changes have been incorporated into the revised licence part of the amendment process.

Table 7: Summary of licence amendments

Previous condition no.	Condition summary	Revised licence condition	Conversion notes
N/A	Licence category	N/A	Licence category 2 (intensive piggery) has been removed from the licence. The housing and holding of pigs is conducted on a temporary basis if equipment malfunction prevents animals from being processed and is considered ancillary to the current abattoir operations at the premises.
N/A	Introduction	N/A	Deleted, consistent with current DWER template. This guidance is now available in DWER's Guide to Licensing (June 2019).
N/A	Licence history	N/A	Updated, consistent with current DWER template.
N/A	Interpretation	N/A	Updated, consistent with current DWER template.
1.1.1	Definitions	Table 11	Updated and new definitions moved into Table 11 consistent with current DWER template.
1.1.2			
1.1.3	Australian Standards	N/A	Deleted, redundant condition.
1.1.4	Codes of practice	N/A	Deleted, redundant condition.
1.2.1	Authorisation of emissions and discharges	N/A	Deleted, redundant condition – covered by Section 49 of the *Environmental Protection Act 1986* (is an offence to cause pollution and unreasonable emissions).
1.2.2	Pollution control and monitoring equipment	N/A	Deleted, redundant condition. Infrastructure and equipment is now listed in Table 2 with all corresponding requirements in accordance with current DWER template.

Previous condition no.	Condition summary	Revised licence condition	Conversion notes
1.2.3	Dangerous goods	N/A	Deleted, redundant condition – the storage and handling of dangerous goods is regulated by the Department of Mines, Industry Regulation and Safety under the *Dangerous Goods Safety Act 2004* and associated legislation.
1.2.4	Spills	N/A	Deleted, redundant condition – covered by Section 49 of the *Environmental Protection Act 1986* (is an offence to cause pollution and unreasonable emissions).
1.2.5	Handling of stormwater	N/A	Deleted, redundant condition – The condition is unclear as it does not specify what stormwater infrastructure is required to be constructed and maintained or what if any specific manage actions are required.
1.3.1	Wastewater treatment system	Condition 6	'piggery operations' updated to 'premises operations' to ensure all water that is contaminated on the premises is captured by the wastewater treatment system.
N/A	Works	Condition 1 Table 1	New condition and table specifying works to install 4 new groundwater monitoring bores surrounding the wastewater treatment ponds, a surveyed freeboard marker in wastewater treatment pond 9 and a requirement to submit a works approval application to DWER for repairs and upgrades to the truck washing bay.
N/A	Environmental Compliance Report	Condition 2	Standard condition requiring an Environmental Compliance Report following construction and installation works.
N/A	Environmental Compliance Report minimum requirements	Condition 3	Standard condition detailing the minimum content required in the Environmental Compliance Report.
1.3.2 Table 1.3.1	Containment infrastructure	Condition 4 Table 2	Table 1.3.1 has been updated in accordance with DWER's current template and now includes all key site infrastructure and equipment and associated operational controls. Conditions have been added in as per licence holder controls and additional regulatory controls where required.
1.3.3	Wastewater treatment pond management		Controls moved into the infrastructure and equipment table under the wastewater treatment system. Changes made under Amendment Notice 1 have been incorporated into the new licence.

Previous condition no.	Condition summary	Revised licence condition	Conversion notes
1.3.4 Table 1.3.2	Management of waste		Incorporated into Table 2 as operational requirements in the updated licence.
1.3.5	Wastewater collection pit alarm		Additional requirement for a visual alarm and for it to be connected to the premises office to ensure there is better opportunity for it to be detected by onsite personnel. Condition moved into Table 2.
1.3.6	Collection pit alarm response		Condition moved into Table 2.
N/A	Discharge of waste	Condition 5	New condition adapted from the El Caballo Golf Course licence to ensure surface discharge of potentially contaminated wastewater is prevented from entering the Wooroloo Brook.
N/A	Waste reporting	Condition 7 Table 3	Additional standard abattoir waste reporting criteria added into the licence.
2.1.1	Investigating exceedances	N/A	Deleted, redundant condition. Captured by notification requirements in Table 10.
2.7.1	Odour	N/A	Deleted, redundant condition – covered by Section 49 of the *Environmental Protection Act 1986* (is an offence to cause pollution and unreasonable emissions).
3.1.1	Sampling requirements	Condition 9	Applicable sampling standards relocated into water sampling Tables 5,6,7. NATA requirement unchanged.
3.1.2	Sampling frequency	Condition 10	Condition updated in accordance with DWER's current template wording. Annual monitoring requirement removed as no annual monitoring is currently required in the licence.
3.6.1 & Table 3.6.1	Monitoring of inputs and outputs	Condition 8 Table 4	Additional monitoring requirements added – water usage and pig delivery truck washing numbers and water usage. Sampling of Pond 9 wastewater relocated into Table 6.
3.8.1 Table 3.8.1	Monitoring of ambient surface water quality	Condition 11 Table 5	Additional condition for the Wooroloo Brook to be sampled within 24 hours of a discharge of wastewater and an increase to monthly when flowing.
3.6.1 & Table 3.6.1	Monitoring of wastewater	Condition 12 Table 6	pH added to suite of standard testing parameters.

Previous condition no.	Condition summary	Revised licence condition	Conversion notes
N/A	Monitoring of groundwater	Condition 13 Table 7	Quarterly groundwater monitoring sampling added to licence and to commence once the 4 new groundwater monitoring bores have been installed.
N/A	Inspections of critical containment infrastructure	Condition 14 Table 8	New condition added to ensure daily inspections of critical containment infrastructure is undertaken and recorded.
4.1.1 & Table 4.1.1	Improvement programme	N/A	Condition and Table deleted from Licence in accordance with Amendment Notice 2.
5.1.1	Record-keeping	Condition 17 and 18	Condition updated into the new Licence format with additional standard record-keeping requirements.
5.1.2	Premises representatives	N/A	Redundant condition, deleted from licence. It is not a defence to offences under the EP Act for the licence holder or its representatives to claim they were unaware of licence conditions. Moreover, knowledge does not ensure compliance and the obligation to comply with conditions of the licence must remain with the licence holder and their representatives.
5.1.3	Annual Audit Compliance Report	Condition 16	Condition updated into new format.
5.1.4	Complaints management system	Condition 15	Condition updated into new format.
5.2.1 & Table 5.2.1	Annual Environmental Report	Condition 19 Table 9	Updated the reporting requirements to include groundwater sampling - parameters to be reported on in more detail to identify any trends and impacts. Additional waste reporting required as per Table 3 of the licence.
5.2.2	Additional records for Annual Environmental Report	N/A	Reporting requirements for an assessment of sampling results and original monitoring reports consolidated into Table 9 of the licence.

Previous condition no.	Condition summary	Revised licence condition	Conversion notes
5.3.1 & Table 5.3.1	Notification requirements	Condition 20 Table 10	Existing requirement to notify the Department of a pollution incident has been updated to specify the information required for a liquid waste discharge. Additional requirement to notify breaches of freeboard and any notification from El Caballo Golf Course if they are unable to accept wastewater have been included. As the premises has wastewater ponds which may require de-sludging, to ensure consistency with other instruments, notification requirements have been added to the licence regarding proposed de-sludging events.
Schedule 1 Maps Map 1: Premises map Map 2: Pond layout Map 3: Surface water monitoring	Map 1: Premises map boundary delineation updated to exclude the Wooroloo Brook as this area is not under control of the licence holder. Map 2: Pond layout map updated to include the wastewater flow direction entering and exiting the ponds. Map 3: Surface water monitoring locations	Figure 1: Map of the boundary of the premises Figure 2: Map of the premises wastewater discharge and primary treatment infrastructure Figure 3: Map of the premises wastewater ponds and wastewater directional flow Figure 4: Map of the premises abattoir infrastructure Figure 5: Map of the premises sampling locations and proposed bore installation areas	Prescribed premises boundary updated to exclude the Wooroloo Brook as this is Crown land. New figure added to show premises wastewater flow direction and primary treatment infrastructure. Updated figure of wastewater treatment ponds showing directional flow of wastewater, infrastructure locations and stock fence location. New figure showing the layout of the abattoir's infrastructure. Updated figure of the surface water locations to include the new bore installation areas and the wastewater sampling point.

Previous condition no.	Condition summary	Revised licence condition	Conversion notes
Schedule 2: Reporting & notification forms	Reporting and notification forms – AACR and N1	Schedule 2: Monitoring Points Table 12	The licence holder is directed to DWER's website to find the most current AACR template to use. N1 form has been removed – licence holder to include notification details as stipulated in the licence conditions. GPS coordinates included for sampling location consistency – surface water, wastewater with the licence holder to advise DWER of the monitoring bore coordinates once installed.

References

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3. 360 Environmental Pty Ltd, 2015, *Groundwater Assessment Report*, Perth, Western Australia. Accessed from DWER Record No: A1149779.
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5. Department of Water and Environmental Regulation (DWER) 2019, *Guideline: Industry Regulation Guide to Licensing*, Perth, Western Australia. Accessed from www.dwer.wa.gov.au
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7. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia. Accessed from www.dwer.wa.gov.au
8. 360 Environmental Pty Ltd, 2022, DWER Request for Information – Linley Valley Pork (September), Perth, Western Australia. Accessed from DWER Record No: A2125664
9. 360 Environmental Pty Ltd, 2023, DWER Request for Information – Linley Valley Pork (February), Perth, Western Australia. Accessed from DWER Record No: DWERDT746058
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11. Derby Industries Pty Ltd, 2023, DWER Request for Information - Linley Valley Pork (June), Perth, Western Australia. Accessed from DWER Record No: DWERDT797895
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