Amendment Report

Application for Licence Amendment

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

Licence Number	L6395/1993/16
Licence Holder	Harvey Industries Group Pty Ltd
ACN	117597985
File Number	DER2015/000553-1~8
Premises	Harvey Beef Abattoir Seventh Street, HARVEY WA 6220 Legal description – Lot 3 on Diagram 70328; Lots 105, 106 and 113 on Plan 202106; Lots 115, 116, 117, 118, 119, 142, 143, 145, 147, 149, 172. 173. 174. 175, 177, 200, 201, 202, 203, 204, 205, 228, 229, 230, 231 and 232 on Plan 2492; Lots 235 and 236 on Plan 29898; and Lots 400 and 401 on Plan 302521. As defined by the Premises maps Schedule 1 Figure 1 attached to the Revised Licence.
Date of Report	16/12/2021
Decision	Revised licence granted

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1. Decision summary

Licence L6395/1993/16 is held by Harvey Industries Group Pty Ltd (licence holder) for the Harvey Beef Abattoir (the premises), located at Seventh Street Harvey, WA 6220

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges from the operation of the covered anaerobic lagoon and biogas recovery processes. As a result of this assessment, revised licence L6395/1993/16 has been granted.

The revised licence issued because of this amendment consolidates and supersedes the existing licence previously granted in relation to the premises. The revised licence has been granted in a new format with existing conditions being transferred, but not reassessed, to the new format.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this Amendment 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.

2.2 Application summary

On 31 August 2021, the licence holder submitted an application to the department to amend licence L6395/1993/16 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- operate a covered anaerobic lagoon (CAL) to enhance wastewater treatment and recover biogas;
- operate an onsite steam boiler with recovered biogas (primarily methane) compromising of two emission stacks, and
- operate an onsite flare for captured biogas.

The construction and operation of the CAL / biogas capture and reuse, and its emissions underwent a risk-based assessment in works approval W6291/2019/1 issued on the 10 February 2020. The licence holder is operating the CAL, steam boiler and flare infrastructure under the works approval under time limited operations. The design of the CAL, steam boiler and flare infrastructure is detailed in the issued works approval W6291/2019/1.

2.3 Background

The licence holder currently operates an abattoir and rendering facility located approximately 2 km west of Harvey on the Swan Coastal Plain, approximately 120 km south of Perth.

Wastewater generated from the abattoir and rendering plant is directed through a primary (solids removal), secondary (anaerobic) and RENOIR (removal of nitrogen for irrigation) ponds. The CAL replaces the existing anaerobic pond that was taken offline and has not received any effluent since 25 January 2021. The CAL will treat combined flows from the existing primary solids pond, (that receives wastewater from the abattoir and rendering plant) and the yard pond which holds wastewater from the existing livestock holding yards.

The anaerobic pond will be decommissioned. The licence holder has not provided any details for the decommissioning of the anaerobic pond. Therefore, this activity will not be assessed within this licence amendment.

The licence holder has submitted the following works approval reports relevant to the amended licence operations they are:

- Infrastructure Compliance reports;
- Critical Containment Infrastructure report;
- Well construction report;
- CAL Stage 1 Commissioning report and
- CAL Stage 2 Commissioning report.

The delegated officer assessed the works approval reports and considered the licence holder to be compliant with works approval W6291/2019/1. The licence holder notified DWER of the following changes to the infrastructure from the works approval, they are outlined in Table 1.

Table 1: Works approval W6291/2019/1 notified changes to infrastructure

Infrastructure item	Works approval authorised	Final form	Reason for change
Stormwater buffer tanks	2x 1,500 L HDPE tanks	1x 1,000 HDPE tank	One tank was considered sufficient for rainfall intensity at Harvey
Enclosed pipe to transfer stormwater from buffer tank to existing drain	Ran east to swale drain	100mm diameter PVC pipe running south from the tank to a new stormwater swale at the south end of the CAL	Change in location.
Emergency vent	Originally located on west wall of CAL	Relocated to western side of south wall.	Change in location.

2.4 Operational aspects of the CAL (from applicant)

CAL

The CAL will treat wastewater generated from the abattoir and rendering process for a throughput of up to 250,000 animals per year over 6 days a week during peak season. The design assumes that there is at least one non-process day per week.

The licence holder predicts that average flow rates will be approximately 2,600 L/head/day at 833 head/day, 6 days a week. (The licence holder indicated that this design allows for 1,000 head/day, 6 days a week during peak periods, subject to market demand.)

The licence holder is anticipating that COD loadings will be approximately 0.38 kg/m^3/day with BOD loading approximately half that.

The CAL will have a hydraulic retention time of 14.4 days during peak season.

Biogas will be allowed to accumulate under the HDPE cover to pressures of 20-70 Pa. Biogas will be removed by a blower connected to a perimeter wall gas extraction system. This allows degree of biogas inventory to be held under the cover at low pressure

Flare

When there is a build-up of biogas pressure under the CAL cover and the gas is not being used in the existing boiler, the biogas will be directed to the flare for combustion. Biogas will enter the flare via knock-out pot and will then be drawn into a fan feeding the combustion stack and ignited by an interrupted LPG gas pilot.

The flare will be designed to operate at low to medium pressure, typically 0 to 100 Pa, and continuous burning in a wide range of biogas flow. This avoids the need for biogas storage and keeps the pressure under the CAL cover relatively constant.

The flare skid is installed at natural ground level on the south side of the CAL and has a stack height of between 6 to 8 metres. The flame will be fully enclosed within the tubular stack and there will be no visible flame from flaring operation.

Stormwater on CAL cover

The CAL cover typically floats on the surface of the wastewater which is one metre below the crest of the walls and will collect rainfall. Stormwater pump(s) will be used to remove accumulated stormwater. The stormwater will be pumped into one 1,000L HDPE tank, located on the CAL wall with overflow piped and discharged into a swale at the south end of the CAL.

CAL pond desludging

A sludge removal system is installed in the CAL to allow sludge withdrawal as required while the CAL is operational. There will be no requirement for the cover to be removed, nor for water levels to be reduced, nor for mechanical removal systems that could potentially damage the primary liner. The withdrawal system is completely static. In brief, a series of 5 HDPE sludge removal pipes will be placed horizontally across the base of the CAL. The pipes are raised about 300 mm off the base of the CAL and rest on concrete. The pipes have a series of holes through which sludge can be removed from the CAL. Sludge is then withdrawn out of the CAL using an external pump or vacuum pump system. Each sludge removal pipe is installed to run up the eastern internal wall of the CAL and out of the CAL via a sealed penetration through the liners complete with thrust block for liner protection.

2.5 Consolidation of Licence

As part of this amendment package the CEO has consolidated the licence by incorporating changes made under the Amendment Notices as summarised in Table 2.

Table 2: Licences consolidated in this amendment

Instrument	Issued	Summary of approval
L6395/1993/16	5/04/2019	Licence holder-initiated amendment to include an additional irrigation area. CEO initiated changes to update the format of the licence and consolidate changes made in Amendment Notice 1.
W6291/2019/1	10/02/2020	Works approval to construct the CAL, boiler, and flare infrastructure.
L6395/1993/16	08/04/2020	Amended licence to increase Category 55 from 170,000 to 250,000 animals (cattle) per annual period.
L6395/1993/16	17/12/2021	Licence holder-initiated amendment to include the infrastructure approved under W6291/2019/1 into the licence.

The obligations of the licence holder have not changed in consolidating the licence. The department has not undertaken any additional risk assessment of the premises related to previous Amendment Notices.

In consolidating the licence, the CEO has:

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

The full consolidation of licence conditions as they relate to this revised licence are detailed in Section 6.1. Previously issued Amendment Notices will remain on the department's website for future reference and will act as a record of the department's decision making.

3. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway, and impact to receptors in accordance with the *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.

3.1 Source-pathways and receptors

3.1.1 Emissions and controls

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

Table 3: Licence holder controls

Emission	Sources	Potential pathways	Proposed controls
Seepage of wastewater through the CAL liner. Containment failure of wastewater transfer pipes (majority anticipated to be located underground).	Operation of the CAL	Depth to groundwater is approximately 1 to 4 mbgl.	Covered 24 ML capacity anaerobic lagoon (approximately 70 m by 110 m by 6 m high) lined with two, one 2 mm and one 1.5 mm thick, HDPE liners on the base and walls so that each achieve a hydraulic conductivity less than 1 x 10-9 m/s. Always maintain an adequate level of water in the CAL to ensure that any upward hydrostatic pressure does not compromise the HDPE liners. Regular checks of CAL walls by WWTP operator. Regular checks of integrity of pipework and CAL with any issues rectified. Groundwater monitoring of four bores monthly.
Overflow of CAL.		Surface water: existing agricultural drainage network located immediately east and west of the Lot where the CAL is proposed to be	Freeboard of at least 500 mm must be maintained. Level sensors and alarms to be operated and maintained. Stormwater runoff resulting from site drainage shall be prevented from entering the CAL or causing erosion of the outer pond embankment. Standby pumps for wastewater to and from the WWTP.

Emission	Sources	Potential pathways	Proposed controls
		constructed.	Nominal freeboard of 1 m (minimum of 500 mm) in the CAL to protect the biogas collection system from foam, crust and excessive working level and provide gas inventory. It will also minimise the risk of overtopping under normal operation. Operational procedures and operator training. Regular checks of CAL water levels and pump operation by WWTP operator.
Rainfall collected on the CAL cover, pumped, and stored in one tank prior to overflow discharged into an existing swale drain. Potential for the rainfall to be contaminated if the integrity of the CAL cover is compromised.		Surface water: existing agricultural drainage network located immediately east of the Lot where the CAL is proposed to be constructed. Depth to groundwater is approximately 1 to 4 mbgl.	One 1,000L polyethylene tank used for the storage of stormwater from the CAL cover prior to release to a drain. Operational procedures and operator training. Regular checks of CAL walls by WWTP operator. Regular checks of integrity of pipework and CAL with any issues rectified.
Odour from CAL and biogas management system		Closest rural residential premises located approximately 480 m NE and 590 m E of the proposed CAL location.	Enclosed pipeline for the transfer of biogas from the CAL to boiler. Enclosed pipe system for transfer of wastewater from the yard pond and/or save all/DAF to the CAL. Enclosed pipe system for the transfer of wastewater from the CAL to the RENOIR.
Noise (from operation of pumps, flare and of the associated infrastructure)		Closest rural residential premises located approximately 480 m NE and 590 m E of the proposed CAL location.	Enclosed pipeline for the transfer of biogas from the CAL to boiler. Enclosed pipe system for transfer of wastewater from the yard pond and/or save all/DAF to the CAL. Enclosed pipe system for the transfer of wastewater from the CAL to the RENOIR.
Emissions from the flare including hydrogen sulphide and CO		Closest rural residential premises located approximately 480 m NE and 590 m E of the	Operated such that biogas is directed to the flare or boiler unless the pressure under the CAL cover is such that it is required to be vented via the emergency vent. During operation of the CAL, the flare may be used as a contingency when the steam

Emission	Sources	Potential pathways	Proposed controls
		proposed CAL location.	boiler requires maintenance, and the biogas is at capacity within the CAL. Boiler maintenance is scheduled to occur quarterly, however, the need to use the flare during these periods may not always be necessary. The flare may also be used during annual shutdown, during extended holiday periods, or as a contingency measure prior to a severe storm event or imminent bushfire. This is expected to be infrequent and over a limited period.
Odour from the release of methane from the emergency vent		Closest rural residential premises located approximately 480 m NE and 590 m E of the proposed CAL location.	Operated such that biogas is directed to the flare or boiler unless the pressure under the CAL cover is such that it is required to be vented via the emergency vent.

3.1.2 Receptors

In accordance with the *Guideline: Risk assessments* (DWER 2020), the delegated officer has excluded employees, visitors, and contractors of the licence holders 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 below provides a summary of potential human and environmental receptors that may be impacted because of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

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

Human receptors	Distance from prescribed activity
Residential premises (rural)	Two residential premises located within 600 m of the CAL (480 m NE and 590 m E). An additional 19 residential premises located 600 – 1,000 m from the CAL; with the majority located SE, E and N of the CAL. The remaining are located NE, NW and W.
Residential area	Residential area located approximately 1.5 km east of the CAL.
Accommodation	Farm stay accommodation is located approximately 1.75 km W of the proposed CAL.
Environmental receptors	**Distance from prescribed activity**
Geomorphic wetlands Swan Coastal Plain	Premises located within: Swan Coastal Plain – Semeniuk, Palusplain (seasonally waterlogged), flat, multiple use.

(management)	
Environmental Protection (Peel Inlet – Harvey Estuary) Policy 1992 (EPP)	CAL is located 830 m S of an area protected under the EPP.
Surface water	The premises is located within the Harvey Irrigation District proclaimed under the *Rights in Water and Irrigation Act 1914* (RIWI Act). The Harvey Dam is located 5.46 km east and the Harvey Main Drain located 2.4 km NE of the CAL. The Harvey Diversion Drain is located approximately 2 km S of the proposed CAL. A minor river is located 1.5 km WNW of the proposed CAL. Existing agricultural drainage networks are located immediately east of where the CAL is located. Other drain lines are located immediately west of the Lot (across Eighth Street). These drain lines flow to the Harvey Diversion Drain discharging into the ocean near Myalup, approximately 19 km downstream. Resource enhancement (sumpland and dampland) wetlands are located approximately 5.5 km west of the CAL.
Groundwater	The South West Coastal Groundwater Area, proclaimed under the RIWI Act, is located 5.8 km west of the proposed irrigation area. The premises is based within the South West Coastal Groundwater Allocation Plan and is located within the unproclaimed Karri Groundwater Area. The licence holder has advised that there are approximately 51 groundwater bores within a 3 km radius, most of which are for production purposes associated with livestock and domestic requirements. The nearest licence to take groundwater, for the Harvey Golf Club, is located approximately 6.5 km west of the CAL. In September 2020 the licence holder commenced monitoring four groundwater monitoring bores for monitoring the CAL. Geotechnical investigations by the licence holder at the CAL site in June 2019 showed that depth to groundwater was between 1.7 and 4.8 mbgl. Field tests, conducted by the licence holder, of sampled groundwater bores indicate pH values of 6.3 to 6.8 and total dissolved solids between 2,100 to 2,138 mg/L. The Perth Groundwater Map shows that the groundwater salinity at the premises is 1,500 – 3,000 mg/L, which is considered brackish to saline.
Other environmental considerations	**Key information**
Soil type classification	Soils at the premises are described as very gently undulating alluvial terraces and fans. Moderate to moderately well drained uniform brown loams or well-structured gradational brown earths. Flat to very gently undulating with deep, imperfect to poorly drained acidic gradational yellow or grey-brown earths and mottled yellow duplex soils, with loam to clay loam surface horizons (licence holder). The licence holder had an acid sulfate soil and groundwater investigation completed in 2019 by Douglas and Partners which showed that the topsoil at the CAL location is dark brown, fine to medium grained sandy topsoil with clay encountered to depths of 0.2 to 0.3 m in all three test

	locations. Orange-brown mottled grey, grey mottled yellow-brown, medium plasticity clay/sandy clay was encountered below the topsoil to depths of at least 5 m in the three test locations.
Acid sulfate soil risk	Moderate to low acid sulfate soil disturbance risk (<3 m from surface). High to moderate acid sulfate soil disturbance risk (>3 m from surface). Soil samples were taken as part of the acid sulfate soil and groundwater investigation for the CAL. The licence holder reported that the results showed: • that pH_F was between 4.3 and 7.8; • the results of pH_{FOX} were reported between 2.9 and 6.1. One of the 24 pH_{FOX} results being less than 3. The licence holder peer reviewed the acid sulfate soil results, concluding that the acid sulfate soil risk at the site is low. This was based on recorded pH_{FOX} being indicative of some neutralising capacity in the sediments. Additionally, the licence holder believes that groundwater pH and sulfate:chloride ratios further justify the low acid sulfate soils risk at the CAL location.

3.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for those emission sources which are proposed to change and considers potential source-pathway and receptor linkages as identified in Section 3.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the licence holder has proposed mitigation measures/controls (as detailed in Section 3.1), these have been considered when determining the final risk rating. Where the delegated officer considers the 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 5.

The revised licence L6395/1993/16 that accompanies this Amendment Report authorises emissions associated with the operation of the premises i.e. CAL operations including emissions via steam boiler stacks and flare.

The conditions in the revised licence 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 Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
Operation								
Operation of the CAL	Seepage of wastewater through the CAL liner. Containment failure of wastewater transfer pipes (majority anticipated to be located underground).	Contamination of soil and infiltration to groundwater causing contamination of groundwater affecting ecosystem health.	Depth to groundwater is approximately 1 to 4 mbgl.	Refer to Section 3.1.1 Table 4	C = Major L = Possible **High Risk**	N	**Condition 1** Condition 1 Condition 10	The delegated officer considered the distance to groundwater, the infrastructure and commissioning reports for W6291/2019/1, and the applicant controls, and considered the risk to be high. The delegated officer considered that the applicants' controls were necessary to manage the risk of containment failure of wastewater transfer pipe and seepage through the CAL liner. The delegated officer considered that the following licence holder controls were required to be conditioned to manage the risk to groundwater ecosystems. The following controls will be conditioned: • The two HDPE liners within the CAL on the base and walls are maintained to achieve a conductivity less than 1 x 10-9 m/s. • CAL is to maintain an adequate level of wastewater to ensure that any upward hydrostatic pressure does not compromise the HDPE liners. • The integrity of the pipework and CAL must be maintained with any issue rectified immediately. • Enclosed pipework's for wastewater transfer • Enclosed pipeline for transfer of biogas. • Four groundwater monitoring wells are monitored for physical and chemical parameters quarterly. The delegated officer will align sampling to a quarterly basis (previously was monthly) to align with other ground water monitoring. Quarterly groundwater monitoring will monitor for leaks from the CAL operation. Furthermore, the redundant anerobic pond that is replaced by the CAL will be conditioned to not be able to treat or store wastewater. This condition has been added as the pond is empty and unused, indicating that its long-term integrity may be compromised.
	Overflow of CAL.	Direct discharge to land. Wastewater discharged into existing drainage network from overland flows. Surface water contamination affecting ecosystem health.	Surface water: existing agricultural drainage network located immediately east and west of the Lot where the CAL is proposed to be constructed.	Refer to Section 3.1.1 Table 4	C = Major L = Possible **High Risk**	Y	Condition 1 1	The delegated officer considered the distance to surface water, the infrastructure and commissioning reports for W6291/2019/1 and the applicant controls. The delegated officer considered the risk to be high. The delegated officer considered that the applicants' controls were necessary to reduce the risk of overflow from the CAL of wastewater, to prevent wastewater flowing to surface water drains. The delegated officer considered that the following licence holder controls were required to be conditions to manage the risk to surface water ecosystems. The following controls will be conditioned: • Freeboard of at least 500 mm must be maintained. • Level sensors and alarms to be operated and maintained in operational condition. • Stormwater runoff resulting from site drainage shall be prevented from entering the CAL or causing erosion of the outer pond embankment. • 1,000 L tank used for storage of CAL cover stormwater before discharge to the local drainage network.
	Rainfall collected on the CAL cover, pumped, and	Direct discharge to land and infiltration to	Surface water: existing agricultural drainage	Refer to Section 3.1.1 Table 4	C = Minor	Y		The delegated officer considers that the purpose of the CAL cover is to capture biogas and therefore the licence holder will maintain the integrity of the CAL

Risk Event					Risk rating[1] C = consequence L = likelihood	Licence holder's controls sufficient?	Conditions[2] of licence	Justification for additional regulatory controls
Source/Activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Licence Holder's controls**				
	stored in one tank prior to overflow discharged into an existing swale drain. Potential for the rainfall to be contaminated if the integrity of the CAL cover is compromised.	groundwater. Surface water and groundwater contamination affecting ecosystem health.	network located immediately east of the Lot where the CAL is proposed to be constructed. Depth to groundwater is approximately 1 to 4 mbgl.		L = Rare **Low Risk**			cover such that contamination from biogas or wastewater within the CAL of any rainfall falling on the cover will be minimised. The delegated officer considers the risk to be low. Additionally, general provisions of the EP Act make it an offence to cause or allow pollution.
	Odour from CAL and biogas management system	Air / wind dispersion, with potential amenity impacts.	Closest rural residential premises located approximately 480 m NE and 590 m E of the proposed CAL location.	Refer to Section 3.1.1 Table 4	C = Slight L = Possible **Low Risk**	Y		The delegated officer considers that the separation distance between the source and potential receptors is sufficient noting that fugitive odour from the CAL and biogas management system is expected to not be significant compared to abattoir and rendering operations onsite and the treatment of wastewater in the existing open wastewater treatment infrastructure (primary / RENOIR pond system). There have been no complaints received by DWER in relation to odour in the last 4 years. The delegated officer considers the risk to be low.
	Noise (from operation of pumps, flare and of the associated infrastructure)	Air / wind dispersion, with potential amenity impacts.	Closest rural residential premises located approximately 480 m NE and 590 m E of the proposed CAL location.	Refer to Section 3.1.1 Table 4	C = Slight L = Possible **Low Risk**	Y		The delegated officer considers that the separation distance from the proposed location of the CAL to the closest rural dwelling is sufficiently large for there to be no adverse impact from noise emissions from the operation of the CAL. Additionally, noise from the operation of the CAL is expected to be insignificant compared to abattoir and rendering operations onsite. The delegated officer considers the risk to be low. The EP Noise Regulations apply to noise emissions.
	Emissions from the flare including hydrogen sulphide and CO	Air / wind dispersion, with potential amenity and health impacts.	Closest rural residential premises located approximately 480 m NE and 590 m E of the proposed CAL location.	Refer to Section 3.1.1 Table 4	C = Minor L = Rare **Low Risk**	Y		During operation of the CAL, the flare may be used as a contingency when the steam boiler requires maintenance and the biogas is at capacity within the CAL. Boiler maintenance is scheduled to occur quarterly, however, the need to use the flare during these periods may not always be necessary. The flare may also be used during annual shutdown, during extended holiday periods, or as a contingency measure prior to a severe storm event or imminent bushfire. This is expected to be infrequent and over a limited period. The delegated officer considers that the separation distance between the source and receptor is sufficient noting the relatively short duration of the activity. The delegated officer considers the risk to be low. Additionally, general provisions of the EP Act make it an offence to cause or allow pollution.
	Odour from the release of methane from the emergency vent	Air / wind dispersion, with potential amenity impacts.	Closest rural residential premises located approximately 480 m NE and 590 m E of the proposed CAL location.	Refer to Section 3.1.1 Table 4	C = Minor L = Rare **Low Risk**	Y		The delegated officer considers that the separation distance between the source and potential receptors is sufficient noting that methane released through the diaphragm pressure relief assembly (emergency vent) will only occur in exceptional circumstances. The delegated officer considers the risk to be low.

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

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

4. Consultation

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

Table 6: Consultation

Consultation method	Comments received	Department response
Local Government Authority advised of work approval on the 23 September 2019	The Shire of Harvey replied on 28/11/2019 confirming that a development approval (P143/19) was granted on the 28 November 2019 for the proposed covered anaerobic lagoon (CAL).	The delegated officer notes this information.
Licence holder was provided with draft amendment on 1 December 2021	The licence holder responded on the 13 December 2021, confirming that they did not have any objections to the conditions. So long as the condition for the existing anerobic pond (Condition 1 Table 1 item2(a) would not constrain future potential plan to upgrade the use of the pond through a future works approval or licence amendment.	The delegated officer notes this information and risk assesses the emissions and discharges to the environment for all works approvals and licence amendments on a case by case basis.

5. Decision

The delegated officer considered the application for a licence amendment to operate the CAL and biogas infrastructure. The delegated officer considered that the operation does not pose an unacceptable risk or impacts to public health amenity or the environment. This determination is based on the following:

- risk based assessment of operations undertaken under works approval W6297/2019/1;
- commissioning and infrastructure reports from works approval W6297/2019/1, and
- licence holders controls.

A risk assessment of works approval W6291/2019/1 had previously undertaken a detailed risk assessment of the operations of the CAL and biogas infrastructure. As the nature of the operations and controls have not changed, the delegated officer considered that the time limited operation assessment within works approval W6291/2019/1 was accurate, thus deemed acceptable for the licence amendment.

The delegated officer is satisfied the above controls lower the risk profile of the CAL and biogas operations within the licence amendment, and adequately address the risk of public health, amenity, and the environment.

6. Conclusion

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

6.1 Summary of amendments

Table 7 provides a summary of the proposed amendments and consolidation of the licence

conditions and this will act as record of implemented changes. All proposed changes have been incorporated into the revised licence as part of the amendment process.

Table 7: Consolidation of licence conditions and summary of amendment.

Existing condition	Condition summary	Revised licence condition	Conversion notes / summary of amendment
Table 1 definitions	Terms having meaning defined	Table 12	Revised with additional definitions to reflect the revised licence. Located at the back of the licence.
Condition 1, Table 2	Authorised emission for primary activities	Emissions and discharges Condition 2 Table 2	Redundant condition. Revised to current licensing format. Disposal of emissions from wastewater irrigation and air emissions from the biogas flare and boiler exhaust gases now listed in Table 2 as authorised discharges.
Condition 2 Table 3	Infrastructure and equipment controls table	Condition 1, Table 1, Infrastructure, and equipment operational requirements	Revised and updated to new format. Works Approval W6291/2019/1 operational conditions for CAL and biogas operations added.
Condition 3 Processing limits Table 4	Limits for processing in Categories 15, 16 and 55.	Front page as assessed production capacity	Redundant condition. Revised to current licensing format located on front page.
Condition 4 Table 5 Condition 5 Table 6	Rendering material and monitoring, material acceptance criteria and material accepted on premises.	Condition 4, Table 4 and Condition 5 Table 5	New numbering and update to wording format
Condition 6, Table 7	Waste and by product management specifications.	Condition 6 and Table 6	New numbering and update to wording format
Condition 7 Table 8	Waste and by-product removed from premises	Condition 7 and Table 7	New numbering and update to wording format
Condition 8 Table 9	Irrigation loading limits	Condition 3, Table 3	New numbering and update to wording format
Condition 9 Table 10	Emissions and discharge monitoring of wastewater	Condition 8 and Table 8	New numbering and update to wording format
Condition 10 Table 11	Soils sampling and monitoring requirements	Condition 9 and Table 9	New numbering and update to wording format
Condition 11 and Table 12	Groundwater monitoring	Condition 10 and Table 10	Revised to include Works approval W6291/2019/1 monitoring for operation of the CAL. Twelve month of continuous monitoring has been removed as that has been completed. Quarterly monitoring only.

Existing condition	Condition summary	Revised licence condition	Conversion notes / summary of amendment
Condition 12	Record all monitoring activity	Condition 11	New numbering and update to wording format
Condition 13	Recording requirements for sampling between periods.	Condition 12	New numbering and update to wording format
Condition 14	NATA accreditation requirement	Condition 13	New numbering and update to wording format
Condition 15	Auditable books reporting	Condition 16 and Condition 17	New numbering and update to wording format
Condition 16	Complaints recording	Condition 14	New numbering and update to wording format
Condition 17	Annual Audit Compliance Report	Condition 15	New numbering and update to wording format Forms accessed at www.dwer.wa.gov.au
Condition 18 Table 13	Annual Environmental Report	Condition 18	New numbering and update to wording format
Condition 19	14-day request	N/A	Removed from licence, redundant condition
Schedule 1 Premises map	Premises boundary map	Schedule 1 Figure 1	New naming convention, no change to map
Schedule 1 Site layout	Premises site layout	Schedule 1 Figure 2	New naming convention, no change to map
Schedule 1 Irrigation Areas	Premises irrigation areas	Schedule 1 Figure 3	New naming convention, no change to map
Schedule 1 Monitoring Locations and Main Site Features	Premises site features	Schedule 1 Figure 4	New naming convention, no change to map
Schedule 1 Soil Sampling Locations	Premises soil sampling areas	Schedule 1 Figure 5	New naming convention, no change to map
Schedule 1 Groundwater monitoring bore locations	Premises groundwater sites	Schedule 1 Figure 6	Map updated to include the 4 CAL groundwater monitoring sites
N/A	N/A	Schedule 1 Figure 7	New map outlining the wastewater treatment infrastructure including CAL and Biogas

Existing condition	Condition summary	Revised licence condition	Conversion notes / summary of amendment
Schedule 2 Table 14	Infrastructure and equipment primary activity	N/A	Redundant condition and has been removed.
Schedule 2 Site Layout	Primary site layout	Schedule 1 Figures 1 to 7	Updated condition to new format.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
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