



Amendment Report

Licence Number L7308/1998/13

Licence Holder A. Richards Pty Ltd

ACN 008 734 852

File Number: 2010/008321-3

Premises Richgro Garden Products
203 Acourt Road
JANDAKOT WA 6164

Part Lot 186 on Plan 109038

Certificate of Title – Volume 1645 Folio 965

Bound by the coordinates –

<u>Position No.</u>	<u>Latitude</u>	<u>Longitude</u>
A	32° 06' 03.71" S	115° 53' 43.14" E
B	32° 06' 12.07" S	115° 53' 59.81" E
C	32° 06' 25.10" S	115° 53' 48.82" E
D	32° 06' 15.78" S	115° 53' 32.81" E

Date of Report 16 March 2020

Decision / Proposed Decision Grant

1. Definitions and interpretation

Definitions

In this Amendment Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
amendment report	refers to this document
AS 3743-2003	Australian Standard AS 3743-2003: Potting mixes
AS 4419-2018	Australian Standard AS 4419-2018: Soils for landscaping and garden use
AS 4454-2012	Australian Standard AS 4454-2012: Composts, soil conditioners and mulches
category/ categories/ cat.	categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the <i>Environmental Protection Act 1986</i> Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
CS Act	Contaminated Sites Act 2003 (WA)
delegated officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EP Act	Environmental Protection Act 1986 (WA)
EP Regulations	Environmental Protection Regulations 1987 (WA)

Term	Definition
existing licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this Review
licence holder	A. Richards Pty Ltd
Minister	the Minister responsible for the EP Act and associated regulations
Noise Regulations	Environmental Protection (Noise) Regulations 1997 (WA)
occupier	has the same meaning given to that term under the EP Act.
prescribed premises	has the same meaning given to that term under the EP Act.
premises	refers to the premises to which this Amendment Report applies, as specified at the front of this Amendment Report.
revised licence	the amended Licence issued under Part V, Division 3 of the EP Act, with changes that correspond to the assessment outlined in this Amendment Report.
risk event	as described in Guidance Statement: Risk Assessment
UDR	Environmental Protection (Unauthorised Discharges) Regulations 2004 (WA)

2. Amendment Description

The following guidance statements have informed the assessment and decision outlined in this Amendment Report:

- Guidance Statement: Regulatory Principles (July 2015)
- Guidance Statement: Setting Conditions (October 2015)
- Guidance Statement: Decision Making (June 2019)
- Guidance Statement: Risk Assessment (February 2017)
- Guidance Statement: Environmental Siting (November 2016)

2.1. Purpose and scope of assessment

On 8 July 2019 the licence holder applied to amend Licence L7308/1998/13, requesting amendments to Conditions 6, 7, 14, 15, 16, 17, 18 and 23. Amendments to Schedule 1 (Maps) and Schedule 2 (General Description) were also requested.

Amendments to Conditions 15, 16, 17 and 18 relate to the introduction of the Harvest Quest composting method. The remaining condition amendments relate to infrastructure and equipment updates (Conditions 6 and 7) and operational controls (Condition 14).

1.1.1 Harvest Quest composting process

The Harvest Quest method of composting involves the manual addition of an inoculant into the composting windrow prior to the application of another 20-30 cm raw feed material over the windrow. The windrows stay in place unturned for approximately 30 days, and a second turn is carried out after another 14 days. No additional liquids are added to windrows. No aeration of windrows is proposed as the licence holder advises that the inoculant sufficiently maintains an aerobic state without additional aeration.

Windrows are proposed to be monitored for temperature, oxygen levels and moisture, twice weekly. The composting process aims to achieve 55 °C for three consecutive days to achieve pasteurisation. A composting windrow will not be released if it does not achieve this minimum temperature. The licence holder aims to maintain moisture at 40-60 per cent through the addition of either bore water or treated leachate and stormwater from the leachate ponds, if required, and maintain oxygen concentrations above 15 per cent.

Prior to being released for sale or for further use in production of blended products, the compost is tested for pH, Electronic Conductivity, Solvita Maturity Index, bioassay (Toxicity), plant pathogens (Phytophthora and Pythium) and human pathogens (Thermotolerant Coliforms and Salmonella). Where a windrow does not meet the required standard (AS4454, AS3743, AS4419 or other internal standard) it is reworked into the composting process (typically blended with another windrow) for further processing.

1.1.2 Trials and verification of method

Trials of the composting process utilising the Harvest Quest Method were undertaken at the Premises in Spring 2018, within the indoor composting sheds utilising digestate from the on-site Anaerobic Digestion Plant for moisture. The licence holder provided trial test results to SAI Global who were satisfied in general with the monitoring records obtained and with the Harvest Quest compost methodology quality test results.

The licence holder has provided a letter from SAI Global that confirms the Harvest Quest Method meets the requirements of AS4454 and that the Harvest Quest Composting Methodology and Richgro's Standard Operating Procedure (SOP 3.03A) is suitable to meet the requirements of the standard.

The Harvest Quest Compost Method, indoor compost process monitoring identified that all windrows achieved and maintained pasteurisation temperatures between 55°C and 65°C core temperature for at least 15 consecutive days, moisture level in the windrows was maintained between 40 to 65 per cent and oxygen level in windrows was relatively low due to windrows minimal turning schedule - two turns during the six week composting processes (four weeks indoor and two weeks of outdoor maturation). The core temperatures were measured at 100 cm profile depth of the composting windrow with three measurements throughout the length of compost.

The laboratory reports provided indicate that all chemical and organic contaminants and pathogens tested were below maximum allowable concentrations in accordance with AS4454.

A search of DWER's Incidents and Complaints Management System indicated a spike in odour complains between October 2018 and February 2019 which partially correlate with the timing of the Harvest Quest trials. In response to this spike in complaints the licence holder advised that during this period digestate (high risk feedstock) was only processed in enclosed composting sheds. It was further advised that the Harvest Quest method should produce less odour as the process involves less turning of windrows.

Based on the information available to DWER in its complaints record, as well as that provided by the applicant, the increased odour complaints, received throughout the period between October 2018 and February 2019, cannot be directly attributed to the Harvest Quest composting trial nor can it be attributed to the processing of manure at the premises. Other nearby business (kennels and catteries) also are known to emit odours. Current licence conditions only allow digestate (an odour source) to be blended with feedstocks within the indoor composting sheds and that compost cannot be moved outside until certain requirements (set out in condition 17 of the licence) have been met. This information will be considered in the assessment of risk related to the proposed Harvest Quest method implementation at the premises.

It is noted that DWER were not notified of the Harvest Quest trials being undertaken at the premises. The trials were identified during a compliance inspection on 17 June 2019. The licence holder is advised that any future trials at the premises must be undertaken in accordance with a licence amendment.

1.1.3 Requested amendments to Licence

The specific amendments requested in the amendment application are outlined below:

Condition 6. Table 3, Item 10: The licence holder's initial proposal was to construct four, three sided loading bays for waste storage. During the construction and subsequent commissioning of the plant the layout within the receival hall was adjusted and only three, three sided loading bays were installed as these three were easily accessed by vehicles and the fourth bay was not required.

Condition 6. Table 3, Item 19: The operation details presented in the Amended March 2018 licence was updated to reflect the removal of the pipe network under crushed aggregate base. This pipework point was removed, however the reference to the crushed aggregate was not removed.

Condition 6. Table 3, Item 28: Has been updated to reflect the current equipment utilised on site, including an electrical Morbark 4600XL grinder.

Condition 6. Table 3: Additional Item: The licence holder requested that a Workshop Wash Down Bay be added to the Licence. This equipment has been in operation for a number of years, however, was not included on Table 3 of the licence.

Condition 7 and Schedule 1: Grinder Location: The new electric grinder requires connection to a dedicated electrical source and the most appropriate source is the generators associated with the anaerobic digestion plant.

Condition 14: Amendments to wording of this condition are requested due to the nature of the activities conducted on the hardstand and the current infrastructure design of the asphalt handstand area. The asphalt hardstand area is constructed with a gradient of 1% to enable natural flow of leachate from windrows or rainfall to flow to the appropriate catchment sumps positioned around the hardstand area.

The activities conducted on the hardstand include the regular construction of windrows and receipt of various feedstocks. These feedstocks and windrows contain material that at times can build up in the area and cause the flow of liquid to slow down.

The licence holder advises that this condition that requires the hardstand area to be washed off each working day is impractical given varied weather conditions during the year and therefore requests the removal of the reference to each 'working day' and utilising additional 'water' to clear the hardstand area.

Condition 15: Outdoor compost windrows: Aerobic conditions for compost windrows are traditionally maintained with regular turning. However, with the recent product trials, development and subsequent approval of the alternative Harvest Quest composting methodology by SAI Global, Australian Standards auditing agency, the current composting process has been altered from a regular turning process to a minimal turning process to maintain anaerobic conditions in composting material.

The composting process of aerobic conditions through manual turning is now attained only during the initial mixing of feedstock and inoculant, and movement of the mixed product to a section within the composting yard. Once positioned within a windrow, the combined mix and approved methodology is left to compost for a period of 30 days without further turning (Harvest Quest inoculant is added into the windrow at the start of composting process which provides an aerobic environment).

Once the product has reached 30 days it undergoes further turning, and then is left for a period of 14 days prior to being tested and conditionally released for consumer purposes. After the 14-day period screening and quality control checks are conducted.

Condition 16 (a), (b) and (e): Indoor compost windrows: The composting process of aerobic conditions through manual turning is now attained only during the initial mixing and movement of the mixed product to a section within the composting shed. Once positioned within a sectional bay the combined mix is left to compost without further turning until transferred to the external environment.

Once the product is transferred to the outdoor yard mixing area the product undergoes further mixing, screening and quality checks prior to being released for consumer purposes.

The process of combining the digestate from the anaerobic digestion was initially undertaken mechanically, within a specified external area outside the composting shed. This design had not been previously tested and during the initial six-week commissioning period this mechanical design did not sustain the mixed ingredients and subsequently an alternative process flow design was required. The alternate process flow improved the overall process as all mixing is now within the composting shed which is linked to a dedicated bio-filter system.

The licence holder's range of composted products include varied carbon sources (such as green waste, pine bark, wood chips, saw dust etc) and therefore it was requested to use of the word feedstock rather than the word green waste when referring to the raw compost materials.

Condition 17: Blended compost requirements: The first mixture of compost, using the Harvest Quest method, was combined week commencing 9th October 2018. The licence holder's Quality Division arranged the daily monitoring for a six week period and results were recorded for temperature, oxygen and moisture content of the compost within the Composting Shed.

Following the initial six weeks of daily monitoring and recording procedures the Company

Laboratory reviewed the data and assessed that daily monitoring did not alter the data being recorded and that pasteurisation process was being achieved. As a result the Company Standard Operating Procedure (SOP3.03A) for product monitoring frequency (twice per week) was applied to the indoor and outdoor compost windrows.

Condition 18: The licence holder requested to remove the requirement to monitor temperature, oxygen and moisture levels on a daily basis, based on the test results obtained during the trial of the Harvest Quest method.

Condition 23: The licence holder advised that its external laboratory providers can take up to 14 days to complete the required testing. Also, water samples to the laboratory need to be provided on Monday, Tuesday or Wednesday.

The laboratory test results are then provided by email as Analytical Report to the Richgro Quality Manager, who then assesses and compares the results to a number of relevant Guidelines.

This assessment can take a few days and thus may result in the delay of resampling and retesting event of the bores with exceedance concentration levels within the seven-day period requested, and in regards to the day of the week not being Monday, Tuesday or Wednesday for re-sampling of the bore waters.

Given the timeframe for the current sampling, testing and QA assessment of the waters test results the licence holder requested to amend the timeframe to two weeks.

Schedule 1: Maps: Updated to include maps that indicate;

- the permanent location of the electric grinder;
- the amended Premises boundary which includes a warehouse that is now part of the Richgro Operations; and
- the location of the wash down bay.

2.2. Modelling and monitoring data

To support the operating position of the Electric Grinder the licence holder undertook further acoustic assessments when commissioning the new equipment. A copy of the Richgro – Herring Storer Acoustic Report for the Electric Grinder Testing was provided to DWER as an attachment to the licence holders 2018 Annual Environmental Report.

Points extracted from the report regarding the Electric Grinder are provided below:

- The noise emission is relatively broadband, minor tonality is audible closer to the unit but is not noticeable at distance.
- Replacement of the Morbark 3800 diesel shredder with the Morbark 4600XL shredder has reduced the noise emission by 10dB(A) and removed the required 'tonal' adjustment of +5dB(A) for noise characteristic. This is an effective reduction of 15dB(a) under the regulations compared to the Morbark 3800 diesel shredder.
- Acoustic modelling with the new electric Morbark 4600XL shredder shows that the noise emission at all receptors is compliant with weekday 'assigned level'.
- Acoustic modelling at the fixed location at Richgro Jandakot does not contribute significantly to combined noise emissions from the site.
- The electric Morbark 4600XL shredder can be operated weekdays and also on Sundays and Public Holidays and not cause an exceedance of the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations).

2.3. Consolidation of Licence

As part of this amendment package DWER has consolidated the licence by incorporating changes made under the following Amendment Notices:

- Amendment Notice 1, 18 September 2018 – removal of the requirement to sample for Delta nitrogen 15 and Delta carbon 13

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

In consolidating the licence, the CEO has:

- revised licence condition's numbers and realigned condition numbers for numerical consistency; and
- corrected clerical mistakes and unintentional errors.

Previously issued Amendment Notices will remain on the DWER website for future reference and will act a record of DWER's decision making.

3. Other approvals

The licence holder has provided the following information relating to other approvals as outlined in Table 3.

Table 2: Relevant approvals

Legislation	Number	Approval
<i>Local Government Act 1995 - Planning Approvals</i>	<p>BA99/0655 was an industrial building approval granted 9 April 1999;</p> <p>DA02/0176 appears to have been granted on 24 June 2002 for the construction of a leachate pond;</p> <p>DA02/0395 appears to have been granted on 21 November 2002 for sheds, office and hardstand area for the existing soil blending facility;</p> <p>BA02/2486A was granted on 07 January 2003 as a building approval for two steel framed warehouses;</p> <p>DA09/0039 for the enclosed composting shed was granted on 4 April 2009;</p> <p>BA09/0591 issued on 23 April 2009 for a building application of composting pits; and</p> <p>DA12/0633 was granted on 16 November 2012 for the AD plant.</p>	<p>Planning approval has been given for the following activities:</p> <ul style="list-style-type: none"> • Soil mixing/blending/storage/stock piling/packaging • Manure storage/packaging • Liquid waste recycling including power generation • Outdoor composting • Inside composting
<i>Rights in Water and Irrigation Act 1914</i>	GWL 168463(1)	Abstraction of to 12,500 kL per year of groundwater for dust suppression on the Premises and irrigation of one hectare of lawns and gardens

4. Amendment history

Table 3 provides the amendment history for L7308/1998/13

Table 3: Licence amendments

Instrument	Issued	Amendment
L7308/1998/13	17/10/2014	Licence reissue
L7308/1998/13	29/04/2016	Department initiated licence amendment to extend licence duration.
L7308/1998/13	12/02/2018	Licence review including occupier initiated licence amendment to include an anaerobic digestion plant onto licence.
L7308/1998/13	20/03/2018	Department initiated amendment to correct administrative errors and minor changes follow granting of licence reissue
L7308/1998/13	18/09/2018	Amendment Notice 1: Department initiated amendment to modify groundwater monitoring requirements

Instrument	Issued	Amendment
L7308/1998/13	16/03/2020	Licence Amendment: Amendment to licence conditions to reflect the Harvest Quest method of composting and to incorporate infrastructure previously omitted.

5. Location and receptors

Table 4 below lists the relevant sensitive land uses in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 4: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Approved residential area (with existing residences)	125 m from prescribed activities (Pond 4)
Residential area (including pet kennels)	266 m from prescribed activities (green waste processing area)
Residential area	830 m south-west of prescribed activities (Pond 3)
Residential area	850 m south-east of prescribed activities (Pond 3)
Jandakot Airport	625 m south-west of Pond 4 (runway) Majority of airport operational area is located 1.4 km north-west of Pond 4

Table 5 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Environmental receptors and distance from activity boundary

Environmental receptors	Description and distance from Prescribed Premises
Queensgate Drive lake and parkland	Located 2.27 km north-east of prescribed activities
Sanctuary Waters lake and parkland	Located 2.37 km east north-east of prescribed activities
Lukin Swamp Reserve (City of Cockburn 'Actively Managed Conservation Reserve')	Approximately 100 m west of Pond 4, in approved residential area
Harrisdale Swamp	Located 2.5 km south-east of prescribed activities
Confirmed Carnaby's Cockatoo Roost Areas	Located 2.4 km east of prescribed activities
Confirmed Carnaby's Cockatoo Breeding Areas	Located 3.17 km east of prescribed activities.

Environmental receptors	Description and distance from Prescribed Premises
Jandakot Regional Park	Listed in <i>Planning and Development Act 2005</i> State Planning Policy 2.8, Bushland Policy for the Perth Metropolitan Region. Immediately adjacent to eastern and southern boundaries which are areas undertaking prescribed activities
Conservation Category Wetland (within Jandakot Regional Park)	Adjacent to Premises' eastern boundary which is an area undertaking prescribed activities
Threatened and Priority ecological communities - Banksia Dominated Woodlands of the Swan Coastal Plain IBRA Region (P3 under the Biological Conservation Act 2016 and Endangered under the Environment Protection and Biodiversity Conservation Act 1999).	Immediately adjacent to Premises' eastern and southern boundaries which are areas undertaking prescribed activities
Metropolitan Water Supply, Sewerage, and Drainage Act 1909 Public Drinking Water Source Area (PDWSA)	The Premises is located within a Priority 2 PDWSA and immediately adjacent to a Priority 1 PDWSA (Figure 8).
Right in Water and Irrigation Act 1914 Jandakot Groundwater Area	The Premises is located within the Jandakot Groundwater Area

6. Applicant Controls

6.1. Dust associated with green waste grinder

Operational Controls:

- Maintain moisture content within stockpiles and feedstock
- Purpose built spray system to suppress dust lift off during operation of green waste equipment
- Location of stockpiles to be in designated areas with appropriate distance to boundary fence line

Management Controls:

- Placement of windsocks to monitor the weather conditions
- Internal procedures to alter activities should weather conditions be unsuitable for potential dust generating activities
- Internal procedures to ensure regular maintenance and cleaning of all machinery, building and air conditioner vents.

6.2. Noise associated with green waste grinder

The replacement of the Morbark 3800 diesel shredder with the Morbark 4600XL shredder has reduced the noise emission by 10dB(A) and removed the required 'tonal adjustment of +5dB(A) for noise characteristics. This is a 15dB(a) compared to the Morbark 3800 diesel shredder.

In addition, the Licence holder has proposed the following controls:

- Appropriate PPE for operators of the equipment
- Retain property boundary barriers to nearby residential areas
- Utilisation of equipment during assigned operating hours
- Regular maintenance and servicing of equipment

6.3. Leachate associated with wash down bay

Operational Controls:

- Treatment of all wash down bay water is via specifically designed oil water separator system
- The bleed off waste water from the oil water separator system is directed to the contained leachate ponds on site
- Regular maintenance and review of the current water treatment system and ponds.

6.4. Leachate associated with Harvest Quest Method and wash down bay

Operational Controls:

- Purpose built asphalt hardstand areas for the compost process
- Purpose built limestone hardstand areas for the green waste feedstock receipt and processing
- Site activities and operations are conducted on asphalt areas where possible
- Hardstand areas (asphalt or limestone) are graded to a 1 in 100 fall towards ponds
- Purpose built interlinked storage ponds
- Purpose built catchment sumps at each pond

Management Controls:

- Regular maintenance and servicing of ponds and sumps
- Regular maintenance and servicing of the chlorination system associated with the pond network
- Regular cleaning out of the sumps to reduce sediment build up
- Regular maintenance and service of wash down bay chlorination system with appropriate disposal of contaminated wash waters
- Regular monitoring and maintenance of hardstand organised as part of SOP8.0

6.5. Odour associated with Harvest Quest Method

Operational Controls:

- Automatic self-closing door on indoor composting shed and receipt hall at the AD Plant, limiting the time the doors are open
- Purpose built extraction fan system within indoor composting shed and receipt hall at the AD Plant directly linked to external purpose built Biofilter
- 24 hour operation of extraction fan system linked to Biofilter
- Dedicated areas for delivery of odorous feedstock

- Purpose built interlinking leachate sump and pond network;
- Purpose built fences surrounding operational yard and ponds
- Purpose built aeration system within pond and sumps;
- Purpose built inline chlorination system within leachate pond network

Management Controls:

- Appropriate induction and training of delivery drivers to the receival hall at the AD Plant
- Regular maintenance and servicing of automated closing door system on indoor composting shed and receival hall at AD Plant
- Review and monitoring of biofilter system to ensure working capacity
- Placement of windsocks to monitor weather conditions
- Internal procedures to schedule operational activities (receival of potential odorous feedstock)
- Research and development of alternate composting process methods to reduce turning requirements
- Regular review and repair if necessary of fences and surrounding operational areas due to animal activity
- Regular maintenance and servicing of aeration system associated with the ponds and sumps
- Regular maintenance and servicing of chlorination system associated with the pond network
- Regular cleaning out of the sumps to reduce sediment build up

6.6. Fire associated with Harvest Quest Method

- Compost windrows have a minimum of 0.5m clear ground between stockpiles to allow easier access to windrows in the event of fire.
- The prescribed activities are surrounded by predominantly cleared land between the sensitive receptors to the west and north of the site, and approximately 10 metres of clear ground between the Premises and the Bush Forever areas to the south and east of the site.
- Temperatures and moisture content of stockpiles are monitored on a weekly basis.
- There are four leachate/stormwater collection ponds onsite that provide a supply of water if required in the event of a fire.

7. Risk assessment

Table 6 below describes the risk events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. The table identifies whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

Table 6: Risk assessment for proposed amendments during operation

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
Operation of Green Waste Grinder – Electrical Morbark 4600XL	Dust	<p>Receptors: Nearest residential area located 105 m west to north-west of prescribed activities</p>	Refer to Section 6.1 above	Minor	Unlikely	Medium	Based upon the licence holder's controls and proximity of the nearest residents the delegated officer has determined that there is a medium risk dust impacts occurring.	Conditions 6 and 7 of the existing licence are considered adequate to control the risks associated with dust. Condition 6 has been updated to acknowledge the change in equipment.
	Noise	<p>Jandakot Airport located 625 m south-west of prescribed activities</p> <p>Pathway: Air / wind dispersion</p> <p>Impact: Impacts to amenity and wellbeing</p>	Refer to Section 6.2 above	Minor	Unlikely	Medium	<p>Based upon the licence holder's controls, the type of grinder (electrical) and proximity of the nearest residents the delegated officer has determined that there is a medium risk of noise impacts occurring.</p> <p>Noise impacts resulting from the Premises can be managed under the <i>Environmental Protection (Noise) Regulations 1997</i>.</p>	Conditions 6, 7 and 8 of the existing licence are considered adequate to control the risk associated with noise.

<p>Wash Down Bay</p>	<p>Leachate:</p> <p>Seepage through hardstand areas and ponds</p> <p>Damage/rupture of pond liner</p> <p>Overtopping of ponds</p> <p>Run-off from hardstand</p>	<p>Receptors:</p> <p>Groundwater: 3 m below ground level within a P2 PDWSA, immediately adjacent to P1 PDWSA</p> <p>Groundwater (abstraction bore): Premises is within well-head protection zone for Water Corporation production bore (165 m from prescribed activities)</p> <p>Lukin Swamp Reserve (groundwater fed wetland) located 100 m from prescribed activities</p> <p>Harrisdale Swamp located 2.5 km south-east of prescribed activities</p> <p>Queensgate Drive Lake and parkland located 2.27 km north-east of prescribed activities</p> <p>Pathways:</p> <p>Seepage through soil</p> <p>Transport through groundwater</p> <p>Impacts:</p> <p>Contamination of groundwater and drinking water supply (PDWSA)</p> <p>Contamination of surface waters at the point of groundwater expression.</p>	<p>Refer to Section 6.3 and 6.4 above</p>	<p>Major</p>	<p>Possible</p>	<p>High</p>	<p>Based upon the Licence holder's controls, proximity to the receptor, surface geology, and readily available pathway, the delegated officer has determined that the groundwater contamination from leachate seepage could occur. Regulatory controls are imposed on the licence to minimise this risk.</p>	<p>Conditions on the existing licence (Conditions 2, 6, 10 to 29, and 33 to 37 of the revised licence) are considered adequate to control risks associated with leachate. Item 8 has been added to Table 3 of Condition 6 which lists operational controls for the wash down bay.</p>
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<p>Harvest Quest Method</p> <ul style="list-style-type: none"> • Waste acceptance and composting • Application of liquid wastes • Storage of leachate in a leachate pond 	<p>Leachate:</p> <p>Seepage through hardstand areas and ponds</p> <p>Damage/rupture of pond liner</p> <p>Overtopping of ponds; Run-off from hardstand</p> <p>AD Plant rupture/loss of containment</p>	<p>Receptors: Groundwater: 3 m below ground level within a P2 PDWSA, immediately adjacent to P1 PDWSA</p> <p>Groundwater (abstraction bore): Premises is within well-head protection zone for Water Corporation production bore (165 m from prescribed activities)</p> <p>Lukin Swamp Reserve (groundwater fed wetland) located 100 m from prescribed activities</p> <p>Harrisdale Swamp located 2.5 km south-east of prescribed activities</p> <p>Queensgate Drive Lake and parkland located 2.27 km north-east of prescribed activities</p> <p>Pathways: Seepage through soil</p> <p>Transport through groundwater</p> <p>Impacts: Contamination of groundwater and drinking water supply (PDWSA)</p> <p>Contamination of surface waters at the point of groundwater expression.</p>	<p>Refer to Section 6.4 above</p>	<p>Major</p>	<p>Possible</p>	<p>High</p>	<p>Based upon the Licence holder's controls, proximity to the receptor, surface geology, and readily available pathway, the delegated officer has determined that the groundwater contamination from leachate seepage could occur. Regulatory controls are imposed on the licence to minimise this risk.</p>	<p>Subject to compliance with Conditions 2, 6, 10 to 29, and 33 to 37 of the revised licence. No new conditions pertaining to leachate were added to the revised licence however, Conditions 15, 16 and 17 have been updated to reflect the amended composting process.</p>
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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	<p>Receptors: Nearest residential area located 105 m west to north-west of prescribed activities</p> <p>Jandakot Airport located 560 m south-west of prescribed activities</p> <p>Pathway: Air / wind dispersion</p> <p>Impact: Impacts to amenity and wellbeing</p>	Refer to Section 6.5 above	Major	Possible	High	Due to the acceptance of highly odourous feedstocks in large quantities there is potential for high level impacts to amenity. While the applicant has implemented a number of odour control measures, impacts to amenity could still occur at some time. Regulatory controls are imposed on the licence to minimise this risk.	Subject to compliance with Conditions 2, 3, 6, 9, 10, 11, 14, 15, 16, 17, 18 and 38 of the revised licence. No new conditions pertaining to leachate were added to the revised licence however, Conditions 15, 16 and 17 have been updated to reflect the amended composting process.

Risk Event				Consequence rating ¹	Likelihood rating ¹	Risk ¹	Reasoning	Regulatory controls
Source/Activities*	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
	<p>Fires and explosions: emissions of particulates and gases during an uncontrolled fire including:</p> <ul style="list-style-type: none"> • Oxides of nitrogen • Carbon monoxide • Sulfur dioxide • Volatile organic compounds • Non-methane volatile organic compounds 	<p>Receptors: Nearest residential area located 105 m west to north-west of prescribed activities</p> <p>Jandakot Airport located 560 m south-west of prescribed activities</p> <p>Lukin Swamp Reserve (groundwater fed wetland) located 100 m from prescribed activities</p> <p>Pathway: Air (windborne); wind speed and direction can change the level of smoke generated.</p> <p>Impact: Public health effects from inhaled particulates and gases Impacts to amenity and wellbeing</p> <p>Loss of life and/or property from explosions/fires</p> <p>Health impacts such as asphyxia</p> <p>Impacts on amenity and wellbeing from odour</p> <p>Disruption to flight paths</p> <p>Contamination to surface water from drop out of ash and other particulates</p>	Refer to section 6.6 above	Major	Unlikely	Medium	Based upon the licence holder's controls and proximity to residences and Jandakot airport, the delegated officer has determined that there is a medium risk of emissions associated with an uncontrolled fire.	Subject to compliance with conditions 2, 6, 15, 16 and 18.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)

8. Licence holder consultation

Table 7: Summary of consultation

Method	Comments received	DWER response
Local Government Authority advised of amendment application (15/11/2019)	No comments were received from the City of Cockburn.	n/a
Applicant referred draft documents (14 February 2020)	Refer to Appendix 2	Refer to Appendix 2

9. Conclusion

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

9.1. Summary of amendments

Table 8 provides a summary of the proposed amendments and will act as record of implemented changes. All proposed changes have been incorporated into the Revised Licence as part of the amendment process.

Table 8: Licence amendments

Condition No.	Proposed amendments
6. Table 3	<ul style="list-style-type: none"> Wash down bay and Clearmake waste pre-treatment system added to infrastructure and equipment controls table. Item 12 amended to 'three x 3 sided loading bays' Item 21 amended to remove '30cm crushed aggregate in base of concrete floored bays' Item 30 amended to include a high speed electric grinder
14	Amendment to wording of condition to remove the obligation to wash down hardstands daily.
15(a)	Wording amended to reflect the new Harvest Quest methodology which requires less turning of windrows
15(b)	Wording amended to require the temperature of composting windrows to be maintained between 55 °C and 65 °C for a period of at least two consecutive weeks rather than 3 consecutive days. The Delegated Officer has also added the requirement to take two measurements per week.
16(a)	Wording amended to reflect the new Harvest Quest methodology which requires less turning of windrows
16(b)	Wording amended to require the temperature of composting windrows to be maintained between 55 °C and 65 °C for a period of at least two consecutive weeks rather than 3 consecutive days. The Delegated Officer has also added the requirement to take two measurements per week.

Condition No.	Proposed amendments
16(e)	Wording updated to reflect current practice which requires all mixing to occur with the composting shed.
17(c)	Wording updated to reflect current practice of monitoring
18	Wording amended to remove the requirement of daily monitoring The Delegated Officer added the requirement monitor twice weekly
20 - 45	Condition number changed as it was identified that numbering was incorrect in the Previous Licence
23	Wording amended to require retesting within two weeks in the event that Groundwater Action Criteria are exceeded. Amended from seven days.
36. Table 11	Column 3 (Timeframe) of the Previous Licence stated "Must be undertaken within two months from the date of this amended licence...". Wording has been amended to add the date of the issue date of the Previous Licence being 12 February 2018.
37. Table 12	As above
Definitions	Address updated under CEO definition.
Schedule 1: Maps	Premises map updated to reflect the amended boundary. Old map deleted Key infrastructure maps added
General Description	Wording updated to reflect current practice

Tracey Hassell
A/Manager – Waste Industries

An officer delegated by the CEO under section 20 of the EP Act

Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L7308/1998/13 – Richgro Garden Products	L7308/1998/13	accessed at www.dwer.wa.gov.au
2	Application for a Licence amendment – submitted on 8/07/2019	n/a	DWER Records A1803433
3	Additional information supplied via email on 26/08/2019	n/a	DWER Records A1818859
4	Additional monitoring results provided on 21/11/2019.	n/a	DWER Records A1845000
5	DER, July 2015. <i>Guidance Statement: Regulatory principles.</i> Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
6	DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	DER 2015b	
7	DER, November 2016. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth.	DER 2016b	
8	DER, June 2019. <i>Guidance Statement: Decision Making.</i> Department of Environment Regulation, Perth.	DER 2019	

Appendix 2: Licence holder comments

The licence holder was provided with the draft Amendment Report on 14 February 2020 for review and comment. The licence holder responded on 10 March 2020. The following comments were received on the draft Licence.

Condition	Summary of licence holder comment	DWER response
<p>Table 2: Monitoring and recording of inputs and outputs</p>	<p>Richgro acknowledge that DWER have amended the Frequency definitions associated with the Other outputs. Given the complexity of the reporting requirements Richgro provide to DWER the following:</p> <p>Digestate is the end product from the Anaerobic Digestate Plant. The volume produced will vary depending on the input quantity of solid or liquid waste and water. Richgro are able to provide the Tonnage of Each load produced at the Premises and each load leaving the premises to other premises or customer.</p> <p>Compost / Mulch / Blended Soil Products are produced in large quantities with a cubic meter calculation. These products are either sold in bulk or bagged and supplied to various retail outlets.</p> <p>Richgro's current recording system is unable to provide to DWER the bagged product in Tonnes as the bagged products are recorded by units within the electronic system that is linked to a product code of litres per bag.</p> <p>As bagged product varies in weight density due to the blended material bulk density therefore the product a tonnage weight is not possible to calculate accurately.</p> <p><u>Richgro suggest that DWER accept the tonnage of the bagged products based on an estimated weight over the produced bags.</u></p>	<p>The complexity of calculating exact tonnage of bagged products is acknowledged and DWER agrees to accept the tonnage of the bagged products based on an estimate over the produced bags.</p>
<p>Table 3: Infrastructure and Equipment Controls Table</p> <p>9. Clearmake waste pre-treatment system</p>	<p>Point 3 of the operation details (Column 2): <i>Outlet to sump and interconnected to onsite leachate dam.</i></p> <p>Suggested wording <i>Outlet to sump that is interconnected to onsite leachate dam.</i></p>	<p>Table 3, Item 9 has been amended as per Licence Holder's request.</p>

Condition	Summary of licence holder comment	DWER response
<p>Operational controls</p> <p>Condition 7 and Schedule 1: Maps</p>	<p>Richgro acknowledge that DWER have taken into consideration the in-situ Electric Grinder location as depicted in the map on page 28 of the DRAFT Licence. However, Richgro seek amendment to the wording within Condition 7.</p> <p>Condition 7. <i>The licence holder must only operate the green waste grinder at the location marked 'Grinder location' in Schedule 1.</i></p> <p>Suggested Wording: <i>The Licence holder must only operate the green waste grinder at the location marked 'Grinder location' as per Richgro Land Map in Schedule 1, page 28 of the Licence.</i></p>	<p>Condition 7 has been updated to include a page number to make it clearer which of the maps it is referring to.</p>
<p>Table 5: Product assessment</p>	<p>Column 2, Timeframe: <i>Report to be provided to the CEO within six months from 20 March 2018.</i></p> <p><i>Richgro ask for the clarification on the above requirement if this requirement has been once off or will be also requested in the upcoming Amended Licence in Year 2020.</i></p>	<p>This requirement was a once off but remains on the licence for transparency and compliance purposes.</p>
<p>Condition 25</p> <p>Pond Monitoring and actions, Table 7: Pond monitoring</p>	<p>Table 7: Pond monitoring</p> <p>Richgro request clarification on the Table 7, Column 4: Frequency requirement to monitor ponds quarterly. The ground water monitoring Table 6, Column 4 requirement is to monitor bores quarterly for the first four sampling rounds and then bi-annually.</p> <p>We ask DWER to clarify if it is still a requirement for ponds to be monitored quarterly or will be aligned with the ground water monitoring schedule as above.</p>	<p>DWER confirms that it is still a requirement to monitor the pond quarterly.</p>
<p>Condition 35, Table 10: Hydraulic conductivity testing requirements</p>	<p>Richgro ask for the clarification if the Column 1 Requirement was only one off or will stay in the upcoming Amended Licence.</p>	<p>This requirement was a once off but remains on the licence for transparency and compliance purposes.</p>

Condition	Summary of licence holder comment	DWER response
Condition 36, Table 11: Infrastructure construction requirements	<p>Column 1, Infrastructure: Construction of groundwater monitoring bores.</p> <p>DWER has been informed that Richgro completed construction of 5 new bores at Jandakot Site in May 2018, and that groundwater monitoring events have been undertaken from July 2018 and ongoing in accordance with the Amended Licence 20 March 2018 required frequency.</p>	DWER acknowledges that groundwater monitoring bores have been constructed, however this condition remains on the Licence for transparency and compliance purposes.
Condition 37, Table 12: Biofilter requirements	<p>Column 1, Actions: Independent assessment and commissioning of the composting shed and composting shed biofilters.</p> <p>DWER has been informed that Richgro completed the above required actions as per the Column 2 Requirements and Column 3 Timeframe.</p>	DWER acknowledges that this condition has been met, however the condition remains on the Licence for transparency and compliance purposes.