Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Licence Number	L9089/2017/1
Licence Holder	Opalvale Pty Ltd
ACN	106 512 896
File Number:	DER2017/001530
Premises	Salt Valley Road Class II Landfill Chitty Road, HODDYS WELL WA 6566 Legal description – Part of Lot 11 on Deposited Plan 34937 Certificate of Title Volume 2535 Folio 391
Date of Report	4 June 2020
Decision	Instrument Granted

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
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 *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
Delegated Officer	an officer under section 20 of the EP Act
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
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	Opalvale Pty Ltd
Minister	the Minister responsible for the EP Act and associated regulations
mtpa	million tonnes per annum
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)

Term	Definition
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*

2. Amendment Description

This amendment has been informed by DWER's Regulatory Framework which is available at https://www.der.wa.gov.au/our-work/regulatory-framework.

2.1. Purpose and scope of assessment

On 3 March 2020 the Licence Holder submitted compliance documentation, for the completion of the construction of landfill Cell 2, and an application to amendment licence L9089/2017/1 to allow waste to be accepted into Cell 2.

The compliance documentation was written and certified by Talis Consultants Pty Ltd to illustrate that the works conformed to the required specifications set out in work approval W5800/2015/1. On 15 April 2020 DWER wrote to the Licence Holder advising that it had reviewed the compliance documentation and was satisfied that the variations made to the original specifications are immaterial and that Cell 2 was constructed in accordance with the requirements of works approval W5800/2015/1.

This licence amendment seeks amendments to conditions 3, 7 (Table 6) and 25 (Table 11) to allow for the acceptance of waste into Cell 2.

This amendment has also removed Specified Action 1 from Condition 23 (Table 10) of the Existing Licence. Specified Action 1 required the Licence holder to undertake an assessment of the liner integrity of the unconfined liner in Cell 1 in accordance with the recommendation made in Golder Associates' Desktop liner integrity assessment. In accordance with Condition 23 the Licence Holder provided the assessment of the liner integrity to DWER on 25 November 2019. DWER reviewed Golder's assessment and on 19 February 2020 DWER wrote to the Licence Holder advising that the extended Cell 1 side slope liner is sufficient for operation.

The Decision Report associated with the original licence application contains a detailed assessment of the; location and siting of the premises (including climate geology, hydrogeology, topography and groundwater), engineering design and construction method, landfill management and a risk assessment. The information in the Decision Report is transferable to this application as Cell 2 is adjacent to Cell 1 and the same engineering design and construction methods have been used.

Therefore, this Amendment Report is to be read in conjunction with DWER's Decision Report for Licence L9089/2017/1 which was granted on 5 February 2019. A copy of the Decision Report can be obtained from DWER's website at: https://www.der.wa.gov.au/our-work/licences-and-works-approvals/current-licences

3. Other approvals

Table 2 below outlines other approvals relevant to this project.

Table 2: Relevant approvals

Legislation	Number	Approval
State Administrative Tribunal Act 2004 *Planning and Development Act 2005*	State Administrative Tribunal (SAT) Order, 27 February 2013	Planning approval by order of SAT – for the proposed landfill development at Lot 11 Chitty Road, Toodyay.
	Shire of Toodyay – Planning Approval Ref: 11CHI/A4273, 6 March 2015	Extension of existing planning approval issued by SAT on 27 February 2013; amendment to condition 5 of SAT Order. Condition 5 referred to the lapse of planning approval to be of no further effect unless a Works Approval had been issued by DER on the Works Approval application (W5800/2015/1) within two years of the date of the original approval (on or before 27 August 2015).
Rights to Water and Irrigation Act 1914	Not applicable	Groundwater extraction bore (not-potable use) sited for potential operational water requirements (currently not required as surface water volumes are sufficient for operational use. Bore is located within an area zones for unrestricted groundwater usage. No licence is required.

4. Licensing history

Table 3 provides the amendment history for L9089/2017/1.

Table 3: Licence amendments

Instrument	Issued	Amendment
L9089/2017/1	05/02/2019	New Licence
L9089/2017/1	06/05/2020	Licence amendment to give effect to the Minister's appeal determination (Appeal Number 010 of 2019).
L9089/2017/1	04/06/2020	Licence amendment to allow waste to be deposited into Cell 2.

5. Emission sources, receptors and pathways

5.1 Emissions

The potential for emissions to impact on sensitive receptors has been assessed in accordance with the Department's Risk Framework. Operation of Cell 2 will follow the same waste acceptance and landfilling processes and limits as Cell 1 and as specified within the licence, therefore it is considered that the emissions related to Cell 2 will not vary from the initial assessment. It is noted that the operation of Cell 2 proposes to continue the current operations by and that no increase to waste acceptance limits is proposed by this amendment.

The assessment of Cell 1 operation identified the key emissions to be landfill leachates, dust, asbestos, odour, noise, fugitive landfill gas, vermin/pests, windblown waste and smoke (fire) from the acceptance, burial and decomposition of waste. A comprehensive assessment of each of the emissions was undertaken in the original Decision Report and is transferable to the operation of Cell 2. Therefore, the information has not been repeated in this report.

One emission source, associated with the operation of Cell 2, which DWER has identified as requiring further investigation is the generation of landfill gas.

5.1.1 Fugitive landfill gas generation and management

Landfill gas is generated by the biodegradation of organic waste and consists of a mix of bulk gases such as methane, carbon dioxide, nitrogen, oxygen and hydrogen and many trace gases such as hydrogen sulphide, carbon monoxide, halogenated organics and aromatic hydrocarbons. The rate of landfill gas emissions is dependent on the conditions present within the waste mass, for example moisture and bacteria content.

The Landfill Management Plan for this premises notes that landfill gas management is primarily concerned with minimising the amount of landfill gas emissions through the landfill waste mass and utilising the collected gas to prevent methane entering the environment. This is achieved by ensuring that there is an efficient gas extraction system installed within the waste and the appropriate consumption/combustion of the collected landfill gas.

The assessment of Cell 1 identified that the size of the final Stage 1 landfill will generate landfill gas at quantities that need to be managed, however there will be insufficient gas generation during the operation of Cell 1 alone to warrant the installation of a gas extraction system during the operation of the Cell 1 landfill. The Landfill Management Plan notes that a landfill gas contractor will be engaged to manage landfill gas and to be responsible for the progressive installation of landfill gas infrastructure as the waste mass increases, including

installing a flare or other mechanisms for the treatment of the extracted gas.

The Landfill Management Plan states that the intention of the landfill gas extraction system is to maximise the extraction of landfill gas while minimising the quantity of oxygen being sucked into the waste mass. It is noted that lateral and vertical wells will be progressively installed in the waste mass as the height increased and that these will start being installed in Cell 2 once the waste height has reached a minimum of 10 metres above the base liner.

Condition 23, Table 10(item 4 of Existing Licence) requires the submission of a final landfill gas management plan within two years of the commencement of waste placement in Cell 1. This timeframe is likely to be reached during the life of Cell 2. The landfill started receiving waste on 25 March 2019 so the management plan is due on 25 March 2021.

On 17 April 2020 DWER wrote to the Licence Holder enquiring whether a landfill gas management plan was available to be assessed as part of this amendment application. DWER advised in the absence of this information DWER would consider risk using the information provided in the Landfill Management Plan provided with the original licence application.

5.2 Environmental Siting

5.2.1 Potential receptors and environmental aspects

Risk is assessed as a combination of emission sources, the proximity and sensitivity of receptors to those emission sources and any pathways that can allow the emission to reach and potentially harm the receptor. Figure 1 and the Table 4 below provides a summary of human receptors in proximity to the premises which have a potential to be impacted from site activities. Table 5 below outlines the environmental receptors in proximity to the premises.

Cell 2 is located adjacent to the eastern wall of Cell 1 and is within the same premises boundary as was assessed in the initial assessment. Therefore, even though the emission source has slightly changed it is still within the same footprint boundary that was previously assessed.

The siting of Cell 2 is closer to some receptors, including Clackline Nature Reserve, than Cell 1. In the Appeal against the conditions of Licence L9089/2017/1 an appellant raised concern that DWER had incorrectly described the distance to the Clackline Nature Reserve. DWER's original risk assessment correctly described the Nature Reserve as being 2.3 kilometres from the premises boundary; however, during the appeal the Minister was advised that an area of vegetation, approximately 670 metres from the premises boundary, had recently been designated for future inclusion into the reserve, to be managed by the Department of Biodiversity, Conservation and Attractions. As part of the Ministerial Amendment that resulted from the appeal determination DWER reassessed the risks associated with the landfill being closer to the present and future Nature Reserve.

The risk assessment in Section 6 considers these receptors in the context of emissions and potential pathways.

Table 4: Receptors and distance from activity boundary

Residential and sensitive premises	Distance from Prescribed Premises
Privately owned farm land	Immediately adjacent (east and west)
Residential premises	Internal farmhouse, approximately 400 m south west (excluded as a sensitive receptor)
	Approximately 1,100 m north east (two properties to the north east of the premises.
	Approximately 1,700 m south of the premises
	Approximately 70 houses within a 1-5 km radius of the premises, predominately to the north and south.

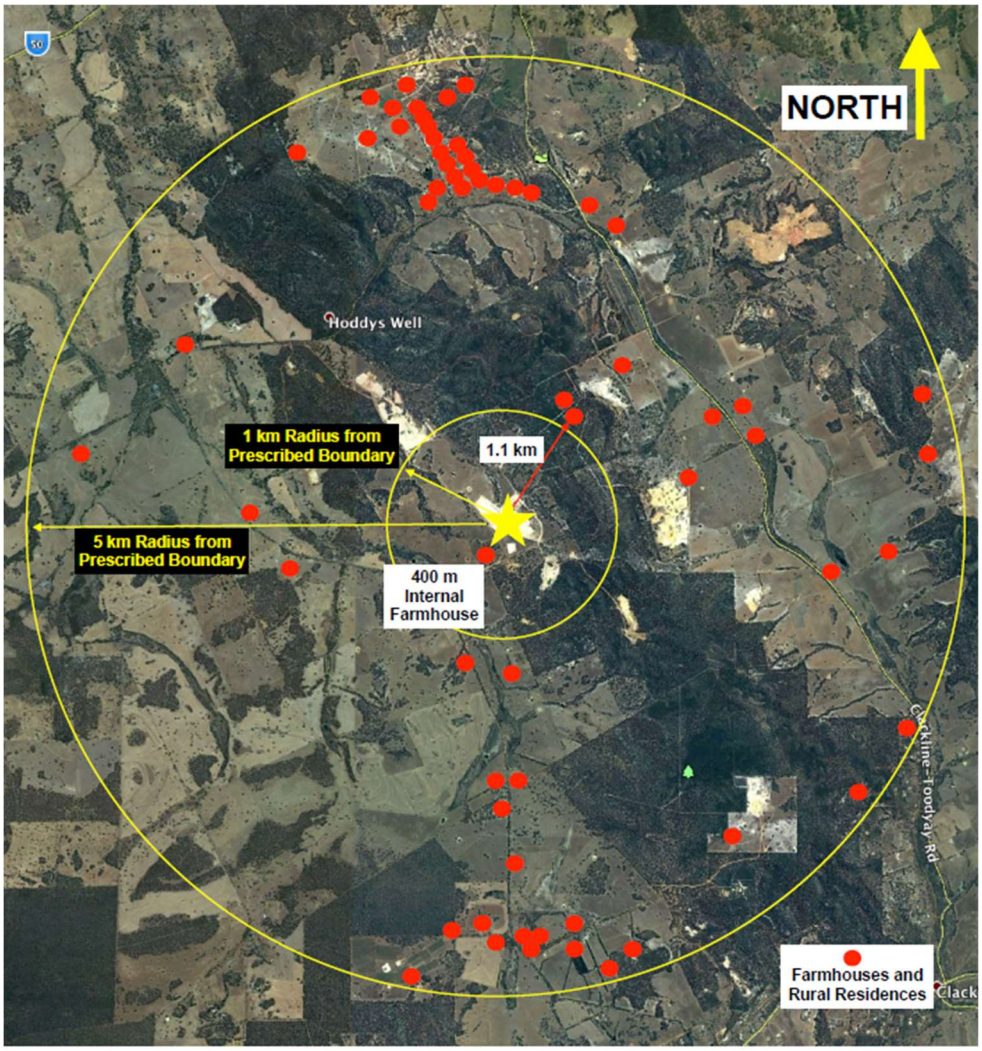


Figure 1: Proximity of residential properties surrounding the premises

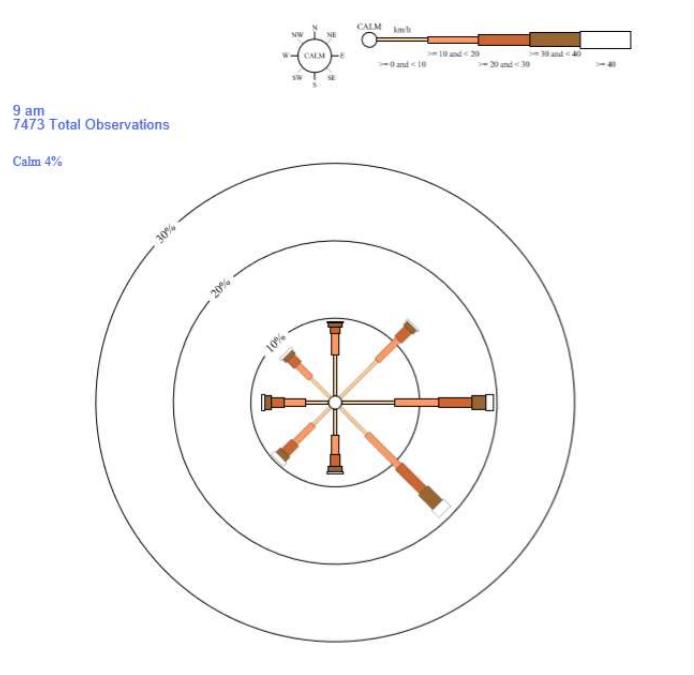
Table 5 below lists the relevant environmental receptors in the vicinity of the Prescribed Premises which may be receptors relevant to the proposed amendment.

Table 5: Environmental receptors and distance from activity boundary

Environmental receptors	Distance from Prescribed Premises
Department of Biodiversity, Conservation and Attractions Managed Lands and Waters	DBCA managed freehold land, which will be included as part of the adjacent Clackline Nature Reserve, 670 m south Clackline nature reserve approximately 2.3 km south east Nanamoolan Nature Reserve 2.3 km east and north east.
Waterways Conservation areas	The Premises is within the Avon River Management Area.
Proclaimed surface water area under the *Rights in Water and Irrigation Act 1914.*	The Premises is within the Avon River Catchment Area.
Directory of Important Wetlands of Australia	Avon River Valley, approximately 17 km downstream from the closest feeding tributary to the premises. The Avon River is a registered type B2 wetland and provides high environmental value to public and the environment.
Threatened Ecological Communities and Priority Ecological Communities	A number of threatened ecological communities (wheatbelt woodlands) >5 km to the north east and south east
Groundwater	Low permeability fractured rock aquifer (confined) quality is potentially suitable for domestic and non-potable use as well as stock watering. No registered users within 5 km of Premises.

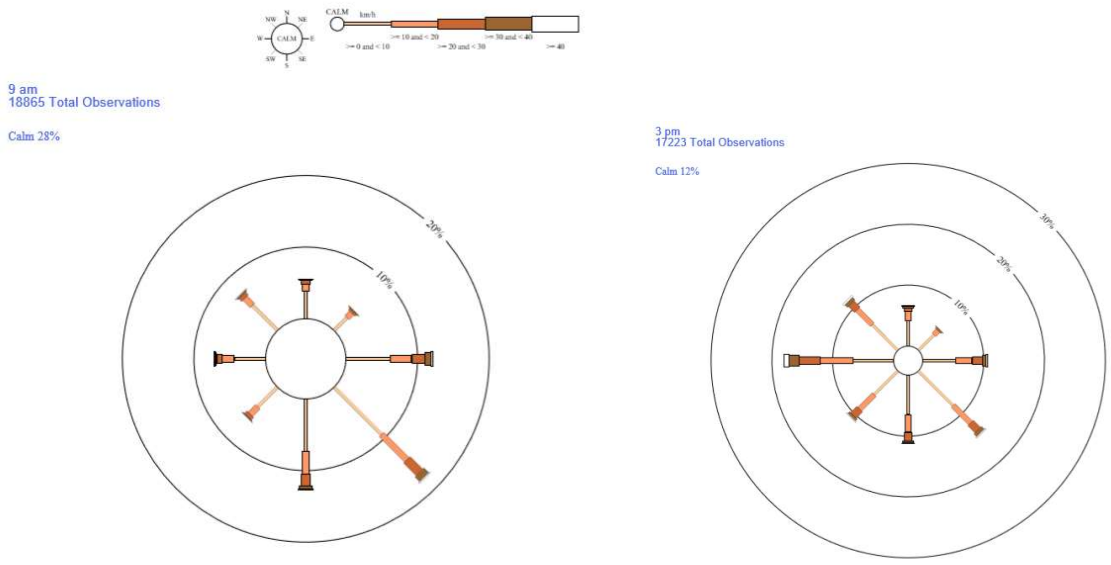
5.3 Pathways

As dust, odour, asbestos, noise, smoke, windblown waste and fugitive landfill gas are considered potential emissions, the prevailing wind direction has been considered. The average annual 9am wind rose for the nearest BoM site Bakers Hill (BoM site number 010244) is shown in Figure . Afternoon wind records are not available for the Bakers Hill weather station. Both morning (9 am) and afternoon (3pm) average annual wind roses for the nearby Northam weather station (BoM site number 010111) are provided in Figure . It is noted that morning wind conditions are stronger at the Bakers Hill site compared to the Northam site.



Data Source: www.bom.gov.au – Station ID 010244

Figure 2: 9 am Wind rose for Bakers Hill (Station ID 010244)



Data Source: www.bom.gov.au – Station ID 010111

Figure 3: 9 am and 3 pm wind roses for Northam (Station ID 010111)

As leachate is considered a potential emission, depth to groundwater and soil type have been considered. In June 2019 the Licence Holder provided a groundwater monitoring report for Cell 2 construction (Stass Environmental, 2019). The report indicated that the groundwater levels underneath Cell 2 are below the required two metre buffer (as required by the works approval). During the six month monitoring of the groundwater around Cell 2 it was observed that the highest groundwater level was measured at 271.927 mAHD at bore C2. The lowest level of the landfill liner in the vicinity is 274.8 mAHD which leaves an inferred separation distance of 2.873m between the highest observed level of the groundwater table and the lowest base of landfill liner (Stass Environmental, 2019).

In the vicinity of Williamson's pit (in which Cell 2 is located) soil is a yellow gravelly loamy sand and loam which overlies sandy clay at a depth of about 0.5 metres (Stass Environmental, 2019).

As contaminated storm water is considered a potential emission to surface water, overland flow (topography) has been considered as a potential pathway. Williamson's Pit is located on the crest of a hill, at an elevation of about 290 metres AHD. To the west of the pit the land is gently undulating before sloping relatively uniformly to the river flat. To the immediate east of the pit the land slopes gently down to a small drainage line (draining from south to north) at about 280 metres and from there the land slopes gently upwards to about 330 metres (Stass Environmental, 2019). The Surface Water Management section of the Landfill Management Plan contains limited information regarding the management of surface water during operations. Therefore, DWER has considered additional information provided by the applicant (on 6/12/2018), in a document titled '*Supplementary surface water management information for Opalvale Class II landfill application (L9089/2017/1)*', in the risk assessment of this application. DWER request that the information in the supplementary document be incorporated into the Landfill Management Plan to support any additional amendments to this Licence. DWER note that the Landfill Management Plan is a live document and is intended to be updated to reflect current practices on site.

These pathways have been considered in the risk assessment table in Section 6.

5.4 Applicant controls

The Applicant has proposed numerous management measures to address potential emissions arising from the acceptance and burial of waste. These management measures are summarised in table 6 below. A full explanation of applicant controls in provided in Section 9 of the original Decision Report.

6. Risk assessment

The identification of the sources, pathways and receptors to determine Risk Events are set out in Table 6 below, consistent with the *Guidance Statement: Risk Assessments*. Risk ratings have been assessed for each key emission source and take into account potential source-pathway-receptor linkages. The mitigation measures / controls proposed by the Applicant have been considered in determining the risk rating. Emissions during construction and operation have been assessed separately to allow clear delineation of activity phases.

The conditions in the issued Licence, as outlined in Table 6, have been determined in accordance with the *Guidance Statement: Setting Conditions*.

Table 6: Risk assessment for proposed amendments during operation

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Acceptance, burial and decomposition of wastes in Cell 2 Collection, storage and management of leachate	Landfill leachates	Seepage through liner to groundwater (beneficial use of groundwater) Overland flow or transport through groundwater to surface water ecosystems, terrestrial ecosystems or groundwater dependent ecosystems (impact to ecosystem health and function) Overland flow and retention in soil (impact to soil quality)	Leachate management plan Groundwater and surface water management plans Surface water diversion, containment and control Site inspection and management practices Monitoring of leachate, groundwater and surface water	Moderate	Unlikely	Medium	The Delegated Officer determined that the existing leachate controls are likely to be sufficient at mitigating leachate emissions associated with the operation of Cell 2. A full risk assessment of potential leachate emissions can be viewed in Section 9.4 of the original Decision Report, available on DWER's website. No additional regulatory controls relating to leachate have been added to the Revised Licence.	Acceptance and throughput controls Infrastructure and equipment controls Operational controls Specified actions Monitoring requirements Record-keeping controls Reporting requirements

Disposal of waste in Cell 2 Vehicle movement on unsealed roads Maintenance of infrastructure	Dust	Dispersal via air to sensitive residential receptors and terrestrial ecosystems (impact to amenity and public health; impact to ecosystem health)	Dust management plan Speed limits Use of dust suppression and restriction of activities	Minor	Possible	Medium	The Delegated Officer determined that the existing dust controls are likely to be sufficient at mitigating dust emissions associated with the operation of Cell 2. The annual waste acceptance has not been increased and therefore it is not anticipated that there will be increased traffic movement at the Premises. A full risk assessment of potential dust emissions can be viewed in Section 9.5 of the original Decision Report, available on DWER's website. No additional regulatory controls relating to dust have been added to the Revised Licence.	Infrastructure and equipment controls Operational controls Record-keeping controls

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Acceptance and burial of Special Waste Type 1 in Cell 2	Asbestos	Dispersal via air to sensitive residential receptors and adjacent worksite (impact to public health)	Asbestos management plan Dedicated asbestos burial area	Severe	Unlikely	Medium	The Delegated Officer determined that the existing asbestos controls are likely to be sufficient at mitigating asbestos emissions associated with the operation of Cell 2. A full risk assessment of asbestos emission impacts can be viewed in Section 9.6 of the original Decision Report, available on DWER's website. No additional regulatory controls relating to asbestos have been added to the Revised Licence.	Operational controls Record-keeping controls

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Acceptance, burial and decomposition of wastes in Cell 2 Collection, storage and management of leachate	Odour	Dispersal via air to sensitive residential receptors (impact to amenity)	Odour management plan Application of cover Procedures for acceptance and burial of odourous waste Leachate management plan	Minor	Unlikely	Medium	The Delegated Officer determined that the existing odour controls are likely to be sufficient at mitigating odour emissions associated with the operation of Cell 2. A full risk assessment of potential odour emission impacts can be viewed in Section 9.7 of the original Decision Report, available on DWER's website. No additional regulatory controls relating to odour have been added to the Revised Licence.	Acceptance and throughput controls Infrastructure and equipment controls Operational controls Record-keeping controls

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Vehicle and plant movement Maintenance of infrastructure	Noise	Dispersal via air to sensitive residential receptors (impact to amenity)	Noise management plan Equipment maintenance	Slight	Unlikely	Low	The Delegated Officer determined that the existing noise controls are likely to be sufficient at mitigating noise emissions associated with the operation of Cell 2. A full risk assessment of potential noise emissions can be viewed in Section 9.8 of the original Decision Report, available on DWER's website. No additional regulatory controls relating to noise have been added to the Revised Licence.	Infrastructure and equipment controls Operational controls Record-keeping controls

Decomposition of waste in Cell 2	Fugitive landfill gas	Dispersal via air to sensitive residential receptors (impact to amenity and public health)	A landfill gas management plan will be developed within two years of the commencement of placement of waste into Cell 1.	Minor	Likely	Medium	The landfill management plan associated with this premises noted that there will be insufficient gas generation during the operation of Cell 1 alone to warrant the installation of a gas extraction system, however lateral and vertical wells will be progressively installed in the waste mass of Cell 2 once the waste height has reached a minimum of 10 metres above the base liner. To manage the likelihood of generation of landfill gas in the combined Cell 1 and Cell 2 waste mass, the Delegated officer has amended Condition 7 (Table 6) to restrict waste height to 10 metres. In order for waste acceptance to proceed above this height a	Process limits

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	Potential emissions	Potential receptors, pathway and impact	Applicant controls					
							Landfill Gas Management Plan must be provided to and assessed by DWER in order to impose suitable conditions for landfill gas management infrastructure	

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Acceptance, burial and decomposition of wastes in Cell 2 Storage of leachate in Leachate Ponds	Vermin/pests	Direct contact (impact to amenity and public health; impact to native ecosystems)	Landfill Management Plan Fencing and regular inspections Application of cover	Minor	Unlikely	Medium	The Delegated Officer determined that the existing regulatory controls are likely to be sufficient at mitigating impacts from vermin/pests and weeds associated with the operation of Cell 2. A full risk assessment of potential impacts from vermin/pests and weeds can be viewed in Section 9.10 of the original Decision Report, available on DWER's website. Vermin/pests were also addressed in the Ministerial Amendment issued on 06/05/2020. This amendment imposed further regulatory controls for vermin/pests (reflected in Condition 13).	Acceptance and throughput controls Infrastructure and equipment controls Operational controls Record-keeping controls

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Acceptance and burial of wastes in Cell 2	Windblown waste	Dispersal via air to sensitive residential receptors (impact to amenity)	Landfill management plan Fencing and regular inspections Application of cover	Slight	Likely	Medium	The Delegated Officer determined that the existing leachate controls are likely to be sufficient at managing windblown waste associated with the operation of Cell 2. A full risk assessment of windblown waste impacts can be viewed in Section 9.11 of the original Decision Report, available on DWER's website. No additional regulatory controls relating to windblown waste have been added to the Revised Licence.	Infrastructure and equipment controls Operational controls Record-keeping controls

Risk Event				Consequence rating[1]	Likelihood rating[1]	Risk[1]	Reasoning	Regulatory controls (refer to conditions of the granted instrument)
Source/Activities	**Potential emissions**	**Potential receptors, pathway and impact**	**Applicant controls**					
Combustion of flammable wastes in Cell 2.	Smoke (fire)	Dispersal via air to sensitive residential receptors (impact to amenity and public health)	Landfill and fire management plans Maintenance of firefighting equipment on the site Security measures	Slight	Likely	Medium	The Delegated Officer determined that the existing fire controls are likely to be sufficient at mitigating impacts from fire that might arise from the operation of Cell 2. A full risk assessment of potential fire (smoke) emissions can be viewed in Section 9.12 of the original Decision Report, available on DWER's website. Emissions from fire were also addressed in the Ministerial Amendment issued on 06/05/2020. This amendment imposed further reporting requirements associated with fires at the Premises.	Acceptance and throughput controls Infrastructure and equipment controls Operational controls Record-keeping controls

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

5. Consultation

Table 7: Summary of consultation

Method	Comments received	DWER response
Application advertised on DWER's website (22 April 2020)	No comments received	n/a
Application advertised in *The West Australian* (27 April 2020)	No comments received	n/a
Local Government Authority advised of proposal (22 April 2020)	No comments received	n/a
Public Authority Stakeholders (DBCA and DPLH) advised of application (22 April 2020)	No comments received	n/a
Community Stakeholders advised of application (22 and 23 April 2020)	Three submissions were received within the 14 day submission period. A summary of the submissions is provided in Appendix 3	Refer to Appendix 3
Applicant referred draft documents (27 May 2020)	A summary of the applicant's comments is provided in Appendix 2.	Refer to Appendix 2

6. Decision

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.

6.1. 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
3	Condition 3 has been amended to remove reference to Cell 1 and replace it 'Active Landfill Cell'. The condition has also been amended to require quarantined waste to be removed to an appropriately authorized facility within 72 hours.
Definitions	A definition of Active Landfill Cell has been added.

Condition No.	Proposed amendments
5 (Table 4)	The first item (Class II Landfill Cells) has been amended to remove reference to Cell 1 and replace it with 'each cell'. The text "with the exception of the leachate sump in Cell 1" has been retained to acknowledge that the leachate sump did not achieve a 2m separation distance. Item two (Leachate Ponds 1 and 2) has been amended to include Cell 2
7 (Table 6)	Cell 2 added to allow disposal of waste into either Cell 1 or Cell 2.
7 (Table 6)	The first row of this table has been amended to restrict the placement of waste into Cell 2 to a height of 10 metres above the base liner. This amendment has been made to ensure that a Landfill Gas Management Plan is submitted and approved prior to waste exceeding this height limit.
16	Cell 2 added as an area which stormwater is to be retained if it comes into contact with waste
18	Cell 1 has been replaced with Active Landfill Cell
19	Cell 1 has been replaced with Active Landfill Cell
23 (Table10)	Item 1 (Assessment of liner integrity of the unconfined liner in Cell 1) has been removed as it has been fulfilled. Remaining items in Table 10 have been renumbered.
23 (Table10)	Item 2 has been added to require a Final Capping Plan for Cell 2 be submitted prior to the completion of waste disposal into that cell.
28 (Table 13)	Spelling errors have been corrected
29 (Tables 14 and 15)	Spelling errors have been corrected
29 (Table 15)	Monitoring bores C2, C3, C5 and C6 have been removed as they were decommissioned as part of Cell 2 construction. Following advice from the applicant on 2 June 2020, monitoring bores C8 has been added.
Schedule 2 (Table 20)	Item one has been amended to indicate that there are now two lined landfill cells at the Premises.

Tracey Hassell

Digitally signed by Tracey Hassell
Date: 2020.06.04 15:51:57 +08'00'

Tracey Hassell
A/Manager, Waste Industries

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

4 June 2020

Appendix 1: Key documents

	Document title	In text ref	Availability
1	Licence L9089/2017/1– Opalvale Pty Ltd – Salt Valley Road Class II Landfill	L9089/2017/1	accessed at www.dwer.wa.gov.au
2	Licence Application and Compliance Documentation submitted on 3 March 2020.	n/a	DWER records (DWERDT259580)
3	Groundwater Monitoring for Cell 2 Construction – June 2018 to December 2018	Stass Environmental, 2019	DWER records (A1801247)
4	Opalvale Salt Valley Road Class II Landfill, Lot 11 Chitty Road, Toodyay, Landfill Management Plan	Landfill Management Plan	DWER records (A1877606)
5	DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth.	n/a	accessed at www.dwer.wa.gov.au
6	DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth.	n/a	
7	DER, August 2016. *Guidance Statement: Licence duration.* Department of Environment Regulation, Perth.	n/a	
8	DER, November 2016. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth.	n/a	
9	DWER, June 2019. *Guidance Statement: Decision Making*. Department of Water and Environmental Regulation, Perth.	n/a	

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Report on 27 May 2020 for review and comment. The Licence Holder responded on 2 June 2020. The following comments were received on the draft Amendment Report.

Condition	Summary of Licence Holder comment	DWER response
N/A	Please correct the name of Opalvale on the registered business address.	Actioned
3	Opalvale has no issue with the requirement to remove non-conforming waste from the premises within 72 hours.	Noted
7 – Table 6	Opalvale notes that a landfill height limit of 10m above the Cell 2 base liner is required, and that it is associated with having the landfill gas risk assessed as part of a separate licence amendment once the Landfill Gas Management Plan and infrastructure design has been presented to DWER as it is considered primary infrastructure not previously assessed. Opalvale would have preferred a specified action (Table 10) be included in the licence that required the landfill gas and infrastructure collection design be approved prior to landfilling above the 10m high level without the need to amend the licence again.	As noted by the applicant DWERs preferred approach is to assess the landfill gas infrastructure under a licence amendment as it is primary infrastructure that has not previously been assessed.
23 – Table 10	Opalvale has no concern with repeating the capping plan requirements for Cell 2, which is similar to the requirement for Cell 1 in relation to timeframes.	Noted
28 and 29	Opalvale notes the spelling corrections associated with parameters to be monitored in Tables 13, 14, and 15.	Noted
Infrastructure and Equipment	Opalvale does not agree with DWERs position that the new bores should be included in the licence as their specific monitoring requirements are detailed in the Works Approval W5800 (with some overlap), however an updated map showing existing and currently planned bore locations is provided as requested (see attached – OV-WA-50 24-03-20_with Cell Monitoring bores_May 2020). Opalvale noted that the new proposed bores (C7, C8, C9 and C10) will be installed in early June 2020 primarily relate to the works approval to verify separation distance to groundwater in preparation of the design of Cell 3 and 4. It is also noted that	DWER notes that the original decision report assesses the adequacy of the groundwater monitoring network in regard the ability for the bores to provide an indication of background groundwater quality and potential movement of leachate through any liner defects for the operation of Cell 1. The network assessed included the deep groundwater monitoring wells (SE1 – SE9) situated external to the clay pit and monitoring wells (C1 – C6) situated close to the operational landfill within the clay pit – Tables 15 and 20 on the Original licence.

Condition	Summary of Licence Holder comment	DWER response
	these bores will likely only be in place for 12-18 months as they are designed to support the works approval requirement before being decommissioned during the construction of the associated landfill cells. Opalvale sought comment from Stass Environmental on the matter raised by DWER and there is concern about using the bores as intended by DWER for the licence, as they have not been designed specifically for operational monitoring. Opalvale noted that the bores (SE1 to SE9) were designed in consultation with DWER at the time of the submission of the Works Approval to determine potential liner failure by specifically targeting preferential pathways identified in the geology for bore placement.	DWER is of the opinion that the deep groundwater monitoring wells (SE1 – SE9) are appropriate for the ongoing monitoring of background groundwater quality, but based on their location and the construction specification, are not likely to provide an early indication of any potential movement of leachate through any liner defects. Therefore, DWER consider that a suite of monitoring locations should be sited within the clay pit to monitoring groundwater levels and groundwater quality in accordance with Condition 29 to provide an indication of the effectiveness of engineering controls employed to prevent impacts from leachate emissions from operational landfill cells (Cell 1 and Cell 2). DWER note that the monitoring bores situated in the pit have been typically sited to address conditions within the Works Approval (W5800/2015/1); however, DWER have considered the locations of available wells in determining suitable locations for operational monitoring for Cell 1 and Cell 2. With the removal of C2, C3, C5 and C6 following construction of Cell 2, DWER consider that, of the remaining network, bores C1, C4 and C8 are adequate for the monitoring of potential impacts to groundwater down hydraulic gradient of Cells 1 and 2 (based on the groundwater reports provided with the Works Approval), noting that leachate flows towards the sump in Cell 1, close to the location of monitoring bore C1. It is noted that the design of the original monitoring network was done some time ago and that the effectiveness of the network may be reviewed with the availability of recent operational monitoring data to

Condition	Summary of Licence Holder comment	DWER response
		inform future decisions related to operational monitoring requirements. For the future amendment to allow the planned Cell 3 to receive waste, Opalvale will be required to propose a permanent groundwater monitoring network for the operation of all of Stage 1 landfill footprint (approved in Works Approval W5800/2015/1), designed to provide an indication of background groundwater quality and potential movement of leachate through any liner defects for the operation of the Stage 1 landfill cells. Opalvale are required to provide a summary of the operational monitoring conducted to date to support DWER's assessment of the existing network, and may propose changes to that network based on the available data.

Appendix 3: Summary of Direct Interest Stakeholder Consultation and Comments

	Summary of Comments Received	DWER response
Submission 1	Submission 1 advised that the amendment to Condition 3 was opposed for the following reasons: **1.** The section on *Monitoring of inputs and outputs* (Section 25) indicates that 'Each load leaving or rejected from the Premises' must be recorded, but there is no requirement for the time of storage of quarantined material to be monitored and recorded. **2.** There is no maximum time limit for temporary storage. **3.** There is no requirement for the area set aside for this temporary storage to be identified. **4.** Whereas there are conditions as to how the various categories of waste are to be handled, there are no conditions as to how the temporary storage is to be managed. Yet it is reasonable to assume that quarantined waste will pose a greater risk to the environment and local agriculture than acceptable waste. Safeguards are needed. **5.** There is no definition of 'quarantined waste'.	**1.** DWER can request waste receipts which will indicate when a certain load arrived and left the premises. The Annual Environmental Report provided to DWER on 30 March 2020 stated that "No non-conforming wastes have been rejected". **2.** Condition 3 is a standard condition used on all waste management facilities. In this instance the Delegated Officer has determined to amend the condition to ensure that quarantined waste is not kept on the premises for longer than 72 hours. **3.** Condition 3 on the Revised Licence has been amended to require waste that does not meet acceptance criteria to be stored in a quarantined storage area or container within the Active Landfill Cell. An Active Landfill Cell is defined as any cell approved by DWER to accept waste. An Active Landfill Cell will contain an engineered liner system, leachate collection system and leachate pond. **4.** As noted above quarantined waste has to kept in an area that has an engineered liner system, leachate collection system and a leachate pond, therefore the temporary storage of this waste type is not likely to pose any greater risk than other waste types. The Delegated Officer has determined to amend the condition to ensure that quarantined waste is not kept on the premises for longer than 72 hours. **5.** The definition of quarantined waste is within the condition itself and relates to waste that does not meet the waste acceptance criteria set out in Condition 2.
Submission 2	Submission 2 reiterated the comments submitted by Submission 1.	Comments addressed above.

	Summary of Comments Received	DWER response
Submission 3	Submission 3 reiterated the comments submitted by Submission 1 and also added that it was concerned by the staged nature of the approval process. It is believed that this staged approach hides cumulative impacts and risks. It was advised that "Since Opalvale's income stream ends when the last Cell is filled, the community has no guarantee that rehabilitation and monitoring will take place. Submission 3 believes the following information is missing: **1.** The application does not provide any information on Opalvale's record of running Cell 1. Where is the evidence that it has proved itself to be a responsible operator? Can the Community trust it to cope with both daily running and unforeseen circumstances? Is it operating under the highest appropriate ISO standard? Has its operation been audited by an independent expert? Are its staff appropriately trained and qualified? The answers to these questions are highly relevant to the granting of a licence for Cell 2. **2.** The application does not provide any information on the status of Cell 1, nor on the relationship between the use of Cell 1 and Cell 2. How close to capacity is Cell 1? Table 10, Item 2 of the licence requires the submission of a final Capping Plan (part of the Capping and Rehabilitation design) 3 months prior to completion of waste disposal over an area of approximately 2 ha or completion of Cell 1, whichever is sooner. When will this occur?	The Delegated Officer considers that the licence is appropriately conditioned to manage the risks associated with the existing landfill cells constructed at the premises. The Works Approval W5800/2015/1 approved the construction of Stage 1 landfill which includes a total of six (6) landfill cells. Landfill operations are regulated under the licence and DWER will assess compliance with licence conditions. It is an offence to contravene the conditions of a licence issued under the EP Act. **1.** The licence requires the Licence Holder to provide an Annual Environmental Report and an Annual Audit Compliance Report and as noted above it is an offence to contravene the conditions of a licence. All required reports and monitoring data were provided to DWER on 30 March 2020. DWER undertakes compliance inspections of premises to assess compliance with licence conditions and will undertake enforcement actions if non-compliance is observed. **2.** As noted above the Licence Holder has provided DWER will all required annual reports which includes details of inputs and outputs. To date, DWER has not been provided evidence of the completion of cell 1. The licence does not restrict the Licence Holder from opening a new cell prior to the previous cell being completed which is common for all operational landfills in Western Australia.