Government of Western Australia
Department of Water and Environmental Regulation

Amendment Report

Application for Licence Amendment

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

Licence Number	L6989/1997/14
Licence Holder	Shire of Augusta Margaret River
File Number	DER2013/003284-1
Premises	Davis Road Putrescible Landfill Davis Road FOREST GROVE WA 6286 Legal description Lot 5011 on Deposited Plan 192309 Certificate of Title Volume LR3093 Folio 152
Date of Report	9/04/2025
Decision	Revised licence granted

Abbie Crawford

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Abbie Crawford
MANAGER, WASTE INDUSTRIES

an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

Licence L8969/1997/13 is held by the Shire of Augusta Margaret River (Licence Holder) for the Davis Road Putrescible Landfill (the Premises), located at Lot 5011 on Deposited Plan 192309, Forest Grove, WA.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed changes to the emissions and discharges during the operation of the Premises. As a result of this assessment, Revised Licence L8969/1997/13 has been granted.

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 and overview of premises

On 16 July 2024, the Licence Holder submitted an application to the department to amend Licence L8969/1997/13 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act) for Phase 1 landfill capping of the putrescible landfill.

The Licence Holder engaged the services of a consultant to prepare a Closure and Post-Closure Management Plan (CPCMP) that details the closure requirements for both Phase 1 and Phase 2 for the premises. Phase 1 is scheduled for December 2025 and involves capping cell 1 and the northern and western portions of the unlined historic landfill area. Phase 2, scheduled for January 2028, involves capping cells 2 and 3 and the remaining portions of the unlined historic landfill area, which will be assessed in a separate application. The Licence Holder intends on capping and rehabilitating the inert landfill in a similar progressive manner at a time yet to be determined (Phase 3), which will be assessed in a separate application.

The works involved with Phase 1, which are subject to assessment under this application, are as follows:

- Installation of an initial nine landfill gas venting wells into Phase 1 of the capping works.
- Installation of the perimeter well network consisting of 13 wells.
- Installation of the capping system in Phase 1 comprising, from bottom to top:
    - 200 mm regulating layer atop the waste mass;
    - 1.5 mm thick double textured Linear Low-Density Polyethylene (LLDPE) geomembrane layer;
    - geonet drainage layer;
    - 1100 mm restoration layer, comprising:
        - 1000 mm thick layer of site won subsoils; and
        - 100 mm thick layer of growing medium/mulch;
    - vegetation layer incorporating hydromulch/seeding to reduce erosion and advance revegetation.
- Construction of the stormwater infrastructure network including:
    - Installation of one stormwater pond; and
    - Installation of an initial five drainage swales and three culverts in place of the swale where it passes under access tracks.

Clearing of 30,000 m^3 is necessary to facilitate vehicle access and excavation of cover and capping soils, with resultant void to be utilised as unlined stormwater pond. An application for clearing CPS 10747/1 was lodged with the department on 2 September 2024 which is currently under assessment.

Table 1: Classification of premises and assessed design capacity

Category	Description	Assessed design capacity
Category 64	Class II putrescible landfill site: premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the *Landfill Waste Classification and Waste Definitions 1996*, is accepted for burial.	20,000 tonnes per annual period

2.3 Background

Shire records state that the inert landfill (capping Phase 3) previously operated as a gravel pit, excavated in the 1970s, and was used by the local town of Witchcliffe for small scale mixed waste disposal from some time in the 1980's. In 1991 a trench was constructed and was used for waste disposal until the mid-1990s with increasing volumes due to expansion in the area. The facility underwent an upgrade in 1996 and ever since this area has been used for above ground Inert Waste Type 1 and Special Waste Type 1 disposal. In 2005 a large area on top of the landfill was covered with 800 – 1100 mm of soils and has since been used for storage and processing of green waste, concrete and scrap metal, with inert landfilling activities continuing within the uncovered portion. It is assumed that there is putrescible waste in this area from the waste disposal activities prior to 1996.

There are currently four cells within the putrescible landfilling area (capping Phases 1 and 2). The original cell on the western side of the landfill is unlined and commenced accepting waste from August 1996. Cell 1 was constructed between 2014 and 2015 which was the first lined cell. Lined cells 2 and 3 followed shortly thereafter, with basal construction completed in 2017 and 2020 respectively. Landfilling is only permitted within lined Cell 3.

As depicted in Figure 1 below, approximately 60% of the landfill area (labelled historical landfill cell) adjacent to Cells 1 – 3 is unlined allowing leachate ingress to groundwater.

Cells 1 – 3, as previously approved, are constructed with low permeability basal liners overlain by aggregate drainage layer with HDPE leachate pipework connected to the existing leachate evaporation pond (the pond) via sumps. The pond receives leachate from Cells 1 – 3 and comprises a low permeability geocomposite lining system. A spray aeration/evaporation system within the pond and trickling of leachate over the HDPE lined sides assists in minimising leachate loads. In the absence of landfill capping, engineered lining and leachate drainage systems for Cells 1 – 3 direct percolating landfill leachate to the pond. A concrete leachate sump constructed in a depression at the southern toe of the unlined landfill batter also directs leachate to the pond via an above ground HDPE pipe. Historical groundwater monitoring results suggest the sump has limited effectiveness in collecting leachate from the unlined cell, and seepage of landfill contaminants to groundwater appears to be occurring with free percolation of stormwater through the current soil cover.

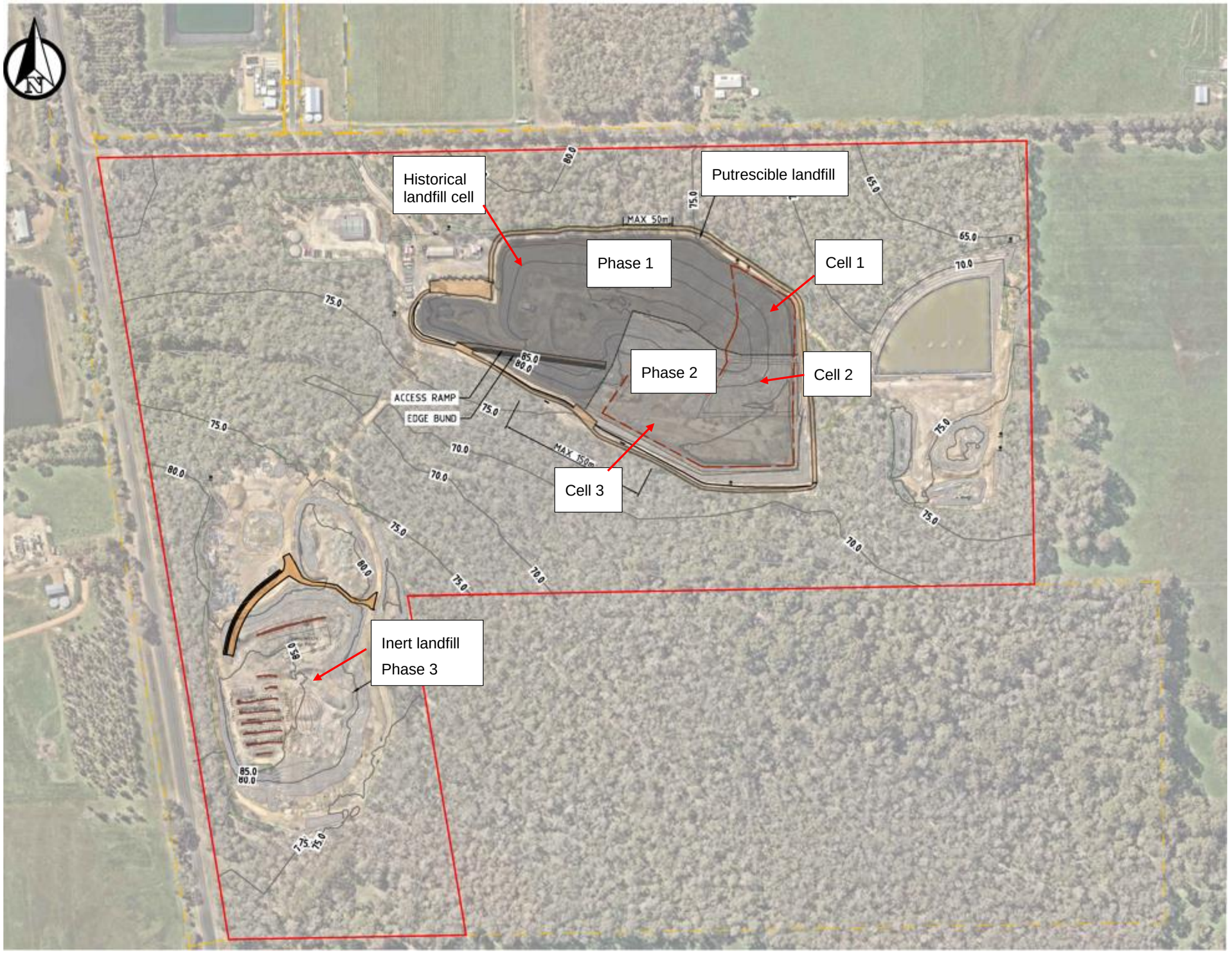
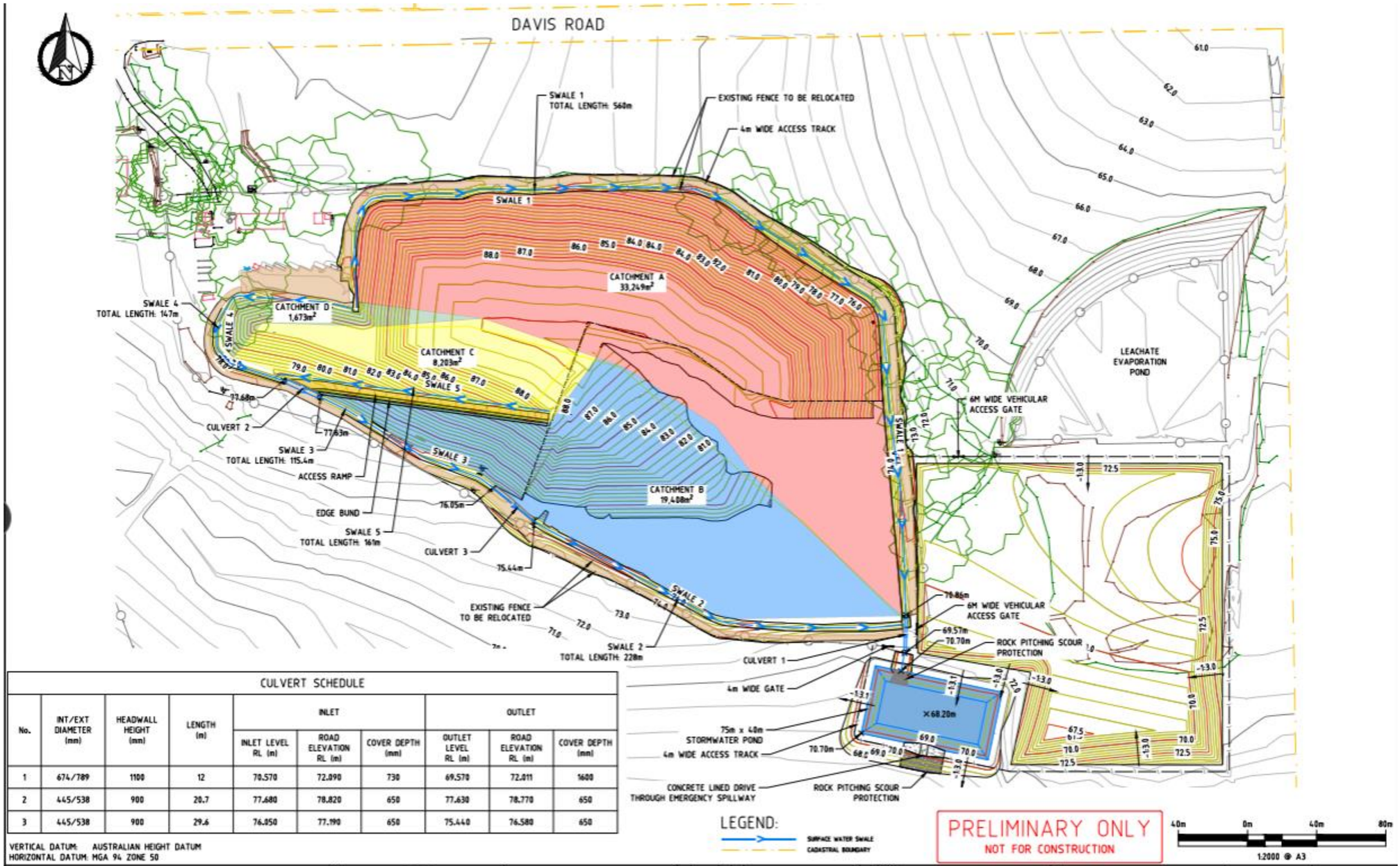


Figure 1: Phased capping zones and associated landfill cells



CULVERT SCHEDULE

No.	INT/EXT DIAMETER (mm)	HEADWALL HEIGHT (mm)	LENGTH (m)	INLET			OUTLET		
				INLET LEVEL RL (m)	ROAD ELEVATION RL (m)	COVER DEPTH (mm)	OUTLET LEVEL RL (m)	ROAD ELEVATION RL (m)	COVER DEPTH (mm)
1	674/789	1100	12	70.570	72.090	730	69.570	72.011	1600
2	445/538	900	20.7	77.680	78.820	650	77.630	78.770	650
3	445/538	900	29.6	76.050	77.190	650	75.440	76.580	650

VERTICAL DATUM: AUSTRALIAN HEIGHT DATUM
HORIZONTAL DATUM: MGA 94 ZONE 50

talis consultants
ASSET ENGINEERING ENVIRONMENT NOISE SPATIAL WASTE

Client: SHIRE OF AUGUSTA MARGARET RIVER

NOTES
1. This drawing is the property of Talis Consultants Pty Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
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No.	Date	Drawn	Chkd	Amendment / Issue	Appd.
A	07.08.2023	AB	CS	PRELIMINARY ISSUE	CS

Project: DAVIS RD PHASE 1 CAPPING WORKS

Title: PHASE 1 SURFACE WATER MANAGEMENT LAYOUT

Scale: AS SHOWN @ A3 | Date: 07.08.2023
Drawn: AB | Checked: AB | Approved: CS
Job No: TW21183 | Drg. No: P1CAP-C-110 | Rev: A
Filename: TW21183_P1CAP_SET.DWG

Figure 2: Putrescible landfill Phases 1 and 2 stormwater catchment areas

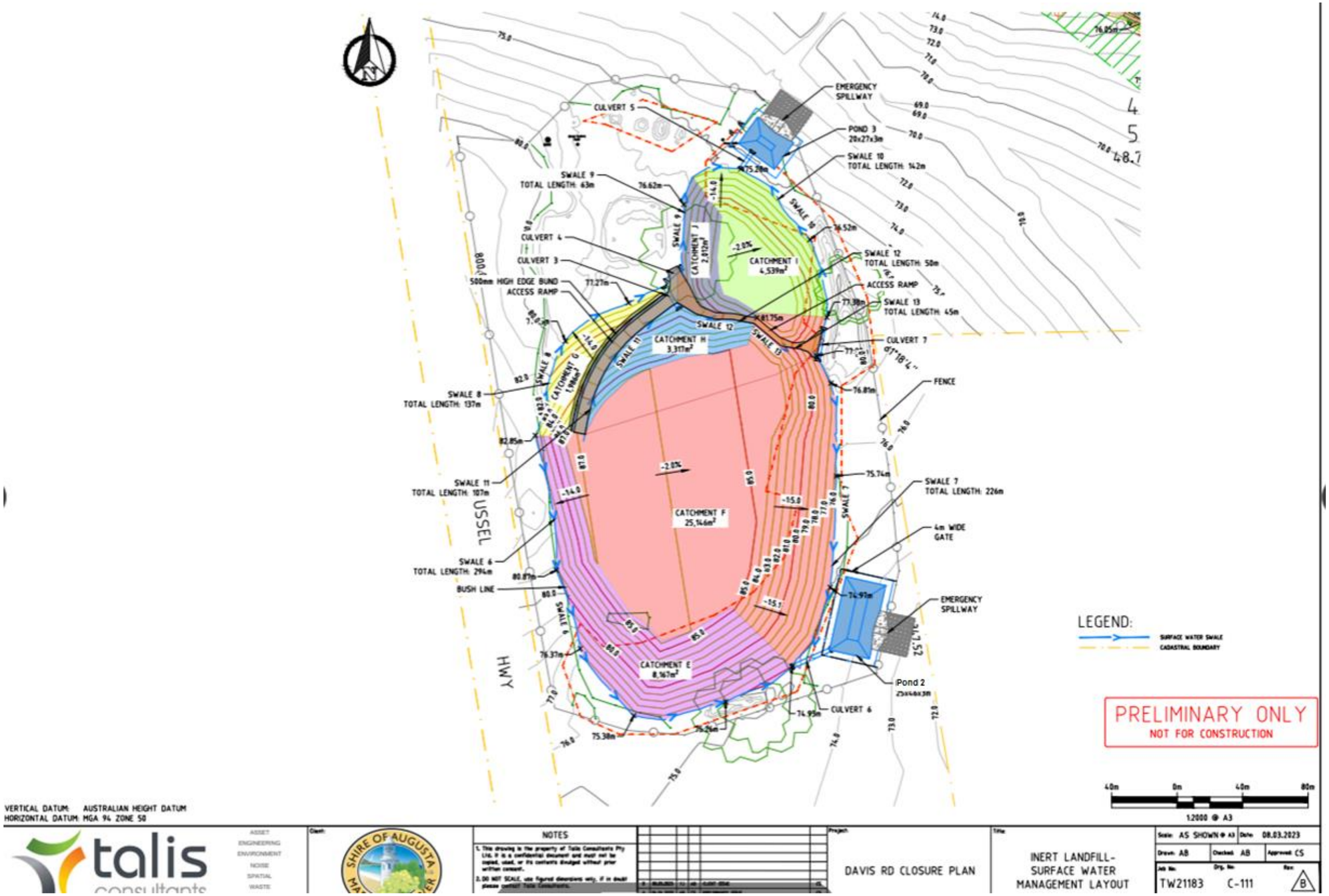

Figure 3: Inert landfill Phase 3 stormwater catchment areas

2.4 Contaminated sites classification

The Premises was classified as 'Possibly contaminated – investigation required' (ID 1745) under the *Contaminated Sites Act 2003* (CS Act) on 18 April 2011. This classification was based on land use at the site being a landfill. At the time of the classification in 2011, no contamination assessment had been carried out to determine the quality of soil and groundwater beneath the site and no risk assessment had been carried out to determine the potential risk to human health, the environment or any environmental value.

Upon closure of the putrescible and inert landfills and completion of all three phases of capping works the premises will no longer be prescribed under the EP Act. Regulation of the premises will then be undertaken in accordance with the CS Act.

2.5 Putrescible landfill capping system

The existing infrastructure and operations at the Premises considered relevant in the scope of this application are summarised below.

2.5.1 Cap infrastructure

The Licence Holder has proposed a low permeability landfill cap for the putrescible landfill comprising the following:

- 200 mm regulating layer;
- 1.5 mm thick double textured Linear Low-Density Polyethylene (LLDPE) Geomembrane Layer;
- Geonet drainage layer;
- 1,000 mm of subsoil layer; and
- Vegetation layer comprising 100 mm depth growing medium and soil blend with spray application of hydromulch with native seed mix.

EPA Victoria's Publication 778.3 for the Siting, Design, Operation and Rehabilitation of Landfills (August 2015) is referenced in the CPCMP for liner seepage using the Hydrologic Evaluation of Landfill Performance (HELP) model and adoption of a seepage standard of less than 10 L/ha/day through the basal liner and 75% of this value through the rehabilitated landfill cap. Using climate and soil data for the premises and the capping design of the putrescible landfill outlined above, the performance of the model found that seepage through the cap was 2.05 L/ha/day, well below the limit of 7.5 L/ha/day. Technical specifications and CQA plans for Phase 2 of the landfill capping are not contained within the application and are required as part of a future amendment.

2.5.2 Stormwater management

The overall design for the landfill capping system incorporates detailed stormwater management infrastructure to prevent the infiltration of rainfall into the waste mass and thereby reduce the production of leachate over time. During capping a geonet drainage layer will be installed on top of the LLDPE layer and below the 1,000 mm thick subsoil layer. The purpose of the drainage layer is to capture subsurface water that has soaked through the subsoil layer and divert it horizontally across the landfill mass. Once it discharges into the perimeter drainage swales it is directed to the stormwater pond for infiltration and evaporation.

The surface of the putrescible landfill can be divided into four catchment zones (Figure 2) and the inert landfill surface can be divided into six catchment zones (Figure 3) based on topography of the premises. Each landfill is surrounded by perimeter drainage swales and culverts capable of capturing rainfall generated in a 1 in 100 year ARI event, and direct it to one of three earthen ponds that will facilitate disposal by infiltration and evaporation.

2.5.3 Groundwater

Emerge Associates were engaged by the Shire to undertake groundwater monitoring at the Davis Road Landfill for the 2022 reporting period. Groundwater results reported during the monitoring events indicates exceedances of the following:

- Freshwater assessment levels:
  - Aluminium at all locations with the exception of well MW2.
  - Cadmium at well MW5.
  - Copper at all locations with the exception of well P2.
  - Nickel in wells MW6 and MW7.
  - Zinc at all locations.
  - NH_3 as N at M1.
  - Total nitrogen at M1.
  - Total phosphorus at MW4, MW6 and MW9.
- Long-term irrigation water assessment levels:
  - Aluminium at wells M1and MW6.
  - Iron at all locations.
  - Manganese at wells MW3, MW5, MW7 and MW9.
  - Total nitrogen at well M1.
  - Total phosphorus at all locations.
- Non-potable guidelines assessment levels:
  - Aluminium at all locations.
  - NH_3 as N at wells M1 and MW2.
- Australian drinking water guideline assessment levels:
  - pH at all locations.
  - Manganese at wells MW3, MW5 and MW7.
  - Lead at well M1.
  - Benzene at well M1.

Proposed low permeability capping and stormwater management is expected to instigate decreasing trends in contaminant levels shown above. Especially in areas influenced by stormwater ingress through the unlined portion of the Landfill.

Groundwater elevation was highest post-winter in September 2022 and typically lowest in March 2022. Maximum groundwater levels below the existing putrescible landfill sumps and base range from 2 – 9 m. No downstream wells are installed for monitoring of Phase 3. Given the age of historical waste beneath this area and installation of hardstand at the surface. The applicant considers that groundwater risk at this area is low.

During assessment of the 2019 licence amendment, DWER identified there is the potential for a perched aquifer to form within the laterite and lateritic gravelly sand in the upper portion of the profile. Based on the bore logs of MW1, MW2 and MW3, this layer is present from the ground surface to approximately 0.8 to 1.8m below ground level and is underlain by a clay layer. The perched aquifer is expected to be a seasonal feature which occurs following rain during winter and early spring. Discharge of the perched aquifer to the ground surface in the form of seeps or springs is a potential pathway for contaminants from the Premises.

To comply with licence conditions, the licence holder installed ten additional groundwater monitoring bores. Four of these bores (MW6 (upgradient), MW7, MW8 and MW9) were installed to expand the current groundwater monitoring network at the site and enable monitoring of groundwater down-gradient from proposed landfill cell 3 and the newly installed leachate pond. Five new bores (MW6-S (upgradient), M1-S, P1-S, MW3-S, MW7-S, MW9-S) were installed into the perched aquifer to target the lower 1.0 metre (m) of the laterite gravels to assess the presence of any perched water immediately above the clay layer surrounding proposed landfill cell 3 and the new leachate pond. A sixth perched water monitoring well was

not installed at the location of the intended well due to the absence of a notable laterite gravel profile.

No perched water was observed during the installation of the wells and no perched water was observed during the subsequent monitoring events. Although Schedule 4 of the licence required the installation of the perched water wells to be completed if perched water was encountered, the licence holder completed installation for future monitoring of potential perched water.

Key Finding:

1. The Delegated Officer notes the requirement to monitor groundwater bores M1-S, P1-S, MW3-S, MW6-S, MW7-S and MW9-S is redundant with an absence of perched water. As such, conditions relating to monitoring of these bores will be deleted from the licence.

2.5.4 Landfill gas management

The numerical modelling software GasSim was used by the Licence Holder to model landfill gas generation over the Site's operational and post-operational lifespan. The application details the GasSim model parameters for Phases 1 and 2 and the results of the modelling, the associated risk to the environment and human health, and model calibration and validation. The model estimates that gas generation rates peaked in 2019 at a rate of approximately 120 m^3/hr and at the time of closure will be approximately 103 m^3/hr. Consequently, a passive management system was selected with a monitoring and extraction bore network as depicted in Schedule 1, Figure 5 of the updated licence. Landfill gas management is not deemed necessary for Phase 3 in the inert landfill cell due to the age of the waste. The application includes the design and layout of the gas network. A total of 16 landfill gas venting wells will be installed within the landfill cap, nine during Phase 1, to enable passive venting of gas out of the putrescible landfill mass. A total of 13 perimeter monitoring wells will be installed around the putrescible landfill mass during Phase 1 works to identify future lateral gas movement.

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 construction and operation which have been considered in this Amendment Report are detailed in Table 2 below. Table 2 also details the proposed control measures the Licence Holder has proposed to assist in controlling these emissions, where necessary.

Table 2: Licence Holder controls

Sources	Emission	Potential pathways	Proposed controls
Excavation and movement of soils Vehicle/machinery movements	Dust	Air/windborne pathway	Frequent watering of areas disturbed by the contractor No work during high wind periods Additional measures for dust suppression (mulching, hydro seeding, chemical crusting agents) may be adopted if on-site observations and complaints indicate dust emissions are occurring.
	Noise	Air/windborne pathway	Construction work undertaken between 7am to 5pm Monday to Saturday. Vehicle speed limit of 40 km/hr. Machinery is regularly maintained including exhaust mufflers.
Phase 1 post-closure capping	Leachate	Seepage to soils and groundwater	Phase 1: Cessation of waste disposal in 2025 and geocomposite capping installed with connection to the existing lined leachate management system. 2.05 L/ha/day modelled seepage into cell.
	Landfill gas	Air/windborne pathway	Phase 1: Cessation of waste disposal in 2025 and geocomposite capping installed on decomposing waste body incorporating passive wells to vent gas.
	Uncontaminated stormwater	Overland flow	Phase 1: Installation of an LLDPE layer within the cap profile to prevent infiltration of stormwater and divert the water horizontally across the landfill mass to the perimeter of the landfill monolith, into a system of swales and culverts to direct uncontaminated stormwater into a pond for infiltration and evaporation.

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 Holder's from its assessment. Protection of these parties often involves different exposure risks and prevention strategies, and is provided for under other state legislation.

Table 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon or emission and discharges from the prescribed premises *(Guideline: Environmental siting* (DWER 2020)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from activity or prescribed premises**
Residential premises (R1 in Figure 4)	Approximately 150 m north of the historical landfill area, being approximately 40 m north of the Premises boundary.
Residential premises (R2 in Figure 4)	Approximately 440 m west north-west of the historical landfill area, being approximately 100 m west of the Premises boundary.
Residential premises (R3 in Figure 4)	Approximately 780 m north east of the historical landfill area, being approximately 510 m east of the Premises boundary.
Residential premises (R4 in Figure 4)	Approximately 1000 m east of the historical landfill area, being approximately 750 m east of the Premises boundary.
Environmental receptors	**Distance from activity / prescribed premises**
Potential downgradient groundwater users	The Premises is located within the Cape to Cape South subarea of the Blackwood Groundwater Area (DoW, 2009). The main aquifer present in the vicinity of the Premises is the fractured rock aquifer comprising the granitic basement rocks of the Leeuwin Complex and its overlying weathered profile (DoW, 2009; DoW, 2015). Due to the limited extent and connectivity of fractures in the aquifer and irregular nature of rainfall recharge, there is considerable variability in the suitability of this aquifer as a sustainable resource. Groundwater yields are generally very low and conditions highly variable. The salinity may be as high as 4000 mg/L (DoW, 2009). A surficial aquifer comprising alluvial and colluvial deposits may overly the fractured rock aquifer in some areas, such as river valleys, dunes and swales. Groundwater in the surficial aquifer is generally fresh but has a thin saturated thickness. It is not known if domestic or stock groundwater bores are in place in the fractured rock or surficial aquifers downgradient of the Premises. There is the potential that groundwater may be used where local conditions are favourable.
Areas of grazing land and native vegetation	Immediately surrounding the Premises boundary in all directions
Minor, non-perennial watercourse	Within the Premises boundary, moving from the north-west to the south east. Located approximately 70 m south (downgradient) of the historical landfill area. The watercourse is a tributary of the Chapman Brook, located approximately 1.4 km downstream of the historical landfill area.
Minor watercourse, seasonally inundated slope	Approximately 130 m north (downgradient) of the historical landfill area. Approximately 350 m north-east (potentially downgradient) of the historical landfill area.
Domestic dams (D1, D2 and D3 in Figure 4)	Approximately 410 m north east of the historical landfill area.
Floodplain, seasonally inundated flats	Approximately 550 m south-east of the historical landfill area.

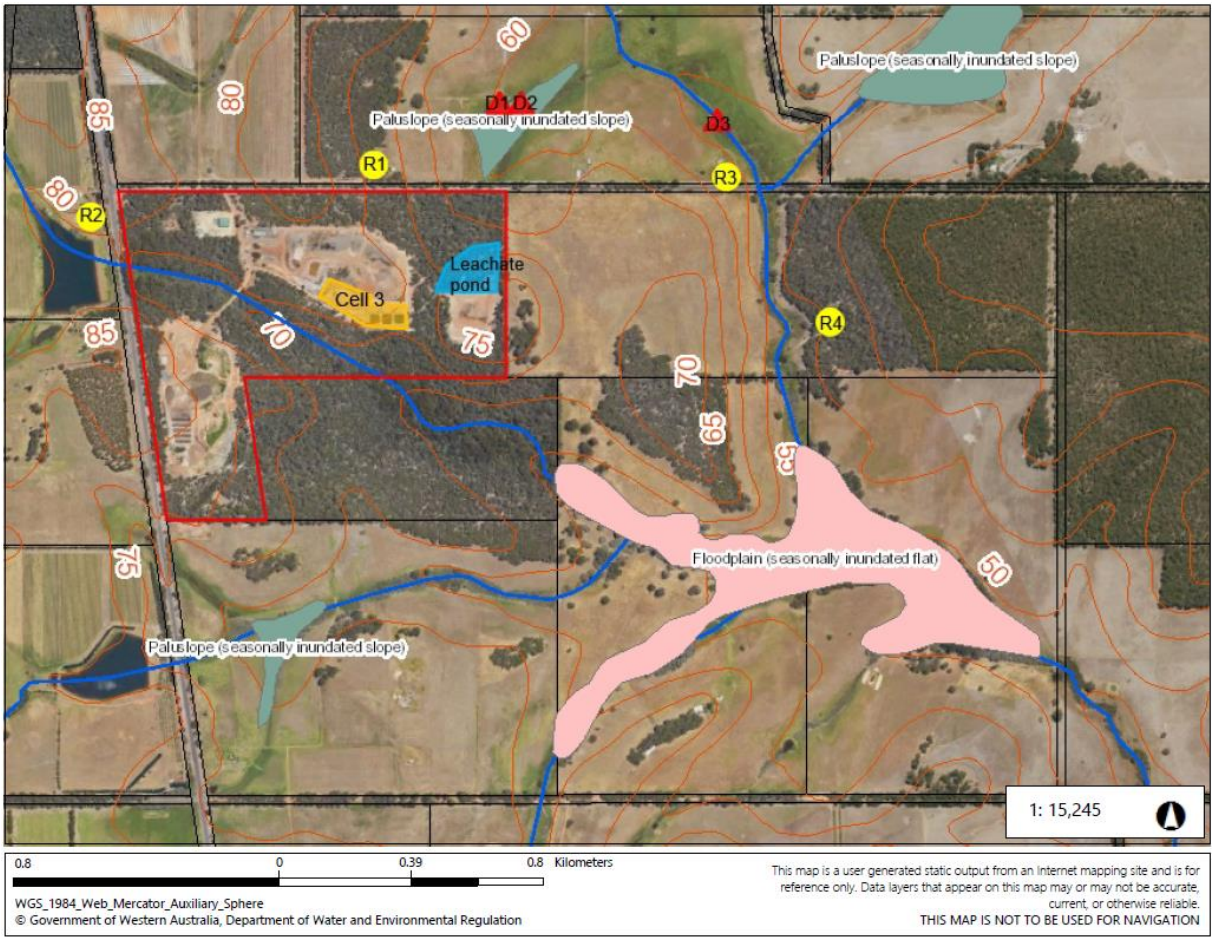

Figure 4: Distance to sensitive receptors

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 takes into account 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 4.

The Revised Licence L6989/1997/14 that accompanies this Amendment Report authorises emissions associated with the operation of the Premises for landfilling and associated capping.

The conditions in the Revised Licence have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 4: Risk assessment of potential emissions and discharges from the Premises during construction and operation of Phase 1 landfill capping

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**				
Construction								
Excavation and movement of soils Vehicle/machinery movements	Dust	Air/windborne pathway Impacts to human health and amenity	Residential premises as close as 150 m north of the historical landfill area	See section 3.1	C = Moderate L = Unlikely **Medium Risk**	Yes	Condition 20	No additional controls added. The works will be short term, therefore dust emissions can be controlled under existing licence conditions.
	Noise			See section 3.1	C = Moderate L = Unlikely **Medium Risk**	Yes	N/A	No additional controls are considered necessary. Construction works will be subject to the EP Noise Regulations.
Operation								
Post-closure capping for Phase 1	Leachate	Seepage to groundwater Impacting groundwater sources	Groundwater 3 to 8 metres below surface level Domestic dams	See section 3.1	C = Moderate L = Unlikely **Medium Risk**	No	Conditions 4 to 8, 19, 34, 36 to 37 **Conditions 12, 33, 38, 44, 45 and 48**	While the CPCMP includes conformance testing for LLDPE geomembrane, additional CQA provisions are added for destructive and non-destructive weld testing including NATA accreditation for testing, and a CQA report following construction. Conditions have been added for infrastructure and landfill cap maintenance, and forward planning for Phase 2 capping.
	Landfill gas	Air/windborne pathway Impacts to human health and amenity	Residential premises as close as 150 m north of the historical landfill area	See section 3.1	C = Major L = Unlikely **Medium Risk**	No	Conditions 1 to 3, 34 **Conditions 12, 21, 38, 39, 46 and 48**	The CPCMP includes comprehensive landfill gas risk assessment and consequent appropriate landfill gas management and monitoring infrastructure. Additional CQA reporting and landfill gas management planning are applied to formalise extraction and monitoring regimes; and apply emergency actions for asphyxiant and explosive landfill gas risk levels. The requirement for a Landfill Gas Management Plan has been included on the licence for installation of perimeter wells, ongoing monitoring regimes and trigger levels/emergency actions. Conditions have been added for infrastructure and landfill cap maintenance, authorising and monitoring gas emissions and the provision of gas trigger levels and emergency actions.
	Uncontaminated stormwater	Overland flow Impacting surface water sources	Water courses within and surrounding the premises Floodplains surrounding the premises	See section 3.1	C = Moderate L = Unlikely **Medium Risk**	No	Conditions 1 to 8, 19, 34 **Conditions 12 and 38**	The CPCMP includes a detailed uncontaminated stormwater collection system that ties into the landfill capping system. Conditions have been added for infrastructure and landfill cap maintenance.

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 5 provides a summary of the consultation undertaken by the department.

Table 5: Consultation

Consultation method	Comments received	Department response
Licence Holder provided with draft amendment (12/03/2025)	Comments were received on 4 April 2025 (see Appendix 1)	See Appendix 1.

5. 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.

5.1 Summary of amendments

Table 6 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 6: Summary of licence amendments

Condition no.	Previous condition no.	Proposed amendments
Interpretation	Interpretation	Addition of a note explaining that this licence does not provide any implied authorisation for the clearing of native vegetation, beyond that approved under licence conditions 24 and 25 herein.
Condition 1 Table 1	N/A	Addition of Phase 1 infrastructure design and construction requirements.
Condition 2	N/A	Addition of the provision of an Environmental Compliance Report.
Condition 3	N/A	Addition of Environmental Compliance Report requirements.
Condition 4	N/A	Addition of the requirement for all laboratory testing to be performed in a NATA accredited geosynthetics laboratory.
Condition 5 Table 2	N/A	Addition of landfill capping works requirements.
Condition 6 Table 3	N/A	Addition of LLDPE geomembrane construction quality assurance testing requirements.
Condition 7	N/A	Addition of the provision of a Construction Quality Assurance Report for landfill capping works.
Condition 8	N/A	Addition of Construction Quality Assurance Report requirements.
Condition 9 Table 4	Condition 1 Table 1	Amendment of wording referencing modified table numbers.

Condition 10	Condition 2	Amendment of wording referencing modified table number.
Condition 11 Table 5	Condition 3 Table 2	Amendment of wording referencing modified table number. Amendment of wording within Table 5 referencing figure number. Amendment of dot points to alphabetical points, for clarity.
Condition 12 Table 6	Condition 4 Table 3 Condition 5 Condition 6 Condition 7 Condition 8	Amendment of wording to reflect amended infrastructure requirements of Table 6 and modified table number. Amendment of dot points to alphabetical points, for clarify. Deletion of column for material. Incorporation of column for map reference into the infrastructure column. Modification of the requirements for the leachate pond liner to be maintained, as opposed to designed, for clarity. Deletion of the requirement for the leachate pond to be designed to contain leachate from a '1 in 100' year storm event, and addition of the requirement for the leachate pond to be maintained to contain the operational volume of the pond, for clarity. Table 6 amended for the addition of Phase 1 infrastructure requirements: landfill cap, stormwater pond 1, stormwater swales 1 to 5, culverts 1 to 3, nine gas venting wells, 13 gas perimeter wells and 12 groundwater monitoring bores. Conditions 5, 6, 7 and 8 incorporated without change into Table 6 for maintenance requirements of the leachate pond.
Condition 13	Condition 9	Amendment of wording referencing modified condition number.
Condition 14 Table 7	Condition 10 Table 4	Amendment of wording referencing modified table number.
Condition 15	Condition 11	No change
Condition 16	Condition 12	No change
Condition 17	Condition 13	No change
Condition 18	Condition 14	No change
Condition 19	Condition 15	No change
Condition 20	Condition 16	Redundant condition wording, modified to current format.
Condition 21 Table 8	N/A	Addition of authorised discharge points for landfill gas.
Condition 22	Condition 19	Addition of the validity period for clearing to clarify the licence requirement. Amendment of wording referencing modified figure and condition numbers.
Condition 23	Condition 20	Amendment of wording referencing modified figure number.
Condition 24	Condition 21	No change

Condition 25	Condition 22	No change
Condition 26	Condition 23	No change
Condition 27	Condition 24	Amendment of wording referencing modified condition, figure and schedule numbers.
Condition 28	Condition 25	Amendment of wording referencing modified condition numbers.
Condition 29	Condition 26	Amendment of wording referencing modified condition number.
Condition 30	Condition 27	No change
Condition 31	Condition 28	Amendment of wording referencing modified condition numbers.
Condition 32	Condition 29	Condition 29 (a) moved to condition 39. Condition 29 (c) modified to current template. Condition 29 (d) redundant, deleted.
Condition 33	Condition 30	Addition of requirements for monthly, quarterly, two yearly and five yearly monitoring.
Condition 34	Condition 31	Redundant condition, revised to current licence format with licence-specific references to modified condition numbers.
Condition 35	Condition 32	No change
Condition 36 Table 9	Condition 33 Table 5	Amendment of wording referencing modified table number. Updated document title in row 2, column 2 of Table 9, for clarity.
Condition 37 Table 10	Schedule 2 Table 9	Row 1 of Schedule 2, Table 9 moved to condition 39. Deletion of Method column as this is a duplication of condition 32 (b). A typographical error was identified in the spelling of organochlorines, corrected. Ad administrative error was identified where Note 1 was not incorporated into previous Table 9, as per the Licence Renewal granted on 16 December 2022. This error is corrected by the re-insertion of Note 1 into condition 39, Table 10. Note 2 remains deleted as the bores have been constructed and monitoring is occurring under this condition, therefore it is no longer applicable.
Condition 38 Table 11	N/A	Addition of monitoring requirements for landfill gas from venting wells and perimeter wells.
Condition 39 Table 12	N/A	Addition of landfill cap monitoring requirements.
Condition 40	Condition 34	No change
Condition 41	Condition 35	No change
Condition 42	Condition 37	Amendment of wording referencing modified condition numbers. Addition of the requirement to keep books on works conducted under conditions 1, 5 and 6.

Condition 43	Condition 38	Amendment of wording referencing modified condition number.
N/A	Condition 17	The cell closure plan for Phase 1 was lodged with this application. As the requirements of this condition have been met, this condition is redundant and therefore deleted.
Condition 44	Condition 18	Amendment of condition to clarify the requirement to submit a Technical Specification and CQA Plan for Phase 2, rather than a Closure Plan.
Condition 45	Condition 36	No change
Condition 46 Table 13	Condition 39 Table 6 Condition 40	Redundant condition, revised to current licensing format. Insertion of the existing annual period, being 01 March each year. Amendment of wording referencing modified table number. Amendment of wording within Table 13 referencing condition numbers. Added the requirement to report on volumes in m^3 into the row referencing reporting on monitoring of inputs and outputs, for clarity. Condition 40 incorporated without change into Table 13 for reporting on groundwater monitoring as required by new condition 39. Addition of reporting on condition 40 landfill gas monitoring from venting wells and perimeter wells.
Condition 47 Table 14	Condition 41 Table 7	Amendment of wording referencing modified table number. Amendment of wording within Table 14 referencing condition numbers.
Definitions Table 15	Definitions Table 8	Deletion of redundant definitions: ACM, Annual Audit Compliance Report (AACR), AS 1289 5.1.1, AS 1289 5.4.1, AS 1289 5.8.1, AS 1726, asbestos fibres, Assessment of Site Contamination NEPM, ASTM D5092/D5092M-16, fugitive emissions, Geotechnical Inspection and Testing Authority (GITA), GRI-GCL3, GRI-GM13, GRI-GT12(a), usual working day. Addition of template definitions: approved form, condition, DWER. Addition of licence specific definitions: AS/NZS 4131, Inert Waste Type 1, Phase 1 landfill capping, Phase 2 landfill capping, Phase 3 inert landfill capping, suitably qualified civil engineer, suitably qualified geotechnical engineer. Updated definition for mulch to be consistent with the *Guideline: Better practice organics recycling* (DWER 2022). Updated document title for clarity within definitions for acceptance criteria, clean fill, contaminated solid waste, hazardous waste, Special Waste Type 1.
Schedule 1: Maps	Schedule 1: Maps	Figure 1 and 2 no change. Figure 3 added to show the phased capping areas and associated putrescible landfill cells. Figure 4 added to show the location of Pond 1 and the stormwater swales and culverts for Phase 1.

		Figure 5 added to show the landfill gas venting well locations for Phase 1, Phase 2 and the perimeter wells. Figure 6 added to show the construction plans for the landfill gas extraction and perimeter wells for Phase 1 and Phase 2. Figure 7 added to show the landfill capping construction configurations for Phases 1, 2 and 3. Figure 8 added to show the groundwater monitoring points. Figure 9 descriptor updated to add "clearing authorised under Clearing Permit CPS 8228/1" to clarify the licence requirement.
N/A	Schedule 2	Row 1 incorporated into condition 39, Table 9. Row 2 deleted as the requirement to monitor from groundwater bores M1-S, P1-S, MW3-S, MW6-S, MW7-S and MW9-S is redundant with the reported absence of perched water.
Schedule 2	Schedule 3	Amendment of wording referencing modified schedule number.
Schedule 3	Schedule 4	Amendment of wording referencing modified schedule number.

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
3. DWER 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
4. Department of Water (DoW) 2009, *Blackwood groundwater area subarea reference sheets – plan companion for the South West groundwater areas allocation plan*, Perth, Western Australia.
5. DoW 2015, *River health assessment in the lower catchment of the Blackwood River*, Perth, Western Australia.
6. Emerge Associates, 2021, *Monitoring well installation report – Davis Road putrescible landfill.*
7. Talis Consultants Pty Ltd, 2023, *Capping and Stability Risk Assessment, Davis Road Recycling and Waste Management Facility, Shire of Augusta Margaret River.*
8. Talis Consultants Pty Ltd, 2023, *Construction Quality Assurance Plan, Davis Road Recycling and Waste Management Facility, Shire of Augusta Margaret River.*
9. Talis Consultants Pty Ltd, 2023, *Technical Specification, Davis Road Recycling and Waste Management Facility, Shire of Augusta Margaret River.*
10. Talis Consultants Pty Ltd, 2024, *Closure and Post-Closure Management Plan, Davis Road Recycling and Waste Management Facility, Shire of Augusta Margaret River.*

Appendix 1: Summary of Licence Holder's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder's comment	Department's response
Condition 1 Table 1	Regarding the design and construction requirements of Phase 1 culverts 1 to 3, we request the following additions are made to items c) and d) as underlined for consistency with item e): c) Culvert 1 to be constructed to an approximate length of 12 m, with a pipe with an internal diameter of 674mm; and d) Culvert 2 to be constructed to an approximate length of 20.7 m, with a pipe with an internal diameter of 445 mm.	Condition modified as requested.
Condition 11 Table 5	Review of the green waste limits in Table 5, 10,000 m^3 green waste and 6,000 m^3 mulch, identified that they might be too restrictive to accommodate the proposed Phase 1 capping works which incorporates advance clearing and mulching of green waste for inclusion in the cap's growing medium. During normal operations, approximately 6,500 m^3 of green waste and 3,500 m^3 of mulch is stored on site. During clearing works for the capping project an additional approximately 4,000 m^3 of mulched vegetation will be generated which requires storage. As such, the Shire request a temporary increase to 10,000 m^3 of both green waste and mulched green waste. This will allow the Shire to produce and store the growing medium without exceeding the licence limits. The Shire would like to request this temporary dispensation during the period from vegetation clearing until construction in the months leading up to the proposed capping works. The mulch will be stored in windrows in the existing mulch stockpile area, on the inert landfill, with the necessary fire breaks maintained at all times.	Category 61A regulates premises on which solid **waste produced on other premises** is stored, reprocessed, treated, or discharged onto land, with a licensing production threshold of 1,000 tonnes per annum. Mulching activities fall under Category 61A. The licence holder reported in the 2023 Annual Environmental Report that 993 tonnes of greenwaste were received at the premises in the year, with 840 tonnes of mulch subsequently sold. As the actual production rate of greenwaste mulched at the premises falls below the licensed production threshold, Category 61A does not require addition to the licence. Further, the clearing of vegetation from within the premises which is then mulched for the purpose of rehabilitation does not require regulation under Category 61A as the greenwaste was not produced on other premises. It is recommended that the Licence Holder retain accurate records of the cubic meterage of cleared vegetation that is mulched and potentially separate or signpost the stockpiles of

Condition	Summary of Licence Holder's comment	Department's response
		vegetation mulch from the greenwaste mulch, to differentiate the origin of the mulch. It is noted the licence definition for mulch is out of date. For accuracy and clarity, the definition will be amended to be consistent with the *Guideline: Better practice organics recycling* (DWER, 2022).
Condition 22	It is noted that Conditions 22, 23 and Figure 9, reflect the previous clearing requirements. Will the DWER update the figure and Conditions 22 and 23 once the clearing permit is approved to reflect the new area?	The licence application granted on 23 October 2019 included a request for clearing associated with the construction of cell 3 and the leachate pond. Conditions 22 and 23 contain specific clearing requirements for that project, therefore they will not be modified. The applicant has applied for a separate clearing permit CPS 10747/1 for the capping project, which is currently under assessment.