



Application for Works Approval Amendment

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

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|------------------------------|---|
| Choose an item. | W5800/2015/1 |
| Works Approval Holder | Opalvale Pty Ltd |
| ACN | 106 512 896 |
| File Number | DER2014/003195 |
| Premises | Salt Valley Road Class II Landfill Chitty Road, HODDY'S WELL WA 6566 Legal description – Part of Lot 11 on Deposited Plan 34937 Certificate of Title Volume 2535 Folio 391 As depicted in Schedule 1 of W5800/2015/1 |
| Date of Report | 4 November 2020 |
| Proposed Decision | Revised works approval granted |

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A/MANAGER WASTE INDUSTRIES

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

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1. Decision summary

Works Approval W5800/2015/1 is held by Opalvale Pty Ltd (Works Approval Holder; Applicant) for the Salt Valley Road Landfill (the Premises), located within a portion of Lot 11 on Plan 34937 Chitty Road, Hoddy's Well within the Shire of Toodyay.

This Amendment Report documents the assessment of potential risks to the environment and public health from proposed landfill design changes. As a result of this assessment, Revised Works Approval W5800/2015/1 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 Classification of Premises

Table 1 summarises the classification and approved capacity for the Prescribed Premises.

Table 1: Classification of premises and assessed design capacity

| Category | Description | Assessed production or design capacity or throughput |
|-------------|--|--|
| Category 64 | Class II or III putrescible landfill site: premises on which waste (as determined by reference to the waste type set out in the document entitled "Landfill Waste Classification and Waste Definitions 1996" published by the Chief Executive Officer and as amended from time to time) is accepted for burial | 150 000 tonnes per annual period |

2.3 Application summary

On 10 August 2020, the Works Approval Holder submitted an application to the department to amend Works Approval W5800/2015/1 under section 59 and 59B of the *Environmental Protection Act 1986* (EP Act). The following amendments are being sought:

- The replacement of the leachate aggregate on the landfill perimeter sideslopes in the remaining cells within Stage 1 (where progressive aggregate placement has not already undertaken) with a fine grained protection layer.

3. Assessment of proposed amendment

3.1 Cell construction

Due to the construction of Cell 1 of the landfill at a lower than planned level, the Works Approval Holder sought an amendment to the works approval to facilitate conveyance of leachate within the relevant landfill Cells (Cell 2, 3 and 4 of the Stage 1 landfill) while still achieving the environmental outcomes of the original approved works approval. This amendment was granted by the department 19 September 2019. The change in cell depth resulted in a 3.4% increase to the landfill airspace. The northern and eastern sideslopes maintained a 1 in 3 gradient, while

the batters separating the cells having a 1 in 2 gradient. The lowering of the Cell 2 floor design elevation generated an additional 9,100 m³ airspace and created a total waste thickness of 36 m.

Key Finding:

1. No material change to the overall size and capacity of Stage 1 of the landfill is proposed within this amendment.

3.2 Stability

Consultant Golder Associates (Golder), on behalf of the Works Approval Holder, prepared a number of technical studies to support the initial design of the landfill, including a stability assessment of the cell with regards to the liner and waste mass. According to Talis (2020), the proposed replacement of the drainage aggregate with a fine grained protection layer on the sideslopes would not be considered a critical interface and would therefore not affect the overall stability of the assessed model conditions.

3.3 Liner integrity

Cell 1 construction was completed in early 2016, with a CQA Validation Report prepared by Golder and submitted to the department in November 2016. The premises was then non-operational for a significant period of time and received no waste inputs while ongoing licencing and planning issues were concluded. In October 2018, the separation geotextile was replaced due to UV degradation.

On 8 November 2018, Opalvale received correspondence from the department requesting comment from a specialist engineer on the integrity of the liner system after the length of time in which the cell had not received any waste.

In December 2018, Golder undertook a desktop assessment of the integrity of the liner system at Cell 1 to address the query from the department. The desktop assessment identified that the unconfined liner system (i.e. slopes area not covered with leachate aggregate) should be tested prior to placement of waste against this slope to ensure it still meets the required specification. This sampling was undertaken in May 2019 and reported in the *Factual Unconfined Liner System Assessment Project Report* (Golder, 2019) (Factual Report).

DWER notes that the HDPE geomembrane was not assessed as part of the Golder factual report. According to Golder (2019) *“the presence of the overlying cushion geotextile would have protected the geomembrane from UV exposure and temperature effects”*.

The Factual Report was provided to the Works Approval Holder who engaged Talis Consultants Pty Ltd (Talis) to undertake an assessment of the liner integrity results. The assessment identified that the cushion/protection geotextile layer width textile strength was approximately 65% of the required minimum specification, and 50% of the original conformance testing results.

To address these identified liner integrity issues, the Works Approval Holder is proposing to place a fine grained protection layer on top of the existing cushion/protection geotextile layer. The works approval holder states that *“even though the exposed cushion geotextile has reduced in strength due to UV degradation, the placement of a fine grained protection layer above the geotextile will be adequate to protect the lining system during operations at the Site. The reduced strength of the cushion geotextile in combination with the fine-grained protection layer is adequate to fulfil the design intent for protection of the underlying geomembrane”*.

Talis also detailed a study provided with the supporting information for the application that aimed to determine the ground pressure applied by bull dozers through various soil thicknesses above a composite lining system. The study, undertaken by Stark (2012) compared a typical composite lining system with a composite lining system with a 300mm thick layer of fine grained protective

layer, without a cushion nonwoven geotextile. Stark concluded that the fine grained protection layer transferred a much lower pressure to the geomembrane than the leachate collection aggregate layer. The study also identified that the applied pressure decreased with increasing lift thickness.

The applicant is proposing to undertake the placement of the fine grained protection layer progressively in campaigns. The placement of the fine grained protection layer progressively will ensure that the fine-grained protection layer is covered with waste in a methodical manner and will not deteriorate/erode (via wind or rainfall) prior to the placement of waste adjacent to the sideslope. The below figure shows a typical fine grained soil protection layer on sideslopes, as proposed by the applicant.

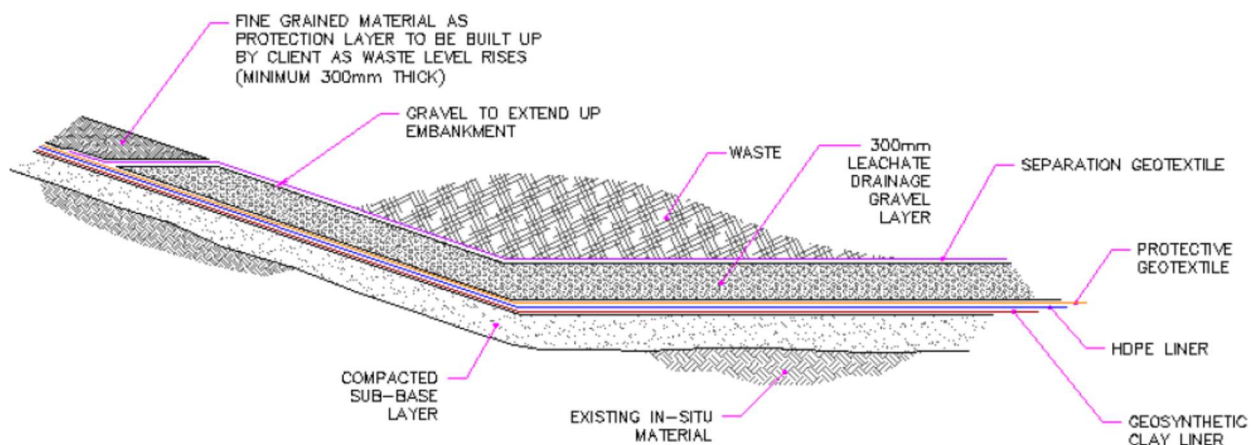


Figure 1: Typical fine grained soil protection on sideslopes

Key Finding:

2. The Delegated Officer notes that the fine grained protection layer is proposed to be placed on top of the existing cushion/protection geotextile layer above 4.5 m and where progressive aggregate placement has not already undertaken.
3. The fine grained protection layer transfers a lower pressure to the geomembrane than a leachate collection aggregate layer.

3.4 Leachate generation and storage

A water balance assessment was undertaken by Golder (2014). Golder used the Hydrogeological Evaluation of Landfill Performance (HELP) computer program to simulate the water balance for the landfill under a range of scenarios. A level of conservatism was factored into the model by considering leachate production took place after two successive wet years. This was determined to be approximately 1600 m³/hectare/year and was considered to be the maximum rate of leachate production that was likely to take place in the landfill.

This leachate production rate was then used as input to an additional water balance modelling exercise to determine the required capacity of leachate management ponds for the landfill. The modelling indicated that four ponds would be required to manage all of the leachate produced from Stage 1 of the landfilling operation. Each pond was designed to have a surface area of 2,304 m² to maximise evaporation, and have a volume of 5,024 m³ with a 0.5 m freeboard.

A space allocation was also made for an additional two leachate ponds (i.e. six ponds in total) to cater for possible future leachate quantities, noting that stage 2 has not been assessed as

part of this works approval.

Key Finding:

4. On the basis of the information provided, DWER considers that the designed capacity of the leachate ponds remains adequate to manage leachate from landfilling operations at the premises.

3.5 Leachate collection system

The leachate collection aggregate layer within Cell 1 and 2 was originally placed across the base of the landfill and extended up to 4.5 m vertical height on the sideslope. The leachate drainage aggregate and separation geotextile has been progressively extended up the perimeter sideslope in Cell 1 during landfilling activities.

Talis (2020) reported the hydraulic conductivity of sand is typically within the range of 10^{-2} to 10^{-5} m/s. The hydraulic conductivity of the leachate aggregate used in the modelling approved in the original works approval was 3×10^{-3} . The proposed replacement of the leachate collection layer with the fine grain protection layer is considered to have the potential to result in lower hydraulic conductivity than that of the original leachate aggregate layer as per the original works approval application. This is due to the noted variability in permeability of the proposed material for use in the fine grained protection layer. The Delegated Officer considers that this may impact the future efficiency of leachate transfer within the cell.

The Works Approval Holder employs a number of leachate management practices at the premises, including:

- Accumulation and storage within leachate ponds;
- Evaporation from the surface of the leachate ponds;
- Use of a water tanker to spray leachate onto the internal landfill roads (only over the lined landfill area);
- Leachate recirculation onto the waste surface;
- Leachate recirculation into the waste mass via injection wells and drains installed into the waste mass;
- Micro-sprays or water cannon over the leachate pond surface or on the landfill surface;
- If needed, volumes of leachate are to be pumped directly onto the incoming waste as it is placed and compacted in the landfill; and
- In the case of an emergency, leachate is to be trucked off site.

The Delegated Officer notes that Condition 27 of the Licence requires the Works Approval Holder to undertake leachate monitoring consistent with the outcome of the original assessment. The condition states that leachate levels must be monitored in all ponds and sumps, and manages the movement of leachate between sumps, ponds and the recirculation system.

3.6 Fugitive landfill gas

The supporting documentation provided with the application indicates that a perimeter landfill gas extraction pipe is proposed to be laid on top of the fine grained protection layer up the sideslope. This will allow for the continued capture of landfill gas once commissioned.

Key Finding:

5. The Delegated Officer expects the design changes and any landfill gas management alterations to be reflected in a detailed closure plan for the landfill cell(s).

3.7 Accepted practice

The Works Approval Holder provided supporting documentation with the amendment application regarding standard or accepted practices. Talis (2020) states that *“it is typical for a 300 mm fine-grained ‘soils’ protection layer to be placed progressively up the sideslope, (as practiced in Australia and internationally) in 2-3m vertical height intervals during operations on landfill sideslopes above the area of the leachate collection system, before the waste placement is raised in benches”*. In addition, the report states that *“Leachate drainage aggregate is not extended up the engineered sideslopes at Red Hill, North Bannister, or Tamala Park landfills. The proposal at Opalvale is therefore consistent with the practice at other DWER licenced landfills and the proposed amendment from the Works Approval would not increase risks to public health, public amenity or the environment in the context of the site operations at Opalvale or in comparison with other licenced landfills”*.

Key Finding:

6. The Delegated Officer notes that DWER assess the suitability and operation of applications individually on a risk basis, and does not give consideration to common industry practices in setting appropriate licence conditions to mitigate emissions and discharges from a premises.

4. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guidance Statement: Risk Assessments* (DER 2017).

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

4.1 Source-pathways and receptors

4.1.1 Emissions

It is considered that the emissions associated with the placement of a fine grained protection layer are unlikely to vary from the initial works approval assessment. The key emissions which are considered in this amendment report are:

- Dust;
- Noise;
- Leachate; and
- Landfill gas.

4.1.2 Controls

The Works Approval Holder has indicated that controls associated with the proposed amendment will remain largely consistent with the original works approval application, with any revisions or variations shown in Table 2 below:

Table 2: Proposed Works Approval Holder controls

| Emission | Sources | Potential pathways | Proposed controls |
|--------------|---|--|--|
| Dust | Dust generated during placement of the fine grained protection layer or by vehicle movements. | Air/windborne pathway | Controls will remain consistent with the original works approval application. |
| Noise | Noise emissions during placement of the fine grained protection layer including vehicles reversing beepers. | Air/windborne pathway | Controls will remain consistent with the original works approval application. |
| Leachate | Damage to liner Overtopping of landfill cell due to use of lower permeability protection layer | Infiltration through soil profile to groundwater | The placement of the 300 mm fine grained protection layer on top of the cushion geotextile layer will fulfil the design intent for protection of the underlying geomembrane. Construction Quality Assurance (CQA) for particle size distribution of fine grained sand layer will be undertaken on a campaign basis to verify grain size is within expected boundary conditions. All other leachate controls will remain consistent with the original works approval application. |
| Landfill gas | Fugitive emission to air. | Air/windborne pathway | Controls will remain consistent with the original works approval application. |

4.1.3 Receptors

In accordance with the *Guidance Statement: Risk Assessment* (DER 2017), the Delegated Officer has excluded employees, visitors and contractors of the Works Approval Holder 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 (*Guidance Statement: Environmental Siting* (DER 2016)).

Table 3: Sensitive human and environmental receptors

| Human receptors | Distance from prescribed activity |
|--|--|
| Privately owned farm land | Immediately adjacent (east and west) |
| Residential premises | <p>Internal farmhouse, approximately 400 m south west</p> <p>The original Works Approval application included a letter of consent from the landowner of Lot 11 Chitty Road dated 10 November 2014, which states <i>“As the landowner of Lot 11 Chitty Road, I consent to the development of a class II putrescible landfill on the site. In accordance with this development, I acknowledge the presence of the farmhouse that is approximately 400 m to the south west of the landfill footprint and accept that this dwelling can be ignored as a receptor when considering the environmental impact of the proposed development”</i>.</p> <p>Two properties approximately 1.1 km north east of the premises.</p> <p>One property approximately 1.7 km south of the primary prescribed activity</p> <p>Approximately 70 houses within a 1-5 km radius of the premises, predominately to the north and south.</p> |
| Environmental receptors | Distance from prescribed activity |
| Department of Biodiversity, Conservation and Attractions (DBCA) Managed Lands and Waters | <p>Clackline Nature Reserve approximately 2.3 km south east</p> <p>Nanamoolan Nature Reserve 2.3 km east and north east.</p> <p>DBCA managed land, being Lot 889 on Deposited Plan 415818, containing suitable foraging, roosting and breeding habitat for threatened black cockatoo species, located approximately 670 m south. The land is managed as part of the adjacent Clackline Nature Reserve pending inclusion to the existing reserve</p> |
| Waterways Conservation areas | The Premises is within the Avon River Management Area. |
| Proclaimed surface water area | The Premises is within the Avon River Catchment Area. |
| Directory of Important Wetlands of Australia | <p>Avon River Valley, approximately 17 km downstream from the closest feeding tributary to the premises.</p> <p>The Avon River is a registered type B2 wetland and provides high environmental value to public and the environment.</p> |
| 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 | <p>Low permeability fractured rock aquifer (confined) potentially suitable for domestic and non-potable use as well as stock watering.</p> <p>No registered users within 5 km of Premises.</p> |

4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guidance Statement: Risk Assessments* (DER 2017) for those emission sources which are proposed to change and takes into account potential source-pathway and receptor linkages as identified in Section 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the Works Approval Holder has proposed mitigation measures/controls (as detailed in Table 2), these have been considered when determining the final risk rating. Where the Delegated Officer considers the Works Approval Holder's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the Works Approval 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 Works Approval W5800/2015/1 that accompanies this Amendment Report authorises the changes to cell construction only. The conditions in the Revised Works Approval have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

A licence to authorise emissions associated with the operation of the landfill Premises i.e. landfilling activities was granted on 5 February 2019 (L9089/2017/1). A risk assessment for the operational phase has not been included in this Amendment Report.

Table 4. Risk assessment of potential emissions and discharges from the Premises during cell construction changes.

| Risk Event | | | | | Risk rating ¹ C = consequence L = likelihood | Works Approval Holder's controls sufficient? | Conditions ² of works approval | Justification for additional regulatory controls |
|---|--|---|--|----------------------------------|---|--|--|---|
| Source/Activities | Potential emission | Potential pathways and impact | Receptors | Works Approval Holder's controls | | | | |
| Replacement of the leachate aggregate on the landfill perimeter sideslopes in the remaining cells within Stage 1 (where progressive aggregate placement has not already undertaken) with a fine grained protection layer. | Dust generated during placement of the fine grained protection layer or by vehicle movements | Air/windborne pathway causing impacts to health and amenity | Two properties approximately 1.1 km north east of the premises and one property approximately 1.7 km south of the primary prescribed activity. | Refer to Table 2 | C = Slight L = Unlikely Low Risk | Y | N/A | The Works Approval Holder's current dust management controls, are considered to be sufficient for mitigating emissions associated with the proposed landfill design changes. |
| | Leachate | Infiltration of leachate through soil profile to groundwater due to damage to liner causing potential impacts on ecological values and beneficial | Beneficial groundwater users. Jimperding Brook and the Greater Avon River Valley catchment. | Refer to Table 2 | C = Moderate L = Unlikely Medium Risk | N | Condition 1.2.1 – General conditions Condition 1.2.9 – General conditions Condition 1.2.10 – General conditions Condition 2.2 - Monitoring Condition 3.1.4 - Reporting | The Delegated Officer considers that the placement of the 300 mm fine grained protection layer on top of the cushion geotextile layer is likely to fulfil the design intent for protection of the underlying geomembrane. Given that the cushion geotextile will remain in place with the addition of the fine grained protection layer, the Delegated Officer considers that the replacement of the leachate aggregate on the currently exposed sideslopes of the landfill is acceptable from a liner integrity perspective |

| Risk Event | | | | | Risk rating ¹ C = consequence L = likelihood | Works Approval Holder's controls sufficient? | Conditions ² of works approval | Justification for additional regulatory controls |
|-------------------|--------------------|--|---|----------------------------------|---|--|---|---|
| Source/Activities | Potential emission | Potential pathways and impact | Receptors | Works Approval Holder's controls | | | | |
| | Leachate | Inadequate circulation of leachate within the landfill cell due to use of lower permeability protection layer causing potential impacts to Jimperding Brook and the Greater Avon River Valley catchment. | Jimperding Brook and the Greater Avon River Valley catchment. | Refer to Table 2 | C = Moderate L = Unlikely Medium Risk | Y | N/A | <p>The Delegated officer considers that the Works Approval Holder's current leachate mitigation controls are likely to be sufficient at mitigating leachate emissions associated with the proposed landfill design changes.</p> <p>The Delegated Officer notes however that while the proposed fine grained protection layer is likely to maintain the operational integrity of the liner, the material used for the fine grained protection layer may potentially reduce the efficiency of leachate movement vertically through the closed system. The Delegated Officer notes it is the Works Approval Holders responsibility to manage leachate through the operational phases of the premises and should it be necessary, waste acceptance or operational practices adjusted to maintain effective leachate management.</p> |

| Risk Event | | | | | Risk rating ¹ C = consequence L = likelihood | Works Approval Holder's controls sufficient? | Conditions ² of works approval | Justification for additional regulatory controls |
|---|-----------------------|---|--|----------------------------------|---|--|---|---|
| Source/Activities | Potential emission | Potential pathways and impact | Receptors | Works Approval Holder's controls | | | | |
| Replacement of the leachate aggregate on the landfill perimeter sideslopes in the remaining cells within Stage 1 (where progressive aggregate placement has not already undertaken) with a fine grained protection layer. | Odour | Airborne odour causing impacts to health and amenity of closest human receptors | Two properties approximately 1.1 km north east of the premises and one property approximately 1.7 km south of the primary prescribed activity. | Refer to Table 2 | C = Minor L = Unlikely Medium Risk | Y | N/A | The proposed landfill design changes are not considered to materially alter odour emissions previously assessed in the initial works approval. |
| | Fugitive landfill gas | Airborne odour causing impacts to health and amenity of closest human receptors (two properties approximately 1.1 km north east of the premises and one property approximately 1.7 km south of the primary prescribed activity) | Two properties approximately 1.1 km north east of the premises and one property approximately 1.7 km south of the primary prescribed activity. | Refer to Table 2 | C = Slight L = Unlikely Low Risk | Y | N/A | The Delegated Officer notes that whilst the original leachate drainage design provided a permeable medium to allow for leachate migration, it also provided a gas conduit for fugitive landfill gas emissions to escape. Due to the nature of the fine grained material proposed, the fine grained protection layer is not considered likely increase fugitive emissions from the landfill, nor materially alter landfill gas emissions previously assessed. |

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guidance Statement: Risk Assessments* (DER 2017).

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

5. Consultation

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

Table 5: Consultation

| Consultation method | Comments received | Department response |
|--|---------------------|---------------------|
| Amendment application advertised on the department's website (9/09/2020) | None received | N/A |
| Local Government Authority advised of amendment application (9/09/2020) | None received | N/A |
| Other Stakeholders advised of amendment application (9/09/2020) | None received | N/A |
| Amendment application advertised in the West Australian newspaper (14/09/2020) | None received | N/A |
| Works Approval/Licence Holder was provided with draft amendment (26/10/2020) | Refer to Appendix 1 | Refer to Appendix 1 |

6. Conclusion

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

6.1 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 Works Approval as part of the amendment process.

Table 6: Summary of works approval amendments

| Condition no. | Proposed amendments |
|---------------|---|
| 1.1.2 | Inclusion of a 'putrescible waste' definition. |
| Table 1.2.1 | Inclusion of construction requirements for leachate aggregate replacement on the landfill perimeter sideslopes. |
| 1.2.9 | Material requirements for the fine grained protection layer. |

| Condition no. | Proposed amendments |
|---------------|---|
| 1.2.10 | Material requirements for the fine grained protection layer. |
| 2.2.1 | Inclusion of monitoring requirements for the fine grained protection layer. |
| 3.1.4 | Inclusion of reporting requirements for the fine grained protection layer. |

References

1. Department of Environment Regulation (DER) 2016, *Guidance Statement: Environmental Siting*, Perth, Western Australia.
2. DER 2017, *Guidance Statement: Risk Assessments*, Perth, Western Australia.
3. DER 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
4. Golder Associates Pty Ltd 2014, *Opal Vale Landfill Technical Studies to Support Design* December 2014.
5. Golder Associates Pty Ltd 2016, *Cell 1 and Leachate Ponds 1 and 2 Construction Quality Assurance Validation Report* November 2016.
6. Golder Associates 2019, *Cell 2 Design, Salt Valley Road Class Landfill Facility* June 2019.
7. Golder Associates 2019, *Factual Report, Salt Valley Road Class Landfill Facility* June 2019.
8. IW Projects Pty Ltd 2014, *Opal Vale Salt Valley Road Class II Landfill Works Approval Application Supporting Documentation* December 2014.
9. IW Projects Pty Ltd 2016, *Opal Vale Salt Valley Road Class II Landfill Management Plan* February 2016.
10. NSW EPA 2016, *Environmental Guidelines for Solid Waste Landfills*, New South Wales Environmental Protection Authority 2016.
11. Stark, T.D., Pazmino, L.F., McDowell, C.J. and Phaneuf, R. 2012, *Equipment pressure applied to geomembrane in composite liner system*. Geosynthetics International 2012.
12. Talis Consultants Pty Ltd 2019, *Cell 1 Liner Integrity Assessment, Salt Valley Road Class II Landfill* 2019.
13. Talis Consultants Pty Ltd 2020, *Supporting Information, Salt Valley Road Class II Landfill*, August 2020.
14. VIC EPA 2015, *Best practice environmental management – Siting, design, operation and rehabilitation of landfills*, Victoria Environmental Protection Authority 2015.

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

| Condition | Summary of Works Approval Holder's comment | Department's response |
|---|--|--|
| Table 2.2.1 Monitoring of the fine grained protection layer | <p>The implementation of the condition will require some flexibility in application. Operationally, sideslopes will need to be prepared in areas where landfilling is due to take place. This may result in multiple lifts on the northern sideslope before landfilling will be undertaken against the eastern sideslope. It will not be possible to complete a full lift for the entire cell on each occasion. This will increase the risk of erosion prior to landfilling.</p> | <p>DWER acknowledges the need to allow operational flexibility within the condition and has updated the condition to meet the needs of the applicant whilst maintaining compliance with the CQA and product testing requirements.</p> |
| | <p>The works approval holder was asked to confirm the proposed sampling frequency and has requested a lower sampling rate be undertaken. The works approval holder requested one sample per 500 m³ (or part thereof) with a minimum of 2 samples per campaign.</p> | <p>DWER has updated Table 2.2.1 to reflect the need for sampling to be undertaken in campaigns and not lifts. As the fine grained material is required to protect the liner due to the degradation of the cushion geotextile, homogeneity of the material in meeting the required technical specifications requires management. Therefore, the department sees the testing requirements of the fine grained material to be greater than the specifications as set out for embankment construction or for the supply of recycled road base specifications as provided by the works approval holder.</p> |