Government of Western Australia
Department of Water and Environmental Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Eclipse Soils Pty Ltd

Licence: L8974/2016/1

Registered office:	The Miramar Building Level 2, 40 Subiaco Square Road SUBIACO WA 6008
ACN:	131 802 661
Premises address:	Abercrombie Road Resource Recovery Centre Lot 115 on Plan 48295 (Volume 2602, Folio 976) and Lot 2 on Plan 29392 (Volume 2219, Folio 775) Abercrombie Road POSTANS WA 6167 As depicted in Schedule 1
Grant date:	28 March 2017
Commencement date:	30 March 2017
Expiry date:	Monday, 27 July 2020
Date of Amendment:	13 May 2019

Decision

Based on the assessment detailed in this document the Department of Water and Environmental Regulation's (DWER) Delegated Officer has granted this licence amendment. The Delegated Officer considers that in reaching this decision, he has taken into account all relevant considerations.

Decision Document authorised by: [redacted]

Senior Manager Waste Industries
Regulatory Services
Delegated Officer - under section 20 of the
Environmental Protection Act 1986

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1 Purpose of this Document

This decision document explains how DWER has assessed and determined the application and provides a record of DWER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DWER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☐ New Licence ☐ Licence amendment ☒ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	61A	200,000 tonnes per annual period
	67A	50,000 tonnes per annual period
Application verified Application fee paid	Date: 19 March 2019 Date: 19 March 2019	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☒ No☐ In respect of the original Licence application, the occupier requested a commercial-in-confidence claim for the Quality Control Plan, Bioremediation Management Plan, Acid Sulfate Soils Management Plan and the Water Retentive Landscape Shaping Soil Production Protocol which have been marked with 'Confidential do not copy' and 'Commercial in Confidence'.	
Commercial-in-confidence claim outcome	Only information related to the management of emissions and discharges has been disclosed in this decision document.	
Is the proposal a Major Resource Project?	Yes☐ No☒	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V ☐ Assessed under Part IV ☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes☒ No☐		

Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999 and *Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992*
Is the Premises subject to any EPP requirements? Yes☒ No☐ *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999* (Kwinana EPP) covers the entire premises. • The objective of the Kwinana EPP is to protect the 'beneficial uses' of the environment. • The Kwinana EPP and associated regulations outline general dust provisions relating to ambient concentrations of total suspended particulates (TSP); • *Environmental Protection Peel Inlet - Harvey Estuary Policy 1992* (Peel Inlet EPP) covers Lot 2 on Plan 29392 (Volume 2219, Folio 775) Abercrombie Road; • outlines environmental quality objectives for the Estuary which if achieved will rehabilitate the Estuary and protect the Estuary from further degradation; • outlines the means by which the environmental quality objectives for the Estuary are to be achieved and maintained; The Peel Inlet EPP sets water quality objectives for the entire Peel Inlet and Harvey Estuary. Subsidiary management documents include on-ground nutrient targets based on modelling.

3 Executive summary of proposal and assessment

Eclipse Soils Pty Ltd (Eclipse Soils) operates the Abercrombie Road Resource Recovery Centre (ARRRC) located on Lot 115 and Lot 2 Abercrombie Road in Postans. The combined two lots cover an approximate area of 42 hectares. This premises was previously operated by Eclipse Resources Pty Ltd under licence L7766/2001/5 for categories 61A, 63 and 67A. That licence expired on 27 April 2015. The previous instruments issued for the Premises since April 2002 are:

Instrument log			
Instrument	**Granted**	**Licence Holder**	**Description**
L7766/2001/1	17/04/2002	Eclipse Resources Pty Ltd	New licence application
L7766/2001/2	05/05/2003	Eclipse Resources Pty Ltd	Licence re-issue
L7766/2001/3	28/04/2004	Eclipse Resources Pty Ltd	Licence re-issue
L7766/2001/4	28/04/2005	Eclipse Resources Pty Ltd	Licence re-issue
W4424/2008/1	01/05/2008	Eclipse Resources Pty Ltd	Works Approval
L7766/2001/5	28/04/2010	Eclipse Resources Pty Ltd	Licence re-issue
L7766/2001/5	07/07/2011	Eclipse Resources Pty Ltd	Licence amendment
L7766/2001/5	11/08/2011	Eclipse Resources Pty Ltd	Licence amendment
L8974/2016/1	28/03/2017	Eclipse Soils Pty Ltd	New licence
L8974/2016/1	13/11/2018	Eclipse Soils Pty Ltd	Appeal amendment
L8974/2016/1	13/05/2019	Eclipse Soils Pty Ltd	Licence amendment

Based on the assessment detailed in this document the Delegated Officer determined to grant a licence subject to regulatory controls imposed as licence conditions. The premises is licensed as a category 61A (solid waste facility) and category 67A (compost manufacturing and soil blending) facility as defined in Schedule 1 of the *Environmental Protection Regulations 1987* (EP Regulations). The licence does not authorise any infilling of waste.

Eclipse Soils accept the following waste materials for further processing, treatment and/or storage:

- clean fill for soil blending and offsite sales,
- green waste for processing into composted products,
- contaminated soils (including hydrocarbon, acid sulfate soils (ASS) and certain pesticide contaminated soils) for treatment (bioremediation) and soil blending; and
- acid sulfate soils for treatment and soil blending.

No manures or liquid wastes are accepted onsite. No filling of land will occur.

Works approval W4424/2008/1 authorised the construction of the two bioremediation treatment pads and lined leachate ponds that exist on site. Works authorised under W4424/2008/1 were completed on 20 October 2009.

The premises also mines and sells limestone and sand however these activities are not regulated under Part V of the *Environmental Protection Act 1986* (EP Act). Screening of this excavated material is not proposed under this licence.

The potential emissions arising from the premises' activities include:

- dust and noise emissions from vehicular movement and machinery use on-site;
- leaching of nutrients and other contaminants to the soil subsurface and underlying groundwater from composting and soil treatment activities; and
- odour emissions from composting and soil treatment activities.

There are no direct (point source) emissions or discharges to air, surface water or groundwater associated with the proposed activities.

Suitability of treated materials for end-use has not been assessed under this decision document. The acceptance and re-use of treated wastes on another premises may be subject to the licensing provisions in Part V of the EP Act and landfill levy obligations.

2018 DWER initiated Amendment following Appeal determination (Appeal 13 of 2017)
In 2018 an amendment to the licence was undertaken to address the determination of the appeal by Eclipse Soils Pty Ltd, against the original licence conditions. The appeal (Office of the Appeals Convenor, Appeal 13 of 2017) was determined by the Minister for Environment on 21 May 2018. The Minister allowed the appeal in part. A summary of the grounds of appeal and DWER's amendments to reflect the appeal determination are shown in Appendix G of this document.

Key documents considered or reviewed as part of the assessment are documented in Appendix A.
Eclipse Soils also requested the former Department, DER, to consider documentation provided in support of previous works approval and licence applications. The Delegated Officer considered these previous documents to the extent that they applied to current operations and not in regard to landfilling activities.

DWER also gave consideration to the Appeal Convenor's advice in the Report to the Minister for Environment, Appeal Number 13 of 2017, March 2018, as per the Minister's request.

The final amendment to the licence following appeal determination was granted on 20 November 2018.

2019 Amendments to Licence
Amendments relate to the proposed increase in throughput of solid waste material and changes to waste acceptance criteria. Further details and DWER's risk assessment are outlined in Appendix H of this Decision Document.

Applicable Regulations, Standards and Guidelines
The overarching legislative framework of this assessment is the *Environmental Protection Act 1986* and *Environmental Protection Regulations 1987*. The Department's Guidance Statements which inform the assessment in line with this legislation are as follows:

- *Guidance Statement: Regulatory Principles (July 2015);*
- *Guidance Statement: Licence and works approvals process (September 2015);*
- *Guidance Statement: Setting Conditions (October 2015);*
- *Guidance Statement: Land Use Planning (February 2017);*
- *Guidance Statement: Licence duration (August 2016)*;
- *Guidance Statement: Environmental Siting (November 2016);*
- *Guidance Statement: Decision Making (February 2017); and*
- *Guidance Statement: Risk Assessments (February 2017).*

Contaminated Sites
The Site was first classified under the *Contaminated Sites Act 2003* (the CS Act) on 16 July 2010. The Site is classified as 'Possibly contaminated - investigation required' under the CS Act. This classification is a result of previously landfilled materials on the premises including asbestos. Excavation or disturbance of soils is prohibited.

4 Location and siting

4.1 Siting context and planning approval

The land is zoned 'Rural B' under the City of Kwinana Town Planning Scheme No. 2 and 'Rural' under the Metropolitan Region Scheme. The premises has been granted planning approval until 27 July 2020. The licence duration is aligned with the planning approval expiry date.

The planning approval is for an extractive industry operation however it includes conditions specific to all activities occurring onsite. The City of Kwinana confirmed in correspondence to the former Department of Environment Regulation (DER), now DWER, that the use of the premises for "soil bioremediation, compost manufacturing and soil blending is approved" under the planning approval (see Table in Section 7).

The approval restricts operational hours to 06:00 to 18:00 Monday to Saturday with trucks not authorised to leave the quarry until 06:30.

4.2 Residential and sensitive receptors

An Agricultural Research Station owned and operated by the Department of Agriculture and Food WA is located south of Lot 115 and includes a caretaker's residence. This residence is located approximately 375m from the southern boundary of Lot 115, 600m from the western boundary of Lot 2 and is the closest neighbour to the Abercrombie Road Resource Recovery Centre (ARRRC). The closest residential area is that of Orelia, located approximately 750m from the southernmost extent of Eclipse's ARRRC.

4.3 Soil Type

The Delegated Officer has reviewed surface geology information and publicly available surface geology maps for the site as presented in Davidson, W.A. (1995) ('Hydrogeology and groundwater resources of the Perth region, Western Australia', Western Australia Geological Survey, Bulletin 142, Davidson, W.A. (1995)) and concludes that the site is mapped in the Tamala limestone formation. This is consistent with onsite activities relating to mining limestone and sand.

The Tamala limestone formation extends along the coastal strip of the Perth region and consists of a creamy-white to yellow, or light-grey, calcareous aeolianite. It contains various proportions of quartz sand, fine- to medium-grained shell fragments, and minor clayey lenses. The quartz sand varies from fine to coarse-grained, but is predominantly medium grained, moderately sorted, sub-angular to rounded, frosted, and commonly stained with limonite (Davidson, 1995).

The formation is reported to contain numerous solution channels and cavities, particularly in the zone of water table fluctuation, and in some areas exhibits karst structures (McPherson and A. Jones, 2005 Geosciences Australia). Its upper surface is exposed and leached to the extent that the upper part of the unit comprises unconsolidated sand. Depending on the location, this unit unconformably overlies the Leederville Formation, Osborne Formation or the Bassendean Sand, and is known to exhibit a maximum known thickness of 110 m. Along the coastal margin it is unconformably overlain by the Becher Sand or the Safety Bay Sand (Davidson, 1995).

4.5 Groundwater and surface water resources

The nearest surface water body is an unnamed lake approximately 785m north/northwest and the Spectacles wetland located approximated 1.8km east of site. No surface water bodies or drainage lines exist on site due to the permeable nature of the soils and limestone.

As identified through DWER's Perth Groundwater Atlas (PGA), groundwater below the premises ranges from 11.5 to 20.5 metres below ground level (mbgl) in Lot 115 and from 20.5 to 26.5 mbgl on Lot 2, with these differences attributed to the varying contours of the premises topography. PGA also states that groundwater is considered marginal (total dissolved solids between 500 – 1000 mg/L), has a low risk of iron staining and has no known risk of Acid Sulfate Soils (ASS). The PGA also identified the surface geology type as Tamala Limestone: predominantly calcarenite.

Water is extracted from two existing high production bores used for dust suppression purposes. The occupier has a groundwater licence to extract 120,000kL per annum.

Groundwater data required from monitoring under previous licences is inconclusive to determine if site activities have impacted on groundwater quality. A discussion of the groundwater data is provided in Appendix B. The current licence provides for additional groundwater monitoring to be undertaken to review potential impacts to groundwater quality from on-site activities. DWER is awaiting the results in order to review the groundwater quality at the premises.

4.5 Sensitive ecosystems

A Threatened Ecological Community (TEC) buffer area exists to the north of the ARRRC. The buffer is in relation to 1.79ha of endangered *Melaleuca huegeli – Melaleuca acerosa* shrublands which is located 190m north of the Premises boundary. A large portion of Lot 115 and part of Lot 2 are located within the buffer area to this TEC. TEC buffers are important to assist in preventing impacts from weeds or dust emissions and can be susceptible to impacts when there are groundwater and surface water discharges that are within the vicinity of the buffer area.

4.6 Meteorology

Rainfall and temperature

The closest Bureau of Meteorology (BoM) station for the site is the Medina Research Centre (Site number: 009194) approximately 600m from the site. The mean rainfall and maximum temperature for this BoM station is presented in Figure 1 below (Mean rainfall (mm) for years 1983 to 2016 and mean maximum temperature (°C) for years 1983 to 2016). The region exhibits warm to hot temperatures between December to March with rainfall predominantly over May to September.

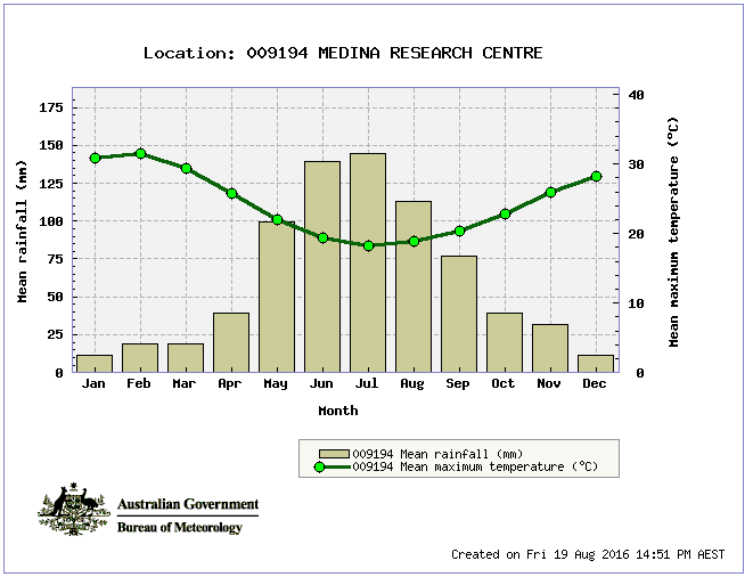

Figure 1: Mean temperature and rainfall – Medina Research Centre.

Wind direction and strength

Annual wind roses for the Medina Research Centre provide an indication of likely wind direction and strength for the site. The annual average 9am and 3pm wind speed vs direction plots are presented in Figure 2. 9am observations indicate a predominant easterly direction while the 3pm observations indicate a predominant south-westerly direction.

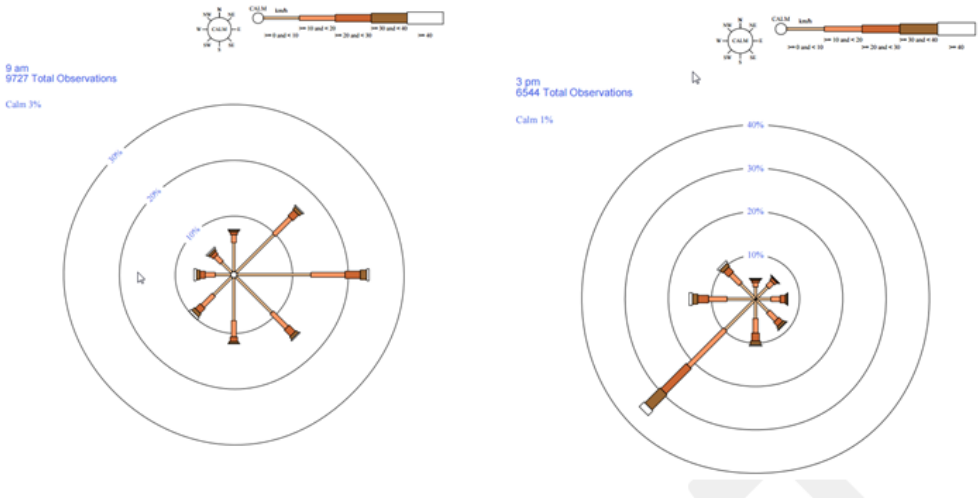

Figure 2: Annual average 9am and 3pm wind speed vs direction plots – Medina Research Centre.

5 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and the Department's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

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DECISION TABLE			
Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Occupancy	N/A	Under the *Environmental Protection Act 1986* (EP Act), licences can only be granted to the occupier of the premises. The Delegated Officer has received a letter from the landowner to confirm that Eclipse Soils has authorisation to occupy the premises for activities related to prescribed premises category 61A and 67A activities. It is noted that the landowner is a company with the same Directors as Eclipse Soils. The Delegated Officer is satisfied that Eclipse Soils is the occupier of the premises.	Application supporting documentation
Premises operation	L1.2.1 –L1.2.8	Refer to Appendix B	Application supporting documentation
Fugitive emissions (dust)	L1.2.5 - L1.2.8	Refer to Appendix B	Application supporting documentation Office of the Appeals Convenor, Report to the Minister for Environment, Appeal Number 13 of 2017
Fugitive emissions to groundwater	L1.2.4, L2.4.1	Refer to Appendix B	Application supporting documentation

DECISION TABLE			
Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Odour	L1.2.3 (Table 1.2.2)	Refer to Appendix B	Application supporting documentation
Noise	N/A	Refer to Appendix B	*Environmental Protection (Noise) Regulations 1997* (EP Noise Regulations)
Monitoring general	L2.1.1 and L2.1.2	Condition L2.1.1 has been included on the licence to specify the methodology that is required to be undertaken for monitoring groundwater. These methods assist in ensuring reliability and accuracy of results. Condition L2.1.2 has been included on the licence to specify the minimum period of time authorised between sampling rounds and has been included to allow a more accurate representation of seasonal data obtained throughout the year.	N/A
Monitoring of inputs and outputs	L2.2.1	Condition L1.2.1 specifies the types and volumes of materials authorised to be accepted at the premises. To allow DWER to regulate the volume of wastes in compliance with this condition, condition L2.2.1 (and Table 2.2.1) has been included on the licence to monitor and record the inputs and outputs of the premises. This condition also assists in assessing that the wastes accepted and processed at the site are at a throughput that can be sufficiently managed by the premises infrastructure and controls which have been considered as part of this risk assessment.	N/A
Process monitoring	L2.3.1	The occupier currently undertakes weekly monitoring of temperature in the compost stockpiles (outside of pasteurisation stage). Condition 2.3.1 has been included on the licence to ensure a minimum level of process monitoring and control is maintained and to reflect the monitoring proposed by the occupier, as well as requiring additional monitoring that is deemed as appropriate by the Delegated Officer and relevant to the onsite composting process. This condition also assists in demonstrating that the onsite	Australian Standards (AS) 4454:2012 Composts, Soil Conditioners and Mulches

DECISION TABLE			
Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		processes have resulted in a viable compost, mulch or blended soil product that meets relevant Australian Standards.	AS 4419 – 2003 Soils for landscaping and garden use
Ambient quality monitoring	L2.4.1	As per the risk assessment for stormwater becoming contaminated with leachate in 'General conditions' in Appendix B, there is a high risk that groundwater can become contaminated from premises operations. The occupier has installed four groundwater monitoring bores to monitor water quality from the superficial aquifer. The background bore (upstream) was drilled to the north of the former quarry. Bore 2 and 3 were drilled down-gradient to the south of the former quarry. The location of these bores is depicted on the map in Schedule 1 of the licence. To assess the impacts of premises operations on the groundwater quality, condition (and table) 2.4.1 has been included on the licence to require the groundwater bores to be monitored on a quarterly basis for the following parameters: • Standing water level; • pH; • Electrical conductivity; • Arsenic; • Cadmium; • Chromium; • Copper; • Mercury; • Ammonium nitrogen; • Lead; • Manganese; • Nickel; • Zinc;	Application supporting documentation Office of the Appeals Convenor, Report to the Minister for Environment, Appeal Number 13 of 2017

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Ambient quality monitoring continued		• Potassium; • Selenium; • Chloride; • Sulphate; • Total acidity; • Total alkalinity; • Total aluminium; • Total iron; • Total nitrogen (TN); • Total phosphorus (TP); • Total Dissolved Solids (TDS); • Organochlorines; • Organophosphates; • BTEX (benzene, toluene, ethylbenzene, xylene); • Polycyclic aromatic hydrocarbons (PAHs); • Polychlorinated biphenyls (PCBs); and • Total petroleum hydrocarbons (TPH). Historical groundwater data is inconclusive to determine if site operations are impacting on the groundwater and additional data (larger data set) is required to demonstrate whether the premises is causing any impacts (discussed further in Appendix B). The Delegated Officer considers that the licence condition for quarterly groundwater monitoring is required to provide a more conclusive data set for monitoring the potential impact of emissions on ambient groundwater quality given the high risk of impacts on the receiving environment.	
Former landfill management	L1.2.3, L1.2.4 and L1.2.8	The occupier has requested to use the former landfill area as part of the site operations. A pad of crushed limestone has been constructed within this area however the dimensions of this pad, including thickness of limestone and permeability, have not been provided.	Office of the Appeals Convenor, Report to the Minister for

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		DER Officers visited the Premises on 27 March 2017 to determine the extent of the limestone pad within this area. The pad was not able to be visually verified due to the quantities of waste being stored in the area. In the absence of information relating to the extent and specification of the limestone pad the Delegated Officer has determined that the former landfill area has not been demonstrated to have the infrastructure required to mitigate risks to groundwater from the storage and processing of wastes that are authorised to be received and processed at the Premises, with the exception of Clean Fill. As a result the Delegated Officer considers it appropriate to only authorise the storage of clean fill in the north-eastern portion of the Premises given the high risk of leachate to the receiving environment. This is reflected in Tables 1.2.2 and 1.2.3 for conditions 1.2.3 and 1.2.4, respectively. Should Eclipse be able to demonstrate that the infrastructure in this area is sufficient to mitigate risks to groundwater if other wastes authiorised to be accepted are handled in this area, they may submit a licence amendment application for DWER to consider. This area has been delineated by GPS coordinates. These GPS coordinates were determined by Department Officers based on advice from Eclipse staff on site on 27 March 2017 who identified to (the then) DER Officers the required extent of this waste storage area and limestone hardstand. Condition 1.2.8 prohibits the occupier from undertaking any activities that may disturb the former landfill area. As discussed in the 'Fugitive emissions' section of Appendix B, asbestos has previously been filled onsite and the requirement to not disturb the former fill area assists in reducing the risk of asbestos fibres being released. These conditions are deemed suitable to manage ongoing activities at the premises, giving consideration to the former utilisation of part of the premises for historic landfilling activities.	Environment, Appeal Number 13 of 2017

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Improvements	L3.1.1 (IC1 – IC3)	Condition L3.1.1 (IC1 and IC2) has been included to require the occupier to undertake permeability testing of the green waste and ASS/PASS storage and processing pads, to meet no less than 1 x 10^{-8} m/s hydraulic conductivity. This condition also requires the occupier to provide a list of actions to bring the infrastructure up to this permeability requirement and a timeframe for completion, should it not meet the permeability criteria. The Delegated Officer's risk-based assessment for emissions of leachate identified a high-risk to the receiving environment as specified in Appendix B 'Emission Description (Leachate)'. Based on the outcome of the risk assessment, the Delegated Officer considered it necessary for composting and ASS/PASS pads to meet a hydraulic conductivity of less than 1 x 10^{-8} m/s. The requirement to meet the permeability criteria was appealed by the Licence holder. In its advice to the Office of the Appeals Convenor, DWER stated that 'given the inconclusive nature of groundwater monitoring results with regard to the impact the activities may have had on groundwater quality, the Department considers it reasonable to allow a period of 12 months increased groundwater monitoring to verify whether the Department's high risk rating for leachate emissions to groundwater is accurate, in advance of requiring any improvements in the infrastructure to be undertaken. In the event that the increased groundwater monitoring program demonstrates that the limestone hardstands are of a sufficient permeability to mitigate impacts to groundwater, then the requirement to upgrade the hardstands to meet a permeability of 1 x 10^{-8} m/s can be removed. The Minister accepted DWER's advice that if additional groundwater monitoring demonstrates that the existing limestone pads used for green waste and ASS/PASS are of sufficient permeability to mitigate impacts to groundwater, improvement requirements IC1 and IC2 may no longer be required to be met within the stipulated timeframes. Specifically, the Minister considered it appropriate for quarterly monitoring to be required for at least the first 12 months following the decision, and should those results confirm the original risk assessment then it is open to DWER to remove the improvement requirements.	Application supporting documentation Office of the Appeals Convenor, Report to the Minister for Environment, Appeal Number 13 of 2017

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		Given this advice, DWER has amended improvements IC1 and IC2 in Table 3.1.1, to allow for additional time to meet the 'Date of Completion'. An extension to 2 years from the date of the amendment for completion, will allow the Licence Holder to undertake the required groundwater monitoring, review the results and to provide these results to DWER for review. Should the groundwater monitoring results demonstrate that the limestone hardstands are of sufficient permeability to mitigate impacts to groundwater, then DWER will undertake an amendment of the licence to remove these hardstand improvement requirements. Should the groundwater monitoring results demonstrate that the limestone hardstands are not of sufficient permeability to mitigate impacts to groundwater, then the requirements of IC1 and IC2 will remain. Given the high risk of leachate emissions to the receiving environment, the Delegated Officer requires the occupier to demonstrate that the infrastructure meets this requirement to protect the receiving environment. A former improvement condition (IC3) was also included on the original licence to require the occupier to install and maintain suitable fencing at the premises to delineate the extent of the authorised prescribed area. On review of the Appeal DWER agreed to remove this condition, as the whole of the property is already fenced. Condition 3.1.1 (IC3) has been included in the licence as a result of Department officers visiting the Premises on 27 March 2017 and identifying that green waste, mulch and other waste was being stored in the former designated 'Clean Fill Storage Area'. This condition requires Eclipse to remove all waste other than Clean Fill from this area within 3 months of the date of issue of the licence amendment. Should Eclipse be able to demonstrate that the infrastructure in this area is suitable for activities involving other wastes to take place, Eclipse may seek to submit a licence amendment and evidence on this issue to DWER.	

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Licence section	**Condition number L= Licence**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Information	L4.1.1 to 4.1.3, L4.2.1, 4.2.2 and L4.3.1	Condition 4.1.1 sets out the requirements for any records that are required under this licence, such as ensuring they are legible and retained for 6 years which assists DWER in regulating the conditions of this licence. Condition 4.1.2 requires a complaints management system to be implemented where the occupier can internally address any issues that arise from premises operations. DWER will review these complaints as reported in the Annual Environmental Report (AER) and can consider the requirement for reassessment of any regulatory controls to address the complaints. Condition 4.1.3 requires the occupier to maintain a register of all ASS or PASS received at the site and the validation and testing results. This condition assists in confirming that all ASS or PASS has been treated appropriately. Condition 4.2.1 requires the occupier to undertake an audit of their operations against the conditions of the licence and to report on this compliance in a Compliance Report. This condition assists DWER in regulating the occupier's compliance with licence conditions and allows an opportunity for DWER to review the occupier's environmental performance. Condition 4.2.2 requires the occupier to submit an AER. The AER is required to include summary of the complaints required under condition 4.1.2. The AER also requires the results for the monitoring of inputs/outputs, groundwater monitoring data, results of ASS/PASS validation and testing results and a summary of any malfunction of pollution control equipment or any environmental incidents. DWER reviews all of the data provided in the AER to assess compliance with the licence conditions and to monitor the environmental impacts from the premises. Condition 4.3.1 requires the occupier to notify the CEO if there is a breach of any licence limit (e.g. processing limits). This condition also requires the occupier to advise of any fires at the premises. The notifications required under this condition give DWER	Office of the Appeals Convenor, Report to the Minister for Environment, Appeal Number 13 of 2017

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		sufficient notice of any environmental impacts at the premises so that DWER can determine if any further action is required to address the incident.	
Licence Duration	N/A	Planning approval from the City of Kwinana is limited to 27 July 2020. In accordance with the Department's *Guidance Statement: Licence Duration* (Revised August 2016), this licence has been granted to 27 July 2020 to coincide with the planning approval expiry date. Any *Environmental Protection Act 1986* approvals beyond this date will require additional planning approval to be in place.	DER *Guidance Statement: Licence Duration* (Revised August 2016)
Fitness and competence	N/A	Please refer to Appendix C	N/A

6 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
29/08/2016	Original Application advertised in West Australian	No comments received	
29/08/2016	Application referred to City of Kwinana	Copies of planning approval provided with the application referred to approval for an extractive industry. Clarification was sought from the City of Kwinana (the City) to determine if the planning approval also authorised composting, bioremediation, soil blending activities and neutralisation activities. Comment received from the City of 31/08/2016 stated: *A DA dated 2001 approved the use for Extractive Industry, Landfill and Resource Recovery. At that stage the City approved extractive industry applications for 5 years only and it appears during the DA renewals the "resource recovery" part was omitted in the heading of the recent approvals… The use of the land for soil bioremediation, compost manufacturing and soil blending is approved.*	N/A
18/10/2016	Proponent sent a copy of draft instrument	Comments received 18 November 2016 and included as Appendix E	DER's response included as Appendix F
28/03/2017	Licence issued	Licence issued to the occupier	
13/04/2017	Appeal lodged by Eclipse Soils Pty Ltd	Occupier lodged appeal with the Office of the Appeals Convenor. Appeal grounds are summarised in Appendix G.	
21/05/2018	Appeal decision	Appeals Convenor made a determination to allow the appeal in part.	Licence conditions and Decision Report have now been amended to reflect the recommendations provided in the Report to the Minister for the Environment, Appeal 13 of 2017, Office of the Appeals Convenor (March, 2018), as shown in these documents and summarised in Appendix G.

Date	Event	Comments received/Notes	How comments were taken into consideration
22/10/2018	Proponent sent a copy of the draft amendments	Comments received on 7 November 2018 from Eclipse Soils Pty Ltd. Eclipse requested the review of two items, as listed below. 1) Table 1.2.1 to be amended to 'contaminated soil containing hydrocarbons and/or pesticides'. 2) Table 3.1.1, Improvement Requirements IC1 and IC2 to be amended to align the wording with the process outlined in the Decision Document (i.e. refer to the potential for no improvements to be required, pending favourable outcomes from the groundwater monitoring results).	Table 1.2.1 has been updated to reflect that contaminated soil can contain hydrocarbons and/or pesticides. Table 3.1.1 and improvement requirements IC1 and IC2 have not changed. On 16 October 2018 DWER sought clarification from the Office of the Appeals Convenor on the Minister's determination for this item. At this time it was confirmed that the determination was to allow 'time for complying with improvement requirements IC1 and IC2 to be amended pending the results of additional groundwater monitoring'. The time has been amended (increased), as per this determination. This additional time will allow DWER to consider the additional groundwater monitoring results and the need for improvement requirements IC1 and IC2. In the case where monitoring results demonstrate that the limestone hardstands are of sufficient permeability to mitigate impacts to groundwater, then DWER will initiate an amendment of the licence to remove the related improvement requirements.

7 Risk Assessment

Note: This matrix is taken from the DER Guidance Statement: Risk Assessments (February 2017)

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost Certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

Appendix A: Key Documents and References

The key documentation considered and reviewed and as part of the assessment is detailed below.

	Document Title	Availability
1	Licence application dated 24 March 2016	DWER records
2	Supplementary information to licence application dated 1 June 2016 (provided in response to the Department's request of 11 May 2016 as several attachments were not provided with the initial licence application). The following plans or protocols were provided this submission: • Quality Control Plan (Eclipse Soils, Rev 6, May 2016), • Management Plan for Bioremediation and Remediation of Hydrocarbon and Pesticide Containing Materials (Eclipse Soils, May 2016); • Acid Sulfate Soils Management Plan (Eclipse Soils, 1 June 2016); • Water Retentive Landscape Shaping Soil Production Protocol (Eclipse Soils, May 2016); and • Structural Fill Sand Production Protocol (Eclipse Soils, May 2016).	
3	*2014 Annual Groundwater Monitoring Report, Resource Recovery Centre, Abercrombie Road, Kwinana, WA* prepared by Aurora Environmental (January 2015)	
4	*Acid Sulfate Soils Management Plan* – (Eclipse Resources, March 2004)	
5	*Eclipse Resources Lot 180 Abercrombie Rd Resource Recovery Centre Management Plan April 2005,* prepared by Eclipse Resources	
6	Works Approval W4424/2008/1 – approval for construction of two bioremediation pads.	
7	DER *Guidance Statement on Regulatory principles,* July 2015	Accessed at http://www.dwer.wa.gov.au
8	DER *Guidance Statement: Land Use Planning,* October 2015	
9	DER *Guidance Statement on Setting conditions,* October 2015	
10	DER *Guidance Statement on Licence duration,* August 2016	
11	DER *Guidance Statement on Licensing and Works Approvals Process,* August 2016	
12	DER *Guidance Statement: Decision Making, February 2017*	
13	DER *Guidance Statement: Risk Assessments, February 2017*	
14	DER's Guideline: *Treatment and management of soil and water in acid sulfate soil landscapes*, June 2015	
15	*Environmental Protection Peel Inlet - Harvey Estuary Policy 1992*	Accessed at http://www.epa.wa.gov.au

16	Office of the Appeals Convenor, *Report for the Minister for the Environment, Appeal Number 13 of 2017, Appeal in Objection to the Conditions Applied to a Licence, L8974/2016/1: Abercrombie Road Resource Recovery Centre, Abercrombie Road, Postans. Proponent: Eclipse Soils Pty Ltd, March 2018.*	Accessed at: http://www.appealsconvenor.wa.gov.au

Appendix B – Risk assessment

Hydrocarbon storage

Emission Description

Emission: Hydrocarbon and chemicals released into environment from the storage of fuels, oils and other chemicals.

Impact: Contamination of surrounding land, groundwater and surface water drainage systems from the addition of hydrocarbons.

Controls: The occupier has stated (2005 Management Plan) that fuel is stored at the premises in above ground bunded tanks which are constructed with a compacted limestone base and overlain by an impermeable plastic liner, which extends to cover the bund walls. Other chemicals and oils are stored in an onsite shed which is locked.

Risk Assessment

Consequence: Moderate

Likelihood: Rare

Risk Rating: Medium

Regulatory Controls

The storage of fuels is not a prescribed activity and in accordance with the Department's Guidance Statement: *Risk Assessments* (February 2017), the onsite storage of the occupier's fuel, chemical or oils, is not regulated by DWER and no specific conditions for hydrocarbon storage have been included on the licence. Any discharges or spills of fuel, oil or other chemicals into the environment may be subject to the *Environmental Protection (Unauthorised Discharges) Regulations 2004.*

Residual Risk

Consequence: Moderate

Likelihood: Rare

Risk Rating: Medium

Emission Description (Fires)

Emission: Smoke and emissions to air in the event of a fire. Contaminated fire wastewaters generated from firefighting activities.

Impact: Contamination of surrounding land and surface water drainage systems from the addition of contaminated fire wastewater and ash fallout. There are potential impacts on ecology of surface water. The premises is located within a TEC buffer area, and 190m away from endangered melaleuca shrublands, which could be impacted by a bushfire, if embers from a compost fire blow in a northerly direction.

Controls: Although the occupier has not specified any controls for managing fire risk, the two abstraction bores with piping, reticulation and sprinkler systems allow for an increased response time in the event of a fire. The occupier has proposed a separation distance of 4m between green waste windrows, with these windrows limited to 3m in height and being 5m wide. The Delegated Officer considers that these separation distances and windrow dimensions assist in reducing the spread of fire to other windrows, which assist in reducing the amount of air emissions and waste water generated in the event of a fire.

Risk Assessment

Consequence: Major

Likelihood: Unlikely

Risk Rating: Medium

Regulatory Controls
Table 1.2.2 of condition 1.2.3 includes the occupier's proposed windrow dimensions and separation distance (clear ground) between green waste windrows, and the process requirements (maintaining a specified temperature range and moisture content) to assist in reducing the risk of fires.

Residual Risk
Consequence: Major
Likelihood: Rare
Risk Rating: Medium

Emission Description (Fugitive dust emissions)
Emission: Fugitive dust emissions from the loading/unloading of wastes, general vehicle movements, lift-off from stockpiles, and from mulching operations if moisture levels are too low.

Impact: Degradation of local air quality. Dust emissions blocking photosynthesis in the *Melaleuca huegeli – Melaleuca acerosa* shrublands Threatened Ecological Community (TEC) 190m north of the Premises. Nuisance impacts on the comfort and amenity of sensitive receptors. Health and wellbeing impacts on sensitive receptors located 375m from the Premises.

Since 2008, DWER and its former departments have not received a dust related complaint in regards to the premises operations. Based on Department records, two dust complaints received prior to 2008 were rectified by utilising dust suppression measures such as sprinklers and a water cart.

Controls: The application indicates that water reticulation has been installed around the northern, eastern and southern boundaries of Lot 115, extending into Lot 2. The water reticulation main is used to provide water for dust suppression, compost manufacturing and soil blending, bioremediation and to assist in the revegetation of the site.

The water reticulation main is fed by 2 on-site groundwater production bores with a combined bore capacity of approximately 120,000 litres/hour. The application notes the current capacity is sufficient to accommodate the water requirements for the site.

A previous management plan "Eclipse Resources Lot 180 Abercrombie Rd Resource Recovery Centre Management Plan April 2005" (2005 Management Plan) was provided to the Department and has been considered in this risk assessment for dust emissions. The dust emissions section of the 2005 Management Plan states that the site has a sprinkler system installed for dust suppression and that loads entering the site are wet down if required.

Risk Assessment
Consequence: Minor
Likelihood: Possible
Risk Rating: Medium

Regulatory Controls
Lot 115 is located within the *Environmental Protection (Kwinana) (Atmospheric Wastes) Policy 1999* (Kwinana EPP), which aims to provide ambient air quality standards and limits for the concentration of atmospheric wastes in the Kwinana Industrial area.

General dust provisions relating to ambient concentrations of total suspended particulates (TSP) are covered with the purpose of the Kwinana EPP to protect the 'beneficial uses' of the environment.

The prevailing wind direction for this site is towards east in the morning changing towards the south-west in the afternoon. It is noted that the closest sensitive receptors to this premises are located 375m and 750m south of the Premises. The closest sensitive ecosystem is the TEC 190m north of the Premises. None of these receptors are in the direction of the prevailing winds. The location of the receptors being away from the direction of the prevailing winds will assist in limiting impacts of dust emissions on the receptors however the following regulatory controls have been deemed appropriate by the Delegated Officer to further manage fugitive dust from the Premises.

Condition 1.2.5 (and Table 1.2.4) has been included on the licence to specify infrastructure and operational requirements related to dust suppression. Table 1.2.4 refers to the two onsite abstraction bores, reticulation main and sprinkler system at the Premises. The table also requires the equipment/infrastructure to be in good working order which assists in providing adequate dust control onsite. This condition and table reflects the dust abatement measures proposed in the 2005 Management Plan (as detailed above in the 'Emissions description' section) and licence application (24 March 2016).

Condition 1.2.6 (and Table 1.2.5) specifies management measures that are to be implemented to further mitigate fugitive dust emissions on stockpiles, unsealed roads and other activities to mitigate the generation of visible dust. Condition 1.2.6 requires an activity to cease where dust management measures have been implemented but have not prevented dust lift-off from impacting, or being likely to impact on, a sensitive receptor.

Condition L1.2.7 has been included to limit onsite stockpiles on the Premises to 7m or less above natural ground level which will further assist in reducing fugitive dust emissions.

Condition 1.2.8 has been included to specify that excavation or disturbance of previously filled waste is not authorised. The premises is classified as Possibly Contaminated – Investigation Required due to the presence of asbestos in previously landfill areas. Given the potential for asbestos having been previously filled at this premises, this condition prevents asbestos fibres from being released.

Residual risk
Consequence: Minor
Likelihood: Unlikely
Risk Rating: Medium

Emission Description (Leachate)

Information available on surface geology suggests that the Premises is comprised of Tamala Limestone and may be underlain by solution channels and cavities with some areas displaying karstic characteristics (McPherson and A. Jones, 2005 Geosciences Australia), indicative of a permeable geological profile. Groundwater has been identified at 11.5 to 20 mbgl (Perth Groundwater Atlas).

A review of groundwater monitoring results from between October 2011 to October 2014 which were presented in the *2014 Annual Groundwater Monitoring Report, Resource Recovery Centre, Abercrombie Road, Kwinana, WA* prepared by Aurora Environmental (January 2015) (2014 GWMR) was carried out by the Department. The events were undertaken as a requirement of licences L7766/2005/4 and L7766/2005/5 to complete annual groundwater monitoring. A summary of the groundwater data series is detailed below.

Regional groundwater contours indicate an inferred groundwater flow towards north-west while the local groundwater contours have an inferred groundwater flow towards to south-west, possibly due to the southern location of the site's abstraction bore as documented in the 2014 GWMR. The Spectacles wetland is located approximated 1.8km east of site and is considered to be up hydraulic of the Premises

and not in the direction of groundwater flow. Four bores (ARMB1, ARMB2, ARM4 now ARMB5 and ARMB3/ARMB6 now ARMB6A) were monitored during the groundwater monitoring events.

Bore ARMB1 is considered cross/up hydraulic gradient of the Premises however it is situated downgradient of Alcoa of Australia's Residue Drying Areas (RDA). It appears that groundwater in ARMB1 has not been impacted by the RDA's, which have alkaline properties, as groundwater data indicates a pH that is considered neutral (between 6 to 8) in this bore. For the purposes of the groundwater review, this bore has been considered as the control bore.

ARMB1 presented elevated levels of total nitrogen, chromium, copper and zinc when compared to the ANZECC & ARMCANZ (2000) Fresh Water criteria (FW criteria), as well as indicating the presence of dieldrin. All other bores indicated elevated levels of zinc compared to the FW criteria. ARMB2 and ARMB6A had consistently elevated levels of iron compared to both the FW criteria and the Department of Health Domestic non-potable groundwater use criteria (2014) (NPUG criteria). ARMB2 only displayed one event that had elevated iron compared to these two criteria. Iron in groundwater is common throughout the Swan Coastal Plain and may not be indicative of impacts from site activities.

Bores ARMB5 and ARMB6A had consistently elevated total nitrogen levels compared to the FW criteria however the results fluctuate from year to year and do not indicate whether there is a consistent increase or decline in total nitrogen levels across the data set. It cannot be determined from the existing data set if this is from the result of the site operations or from external activities occurring within the vicinity of the site.

Chromium and copper were elevated compared to the FW criteria in bores ARMB5 and ARMB6A which also had elevated levels of arsenic compared to both the FW and NPGU criteria. pH remained neutral across the site. Dieldrin was identified in bore ARMB6A however this may be a result of historical activities. Other than the presence of dieldrin, organochlorine pesticides were not detected in the results. Based on the 2014 data set, total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected in the bores.

Considering the distance to the Spectacles wetland and the fact it is up gradient of the site, the NPGU criteria are considered to be more relevant than the FW criteria for determining groundwater quality. The data set available indicated only slight elevations compared to the NPGU criteria however given the limited background data, the data set is inconclusive to determine if previous onsite activities have impacted on groundwater quality. The depth to groundwater and surface geology assist as natural controls to limit impacts to groundwater which can be examined through ongoing groundwater monitoring events.

Lot 2 is located within the *Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992* (PIHE EPP), which aims to protect the Estuary from further degradation by nutrient enrichment. The estuary itself is approximately 35km from the premises. The groundwater monitoring has limited data for total phosphorus (TP) however it suggests that TP is below the FW criteria.

*Emission: S*tormwater contaminated with leachate from composting operations and treatment of Acid Sulfate Soils (ASS) and Potential Acid Sulphate Soils (PASS). Stormwater contaminated with hydrocarbons and pesticides from soil bioremediation activities.

Pesticides typically accepted for treatment include:

- Dieldrin;
- Lindane;
- Aldrin;
- Chlordane;

- Dichlorodiphenyltrichloroethane;
- Metolachlor;
- 2,4-Dichlorophenoxyacetic acid; and
- 2,4,5-Trichlorophenoxyacetic acid.

Leachate generated from onsite activities infiltrating into groundwater and discharges into the PIHE EPP area.

Impact: Contamination of surrounding land, vegetation (including TEC area) and surface water drainage systems. Potential impacts on groundwater in the form of addition of nutrients, heavy metals, hydrocarbons, pesticides and suspended solids. It is noted that the nearest surface water bodies are the Spectacles Wetlands and the PIHE however these have not been considered as receptors for this assessment given that the Spectacles wetlands is located 1.8km up gradient of the premises and the PIHE is located 35km from the site, with any emissions to surface water considered rare.

Controls: Only green waste has been proposed as an input to the composting activity which is considered to have a lower emission risk. The proponent has advised that green waste is stored on a compacted limestone pad. The thickness and permeability of this pad has not been specified in the supporting documentation. The occupier has also not advised if leachate from these areas is directed to a storage pond however the supporting documentation refers to compost windrow stormwater collection ponds and greenwaste leachate being collected and stored at the premises.

The occupier has advised that ASS and PASS will be stockpiled and treated on a pad that has a minimum thickness of 300mm of crushed and compacted limestone which has a 300mm bund of the same materials as the base. This infrastructure is consistent with the treatment pad specifications in DER's Guideline: *Treatment and management of soil and water in acid sulfate soil landscapes* (June 2015) (DER's Guideline TMASS). The bund is 150mm high at the truck access point however the occupier has advised that this access point has drainage directed away from this location due to the fall of the pad.

Soils that contain contaminants that have a greater likelihood of leaching or an unable to be biodegraded to target treatment levels will be rejected for treatment. Bioremediation activities of hydrocarbon and pesticide contaminated soil are undertaken on two treatment cells that have been constructed with a base of 200mm clay and 150mm of crushed limestone and compacted to meet 1 x 10^{-9} m/s permeability. The cells are overlain by a 1.0mm high-density polyethylene (HDPE) liner and have been fully bunded with a 1% cross fall for drainage. The stormwater from these cells drain from a pipe to an HDPE lined stormwater basin which has been designed and constructed for a 1 in 5 year average recurrence interval (ARI) event. The bioremediation pads and stormwater basin were assessed as suitable infrastructure under works approval W4424/20081.

Risk Assessment
Consequence: Major
Likelihood: Possible
Risk Rating: High

Regulatory Controls
On 27 March 2017 Department Officers visit the Premises to determine the GPS coordinates of key pieces of infrastructure and to delineate the different waste activities on the Premises. Each area is defined by GPS coordinates in the definitions section of the licence and depicted on the Premises Map in Schedule 1 of the Licence. The GPS coordinates were determined by DER Officers based on advice from Eclispse staff on site on 27 March 2017 who identified to DER Officers the required extent of the waste storage areas and limestone hardstands.

Condition L1.2.1 has been included on the licence to limit the types and quantities of waste that can be accepted at the premises to those that have been assessed as suitable and can be sufficiently managed through the premises infrastructure and controls.

Condition L1.2.2 requires the occupier to remove any wastes from the Premises that are not authorised by condition 1.2.1. This condition assists in reducing the risk of stormwater becoming contaminated from the storage of non-conforming wastes.

Condition L1.2.3 specifies that wastes accepted onto the Premises may only be subject to the processes set out in Table 1.2.2 and in accordance with any process limits described in that Table. The process limits have been included to manage the activities to those that have been assessed through this decision document and have been considered to be necessary by the Delegated Officer to effectively regulate the composting process. The process requirements have been included to reduce the risk of leachate entering the environment and to reduce odour and dust emissions.

Table 1.2.3 (condition L1.2.4) has been included on the licence to specify the infrastructure for the storage and processing of wastes accepted at the site. This condition reflects the existing site infrastructure and controls. The greenwaste storage, mulching and composting areas have been proposed to be undertaken on a compacted limestone pad however the supporting documentation has not specified the thickness of the pad.

Table 1.2.3 also specifies that the pad for the ASS/PASS and green waste storage/processing areas has a minimum thickness of 300mm with a 300mm bund on all sides except for the truck drive over area. These requirements have been included to be consistent with the proposed ASS/PASS pad specifications and are also consistent with DWER's Guideline TMASS.

The requirement to direct all contaminated stormwater and leachate from these areas to a compacted limestone stormwater basin has also been included to reduce the possibility of contaminated stormwater runoff entering other waste storage areas, and to facilitate an area that allows for evaporation. Limited information has been provided with the application regarding stormwater/leachate management for the green waste storage and processing areas. Given the high risk associated with leachate emissions, Table 1.2.3 requires the stormwater pond to be constructed using 300 mm compacted limestone, and to maintain sufficient freeboard to prevent overflow. These thickness and material of the stormwater pond is consistent with the pad thickness for the ASS/PASS and greenwaste storage areas, and the freeboard requirement is consistent with the freeboard of the bioremediation stormwater basin.

The Delegated Officer has considered the geological profile, feedstock accepted onto site, distance to groundwater and the sites location within the PIHE EPP and considers that a permeability not more than 1×10^{-8} m/s is required for the that storage and treatment pads for green waste and ASS/PASS. The permeability of the ASS/PASS and greenwaste pads has not been provided with the application.

Given the depth to groundwater (minimum 11.5m bgl) and the surface geology being calcarenite limestone, the infrastructure requirements for these areas are anticipated to assist in preventing discharges of leachate into the environment. In the event that acidic leachate migrates through the ASS/PASS pad, it will be naturally treated through the surface limestone. This treatment process is likely to produce salts that have the potential to enter the groundwater. This can be monitored through groundwater sampling.

Previous groundwater data has identified the presence of salts, TN, dieldrin and some metals (arsenic, chromium, copper, iron and zinc) however the groundwater data series is inconclusive to determine if the premises activities have impacted on water quality, given the limited availability of background data.

The licence requires increased groundwater monitoring to determine the impacts of the premises' activities on groundwater quality. Improvement condition L3.1.1 (and Table 3.1.1 specifying requirements IC1 and IC2) requires the occupier to undertake permeability testing of the green waste and ASS/PASS pads to demonstrate hydraulic conductivity of 1×10^{-8} m/s and where this has not been met, a timeframe of proposed actions to be undertaken to meet this requirement. The requirement to undertake these improvements is pending the outcome of the additional groundwater monitoring to assess whether or not the existing hardstand areas provide sufficient permeabililty to mitigate potential impacts of leachate.

The PIHE EPP aims to limit phosphorus concentrations into the estuary system. Total phosphorus (TP) data is limited in the groundwater data series however what data is available suggests that TP is below the FW criteria. Based on the results of the groundwater monitoring and given the considerable distance to the estuary (approximately 35 km), the premises' activities are not considered likely to result in significant nutrient inputs to the Peel-Harvey catchment.

Table 1.2.3 also includes the requirement to maintain sufficient freeboard in the stormwater basin to reduce the risk of overtopping. This condition also requires the integrity of the containment infrastructure to be maintained so that the effectiveness of these controls is preserved. Any discharges of contaminated stormwater to the environment may be subject to the *Environmental Protection (Unauthorised Discharges) Regulations 2004.*

Given the high risk of leachate to groundwater and the presence of the TEC shrubland located downgradient of the site, the occupier is required under condition L2.4.1 (and Table 2.4.1) to undertake quarterly groundwater monitoring. This assists in determining if site activities are impacting on groundwater as well as providing a better data set depicting seasonal trends.

Residual Risk
Consequence: Major
Likelihood: Possible
Risk Rating: High

Emission Description (Odour)
Emission: Dry mulching, soil blending operations and greenwaste composting activities may give rise to odour. Odour may be generated from the pooling of leachate and from the compost windrows, especially if they become anaerobic or when windrows have increased levels of nitrogen. Storage and treatment of ASS has the potential to produce odour due to the generation of hydrogen sulphide during blending and treatment activities. Generation of odours from the storage and treatment of hydrocarbon and pesticide contaminated soils.

Impact: Potential for nuisance odour complaints. The Delegated Officer considers that outdoor uncovered composting facilities producing more than 35,000 tonnes per annum, that do not have a separation distance of 2500m, represent a higher odour risk to sensitive receptors.

The prevailing wind direction for this site is towards east in the morning changing towards the south-west in the afternoon. It is noted that the closest odour sensitive receptors to this premises are located 375m and 750m south of the Premises, which are not directly in the direction of the prevailing winds.

Odour impacts are anticipated to be localised. Based on Department records, no odour complaints have been received for this Premises when it was previously undertaking the proposed activities.

Controls: No information on odour control was provided with the application. An odour monitoring report has been provided however this does not specify any controls. Monthly odour monitoring has

been proposed however the information regarding how this will be undertaken has not been provided. The occupier has also proposed that if an offensive odour has been identified in a windrow, the occupier proposes to turn the windrow immediately for aeration purposes. Only green waste has been proposed for composting operations. No odorous feedstocks are proposed to be composted.

Risk Assessment
Consequence: Minor
Likelihood: Possible
Risk Rating: Medium

Regulatory Controls
Although the composting facility is less than 2,500m from sensitive receptors, the Delegated Officer considers that the following regulatory controls are adequate for managing odours from the premises given that the receptors are not within the prevailing wind direction of the site, no odorous feedstocks will be accepted for composting, and that no complaints were received regarding odours when the premises was previously operating.

Condition 1.2.1 limits authorised waste types accepted onsite and assists in restricting the acceptance of odorous wastes onto the site. Table 1.2.2 (condition 1.2.3) restricts composting operations to the use of green waste only, requires aerobic conditions to be maintained, and specifies an input nutrient balance (carbon: nitrogen ratio) and moisture content that the Delegated Officer considers appropriate to assist in reducing the generation of odours within windrows and is consistent with the controls specified for similar sites using similar feedstocks and processes. This condition assists in addressing the level of risk posed from odours on public amenity and wellbeing. Condition 4.2.2 has been included to ensure that records relating to C:N ratios are available on the CEO's request. This allows DWER to verify compliance with condition 1.2.3.

Table 1.2.2 also sets requirements for ASS/PASS to be stored and treated in accordance with the Department's ASS Treatment Guidelines. This incorporates requirements relating to the neutralisation of ASS/PASS, validation of treatment, and controls on the stockpiling of materials.

Residual Risk
Consequence: Minor
Likelihood: Unlikely
Risk Rating: Medium

Emission Description (Noise)
Emission: Unreasonable noise emissions from the loading/unloading of wastes, general vehicle movements (including reversing beepers), turning of composting, mulching and soil blending operations.

Impact: There is the potential that noise emissions may cause low level amenity impacts on sensitive noise receptors located 375 metres from the boundary. Any noise emissions are anticipated to be short-term and localised with reversible effects. Department records indicate that no noise related complaints were received when the proposed operations were previously undertaken on the premises.

Controls: The occupier's planning approval authorises operational hours to be between 0600 to 1800 Monday to Saturday however trucks are not authorised to leave the Premises prior to 0630. No specific noise controls have been provided with this licence application to avoid duplicating planning controls.

A previous management plan (April 2005) was provided to the Department and has been assessed to the extent that it applies to the current operations. The section for noise emissions states that the occupier "ensures the site operates in compliance with the *Environmental Protection (Noise) Regulations 1997."*

Risk Assessment
Consequence: Minor
Likelihood: Unlikely
Risk Rating: Medium

Regulatory Controls
No specific regulatory controls for noise emissions have been included on the licence. The Delegated Officer considers that the medium risk of noise emissions can sufficiently be managed by the occupier adhering to the hours of operation specified on the planning approval. Hours of operation have not been included as regulatory controls on the licence to avoid duplication with the planning approval.

The occupier is required to comply with the *Environmental Protection (Noise) Regulations 1997* at all times which provides an adequate method for regulating noise emissions from the Premises.

Residual risk
Consequence: Minor
Likelihood: Unlikely
Risk Rating: Medium

Appendix C – Fitness and Competence

When assessing and making a decision on whether to grant a works approval or licence the CEO or his delegates can have regard to the fitness and competency of the proposed works approval holder/licensee. An internal review of Eclipse Soils Pty Ltd (ESPL) was undertaken, based on a review of records held by the Department.

The Delegated Officer has identified that Eclipse Soils Pty Ltd has the same Directors as Eclipse Resources Pty Ltd and therefore the compliance history of Eclipse Resources Pty Ltd is relevant to consider in the assessment.

Previous operating history

The Licensee has experience in composting, soil blending and recycling. Below is a summary of the licensing history for Eclipse Resources Pty Ltd (ERPL) , which is a sister company of ESPL.

- Eclipse Resources Pty Ltd (ERPL) operated this premises (Abercrombie) pursuant to a licence (L7766/2001/1) granted under Part V of the EP Act for prescribed premises categories 62 (solid waste depot, later amended to category 61A Solid waste facility), 63 (class I inert landfill) and 67A (compost manufacturing and soil blending).
- ERPL operated the Wanneroo Road Resource Recovery Centre (WRRRC) at Lot 12 on Plan 6905 Wanneroo in Neerabup pursuant to two licences (L7388/1999/1 and L8315/2008/1) granted under Part V of the EP Act for prescribed premises categories 61A, 63 and 67A.
- ERPL also operated the Flynn Drive premises under a licence (L7103/1997/4 – occupied by Readymix Holdings Pty Ltd for first three versions) granted under Part V of the EP Act for prescribed premises categories 63, 64 (Class II or III putrescible landfill site) and 67A.

Compliance history check

A search of the Department's Industry Licensing System (ILS) and Incident Complaint Management System (ICMS) has been undertaken using links to other previously licensed prescribed premises who share Directors or links to Directors or the CEO of ESPL.

Based on Department records, it appears that no complaints were received in relation to either the Flynn Drive or WRRRC premises.

The Department has received complaints primarily relating to dust from and non-conforming waste acceptance at the ARRRC. A summary of the key findings and compliance matters that the Department consider relevant to the Application is provided below:

- Undertaking PASS treatment as identified by departmental staff during a site visit in June 2005, and expansion of operations at the ARRRC premises without authorisation which was also identified by departmental staff during a site visit in April 2007.
    - The licence was amended to authorise these activities to be undertaken and the Delegated Officer therefore considers that this matter has been resolved.

- Clearing of native vegetation without authorisation at the ARRRC premises as identified by departmental staff in September 2005 and November 2007.
    - Both of these matters were closed on the basis that there was insufficient evidence to proceed.
    - The licence prescribed premises is limited to areas that have already been cleared and the licence does not authorise any new clearing. The Delegated Officer considers these controls sufficient to prevent risk of any clearing at the Premises.

- A dust complaint was received from a member of the public in January 2006 which was substantiated by departmental officers. ERPL proposed to increase the use of sprinklers on the site.

- Failure to complete all required groundwater sampling for the ARRRC premises for the 2008/2009 reporting period.
    - A formal Letter of Warning was served on ERPL as a result of this non-compliance.
    - The licence requires groundwater sampling to be undertaken. This offence occurred in 2009, the Delegated Officer notes that more recent groundwater monitoring has been undertaken in accordance with the previous licence.

Landfill levy

- ERPL has operated the ARRRC premises since April 2002 and complied with the requirement to lodge returns and pay the landfill levy up to and including the return period of 1 April to 30 June 2008. From 1 July 2008, ERPL had ceased lodging quarterly survey, returns or paying the landfill levy for each return period since for the whole duration of this licence, which is a total of 27 return periods.

- ERPL operated the WRRRC premises from October 2000 to April 2005 (L7388) and complied with the requirement to lodge returns and pay the landfill levy for this duration.

- The WRRRC premises recommenced operations from February 2009 to August 2014. During this time ERPL had ceased lodging quarterly survey, returns or paying the landfill levy for each return period since for the whole duration of this licence, which is a total of 22 return periods.

- ERPL operated the Flynn Drive premises since 1 July 2000 to 30 June 2008 and complied with the requirement to lodge returns and pay the landfill levy up to and including the return period of 1 April to 30 June 2008. From 1 July 2008 ERPL , had ceased lodging quarterly survey, returns or paying the landfill levy for each return period since for the duration of when inert material ceased to be accepted onsite (approximately in mid-June 2009), which is a total of 4 return periods.

Summary of the landfill levy offences:

- Failing to lodge a quarterly survey report with the CEO of the Department is an offence under regulation 10(6) of the *Waste Avoidance and Resource Recovery Regulations 2008.*
- Regulation 33 of the *Environmental Protection Regulations 1987* (EP Regulations) imposes a condition on licensed landfills that the licensee is to pay any levy imposed under the *Environmental Protection (Landfill) Levy Act 1998* in respect of waste to which this Part applies that is received at those premises; and, any levy imposed under the *Waste Avoidance and Resources Recovery Levy Act 2007* in respect of which the *Waste Avoidance and Resource Recovery Regulations 2008* Part 3 applies that is received at those premises.

- Failure to comply with licence conditions is an offence under section 58(1) of the EP Act.

- Failing to make and lodge a levy return with the CEO of the Department is an offence under regulation 18(2) of the *Waste Avoidance and Resource Recovery Regulations 2008.*

Summary of legal proceedings:

- Eclipse Resources commenced proceedings in the Supreme Court in 2009 seeking, amongst other remedies, a declaration to the effect that it was not required to pay the levy imposed under the *WARR Levy Act* in respect of the activities carried out on the Abercrombie Road Site (CIV 1364-09).

- The Minister for Environment issued a counterclaim in the same proceedings, and commenced separate proceedings in 2013 (CIV 2385-13), seeking to recover unpaid levy

from Eclipse in respect of material filled at the Abercrombie Road Site between 1 July 2008 and 31 December 2011.

- On 9 October 2014 Eclipse commenced further proceedings in the Supreme Court (CIV 2416-14) seeking further declarations to the effect that it is not liable to pay levy in respect of the activities carried out on the Abercrombie Road Site, and in particular in respect of material received and filled at the Site between 1 January 2012 and 30 September 2014.
- The court proceedings relating to the non-payment of the levy by Eclipse Resources were determined by Justice Beech in *Eclipse Resources Pty Ltd v State of Western Australia [No.4] [2016] WASC 62* that Eclipse's activities were subject to the landfill levy.

The potential for similar non-compliances/complaints from the proposed premises has been assessed. The Delegated Officer has given consideration to the fact that the majority of the non-compliances are in regards to the landfill levy. A landfill category has not been sought by the occupier and the occupier has confirmed that no landfilling will be undertaken onsite.

The majority of the compliance and history of legal proceedings is not relevant to the occupier's ability to effectively operate the proposed operations, nor does it affect the occupier's ability to comply with the requirements of this licence. The non-compliances related to groundwater monitoring and undertaken prescribed activities without authorisation can be sufficiently regulated and monitored through regulatory controls on the licence.

On this basis, the Delegated Officer has determined that the licence will not be refused due to the occupier's compliance history.

Appendix D – Premises Map

The Premises is shown in the map below. The pink line depicts the Premises boundary.

Appendix E – Comments re initial draft licence

No	Page and paragraph	Issue	Comment
1	3 of 33, 1st para under "Premises description and Licence summary	Proposed granting of a licence over only part of Lots 115 & 2	1. Eclipse Soils requires the whole site for the manufacture of blended soils and mulches, and for fill for offsite sale. 2. Eclipse Soils also requires the whole site for the storage and stockpiling of materials received 3. Eclipse Soils applied for a licence for the whole of Lots 115 & 2 for these purposes
2	4 of 33, 3rd para	"The main emissions arising from the proposed activities include: …"	Should read "The main **potential** emissions arising from the proposed activities include: …"
3	8 of 33, Table 1.2.2, cell for Green waste under Process requirements	(a) "an input nutrient balance (carbon: nitrogen ratio) of 25:1 to 35:1 is to be maintained (b) "All mulched green waste shall be stored in windrows no larger than: • 3 metres high; • 5 metres wide; and • Have 4 metres of clear ground between windrows"	The rationale for this proposed condition in terms of environmental protection is sought Eclipse Soils will propose alternate wording based on operational factors
4	10 of 33, cell for 3 under Column 2	"Reticulation sprinklers must be capable of wetting down the entire surface of all stockpiles on the premises simultaneously or within a period of thirty minutes"	Some stockpiles such as clay and limestone track material set hard and do not require wetting down, nor do stockpiles of tree trunks and stumps. A better approach would be performance based wording along these lines:

			"Reticulation sprinklers must be capable of ensuring that any fugitive dust from stockpiles of materials is confined to the premises such that unacceptable levels are not emitted offsite"
5	10 of 33, 1.2.6 (b)	"The licensee must ensure that: (b) all stockpiles; Are maintained in a damp state during operations at all times..."	See comment 4 (above)
6	10 of 33, 1.2.8	"The Licensee shall ensure that all stockpiles at the premises are limited to 7m or less"	Eclipse Soils holds material in stockpiles at the bottom of the quarry void over 20m deep. A 7m height limit under these circumstances is irrelevant to achieving what is presumed to be the desired objective: dust management. The solution proposed in 4 (above) is sufficient to manage this low risk matter.
7	10 of 33, 1.2.9	No activities to emit noise beyond the premises boundary outside 7am – 6pm Monday - Saturday	There are no residences within 1.5km of the site. The Department of Agriculture & Food's manager's house on the adjacent Medina Research Station has been vacant for 4-5 years and there are no known plans to occupy it. In fact he land has been identified in the government's list for asset sale. Many of Eclipse Soils customers, including those under contract to deliver Government works, have their own site restrictions in built up areas (CBD, residential and commercial) that require them to operate outside normal business hours. Eclipse Soils needs to be able to receive materials outside the proposed hours. Eclipse Soils will negotiate reasonable operating times with the City of Kwinana because

			Eclipse Soils understands that the Environmental Protection Act 1986 does not regulate vehicle noise (see Regulation 3 of the *Environmental Protection (Noise) Regulations 1997*.
8	10 of 33 Table 2.2.1	Waste Inputs; Green waste, Inert waste Type 1, Clean fill, Peat and acid sulfate soils; Frequency	Monitoring volumes of "each load arriving at the premises" in m^3 is ambiguous in meaning If it is intended that the agreed volumes of each load received is recorded then that is reasonable Eclipse Soils seeks clarification of this proposed requirement.
9	10 of 33 Table 2.2.1	Other outputs; Frequency	See 8 (above).
10	11 of 33, Table 2.3.1 under "Process description" Composting	Carbon: nitrogen ratio to be monitored weekly	The rationale for this proposed condition in terms of environmental protection is sought
11	11 of 33 Table 2.4.1	Quarterly monitoring of groundwater quality	Eclipse Soils considers that as the site has been in operation since 2002 and annual water quality monitoring since then has not detected any environmental problems. Eclipse Soils recommends that annual water quality monitoring and reporting is appropriate and adequate because there will be reduced, not increased activities on the site.
12	12 of 33 Table 3.1.1	Hydraulic conductivity of the composting (IC1) and ASS/PASS pads (IC2) is required to meet 1 X 10^{-8} m/s	There is no issue with storm water basins achieving this permeability, but it is considered unnecessary for composting and ASS/PASS purposes because: 1. Eclipse Soils only composts plant materials. 2. No bio-solids or animal manures are involved. 3. Nitrogen is applied in small quantities when needed because it is a significant cost in composting

			4. Aerobic composting of plant materials occurs naturally in forests 5. There is no evidence of a groundwater problem since operations commenced in 2002 6. In the case of ASS/PASS the site is underlain by limestone 2m above the groundwater table. It is recommended that this figure be changed to 1 X 10^{-6} m/s which is achievable with a compacted limestone compacted pad. 1 X 10^{-8} would require clay which may become untrafficable when water is applied or it rains, or asphalt/concrete which would be commercially unviable.
13	12 of 33 Table 3.1.1	IC3. Install and maintain suitable fencing around the whole of the Premises boundary	This condition is unrealistic unless the Premises boundary is the same as the site boundary. See comment 1. (above). (In any event GPS coordinates would be sufficient).
14	16 of 33 Map of monitoring bores	ARMB6 is an "extraction bore"	This is incorrect. Only ARMB3 and ARMB 4 are extraction bores.
15	Decision document 4 of 31 Last para	"The main emissions arising from the proposed activities include:..."	Should read "The main **potential** emissions arising from the proposed activities include:..." See also comment 2 (above).
16	Decision document 8 of 31 Decision table L3..1.1 (IC3)	See comments 1 and 13 (above)	See comments 1 and 13 (above)
17	Decision document 9 of 31 Decision table L3.1.1 (IC3) continued	See comments 1 and 13 (above)	See comments 1 and 13 (above)
18	Decision document 12 of 31 Decision table	"Monthly odour monitoring has been proposed..."	Eclipse Soils has no recollection of making this proposal.

	L1.2.3 (Table 1.2.2)		
19	Decision document 14 of 31 Decision table L1.2.9	Restricted operating hours	See comment 7 (above)
20	Decision document 15 of 31 Decision table L2.1.2	Quarterly groundwater quality monitoring	See comment 11 (above)
21	Decision document 16 & 17 of 31 Decision table L2.4.1	Quarterly groundwater quality monitoring	See comment 11 (above)
22	Decision document 18 of 31 Decision table L3.1.1	IC1 & IC2 IC3	See comment 12 (above) See comment 1 & 13 (above)
23	Decision document 26 of 31 Para 7	Hydraulic conductivity of the composting (IC1) and ASS/PASS pads (IC2) is required to meet 1 X 10^{-8} m/s	See comment 12 (above)
24	Decision document 28 of 31	Compliance history check "DER has received complaints primarily relating to dust from and non-conforming waste acceptance at the ARRRC"	This is a general statement. Eclipse Resources has received no complaints from operating at this site. If the existence of complaints is to be mentioned, then relevant details should be given including: (a) Month and year of complaint received by DER (b) Public or regulator's complainant (c) Nature of complaint (d) Comment as to whether or not it was satisfactorily resolved by Eclipse Resources

Appendix F – Draft Licence comments

Summary of comments received on original draft licence documents		
Occupier's comment reference number	**Issue**	**How comments were taken into consideration**
1	Restricting prescribed premises boundary to part of Lots 2 and 115.	The Delegated Officer considered the risk posed by expanding the prescribed premises boundary to the whole of Lots 2 and 115 and has authorised the whole of these lots to be included in the prescribed premises boundary. Additional correspondence from the occupier dated 1 February 2017 stated that a pad of crushed limestone had been constructed in the fill area. The dimensions of this pad, including thickness of limestone and permeability, have not been provided. In the absence of this information, the Delegated Officer has determined that the former landfill area has not been demonstrated to have the infrastructure required to mitigate risks to groundwater from the storage and processing of wastes that will be authorised to be received and processed at the Premises (see conditions 1.2.1, 1.2.3 and 1.2.4), with the exception of Clean Fill. As a result the Delegated Officer considers it appropriate to only authorise the storage of clean fill in the north-eastern portion of the Premises given the high risk of leachate to the receiving environment. Should Eclipse consider they can demonstrate the suitability of infrastructure in this area to mitigate risks to groundwater from other wastes they may wish to consider submitting a licence amendment application for DER to consider. GPS coordinates of the Clean Fill Storage Area were determined on advice from Eclipse staff during a site visit on 27 March 2017. Table 1.2.2 of condition 1.2.3, Table 1.2.3 of condition 1.2.4 and the Premises Map in Schedule 1 have been amended to reflect this. References to 'part lots' have also been removed from both the licence and decision document. Conditions 1.2.10 and 1.2.11 have been included on the licence to also reflect the storage of Clean Fill and to regulate stockpile management within the former fill area.

2	Change of wording in licence 'Premises description and Licence summary' regarding emissions.	The Delegated Officer amended this summary to include reference to 'potential' emissions as requested by the occupier.
3	Seeking clarification for green waste process requirements in Table 1.2.2 for: (a) carbon: nitrogen ratio; and (b) dimensions of windrows.	(a) The ratios in Table 1.2.2 have been set in accordance with those for similar sites using similar feedstocks and processes. The Delegated Office considers this ratio to be appropriate for odour management within stockpiles as an increase in nitrogen may result in elevated odour emissions. This condition is consistent with DER's Guidance Statement: *Setting Conditions* (October 2015) to assist in addressing the risk that odour emissions pose to amenity values and public health. The decision document has been updated to provide additional clarification. (b) Dimensions of windrows have been included on the licence are as specified by the occupier in section 2.2.3 of the document *Eclipse Soils Quality Control Plan* (May 2016). The Delegated Officer has considered that these separation distances assist in fire prevention. The decision document has been updated to specifically address fire risk as it relates to windrow management and windrow dimensions as proposed by the occupier. This condition is consistent with DER's Guidance Statement: *Risk Assessments* (November 2016) where DWER will set conditions reflecting appropriate applicant controls when applicant controls have been relied upon in the risk assessment. If alternative windrow dimensions are required, the occupier may submit a licence amendment application which will be assessed by DWER.
4	Proposed change to wording of Table 1.2.4 for reticulation sprinklers	The operational details in for reticulated sprinklers in Table 1.2.4 were reworded to more accurately reflect the intent to mitigate dust from stockpiles.
5	Proposed change to the requirement for all stockpiles to be maintained in a damp state.	Condition 1.2.6 was updated to specify fugitive dust management requirements, which includes proactively suppressing dust when visible dust lift-off is identified, or anticipated, managing vehicle speeds to reduce dust, and cessation of activities when dust management measures fail.
6	Stockpile height	Condition 1.2.8 was updated to specify that all stockpiles on the Premises outside of the Clean Fill Storage Area are limited to a maximum height of 7m above natural ground level. Stockpiles within the Clean

		Fill Storage Area are limited to natural ground level (the embankments surrounding the clean fill area) by condition 1.2.211 to mitigate risks associated with dust emissions.
7	Restriction of operating hours	Upon review of the risk assessment, the Delegated Officer considered that the medium risk of low-level impacts to amenities can sufficiently be addressed by the occupier adhering to the hours of operation specified in the planning approval. Condition 1.2.9 was removed from the licence to avoid duplication of planning requirements. The occupier is required to comply with the *Environmental Protection (Noise) Regulations 1997* at all times. The decision document has been updated to reflect this change.
8	Table 2.2.1, monitoring of inputs and outputs.	Table 1.2.2 was reworded to 'Monitoring and recording of inputs and outputs'. The intent of this condition is to require the volume of each load being received at the premises, to be recorded. This condition also requires the volume of each load leaving or rejected from the Premises to be recorded. The 'Monitoring of inputs and outputs' section of the decision document was amended to reflect this.
9	As per item number 8 above.	Please see comments above for item number 8.
10	Table 2.3.1, monitoring of the carbon: nitrogen ratio	As per the Delegated Officer's comments for item number 3(a) above, the carbon: nitrogen ratio specified in the licence assists in reducing unreasonable odour emissions from windrows. The requirement to monitor this ratio on a weekly basis was removed from the licence on the basis that the occupier may undertake internal processes/monitoring for meeting compliance with maintaining the carbon: nitrogen ratio specified in Table 2.3.1.
11	Table 2.4.1, frequency of groundwater monitoring	As detailed in Appendix B 'Emission description (Leachate)' of the decision document, a review of historical groundwater monitoring undertaken at the Premises was undertaken by DER officers and it was identified that the data set was inconclusive to determine if previous onsite activities had impacted on the groundwater quality. The risk assessment identified that leachate poses a high risk to the environment and that quarterly monitoring was required to provide a more accurate data set depicting seasonal trends. No changes were made to Table 2.4.1 or the decision document in regards to groundwater monitoring frequency.

		If the quarterly groundwater monitoring demonstrates that site activities are not impacting on the groundwater, the frequency of monitoring may be reviewed in the future.
12	Permeability of hardstands: IC1 and IC2 of Table 3.1.1.	As specified in Appendix B under 'Emission Description (Leachate)', the Delegated Officer did a risk-based assessment of leachate emissions to groundwater and identified a high risk level of leachate on the receiving environment which is located within the *Environmental Protection (Peel Inlet-Harvey Estuary) Policy 1992* area. As a result of the high risk, the Delegated Officer considered that a hydraulic conductivity of not less than 1 x 10^{-8} m/s is required for the composting and ASS/PASS treatment pads to assist in mitigating the high risk of leachate emissions. This section of the decision document was expanded to provide further clarity for this limit.
13	IC3 of Table 3.1.1: requirement to install and maintain fencing for premises boundary.	In accordance with the Delegated Officer's comments for item number 1, IC3 of Table 3.1.1 remained on the licence to assist in preventing activities being undertaken outside of the prescribed premises boundary however this now includes the whole of Lots 2 and 115.
14	Clarifying that bore ARMB6 is not an extraction bore.	The text provided with the 'Map of monitoring bore locations' in Schedule 1 of the licence was updated to reflect the occupier's comment that bore ARMB6 is not an extraction bore. ARMB6A replaces bore ARMB6.
15	Change of wording in decision document 'Executive summary of proposal and assessment' regarding emissions	The Delegated Officer amended this summary to include reference to 'potential' emissions as requested by the occupier.
16	Prescribed premises boundary in the 'Decision Table' and requirement to install and maintain fencing.	Please see comments from item numbers 1 and 13.
17	As per item number 16 above	Please see comments from item numbers 1 and 13.
18	Seeking clarification on when the occupier proposed monthly odour monitoring.	Section 2.3.5: Odour monitoring (Page 7) of the document *Eclipse Soils Quality Control Plan* (May 2016) states "Odour monitoring should be conducted at least once per month to ensure the composting of materials are not omitting an offensive odour… if an

		offensive odour is detected, the source windrow should be turned immediately." As the occupier did not propose any changes to this part of the decision document, this section was not been amended.
19	Restriction operating hours	Please see comments above for item number 7.
20	Frequency of groundwater monitoring in the 'Decision Table'.	Please see comments above for item number 11.
21	As above for item number 20.	Please see comments above for item number 11.
22	Improvement conditions IC1 and IC2 of Table 3.1.1 regarding hydraulic conductivity and improvement condition IC3 regarding fencing requirements for premises boundary, as discussed in the decision document.	Please see comments above for item numbers 1 (prescribed premises boundary) and 12 (hydraulic conductivity).
23	As per item number 22 above for IC1 and IC2 in decision document	Please see comments above for item number 12.
24	Appendix C of decision document 'compliance history check' regarding dust complaints received by DER.	This section will be expanded to include further information on dust complaints as requested by the occupier.

Appendix G – Appeal determination

Summary of appeal grounds and determination		
Appeal ground	**Issue**	**DWER amendments to address Appeals convenor advice**
1	Delineation of site into storage and processing areas	Relates to conditions 1.1, 1.2.3, 1.2.4 and Schedule 1. - Requirement of clean fill to be stored on a limestone pad is removed; and - Current delineated green waste and PASS/ASS areas remain, however flexibility has been added so that both areas can be utilised for these materials interchangeably. - Schedule 1 maps amended to remove reference to 'Clean Fill Storage Area'.
2	Waste acceptance	Relates to condition 1.2.1 - Amended wording of Table 1.2.1 to include hydrocarbon contaminated soil.
3	Green waste C:N criteria	Relates to condition 1.2.3 - Amended C:N ratio to allow for higher C:N ratio for ligneous/coarse material; - Amended wording to remove the limitation of green waste to be 'maintained' at a specific C:N ratio, and replaced this with to be 'achieved'.
4	Demonstration of permeability of storage processing pads	Relates to condition 3.1.1 and Improvement Conditions IC1 and IC2 of the original licence. - Improvement Conditions IC1 and IC2 have been amended to provide for additional time for their completion. This will allow for the review of additional groundwater monitoring results, prior to the requirements to complete these conditions being made.
5	Cessation of activities due to dust	Relates to condition 1.2.6, Table 1.2.5 - Table 1.2.5 'Cessation of activities' amended so that cessation only applies where there is, or is likely to be, a dust impact to a nearby sensitive receptor.
6	Dust suppression, requirement to keep all materials damp	Relates to Condition 1.2.7 and 1.2.6 of the original licence. - Condition 1.2.7 removed. - Condition 1.2.6, Table 1.2.5 amended to allow for water sprays to be operated to manage dust emissions.

7	Waste for burial	Relates to Condition 1.2.9 of the original licence. - Condition 1.2.9 removed.
8	Asbestos risk from activities within the former landfill area	Relates to Condition 1.2.10 of the original licence (now Condition 1.2.8) - Nil. Ground of appeal dismissed.
9	Clean fill stockpile restrictions	Relates to Condition 1.2.11 and 1.2.8 of the original licence. - Condition 1.2.11 removed. - Condition 1.2.8 (now 1.2.7) re-worded to address all stockpiles on the premises.
10	Recording of 'outputs' leaving the premises	Relates to Condition 2.2.1. - Nil. Ground of appeal dismissed.
11	Increased groundwater monitoring	Relates to Condition 2.4.1, Table 2.4.1 - Nil. Ground of appeal dismissed.
12	Volumetric surveys not required.	Relates to Condition 2.5.1 of the original licence. - Condition 2.5.1 removed.
13	Fencing boundary not required.	Relates to Condition 3.1.1, Improvement Condition IC3 of the original licence. - As the premises' boundary is already fenced, IC3 of Condition 3.1.1 has been removed.
14	Removal of waste from clean waste areas	Relates to Condition 3.1.1, Improvement Condition 4 on the previous licence (now Improvement Condition 1) - Nil. Ground of appeal dismissed.
15	Location/end use of ASS/PASS reporting	Relates to Condition 4.1.3(b) of the original licence. - Condition 4.1.3(b) removed.

Appendix H – May 2019 Licence amendment

The following guidance statements have informed the decision making on this amendment*:*

- *Guidance Statement: Regulatory Principles (July 2015)*
- *Guidance Statement: Setting Conditions (October 2015)*
- *Guidance Statement: Decision Making (February 2017)*
- *Guidance Statement: Risk Assessment (February 2017)*

It should be noted that risk ratings for this amendment may be different to the original assessment due to the Department's new risk assessment process implemented through the above documents.

Amendment description

In February 2018 and March 2018, Eclipse Soils submitted Licence amendment applications (DWER References CEO231/18 and CEO266/18) to increase the premises throughput, and also to include the acceptance of Class IV hydrocarbon/pesticide contaminated soils onto the premises and material meeting the former Health Investigation Levels (HIL-F) criteria for commercial/industrial premises as published in the guideline titled *Assessment levels for soils, sediment and water: Contaminated Sites Management Series* (Department of Environment and Conservation, February 2010) [now superseded].

As the licence was under appeal at that time, the amendment applications were placed on hold pending the outcome of the appeal (Appeal 13 of 2017). In addition, further information was required from Eclipse Soils in order for DWER to undertake an assessment of the proposed amendments. Following the determination of the appeal, DWER amended the licence in November 2018.

In February and March 2019 Eclipse provided additional information to support the amendment applications and as such the assessment process resumed.

Table H.1 below outlines the proposed changes to the Licence

Table H.1: Proposed design or throughput capacity changes

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
61A	100,000 tonnes per year	200,000 tonnes per year, inclusive of: - 1,000 tonnes per year of Class IV hydrocarbon and pesticide contaminated soils[1]; and - 50,000 tonnes per year of Class III hydrocarbon and pesticide contaminated soils[1]; and - 20,000 tonnes per year of Class I	The Licence holder seeks to increase the Cat 61A throughput to 200,000. The amendment also includes the addition of material meeting Class IV contaminant thresholds for bioremediation, and Class I contaminated soil for storage, blending and offsite reuse.

Category	Current design capacity	Proposed design capacity	Description of proposed amendment
		contaminated soils[1,2] - 100,000 tonnes per year of ASS/PASS materials[1]	

Note 1: sub-limits to be imposed on waste acceptance conditions of the Licence
Note 2: : Eclipse are seeking authorisation to accept soil materials that meet the former Health Investigation Levels (HIL-F) criteria for Commercial/industrial premises as published in the guideline titled Assessment levels for soils, sediment and water: Contaminated Sites Management Series (Department of Environment and Conservation, February 2010) [now superseded). For the purposes of waste acceptance to be specified in the licence (Condition 1.2.1), DWER will limit the acceptance of material to soils that meet the definition of the 'Class I contaminated solid waste' (refer to Table 3 and 4 of the Landfill waste classification and waste definitions (April 2018)) [LWCWD]. Many of the contaminant criteria for metals and hydrocarbons as listed in Table 4 of the LWCWD are based on HIL-F criteria for commercial/industrial land.

Further detail on the proposed amendments is provided below:

Increase in combined waste throughput (annual):
Eclipse Soils propose to increase the premises throughput for Category 61A from 100,000 tonnes per year, to 200,000 tonnes per year. This increase is to allow for greater raw material inputs to be received on the premises to assist in maintaining production demands for their recycled fill and soil products.

Although the throughput for the premises' Category 61A activities will potentially double, the existing premises' plant and equipment will be utilised to process the material and no additional works or plant/infrastructure is required.

With regards to the acceptance of ASS/PASS material, Eclipse Soils have confirmed that they will limit acceptance to 100,000 t/pa, which is consistent with the existing waste acceptance conditions on the Licence. This equates to the highest volume which Eclipse Soils can currently accept, if ASS/PASS was the sole waste type received at the Premises, and which was previously assessed as acceptable. This is considered appropriate given the further groundwater investigations and potential improvements to related hardstand areas – refer to Condition 3.1.1.

A review of DWER's historic records does not provide for any odour or noise complaints from the premises in regards to current or past operating conditions. It is also noted that the nearest residential area is approximately 750m from the southernmost premises boundary. Therefore, whilst the potential for noise and odour emissions is increased with the increase to the premises throughput, the assessed risk for odour and noise emissions is considered to be medium risk.

Addition of Class IV contaminated soil material within approved waste acceptance criteria:
Eclipse Soils are seeking to add Class IV contaminated soils into the licence waste acceptance criteria, to allow for bioremediation of this material within the existing bioremediation cells. The bioremediation cells at Eclipse Soils have been in operation for approximately 10 years, treating up to 50,000 tonnes per year of hydrocarbon and pesticide contaminated soils. The amendment proposal is to accept up to 1,000 tonnes per year of Class IV contaminated soils affected by hydrocarbons or pesticides. The material is likely to be sourced from fuel truck rollovers, old service station remediation works or sites impacted by transformer oil.

Prior to acceptance the Class IV contaminated soil will be assessed to determine its suitability for bioremediation, with material not suitable for bioremediation not accepted at the site. Material that is considered suitable will be accepted and placed within the premises' existing bioremediation cells and processed under Eclipse Soils' *Management Plan for Bioremediation and Remediation of Hydrocarbon and Pesticide Containing Materials 2018* (Bioremediation Management Plan). This includes screening, material preparation and characterisation and treatment (bioremediation). Following bioremediation,

material is either used to generate blended soil products, or a soil product that meets the criteria for uncontaminated fill off site.

Odour and leachate are the main potential emissions of concern from this activity on the premises. While the material has the potential to generate additional odour on the premises due to the high hydrocarbon and pesticide content, it is noted that the volume proposed to be accepted (1,000 tonnes per year) is a very small percentage (~2%) of the premises' existing bioremediation material. In addition, the nearest sensitive receptor (residence), in Orelia, is approximately 1.5km south of the bioremediation area, and cross-gradient from the prevailing annual wind direction. To date, DWER has not received any complaints from the nearby residential area of Orelia related to odours from the composting or bioremediation activities being undertaken. Therefore, the potential for odour emissions is likely to be low and any increase to odour emissions can be managed and mitigated within the existing Bioremediation Management Plan to prevent offsite impacts.

There is the potential for leachate to be generated from the acceptance of Class IV hydrocarbon and pesticide contaminated soils at the premises. In this regard, the material proposed to be received will be received and bioremediated within the premises existing bioremediation cells. These cells have been constructed with a 350mm thick clay and limestone base, and are lined and bunded with a 1mm HDPE liner (Refer to Works Approval W4424/2018/1). Stormwater from the bioremediation pads is drained into two lined stormwater basins for evaporation. Existing licence conditions contain infrastructure requirements for the Bioremediation Area and the stormwater basins to ensure that leachate is collected and contained from the bioremediation process. These existing conditions are considered suitable to manage and mitigate leachate generated from the addition of this Class IV material.

Acceptance of treatable soil materials meeting Health Investigation Level (HIL- F) criteria:
Eclipse Soils propose to accept treatable materials meeting HIL-F industrial/commercial landuse criteria as previously published in the guideline titled *Assessment levels for soils, sediment and water: Contaminated Sites Management Series* (Department of Environment and Conservation, February 2010) [now superseded].

The proposal is to receive, store and treat this material within the same processing areas as is currently undertaken for Clean Fill on the premises – see Figure 1 below. The product is intended to be utilised for blending prior to reuse or resale offsite. The material is proposed to be received from brownfields developments and/or land development sites, with an estimated quantity of 10,000m^3 (20,000 tonnes) per year.

For the purposes of waste acceptance to be specified in the licence (Condition 1.2.1), DWER will limit the acceptance of related material to soils that meet the definition of the 'Class I contaminated solid waste' (refer to Table 3 and 4 of the *Landfill waste classification and waste definitions* (April 2018)) [LWCWD]. Many of the contaminant criteria (not inclusive) for metals and hydrocarbons as listed in Table 4 of the LWCWD are based on the former HIL-F criteria for commercial/industrial land (i.e. Class I = NEPM HIL-F)

Screening of this material is proposed to be undertaken to remove large pieces not suitable for blending. There is the potential for dust emissions to occur from this activity. Since 2006 DWER has received only one dust complaint regarding activities at this premises. On this occasion the activities were related to the extractive industry operations being undertaken by WA Limestone at the site. While the processing of this material has the potential to result in dust emissions, it is noted that volume is small (max. 10% of the total Cat 61A volume, equating to 20,000 t/pa) and the nearest sensitive receptor is approx. 750m from the premises' southern boundary. Any potential dust emissions from this activity are considered to be suitably managed under existing licence conditions for fugitive dust emissions (e.g. dust suppression via spinklers/water, stockpile heights and cessation of activities where these will impact sensitive receptors).

As depicted in Figure 1, depth to groundwater varies across the proposed storage and processing

areas. The purple shaded area depicts the base of the pit area which is situated adjacent the former landfill area (depicted by the yellow line) to the south and east, and which comprises an area with the smallest separation distance to groundwater being 3.5-4m below surface level.

Eclipse have indicated that they may not necessarily use all the proposed areas for processing or stockpiling clean fill and/or Class I soils, however, they would like to retain flexibility to avoid any possible space constraints with varying production and receival demands.

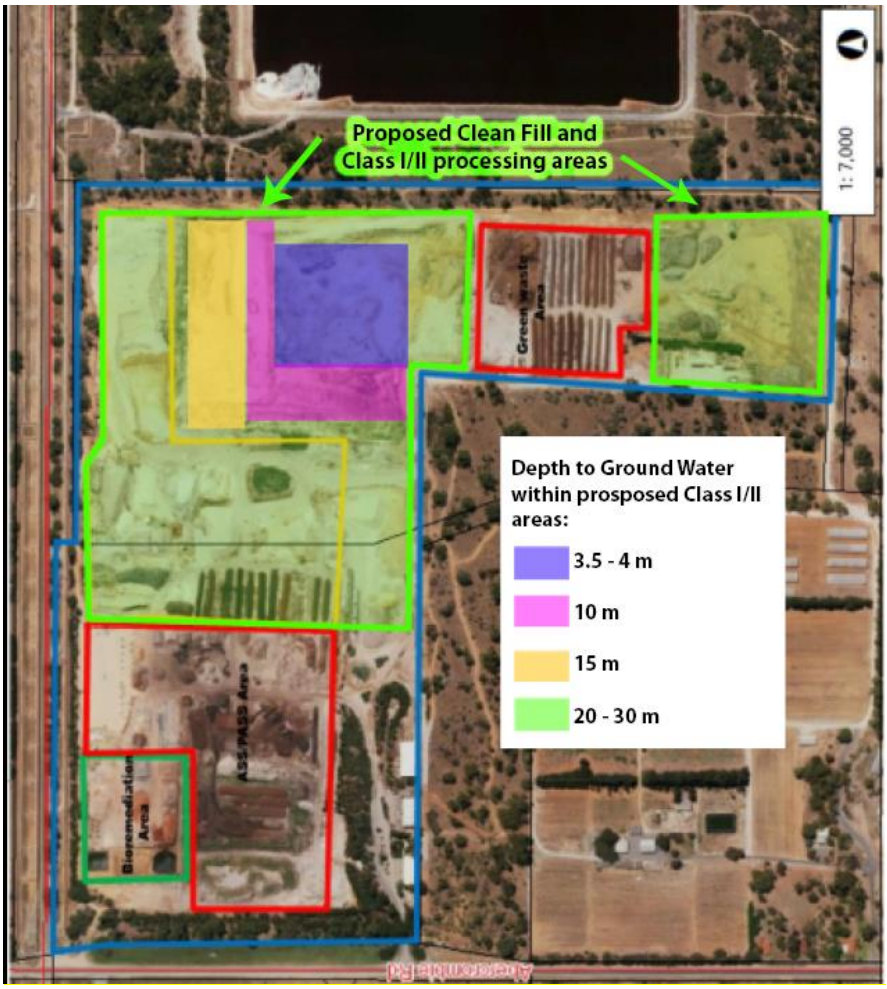

Figure 1: proposed processing areas for clean fill and class I contaminated soils.

Key findings:
The Delegated Officer notes that the contaminated sites guidelines referred to in the Application (DEC, February 2010) was updated/replaced in 2014 with the guideline titled *Assessment and management of contaminated sites – Contaminated sites guidelines* (Department of Environment Regulation, December 2014). The updated guideline takes into consideration revisions to the national site assessment framework provided in the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) (amended April 2013).

Schedule B1 of the NEPM is comprised of guidelines on investigation levels for soil and groundwater. HILs have been updated as part of this revision, as has the nomenclature used for HIL criteria for commercial/industrial land use settings, and is now referred to as 'HIL D'.

Notwithstanding the revised NEPM, DWER will limit the acceptance of related material to soils that

meet the definition of the 'Class I contaminated solid waste' (refer to Table 3 and 4 of the LWCWD). Many of the contaminant criteria (not inclusive) for metals and hydrocarbons as listed in Table 4 of the LWCWD are based on the former HIL-F criteria for commercial/industrial land (Class I = former NEPM HIL-F.

DWER initiated amendments:

Condition 1.2.2 – removal of ambiguity around the management and removal of non-conforming waste types from site, which are inadvertently accepted, 'as soon as practicably possible'. New requirements quantify the timeframes required to remove the material off-site, to within '7 week days'.

Condition 1.2.8 – minor wording clarification relating to the former landfill area as specified in Schedule 1 of the Licence.

Condition 3.1.1 – Improvement Program (IC3); this condition required the removal of all waste, other than clean fill, to be removed from the area delineated in yellow on the Premises Map in Schedule 1. The timeframe to comply with this requirement was 20 February 2019. To date, no evidence has been provided to DWER to demonstrate that this requirement was met (DWER notes this information will be required as part of annual compliance reporting requirements – due end of July 2019, Condition 4.2.1). Further, condition 1.2.3 (Table 1.2.2) specifies storage and processing locations for all waste types authorised for acceptance onsite, thereby limiting where certain materials can be stored/processed on-site. Given this situation, DWER proposes to remove IC3 from Table 3.1.1, noting that existing controls are in place to ensure wastes are stored and processed in appropriate areas.

Risk assessment

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

May 2019 Licence amendment risk assessment

Table H.2: Risk assessment for proposed amendments during operation

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**				
Cat 61A Solid waste facility	Increase in throughput for Clean fill, ASS/PASS materials and Class III hydrocarbon and pesticide contaminated soils	**Noise** – emissions from the movement and operation of machinery and equipment	The nearest residential premises in Orelia is approx. 750m from the southern boundary	Air	Health and amenity impacts	Minor	Possible	Medium	While the premises throughput is proposed to be increased to 200,000tpa, no additional machinery or equipment is required to process this material. Therefore noise levels on the premises should remain the same, with the potential for the frequency to change. The risk of noise emissions impacting nearby receptors is assessed as 'medium'. Existing licence conditions and provisions of the Noise Regulations are considered suitable to manage noise emissions from the premises' operation.
		Odour – potential for odours to increase with the increase in throughput (ASS/PASS, and Class III hydrocarbon and pesticide contaminated soils)		Air		Moderate	Possible	Medium	There is the potential for odour emissions to increase with the increased throughput. DWER have not received any odour complaints for this premises, and the nearest sensitive resident is approx. 750m from the southern premises boundary away from the prevailing wind direction. The risk associated with the increased throughput has been assessed as 'medium'. Existing licence conditions are considered suitable to manage and mitigate potential odour emissions.

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
		Leachate – due to potential increase in throughput of ASS and PASS	Groundwater below the premises ranges from 11.5 to 20.5 metres below ground level (mbgl) in Lot 115 and from 20.5 to 26.5 mbgl on Lot 2, with these differences attributed to the varying contours of the premises topography.	Discharge to land	Potential for leachate to impact on underlying groundwater supplies	Major	Possible	High	There is the potential for leachate to increase from the addition of ASS/PASS on the premises, with the Cat 61A throughput proposing to be doubled to 200,000 tonnes per annum. Eclipse Soils have confirmed that they will limit acceptance to 100,000 t/pa which is consistent with the existing waste acceptance conditions on the Licence. This equates to the highest volume which Eclipse Soils can currently accept, if ASS/PASS was the sole waste type received at the Premises, and which was previously assessed and considered appropriate, subject to regulatory controls (pending further groundwater investigations and potential improvements to related hardstand areas – refer to Condition 3.1.1) Given the situation, DWER considers the proposal will not increase the current level of assessed risk. Existing licence conditions are therefore considered suitable to manage and mitigate potential leachate emissions.
		Leachate – due to potential increase in throughput of	Groundwater below the premises ranges from 11.5 to 20.5 metres	Discharge to land	Potential for leachate to impact on underlying	Major	Unlikely	Medium	Eclipse Soils have confirmed that they will limit acceptance to 50,000 t/pa

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
		Class III hydrocarbon and pesticide contaminated soils	below ground level (mbgl) in Lot 115 and from 20.5 to 26.5 mbgl on Lot 2, with these differences attributed to the varying contours of the premises topography.		groundwater supplies				The material will be received and bioremediated within the premises existing bioremediation cells which consists of two treatment cells that have been constructed with a base of 200mm clay and 150mm of crushed limestone and compacted to meet 1 x 10-9 m/s permeability. The cells are overlain by a 1.0mm high-density polyethylene (HDPE) liner and have been fully bunded with a 1% cross fall for drainage. The stormwater from these cells drain from a pipe to an HDPE lined stormwater basin which has been designed and constructed for a 1 in 5 year average recurrence interval (ARI) event. The bioremediation pads and stormwater basin were assessed as suitable infrastructure under works approval W4424/20081. Existing licence conditions contain infrastructure requirements for the Bioremediation Area and the stormwater basins to ensure that leachate is collected and contained from the bioremediation process.
	Addition of Class IV contaminated soil for bioremediation	**Odour** – potential for additional odour emissions from the receivable of Class IV	The nearest residential premises in Orelia is approx. 750m from the southern boundary	Air	Health and amenity impacts	Minor	Possible	Medium	The Licence Holder is proposing to accept up to 1,000 tonnes per year of this material, which accounts for ~ 2% of the bioremediation volume. Given the small volume of material and the distance to sensitive receptors, the potential impact offsite for this material is considered to present a 'medium' risk.

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
		material for bioremediation							Existing licence conditions are considered suitable to manage and mitigate potential odour emissions from this material.
		Leachate – potential for leachate to be generated from the Class IV material proposed to be received	Groundwater below the premises ranges from 11.5 to 20.5 metres below ground level (mbgl) in Lot 115 and from 20.5 to 26.5 mbgl on Lot 2, with these differences attributed to the varying contours of the premises topography.	Discharge to land	Potential for leachate to impact on underlying groundwater supplies	Major	Unlikely	Medium	There is the potential for leachate to be generated from the acceptance of 1,000tpa of Class IV hydrocarbon and pesticide contaminated soils. The material will be received and bioremediated within the premises existing bioremediation cells which consists of two treatment cells that have been constructed with a base of 200mm clay and 150mm of crushed limestone and compacted to meet 1 x 10^{-9} m/s permeability. The cells are overlain by a 1.0mm high-density polyethylene (HDPE) liner and have been fully bunded with a 1% cross fall for drainage. The stormwater from these cells drain from a pipe to an HDPE lined stormwater basin which has been designed and constructed for a 1 in 5 year average recurrence interval (ARI) event. The bioremediation pads and stormwater basin were assessed as suitable infrastructure under works approval W4424/20081. Existing licence conditions contain infrastructure requirements for the Bioremediation Area and the stormwater basins to ensure that leachate is collected and contained

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
									from the bioremediation process. These existing conditions are considered suitable to manage and mitigate potential leachate generated from the addition of this Class IV waste materials.
	Class I contaminated soil storage and processing	**Dust** – there is the potential for dust emissions to result from the processing and storage of this material on the premises.	The nearest residential premises in Orelia is approx. 750m from the southern boundary	Air	Health and amenity impacts	Minor	Possible	Medium	The licence holder is proposing to accept up to 20,000 tonnes of this material described as soil with, unavoidable low levels of metal, bricks, concrete etc. The material will be screened and stockpiled for storage on the premises prior to blending for re-use offsite. There is the potential for dust emissions to occur from these activities. However existing licence conditions to manage and mitigate dust emissions are considered suitable to address the 'medium' risk associated with the proposal. Conditions have been incuded to prevent the acceptance of waste containing visisble asbestos or ACM.
		Leachate – from storage and processing of Class I contaminated soils/wastes	Groundwater below the premises ranges from 11.5 to 20.5 metres below ground level (mbgl) in Lot 115 and from 20.5 to 26.5 mbgl on Lot	Discharge to land	Potential for leachate to impact on underlying groundwater supplies	Minor	Possible	Medium	Material proposed for acceptance is material that meets former HIL-F investigation criteria for industrial and commercial land use settings, and which is relatively consistent with Class I contaminant criteria for solid wastes as specified in the LWCWD i.e. material that is deemed suitable for disposal to

Risk Event						Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts				
			2, with these differences attributed to the varying topography levels. Within the pit area (see Figure 1) groundwater is reported to be approximately 3-4m below surface levels.						unlined inert landfills (Class I contaminated soils) across the site. Noting that the site is not licensed as a landfill, given the nature and volume of material proposed for acceptance and processing, DWER considers the associated risks of leachate generation and impacts to groundwater to be minor; may present minor on-site impacts and low-level off-site impacts at the local scale and could occur at some time. Existing licence conditions are already in place to monitor potential impacts to groundwater from on-site activities. Should impacts be observed, additional investigations will be required to identify likely sources, which may require additional groundwater monitoring wells to be installed. No additional regulatory controls are required on the licence.

Decision

This amendment was submitted by the Licence Holder to increase the throughput of the Category 61A activities on the premises, including the addition of Class IV contaminated soil for bioremediation and Class I contaminated soil for blending and potential offsite reuse. Having considered the proposed amendment to the Licence, the Delegated Officer has determined that the increase to the premises throughput and addition of the small volume of Class IV and Class I contaminated soils will not result in emissions which are unacceptable to public health or the environment.

The existing licence contains conditions suitable to manage and mitigate any potential emissions from these amended activities on the premises. Waste acceptance criteria have been updated to reflect the changes to include Class I and Class IV material acceptance, limits and processing specifications.

The current licence expires in July 2020. At the time of licence renewal DWER intends to undertake a detailed risk review of the Licence to align the Licence with the risk based Regulatory Framework.

Licence Holder's comments

The Licence Holder was provided with the draft Amendment Notice on 6 May 2019. The Licence Holder responded on 8 and 9 May 2019 providing comment and waived the remaining comment period should their comments be considered and minor changes made – see below:

Condition	Summary of Licence Holder comment	DWER response
Condition 1.2.1 and Table 1.2.1	Specification for Class IV contaminated soil containing hydrocarbons and/or pesticides incorrectly refers to 'Class III'.	Typographical error noted. Specification updated to reflect 'Class IV'.
Condition 1.2.1 and Table 1.2.1	Limits on Class III material to be accepted should be set at 50,000 tonnes, as historically Eclipse has treated as much as this volume/tonnage.	Noted. Condition 1.2.1 and Decision Report updated to reflect.
Condition 1.2.2	Request that timeframes for the removal on non-conforming waste types, to be set to '7 week days'.	Noted. Condition 1.2.2 updated to reflect.
Condition 3.1.1	Improvement program – IC3, request that flexibility is provided to allow clean fill and class I soils to be stored in the area delineated by yellow on the Premises Map in Schedule 1.	Noted. IC3 removed from Condition 3.1.1. Decision report also updated to clarify that condition 1.2.3 (Table 1.2.2) specifies storage and processing locations for all waste types authorised for acceptance onsite, thereby limiting where certain materials can be stored/processed on-site.