

# Permit

*Environmental Protection Act 1994*

## Environmental authority EPPR00500613

*This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.*

### Environmental authority number: EPPR00500613

**Environmental authority takes effect on the day it is issued.**

The anniversary date of this environmental authority remains the same, 12 May. The payment of the annual fee will be due each year on this day.

### Environmental authority holder

Name	Registered address
ORORA LIMITED	109-133 Burwood Road HAWTHORN VIC 3122

### Environmentally relevant activity and location details

Environmentally relevant activities	Locations
ERA 36 - Pulp or paper manufacturing - Manufacturing a total of 100t or more of pulp or paper products in a year	965 Old Gympie Road PETRIE QLD 4502 – 107/SP309938 2/SP309897 2/SP318661 3/SP318661 4/SP309926 5/SP309926 9/SP255140

Environmentally relevant activities	Locations
ERA 60 - Waste disposal - 2(h) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b) - more than 200,000t	2/SP309897
ERA 60 - Waste disposal - 1(d) - Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a) - more than 200,000t	
ERA 63 - Sewage Treatment - 1(b-ii) - Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of more than 100 but not more than 1500EP - otherwise	2/SP318661 3/SP318661

### Additional information for applicants

#### Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

#### Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days)

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website [www.qld.gov.au](http://www.qld.gov.au), using the search term 'duty to notify'.

#### Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority - on the nominated day; or


- b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or
- c) otherwise on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

The anniversary day of this environmental authority is the same day each year as the original take effect date unless you apply to change the anniversary day. The payment of the annual fee will be due each year on this day.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.



Signature

24 December 2021

Date

**Scott Blanchard**

Department of Environment and Science  
Delegate of the administering authority  
*Environmental Protection Act 1994*

**Enquiries:**

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**Privacy statement**

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at [www.qld.gov.au](http://www.qld.gov.au). For queries about privacy matters please email [privacy@des.qld.gov.au](mailto:privacy@des.qld.gov.au) or telephone 13 74 68.

**Obligations under the *Environmental Protection Act 1994***

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

**Other permits required**

This permit only provides an approval under the *Environmental Protection Act 1994*. In order to lawfully operate you may also require permits / approvals from your local government authority, other business units within the department and other State Government agencies prior to commencing any activity at the site. For example, this may include permits / approvals with your local Council (for planning approval), the Department of Transport and Main Roads (to access state controlled roads), the Department of Resources (to clear vegetation), and the Department of Agriculture and Fisheries (to clear marine plants or to obtain a quarry material allocation).

**Conditions of environmental authority****SCHEDULE A - GENERAL CONDITIONS****Compliance with environmental authority**

- (A1) In carrying out the environmentally relevant activities, contaminants not expressly provided for in this environmental authority that will or may cause environmental harm must not be released to the environment.
- (A2) The holder of this environmental authority must:
- (a) install and operate all works and control equipment, and
  - (b) take all measures, perform all acts and do all things necessary to ensure compliance with the conditions of this environmental authority.
- (A3) *This condition has been deleted by agreement with the holder of the environmental authority and is no longer in force.*

**Records**

- (A4) Any record or document required to be kept by a condition of this environmental authority must be kept at the approved place and be available for examination by an authorised person.
- (A5) Copies of any record or document required to be kept by a condition of this environmental authority must be provided to any authorised person or the administering authority on request.

**Alterations**

- (A6) No change, replacement or operation of any plant or equipment is permitted if the change, replacement or operation of the plant or equipment increases, or is likely to substantially increase, the risk of environmental harm.

**Calibration**

- (A7) All instruments and measurement devices used for the measurement or monitoring of any parameter under any condition of this environmental authority must be calibrated, and appropriately operated and maintained.

**Nuisance**

- (A8) Notwithstanding any other condition of this environmental authority, this environmental authority does not authorise any release of contaminants which causes or is likely to cause an environmental nuisance beyond the boundaries of the approved place.

**Integrated Environmental Management System (IEMS)**

- (A9) The holder of this environmental authority must develop and implement an Integrated Environmental Management System (IEMS) which provides for the effective and appropriate management by the holder of this environmental authority of the actual and potential environmental impacts resulting from the carrying out of the environmentally relevant activities.
- (A10) The Integrated Environmental Management System must provide for at least the following functions:
- (i) The monitoring of releases of contaminants into the environment, for example measurement of the quantities and concentrations of releases of contaminants to the environment as required under this environmental authority;
  - (ii) The assessment of the environmental impacts of any releases of contaminants into the environment, for example any ambient environmental quality monitoring, noise monitoring or complaints monitoring required under this environmental authority; and
  - (iii) The training of all relevant staff, agents and contractors ("staff") to competent levels in at least the following:
    - (a) The environmental policy of the holder of this environmental authority so that staff are aware of any relevant commitments to environmental management; and
    - (b) Any relevant environmental objectives and targets so that all staff are aware of the relevant performance objectives and can work towards these; and
    - (c) Control procedures for routine operations for day to day operational activities to prevent or minimise environmental harm, however occasioned or caused; and
    - (d) Contingency plans and emergency procedures for non - routine situations to deal with foreseeable risks and hazards including corrective responses to prevent and mitigate environmental harm (including any necessary site rehabilitation); and
    - (e) Organisational structure and responsibility to ensure that roles, responsibilities and authorities are appropriately defined to manage environmental issues effectively; and
    - (f) Effective communication to ensure two - way communication on environmental matters between operational staff and management as well as communications with the administering authority; and
    - (g) Documentation systems so that appropriate records of environmental matters are kept to satisfy the holder of the environmental authority, the administering authority and the community that the applicant is meeting environmental commitments; and
    - (h) Responsibilities of the holder of this environmental authority and staff under the Act so that these can be met; and
  - (iv) The conduct of environmental and energy audits to review periodically:
    - (a) the level of environmental performance; and
    - (b) the effectiveness of environmental management procedures adopted; and
    - (c) efficiency in using energy and resources and opportunities for more efficient usage.
- (A11) The conduct of environmental and energy audits required by condition A10 (iv) must be carried out as often as necessary but not less frequently than the frequency specified below:
- (i) the level of environmental performance: annually;

- (ii) the effectiveness of environmental management procedures adopted: once every two (2) years;
- (iii) efficiency in using energy and resources and opportunities for more efficient usage: once every five (5) years.

(A12) The holder of this environmental authority must prepare a report summarising the outcomes of the environmental and energy audits required by condition A10 (iv) and submit the report with the annual return which follows the conduct of the audits.

(A13) The holder of this environmental authority must not implement an Integrated Environmental Management System or amend the Integrated Environmental Management System where such implementation or amendment would result in a contravention of any condition of this environmental authority.

(A14) *This condition has been deleted by agreement with the holder of the environmental authority and is no longer in force.*

(A15) The holder of this environmental authority must submit details of any amendments to the Integrated Environmental Management System to the administering authority with the Annual Return which immediately follows the enactment of any such amendment.

(A16) A copy of the Integrated Environmental Management System must be provided to the administering authority within thirty (30) days of its implementation.

### **Management Plan for Algae**

(A17) The holder of this environmental authority must prepare and implement a management and monitoring plan for algal outbreaks within the wastewater treatment marsh system and the receiving water. The plan must address at least the following issues:

- (i) visual observation to detect the presence of any algal bloom not less than once per week during the months of October to April and not less than once per fortnight during May to September; and
- (ii) if an algal bloom is suspected, the collection and analysis of samples for the purpose of:
  - identifying the contributing species of algae;
  - quantification of the algae (both within the ponds, treated waste water and the receiving water);
  - identifying the cause of the algal bloom including quantification of nutrient levels (nitrogen and phosphorus) in the pond system and water discharged into the receiving waters;
  - assessing the impact of the release of contaminants on the receiving waters; and
- (iii) remedial actions; and
- (iv) notification and reporting to the administering authority for matters addressed in A17 (i), (ii) and (iii).

- (A18) A copy of the Management Plan for Algae and any subsequent amendments must be kept at the approved place and be available for examination by an authorised person upon request.

**End of Conditions for Schedule A**



## SCHEDULE B - AIR

### Release of Contaminants to the Atmosphere

#### Non - Specified Releases

- (B1) Except as otherwise provided by the conditions of the air schedule of this environmental authority the environmentally relevant activities must be carried out by such practicable means necessary to prevent the release or likelihood of release of contaminants to the atmosphere.
- (B2) Where it is not practicable to prevent a release of contaminants to the atmosphere as required by condition B1, the environmentally relevant activities must be carried out by such practicable means necessary to minimise the release or likelihood of any such release of contaminants to atmosphere.

#### Noxious or Offensive Odour

- (B8) Notwithstanding any other condition of this environmental authority no release of contaminants from the approved place is to cause a noxious or offensive odour beyond the boundaries of the approved place.

*Conditions B3 - B7 and B9 - B17 have been deleted by agreement with the holder of the environmental authority and are no longer in force.*

**End of Conditions for Schedule B**

## SCHEDULE C - WATER

### Release of Contaminants to Waters

- (C1) Contaminants must not be directly or indirectly released from the approved place to any waters or the bed and banks of any waters except:
- (i) as permitted under the water schedule; or
  - (ii) as permitted under the stormwater management schedule; or
  - (iii) to a sewer as permitted or otherwise agreed from time to time by the relevant Local Government.
- (C2) The only contaminants permitted to be released from the approved place at the release point W1 via the wastewater treatment system are:
- contaminated stormwater from the engineered landfill (as depicted in Figure 1 Appendix 1) only in an emergency when stormwater does not meet discharge criteria specified in condition D17 and D17A;
  - residual wastewater remaining in the historic wastewater treatment ponds; and
  - water from dewatering sludges during treatment pond decommissioning and remediation;
  - contaminated stormwater runoff and groundwater derived from contaminated land remediation activities on site (provided additional contaminants of concern such as chlorinated solvents are not present).
- (C2A) The wastewater treatment system is to include the following treatment stages as required:
- filtration;
  - flocculation / coagulation;
  - pH adjustment, and
  - multistage **PFAS** removal.
- (C2B) Multistage **PFAS** removal may include the following treatment stages:
- granular and powdered activated carbon;
  - anion exchange resins;
  - tertiary and quaternary filtration processes;
  - any other best practice treatment methodology necessary to achieve the required release quality characteristic limits.
- (C2C) The wastewater treatment system must be designed, installed, operated and maintained by appropriately qualified person(s).

### Release Points

- (C3) Other than as permitted within this environmental authority, contaminants must not be directly or indirectly released from any source on the approved place to any waters at any location other than the contaminants and sources at the locations listed below:

Release point W1 - outfall pipe from the wastewater treatment system to waters described as the North Pine River at approximately 10.4 km AMTD.

- (C3A) The release must only occur when and for volumes for which it is not practicable to reuse treated water on site for uses including dust suppression and irrigation and must cease following final capping of the **landfill facility** or 31 December 2022, whichever occurs earlier.

#### **Release Point Details**

- (C4) Release point number W1 must be submerged such that the top of the outfall pipe is at least 0.5 metres below Low Water Datum.

#### **Quantity of Contaminants Released**

- (C5) Despite condition C3A, the total quantity of contaminants released from release point W1 during any dry weather day must not exceed:
- a maximum of 2 (two) megalitres (ML) during commissioning period up to 30 November 2019; and
  - a maximum of 5 (five) megalitres (ML) thereafter.

A record must be kept of the date on which any release occurs and quantity of the release.

#### **Quality Characteristics of Release to Waters**

- (C6) The release of contaminants to waters must comply, at the sampling and in-situ measurement point specified in Schedule H, with each of the limits specified in Schedule C - Table 1 for each quality characteristic.
- (C7) Notwithstanding the quality characteristic limits specified in Schedule C - Table 1, the release of contaminants to waters must comply with the following qualitative characteristics:
- (a) The release must not have any properties nor contain any organisms or other contaminants which are capable of causing environmental harm or an environmental nuisance.
  - (b) The release must not produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other objectionable matter.

**SCHEDULE C TABLE 1 - RELEASE QUALITY CHARACTERISTIC LIMITS**

QUALITY CHARACTERISTICS	RELEASE LIMIT	LIMIT TYPE
5-day Biochemical Oxygen Demand (uninhibited, mg/L)	10	Long term 80 percentile compliance
5-day Biochemical Oxygen Demand (uninhibited, mg/L)	15	Short term 80- percentile compliance
5-day Biochemical Oxygen Demand (uninhibited, mg/L)	20	Maximum
Suspended Solids (mg/L)	15	Long term 80 percentile compliance
Suspended Solids (mg/L)	23	Short term 80 percentile compliance
Suspended Solids (mg/L)	30	Maximum
pH (pH Units)	6.5 - 8.5	Range
Dissolved Oxygen. (mg/L)	2	Minimum
Total Nitrogen (mg/L)	10	Maximum
Total Phosphorus as P. (mg/L)	1	Maximum
Adsorbable Organic Halide (µg/L)	500	Long term 50 percentile compliance
Adsorbable Organic Halide (µg/L)	1250	Maximum
Benzene (µg/L)	10	Maximum
Naphthalene (µg/L)	14	Maximum
Total Recoverable Hydrocarbons (silica gel) (µg/L)	None detected (note 1)	Maximum
Polychlorinated Biphenyls (PCBs) (µg/L)	0.01	Maximum
Bis(2-ethylhexyl) phthalate (µg/L)	1	Maximum
Diethylphthalate (µg/L)	900	Maximum
Dimethyl phthalate (µg/L)	3.7	Maximum
Di-n-butyl phthalate (µg/L)	25	Maximum
Antimony (µg/L)	9	Maximum
Arsenic (µg/L)	50	Maximum
Cadmium (µg/L)	2	Maximum
Chromium (µg/L)	50	Maximum
Copper (µg/L)	5	Maximum
Lead (µg/L)	5	Maximum
Manganese (mg/L)	1.9	Maximum
Mercury (µg/L)	0.1	Maximum
Nickel (µg/L)	15	Maximum
Selenium (µg/L)	70	Maximum
Silver (µg/L)	1.0	Maximum
Vanadium (µg/L)	6	Maximum
Zinc (µg/L)	50	Maximum
Per and Polyfluoroalkyl Substances (PFAS)	See Schedule C Table 2	See Schedule C Table 2

**Note** – The applicable water quality objective to protect aquatic ecosystems, 7 µg/L, is below typical limits of detection (LOD) for TRH. Applicable limits of detection must be no greater than <10 µg/L for C<sub>6</sub>-C<sub>10</sub>; <50 µg/L for >C<sub>10</sub>-C<sub>16</sub>; <100 µg/L for >C<sub>16</sub>-C<sub>34</sub>; <100 µg/L for >C<sub>34</sub>-C<sub>40</sub>. If the LOR is raised by the analytical laboratory due to matrix interference despite request for trace level analysis, the revised LOR will be acceptable provided all reasonable steps are taken to remedy matrix interference issues in subsequent samples.

**SCHEDULE C TABLE 2 - RELEASE QUALITY CHARACTERISTIC LIMITS FOR PFAS**

QUALITY CHARACTERISTICS	RELEASE LIMIT µg/L	LIMIT TYPE
<b><i>Perfluoroalkyl Sulfonic Acids</i></b>		
Perfluorobutane sulfonic acid (PFBS)	< 0.05 < standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluoropentane sulfonic acid (PFPeS)	< 0.05 < standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorohexane sulfonic acid (PFHxS)	< 0.05 < standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluoroheptane sulfonic acid (PFHpS)	< 0.05 < standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorooctane sulfonic acid (PFOS)	< 0.05 < standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorodecane sulfonic acid (PFDS)	< 0.05 < standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
PFOS + PFHxS	<0.07	Maximum
<b><i>Perfluoroalkyl Carboxylic Acids</i></b>		
Perfluorobutanoic acid (PFBA)	<0.05 <0.02	Maximum 50 <sup>th</sup> Percentile
Perfluoropentanoic acid (PFPeA)	<0.05 <0.01	Maximum 50 <sup>th</sup> Percentile
Perfluorohexanoic acid (PFHxA)	<0.05 < 0.01	Maximum 50 <sup>th</sup> Percentile
Perfluoroheptanoic acid (PFHpA)	<0.05 <standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorooctanoic acid (PFOA)	< 0.05 <standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorononanoic acid (PFNA)	<0.05 <standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorodecanoic acid (PFDA)	<0.05 <standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluoroundecanoic acid (PFUnDA)	<0.05 <standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorododecanoic acid (PFDoDA)	<0.05 <standard LOR of 0.01	Maximum Percentile A

	< trace LOR of 0.001	Percentile B
Perfluorotridecanoic acid (PFTrDA)	<0.05 <standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
Perfluorotetradecanoic acid (PFTeDA)	<0.05 <standard LOR of 0.01 < trace LOR of 0.001	Maximum Percentile A Percentile B
<b>Perfluoroalkyl Sulfonamides</b>		
Perfluorooctane sulfonamide (FOSA)	<0.05 <standard LOR of 0.02 < trace LOR of 0.002	Maximum Percentile A Percentile B
N-Methyl perfluorooctane sulfonamide (MeFOSA)	<0.05 <standard LOR of 0.02 < trace LOR of 0.002	Maximum Percentile A Percentile B
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	<0.05 <standard LOR of 0.02 < trace LOR of 0.002	Maximum Percentile A Percentile B
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	< standard LOR 0.05 <standard LOR of 0.02 < trace LOR of 0.002	Maximum Percentile A Percentile B
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	< standard LOR 0.05 <standard LOR of 0.02 < trace LOR of 0.002	Maximum Percentile A Percentile B
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	< standard LOR 0.05 <standard LOR of 0.02 < trace LOR of 0.002	Maximum Percentile A Percentile B
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	< standard LOR 0.05 <standard LOR of 0.02 < trace LOR of 0.002	Maximum Percentile A Percentile B
<b>(n:2) Fluorotelomer Sulfonic Acids</b>		
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	< standard LOR 0.05 < trace LOR of 0.001	Maximum Percentile B
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	< standard LOR 0.05 < trace LOR of 0.005	Maximum Percentile B
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	< standard LOR 0.05 < trace LOR of 0.001	Maximum Percentile B
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	< standard LOR 0.05 < trace LOR of 0.001	Maximum Percentile B

**Note** – “< LOR” means less than the above stated limit of reporting. If the LOR is raised by the analytical laboratory due to matrix interference despite request for trace level analysis, the revised LOR will be acceptable provided all reasonable steps are taken to remedy matrix interference issues in subsequent samples.

“**Percentile A**” means 80<sup>th</sup> percentile limit during commissioning period up to 30 November 2019 and 95<sup>th</sup> percentile limit thereafter.

“**Percentile B**” means 50<sup>th</sup> percentile limit during commissioning period up to 30 November 2019 and 90<sup>th</sup> percentile limit thereafter.

“**50<sup>th</sup> Percentile**” means not more than six (6) of the measured values of the quality characteristics exceeding the stated release limit for any twelve (12) consecutive samples for a sampling point at any time during the environmental activity(ies) works.

“**80<sup>th</sup> Percentile**” means not more than two (2) of the measured values of the quality characteristics exceeding the stated release limit for any ten (10) consecutive samples for a sampling point at any time during the environmental activity(ies) works.

**"90<sup>th</sup> Percentile"** means not more than two (2) of the measured values of the quality characteristics exceeding the stated release limit for any twenty (20) consecutive samples for a sampling point at any time during the environmental activity(ies) works.

**"95<sup>th</sup> Percentile"** means not more than two (2) of the measured values of the quality characteristics exceeding the stated release limit for any forty (40) consecutive samples for a sampling point at any time during the environmental activity(ies) works.

- (C7A) A commissioning period report on the performance of the wastewater treatment system must be submitted to the administering authority by 30 September 2019. The report must include but not be limited to:
- (a) Summary details of the monitoring and analysis undertaken, including details of the sampling framework applied and quality assurance and quality control measures applied;
  - (b) Summary of the monitoring program's results presented in numerical and graphical form, showing relevant limits and a comparison made with the prescribed release limits;
  - (c) An interpretation, evaluation and explanation of the monitoring results and programs and a review of compliance with the prescribed release limits by an appropriately qualified person(s);
  - (d) An outline of actions taken or proposed to minimise the environmental risk from any potential or actual impacts identified by the monitoring or recording programs and measures taken to implement continuous improvement in wastewater treatment system operation and treated wastewater discharge quality;
  - (e) A summary of any contaminants or release quantities recorded under this Schedule.
- (C8) Releases of contaminants from the activity must not cause stream sediment concentrations to exceed:
- (a) For metals and metalloids, the contaminant trigger levels (ISQG low) defined in the Australian & New Zealand Environment & Conservation Council's "Australian Water Quality Guidelines for Fresh and Marine Waters", December 2000 (or more recent updates to this document) whichever is the higher [see Notes 1]; and
  - (b) a dioxin and furan (including dioxin like PCBs) concentration (ngTEQ/kg [ $<$  2mm size fraction]) in excess of the mean background concentration [see Notes 2, 3, 4 and 5].

**Notes to Condition**

**Note 1:** for metals and metalloids, concentration is mg/kg dry weight on the less than 63 micron size fraction

**Note 2:** Where the quantum of a monitoring result suggests a potential breach of this condition, if available, a comparison of congener profiles between the monitored results and waste materials must be undertaken to check for similarity/difference between the profiles and reported to the administering authority.

**Note 3:** Comparisons of dioxins and furans between upstream and downstream sites must be of composite samples on a like for like basis, taking account to standardise comparisons on sediment grain size and per cent organic carbon.

**Note 4:** a downstream mean dioxin concentration greater than the upper 75% confidence limit of the corresponding upstream mean concentration constitutes an exceedance.

**Note 5:** TEQ scheme must be as per World Health Organisation 2005, including assessments with TEF values which apply to humans, mammals, birds and fish.

- (C9) A biannual sediment quality monitoring program must be conducted to check compliance with this condition.

**Note:** This must be incorporated into the Receiving Waters Monitoring Program

**End of Conditions for Schedule C**

## **SCHEDULE D - STORMWATER MANAGEMENT**

### **Contaminant Releases Caused by Rainfall**

- (D1) The environmentally relevant activities must be carried out by such practicable means necessary to prevent the contact of incident rainfall and stormwater runoff with wastes or other contaminants.
- (D2) Where it is not practicable to prevent contact as required by condition D1 above, the environmentally relevant activities must be carried out by such practicable means necessary to minimise any such contact.

### **Release of Contaminated Stormwater Runoff**

- (D3) Except as otherwise provided by the conditions of the stormwater management schedule and the water schedule of this environmental authority, the environmentally relevant activities must be carried out by such practicable means necessary to prevent the release or likelihood of release of contaminated runoff from the approved place to any stormwater drain or waters or the bed or banks of any such waters.
- (D4) Where it is not practicable to prevent any release of contaminated runoff as required by condition D1 above, the environmentally relevant activities must be carried out by such practicable means necessary to minimise any such release or the likelihood of any such release.

### **Stormwater Management Plan**

- (D5) The holder of this environmental authority, must implement the Stormwater Management Plan submitted with the application for the environmental authority and which details how the holder of this environmental authority will manage the actual and potential environmental impacts resulting from the contamination of stormwater at the approved place.
- (D6) A copy of the Stormwater Management Plan and any subsequent amendments of the Stormwater Management Plan must be kept at the approved place and be available for examination by an authorised person on request.
- (D7) The holder of this environmental authority must not implement a Stormwater Management Plan or amend a Stormwater Management Plan where such implementation or amendment would result in a contravention of any condition of this environmental authority.

### **Bunding**

- (D8) All chemical tank storages must be banded so that the capacity of the bund is sufficient to contain at least one hundred percent (100%) of the largest storage tank plus ten percent (10%) of the second largest tank within the bund.
- (D9) All chemical drum storages must be banded so that the capacity of the bund is sufficient to contain at least twenty five percent (25%) of the maximum design storage volume within the bund.
- (D10) All bunding must be constructed and maintained so as to be sufficiently impervious to allow retention and recovery of any materials being stored within the bund.



- (D11) All bunding must be roofed where practicable.
- (D12) Where it is impractical to completely roof a bunded area the holder of this environmental authority must ensure that any stormwater captured within the bund is free from contaminants or wastes prior to any release.
- (D13) All empty drums must be stored on a concrete hardstand area with their closures in place.

### Pond Conditions

- (D14) All ponds used for the storage or treatment of contaminants or wastes must be installed and maintained to ensure the stability of the ponds construction.
- (D15) Suitable banks and or diversion drains must be installed and maintained to exclude stormwater runoff from any ponds or other structures used for the storage or treatment of contaminants or wastes.
- (D16) The stormwater runoff from the areas of the **landfill facility** covered with an interim and any final cover generated by (up to and including) a **24 hour storm event with an average recurrence interval of 1 in 10 years** must be retained on site and can only be released if:
1. beneficial reuse on site is not viable; and
  2. a release is required to maintain the stormwater retention capacity;
  3. the release complies with condition D17 and D17A; and
  4. there are no other contaminants present or at concentrations which may cause environmental harm.

### Treated Stormwater Release to Yebri Creek

- (D17) The only contaminants to be released to Yebri Creek are settled treated stormwater runoff waters from areas of the **landfill facility** covered with an interim cover or any final cover to waters described as Yebri Creek via a release structure and must be monitored in accordance with Schedule D Table 1 'Treated stormwater release limits to Yebri Creek'.

**Schedule D Table 1 – Treated stormwater release limits to Yebri Creek**

Release Point (s)	Quality Characteristic (unit)	Limit	Limit Type	Minimum Monitoring Frequency
Release point 1 (YC4)* Release point 2 (YC5)* Release point 3 (YC2)*	pH (pH units)	6.5 - 9	Range	When a release occurs
	Electrical Conductivity (µs/cm)	1500	Maximum	
	Dissolved Oxygen (mg/L)	6	Minimum	
	Suspended Solids (mg/L)	50	Maximum	
	Total organic carbon (TOC) (mg/L)	30	Maximum	
Background water quality monitoring point (YC1)	pH (pH units) Electrical Conductivity (µs/cm) Dissolved Oxygen (mg/L) Suspended Solids (mg/L) Total organic carbon (TOC) (mg/L)	-	-	When a release occurs

\*Description of sub-catchments and release points:

Release point 1 (YC4) - from the sediment basin in the central-southern portion of the landfill.

Release point 2 (YC5) - from the sediment basin in the south-western portion of the landfill.

Release point 3 (YC2) - from the sediment basin in the eastern portion of the landfill.

**Associated monitoring requirements**

1. Water collected within the sediment ponds must be sampled prior to discharge to determine that the water meets the limits listed in Schedule D Table 1.
2. Monitoring must be undertaken in accordance with the methods prescribed in the current edition of the administering authority Water Quality Sampling Manual, and for PFAS, the current version of the PFAS National Environmental Management Plan.
3. Samples must be taken using representative samples.
4. All determinations must employ analytical practical quantification limits sufficiently low enough to enable comparisons to be made against water quality objectives / limits relevant to the particular water quality characteristic.
5. Monitoring must be undertaken during a release as per the frequency stated.
6. All monitoring devices must be correctly calibrated and maintained.
7. Records of volumes of water released from sediment ponds must be maintained.

(D17A) Notwithstanding the quality characteristic limits specified in Schedule D - Table 1, the release of contaminants to waters must be minimised to the greatest practicable extent and comply with the following qualitative characteristics:

- (a) The release must not have any properties nor contain any organisms or other contaminants including PFAS which are capable of causing environmental harm or an environmental nuisance.

(D17B) A report to demonstrate compliance with conditions (D17) and (D17A) must be submitted to the administering authority by 31 July 2019. The report must include but not be limited to:

1. Demonstrating compliance with prescribed stormwater quality limits; and
2. Demonstrating ongoing minimisation of any PFAS contamination of stormwater discharges into Yebri Creek.

(D18) The controlled release of treated stormwater must be conducted in a way and at a rate that does not cause:

1. re-suspension of particles; or
2. erosion of bed and banks or receiving waters; or
3. landscape damage; or
4. ponding of the water; or
5. vegetation damage.

**End of Conditions for Schedule D**

## SCHEDULE E - LAND APPLICATION

### Release of Contaminants to Land

- (E1) Except as otherwise provided by the conditions of this environmental authority, the environmentally relevant activities must be carried out by such practicable means necessary to prevent the release or likelihood of release of contaminants to land that will or may cause environmental harm.
- (E2) Where it is not practicable to prevent any release of contaminants to land as required by condition E1, the environmentally relevant activities must be carried out by such practicable means necessary to minimise the release or likelihood of release of any such contaminants to land.

### Description of Contaminants Released to Land

- (E3) The only contaminants allowed to be released to the defined contaminant release areas are those wastes that are generated by the environmentally relevant activities carried out by the holder of this environmental authority at the approved place and described as:
- (i) bacterial sludge (biomass sludge from the aeration ponds);
  - (ii) dewatered bacterial sludge (from the drying beds of the on - site sewage treatment plant);
  - (iii) waste packaging materials which cannot be recycled due to the nature of their composition;
  - (iv) filter cake sludges and residues (waste fibre and other rejects from the waste paper process ('wet rejects'));
  - (v) waste coating sludge;
  - (vi) boiler ash;
  - (vii) fly ash;
  - (viii) contaminated soil associated only with the historical operation of the cartonboard mill;
  - (ix) surplus construction and demolition waste (not including regulated waste with the exception of asbestos) associated only with the closure of the cartonboard mill;
  - (x) wastewater treatment sludge and wastewater pond sediment; and
  - (xi) **wastewater treatment plant waste byproducts and residues.**

### Contaminant Release Locations

#### ***Biomass and Sewage Sludges***

- (E4) *This condition is no longer needed and is not in force.*

#### **Other Solid Waste**

- (E5) The defined contaminant release areas for wastes stated in condition E3 (iii), (iv), (v), (vi), (vii), (viii), (ix), (x) and (xi) is a **landfill facility** depicted in Figure 1 in Attachment 1.

- (E5A) Contaminated soil and wastes that exceed the maximum contaminant levels and the allowable leaching contaminant levels prescribed in **Schedule E Table 1** and **Schedule E Table 2** respectively for single lined landfills (column 1) but below the maximum contaminant levels and the allowable leaching contaminant levels prescribed in **Schedule E Table 1** and **Schedule E Table 2** respectively for double lined landfills (column 2) must be disposed in CELL 7 and CELL 8 of the **landfill facility** as depicted in Figure 1 in Attachment 1.

### Quality Characteristics of Contaminant Releases to Land

- (E6) Waste and any contaminated soil disposed of at the landfill facility:
1. must be subject to effectively implementing risk assessment practices and procedures for prior contaminant testing that ensure that the material accepted complies with the maximum contaminant levels and the allowable leaching contaminant levels prescribed in **Schedule E Table 1**—Maximum contaminant levels in soils and **Schedule E Table 2**—Allowable leaching contaminant levels respectively; and
  2. if the contaminated soil is used as coverage material, contaminant levels must not exceed the maximum concentration limits in **Schedule E Table 3** - Maximum total contaminant levels in soils used as cover material (note: this material is not suitable for final capping), must not cause contaminated stormwater release and must not include any soil that is contaminated due to the concentration of monocyclic aromatic hydrocarbons, polycyclic aromatic hydrocarbons, chlorinated hydrocarbons, pesticides, or petroleum hydrocarbons.
  3. All waste that was previously disposed to Cells 1, 2, 3, 4, 5 and 6 must comply with the Maximum Allowable Leaching Concentration (mg/L) limits listed in **Schedule E Table 4** - Maximum Allowable Leaching Concentration (mg/L) limit in previously disposed wastes.

**Schedule E Table 1—Maximum contaminant levels in soils**

Contaminant	CELL 3	CELL7 and CELL8
	Maximum contaminant level for <b>clay lined</b> Cell 3 (mg/kg)	Maximum contaminant level for <b>double lined</b> Cell 7 and Cell 8 (mg/kg)
<i>Monocyclic aromatic hydrocarbons (MAH)</i>		
Benzene	10	20
Ethyl Benzene	500	1,000
Toluene	300	600
Xylene	250	500
Total MAH	500	1,000
<i>Polycyclic aromatic hydrocarbons (PAH)</i>		
Total PAH	500	1,000
<i>Phenolic contaminants</i>		
<i>Non halogenated compounds:</i>		
Phenol	100	250
m-cresol	250	500

Contaminant	CELL 3	CELL7 and CELL8
	Maximum contaminant level for <b>clay lined</b> Cell 3 (mg/kg)	Maximum contaminant level for <b>double lined</b> Cell 7 and Cell 8 (mg/kg)
o-cresol	250	500
p-cresol	250	500
Total non halogenated phenol	250	500
<i>Halogenated phenol</i>		
Chlorophenol	1	5
Pentachlorophenol	5	20
Trichlorophenol	5	20
Total halogenated phenol	5	20
<i>Chlorinated Hydrocarbons</i>		
<i>Chlorinated aliphatic compounds:</i>		
Carbon tetrachloride	5	10
1,2 Dichloroethane	10	20
1,1 Dichloroethene	1	1
Tetrachloroethene	10	20
Trichloroethene	25	25
Total chlorinated aliphatic compounds	50	50
<i>Chlorinated aromatic compounds:</i>		
Chlorobenzene	100	200
Hexachlorobenzene	1	1
Total chlorinated aromatic compounds	100	200
Non scheduled solid polychlorinated biphenyls (PCBs)	2	50
<i>Pesticides</i>		
Total organochlorine	5	50
Total herbicides	25	50
Total carbamates	25	50
Total organophosphorus	10	50
<i>Petroleum hydrocarbons</i>		
Total petroleum hydrocarbons (C <sub>6</sub> -C <sub>9</sub> )	500	1,000
Total petroleum hydrocarbons (C <sub>10</sub> -C <sub>14</sub> )	5,000	10,000
Total petroleum hydrocarbons (C <sub>15</sub> -C <sub>28</sub> )	10,000	50,000

Contaminant	CELL 3	CELL7 and CELL8
	Maximum contaminant level for <b>clay lined</b> Cell 3 (mg/kg)	Maximum contaminant level for <b>double lined</b> Cell 7 and Cell 8 (mg/kg)
Total petroleum hydrocarbons (C <sub>29</sub> -C <sub>36</sub> )	10,000	50,000

**Schedule E Table 2—Allowable leaching contaminant levels**

Contaminant	CELL 3	CELL 7 and CELL 8
	Allowable leaching contaminant levels (TCLP*) for <b>clay lined</b> Cell 3 (mg/l)	Allowable leaching contaminant levels (TCLP) for <b>double lined</b> Cell 7 and Cell 8 (mg/l)
<i>Non specific contaminants</i>		
Biochemical oxygen demand	20,000	20,000
Total organic carbon	10,000	10,000
Petroleum hydrocarbons	25	50
<i>Metals/non-metals</i>		
Antimony	0.5	5
Arsenic	0.5	5
Barium	10	100
Cadmium	0.05	0.5
Chromium	0.5	5
Cobalt	0.5	5
Copper	10	100
Lead	0.5	5
Mercury	0.01	0.1
Molybdenum	0.1	5
Nickel	0.5	5
Selenium	0.1	1
Silver	0.5	5
Thallium	0.1	1
Tin	0.3	3
Vanadium	0.5	5
Zinc	50	500
<i>Inorganic anions</i>		
Bromide	5	50
Chloride	6,000	6,000
Cyanide (total)	1	5
Fluoride	15	150
Nitrate	100	1,000
Sulphate	2,500	4,000
<i>Monocyclic aromatic hydrocarbon (MAH)</i>		

Contaminant	CELL 3	CELL 7 and CELL 8
	Allowable leaching contaminant levels (TCLP*) for clay lined Cell 3 (mg/l)	Allowable leaching contaminant levels (TCLP) for double lined Cell 7 and Cell 8 (mg/l)
Benzene	0.1	1
Ethyl benzene	5	50
Toluene	3	30
Xylene	2	20
Total MAH	5	50
<i>Polycyclic aromatic hydrocarbons (PAH)</i>		
Anthracene	0.07	0.7
Benz (a) anthracene	0.005	0.05
Benz (c) phenanthrene	0.005	0.05
Benzo (a) pyrene	0.002	0.02
Benzo (b) fluoranthene	0.005	0.05
Benzo (k) fluoranthene	0.005	0.05
Chrysene	0.01	0.1
Dibenz (a,h) anthracene	0.002	0.02
Dibenz (a,h) pyrene	0.01	0.1
Dimethylbenz (a) anthracene	0.005	0.05
Fluoranthene	0.02	0.2
Indeno (1,2,3-cd) pyrene	0.01	0.1
Naphthalene	0.07	0.7
Phenanthrene	0.01	0.1
Pyrene	0.07	0.7
Total PAH	0.1	1
<i>Phenolic contaminants</i>		
<i>Non halogenated compounds:</i>		
Phenol	1	10
m-cresol	2	20
o-cresol	2	20
p-cresol	2	20
<i>Halogenated phenols</i>		
Chlorophenol	0.01	0.1
Pentachlorophenol	0.1	1
Trichlorophenol	0.1	1
<i>Chlorinated hydrocarbons</i>		
<i>Chlorinated aliphatic compounds</i>		
Carbon tetrachloride	0.03	0.3

Contaminant	CELL 3	CELL 7 and CELL 8
	Allowable leaching contaminant levels (TCLP*) for clay lined Cell 3 (mg/l)	Allowable leaching contaminant levels (TCLP) for double lined Cell 7 and Cell 8 (mg/l)
1,2 Dichloroethane	0.1	1
1,1 Dichloroethene	0.003	0.03
Tetrachloroethene	0.1	1
Trichloroethene	0.3	3
<i>Chlorinated aromatic compounds</i>		
Chlorobenzene (total)	1	10
Hexachlorobenzene	0.002	0.02
<i>Pesticides</i>		
<i>Organochlorine</i>		
Aldrin	0.001	0.01
Chlordane	0.006	0.06
Chlorpyrifos	0.01	0.03
Dieldrin	0.001	0.01
DDT	0.003	0.03
Endrin	0.001	0.01
Heptachlor	0.003	0.03
Lindane	0.1	1
Methoxychlor	0.1	1
Toxaphene	0.005	0.05
<i>Herbicides</i>		
2,4-D	0.1	1
2,4-DB	0.2	2
2,4,5 -T	0.002	0.02
MCPA	0.2	2
<i>Carbamates:</i>		
Carbaryl	0.06	0.6
Carbofuran	0.03	0.3
<i>Organophosphoru</i>		
Diazinon	0.01	0.1
Methyl Parathion	0.006	0.06
Parathion	0.03	0.3
<i>Triazines:</i>		
Atrazine	0.01	0.03
Simazine	0.01	0.03
<i>Fluorinated organic compounds</i>		



Contaminant	CELL 3	CELL 7 and CELL 8
	Allowable leaching contaminant levels (TCLP*) for clay lined Cell 3 (mg/l)	Allowable leaching contaminant levels (TCLP) for double lined Cell 7 and Cell 8 (mg/l)
Total fluorinated organic compounds (if leachate reused on or off-site)#	0.0003	0.0003
Total fluorinated organic compounds (if leachate not reused on or off-site)#	0.05	0.05

\*Allowable leaching levels to be determined using the **TCLP** procedure mentioned in United States Environmental Protection Agency (EPA), Washington DC (2008) "Test methods for evaluating solid waste, physical/chemical methods" Document number SW 846. 3rd Edition or more recent editions or supplement to that procedure as they become available.

#The standard suite of Total fluorinated organic compounds (PFCs) (including key sulfonates), plus total oxidisable precursor assay reported as the analyses for the resulting perfluorinated carboxylates for C<sub>4</sub> to C<sub>14</sub> carbon chain length (refer to PFAS National Environmental Management Plan JANUARY 2018 [https://www.epa.vic.gov.au/~media/Files/Your%20environment/Land%20and%20groundwater/PFAS%20in%20Victoria/PFAS%20NEMP/FINAL\\_PFAS-NEMP-20180110.pdf](https://www.epa.vic.gov.au/~media/Files/Your%20environment/Land%20and%20groundwater/PFAS%20in%20Victoria/PFAS%20NEMP/FINAL_PFAS-NEMP-20180110.pdf)).

**Schedule E Table 3—Maximum total contaminant levels in soils used as cover material (note: this material is not suitable for final capping)**

Contaminant	Maximum total contaminant levels in soils used as cover material (mg/kg)
Arsenic (total)	200
Beryllium	40
Cadmium	40
Chromium (iii)	240,000
Chromium (vi)	200
Copper	2,000
Lead	600
Manganese	3,000
Mercury (inorganic)	30
Methyl Mercury	20
Nickel	600
Zinc	14,000
PFOS (Perfluoro-octane sulfonate) + Perfluoroalkyl Sulfonamides	0.01
Total fluorinated organic compounds (TOPA analysis)	0.14
Contaminant	Maximum contaminant ALSP leaching concentration measured in cover material (unbuffered leach solution) µg/L (see Note 1)
Perfluoroalkyl Sulfonic Acids	* Stormwater release limit X 1
Perfluoroalkyl Sulfonamides	* Stormwater release limit X 1
Perfluoroalkyl Carboxylic Acids	* Stormwater release limit X 1
Fluorotelomer Sulfonic Acids	* Stormwater release limit X 1

\* "Stormwater release limit X 1" as per condition D17A and means a multiple of one times the release limit for the relevant PFAS compound applying to releases from the stormwater ponds serving the landfill cover system(s). Stormwater release limits prescribed by conditions D17A require that contaminants including PFAS contaminants must be minimised to the greatest practicable extent not cause environmental harm. During the commissioning period, the holder is to conduct investigations of leachability of cover materials to comply with this requirement and report results of the investigations by 31 July 2019. The intention is thus for specific best practice leachability values to be established by this investigative program.

Note 1 Material used for interim and final cover systems must be tested to determine susceptibility to leach PFAS to waters using at least Australian Standard Leaching Procedure (ASLP) (Australian Standard AS4439) with an unbuffered leach solution. In consultation and with written agreement of the administering authority, the suitably qualified person may utilise an alternate leach procedure that effectively simulates leaching of the material when exposed to rainfall, for example US EPA leaching procedure SW846 Method 1314.

**Schedule E Table 4 - Maximum Allowable Leaching Concentration (mg/L) limit in previously disposed wastes**

Parameter	Maximum Allowable Leaching Concentration (mg/L)
Biological Oxygen Demand	20 000
Total Organic Carbon	10 000
Petroleum Hydrocarbons	50
Antimony	5.0
Arsenic	5.0
Barium	100.0
Cadmium	0.5
Chromium	5.0
Cobalt	5.0
Copper	100.0
Lead	5.0
Mercury	0.1
Nickel	5.0
Selenium	1.0
Silver	5.0
Tin	3.0
Zinc	500.0

(E7) Notwithstanding the quality characteristic limits specified in Schedule E Table 1, 2, 3 and 4 the contaminants released must also comply with the following qualitative characteristics:

- (i) The contaminants must be spadeable by nature.

**Contaminant Release Precautions**

(E8) The release of contaminants to the pond sludge spreading areas must not be carried out if soil moisture conditions are such that surface runoff is likely to occur.

(E9) The release of contaminants to land as a result of the landfilling **activity** must:

- (a) be monitored from the uppermost aquifer at locations hydraulically up-gradient and down-gradient of the landfilled waste; and
- (b) not cause environmental harm.

**End of Conditions for Schedule E**

**SCHEDULE F - NOISE****Emission of Noise**

- (F1) The environmentally relevant activities must be carried out by such practicable means necessary to prevent the emission or likelihood of emission of noise that constitutes annoyance.
- (F2) In the event of a complaint about noise that constitutes annoyance being made to the administering authority, that the administering authority considers is not frivolous or vexatious, then the emission of noise from the approved place must not result in levels greater than those specified in Schedule F Table 1.

**SCHEDULE F TABLE 1**

<b>NOISE LIMITS AT A NOISE SENSITIVE PLACE</b>	
<b><i>Period</i></b>	<b><i>Noise Level at a Noise Sensitive Place Measured as the Adjusted Maximum Sound Pressure Level</i></b> <small><math>L_{Amax\ adj, T}</math></small>
7 am - 6 pm	Background noise level plus 5 dB(A)
6 pm - 10 pm	Background noise level plus 5 dB(A)
10 pm - 7 am	Background noise level plus 3 dB(A)
<b>NOISE LIMITS AT A COMMERCIAL PLACE</b>	
<b><i>Period</i></b>	<b><i>Noise Level at a Commercial Place measured as the Adjusted Maximum Sound Pressure Level</i></b> <small><math>L_{Amax\ adj, T}</math></small>
7 am - 6 pm	Background noise level plus 10 dB(A)
6 pm - 10 pm	Background noise level plus 10 dB(A)
10 pm - 7 am	Background noise level plus 8 dB(A)

**End of Conditions for Schedule F**

## SCHEDULE G - WASTE MANAGEMENT

### General

- (G1) Waste must not be released to the environment, stored, transferred or disposed contrary to any condition of this environmental authority.
- (G2) The holder of this environmental authority must not:
- (i) burn waste at or on the approved place; nor
  - (ii) allow waste to burn or be burnt at or on the approved place; nor
  - (iii) remove waste from the approved place and burn such waste elsewhere;

with the exception of the burning of wood and forest waste (underbrush) for the purpose of fire control management.

*Conditions G3 - G7 have been deleted by agreement with the holder of the environmental authority and are no longer in force.*

### Off Site Movement

- (G8) Where regulated waste is removed from the approved place (other than by a release as permitted under another schedule of this environmental authority), the holder of this environmental authority must monitor and record the following:
- (a) the date, quantity and type of waste removed; and
  - (b) name of the waste transporter and/or disposal operator that removed the waste; and
  - (c) the intended treatment/disposal destination of the waste.

(NOTE: Records of documents maintained in compliance with a waste tracking system established under the *Environmental Protection Act 1994* or any other law for regulated waste will be deemed to satisfy this condition).

- (G9) *This condition has been deleted by agreement with the holder of the environmental authority and is no longer in force.*

### Records

- (G10) Records must be maintained for a period of five (5) years for all regulated wastes mentioned in this schedule.
- (G11) *This condition has been deleted by agreement with the holder of the environmental authority and is no longer in force.*

### Landfill facility - Design and Operating Criteria

- (G12) Appropriate signs must be prominently displayed at **landfill facility** indicating:
- those wastes which may be deposited and those which must not be deposited; and

- locations where wastes must be deposited within the **landfill facility**.

- (G13) The holder of this environmental authority must record at least the following information with respect to the waste deposited in **landfill facility**:
- (i) type of waste;
  - (ii) quantity of waste;
  - (iii) date of deposition; and
  - (iv) results of analysis (where applicable).
- (G14) Records required to be kept in relation to condition G13 must be kept for a period of at least five (5) years.
- (G15) All wastes must be dumped or deposited in layers not exceeding a vertical height of 3.0 metres.
- (G16) Every layer of waste deposited in **landfill facility** must be evenly and properly consolidated by mechanical plant.
- (G17) Each completed vertical lift must be covered by a layer of earth not less than three hundred (300) millimetres in depth or by any other alternative cover with equivalent performance.
- (G18) When constructing adjacent cells or lifts the cover material placed over the earlier cell or lift may be removed to improve leachate drainage and gas migration.

#### **Landfill Facility - Maintenance**

- (G19) A system of suitable diversion drains or embankments shall be constructed and maintained to divert surface waters away from areas where wastes have been deposited and away from leachate collection systems. No stormwater drains are to be installed through the landfilled areas.
- (G20) A **leachate** collection system must be designed, installed and maintained by **an appropriately qualified person** to:
- 1) collect leachate generated in the **landfill unit**;
  - 2) convey the collected **leachate** out of the **landfill unit** to an appropriate temporary leachate storage facility; and
  - 3) restrict the height of the **leachate** above the liner system to a maximum level of 300mm.
- (G21) Collected **leachate** and stormwater runoff which has been in contact with waste materials in the **landfill units** must be:
- a) treated for a lawful off-site disposal; or
  - b) disposed of via on-site reuse (via surface irrigation over active waste disposal areas); or
  - c) disposed at a facility that is approved to receive such waste.

**Liners (prior to February 2017)**

- (G22) The holder of this environmental authority must before tipping commences in any new stage of operation undertake the following works and measures:
- (a) clean the base ensuring that natural clay soil is not damaged by the cleaning procedures;
  - (b) prove with the results of a certified survey of the new stage that a minimum of one metre of clay soil in the liner exists;
  - (c) ensure that any repair work or additional raising of the levels of the floor with clay is placed in layers and that the clay has permeability of less or equal to (but no more) than  $10^{-9}$  metres per second;
  - (d) the permeability of the clay liner must be assessed by an appropriate laboratory method and must be determined in the field by correlation of field dry density and field moisture content with a range of acceptable dry density and moisture content values which result in laboratory permeability values less than the target value of  $1 \times 10^{-9}$  metres per second. The acceptable range of dry density and moisture contents must be determined for each clay type used. **[Note:** As an alternative, a geosynthetic clay liner (GCL) installed in a quality assured manner by an **appropriately qualified person** and certified by an **appropriately qualified person** as equivalent in hydraulic performance and durability to a one metre minimum compacted clay liner with a coefficient of permeability (hydraulic conductivity) of less than  $1 \times 10^{-9}$  m/sec may be used];
  - (e) construct a perimeter clay wall extending from the base liner to the lower limit of the surface cap. This clay wall should be constructed to achieve the same permeability specification in condition G22(d) above;
  - (f) ensure that all leachate collection sumps must:
    - (i) be constructed with the base liner below the lowest level of the sump, and
    - (ii) contain an accessible pumping point during and after the completion of filling operations at the premises.
  - (g) any works associated with preparation or construction of lining systems must be overseen by an independent **appropriately qualified person**;
  - (h) arrange for a report from an independent **appropriately qualified person** to be prepared, detailing the liner integrity and quality and keep a copy of this report at the approved place and make this available for examination by an authorised person upon request and;
  - (i) construction of a new **landfill unit** and placement of a new liner outside the areas depicted in Figure 1 Appendix 1 is not authorised by this environmental authority; any such works must only be carried out following the amendment of this environmental authority; and
  - (j) all designs must be verified by a RPEQ in accordance with the *Queensland Professional Engineers Act 2002*.

**Liners (from February 2017)**

(G22A) A liner system must be designed, installed and maintained by an **appropriately qualified person** to:

- 1) prevent release of contaminants, including leachate, to land and waters; and
- 2) prevent subsurface migration of landfill gas from the landfill unit.

**Liner CELL 7 and Cell 8**

- (G22B) A **double liner** must be installed in CELL 7 and CELL 8 including the batters of CELL 7 and CELL 8 adjacent to the boundary of the **landfill facility** or, as an alternative, a combination of 1.5mm **HPDE** and a geosynthetic clay liner (**GCL**) with a coefficient of permeability (hydraulic conductivity) of less than  $1 \times 10^{-9}$  m/sec may be used.
- (G22C) Liner in CELL7 and CELL 8 must be installed in a quality assured manner by an **appropriately qualified person**.
- (G22D) A Construction Quality Assurance plan must be prepared and submitted to the **administering authority** prior to commencement of the liner installation in CELL 7 and CELL 8. The Construction Quality Assurance plan must identify parameters to be inspected or tested, the frequency or timing of the inspection, performance indicators and the responsibility for the inspection.
- (G22E) The installation of the alternative liner in CELL7 and CELL 8 must be certified by an independent **appropriately qualified person** as equivalent in hydraulic performance and durability to those prescribed in the Definitions Schedule.
- (G23) All waste disposal from 1 February 2017 for all waste mentioned in condition E3 (viii) and E3 (ix) must only occur in Cell 3, 7 and 8.
- (G24) Prior to acceptance of waste mentioned in condition E3 (viii), E3 (ix) and E3 (x), cells 1, 2, 4, 5 and 6 must not receive any waste and must have the following management measures implemented:
- Minimising the size of the tipping face;
  - Management of leachate from the sumps and any surface run-off from the waste;
  - The use of interim cover on the waste in accordance with standard operational procedures for landfills, namely
    - Any waste-filled areas that have not been landfilled for more than 90 days should have an intermediate soil cover meeting the following requirements:
    - The cover layer should be a minimum 300 mm layer of clean earth in the form of a fine-grained, largely cohesive soil or any alternative cover with equivalent performance.
    - The soil should have a saturated hydraulic conductivity of less than  $1 \times 10^{-5}$  m/s.
    - The cover layer should restrict the rainfall infiltration rate into the waste to 20% of the total rainfall.
    - The methane concentration in surface gas monitored above the intermediate cover should be less than 500 ppm.
  - Regrading and compaction of the waste to shed incident rainfall..
- (G25) *This condition has been replaced by condition G20 and is no longer needed.*
- (G26) The installation of the liner for the cell(s) accepting waste from February 2017 must be a minimum 1.5 metres above the highest known groundwater table and/or include, where necessary, a groundwater cut-off trench which must be designed, installed, operated and maintained by an **appropriately qualified person** to achieve the separation of disposed waste and groundwater.

**Asbestos Disposal**

(G27) Asbestos disposal must:

- (a) only asbestos packaged and managed in accordance with all relevant work health and safety legislation requirements can be disposed;
- (b) be managed at all times to avoid any potential release of particulate matter to the atmosphere;
- (c) be disposed of as a special burial of waste that is not located not less than 2 metres from the sides and final waste surface of the landfill cell;
- (d) be covered immediately with at least 300 mm of soil or 1000 mm of non-asbestos waste, and prior to any compaction; and
- (e) include keeping of accurate records of the disposal location and be marked on site map(s).

**Landfill Closure and Post-Closure Care**

(G28) When the deposition of waste to the **landfill unit** ceases, a final capping system to the **landfill unit** must be designed by an **appropriately qualified person** and installed to minimise:

- (a) infiltration of water into the **landfill unit** and water ponding on the surface; and
- (b) the likelihood of any erosion occurring to either the final capping system or the landfilled materials.

Note: A final capping system is not required where the deposition of waste to a **landfill unit** ceases temporarily for the purpose of using an alternative working face.

(G29) Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that:

1. suitable species of vegetation for the location are established and sustained for earthen surfaces; and
2. potential for erosion is minimised; and
3. the quality of **water**, including seepage, released from the site does not cause environmental harm; and
4. potential for environmental nuisance caused by dust is minimised; and
5. the water quality of any residual water body does not have potential to cause environmental harm; and
6. the final landform is stable and protects public safety; and
7. the contaminant concentrations within the final capping layer are appropriate for the final land use and in accordance with the latest edition of the 'National Environmental Protection (Assessment of Soil Contamination) Measure'.

(G30) Following cessation of deposition of waste in the **landfill unit**, post-closure care of the **landfill unit** must be conducted for a period of 30 years or until the **administering authority** determines, on the basis of correct information, that the **landfill unit** and surrounding site are stable and that no release of waste materials, **leachate**, landfill gas or other contaminants that may cause environmental harm is likely.

(G31) The program of post-closure care implemented must be effective in preventing and/or minimising the likelihood of environmental harm being caused. The program must include measures to:



1. maintain the structural integrity and effectiveness of the final capping system; and
  2. maintain and operate the **leachate** collection system; and
  3. maintain the **groundwater monitoring network** and monitor quality of groundwater at a frequency sufficient to detect any release of contaminants to groundwater; and
  4. maintain and operate the groundwater management system installed; and
  5. maintain and operate the landfill gas monitoring system; and
  6. maintain and operate the landfill gas collection system.
- (G32) A site management plan pursuant to Chapter 7, Part 8 of the *Environmental Protection Act 1994* must be developed and provided to the **administering authority** after the installation of the final cap on the **landfill unit**. The site management plan must include, but is not to be limited to, the future land use and actions intended to be taken for compliance with the closure and post-closure care requirements of this approval.

### Landfill Gas Management

- (G33) Landfill gas measured as methane must not exceed the following limits:
- (a) 500 parts per million at a height of 50mm above the final and intermediate cover surface including the batter slopes of the **landfill unit**;
  - (b) 25% of the lower explosive limit of the landfill facility **boundary** when measured in facility structures (but excluding facility structures used for landfill gas control and recovery, and **leachate** collection system components);
  - (c) the lower explosive limit in subsurface geology at or beyond the **landfill facility boundary** as depicted in Figure 1 Appendix 1;
  - (d) any landfill gas collected is reused or efficiently flared in a manner that avoids environmental harm; and
  - (e) 25% of the lower explosive limit within service pits, service trenches, stormwater drains or other structures beyond the **landfill facility boundary** as depicted in Figure 1 Appendix 1
  - (f) In future residential areas, once those areas are established, the following limits:
    - methane <2,500ppm (5%LEL);
    - hydrogen sulphide <10ppm; and
    - carbon monoxide <30ppm.
- (G34) A **landfill gas** monitoring network must be installed for each **landfill unit** to measure methane levels, hydrogen sulphide and carbon monoxide in **landfill facility** structures, at the **landfill facility boundary** and other sites, as prescribed by condition G33. The network must consist of gas monitoring devices, such as monitoring bores and be developed by an **appropriately qualified person** in the fields of hydrogeology and landfill gas monitoring program design to be able to competently make recommendations about these matters.

### End of Conditions for Schedule G

## SCHEDULE H - SELF MONITORING AND REPORTING

### Complaint Recording

- (H1) All complaints received by the holder of this environmental authority relating to operations at the approved place must be recorded in a register with the following details:
- (i) time, date and nature of the complaint;
  - (ii) type of communication (telephone, letter, personal etc.);
  - (iii) name, contact address and contact telephone number of complainant (Note: if the complainant does not wish to be identified then "Not identified" is to be recorded);
  - (iv) response and investigation undertaken as a result of the complaint;
  - (v) name of person responsible for investigating complaint; and
  - (vi) action taken as a result of the complaint investigation and signature of responsible person.
- (H2) The complaints record required by condition number H1 must be maintained for a period of not less than five (5) years.

### Incident Recording

- (H3) A record must be maintained of events including but not limited to:
- (i) the time, date and duration of pollution control equipment malfunctions that may affect the environmental performance of the approved place; and
  - (ii) any shut-downs of the baghouses, cyclones or the waste water treatment operations.
- (H4) The record required by condition number H3 must be maintained for a period of not less than five (5) years.

### Notification of Emergencies and Incidents

- (H5) As soon as practicable after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority, the holder of this environmental authority must notify the administering authority of the release by telephone or facsimile.
- (H6) The notification of emergencies or incidents as required by condition number H5 must include but not be limited to the following:
- (i) The holder of the environmental authority;
  - (ii) the location of the emergency or incident;
  - (iii) the number of the environmental authority;
  - (iv) the name and telephone number of the designated contact person;
  - (v) the time of the release;
  - (vi) the time the holder of the environmental authority became aware of the release;
  - (vii) the suspected cause of the release;
  - (viii) the environmental harm and or environmental nuisance caused, threatened, or suspected to be caused by the release; and

- (ix) actions taken to prevent further any release and mitigate any environmental harm and or environmental nuisance caused by the release.
- (H7) Not more than fourteen (14) days following the initial notification of an emergency or incident, the holder of the environmental authority must provide written advice of the information supplied in accordance with condition number H6 in addition to:
- (i) proposed actions to prevent a recurrence of the emergency or incident;
  - (ii) outcomes of actions taken at the time to prevent or minimise environmental harm and or environmental nuisance.
- (H8) As soon as practicable, but not more than three months following the conduct of any environmental monitoring performed in relation to the emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority, the holder of the environmental authority must provide written advice of the results of any such environmental monitoring performed.

*Conditions H9 and H10 have been deleted by agreement with the holder of the environmental authority and are no longer in force.*

#### Monitoring of Contaminant Releases to Waters

- (H11) The holder of this environmental authority is responsible for the making of determinations of the quality of the contaminants released for the release points, quality characteristics, and at the frequency specified in Schedule H Table 2:

#### Sampling and In-situ Monitoring Point Details

- (H12) Determinations of the quality of contaminants released to waters to check conformity with the release quality characteristics specified in **Schedule C Table 1 - RELEASE QUALITY CHARACTERISTIC LIMITS** and **Schedule C Table 2 - RELEASE QUALITY CHARACTERISTIC LIMITS FOR PFAS**, and condition (C7) of this environmental authority must be undertaken at the sampling and in-situ measurement point(s) described as:

S1: discharge pipe from wastewater treatment plant prior to discharge into the North Pine River.

**Schedule H Table 2 – Monitoring requirements for discharge to water**

Quality Characteristic Determination	Sample Points	Minimum Frequency
5-day Biochemical Oxygen Demand. mg/L	S1	One sample per batch discharged or one per week whichever is more frequent
Suspended Solids.mg/L		
pH		
Dissolved Oxygen. mg/L & % saturation		
Organic Nitrogen as N µg/L		
Ammonia Nitrogen as N µg/L		
Oxidised Nitrogen (Nitrate + Nitrite) as N µg/L		
Total Nitrogen as N µg/L		
Chlorophyll a. µg/L		
Orthophosphate as P µg/L		
Total Phosphorus as P. µg/L		
Adsorbable Organic Halide µg/L		
Benzene (µg/L)		

Naphthalene (µg/L)		
Total Recoverable Hydrocarbons (silica gel) (µg/L)		
Poly Chlorinated Biphenyls (µg/L)		
Bis(2-ethylhexyl) phthalate (µg/L)		
Diethylphthalate (µg/L)		
Dimethyl phthalate (µg/L)		
Arsenic (Total) µg/L		
Antimony (Total) µg/L		
Cadmium (Total) µg/L		
Chromium (Total) µg/L		
Cobalt (Total) µg/L		
Copper (Total) µg/L		
Iron (Total) µg/L		
Lead (Total) µg/L		
Manganese (Total) µg/L		
Mercury (Total) µg/L		
Nickel (Total) µg/L		
Selenium (Total) µg/L		
Silver (Total) µg/L		
Titanium (Total) µg/L		
Vanadium (Total) µg/L		
Zinc (Total) µg/L		
PFAS (as Schedule C Table 2) Refer Note 1		

**Note 1: PFAS** must be monitored using trace level analysis as per Schedule C Table 2 - RELEASE QUALITY CHARACTERISTIC LIMITS FOR **PFAS**. At least every second **PFAS** sample shall incorporate both LC-MS/MS analysis and Total Oxidisable Precursor Assay (TOPA) analysis to confirm removal effectiveness of perfluoroalkyl acid precursor compounds.

### Quality Determinations of Contaminant Releases to Water

- (H13) All determinations of the quality of contaminants released to waters must be made in accordance with methods prescribed in the most recent addition of the administering authority *Water Sampling Manual*. Determinations for **PFAS** concentration must also comply with quality assurance measures for **PFAS** sampling and analysis described in the "PFAS National Environmental Management Plan", January 2018 (or more recent revisions of that guidance).
- (H14) All determinations of the quality of contaminants released must be performed by a person or body possessing appropriate experience and qualifications to perform the required measurements.
- (H15) Records must be kept of the results of all determinations of the quality of contaminants released to waters for a period of at least five (5) years.

### Monitoring of Volume of Release

- (H16) The daily quantity (volume) of contaminants released into the North Pine River must be determined by an appropriate method, for example a flow meter.
- (H17) Records must be kept of the results of all determinations of the daily quantity of contaminants released to waters for a period of at least five (5) years.

### Receiving Waters Monitoring Program

- (H18) The holder of this environmental authority must design a Receiving Environment Monitoring Program to monitor the effects of the release of contaminants on the receiving water environment.
- (H19) The holder of this environmental authority must:

- (i) not more than six (6) calendar months after the date of issue of this environmental authority, submit a proposal for a Receiving Waters Monitoring Program to the administering authority for review and comment, and
- (ii) have due regard to the comments resulting from the review in finalising and implementing the Receiving Waters Monitoring Program.

(H20) The proposal for the Receiving Waters Monitoring Program must include but not be limited to the following:

- (i) description of potentially affected environment, including key communities and ambient water quality;
- (ii) description of water quality objectives to be achieved;
- (iii) description of selected physio - chemical and biological indicators and reasons for their inclusion;
- (iv) the locations of monitoring stations including monitoring upstream and downstream of the approved release as well as any control locations;
- (v) the proposed sampling depths;
- (vi) the water quality characteristics of receiving waters to be determined;
- (vii) the frequency of sampling and analysis;
- (viii) any historical data sets to be relied upon; and
- (ix) description of statistical basis on which conclusions are drawn.

(H21) The proposal for the Receiving Environment Monitoring Program must also consider, but not be limited to, the following:

- (i) water quality criteria specified in the Australian & New Zealand Environment & Conservation Council's "Australian Water Quality Guidelines for Fresh and Marine Waters", November 1992;
- (ii) any Environmental Protection Policies enacted under Queensland's *Environmental Protection Act 1994* concerning water quality and ecosystems;
- (iii) relevant reports produced with respect to the administering authority's Water Quality Monitoring Programs;
- (iv) any other requirements arising due to the inclusion of the North Pine River in the Moreton Bay Marine Park and or fish habitat areas;
- (v) the "PFAS National Environmental Management Plan"; and
- (vi) trigger points for PFOS, PFOA and PFHxS in fish and seafood published by Food Standards Australia and New Zealand.

(H22) The holder of this environmental authority must conduct the Receiving Environment Monitoring Program required under conditions H18, H19, H20 and H21 of this environmental authority.

(H23) All determinations of the quality of contaminants released to waters must be made in accordance with methods prescribed in the most recent addition of the administering authority *Water Sampling Manual*.

- (H24) All determinations of the quality of contaminants released must be performed by a person or body possessing appropriate experience and qualifications to perform the required measurements.
- (H25) The holder of this environmental authority must submit a report of the results of the Receiving Waters Monitoring Program including an assessment of the impact of the discharge upon the receiving environment with respect to water quality criteria with each Annual Return. This report shall include an interpretation of the results and conclusions by an expert in the field of receiving waters monitoring as to whether there is any contamination and if so, the level of environmental harm caused as a result of such contamination.
- (H26) Records must be kept of the results of all determinations and monitoring carried out under the Receiving Waters Monitoring Program for a period of at least five (5) years.

### **Monitoring of Landfill Groundwater Quality**

- (H27) A groundwater monitoring network must be installed for the existing dump areas and for any new dump areas within three (3) months of the completion of construction of the new dump area. The network must include sufficient numbers of wells installed at appropriate locations and depths which:
- (i) yield representative groundwater samples from the uppermost aquifer so as to establish background water quality in hydraulically upgradient well(s) (bores) that have not been affected by any potential leakage of contaminants to groundwater; and
  - (ii) yield representative groundwater samples from the uppermost aquifer so as to establish groundwater quality down-gradient of any potential leakage of contaminants to groundwater.
- (H28) The groundwater monitoring network referred to in condition H27 above must be developed by a person possessing appropriate qualifications and experience in the fields of hydrogeology and groundwater monitoring program design to be able to competently make recommendations about these matters.
- (H29) Each groundwater monitoring bore must be fitted with a locked cap at all times other than at the time of sampling.
- (H30) Following the installation of the groundwater monitoring network, the holder of this environmental authority must conduct an ongoing Groundwater Monitoring Program.
- (H31) The Groundwater Monitoring Program must include but not be limited to the following:
- (i) sampling point locations;
  - (ii) measurement and recording of standing levels in bores, accurate to 0.01 metre, on each occasion that samples are obtained for groundwater monitoring;
  - (iii) security of the sampling sites;
  - (iv) sampling of groundwater from each bore on at least one occasion in every period of three (3) months;
  - (v) samples to be analysed and results recorded for at least the following parameters:
    - pH
    - anions (SO<sub>4</sub>, Cl, CO<sub>3</sub>, HCO<sub>3</sub>)
    - cations (Na, Mg, K, Ca)
    - chloride : sulfate ratio (calculated)

- benzene
- naphthalene
- poly chlorinated biphenyls
- phthalates
- electrical conductivity
- chemical oxygen demand (COD)
- total organic carbon (TOC)
- nitrate (as N)
- total phosphorous (as P)
- sulphate
- total iron
- total aluminum
- total antimony
- total barium
- total cadmium
- total cobalt
- total chromium
- total cobalt
- total copper
- total mercury
- total manganese
- total lead
- total vanadium
- total zinc
- total titanium
- phenolic substances
- total recoverable hydrocarbons (C<sub>6</sub> – C<sub>40</sub>) (with & without silica gel cleanup) total petroleum hydrocarbons (C<sub>5</sub> - C<sub>36</sub>) (with & without silica gel cleanup), and
- absorbable organic halides.
- **PFAS** compounds as per compounds in Schedule C Table 2 - RELEASE QUALITY CHARACTERISTIC LIMITS FOR PFAS, with sample analysis using both LC-MS/MS (to ultra-trace LOR) and TOPA analysis.

- (H32) Records must be kept of the results of all determinations of the quality of groundwater for a period of at least five (5) years.
- (H33) All determinations of the quality of contaminants released must be performed by a person or body possessing appropriate experience and qualifications to perform the required measurements.
- (H34) The holder of this environmental authority must submit a report of the results of the Groundwater Monitoring Program including an assessment of the impact of the discharge upon the receiving environment with respect to water quality criteria with each Annual Return. This report shall include an interpretation of the results and conclusions by an expert in the field of groundwater monitoring as to whether there is any contamination and if so, the level of environmental harm caused as a result of such contamination.

**Noise Monitoring**

- (H35) For the purposes of investigating any complaint made about noise annoyance monitoring and recording the noise levels from the environmentally relevant activities must be undertaken for at least the following descriptors, characteristics and conditions, where applicable:
- (i)  $L_{Amax, adj T}$
  - (ii)  $MaxL_{pA T}$
  - (iii)  $L_{A_{bg, T}}$  (or  $L_{A90, T}$ );
  - (iv)  $L_{AN, T}$  (where N equals statistical levels of 1, 10, 50, 90 and 99);
  - (v) The level and frequency of occurrence of impulsive or tonal noise;
  - (vi) Atmospheric conditions including temperature, relative humidity and wind speed and direction; and
  - (vii) Effects due to extraneous factors such as traffic noise.
- (H36) In conjunction with the measurement and recording of the noise, the following parameters and conditions must be recorded:
- (i) location, date and time of recording;
- (H37) The holder of this environmental authority must monitor and record the noise levels as often as is necessary to check compliance with the conditions of this authority but not less frequently than upon the receipt of a complaint of noise annoyance directed to the company.
- (H38) Monitoring must also be undertaken to investigate any complaint of noise annoyance upon receipt of a written request from the administering authority to carry out such monitoring at the locations specified in such a request.
- (H39) The method of measurement and reporting of noise levels must be made in accordance with methods prescribed in the most recent addition of the administering authority *Noise Measurement Manual*.
- (H40) The method of measurement and reporting of noise levels must be undertaken by a person or body possessing appropriate experience and qualifications to perform the required measurements.
- (H41) Records must be kept of the results of all monitoring of noise levels and other information required to be recorded in conjunction with such monitoring for a period of at least five (5) years.

**Report Submission**

- (H42) The holder of this environmental authority must ensure that the results of all monitoring performed in accordance with this environmental authority are submitted with the initial Annual Return. Each subsequent Annual Return must include details of the results of monitoring performed during the twelve (12) months preceding that Annual Return.

**Exception Reporting**

- (H43) The holder of this environmental authority must notify the administering authority in writing of any monitoring result which indicates an exceedance of any environmental authority limit within twenty eight (28) days of completion of analysis.



(H44) The written notification required by condition number H43 above must include:

- (i) The full analysis results, and
- (ii) Details of investigation or corrective actions taken, and
- (iii) Any subsequent analysis.

**End of Conditions for Schedule H**

### SCHEDULE I - DEFINITIONS

- (I1) Key terms and/or phrases used in this document are defined in this section and bolded throughout this document. Applicants should note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

For the purposes of this environmental authority the following definitions apply:

- (I3) “**Act**” means the *Environmental Protection Act 1994*.
- (I4) “**administering authority**” means the Department of Environment and Science.
- (I5) “**authorised person**” means a person holding office as an authorised person under an appointment under the *Environmental Protection Act 1994* by the chief executive or chief executive officer of a local government.
- (I6) “**cover material**” means dense, inert and incombustible material.
- (I7) “**groundwater**” means any water contained in or occurring in an aquifer.
- (I8) “**dry weather day**” refers to a day during which no rainfall is recorded at any rainfall measuring station recognised by the Commonwealth Bureau of Meteorology within the area associated to the approved place, or if no such measuring station exists, at the nearest such station to the approved place. The term also excludes days during which recorded rainfall over the three preceding days exceeds 100 mm.
- (I9) “**land**” as stated in Schedule E - Land Application means land excluding waters and the atmosphere.
- (I10) “**landfill cell**” means a compartment within a dump area in which waste is deposited or enclosed by cover material.
- (I11) “**landfill site**” means a site for the disposal of general or regulated wastes to land.
- (I12) “**leachate**” means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the approved place which contains soluble, suspended or miscible contaminants likely to have been derived from said material.
- (I13) “**waste**” means anything that is:
- (a) left over, or an unwanted by-product, from an industrial, commercial, domestic or other activities; or
  - (b) surplus to the industrial, commercial, domestic or other activities generating the waste.
  - (c) a gas, liquid solid, or energy, or a combination of any of them; and
  - (d) a thing (can be waste) whether or not it is of value.
- (I14) “**regulated waste**” means non-domestic waste mentioned in Schedule 9 of the Environmental Protection Regulation 2019, and includes:
- (a) for an element - any chemical compound containing the element; and

- (b) anything that has contained a regulated waste; and
- (c) regulated waste that has been treated or immobilised.

- (I15) “**general waste**” means waste other than regulated waste.
- (I16) “**spadeable**” means firm solid which does not leak liquid, when picked up with a spade.
- (I17) “**dumping area**” means a place within a landfill site in which wastes have or will be deposited.
- (I18) “**total nitrogen**” means the sum of Organic Nitrogen, Ammonia Nitrogen, Nitrite plus Nitrate Nitrogen
- (I19) “**mg/L**” means milligrams per litre.
- (I20) “**median**” means the middle value, where half the data are smaller, and half the data are larger. If the number of samples is even, the median is the arithmetic average of the two middle values.
- (I21) “**annoyance**”: in determining what constitutes “annoyance”, regard must be had to *Australian Standard 1055.2 - 1989 Acoustics - Description and Measurement of Environmental Noise Part 2 Application to specific situations*.
- (I22) “**µg/L**” means micrograms per litre.
- (I23) “**cubic metre**” (“**m<sup>3</sup>**”) means the volume of dry gaseous contaminant which occupies 1 cubic metre at a temperature of zero degrees Celsius and at an absolute pressure of 101.3 kilopascals.
- (I24) “**long term 80 percentile compliance**” means that not more than ten (10) of the measured values of the quality characteristic are to exceed the stated release limit for any fifty (50) consecutive samples where:
- (i) the consecutive samples are taken over a one (1) year period;
  - (ii) the consecutive samples are taken at approximately equal periods; and
  - (iii) the time interval between the taking of each consecutive sample is not less than six (6) days.
- (I25) “**short term 80 percentile compliance**” means that not more than one (1) of the measured values of the quality characteristic are to exceed the stated release limit for any five (5) consecutive samples where:
- (i) the consecutive samples are taken over a five (5) week period;
  - (ii) the consecutive samples are taken at approximately equal periods; and
  - (iii) the time interval between the taking of each consecutive sample is not less than six (6) days.
- (I26) “**long term 50 percentile compliance**” means that the median value of the measured values in ranked order of the quality characteristic is not to exceed the stated release limit for any fifty (50) consecutive samples where:
- (i) the consecutive samples are taken over a one (1) year period;
  - (ii) the consecutive samples are taken at approximately equal periods; and
  - (iii) the time interval between the taking of each consecutive sample is not less than six (6) days.

- (I27) “**maximum**” means that the measured value of the quality characteristic or contaminant must not be greater than the release limit stated.
- (I28) “**minimum**” means that the measured value of the quality characteristic or contaminant must not be less than the release limit stated.
- (I29) “**range**” means that the measured value of the quality characteristic or contaminant must not be greater than the higher release limit stated nor lower than the lower release limit stated.
- (I30) “**noise sensitive place**” means:
- (a) a dwelling, mobile home or caravan park, residential marina or other residential premises; or
  - (b) a motel, hotel or hostel; or
  - (c) a kindergarten, school, university or other educational institution; or
  - (d) a medical centre or hospital; or
  - (e) a protected area; or
  - (f) a park or gardens.
- (I31) “**commercial place**” means a place used as an office or for business or commercial purposes.
- (I32) “**L<sub>Amax adj, T</sub>**” means the average maximum A-weighted sound pressure level, adjusted for noise character and measured over a time period of not less than fifteen (15) minutes, using Fast response.
- (I33) “**background noise level**” means either:
- L<sub>A90, T</sub> being the A-weighted sound pressure level exceeded for ninety percent (90%) of the time period of not less than fifteen (15) minutes, using Fast response, or
- L<sub>Abg, T</sub> being the arithmetic average of the minimum A-weighted sound pressure level readings measured in the absence of the noise under investigation during a representative time period of not less than fifteen (15) minutes, using Fast response.
- (I34) “**MaxL<sub>pA T</sub>**” means the maximum A-weighted sound pressure level measured over a time period of not less than fifteen (15) minutes, using Fast response.
- (I35) “**third party certification body**” means external and independent (third party) body, ensuring continued quality for the required determinations by auditing both systems and procedures on a regular basis, for example National Association of Testing Authorities, Lloyd’s Register Quality Assurance, Davis Langdon International Quality, Sci - Qual International.
- (I36) “**groundwater monitoring network**” means a network of groundwater monitoring devices, such as monitoring bores, used to provide data in respect to the level and quality of groundwater in the uppermost aquifer where the location of the groundwater monitoring devices is such that comparisons of groundwater quality and groundwater level can be made between groundwater flowing beneath the site (down - gradient flow) of the activity and groundwater flowing towards the site of the activity (up - gradient flow).

- (I37) **"geotechnical stability"** means a situation where instability related to the excessive settlement and subsidence caused by decomposition and consolidation of the wastes deposited in the dump areas, and sliding instability of the dump area slope has ceased.
- (I38) **"appropriately qualified person(s)"** means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.
- (I39) **"landfill unit"** means a discrete area of land or an excavation that receives waste.
- (I40) **"landfill facility"** means land including buffers and structures at the site approved for the disposal of waste.
- (I41) **"landfill gas"** is a mix of different gases generated from the landfilled waste and includes gaseous emissions arising from all physical, chemical and biological processes occurring within the waste, e.g. microbial production, chemical reactions and direct volatilisation and may include methane.
- (I42) **"24 hour storm event with an average recurrence interval of 1 in 10 years"** means the maximum rainfall depth from a 24 hour duration precipitation event with an average recurrence interval of once in 10 years. *For example, an Intensity-Frequency-Duration table for a 24 hour duration event with an average recurrence interval of 1 in 10 years, identifies a rainfall intensity of 8.2mm/hour. The rainfall depth for this event is therefore 24 hour x 8.2mm/hour = 196.8mm.*
- (I43) **"double liner"** means compacted clay at least 600mm thick achieving a maximum permeability of  $1 \times 10^{-9}$  metres per second overlain with 1.5mm HDPE synthetic liner or alternate double liner system agreed in writing as equivalent in performance by the administering authority.
- (I44) **"HDPE"** means high density polyethylene.
- (I45) **"clay liner"** means compacted clay at least 600 mm thick achieving a maximum permeability of  $1 \times 10^{-9}$  metres per second or alternate such as an engineered geosynthetic agreed in writing as equivalent in performance by the administering authority.
- (I46) **"GCL"** means a geosynthetic clay liner comprising of a layer of processed clay (bentonite) either bonded to a geomembrane or fixed between two sheets of geotextile.
- (I47) **"PFAS"** means per and polyfluoroalkyl substances and includes perfluoroalkyl acid precursor compounds and their intermediates.
- (I48) **"LC-MS/MS"** means liquid chromatography with tandem mass spectrometry.
- (I49) **"TOPA"** means total oxidisable precursor assay.
- (I50) **"wastewater treatment plant waste byproducts and residues"** means wastewater treatment plant spent media including resins, activated carbon and filtration media.

**End of Conditions for Schedule I**

**END OF PERMIT**

Appendices

APPENDIX 1

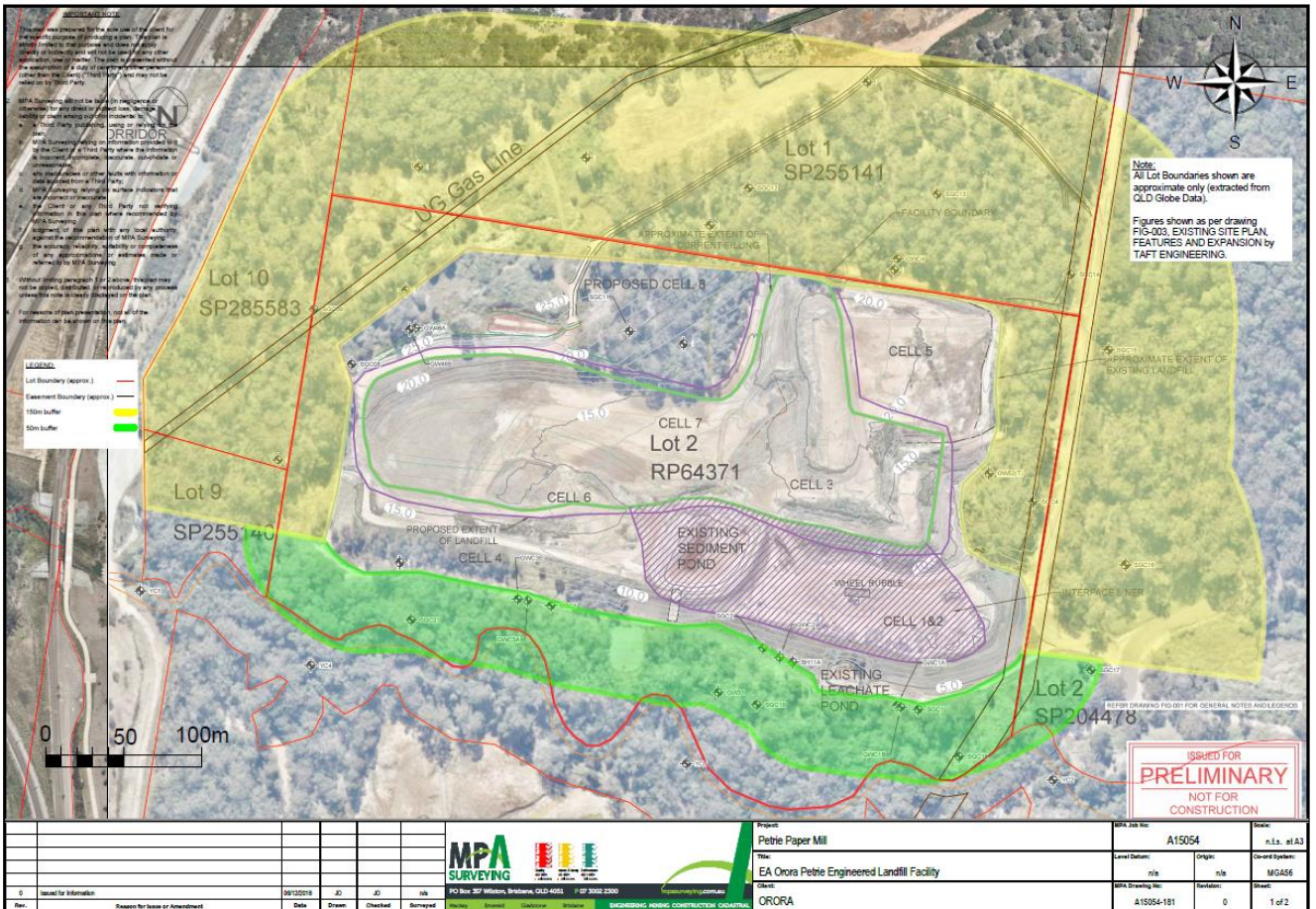


FIGURE 1. LANDFILL FACILITY

END OF ENVIRONMENTAL AUTHORITY