

Model operating conditions

ERA 60—Waste disposal

Version history

Version	Date	Description of changes
1.00	26 November 2013	Original document
1.01	30 January 2015	Formatted tables and page numbers. Changed 1,1 Dichloroethene to 1,1 Dichloroethene
2.00	24 November 2015	Updated corporate style
2.01	1 July 2016	Added policy register reference
2.02	3 July 2017	Updated reference from <i>Sustainable Planning Act 2009</i> to <i>Planning Act 2016</i>
3.00	07 September 2017	Condition numbers updated to reflect the DES condition library numbering (Connect conditions). Minor amendments made to some conditions for consistency with other model conditions.
3.01	29 September 2017	Minor formatting changes.
3.02	25 June 2018	Document rebranded to align with machinery of government changes.
4.00	23 November 2018	Updated for Environmental Protection (Waste ERA Framework) Amendment Regulation 2018. Also updated reference to Marine Parks Act and “Monitoring and sampling manual”.
5.00	4 February 2019	Minor corrections.

Prepared by: Industry Sector Regulation & Support, Department of Environment and Science

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Summary

This document provides advice to potential environmental authority holders on the model operating conditions that will be applied to their environmental authority for environmentally relevant activity (ERA) 60 landfill operations if a site specific application is made for the following thresholds:

1. ERA 60 (1)
2. ERA 60 (2)
3. ERA 60 (3)
4. ERA 60 (4).

Key terms and/or phrases used in this document are defined in the definitions section and bolded throughout this document.

The model operating conditions were drafted before ERA 60 was split to include threshold 3 for disposing of only inert waste and threshold 4 for maintaining a decommissioned waste disposal facility. The model conditions have not been assigned to individual thresholds. Rather, if a particular model operating condition does not apply to an operation, then it will not form part of the conditions placed on the environmental authority. Similarly, additional conditions can be applied at the discretion of the **administering authority** to address risks that are specific to a particular operation or a particular site (e.g. where specific **environmental values** may be impacted).

1 Introduction

The *Environmental Protection Act 1994* (EP Act) provides for the granting of environmental authorities for landfill operations (i.e. ERA 60—Waste disposal).

These model operating conditions provide a framework of conditions that will apply to landfill operations across the State of Queensland.

In giving approval under the EP Act for ERA 60—Waste disposal **activities**, the **administering authority** must address the regulatory requirements set out in the Environmental Protection Regulation 2008 and the standard criteria contained in the EP Act. The **administering authority** will give consideration to these regulatory requirements in the context of specific information about the environmental impacts of a particular project provided through application documentation for an environmental authority.

Conditions in your environmental authority will generally state what is and what is not permitted as part of the **activity**. They will relate to the operation of the **activity** and also cover rehabilitation requirements. Where you also require a development permit for your **activity** under the *Planning Act 2016*, the conditions in your environmental authority will not deal with land-use issues, as these will be assessed and conditioned in your development approval.

An environmental authority approves the carrying out of an **activity** and does not approve any environmental harm unless a condition stated by the authority specifically states that an action or event can occur.

The **administering authority** may amend the conditions in this guideline to ensure they are current and appropriate (although conditions in your approval will only change in the circumstances set out in the EP Act).

2 How to use this guideline

2.1 New project applications

These model operating conditions provide a framework of conditions that will be applicable to all new environmental authorities for ERA 60—Waste disposal activities where a site specific application is made.

As the model operating conditions are a framework only, additional conditions can be applied at the discretion of the **administering authority** to address risks that are specific to a particular operation or a particular site (e.g. where specific **environmental values** may be impacted). Also, if a particular model operating condition does not apply to an operation, then it will not form part of the conditions placed on the environmental authority.

The applicant can also request the addition of conditions or removal of model conditions to tailor the environmental authority to their particular operation. These requests are to be made through the site specific application for an environmental authority supported by a justification for the change requested.

In some circumstances, payment of financial assurance may also be required. If financial assurance is required, it will be stated as an additional condition on the environmental authority.

If a condition of the environmental authority requires monitoring to occur, limit objectives should first be sourced from any relevant environmental protection policy (EPP).

2.2 Amendments

Where an amendment application involves altering **activities** covered by the model operating conditions, negotiation with **you** should take place before the original conditions are amended to reflect the model operating conditions. An amendment application is not an opportunity for the **administering authority** to impose these model operating conditions on an existing project, except to the extent that **you** seek to adopt the model operating conditions.

2.3 Transfer of environmental authority holder

The model operating conditions should not be imposed upon a transfer, unless at the request of the transferee.

3 Obligations under the EP Act

At all times **you** must meet your obligations under the EP Act. The following information is provided to help **you** understand some of the key environmental obligations under the EP Act which may relate to the operation of your **activity**. This is not an exhaustive list of all of the environmental obligations. Environmental obligations which **you** must comply with include:

1. general environmental duty—s. 319
2. duty to notify environmental harm—ss. 320-320G.

3.1 General environmental duty

A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable **measures** to prevent or minimise the harm. This is a person's general environmental duty.

You have the responsibility to work out what **you** need to do to make sure that **you** manage your environmental risk and achieve the outcomes set out in your environmental authority.

Failure to comply with the general environmental duty is not, itself, an offence. However causing an environmental nuisance or causing serious or material environmental harm is an offence unless **you** can prove:

1. that the nuisance or harm was not unlawful; and
2. **you** have complied with the general environmental duty.

3.2 Duty to notify of environmental harm

The duty to notify requires a person to give notice where serious or material environmental harm is caused or there is a risk of such harm and that harm is not authorised by the **administering authority**.

For more information on the duty to notify requirements, including who must be notified, how and when to notify, refer to the guideline *The duty to notify of environmental harm* (available at www.qld.gov.au using the publication number ESR/2016/2271).

4 Offences under the legislation

This section sets out some of the offences that **you** should be aware of as **you** are carrying out your **activity**. If **you** commit one of these offences, **you** could be fined, prosecuted, or required by the **administering authority** to take some action. This is not an exhaustive list of all of the environmental offences under the legislation.

If **you** do commit an offence while carrying out your **activity**, the **administering authority** will take enforcement action in accordance with its [Enforcement guidelines](#).

4.1 Contravention of a condition of an environmental authority

It is a legal requirement for **you** to comply with the conditions in your environmental authority. **You** must also ensure that anyone operating under the environmental authority also complies with the conditions. This might include contractors visiting the site temporarily or transport operators loading and unloading materials on site, and all staff employed at the site. Multiple people may be prosecuted if an offence is committed.

If **you** think that **you** have breached a condition of your environmental authority, it is your responsibility to fix the problem and bring yourself back into compliance with the condition. **You** should not wait for the **administering authority** to tell **you** what do to. **You** may be required to contact the **administering authority** by the conditions in your environmental authority and the duty to notify.

Penalties for a breach of a condition of an environmental authority vary from penalty infringement notices (PIN) for one-off offences that are easily rectified, to the issuing of statutory notices—such as an environmental evaluation, transitional environmental program or an environmental protection order. In serious cases the **administering authority** may initiate court proceedings to have a court order issued or may prosecute those responsible for the breach.

4.2 Causing material or serious environmental harm

Material environmental harm has the meaning as defined in s. 16 of the EP Act. In summary, material environmental harm is environmental harm that costs more than \$5,000 to clean up, or that causes (or has the potential to cause) more than \$5,000 worth of damage to property.

Serious environmental harm has the meaning as defined in s. 17 of the EP Act. In summary, it is harm that is irreversible; has a high impact or widespread effects to the environment; is caused to an area of high conservation significance; or causes clean-up costs or property damage worth more than \$50,000. Material and serious environmental harm excludes environmental nuisance.

4.3 Causing environmental nuisance

Environmental harm includes environmental nuisance. Environmental nuisance is unreasonable interference with an environmental value caused by aerosols, fumes, light, noise, odour, particles or smoke. It may also include an unhealthy, **offensive** or unsightly condition because of contamination. For activities that need an environmental authority, the most common causes of environmental nuisance are dust, noise and odour.

4.4 Depositing a prescribed contaminant in waters

Prescribed contaminants includes a wide variety of contaminants from inert substances such as earth, clay, gravel and sediment to substances such as chemicals, contaminants with a high or low pH, construction and building waste, gas, oil and sewage. For a full list of **prescribed contaminants** see Schedule 9 of the EP Act.

It is your responsibility to ensure that **prescribed contaminants** are not left in a place where they could enter a waterway roadside gutter or stormwater drain and to make sure that they do not actually get into one of those places. This includes making sure that stormwater falling on or running across your site does not leave the site contaminated. Where stormwater contamination occurs **you** must ensure that it is treated to remove contaminants. **You** should also consider where and how **you** store material used in your processes onsite to reduce the chance of water contamination.

5 Model operating conditions

Model operating conditions for ERA 60 activities	
GENERAL	
PMG010 (G1)	Activities under this environmental authority must be conducted in accordance with the following limitations: 1. <INSERT the extent, nature or limitations of the activity approved> 2. <REPEAT for all relevant activities approved>.
PMG008 (G2)	All reasonable and practicable measures must be taken to prevent or minimise environmental harm caused by the activities .
PMG007 (G3)	Any breach of a condition of this environmental authority must be reported to the administering authority as soon as practicable within 24 hours of becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions undertaken.
PMG014 (G4)	Other than as permitted by this environmental authority, the release of a contaminant into the environment must not occur.
PMG018 (G5)	All information and records required by the conditions of this environmental authority must be kept for a minimum of five years with the exception of environmental monitoring results, which must be kept until surrender of this environmental authority. All information and records required by the conditions of this environmental authority must be provided to the administering authority upon request and in the format requested.
PMG015 (G6)	An appropriately qualified person(s) must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.

PMG011 (G7)	All analyses required under this environmental authority must be carried out by a laboratory that has National Association of Testing Authorities (NATA) certification, or an equivalent certification, for such analyses. <The only exception to this condition is for <i>in situ</i> monitoring of <INSERT relevant parameters>.>
PMG009 (G8)	When required by the administering authority , monitoring must be undertaken in the manner prescribed by the administering authority , to investigate a complaint of environmental nuisance arising from the activity . The monitoring results must be provided within 10 business days to the administering authority upon its request.
PMG017 (G9)	The activity must be undertaken in accordance with written procedures that: <ol style="list-style-type: none"> 1. identify potential risks to the environment from the activity during routine operations, closure and an emergency 2. establish and maintain control measures that minimise the potential for environmental harm 3. ensure plant, equipment and measures are maintained in a proper and effective condition 4. ensure plant, equipment and measures are operated in a proper and effective manner 5. ensure that staff are trained and aware of their obligations under the <i>Environmental Protection Act 1994</i> 6. ensure that reviews of environmental performance are undertaken at least annually.
PMG021 (G10)	All reasonable and practicable measures must be taken to contain litter within the waste operations area , and retrieve litter released.
PMG022 (G11)	A leachate collection system must be designed by an appropriately qualified person and installed and maintained to: <ol style="list-style-type: none"> 1. collect leachate generated in the landfill unit; 2. convey the collected leachate out of the landfill unit to an appropriate leachate storage facility; and 3. restrict the height of the leachate above the liner system to a maximum level of <INSERT 300mm or another value with equivalent leachate minimisation performance as agreed with the administering authority>.
PMG023 (G12)	Leachate and stormwater runoff which has been in contact with waste materials in the landfill unit , must be collected in the leachate storage facility and be: <ol style="list-style-type: none"> 1. treated in the leachate treatment plant and discharged to sewer in accordance with the requirements of the relevant water utility; or 2. recirculated through waste disposed in the landfill unit; or 3. treated by alternative technologies agreed by the administering authority for offsite disposal, discharge, or on-site reuse; or 4. disposed of at a facility that is approved to receive such waste.
PMG019 (G13)	All reasonable and practicable measures must be taken to exclude vectors and pest species to the extent necessary to prevent: <ol style="list-style-type: none"> 1. environmental nuisance to occupiers of neighbouring premises 2. any danger or risk to the health of any persons.
PMG039 (W1)	Only the following waste streams can be received at the site: <ol style="list-style-type: none"> 1. <INSERT waste streams as relevant to activity as described in Environmental Protection Regulation 2008 and any other relevant Queensland Legislation>.
PMG040 (W2)	In addition to condition PMG039, the following waste streams must not be permitted to be placed at the landfill facility at any time: <ol style="list-style-type: none"> 1. liquid or semiliquid waste, other than: <ol style="list-style-type: none"> a. liquid or semi-liquid waste which has been produced in the carrying out of the activity; b. liquid or semi-liquid waste that is incidental to, and commingled with, the permitted waste streams. 2. hot ash; 3. material that is smouldering or aflame; 4. material containing a substance which is ignitable, corrosive, reactive or toxic material (other than materials containing a toxic substance from domestic premises) unless this material is to be deposited into a dedicated monocoil with a written approval of the administering authority; 5. all radioactive wastes, unless otherwise approved under the <i>Radiation Safety Act 1999</i> or approved contaminated soil; 6. an explosive; 7. ammunition, other than ammunition that no longer contains explosives, pyrotechnics or propellants apart from

	trace residues that are no longer capable of supporting combustion or an explosive reaction.																																													
PMG041 (W3)	Deposited waste must be covered as soon as practicable to limit stormwater infiltration, prevent exposure of waste and prevent issues arising from vectors and pest species.																																													
PMG042 (W4)	Excepting combustion of landfill gas, waste must not be burnt.																																													
PMG043 PMG044 (W5) ¹	<p><INSERT this condition only if contaminated soil is approved as part of the waste stream in condition PMG039. If this condition is deleted, move the table in this condition to a schedule of the environmental authority as they also form the definition of toxic material used in condition PMG040></p> <p>Waste and any contaminated soil disposed of at the premises to which this environmental authority relates:</p> <ol style="list-style-type: none"> 1. must be accepted subject to effectively implementing risk assessment practices and procedures for contaminant testing that ensure that the material accepted complies with the maximum contaminant levels and the allowable leaching contaminant levels prescribed in <i>Table - Maximum contaminant levels in soils</i> and <i>Table - Allowable leaching contaminant levels</i> respectively; and 2. if the contaminated soil is used as coverage material, contaminant levels must not exceed the maximum concentration limits in <i>Table - Maximum total contaminant levels in soils used as cover material</i>, 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. <p>Table - Maximum contaminant levels in soils</p> <table border="1"> <thead> <tr> <th>Contaminant</th> <th>Maximum contaminant level for clay lined landfills (mg/kg)</th> <th>Maximum contaminant level for double lined landfills (mg/kg)</th> </tr> </thead> <tbody> <tr> <td colspan="3"><i>Monocyclic aromatic hydrocarbons (MAH)</i></td> </tr> <tr> <td>Benzene</td> <td>10</td> <td>20</td> </tr> <tr> <td>Ethyl Benzene</td> <td>500</td> <td>1,000</td> </tr> <tr> <td>Toluene</td> <td>300</td> <td>600</td> </tr> <tr> <td>Xylene</td> <td>250</td> <td>500</td> </tr> <tr> <td>Total MAH</td> <td>500</td> <td>1,000</td> </tr> <tr> <td colspan="3"><i>Polycyclic aromatic hydrocarbons (PAH)</i></td> </tr> <tr> <td>Total PAH</td> <td>500</td> <td>1,000</td> </tr> <tr> <td colspan="3"><i>Phenolic contaminants</i></td> </tr> <tr> <td colspan="3"><i>Non halogenated compounds:</i></td> </tr> <tr> <td>Phenol</td> <td>100</td> <td>250</td> </tr> <tr> <td>m-cresol</td> <td>250</td> <td>500</td> </tr> <tr> <td>o-cresol</td> <td>250</td> <td>500</td> </tr> <tr> <td>p-cresol</td> <td>250</td> <td>500</td> </tr> </tbody> </table>	Contaminant	Maximum contaminant level for clay lined landfills (mg/kg)	Maximum contaminant level for double lined landfills (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	o-cresol	250	500	p-cresol	250	500
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¹ The table has been split. Connect business keys: PMG043 is used for double lined landfills; and PMG044 is used for clay lined landfills.

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 ₆ -C ₉)	500	1,000
Total petroleum hydrocarbons (C ₁₀ -C ₁₄)	5,000	10,000
Total petroleum hydrocarbons (C ₁₅ -C ₂₈)	10,000	50,000
Total petroleum hydrocarbons (C ₂₉ -C ₃₆)	10,000	50,000

Table - Allowable leaching contaminant levels

Contaminant	Allowable leaching contaminant levels (TCLP*) for clay lined landfills (mg/l)	Allowable leaching contaminant levels (TCLP) for double lined landfills (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>		
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
Chlorinated hydrocarbons		
<i>Chlorinated aliphatic compounds</i>		
Carbon tetrachloride	0.03	0.3
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>		
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
For any waste or soil contaminated by radioactive material, the gross alpha and gross beta activity concentration in the Toxicity Characteristic Leaching Procedure (TCLP) extracts from the material are no more than 100 times the concentrations for the screening of gross alpha and gross beta activity concentrations specified in the National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines, 2011.		
*Allowable leaching levels to be determined using the TCLP procedure mentioned in United States Department of Environment and Science (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.		
Table - 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)	6
	PFOA (Perfluoro-octanoic acid)	16
	Total fluorinated organic compounds	10 (not including PFOS & PFOA)

ACOUSTIC

PMN002 (N1) Noise from the **activity** must not exceed the levels identified in *Table - Noise limits* when measured in accordance with the associated monitoring requirements.

Table - Noise limits

Noise level measured in dB(A)	Monday to Saturday			Sunday and Public Holidays		
	7am–6pm	6pm–10pm	10pm–7am	7am–6pm	6pm–10pm	10pm–7am
	Noise measured at the <INSERT>					
<INSERT noise descriptor>	<INSERT>	<INSERT>	<INSERT>	<INSERT>	<INSERT>	<INSERT>

Associated monitoring requirements

1. All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.
2. Any monitoring must be in accordance with the most recent version of the administering authority's *Noise Measurement Manual*.
3. Any monitoring of noise emissions from the **activity** must be undertaken when the **activity** is in operation.
4. <INSERT any other associated monitoring requirements e.g.> Monitoring location must be in accordance with plan <INSERT plan title, version and date> attached.

PMN003 (N2) When required by the **administering authority**, noise monitoring must be undertaken, in accordance with the associated monitoring requirements of *Table - Noise limits* in condition PMN002, and the results notified within 14 days to the **administering authority**. Monitoring must include:

1. $L_{Aeq,adj,T}$
2. **Background** noise (Background) as $L_{A,90,adj,T}$
3. $MaxL_{pA,T}$
4. the level and frequency of occurrence of any impulsive or tonal noise
5. atmospheric conditions including wind speed and direction
6. effects due to extraneous factors such as traffic noise
7. location, date and time of recording.

AIR

PMA001 (A1) Other than as permitted within this environmental authority, odours or airborne contaminants must not cause **environmental nuisance** to any **sensitive place** or **commercial place**.

PMA002 (A2) The following materials must not be used for dust suppression purposes:

1. **leachate** or landfill gas condensate
2. waste oil or other hydrocarbons.

PMA003 (A3)	<p><DELETE condition PMA003 to PMA005 if the ERA 60 activity does not generate landfill gas></p> <p>Landfill gas must not exceed the following limits:</p> <ol style="list-style-type: none"> 1. 500 parts per million at a height of 50mm above the final and intermediate cover surface including the batter slopes of the landfill unit 2. 25% of the lower explosive limit of the landfill site boundary when measured in facility structures (but excluding facility structures used for landfill gas control and recovery, and leachate collection system components) 3. the lower explosive limit in subsurface geology at or beyond the landfill site boundary 4. landfill gas collected is reused or efficiently flared in a manner that avoids environmental harm 5. 25% of the lower explosive limit within service pits, service trenches, stormwater drains or other structures beyond the landfill site boundary.
PMA004 (A4)	A landfill gas monitoring network must be installed for each landfill unit to measure methane levels in facility structures and at the landfill site boundary , as prescribed by condition PMA003. 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.
PMA005 (A5)	If methane gas levels exceeding methane standards referred to in condition PMA003 are detected, all necessary steps must immediately be taken to ensure protection of human health.
LAND	
PML008 (L1)	<p>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:</p> <ol style="list-style-type: none"> 1. infiltration of water into the landfill unit and water ponding on the surface; and 2. the likelihood of any erosion occurring to either the final capping system or the landfilled materials. <p>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.</p>
PML009 (L2)	<p>Land that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that:</p> <ol style="list-style-type: none"> 1. suitable species of vegetation for the location are established and sustained for earthen surfaces 2. potential for erosion is minimised 3. the quality of water, including seepage, released from the site does not cause environmental harm 4. potential for environmental nuisance caused by dust is minimised 5. the water quality of any residual water body does not have potential to cause environmental harm 6. the final landform is stable and protects public safety 7. the contaminant concentrations within the final capping layer are appropriate for the final land use and in accordance with the 'National Environmental Protection (Assessment of Soil Contamination) Measure 1999.'
PML010 (L3)	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.
PML011 (L4)	<p>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:</p> <ol style="list-style-type: none"> 1. maintain the structural integrity and effectiveness of the final capping system; 2. maintain and operate the leachate collection system; 3. maintain the groundwater monitoring system and monitor quality of groundwater at a frequency sufficient to detect any release of contaminants to groundwater; 4. maintain and operate the landfill gas monitoring system; and 5. maintain and operate the landfill gas collection system. <p><DELETE dot points 4 and 5 if the landfill only accepts construction and demolition waste></p>
PML012 (L5)	A site management plan pursuant to Chapter 7, Part 8, Division 5 of the <i>Environmental Protection Act 1994</i> must be developed and provided to the administering authority at least 12 months before the expected final receipt of waste in 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.														
WATER															
PMW009 (WT1)	<p>The only contaminants to be released to surface waters are <describe permitted release e.g. settled treated stormwater runoff waters from areas of the site not likely to be contaminated with waste materials> to waters described as < Describe waterway and location> in accordance with <i>Table - Surface water release limits</i> and the associated monitoring requirements.</p> <p>Table - Surface water release limits</p> <table border="1"> <thead> <tr> <th colspan="2">Release Point(s) Description (GDA94 decimal degrees) *</th> <th rowspan="2">Quality characteristic (units)</th> <th rowspan="2">Limit</th> <th rowspan="2">Limit Type</th> <th rowspan="2">Minimum Monitoring Frequency</th> </tr> <tr> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td><INSERT></td> <td><INSERT></td> <td><INSERT relevant quality characteristics for activity affected waterway and environmental values. Parameters may include pH, dissolved oxygen, suspended solids, turbidity, and conductivity.></td> <td><INSERT></td> <td><INSERT> e.g. Maximum Minimum Range</td> <td><INSERT></td> </tr> </tbody> </table> <p><i>*Decimal degrees to be provided to a minimum of 4 decimal places.</i></p> <p>Associated monitoring requirements</p> <p><INSERT the following as relevant ></p> <ol style="list-style-type: none"> 1. Monitoring location OR release points/areas must be in accordance with plan <INSERT plan title, version and date> attached. 2. Monitoring must be in accordance with the methods prescribed in the current edition of the Department of Environment and Science <i>Monitoring and Sampling Manual</i>. 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. <INSERT any other associated monitoring requirements>. 	Release Point(s) Description (GDA94 decimal degrees) *		Quality characteristic (units)	Limit	Limit Type	Minimum Monitoring Frequency	Latitude	Longitude	<INSERT>	<INSERT>	<INSERT relevant quality characteristics for activity affected waterway and environmental values. Parameters may include pH, dissolved oxygen, suspended solids, turbidity, and conductivity.>	<INSERT>	<INSERT> e.g. Maximum Minimum Range	<INSERT>
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PMW010 (WT2)	Monitoring of contaminant releases to waters must be undertaken in accordance with condition PMW009 and records of the results must be kept.														
PMW011 (WT3)	<p>In addition to PMW010, the release to waters must not:</p> <ol style="list-style-type: none"> 1. have any other properties at a concentration that is capable of causing environmental harm 2. produce any slick or other visible evidence of oil or grease, nor contain visible floating oil, grease, scum, litter or other visually objectionable matter. 														

<p>PMW012 (WT4)</p>	<p>The release of contaminants to groundwater as a result of the activity must:</p> <ol style="list-style-type: none"> 1. be monitored from the uppermost aquifer at locations hydraulically up-gradient and down-gradient of the landfilled waste; and 2. not cause environmental harm; or 3. not exceed the limits for the quality characteristics prescribed in <i>Table 1 - Groundwater quality limits - Detection monitoring</i>, at or beyond the edge of the groundwater attenuation zone. <p>Table 1 - Groundwater quality limits - Detection monitoring</p> <table border="1" data-bbox="261 562 1501 763"> <thead> <tr> <th data-bbox="261 562 815 629">Quality Characteristic</th> <th data-bbox="815 562 1134 629">Limit</th> <th data-bbox="1134 562 1501 629">Limit Type</th> </tr> </thead> <tbody> <tr> <td data-bbox="261 629 815 763"><INSERT Quality characteristics include key indicators of leachate for the type of waste disposed, common anions and cations, and in acid sulfate soil situations, indicators of ASS oxidation></td> <td data-bbox="815 629 1134 763"><INSERT></td> <td data-bbox="1134 629 1501 763">Maximum</td> </tr> </tbody> </table> <p>Associated monitoring requirements <INSERT monitoring requirements as relevant></p>	Quality Characteristic	Limit	Limit Type	<INSERT Quality characteristics include key indicators of leachate for the type of waste disposed, common anions and cations, and in acid sulfate soil situations, indicators of ASS oxidation>	<INSERT>	Maximum
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<p>PMW008 (WT5)</p>	<p>The stormwater runoff from disturbed areas, 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 or managed to remove contaminants before release.</p>						
<p>PMW013 (WT6)</p>	<p>The controlled release of treated/settled stormwater must be conducted in a way and at a rate that does not cause:</p> <ol style="list-style-type: none"> 1. re-suspension of particles; or 2. erosion of bed or banks of receiving waters; or 3. landscape damage; or 4. ponding of the water; or 5. vegetation damage. 						
<p>PMW014 (WT7)</p>	<p>All batteries, liquid chemicals, fuels, and other liquid substances with potential to cause environmental harm must be stored within a secondary containment system that is impervious to the materials stored within it, and must be managed to prevent the release of contaminants to waters or land.</p>						
<p>PMW015 (WT8)</p>	<p>A liner system must be installed and maintained to:</p> <ol style="list-style-type: none"> 1. prevent release of contaminants, including leachate, to land and waters; and 2. prevent subsurface migration of landfill gas from the landfill unit. 						

6 Definitions²

Note that where a term is not defined, the definition in the EP Act, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

NOTE: Where the prefix 'PD' accompanies a definition (e.g. PD077), this code refers to a Connect business key. Where there is no Connect business key, the definition provided below is not included in a condition rather the definition relates to the supporting text in this document.

PD075 - 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.*

PD077 - Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the environmental authority relates.

PD078 - Administering authority means the Department of Environment and Science or its successor or predecessors.

PD085 - 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.

PD087 - Background means noise, measured in the absence of the noise under investigation, as L A90,T being the A-weighted sound pressure level exceeded for 90 per cent of the time period of not less than 15 minutes, using Fast response.

PD093 - Boundary means within one metre of the cadastral boundary of the site.

PD097 - Clay lined means a landfill lined with compacted clay at least 600 mm thick achieving a maximum permeability of 1×10^{-9} metres per second or alternate such as an engineered geosynthetic agreed in writing as equivalent in performance by the **administering authority**.

PD099 - Commercial place means a place used as a workplace, an office or for business or commercial purposes and includes a place within the curtilage of such a place reasonably used by persons at that place.

PD110 - Disturbed areas includes areas:

1. that are susceptible to erosion;
2. that are contaminated by the **activity**; and/or
3. upon which stockpiles of soil or other materials are located.

PD111 - Double lined means a landfill lined with compacted clay at least 600mm thick achieving a maximum permeability of 1×10^{-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**.

General waste means waste other than regulated waste.

PD123 - Environmental nuisance as defined in Chapter 1 of the *Environmental Protection Act 1994*.

PD129 - Groundwater means water that occurs naturally in, or is introduced artificially into, an aquifer.

² Note to administering authority officers: These definitions have been developed for consistent use across the State. However it is recognised that in rare circumstances, a definition might need to be amended to fit a particular type of operation. Delete this footnote once the definition has been added into the environmental authority.

PD130 - Groundwater monitoring system means a system 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 from beneath the site (down-gradient flow) of the **activity** and groundwater flowing towards the site of the **activity** (up-gradient flow).

PD131 - HDPE means high density polyethylene

PD134 - $L_{Aeq,adj,T}$ means the adjusted A weighted equivalent continuous sound pressure level measures on fast response, adjusted for tonality and impulsiveness, during the time period T, where T is measured for a period no less than 15 minutes when the **activity** is causing a steady state noise, and no shorter than one hour when the approved **activity** is causing an intermittent noise.

PD139 - Landfill unit means a discrete area of land or an excavation that receives solid waste.

PD138 - Landfill facility means land and structures at the site approved used for the disposal of solid waste.

PD140 - 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 site that contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

PD141 - Liquid means any substance that:

1. has an angle of repose of less than five degrees; or
2. becomes free flowing at or below 60 degrees Celsius or when it is transported; or
3. is not generally capable of being picked up by a spade or shovel.

PD143 - $Max_{LpA,T}$ means the maximum A-weighted sound pressure level measured over a time period T of not less than 15 minutes, using Fast response.

PD144 - Measures has the broadest interpretation and includes plant, equipment, physical objects, monitoring, procedures, actions, directions and competency.

PD147 - NATA means National Association of Testing Authorities.

Noxious means harmful or injurious to health or physical well-being.

Offensive means causing offence or displeasure; is unreasonably disagreeable to the sense; disgusting, nauseous or repulsive.

Prescribed contaminants means contaminants listed within Schedule 9 of the Environmental Protection Regulation 2008.

PD163 - Records include breach notifications, written procedures, analysis results, monitoring reports and monitoring programs required under a condition of this authority.

PD167 - Release of a contaminant into the environment means to:

1. deposit, discharge, emit or disturb the contaminant; and
2. cause or allow the contaminant to be deposited, discharged, emitted or disturbed; and
3. fail to prevent the contaminant from being deposited, discharged emitted or disturbed; and
4. allow the contaminant to escape; and
5. fail to prevent the contaminant from escaping.

PD176 - Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

1. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises;
or
2. a motel, hotel or hostel; or
3. a kindergarten, school, university or other educational institution; or
4. a medical centre or hospital; or
5. a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area;
or
6. a public thoroughfare, park or gardens; or
7. for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

PD186 - TCLP means a toxicity characteristic leaching procedure.

PD193³ - Toxic material means:

1. cytotoxic wastes;
2. drugs and poisons as cited in the Standards for Uniform Scheduling of Drugs and Poisons (Schedules 8 and 9 drugs as per the Poisons (Health and Drugs) Regulation 1996); and
3. any other material that:
 - a. has contaminant concentrations in the waste exceeding the allowable levels in Table - Maximum contaminant levels in soils; or
 - b. has leaching contaminant levels in the waste when measured in accordance with toxicity characteristic leaching procedure (TCLP), exceeding the concentrations prescribed in Table - Allowable leaching contaminant levels..

PD198 - Waste operations area means the following areas:

1. waste receiving
2. sorting
3. treating
4. recycling
5. disposal.

PD199 - Waters includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water, natural or artificial watercourse, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

PD202 - You means the holder of the environmental authority.

³ Where neither condition PMG043 nor PMG044 are used, the Connect definition PD212 or PD213 should be used. These definitions include the relevant tables for double-lined and clay lined landfills respectively.