

ENVIRONMENT PROTECTION POLICY (AIR QUALITY) 2004

Environment Division
Department of Tourism, Arts and the Environment



I, the Administrator in and over the State of Tasmania and its Dependencies in the Commonwealth of Australia, acting with the advice of the Executive Council and on the recommendation of the Minister, make the following environment protection policy under section 96K of the Environmental Management and Pollution Control Act 1994.

Dated 13 December 2004.

PETER G UNDERWOOD
Administrator

By His Excellency's Command,

JUDY JACKSON
Minister for Environment and Planning

This Environment Protection Policy came into effect on 1 June 2005

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Environment Division
Department of Tourism, Arts and the Environment
GPO Box 1751
Hobart Tasmania 7001
Australia

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Part 1 - PRELIMINARY

Authority

1. This Environment Protection Policy is made pursuant to the provisions of section 96A-96O of the *Environmental Management and Pollution Control Act 1994*. The types of provisions that may be included in an Environment Protection Policy are specified in section 96D of the Act.

Short title and commencement

2. This Environment Protection Policy may be cited as the Environment Protection Policy (Air Quality) 2004.

This Policy takes effect on the later of the following days –

- (a) 1 June 2005;
- (b) the date after it has been approved by both Houses of Parliament in accordance with section 96K of the Act.

Interpretation

3. (1) In this Policy, unless the contrary intention appears -

“**accepted modern technology**” means technology which has a demonstrated capacity to achieve the desired emission concentration in a cost-effective manner, takes account of cost-effective engineering and scientific developments and pursues opportunities for waste minimisation;

“**Act**” means the *Environmental Management and Pollution Control Act 1994*;

“**Air NEPM**” means the National Environment Protection Measure for Ambient Air Quality made by the National Environment Protection Council on 26th June 1998, as amended from time to time;

“**airshed**” means an area that is defined by natural or topographic features affecting air quality. Once a substance is emitted into an airshed, it is contained therein for a reasonable period of time;

“**ambient air environment**” means the external air environment and does not include the air environment inside buildings or structures;

“**Appeal Tribunal**” means the Resource Management and Planning Appeal Tribunal established by the *Resource Management and Planning Appeal Tribunal Act 1993*;

“**best practice environmental management**” has the same meaning as in the Act;

“**Board**” has the same meaning as in the Act;

“**diffuse sources of air pollution**” means a number of dispersed sources from which pollution entering the environment has the potential to combine with other such sources, and includes pollution from domestic solid fuel burning appliances,

motor vehicles, backyard burning and planned burning (as defined in clause 17(1));

“**Director**” means the Director of Environmental Management holding office under section 18 of the Act;

“**environmental harm**” has the same meaning as in the Act;

“**environmental nuisance**” has the same meaning as in the Act;

“**industrial location**” means:

- (a) premises used for the purpose of providing water, sewerage, drainage, electricity, gas, telecommunications, passenger transport, or similar services;
- (b) premises used by aircraft or ships or as a freight yard;
- (c) premises used for the carrying out of any process for and incidental to -
 - (i) production, processing or manufacture;
 - (ii) dismantling or breaking-up goods or equipment;
 - (iii) repairing, cleaning or servicing of equipment or buildings, but not including on-site work on buildings;
 - (iv) packaging; or
 - (v) outdoor storage not in association with any other activity on the site, but not including a vehicle sales yard;
- (d) a mine within the meaning of the *Mineral Resources Development Act 1995*;
- (e) without limiting item 4, any premises used for sand, soil, gravel, clay, limestone or rock excavation;
- (f) waste disposal sites and premises used for any process for and incidental to the treatment or disposal of waste;

“**in-stack concentration**” means the concentration of a pollutant within and prior to its emission from a chimney stack or other point of emission, as measured in accordance with the relevant Australian Standard or other procedure approved by the Director;

“**level 1 activity**” has the same meaning as in the Act;

“**level 2 activity**” has the same meaning as in the Act;

“**level 3 activity**” has the same meaning as in the Act;

“**material environmental harm**” has the same meaning as in the Act;

“**mg/m³**” means milligrams per cubic metre referenced to a temperature of 0 degrees Celsius and an absolute pressure of 101.325 kilopascals;

“**Minister**” means the Minister responsible for the administration of the Act;

“**NEPM**” means a national environmental protection measure within the meaning of the *National Environment Protection Council (Tasmania) Act 1995*;

“point source of air pollution” means a discrete, stationary, industrial location which is a source of pollution by one or more chimneys or other points of emission, but does not include a stationary motor vehicle, train or marine vessel;

“pollutant” has the same meaning as in the Act;

“pollute” has the same meaning as in the Act;

“ppm” means parts per million by volume;

“regulatory authority” means any authority that has a statutory power to approve or regulate the environmental effects of an activity. For level 1 activities the regulatory authority will be the relevant planning authority and for level 2 activities, the Director or the Board. There are some activities that are neither level 1 or level 2 activities and the regulatory authority in such instances is likely to be the relevant planning authority;

“responsible person” means the person responsible for an activity which emits or is likely to emit pollutants to the air;

“serious environmental harm” has the same meaning as in the Act;

“ $\mu\text{g}/\text{m}^3$ ” means micrograms per cubic metre referenced to a temperature of 0 degrees Celsius and an absolute pressure of 101.325 kilopascals; and

“waste” has the same meaning as in the Act.

(2) In this policy, words in the singular shall include the plural and words in the plural shall include the singular.

Part 2 - APPLICATION AND OBJECTIVES

Application of Policy

4. This Policy applies to the ambient air environment of Tasmania.

Objective of Policy

5. **(1)** The objective of this Policy is to further the objectives of the Act in relation to the ambient air environment of Tasmania.

(2) The objectives of the Act are set out in Schedule 1 to the Act.

Part 3 - ENVIRONMENTAL VALUES AND STANDARDS

Environmental values

6. **(1)** Environmental values are the values or uses of the environment that are to be protected.

(2) The environmental values to be protected under this Policy are –

(a) the life, health and well-being of humans at present and in the future;

(b) the life, health and well-being of other forms of life, including the present and future health, wellbeing and integrity of ecosystems and ecological processes;

(c) visual amenity; and

(d) the useful life and aesthetic appearance of buildings, structures, property and materials.

Ambient air quality standards

7. (1) The Air NEPM standards are the national environment protection standards set by Part 3 and Schedule 2 of the Air NEPM and include any national environment protection standards for ambient air which are adopted in substitution for or in addition to those standards.

(2) Compliance with the Air NEPM standards will be measured in accordance with the provisions of the Air NEPM and any associated methodologies approved by the National Environment Protection Council.

Achieving Air NEPM standards

8. Within 12 months of the making of this Policy, the Minister will publish an Air Quality Strategy that:

(a) assesses compliance with the Air NEPM standards in Tasmania; and

(b) where the Air NEPM standards are not being met, specifies strategies for achieving compliance with the standards by 2008.

Part 4 - MANAGING POINT SOURCES OF AIR CONTAMINANTS

Point sources to be managed and regulated

9. (1) Regulatory authorities should manage and regulate point sources of air pollution which have the potential to cause material or serious environmental harm or an environmental nuisance in such a manner as to not prejudice the achievement of the environmental values identified in this Policy.

(2) Where necessary for the purposes of sub-clause (1), regulatory limits on the concentration or emission rate of pollutants that may be emitted from a new or significantly upgraded point source of air pollution should be established in accordance with clauses 10 and 11, as relevant.

(3) The regulatory controls and monitoring requirements applied to a point source of air pollution should be proportionate to the level of environmental risk posed by the emission of pollution from that source.

Waste avoidance

10. (1) In setting regulatory limits in accordance with clause 9, regulatory authorities should ensure that all reasonable and practical measures are taken to minimise the production of wastes that might be emitted to the atmosphere.

(2) The measures considered for the purposes of sub-clause (1) should include, but are not limited to, the management and disposal of wastes in the following order of priority –

- (a)** avoidance;
- (b)** reuse;
- (c)** recycling;
- (d)** recovery of energy;
- (e)** treatment;
- (f)** containment; and
- (g)** disposal.

Managing and setting regulatory controls for unavoidable emissions

11. (1) Regulation of unavoidable emissions of pollutants to the atmosphere from point sources of air pollution should be consistent with the following principles –

(a) Accepted modern technology should be applied to reduce emissions to the greatest extent practicable. Guidelines on in-stack concentrations that would normally be expected to be achievable using accepted modern technology are specified in Schedule 1 and should be used by regulatory authorities as default values unless a case is made that alternative values more appropriately represent accepted modern technology in the circumstances.

(b) To retain a reserve capacity for airsheds, no activity at a point source of air pollution should be permitted to emit a pollutant in a manner or quantity that, allowing for other reasonable emissions to the relevant airshed, would prejudice compliance with the Air NEPM.

(c) Notwithstanding sub-clause (1)(b) regulatory authorities may determine not to require a reserve capacity if –

(i) emissions from the activity conform to accepted modern technology; or

(ii) it is highly unlikely that there will be additional sources of emissions of the pollutant to the airshed; or

(iii) this would prevent a proposal that is clearly in the public interest from proceeding.

(d) When modelled in accordance with the requirements of this Policy, emissions of a pollutant should not cause design criteria for that pollutant, as specified in Schedule 2, to be exceeded at or beyond the boundary of the land on which the industrial activity is located.

(e) If Schedule 2 does not contain design criteria for a pollutant, the regulatory authority should request the Director to determine appropriate design criteria,

and should regulate the relevant activity in accordance with the concentrations so determined.

(f) If it is not possible with the application of best practice environmental management to comply with design criteria determined in accordance with (d) and (e) above at the boundary of the land on which the point source of pollution is located, the regulatory authority may permit the emission of the pollutants if it is satisfied that the emission will not –

(i) put at risk the health of any person beyond the boundary of the land on which the point source of the pollution is located;

(ii) allow the pollutant(s) to unreasonably interfere with the enjoyment of the environment by any person living or working beyond the boundary of the land on which the point source of the pollutant(s) is located; or

(iii) otherwise cause serious or material environmental harm; or

(iv) be exceeded outside commissioning, start-up or shutdown periods provided the regulatory authority has specified the conditions under which the excess emissions from such events are permitted;

and there is an ongoing commitment to a program of pollution reduction to reach compliance with (d) or (e) as soon as reasonably practical.

(2) In determining the most appropriate manner in which to manage and treat potential atmospheric pollutants, regulatory authorities and responsible persons should have regard to the net environmental impacts of management options.

(3) The concentrations specified in Schedule 1 should not be exceeded during commissioning, start up or shutdown unless the Board has specified conditions under which excess emissions from such events are permitted, and the emissions occur in compliance with those conditions.

(4) In determining the most appropriate manner in which to manage point sources of air pollution, regulatory authorities should have regard to any guidelines published, adopted or endorsed by the Board for the purposes of this clause which describe accepted modern technology for activities that are likely to give rise to the emission of air pollution.

Improving the performance of current emission sources

12. (1) Regulatory authorities should require a responsible person in relation to a significant source of air pollution which is in existence at the time this Policy is made to progressively reduce the emission of pollutants from that source in accordance with the requirements of clauses 10 and 11.

(2) The time frame for compliance with sub-clause (1) should be determined on a case specific basis having regard to:

(a) the environmental risk associated with the pollutant being emitted;

(b) the economic cost of upgrading and the capacity of the relevant activity to support this cost; and

(c) the practicability of reducing emissions.

Odour

13. (1) If a regulatory authority is satisfied that an odour from an activity is causing or is likely to cause an environmental nuisance or environmental harm, the authority should require that the odour emission from the source not exceed the odour criteria specified in Schedule 3, at or beyond the boundary of the land on which the source is located.

(2) If the activity that is the source of the odour is being carried out at the time that this Policy is made, the time frame for compliance with sub-clause (1) should be determined on a case-specific basis having regard to:

(a) the environmental impact associated with the pollutant being emitted;

(b) the economic cost of upgrading and the capacity of the relevant activity to support this cost; and

(c) the practicability of reducing emissions.

Air pollution dispersion modelling

14. (1) If a regulatory authority has reasonable grounds to consider that an existing emission of a pollutant to the atmosphere might cause serious or material environmental harm or environmental nuisance, it should require the responsible person to undertake air pollution dispersion modelling in accordance with a methodology approved by the Director.

(2) If a regulatory authority has reasonable grounds to consider that a proposed emission of a pollutant to the atmosphere might cause serious or material environmental harm or environmental nuisance, it should require the responsible person to undertake air pollution dispersion modelling in accordance with a methodology approved by the Director.

(3) Where the regulatory authority has determined that air pollution dispersion modelling is necessary it should require the modelling to be carried out in accordance with a methodology approved by the Director in order to:

(a) assess air quality against the Air NEPM, the values contained in Schedule 2 or values set in accordance with clause 11(1)(b);

(b) assess the potential for reducing the impact of the emissions or proposed emissions on the air environment;

(c) assess the cumulative effect of the emissions or proposed emissions;

(d) define the appropriate dimensions or location of an emission source or chimney from which it is proposed to release contaminants into the ambient air environment; or

(e) achieve any other outcome consistent with the objective of this Policy.

Monitoring of emissions and their effects

15. (1) A regulatory authority should where appropriate require a responsible person to measure and report emissions according to protocols approved by the Director so that the authority can determine whether the emissions are being managed in accordance with this Policy or the Act.
- (2) A regulatory authority should where appropriate require a responsible person to measure and report the relevant indicators of air quality in the ambient air environment.
- (3) The scope and frequency of monitoring requirements imposed by a regulatory authority should be commensurate with the probability of exceeding a required limit or standard, the probability of causing environmental harm, and the severity of the environmental harm which might be caused.

Part 5 - MANAGING DIFFUSE SOURCES OF AIR CONTAMINANTS

Management of diffuse sources of air pollution

16. (1) Regulatory authorities should manage and regulate diffuse sources of air pollution that have the potential to cause material or serious environmental harm or an environmental nuisance in such a manner as will protect the environmental values identified in this Policy.
- (2) Diffuse sources of air pollution should be managed using best practice environmental management so as to:
 - (a) minimise emissions; and
 - (b) manage those emissions that are unavoidable in a manner that minimises impacts on health, safety or amenity.
- (3) Diffuse sources of air pollution should be managed in accordance with any relevant guidelines published, adopted or endorsed by the Board for the purposes of this clause.
- (4) Diffuse sources of air pollution must be managed in accordance with any regulations made under the Act.

Planned Burning

17. (1) "Planned burning" is the planned application of fire to vegetation under controlled conditions to achieve a deliberate outcome. Planned burning includes low intensity fuel reduction, ecological management, and high intensity regeneration and windrow burning. Planned burning does not include burning undertaken to control existing wildfires.
- (2) Persons or organisations involved in the conduct of planned burning or in the preparation of management guidelines for such operations must take account of the health and amenity impacts of smoke pollution on individuals and the community.

(3) Best practice environmental management should be employed by those persons undertaking planned burning to minimise the effects of smoke pollution on individuals and the community. This includes, but is not limited to, complying with State Fire Management Council guidelines on high intensity and low intensity burning.

(4) Where practicable, agencies, companies or organisations undertaking burning on a regular basis or on a large scale should:

(a) adopt efficient and effective air quality monitoring programmes;

(b) adopt a uniform approach to recording and assessing complaints;

(c) focus upon minimising the impact of smoke on the community in terms of health, amenity and safety;

(d) encourage the planning and execution of planned burning in a way that minimises the generation of smoke and improves the management of the effects of smoke; and

(e) require a responsible person involved in planned burning for land management to be competent in relevant burning procedures.

(5) The State Fire Management Council should review its guidelines on high intensity and low intensity burning to ensure that they are consistent with best practice environmental management.

SCHEDULE 1 - IN-STACK CONCENTRATIONS

Table 2 of this Schedule specifies in-stack concentrations that would normally be expected to be achievable using accepted modern technology referred to in clause 11 of this Policy.

The guidelines are intended to apply to new stationary sources and facility upgrades. Existing industry not able to currently meet the guidelines may need to progressively improve emissions performance according to a negotiated schedule (with due regard to environmental risk, economic cost and practicability) approved by the Director.

The in-stack concentrations contained in this schedule refer to routine operations of the activity. It is recognised that these values may not be achieved during commissioning, start-up or shutdown.

This Schedule does not apply to any boiler whose heating capacity (as determined by the apparatus by which it is heated) is less than 100 megajoules per hour.

The emission of a pollutant from a chimney or stack associated with a source specified in the second column of Schedule 1 should comply with the values of the third column in cases where accepted modern technology is used.

The concentration of a pollutant in the chimney or stack should be determined according to Australian Standard Methods or procedures approved by the Director. Moreover, the determination of pollutants should be conducted by personnel or laboratories approved by the Director.

For the purpose of this Schedule, a particular volume of a gas should be taken to be the amount of that gas which when dry would occupy that volume at a temperature of 0° Celsius and at an absolute pressure of 101.325 kilopascals. Moreover, the concentration of particles in an emission should be determined before its admixture with air, smoke, or other gases and be collected at a temperature as near to ambient as practicable.

For fuel burning equipment, the concentration of particles and oxides of nitrogen measured, should be adjusted to a reference gas value (oxygen or carbon dioxide) to compensate for variability due to the excess air rates in different combustion processes. The reference gas values (by equipment and pollutant) are specified in Table 1.

Table 1 - Reference conditions

Equipment	Pollutant	Basis ^a
Boilers and incinerators	Particulate matter	12% CO ₂ for wood-firing and 7% O ₂ for other fuels
Gas turbines	Oxides of nitrogen	15% O ₂
Other fuel burning equipment	Oxides of nitrogen	7% O ₂

a The adjusted concentration (C_a) is determined as follows:

For O₂ $C_a = C_m \times (21 - \text{reference O}_2 \text{ as vol. \%}) / (21 - \text{measured O}_2 \text{ concentration as vol. \%})$

For CO₂ $C_a = C_m \times 12 / (\text{measured CO}_2 \text{ concentration as vol. \%})$

where C_m is the measured concentration adjusted for dry gas at 0°C and 101.325 kPa.

Table 2 – In-stack concentrations

Pollutant	Source	In-stack concentration (mg/m ³ , unless otherwise specified)
Chlorine	Any trade, industry, or process	200
Hydrogen chloride	Any trade, industry, or process	100
Hydrogen sulfide	Any trade, industry, or process	5
Fluorine and compounds	Any trade, industry, or process, other than a primary aluminium smelter manufacturing aluminium from alumina	50 (HF or HF equivalent)
	Any primary aluminium smelter manufacturing aluminium from alumina	0.8 kg of total fluoride per tonne of aluminium produced
Metals	Any trade, industry, or process emitting antimony, arsenic, cadmium, lead, mercury, beryllium, chromium (hexavalent only), cobalt, manganese, nickel, selenium, tin, or vanadium or any compound thereof	5 for total 1 for cadmium or mercury
Oxides of nitrogen	Any boiler operating on gas	350 (as NO ₂)
	Any boiler operating on a fuel other than gas, other than a boiler used in connection with an electricity generator	500 (as NO ₂)
	Any boiler operating on a fuel other than gas, being a boiler used in connection with an electricity generator with a capacity of less than 30 megawatts	500 (as NO ₂)

Pollutant	Source	In-stack concentration (mg/m³, unless otherwise specified)
	Any boiler operating on a fuel other than gas, being a boiler used in connection with an electricity generator with a capacity of 30 megawatts or more	800 (as NO ₂)
	Any gas turbine operating on gas, being a turbine used in connection with an electricity generator with a capacity of less than 10 megawatts	90 (as NO ₂)
	Any gas turbine operating on gas, being a turbine used in connection with an electricity generator with a capacity of 10 megawatts or more	70 (as NO ₂)
	Any trade, industry or process other than for the manufacture of glass using sodium nitrate	2.0 g/m ³ (as NO ₂)
	Any trade, industry or process for the manufacture of glass using sodium nitrate	4.0 g/m ³ (as NO ₂)
Particulate matter	Any trade, industry or process and any fuel burning equipment or industrial plant	100
Smoke	Any trade, industry or process and any fuel burning equipment or industrial plant	A concentration no darker than Ringelmann 1, except that the concentration may be darker (but not so to exceed Ringelmann 3) for up to 10 minutes in any period of 8 hours for lighting a boiler or blowing soot, but only as long as all practicable means are employed to prevent or minimise the emission of air impurities. (This limit does not apply to emissions involving water vapour.)
Sulfur dioxide	Any trade, industry or process manufacturing sulfuric acid from other than elemental sulfur	7.2 g/m ³
	Any trade, industry or process manufacturing sulfuric acid from elemental sulfur	2.8 g/m ³
Sulfuric acid mist or sulfur trioxide or both	Any trade, industry or process	100 (as SO ₃ equivalent)

SCHEDULE 2 – DESIGN CRITERIA

Table 1 of this Schedule specifies the design criteria referred to in clause 11 of this Policy.

If a regulatory authority is satisfied that emissions from a stationary source are causing or are likely to cause an environmental nuisance or material environmental harm, a plume dispersion calculation should be performed to establish whether the predicted maximum ground level concentration (as defined below) exceeds the design criteria specified in this Schedule at relevant receptor locations. The atmospheric dispersion calculation should consider local terrain and meteorology, the effect of background concentrations, the contribution of adjacent sources and the need to preserve the capacity of the local environment to receive future emissions.

For the purpose of this Schedule, the maximum predicted ground level concentration at each receptor location is defined as the 99.9 percentile peak concentration for averaging periods of one hour or less and the 100 percentile peak concentrations otherwise. Using the 99.9 percentile concentration overcomes the need to place reliance on a single predicted hourly value calculated using an extreme set of meteorological conditions, which may produce an aberrant prediction.

Where suitable meteorological data are not available, the Director may in some cases approve the use of a default meteorological file containing likely “worst case” combinations of wind speed, stability and mixing height. In such cases, the maximum ground level concentration is defined as the 100 percentile peak concentration.

Atmospheric dispersion calculations should be conducted in a manner and with a model approved by the Director.

Table 1 – Design criteria

Pollutant	3 minute average unless otherwise specified	
	ppm	mg/m ³
Acetaldehyde ^o	0.042	0.076
Acetic acid ^o	0.20	0.50
Acetone ^o	20	48
Acrolein ^t	0.0033	0.0083
Acrylic acid ^o	0.094	
Acrylonitrile ^t	0.067	0.15
Ammonia ^t	0.83	0.6
Aniline ^t	0.17	0.63
Asbestos ^t		33,000 fibres/m ³
Asphalt fume ^t		0.17
Barium (soluble compounds) ^t		0.017
Benzene ^t	0.033	0.10
Benzyl chloride ^o	0.0094	0.047
Beryllium ^t		0.00007
Biphenyl ^t	0.0067	0.033

Pollutant	3 minute average unless otherwise specified	
	ppm	mg/m ³
Bromochloromethane ^t	6.7	35
Bromoform ^t	0.017	0.17
Bromotrifluoromethane ^t	33	203
1,3-Butadiene ^o	0.45	1.0
n-Butanol ^o	0.3	0.9
Butyl mercaptan ^o	0.004	0.012
Carbon black ^t		0.1
Carbon disulphide ^o	0.042	0.13
Carbon monoxide (8-hour average)	9.0	
Carbon tetrachloride ^t	0.17	1.1
Chlorine ^t	0.033	0.1
Chlorine dioxide ^t	0.003	0.01
Chlorobenzene ^o	0.042	0.20
Chloroform ^t	0.33	1.59
Chloromethane ^t	3.3	7.0
Chromic acid and chromates, as CrO ₃ ^t		0.0017
Chromium, soluble chromic and chromous salts as Cr ^t		0.017
Copper: fume ^t		0.0067
Copper: dust and mist ^t		0.033
Cotton dust (raw) ^t		0.0067
Crotonaldehyde ^t	0.067	0.2
Cumene ^o	0.008	0.039
Cyanide as CN ^t		0.2
Cyclohexane ^t	10	35
Cyclohexanol ^t	1.7	6.7
Cyclohexanone ^o	0.12	0.48
Diacetone alcohol ^o	0.28	1.3
o-Dichlorobenzene ^t	1.7	10
1,2-Dichloroethylene ^t	6.7	26.3
1,2-Dichloroethane ^t	1.7	6.7
Dichlorvos ^t	0.0033	0.033
Diethylamine ^o	0.02	0.06
Dimethylamine ^o	0.0094	0.017
Dinitrobenzene (all isomers) ^t	0.005	0.033
Dinitrotoluene ^t		0.05
Dioxins and furans (as TCDD I-TEQs) ^{t,1}		0.000000037
Diphenyl ether ^o	0.02	0.14
Diphenylmethane-di-isocyanate	0.0007	0.007
Epichlorhydrin ^t	0.067	0.25
Ethanol ^o	2.0	3.8
Ethanolamine ^t	0.10	0.20
Ethyl acetate ^o	6.3	22.1
Ethyl acrylate ^o	0.0002	0.0008
Ethylbenzene ^t	3.3	14.5
Ethyl butyl ketone ^t	1.7	7.7
Ethyl chloride ^t	33.3	86.6
Ethylene glycol (vapour) ^t	3.3	8.7
Ethylene oxide ^t	0.03	0.05

Pollutant	3 minute average unless otherwise specified	
	ppm	mg/m ³
Fluorine ^t	0.033	0.067
Fluoride ^t		
1 day average	0.0034	0.0029
7 day average	0.0020	0.0017
90 day average	0.00059	0.0005
Formaldehyde ^t	0.033	0.05
n-Hexane ^t	1.67	6.0
2-Hexanone ^t	0.83	3.3
Hydrogen chloride ^t	0.2	0.2
Hydrogen cyanide ^t	0.3	0.4
Hydrogen sulphide ^{o,2}	0.0001	0.00014
Iron oxide fume ^t		0.17
Lead (90 day average)		0.0015
Magnesium oxide fume ^t		0.33
Maleic anhydride ^t	0.0083	0.033
Mercury (organic) ^t	0.00003	0.0003
Mercury (inorganic) ^t		0.017
Methanol ^o	4.26	5.5
Methyl acrylate ^t	0.33	1.2
Methylamine ^o	0.0042	0.005
Methylene chloride ^t	3.3	12.0
Methyl ethyl ketone ^o	2.0	5.9
Methyl mercaptan ^{o,2}	0.00042	0.00084
Methyl methacrylate ^o	0.05	0.21
Methyl styrene ^o	0.052	0.25
Methyl isobutyl ketone ^o	0.1	0.41
Nickel carbonyl ^t	0.0017	0.012
Nitric acid ^t	0.067	0.17
Nitrobenzene ^o	0.00094	0.0047
Nitrogen dioxide (1-hour average)	0.16	
Particulate matter (as PM ₁₀ , 24-hour average)		0.150
Pentachlorophenol ^t		0.017
n-Pentane ^t	20	60
2-Pentanone ^t	6.7	23.3
Perchloroethylene ^o	0.94	6.3
Phenol ^o	0.0094	0.036
Phosgene ^t	0.0033	0.013
Phosphine ^o	0.0042	0.0056
Phthalic anhydride ^t	0.033	0.20
n-Propanol ^o	0.03	0.075
Propylene glycol monomethyl ether ^t	3.3	12.0
Propylene oxide ^t	3.3	8.0
Pyridine ^o	0.0042	0.013
Silver, metal and soluble compounds (as Ag) ^t		0.00033
Styrene (monomer) ^o	0.05	0.21
Sulfur dioxide (1-hour average)	0.20	
Sulfuric acid ^t		0.033

Pollutant	3 minute average unless otherwise specified	
	ppm	mg/m ³
Toluene ^o	0.17	0.65
Toluene-2,4-di-isocyanate ^t	0.0007	0.005
Total reduced sulphur ^{o,3}		0.0015
1,1,1-Trichloroethane ^t	11.7	63.3
1,1,2-Trichloroethane ^t	0.33	1.5
Trichloroethylene ^t	1.67	9.0
Trichlorofluoromethane ^t	33.3	187
Triethylamine ^o	0.09	0.36
Trimethylbenzene (mixed isomers) ^t	0.83	4.0
Vinyl chloride ^t	0.033	0.1
Vinyl toluene ^t	3.3	16.0
Welding fume (total particulate) ^t		0.17
Wood dust (non-allergenic) ^t		0.17
Xylene ^o	0.08	0.35
Zinc chloride fume ^t		0.033
Zinc oxide fume ^t		0.17

o Based on odour properties.

t Based on toxic properties.

1 TCDD I-TEQs means 2,3,7,8-tetrachloro-dibenzodioxin as international toxic equivalents.

2 Does not apply to bleached eucalypt kraft pulp mills.

3 Applies only to bleached eucalypt kraft pulp mills.

SCHEDULE 3 - ODOUR CRITERIA

This Schedule specifies the odour criteria referred to in clause 13 of this Policy.

If a regulatory authority is satisfied that odour from a source is causing or is likely to cause an environmental nuisance or material environmental harm, an atmospheric dispersion calculation should be performed to ensure that the predicted maximum (“worst case”) ground level concentration does not exceed the concentration criteria specified below. The atmospheric dispersion calculation should consider local terrain and meteorology, the effect of background concentrations, the contribution of adjacent sources and the need to preserve the capacity of the local environment to receive future emissions.

For the purpose of this Schedule, the maximum predicted ground level concentration specified in column 2 of Table 1 is defined as the percentile peak concentration specified in column 4 of Table 1.

Atmospheric dispersion calculations should be conducted using a model approved by the Director.

The concentration of an odour should be determined according to Australian Standard Methods or procedures approved by the Director. Moreover, the determination of odour should be conducted by personnel or laboratories approved by the Director.

Table 1 – Odour criteria

Column 1	Column 2	Column 3	Column 4
	Criterion	Averaging Period	Percentile
Known pollutant(s)	See Schedule 2	See Schedule 2	99.9 ^a
Unknown mixture	2 odour units ^{1,a}	1 hour	99.5 ^b

1 “Odour unit” has the same meaning as in Australian Standard AS/NZS 4323.3 *Stationary source emissions – Determination of odour concentration by dynamic olfactometry*.

a Modelled 99.9 percentile concentration at or beyond the boundary of a facility (whichever is higher) in cases where local high-quality meteorological and emissions data are available. In cases where such data are not available, the 100 percentile concentration modelled at or beyond the boundary of a facility applies.

b Modelled 99.5 percentile concentration at or beyond the boundary of a facility (whichever is higher) in cases where local high-quality meteorological and emissions data are available. In cases where such data are not available, the 100 percentile concentration modelled at or beyond the boundary of a facility applies.