Hill, Libby

From: Rhonda Myers <r71myers@gmail.com>
Sent: Sunday, 8 May 2016 00:21
To: Myers, Rhonda
Subject: Concerns there are now too many childcare places in Canberra as the much-loved Fyshwick Early Childhood Centre closes its doors after 25 years

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http://www.canberratimes.com.au/act-news/canberra-life/concerns-there-are-now-too-many-childcare-places-in-canberra-as-the-muchloved-fyshwick-early-childhood-centre-closes-its-doors-after-25-years-20160505-gomsy7.html

Hill, Libby

From: Rhonda Myers <r71myers@gmail.com>
Sent: Wednesday, 2 November 2016 22:02
To: Myers, Rhonda
Subject: Ct article

http://www.canberratimes.com.au/act-news/worksafe-act-respond-to-asbestos-incident-on-barrier-street-in-fyshwick-20161102-gsgowx.html

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From: Myers, Rhonda
Sent: Thursday, 27 October 2016 12:26
To: Myers, Rhonda
Subject: Dryer catches alight at Mitchell laundry [SEC=UNCLASSIFIED]

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http://www.canberratimes.com.au/act-news/dryer-catches-alight-at-mitchell-laundry-20150323-1m67ac.html

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From: Myers, Rhonda
Sent: Thursday, 27 October 2016 12:50
To: Myers, Rhonda
Subject: Fire extinguished at Canberra Concrete Recyclers in Pialligo [SEC=UNCLASSIFIED]

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http://www.canberratimes.com.au/act-news/fire-extinguished-at-canberra-concrete-recyclers-in-pialligo-20150709-gi96au.html

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From: Myers, Rhonda
Sent: Thursday, 27 October 2016 12:23
To: Myers, Rhonda
Subject: Firefighters put out Mitchell telephone exchange blaze [SEC=UNCLASSIFIED]

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http://www.canberratimes.com.au/act-news/firefighters-put-out-mitchell-telephone-exchange-blaze-20151010-gk5xu4.html

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From: Myers, Rhonda
Sent: Thursday, 27 October 2016 12:28
To: Myers, Rhonda
Subject: Fuel smell closes Hoskins Street in Mitchell [SEC=UNCLASSIFIED]

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http://www.canberratimes.com.au/act-news/fuel-smell-closes-hoskins-street-in-mitchell-20150513-gh0q0p.html

Hill, Libby

From: Teasdale, Jonathan
Sent: Wednesday, 23 November 2016 14:02
To: Stawski, Leszek; Griffin, Verity
Cc: Myers, Rhonda; Johnson, Lisa
Subject: FW: Tribunal vetoes child-care centre near refinery [SEC=UNCLASSIFIED]

fyi

Jonathan Teasdale | Senior Manager - Impact Assessment and ACAT Coordination
Phone 02 6207 0316
Planning Delivery

From: Walters, Daniel
Sent: Wednesday, 23 November 2016 1:44 PM
To: Brown, Robin
Cc: Teasdale, Jonathan
Subject: FW: Tribunal vetoes child-care centre near refinery [SEC=UNCLASSIFIED]

Robin

You may be interested in this

Regards

Daniel Walters

Senior Manager | Environment Protection Policy
Environment, Planning and Sustainable Development Directorate | ACT Government
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✉*email: daniel.walters@act.gov.au*
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From: Myers, Rhonda
Sent: Thursday, 27 October 2016 12:25
To: Myers, Rhonda
Subject: Grass fire in Mitchell [SEC=UNCLASSIFIED]

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http://www.canberratimes.com.au/act-news/grass-fire-in-mitchell-20140113-30q8j.html

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From: Rhonda Myers <r71myers@gmail.com>
Sent: Friday, 16 December 2016 18:38
To: Myers, Rhonda
Subject: Jack Martin scrap metal CT news article

http://www.canberratimes.com.au/act-news/scrap-metal-yard-spreads-well-beyond-lease-at-fyshwick-20161215-gtcdgw.html

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From: Myers, Rhonda
Sent: Thursday, 27 October 2016 13:10
To: Myers, Rhonda
Subject: Mattresses catch fire at Fyshwick industrial recycling centre [SEC=UNCLASSIFIED]

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http://www.canberratimes.com.au/act-news/mattresses-on-fire-in-fyshwick-causes-plumes-of-smoke-20160908-grbs3h.html

Hill, Libby

From: Rhonda Myers <r71myers@gmail.com>
Sent: Friday, 16 December 2016 19:00
To: Myers, Rhonda
Subject: Mawson servo leak & evacuation

http://www.canberratimes.com.au/act-news/act-fire--rescue-respond-to-gas-leak-in-mawson-20161216-gtcivx.html

Hill, Libby

From: Rhonda Myers <r71myers@gmail.com>
Sent: Saturday, 5 November 2016 15:19
To: Myers, Rhonda
Subject: Mitchell cannery

http://www.canberratimes.com.au/act-news/canberra-life/bentspokes-brewery-new-mitchell-cannery-opens--20161103-gshrkh.html

Hill, Libby

From: Rhonda Myers <r71myers@gmail.com>
Sent: Friday, 16 December 2016 23:42
To: Myers, Rhonda
Subject: Mitchell power problem

http://www.canberratimes.com.au/act-news/canberras-baldwin-distilling-company-running-on-a-generator-after-stoush-with-actewagl-20161214-gtbhw0.html

Hill, Libby

From: Rhonda Myers <r71myers@gmail.com>
Sent: Saturday, 18 June 2016 21:39
To: Myers, Rhonda
Subject: Mitchell Resource Management Centre shut after chemical reaction

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http://www.canberratimes.com.au/act-news/mitchell-resource-management-centre-shut-after-chemical-reaction-20160618-gpmbr2.html

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From: Rhonda Myers <r71myers@gmail.com>
Sent: Monday, 5 December 2016 10:03
To: Myers, Rhonda
Subject: Pialligo fire

http://www.canberratimes.com.au/act-news/fire-at-pialligo-recycling-plant-reignites-20161204-gt3lk1.html

http://mobile.abc.net.au/news/2016-12-04/fire-at-pialligo-recycling-centre-in-canberra-again/8091024

Hill, Libby

From: Rhonda Myers <r71myers@gmail.com>
Sent: Wednesday, 30 November 2016 17:23
To: Myers, Rhonda
Subject: Pialligo fire

http://www.canberratimes.com.au/act-news/firefighters-battle-rubbish-mulch-fire-at-pialligo-recycling-plant-20161130-gt0tbw.html

From: Rhonda Myers
To: Myers, Rhonda
Subject: Planned Amaroo childcare centre operator in administration & Fyshwick Centre to close
Date: Sunday, 8 May 2016 00:20:19

I would like to share something with you
http://www.canberratimes.com.au/act-news/planned-amaroo-childcare-centre-operator-in-administration-20160506-goojdk.html

From: Rhonda Myers
To: Myers, Rhonda
Subject: Pool chemical leak causes evacuation of Fyshwick businesses
Date: Saturday, 18 June 2016 21:55:07

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http://www.canberratimes.com.au/act-news/pool-chemical-leak-causes-evacuation-of-fyshwick-businesses-20160617-gplb1z.html

From: Myers, Rhonda
To: Myers, Rhonda
Subject: Three injured in Canberra explosion [SEC=UNCLASSIFIED]
Date: Thursday, 27 October 2016 12:56:16

I would like to share something with you

http://www.canberratimes.com.au/national/three-injured-in-canberra-explosion-20091215-ktr0.html

From: Myers, Rhonda
To: Myers, Rhonda
Subject: Truck catches fire at Mitchell tip [SEC=UNCLASSIFIED]
Date: Thursday, 27 October 2016 12:25:26

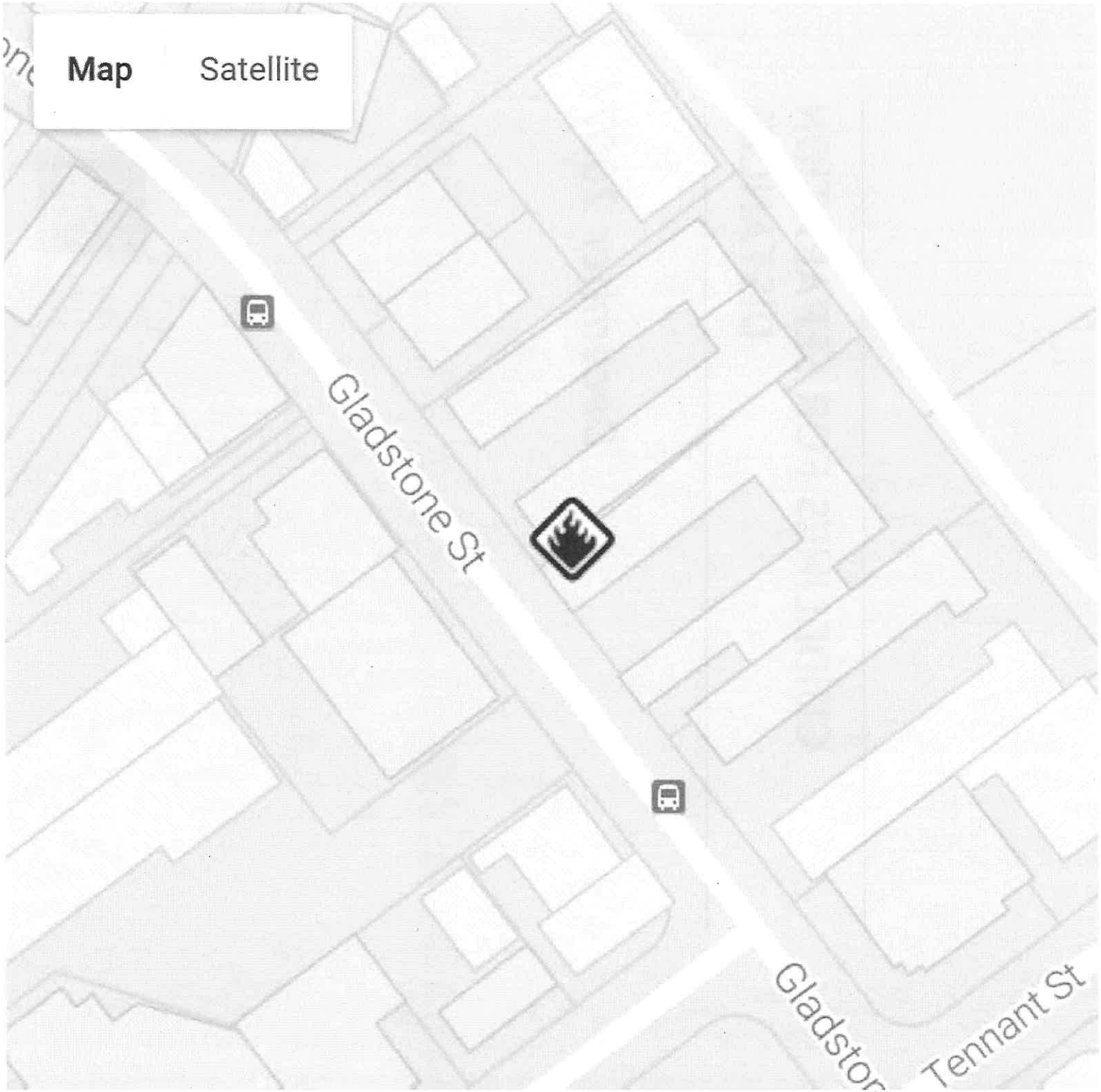
I would like to share something with you

http://www.canberratimes.com.au/act-news/truck-catches-fire-at-mitchell-tip-20160829-gr42l2.html

From:	Rhonda Myers
To:	Myers, Rhonda
Subject:	Warehouse fire fyshwick
Date:	Tuesday, 20 December 2016 07:37:24
Attachments:	Screenshot_2016-12-20-07-34-38.png Screenshot_2016-12-20-07-35-57.png

http://www.canberratimes.com.au/act-news/warehouse-fire-in-fyshwick-after-car-crashes-into-building-20161219-gtejyl.html


Map
Satellite
Incident
STRUCTURE FIRE – FYSHWICK
Location
/ GLADSTONE STREET, FYSHWICK
Status
Out / Completed
Suburb
FYSHWICK
Type
STRUCTURE FIRE 1 TO 3 FLOORS
Agency
Fire
Incident Number
067154–20122016
Updated
20 Dec 2016 06:17:55
Time of Call
20 Dec 2016 03:21:49
News alert
View news alert


Map
Satellite
Gladstone St
Tennant St

ENVIRONMENT PROTECTION AUTHORITY

GUIDELINES FOR SEPARATION DISTANCES

December 2007

EPA
South Australia

Guidelines for separation distances

Guidelines for separation distances

Acknowledgments:

The sections on surface roughness and terrain weighting factors are used with permission from *National environmental guidelines for piggeries* (2004) by Australian Pork Limited.

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1 INTRODUCTION

The *Guidelines for separation distances* are for the use of the Environment Protection Authority (the EPA), planning authorities, developers, planning consultants and the community as a tool in the development application processes for new or expanding developments.

The recommended separation distances are to be applied in the assessment of development proposals to ensure that incompatible land uses are located in a way that minimises impacts caused by noise, odour, polluting air emissions and/or water polluting activities. While the guidelines will be used to assist in the siting of new developments, they may also be used to ensure that industrial activities in appropriate zones are protected from encroachment by residential and other sensitive land uses that would adversely affect industry viability.

Planning authorities are encouraged to use the guidelines when preparing Development Plan Amendments and Better Development Plan modules as one method of addressing potential conflicts between incompatible land uses.

The EPA also supports the use of the guidelines as a basis for introducing a development control mechanism which uses separation distances as threshold values for complying and non-complying development in order to assess the potential for offsite impacts.

The guidelines are to be used in the assessment of new developments and are not to be applied retrospectively to existing industrial operations. The distances quoted in the guidelines are recommended separation distances between various industrial uses and sensitive land uses. The guidelines include a mechanism for a developer to demonstrate that a separation distance, other than the recommended distances, is appropriate. Consequently, the distances quoted in the document should not be adopted as absolute criteria, but rather as indicative distances that may be adjusted having regard to specific site circumstances.

These guidelines are not intended to address occupational health and welfare issues, or circumstances, where there is a direct health issue. The guidelines also do not address major hazards such as fire or explosion.

2 BACKGROUND

Good planning is a major contributing factor to the achievement of sustainable development and environmental protection. The environmental aspects of development proposals[1] involving activities of environmental significance[2] are assessed, in accordance with the *Development Act 1993* and its *Regulations*, by the Environment Protection Authority.

Development planning policy in South Australia is based on the separation of certain classes of activities by using land-use zones to achieve a number of desired outcomes, including the protection of the amenity of residential areas and the unhindered operation of businesses in industrial and commercial areas. The separation of land-use activities is the conceptual basis for the preparation by the EPA of these guidelines. The guidelines are intended to assist in the making of informed decisions that address potential conflicts between residential and other sensitive land uses and industry, due to industrial emissions such as particulates, odours, noise, waste water and polluted runoff.

Under the *Environment Protection Act 1993* (the Act), industrial emissions are regulated by the requirement to comply with the General Environmental Duty, any relevant Environment Protection Policies and any licence conditions. The use of separation distances is not an alternative to compliance by industry with its statutory obligations, but rather is an aid in locating industry and sensitive land uses to minimise the impacts of noise, odour, polluting air emissions or waste water, which may result from accident, power failure, equipment failure, unusual meteorological conditions or human error, as well as normal operation. Similarly, the use of separation distances is not an alternative to the provision of appropriate policies and zoning schemes in council Development Plans. The guidelines may inform the planning process and should be seen as one of a number of tools available to deal with loss of amenity caused by close proximity of incompatible land uses.

The primary role of the guidelines is to serve as an aid in the assessment of development proposals. The application of the guidelines will assist in protecting amenity in residential and other sensitive areas, and can be used by planning authorities to protect industry from encroachment by sensitive land uses.

Other bodies, such as councils, government departments, developers and planning consultants may choose to use the guidelines to assist in the planning and assessment of development proposals, and amendments to development plans.

1 Development is defined in the Development Act

2 As defined in Schedules 8, 21 and 22 Development Regulations

3 THE ROLE OF SEPARATION DISTANCE GUIDELINES

Separation distances are used extensively in differing forms in most Australian states. The use of separation distances is an approach endorsed in the South Australian Government's *Planning Strategy for Metropolitan Adelaide* (August 2006) and *Planning Strategy for the Outer Metropolitan Adelaide Region* (August 2006) and is supported on the basis that industrial activities cannot be undertaken with optimum emission control conditions all the time.

These guidelines are designed to be:

- simple for all parties eg proponent, community and local government: to be able to easily determine compliance
- transparent: separation distances are reproducible and consistent for all proposals with similar configurations
- quick and cheap: expert air quality or noise advice should not be required and
- generally more conservative than the separation distances predicted by air pollution or noise modelling for a high percentage of proposals.

The recommended separation distances contained in these guidelines are based on the assumption that Best Available Technology Economically Achievable (BATEA) is implemented. BATEA involves the use of emission control technology, which, although representing a significant financial cost, will not be such that the viability of the enterprise is threatened. Utilisation of BATEA will help to ensure that an enterprise complies with the requirements of the Environment Protection Act and Environment Protection Policies made under Part 5 of the Act.

Buffers or separation distances are not an alternative to source control and cleaner production methods. They are a means of reducing the effects of residual emissions and, in exceptional circumstances, the emissions from an enterprise operating under less than optimum conditions. It is important that the application of separation distances is not seen as a substitute for BATEA.

The recommended separation distances contained in this guideline are based on the best available information and, in many cases, the experience and knowledge of EPA officers.

While a separation distance is recommended for an industry, the ensuing buffer zone can still be used for other compatible uses.

4 APPLICATION OF SEPARATION DISTANCES

Separation distance application considerations

These guidelines apply to new industries/activities and redevelopment of existing industries/activities for which development authorisation is required under the Development Act, and will not be applied retrospectively to an existing industry/activity.

While an activity may have the potential to cause a nuisance from a range of medium such as odour/air pollution or noise, the distance required to minimise the potential impacts to acceptable levels is generally the largest for the odour/air pollution situation. Hence the recommended separation distances in Appendix 1 refer to the potential odour/air pollution impacts. If the recommended separation distance for potential noise impacts is higher than that recommended for odour/air pollution this is directly given.

The site of some proposed activities is fixed and the activity only occurs infrequently. For example, if a steel bridge is required to be abrasive blasted as part of corrosion protection, it cannot be moved to achieve the recommended separation. In these cases, extra precautions would be required to minimise the potential impacts, but there may still be an environmental nuisance for a short period.

Planning authorities, government departments, developers and planning consultants may also use the guidelines as a tool to assist in the planning and assessment of development proposals, and amendments to Development Plans. The guidelines may also be used to assess proposed residential development near an existing industry to ensure that the proposed residential development does not have unsatisfactory environmental impacts and the existing industry is not unduly affected by the encroaching residential development.

The guidelines address the potential impact from a single industry and not the cumulative impact of several industries. The cumulative impact of several industries would need to be assessed on a site specific basis.

When applying the guidelines, the following concepts must be taken into consideration.

Activity boundary

This is the boundary drawn to enclose all activities, plant, buildings, other structures or other sources from which residual emissions or noise may arise.

The activity boundary includes all sources of potential pollutant emissions, such as stockpiles and storage facilities. These must be identified and included within the activity boundary from which separation distances are taken. This concept allows industrial developers to provide for a buffer area or part thereof on their own premises if circumstances permit. The activity boundary may not coincide with the property boundary. The concepts of activity boundary and separation distance are shown in Figure 1.

Measurement point

This is the point on or adjacent to the nearest sensitive land use or zone at which a separation distance is assessed.

Recommended separation distance

This is the distance recommended in the guidelines for the activity(ies) listed. This distance is to be measured from the activity boundary.

The separation distances are based on typical to large sized existing developments for that industry sector. If a proposed development has the potential to have a significantly larger impact than this, then the recommended distances may not be sufficient. The recommended

distance can then be estimated using the procedure in Section 5 'Amendments to Separation Distances' of these guidelines.

Buffer area

The buffer area is that area within the separation distance of an activity boundary. The buffer area may have a natural or artificial feature that mitigates an adverse impact. An example may be a hill or an acoustic barrier. Consideration needs to be given to the ongoing ownership and maintenance of the buffer area. If the buffer area is not maintained there may be an increase in the potential impacts and a significant business risk to the proposed or new operation.

Where the distance between the measurement point and the activity boundary is less than the recommended separation distance, then the planning authority should request the proponent to demonstrate why the lesser distance would be appropriate in accordance with Section 5 'Amendments to Separation Distances' of these guidelines.

A Development Plan Zone or Policy Area that lists a sensitive land use as a complying use should be treated as if the land were being used for that activity for the purpose of these guidelines, regardless of its current use. The nearest Zone or Policy Area boundary to an actual or potential source of emissions is the measurement point in this case. Vacant industrial land would generally be treated as if the land were being used for that activity as detailed in the Development Plan Zone or Policy Area for the purpose of these guidelines

By careful layout within a site, and by locating the source producing the residual emissions as far as practicable from the nearest sensitive land use, the impact on neighbouring landholders can be reduced. Careful examination of the proposed site, activities, plant and installation, in conjunction with the relevant planning and environmental legislation, Development Plan objectives and principles, and details of existing land uses in the vicinity, is necessary if the separation distance requirements of a proposal are to be addressed adequately.

Industries themselves can be incompatible neighbours. Incompatible industrial uses include chemical works and food preparation premises; a dusty concrete plant and a paint shop requiring a dust free atmosphere; or a brick kiln and an orchid grower. The reasons for their incompatibility are often highly individual, and need to be addressed on a case by case basis to ensure that sensible planning solutions are reached.

The creation of designated precincts dedicated to particular industrial activities within industrial zones (for example a foundry precinct including resin sand production and other allied activities on the outer boundaries of the precinct) could be an effective means of preventing conflict.

Allowance should be made by the developer for the possibility of future expansion on a site when setting up initial separation distances, otherwise the expansion could be prevented by the lack of separation.

Sensitive land uses

These guidelines are intended to protect the amenity of sensitive land uses, such as, but not limited to:

- caravan park
- community centres
- consulting rooms
- educational establishments
- childcare centres
- hospitals
- hotels
- motels

- nursing homes
- offices
- residential (including detached dwellings, multiple dwellings, flat buildings, row dwellings, semi-detached dwellings)
- parklands, recreation areas or reserves (regular public use)
- tourism accommodation

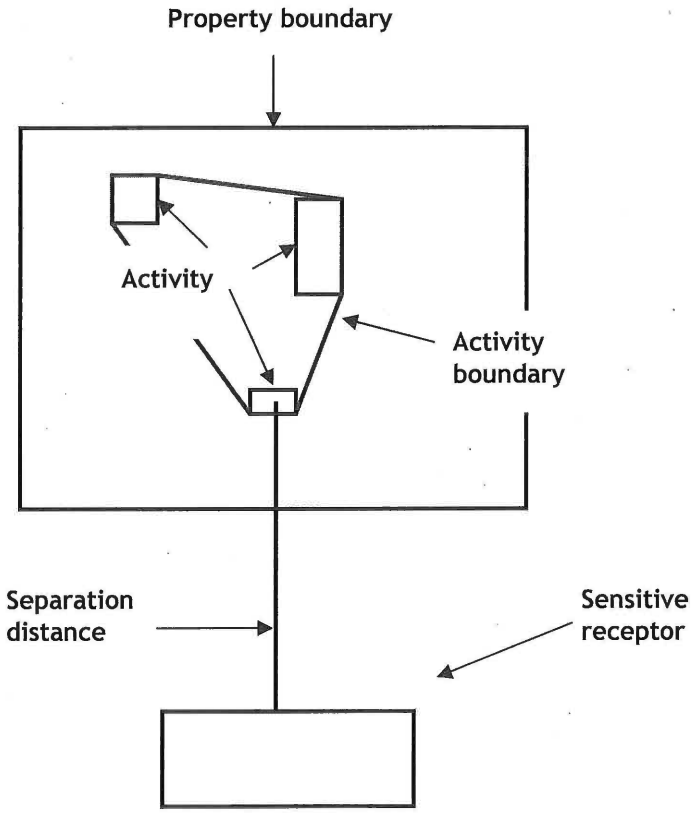

Figure 1 **Concepts of activity boundary and separation distance**

5 AMENDMENTS TO SEPARATION DISTANCES

If site specific circumstances appear to indicate a reason for departing from the recommended separation distance (eg scale of operation, local topography, state of the art technology etc), a separation distance different from the recommended distances may be able to be justified.

The onus will be on the party seeking an amendment to the recommended distance to *demonstrate* that the designated separation distance is inappropriate for the particular situation.

As a guide, the following criteria should be addressed when seeking a site-specific variation from the recommended separation distance:

- the scale of operation of the proposal (eg the proposed plant is significantly smaller than the normal operation for that activity and it will produce substantially lower emissions)
- the standard of emission control technology to be used (eg will have a standard of emission control technology significantly better than the good level of control normally applied to that activity, ie Best Available Technology, rather than BATEA)
- evidence of the effectiveness of the proposed technology
- an environmental audit of residual emissions (air, water, noise, waste) from an existing plant, on the proposed site or a similar plant at another site that has been carried out and made available to the EPA
- details of how the residual emissions will be addressed
- details of any history of complaints arising from residual emissions from an existing plant, on the proposed site or a similar plant at another site
- details on how the proposed development may comply with industry guidelines (if available)
- existence of new applicable research
- the existence of exceptional topographic, meteorological or other circumstances that will affect the emission or dispersion of residual emissions
- evidence from tools such as odour modelling, demonstrating that the potential odour impact is less than the EPA odour criteria for normal conditions and other conditions including times of higher emissions from accident, power failure, equipment failure, unusual meteorological conditions or human error.

Refer to the EPA guidelines *Odour assessment using odour source modelling* (2006) and *Air pollution modelling—presentation of results* (2005).

Requests for amendments to the recommended separation distances should be included by proponents as part of their development application and address the criteria outlined above. It is suggested that proponents seeking an amendment to recommended separation distances will need to engage the services of experienced and appropriately qualified environmental consultants.

6 SEPARATION DISTANCES FOR AIR EMISSIONS (AIR QUALITY & ODOUR)

The separation distances for odour or air pollutants are shown in Appendix 1. The distances given should be adjusted for the vegetation/surface roughness between the source and the receptor and the terrain effects around the site, particularly the effects of terrain features on the meteorology of the area. The activities listed in Appendix 1 are grouped into the major activity groupings as defined in Schedules 21 and 22 in the Development Regulations under Schedule 8 of the Development Act. Separation distances for poultry farms are shown in Appendix 2.

The recommended distances for potential odour from siting of intensive animal keeping activities, not covered by Appendices 1 or 2, and waste spreading are shown in Appendix 3.

The recommended separation distance for air quality purposes from Appendix 1 is multiplied by the appropriate surface roughness factor and the terrain weighting factor to give the final recommended separation distance.

Recommended distance = value in Appendix 1 x surface roughness factor (Table 1) x terrain weighting factor (Table 2)

Surface roughness factor

The surface roughness factor varies according to the roughness of the land surface between the site and the receptor. The principal elements that determine surface roughness are vegetation density and surface topography. Recommended values of surface roughness are provided in Table 1. The values presented in this table are not to be added; only the value for the single category that best represents the site conditions should be selected.

The roughness factors given in Table 1 assume that the selected roughness is continuous between the site and the receptor. Where roughness is variable or non-continuous, judgment should be used in selecting an appropriate composite factor.

The values given in Table 1 should be used with care; a number of qualifications apply to their use. For receptors located at larger separation distances, more than one surface roughness factor may apply over different sections of the separation. In this instance, the surface roughness factor applied should be selected after considering the relative weighting of the different factors. When selecting factors based on the presence of vegetation, some consideration should be given to the potential for the vegetation to be cleared during the life of the activity. For example, off-site vegetation is beyond the control of the operator, but may be regarded as permanent depending on the owner of the land (eg national park/state forest where no timber harvesting is undertaken).

Table 1 Values of surface roughness factor

Surface roughness features	Description	Factor
Settled areas	Metropolitan area or continuous residential, commercial and/or industrial areas.	1.00
Long grass, few trees	Open country with few or scattered trees. Topography would be predominantly flat to slightly undulating.	1.00
Undulating hills	Situations where topography consists of continuous rolling, generally low-level hills and valleys, but without sharply defined ranges, ridges or escarpments. (Assumes minimal vegetation.)	0.93

Surface roughness features	Description	Factor
Level wooded country	Open forest country with tree density not sufficient to provide a continuous canopy, but sufficiently dense to influence air movement. There would be little or no lower storey vegetation. The density is such that the vegetation can be considered as a continuous belt.	0.85
Heavy timber	Generally, tall forests with dense timber stands, providing a continuous canopy. There is limited understorey vegetation, mainly associated with regrowth.	0.77
Significant hills and valleys	Situations where one or more lines of hills sufficiently large enough to influence air movement exist between the receptor and the activity.	0.68

Terrain weighting factor

The terrain weighting factor relates to the potential for an odour plume to be exaggerated in particular directions and relatively small in others. This factor provides an estimation of the potential changes to air pollution/odour dispersion in situations where meteorological conditions may be influenced by local terrain.

The recommended factors are shown in Table 2, along with the direction in which each factor should be applied. The slope referred to is determined by the topographical features of each site. The use of these terrain weighting factors does not affect the application of surface roughness factors discussed above.

Table 2 Values of terrain weighting factor

Terrain	Weighting factor	
	Downslope	Upslope
Broad valley/drainage (0.1-1%)	1.6	1
Sloping terrain (1-2%)	1.5	1
Flat (<0.1% in all directions)	1	1
Hilltop (>4%)	1.2	-
Narrow valley (1-2%)	1.2	0.5

Notes:

1 These factors may not apply where sea breezes are a significant influence on weather patterns (ie in coastal regions), or where odour is emitted from elevated vent sources.

2 Downslope factors should be applied across an angle of 90° centred on the terrain feature. Upslope factors should be applied across an angle of 60° centred on the terrain feature.

3 % is percentage slope.

The location of the operation should be checked in relation to the topography. For example:

- If the operation is on a slight slope (<1%) within a broad valley, a terrain weighting factor of 1.0 should be used upslope and 1.6 downslope of the facility.
- If the operation is situated on a moderate slope (1–2%), a terrain weighting factor of 1.0 should be used upslope and 1.5 downslope of the facility.

Weighting factors should be applied for the range of distances applicable to site impacts. However, the application of these weighting factors is dependent on the homogeneity of terrain between source and receptor. For example, if the terrain remains similar between the operation and receptor, the weighting factor can be applied for an indefinite distance. The weighting factor is, however, less reliable if significant terrain changes occur between source and receptor.

The terrain weighting factors apply to most locations. If, however, the site is not described by these factors, a terrain weighting factor of 1.0 should be used.

Examples

The recommended separation distance for Hot Mix Asphalt Preparation in Appendix 1 is 1,000 metres.

- If the proposed plant has heavy timber between the plant and the receptor and the plant is located on a slight slope(<1%) within a broad valley the recommended distance is 1000 x 0.77 x 1.0 = 770 metres for upslope of the plant and 1000x 0.77 x 1.6 = 1,232 metres downslope of the plant.
- The recommended separation distance from Appendix 1 for Milk Processing Works is 100 metres. If the proposed plant is located in residential/industrial area and the land is flat (<0.1%) the recommended distance is 100 x 1.0 x 1.0 = 100 metres.

7 SEPARATION DISTANCES FOR NOISE EMISSIONS

Generally, the rationale for noise control is the use of noise attenuation techniques at the source of the noise by BATEA rather than the adoption of separation distances. At times, with sufficient separation and depending on the type of industry, it is not always necessary to use the maximum noise attenuation that is typically used for that industry. The amount of noise attenuation to be used and the separation would need to be determined on a case by case basis.

The separation distances provided for an air quality perspective in Appendix 1 (including the application of the surface roughness and topographic factors) may exceed separation distances that would be required to attenuate noise to an acceptable level. There are exceptions to this. The Appendix 1 indicates where a separation distance is based principally upon noise attenuation requirements. The separation distances for noise can be used as a general guide to indicate that a proposal will not have a detrimental impact subject to BATEA when outside of these distances. For development proposed within the separation distance, expert advice should be sought to determine the site variables and associated extent of treatment required to achieve the relevant EPA standard. By incorporating acoustic treatment, it is possible to have satisfactory development at distances substantially less than those nominated in these guidelines. Even when the recommended distances are used, there is still a requirement that all developments must comply with the *Environment Protection (Noise) Policy 2007*.

8 SEPARATION DISTANCES FOR POTENTIAL WATER POLLUTION

The recommended distances for siting of intensive animal keeping activities and waste disposal are shown in Appendix 3. These distances are not to be used when there is a recommended separation distance in an industry specific guide. Any spreading of nutrient rich wastes needs to be undertaken in a manner to ensure that all nutrients are fully taken up by crops or other vegetation. If spreading bio-solids, reference should be made to EPA guideline *South Australian biosolids guidelines for the safe handling, reuse or disposal of biosolids* (June 1997).

Areas of South Australia that are highly sensitive to potential contamination of water resources, either surface waters or groundwater, have been declared Water Protection Areas under the Environment Protection Act. The water related distances in Appendix 3 are relevant to sites in and outside of the water protection areas. However, in a Water Protection Area a greater level of design and management of a development is required to ensure compliance with the *Environment Protection (Water Quality) Policy 2003.*

REFERENCES

Australian Pork Limited 2004, *National environmental guidelines for piggeries,* EPA, Adelaide, viewed 10 December 2007, <www.epa.sa.gov.au/pdfs/pigguide2.pdf>.

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——, Department of Primary Industries and Resources (SA) and Local Government Association of South Australia 2006, *EPA 525/06 Guidelines for establishment and operation of cattle feedlots in South Australia,* EPA, Adelaide, viewed 10 December 2007, <www.epa.sa.gov.au/pdfs/cattle.pdf>.

APPENDIX 1 RECOMMENDED SEPARATION DISTANCES FOR AIRBORNE AND NOISE EMISSIONS

The column listed as Schedule, refers to the associated schedules in the *Development Regulations 1993* under Schedule 8 of the *Development Act 1993*. NS means the activity is not listed on Schedule 21 or 22. The activities are grouped in the same manner as the activities are listed in Schedule 21 and 22.

Under most circumstances, the separation distances required from an air quality perspective would generally exceed separation distances required to attenuate noise to an acceptable level. There are exceptions to this and these are shown where a separation distance is based principally upon noise attenuation requirements.

The distances provided in this appendix should be adjusted for the surface roughness and terrain weighting factors as detailed in Section 6.

All distances are in metres.

Petroleum and Chemical

Activity	Description of activity	Schedule	Air separation distance	Noise separation distance
Chemical storage & warehousing facilities	Stored or kept in bulk or in containers having a capacity exceeding 200 litres at facilities with a total storage capacity exceeding 1,000 cubic metres. Within a River Murray Protection Area under the River Murray Act 2003-> 1 but >1,000 cubic metres or >100 but not < 1,000 cubic metres.	22 1(1) 21 1(1)	500 500	
Chemical works		22 1(2)	500	
Coke Works		22 1(3)	2,000	
Oil Refineries		22 1(4)	2,000	
Petroleum Production, Storage or Processing Works or Facilities		22 1(5)	1,500	
Wood Preservation Works	Using creosote as preservative Storage only of creosote logs Using non -creosote preservative	22 1(6)	300 200 100	

Manufacturing and Mineral Processing

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Abrasive Blasting	blasting outside— blast cleaning cabinets less than 5 cubic metres in volume or totally enclosed automatic blast cleaning units	22 2(1) NS	500 100	
Hot Mix Asphalt Preparation		22 2(2)	1,000	
Cement Works		22 2(3)	1,000	
Ceramic Works		22 2(4)	500	
Concrete Batching Works		22 2(5)	100	200
Drum Reconditioning		22 2(6)	100	
Ferrous and Non-ferrous Metal Melting	> 500 kg/cycle— Resin sand Green Sand Diecasting (no resin sand) > 50 &< 500 kg/cycle— Resin sand Green Sand Diecasting (no resin sand) < 50 kg/cycle— Resin sand Green Sand Diecasting (no resin sand)	22 2(7) 21 2(3) NS 	 1,000 750 100 500 300 50 500 300 50	
Metallurgical Works		22 2(8)	2,000	
Mineral Works		22 2(9)	1,000	
Pulp or Paper Works	>100 tonnes/year <100 tonnes/year	22 2(10) NS	2,000 1,000	
Scrap Metal Recovery		22 2(11)	500	
Surface Coating	electroplating, electrolyse plating, anodising (chromating, phosphating and colouring), chemical etching or milling, or printed circuit board manufacture, > 5 kilolitres/day of effluent; electroplating, electrolyse plating, anodising (chromating, phosphating and colouring), chemical etching or milling, or printed circuit board manufacture, <5 kilolitres/day of effluent	22 2(12)(a) NS	100 100	

Manufacturing and Mineral Processing

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Surface Coating	hot dip galvanising;	22 2(12)(b)	300	
Surface Coating	spray painting and powder coating with a capacity to use more than 100 litres/day of paint or 10 kilograms/day of dry powder	22 2(12)C	300	
	spray painting and powder coating with a capacity to use less than 100 litres/day of paint or 10 kilograms/day of dry powder	NS	100	
Wood Processing Works	>4,000 cubic metres/year (sawmills)	22 2(13)	100	500
	<4,000 cubic metres/year (joineries)	NS	100	
Maritime Construction Works		22 2(14)	300	
Vehicle Production	>2,000 motor vehicles/year	22 2(15)	500	
	<2,000 motor vehicles/year	NS	100	

Waste Treatment and Disposal

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Incineration	destruction of chemical wastes	22 3(1)(a)	1,000	
	destruction of medical wastes	22 3(1)(b)	500	
	cremation	22 3(1)(c)	150	
	solid municipal waste	22 3(1)(d)	500	
Sewage Treatment Works or STEDs (also known as Community Water Management Systems (CWMS))	mechanical/biological wastewater plants including aerated lagoons:	22 3(2)		
	<1,000 equivalent population		100	
	>1,000 & <5,000		200	
	>5,000 & <15,000		300	
	>15,000		Individual assessment	
	facultative lagoons:			
	<1,000 equivalent population		150	
	>1,000 & <5,000		350	
	>5,000 & <15,000		700	
	>15,000		Individual assessment	

Waste Treatment and Disposal

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Waste or Recycling Depots See landfill guidelines & biosolids guidelines	Landfill	22 3(3)	500	
	biosolids depot	22 3(3)	400	
	other	22 3(3)	300	
	not licensed	NS	100	

Activities in Specified Areas

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Brukunga Mine Site		22 4(1)	Not applicable	
Discharge of Stormwater to Underground Aquifers		22 4(2)	Not applicable	

Animal Husbandry, Aquaculture and Other Activities

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Cattle Feedlots (see industry guidelines)		22 5(1)		
Fish Farming	If no onsite power generation (24/7)	22 5(2)	100	
	If onsite power generation (24/7)	22 5(2)	100	500
Saleyards	throughput > 50 000 sheep equivalent units per year [sheep equivalent units: 1 sheep or goat = 1 unit 1 pig (< 40kg) = 1 unit 1 pig (> 40kg) = 4 units 1 cattle (< 40kg) = 3 units 1 cattle (40-400kg) = 6 units 1 cattle (> 400kg) = 8 units].	22 5(3)	500	
	with throughput > 25 000 but < 50,000 sheep equivalent units per year	NS	200	

Animal Husbandry, Aquaculture and Other Activities

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Piggeries (see the National environmental guidelines for piggeries)		22 5(4)		
Dairies	Total site including lagoon	21 4 (5)	300	
Poultry farms (see Appendix 2)		21 4(6)		
Dog kennels		NS	200	

Food Production and Animal and Plant Product Processing

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Abattoirs or Slaughterhouses	Other than poultry	22 6(1)	500	
	Poultry only		300	
Breweries	Production capacity > 5,000 litres/day	22 6(2)	1,000	
	Production capacity > 2,000 litres/day < 5,000 litres/day	NS	500	
Composting Works	> 200 tonnes/year	22 6(3)	1,000	
	>20 & <200 tonnes/year	NS	300	
	<20 tonnes/year and located River Murray Protection Area under the River Murray Act 2003;	NS	100	
Fish Processing	Excluding works < 100 tonnes/year waste water is disposed of to a sewer or septic tank effluent disposal system	22 6(4)	100	200
	Excluding works <2 tonnes/year where waste water is disposed of otherwise than to a sewer or septic tank effluent disposal system			
	Excluding works processing in retail only			
Milk Processing Works	> 5 m litres/year	22 6(5)	100	
	> 1 m–5m litres/year	21 5(1)(4)	100	

Food Production and Animal and Plant Product Processing

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Produce Processing Works	deep fat frying, roasting or drying	22 6(6) (a)	150	
	processing capacity >30 kilograms/hour	NS	150	
	<30 kilograms/hour			
Produce Processing Works	agricultural crop material			
	> 10,000,000 litres of waste water is generated and disposed of otherwise than to a sewer or septic tank effluent disposal system	22 6(6) (b)	150	200
	< 10,000,000 litres of waste water is generated and disposed of otherwise than to a sewer or septic tank effluent disposal system	21 5(1)(5)	150	300
Rendering or Fat Extraction Works	processing capacity			
	> 250 kilograms/hour	22 6(7)	1,000	
	< 250 kilograms/hour	NS	1,000	
Curing or Drying Works	processing capacity			
	> 250 kilograms/hour	22 6(8)	100	
	< 250 kilograms/hour	NS	100	
Tanneries or Fellmongeries	> 5 tonnes of skins or hides/year	22 6(9)	500	
	< 5 tonnes of skins or hides/year	NS	500	
Woolscouring or Wool Carbonising Works		22 6(10)	500	
Wineries or Distilleries	Mechanically treated wastewater	22 6(11)	300	
	Wastewater storage lagoons without any aeration device			
	BOD >4000mg/l		1,000	
	BOD >1000 & <4000mg/l		750	
	BOD >100 & >1000mg/l		500	
	BOD <100 mg/l		300	
	Bottling only	NS	300	

Materials Handling and Transportation

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Bulk Shipping Facilities	Wharf >100 tonnes/day	22 7(1)	300	
	Storage > 100 tonnes/day or wharf 10-100 tonnes/day	21 6(1)	300	
	Storage < 100 tonnes/day or wharf <10 tonnes/day	NS	300	
Railway Operations		22 7(2)	Not applicable	Individual assessment
Crushing, Grinding or Milling	chemicals or rubber > 100 tonnes/year	22 7(3)(a)	300	500
	chemicals or rubber <100 tonnes/year	NS	300	500
Crushing, Grinding or Milling (excluding non-commercial processing for on farm use)	agricultural crop products > 500 tonnes/year	22 7(3)(b)	300	
	<500 tonnes/year	NS	300	
Crushing, Grinding or Milling	rock, ores or minerals > 1000 tonnes/year excluding lease or private mine or wet sand	22 7(3)(c)	500	
	100–1,000 tonnes/year or in excess of authorisation	NS	500	
	<100 tonnes/year	NS	500	
Dredging	but excluding works carried out for the establishment of a visual aid to navigation and any lawful fishing or recreational activity.	22 7(4)	300	
Coal Handling and Storage	handling capacity > 100 tonnes per day or a storage capacity > 5000 tonnes	22 7(5)	1,000	
	handling capacity >1 & <100 tonnes per day or a storage capacity >50 & < 5,000 tonnes.	21 6(5)	1,000	
	handling capacity < 1 tonnes per day or a storage capacity < 50 tonnes.	NS	500	
Earthworks Drainage	> 100 kilolitres of waste water containing suspended solids in a concentration > 25 mg/l discharged	22 7(6)	300	
	< 100 kilolitres of waste water containing suspended solids in a concentration > 25 mg/l discharged	NS	300	

Materials Handling and Transportation

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Extractive Industries	> 100,000 tonnes/year with blasting	22 7(7)	500	3,000
	No blasting		300	
	< 100,000 tonnes/year with blasting	NS	500	3,000
	No blasting		300	

Other

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Aerodromes	> 2,000 flight movements/year	22 8(1)	Site specific	Site specific
	< 2,000 flight movements/year	NS	Site specific	Site specific
Fuel Burning	> 5 megawatts or > 500 kilowatts for stove enamel or to bake or dry any substance that on heating releases dust or air impurities.	22 8(2)	300	
	>0.5 & < 5 megawatts or > 50 & <500 kilowatts for stove enamel or to bake or dry any substance that on heating releases dust or air impurities.	21 7(1)	300	
	< 0.5 megawatts or < 50 kilowatts for stove enamel or to bake or dry any substance that on heating releases dust or air impurities.	NS	300	
Helicopter Landing Facilities		22 8(3)	Site specific	Site specific
Marinas and Boating Facilities: Storage	> 50 or more powered vessels	22 8(4)(a)	100	200
	>5 & < 50 vessels	21 7(2)	100	200
	< 5 vessels	NS		100
Marinas and Boating Facilities: repair or maintenance	> 5 or more vessels at any one time or	22 8(4)(b)	300	
	> 12 metres in length		300	
	< 5 or more vessels at any one time and < 12 metres in length.	NS	300	

Other

Activity	Description of activity	Schedule	Air separation distance (metres)	Noise separation distance (metres)
Motor Racing or Testing Venues		22 8(5)	Not applicable	3,000
Shooting Ranges	Outside	22 8(6)	Not applicable	2,000
Discharges to Marine or Inland Waters		22 8(7)	Not applicable	
Retreading tyres		21 7(5)(a)	300	
Fibre-reinforced plastic manufacturing		21 7(5)(b)	300	
Bakery	Using > 40 tonnes per week	NS	100	200
Dyeing/finishing		NS	100	
Charcoal manufacturing	By retort process Other than by retort process	NS NS	500 1,000	
Rope, cord & twine manufacturing		NS	100	
Gas distribution works		NS	300	
Frost fans		NS	Not applicable	2000
Creosote log storage	Age of logs less than 6 weeks	NS	200	

APPENDIX 2 RECOMMENDED SEPARATION DISTANCES FOR POULTRY FARMS

Minimum separation distances

Feature	Distance (metres)
Public road > 50 vehicles per day	200
Public road < 50 vehicles per day	50
Town	750
Rural residential	500
Rural dwelling	250
Property boundary	20

Variable separation distances

$D=N^{0.55} \times 30 \times S1 \times S2 \times S3 \times S4 \times S5$

where:

D = separation distance (metres)
N = Total number of birds on farm in 1000; N=500 for 500,000 birds
0.55 = Shed area exponent
S1 = Type of poultry farm
S2 = Receptor type
S3 = Litter/manure handling
S4 = Surface roughness factor
S5 = Terrain weighting factor

S1 factor

Type of poultry farm	Factor
Broiler meat bird production	1
Egg production	0.6

S2 factor

Receptor type	Factor
Town	2
Rural residential	1.5
Rural Dwelling	1

S3 factor

Litter/manure handling	Factor
Used litter/manure taken off site	1
Litter/manure stored/composted on site	1.3

S4 factor

Surface roughness features	Description	Factor
Settled areas	Metropolitan area or continuous residential, commercial and/or industrial areas.	1.00
Long grass, few trees	Open country with few or scattered trees. Topography would be predominantly flat to slightly undulating.	1.00
Undulating hills	Situations where topography consists of continuous rolling, generally low-level hills and valleys, but without sharply defined ranges, ridges or escarpments. (Assumes minimal vegetation.)	0.93
Level wooded country	Open forest country with tree density not sufficient to provide a continuous canopy, but sufficiently dense to influence air movement. There would be little or no lower storey vegetation. The density is such that the vegetation can be considered as a continuous belt.	0.85
Heavy timber	Generally tall forests with dense timber stands, providing a continuous canopy. There is limited understorey vegetation, mainly associated with regrowth.	0.77
Significant hills and valleys	Situations where one or more lines of hills sufficiently large enough to influence air movement exist between the receptor and the activity.	0.68

S5 factor

Terrain	Factor	
	Downslope	Upslope
Broad valley/drainage (0.1-1%)	1.6	1
Sloping terrain (1-2%)	1.5	1
Flat (<0.1% in all directions)	1	1
Hilltop (>4%)	1.2	-
Narrow valley (1-2%)	1.2	0.5

Notes:

1 These factors may not apply where sea breezes are a significant influence on weather patterns (ie in coastal regions), or where odour is emitted from elevated vent sources.

2 Downslope factors should be applied across an angle of 90° centred on the terrain feature. Upslope factors should be applied across an angle of 60° centred on the terrain feature.

Examples

1 3 Sheds each 100 x12 metres (70,000 broilers assuming 0.55 ft^2/bird) on flat open ground, litter/manure take off site

D = $70^{0.55}$ x 30 x 1 x 2 x 1 x 1 x 1 x 1 for Town

D= 621 metres

D = 700.55 x 30 x 1 x 1 x 1 x 1 x 1 x 1 for Residential dwelling

D = 310 metres

2 10 Sheds each 150 x15 metres (440,000 broilers assuming 0.55 ft^2/bird) on flat open ground, litter/manure take off site

D = 440.55 x 30 x 1 x 2 x 1 x 1 x 1 for Town

D= 1,706 metres

D = 4,400.55 x 30 x 1 x 1 x 1 x 1 x 1 for Residential dwelling

D = 853 metres

3 20 Sheds each 150 x15 metres (881,000 broilers assuming 0.55 ft^2/bird) on flat open ground, litter/manure take off site

D = 881.55 x 30 x 1 x 2 x 1 x 1 x 1 x 1 for Town

D= 2,500 metres

D = 881.55 x 30 x 1 x 1 x 1 x 1 x 1 x 1 for Residential dwelling

D = 1,250 metres

4 For a farm of broilers (assuming 0.55 ft^2/bird) on flat open ground, litter/manure take off site

Number of birds	Distance to residential dwelling (metres)
50,000	258
100,000	378
200,000	553
300,000	691
400,000	810
440,000	853
500,000	915
1,000,000	1,340

5 For an egg farm with sheds each 35,000 birds

Number of birds	Distance to residential dwelling(metres)
35,000	127
70,000	186
105,000	233
140,000	273
280,000	399

APPENDIX 3 RECOMMENDED SEPARATION DISTANCES FOR INTENSIVE ANIMAL KEEPING AND ASSOCIATED WASTE SPREADING

Note: all distances in metres

Intensive animal keeping (not covered by industry specific guideline)

Site of the development including any lagoons and manure storage areas (does not include poultry)

Town	1000
Rural dwelling	500
Public road > 50 vehicles per day	200
Public road < 50 vehicles per day	50
Property boundary	25
Major watercourse (eg Murray River, River Torrens & Onkaparinga River	100
Watercourse (defined by a blue line on a 1:50,000 current SA Government topographical map)	50

Spreading of by-products and waste water (not covered by industry specific guideline, and includes poultry)

Town	1000
Rural dwelling	300
Public road > 50 vehicles per day	50
Public road < 50 vehicles per day	25
Property boundary	25
Major watercourse	100
Watercourse (defined by a blue line on a 1:50,000 current SA Government topographical map)	50