



Environmental Assessment Guidelines

DRAFT
Environmental Assessment Guideline
for
Separation distances between
industrial and sensitive land uses

September 2015

Environmental Protection Authority

Western Australia

Foreword

One of the five principles of the *Environmental Protection Act 1986* is the principle of waste minimisation: “All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge to the environment”.

The Environmental Protection Authority (EPA) applies this principle through its own decision-making in relation to environmental impact assessment, and encourages adoption of this principle by other regulatory authorities where it does not assess such proposals. However, the EPA recognises that, even with the deployment of state of the art facilities, best practice processes, and modern pollution control equipment, emissions beyond the boundary of an industry’s activities are not always avoidable. Furthermore, unintended emissions as a result of equipment failure or other causes sometimes occur.

The application of separation distances between industry and sensitive land uses, through the land use planning system, can ensure that both intended and unintended emissions do not adversely impact on people. Without separation, ‘wicked problems’ can arise which cause high levels of concern for individuals and communities and which are difficult to solve.

This Environmental Assessment Guideline (EAG) applies to all proposed schemes and scheme amendments, and provides recommended separation distances between sensitive land uses and industries that emit gaseous and particulate material, odour, dust and noise. In order to be effective, and to assist in avoiding land use conflict, it is the EPA’s view that separation distances must be implemented using appropriate planning mechanisms such as buffers. This EAG provides the EPA’s expectations on how separation distances should be considered in schemes and scheme amendments in the environmental impact assessment of planning schemes and scheme amendments under Part IV Division 3 of the *Environmental Protection Act 1986*. This EAG can also help planning authorities make decisions through other strategic and statutory land use planning tools.

Use of the EAG will ensure that decision-making by planning authorities on new or changed land uses protects human health and wellbeing, local amenity and aesthetic enjoyment, as well as protecting industry from encroachment by sensitive uses.



Dr Paul Vogel

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Key messages

- Separation distances are the estimated distances recommended to separate a source of emissions from sensitive land uses to ensure that the health and amenity of people are not adversely affected.
- The EPA expects that industry premises should be designed to avoid or minimise emissions, and ensure that unacceptable emissions do not occur beyond the boundary of the premises¹. However, the EPA recognises that this is not always possible. Unintended emissions can also occur through a range of causes.
- Separation distances assist land use planning authorities to make appropriate decisions so that new sensitive land uses are not exposed to emissions causing an adverse effect and/or do not constrain the operation of existing industry.
- Separation distances also assist planning authorities to ensure that emissions from new or expanded industry do not adversely impact on existing sensitive land uses.
- Avoiding land use conflicts is best undertaken early in the planning process, as the ability to separate conflicting land uses at a later stage (such as at the time of subdivision) is often constrained by other land uses and mitigation may not be possible.
- The EPA expects that new planning schemes and scheme amendments, involving the siting of new or expanded industry near sensitive land uses, or sensitive land uses near existing industry, demonstrate how they have incorporated adequate separation distances into planning mechanisms such as buffers.
- The separation distances in Appendix 1 are recommended distances to separate an individual source of emissions and sensitive land uses. They may not necessarily apply to industrial precincts or Strategic Industrial Areas (SIAs) where multiple premises may give rise to a cumulative impact, in which case a larger separation may be warranted. In these circumstances, the EPA expects planning authorities to make a judgement on an appropriate buffer based on technical advice, appropriate investigations, and current and anticipated future land uses.
- The EPA strongly advocates that planning authorities also consider separation distances through other planning tools such as state and local planning strategies, regional and sub-regional structure planning, subdivisions, and development approvals to ensure future land use conflicts are avoided.
- The use of Special Control Areas to clarify permitted development around existing industry, when transitioning from one land use to another through the rezoning of an existing buffer, is strongly encouraged.
- While the EPA does not have a role in approving development applications, it is of the strong view that local government and development assessment panels have responsibility for making decisions that avoid impacts to sensitive land uses. This EAG can assist them to do so.
- The separation distances do not apply to significant proposals which are formally assessed by the EPA². In these cases, site specific studies may be required and will be identified during the scoping phase of the assessment.

¹ The EPA has a range of guidelines on its website which provide guidance to proponents on best practice, minimising emissions, and related matters.

² Referred under s38 and assessed under Part IV of the *Environmental Protection Act 1986*.

1 Introduction

A number of emissions are generated by industrial³ activities, such as noise, gases, dust and odours. These emissions may, at times, cause adverse impacts on health and amenity levels in residential areas and at other sensitive land uses.

In line with the *Environmental Protection Act 1986* (EP Act), the operators of an emitting industry must take all reasonable and practicable measure to prevent or minimise emissions from their premises. It is generally expected that, through appropriate site layout, design of facilities, and the implementation of engineering and process controls, emissions from an individual site can be prevented from causing adverse impacts beyond its boundaries. However, this is not always the case. Sometimes, unintended emissions also occur as a result of equipment failure, leaks, accidents or abnormal weather events.

An appropriate separation of sensitive land uses from a source of emissions is the key approach to ensuring that intended and unintended emissions from industrial, commercial, rural or other properties do not adversely impact on the health and amenity of people.

Sensitive land uses are land uses applied to places where people live or regularly spend time and which are therefore sensitive to emissions from industry. They include residences, hospitals and nursing homes, short-stay accommodation, schools, child care facilities, shopping centres, playgrounds, and some public buildings. Some commercial and institutional land uses which require high levels of amenity or are sensitive to particular emissions may also be considered sensitive land uses.

For the purpose of this EAG, a **land use which generates emissions** could be any of a large range of land uses that could be found in Industrial, Commercial, Rural or Public Utility zones which generate noise, gaseous, dust and odour emissions that may impact on the health and amenity of people. Appendix 1 lists the full range of land uses which are addressed by this Environmental Assessment Guideline.

2 Purpose

The purpose of this EAG is to:

- provide advice on which land uses require separation, and recommend the appropriate separation distances;
- outline the EPA's expectations on the application of separation distances for schemes and scheme amendments in the environmental impact assessment process; and
- support strategic and statutory land use planning and development decisions by planning authorities where proposed land uses have the potential to adversely impact on human health and amenity.

This EAG relates to the EPA's environmental factors of human health and amenity which may be impacted by gaseous and particulate emissions, noise, dust and odour generated from industry.

The EPA's objective for the environmental factor of Human Health is "To ensure that human health is not adversely affected".

³ In the context of this EAG, the term "industry" (or industrial) is consistent with the Macquarie Dictionary definition (being - any large-scale business activity) and applies to a broad range of land uses, not just those zoned as "Industrial" in land use planning schemes and/or structure plans.

The EPA's objective for the environmental factor of Amenity is: "To ensure that impacts to amenity are reduced as low as reasonably practicable".

3 Scope

This guidance applies to the EPA's consideration of schemes and scheme amendments through the environmental impact assessment process.

The EPA also recommends the EAG is used by planning authorities in: the preparation and assessment of regional frameworks, sub-regional strategies and structure plans, district structure plans, local planning strategies and structure plans; in the assessment of subdivision proposals; and in determining development applications. For the purposes of this guidance, planning authorities include local government authorities, development assessment panels, the Western Australian Planning Commission, and redevelopment authorities.

The EAG does not apply to proposals formally assessed by the EPA under Part IV Division 1 of the EP Act. The EPA formally assesses proposals which are likely, if implemented, to have a significant effect on the environment. For these proposals, the scope of information required by the EPA may include site specific studies on the impacts of emissions, and will be determined through the scoping phase of the assessment.

The EAG also does not apply to the assessment of applications made under Part V of the EP Act (for works approvals or licences) for premises that may cause emissions. The Department of Environment Regulation (DER) will make a decision relating to its regulatory functions based on its assessment of the risks.

The recommended separation distances in this EAG should be used with caution in planning for new industrial precincts and state SIAs where cumulative impacts may result from the co-location of a number of premises or different industries. In these cases, greater separation distances may be warranted. In considering such sites, the EPA expects planning authorities to make a judgement on an appropriate buffer, based on available science and current and predicted future land uses, but with a precautionary mindset.

This EAG is also not intended to apply to the siting of temporary or mobile plants. In such cases, it may be appropriate to use a lesser separation distance depending on the magnitude and duration of the emissions and the plant operator's ability to meet the requirements of the EP Act and associated regulations.

This EAG is not applicable to planning for infrastructure corridors.

4 Separation distances and their purpose

The EPA's hierarchy for the management of emissions is:

- avoid or minimise the creation and discharge of emissions through design and operation of the facility;
- ensure environmental impacts from emissions are acceptable and meet the relevant regulations and health criteria at the boundary of the site; and
- implement separation distances to ensure that any residual emissions and unintended emissions do not impact adversely on sensitive land uses.

A **separation distance** is the recommended distance to separate a source of emissions (gaseous and particulate emissions, dust, odour and noise) from sensitive land uses in order to avoid adverse impacts to human health and amenity. A separation distance is an important consideration in determining a buffer.

A **buffer**, as defined in *State Planning Policy 2.5 – Rural Planning Policy*, is the designation of land in which sensitive land uses are constrained. A land use planning response, the extent of a buffer comprises the following elements: the type and scale of the proposal, separation distances in this EAG, existing or potential requirement for environmental works approval and licensing, industry-specific guidelines, technical studies, potential cumulative impacts, amenity, visual impact, topographic features, cadastre and the continuation and/or expansion of the land use in the context of surrounding land uses.

Separation distances provide guidance on the appropriate level of separation between a source of emissions and sensitive land uses in order to mitigate the impacts of intended and unintended emissions on people. This approach relies on the knowledge that impacts on the environment generally decrease with increasing distance from the source of emissions. Separation distances are based on scientific information, where available, and technical expertise about the types of emissions associated with various industries and their potential impacts on people. These distances can vary based on the scale and size of the industry, location topography, prevailing winds and other factors.

The application of separation distances does not replace the responsibility of industry operators to minimise emissions through best practice design and operation of their facilities. Separation distances provide an additional level of mitigation where emissions cannot be contained within the boundary of the industry premise, and to cater for unintended emissions.

Establishment of buffers is a planning mechanism to implement separation distances. However, as the separation distances are based on environmental impacts only, planning authorities will need to consider other planning issues in conjunction with the recommended separation distances in determining buffers. It is not the purpose of a separation distance to 'sterilise' land from development; non-sensitive land uses can be located within the area between the source of emissions and sensitive land use. It is up to planning authorities to make decisions on appropriate current and future land uses within the whole buffer.

5 Advice to planning authorities

5.1 Schemes and scheme amendments

The EPA expects that planning authorities, in referring proposed planning schemes and scheme amendments that involve the siting of new or the expansion of existing land uses which will generate emissions, or sensitive land uses near existing Industrial, Commercial, Rural or Public Utility zones (or land zoned for these future uses), will demonstrate how the separation of sensitive land uses and emitting industries has been considered and addressed. This will require planning authorities to demonstrate how they have considered the recommended separation distance and demonstrate how it has been implemented through a buffer in the scheme or scheme amendment.

The EPA recognises that in highly developed areas it may not always be possible to establish or maintain buffers to separate sensitive land uses and land uses which generate emissions to the extent recommended in this EAG.

Where a proposed scheme or scheme amendment provides for development that will have a lesser separation distance than that recommended in this EAG, the referring planning authority will be expected to provide a clear rationale for why that is the case. For example, a planning authority may consider that a lesser separation distance is appropriate because mitigation measures (such as incorporation of noise reduction technology in an industry) are to be required.

Where it is proposed to rezone an area around a source of emissions to allow for future sensitive land uses, the EPA expects planning authorities to confirm any potential future impacts on the health and amenity of people in the rezoned area are acceptable, or can be made acceptable, prior to rezoning including Urban Deferred. It is preferred that there be a long term plan in place which provides for changes in land uses that avoid conflict and impacts. The use of SCAs or other similar planning tools to manage buffer areas is encouraged to promote compatible land uses. Clarifying the type of development permitted in the rezoned area, while the industry is in operation, will help manage the expectations of developers and the community. If development of a sensitive land use is approved within the recommended separation distance, without knowledge of the likely impacts, the ability to mitigate issues that arise is greatly reduced. A precautionary approach to changing land uses around existing emission sources is advised.

Modelling – for example, odour modelling – will not always provide a reliable justification for a lesser separation distance; scientific assessment of the potential impacts of existing and future land uses which generate emissions can only provide guidance on buffer decisions. It is necessary for a planning authority to make a judgement-based decision on the risks and benefits of their buffer and to do so in a transparent manner and on a defensible and precautionary basis.

The key test for the EPA in considering whether the referred schemes and scheme amendments are environmentally acceptable with regard to separating sensitive and industrial land uses is that its objectives for the environmental factors of Human Health and Amenity can be met.

5.2 Strategic planning

The EPA strongly advocates that planning authorities ensure separation distances are established through buffers through the planning process. Strategic planning documents should include indicative buffers to provide a guide to statutory planning, and district and local structure planning. Consideration of buffers at a strategic level facilitates the inclusion of buffers through other planning instruments, and assists in managing developer expectations for future land development.

5.3 Subdivisions and development approvals

The EPA encourages planning authorities to use the recommended separation distances in assessing and making decisions on subdivisions and development approvals. Where no scheme amendment is required, such as with the development of intensive animal industries on rural land, the application of separation distances through the development approval process can avert conflicts with surrounding sensitive land uses (such as residences on neighbouring rural properties). It is the EPA's experience that community concern and complaints can be avoided through ensuring appropriate separation distances, where they can be achieved.

6 Recommended separation distances – how to use them

Appendix 1 lists the range of industries which require separation from sensitive land uses, and provides the recommended separation distance.

The separation distances are based on scientific information (where available) and knowledge and experience of technical experts and are also drawn from various codes-of-practice, guidance from other jurisdictions, and the EPA's previous guidance material.

Appendix 1 includes:

- a description of the types of land uses and industries involved;
- the type of emission generated;

- recommended separation distances; and
- references to relevant accepted industry codes and practices.

In using Appendix 1, the separation distances should be measured from the activity boundary of the industry to the activity boundary of the nearest sensitive land use. Figure 1 below provides an illustration of how a separation distance is measured.

The activity boundary of the industry is the area (within a polygon) that includes all industry activities (including plants, buildings or other sources) from which residual emissions may arise. The activity boundary of the sensitive land use is the area (within a polygon) that includes all the sensitive uses (such as the building and outdoor playground of a child care centre).

Separation distances do not take account of property boundaries. Property boundaries should be considered by planning authorities alongside other planning issues in determining how a separation distance should be implemented through the planning framework⁴.

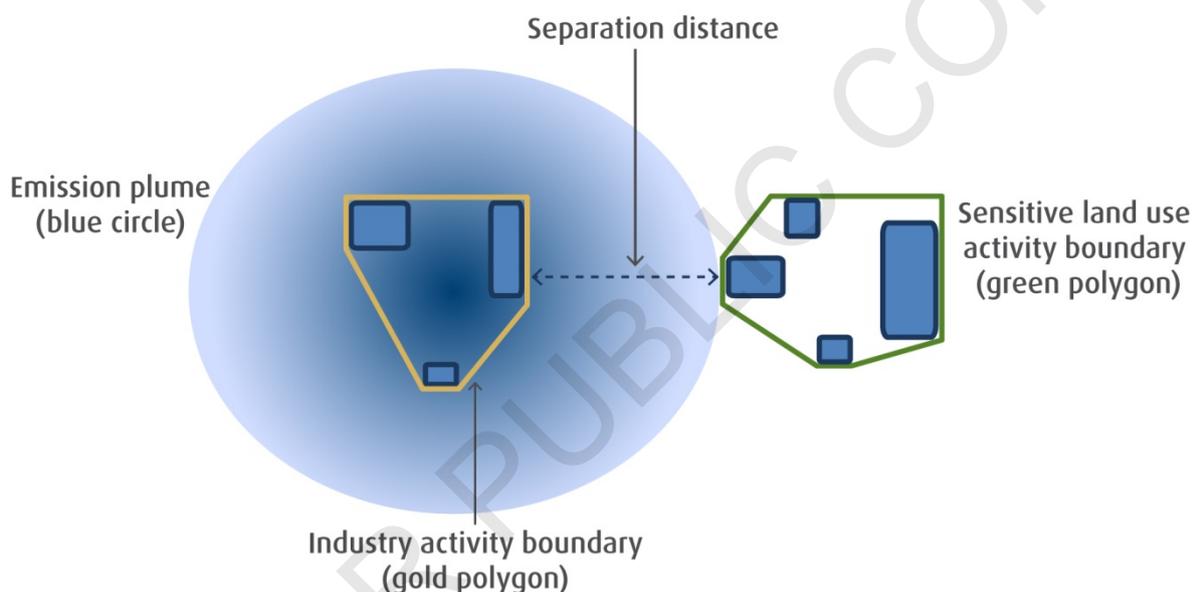


Figure 1 Illustration of how to measure a separation distance.

For some industries in Appendix 1, a separation distance has not been provided and further investigation is recommended. This is because the particular industry is too variable in its size and scale of operations and potential impacts to provide a 'one-size-fits-all' separation distance. The scope of the investigation should be determined in line with *Statement of Planning Policy 4.1 State Industrial Buffer Policy* and the results used to make a decision on an appropriate buffer for that source of emissions.

7 Legislative and policy context

Part IV Division 3 of the EP Act makes provisions for the EPA to undertake environmental impact assessment of schemes which must be referred to the EPA under the *Planning and Development Act 2005*. This includes Region Schemes, Local Schemes, Redevelopment Schemes, Improvement Schemes, and their amendments.

⁴ It should be noted that the Environmental Protection (Noise) Regulations 1997 apply at the sensitive land use **property** boundary, not the sensitive land use activity boundary.

In deciding whether to assess a scheme, the EPA considers whether it is likely, if implemented, to have a significant impact on the environment. During the environmental impact assessment (EIA) process, the EPA considers the 'significance' of a scheme's impact on the environment by considering whether its environmental objectives for relevant environmental factors can be met. The EPA has published guidance which describes its approach to determining significance⁵.

In regard to the separation of emitting industries from sensitive land uses, where a scheme or scheme amendment has a potentially significant impact on the factors such as human health or amenity, the EPA may undertake a formal environmental impact assessment.

7.1 Relationship of the separation distances to State Planning Policies

The Western Australian Planning Commission's *Statement of Planning Policy 4.1 State Industrial Buffer Policy* (SPP 4.1) and *State Planning Policy 2.5 Rural Planning Policy* (SPP 2.5) are complemented by this EAG, which assists in their implementation to secure buffers. SPP 4.1 is intended to provide a consistent State-wide approach for the definition and securing of buffer areas around industry, state infrastructure assets and SIAs. The purpose of SPP 2.5 is to protect and preserve the State's rural land assets.

7.2 Relationship of the separation distances to the regulation of prescribed premises

The Department of Environment Regulation (DER) is the responsible agency for regulating certain industry premises with the potential to cause emissions and discharges to air, land or water known as 'prescribed premises' under Part V of the EP Act. These categories of premises are prescribed under Schedule 1 of the Environmental Protection Regulations 1987.

The EP Act requires a works approval to be obtained before constructing or modifying a prescribed premise and makes it an offence to cause an emission or discharge unless a licence or registration is held for the premises. The DER is responsible for regulating emissions and discharges to the environment through the works approval and licencing process.

The DER have their own guidance specifically in relation to prescribed premise categories, *Separation Distances: Division 3, Part V, Environmental Protection Act 1986* (draft August 2015). The DER's guidance provides separation distances for the purposes of informing risk assessments to support decision-making for applications in works approvals and licenses.

7.3 Relationship of the separation distances to codes of practice

The Department of Agriculture and Food WA (DAFWA), in its role to support WA's agriculture and food sector, works with agricultural industries and businesses to develop industry codes of practice. A number of industry codes of practice have been developed which provide advice on separation distances between specific industries and other land uses. This EAG (Appendix 1) provides recommended separation distances for agricultural practices and references relevant codes of practice where there is an accepted practice and separation distance.

⁵ *Environmental Assessment Guideline for Application of a significance framework in the environmental impact assessment process* (EAG 9), Environmental Protection Authority, 2013.

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Appendix 1: Recommended separation distances between industrial and sensitive land uses

Notes:

- The recommended separation distances do not necessarily apply to clusters of industries such as those Strategic Industrial Areas where cumulative impacts may occur. In these cases, greater separation distances may be warranted.
- The following separation distances are recommended for all industries, not just those above a specific production or design capacity, such as those industries listed as prescribed premise under Part V of the *Environmental Protection Act 1986* (EP Act).
- Where ranges are provided, a judgment should be applied to determine the most appropriate distance based on variable factors and circumstances such as the location and size of operations, and the nature of the products and chemical processes used in the industry. If the industry is a prescribed premise under Part V of the EP Act, the higher value is the same as DER's draft guidance statement on separation distances for prescribed premises.
- Where an industry is not listed below, or a case by case approach is recommended, planning agencies should seek the advice of the OEPA.

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Abattoir	slaughtering of animals – facility with wastewater treatment ponds	Environmental Protection (Abattoirs) Regulations 2001	Noise, dust, odour	1000
	slaughtering of animals – facility without wastewater treatment ponds	Environmental Protection (Abattoirs) Regulations 2001		500
Abrasive blasting operations	metal or other material is cleaned or abraded by blasting with any abrasive material	Environmental Protection (Abrasive Blasting) Regulations 1998	Noise, dust	case by case
Aluminium production	using electrolytic fusion technique		Gaseous, noise, dust, risk	case by case
Ammonia import/export	loading or unloading ammonia from ships and storage		Gaseous (NH ₃), risk	case by case
Ammonium nitrate import/export	loading or unloading ammonium nitrate from ships and storage		Risk	case by case
Ammunition production	includes explosives and fireworks		Risk	case by case
Animal feed manufacturing	manufacture or processing of animal food		Noise, dust and odour	500
Animal feedlot (cattle)	intensive rearing of cattle	National Guidelines for Beef Cattle Feedlots in Australia (Meat and Livestock Australia) 2012	Noise, dust and odour	1000 for noise and dust S-Factor calculation for odour and at least 5 km from towns – refer to National Guidelines
Animal feedlot (sheep)	intensive rearing of sheep	National Procedures and Guidelines for Intensive Sheep and Lamb feeding Systems (Meat and Livestock Australia) 2011	Noise, dust and odour	1000
Aquaculture	propagation or rearing of aquatic fauna, with supplementary feeding, in pond, tanks or natural waterways	See Aquaculture Council of WA website in relation to the following Environmental Code of Practice for the Sustainable Management of WA's Aquaculture Industry: <ul style="list-style-type: none"> • Abalone • Pearl • Land-Based Finfish 	Noise, odour	100-300

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
		<ul style="list-style-type: none"> • Marine Finfish • Marron • Mussel and Oyster • Prawn <p>http://www.aquaculturecouncilwa.com/sustainability/caring-our-country/codes-practice/</p>		
Asphalt manufacturing	Hot or cold mix asphalt is produced		Noise, dust, odour	1000
Automotive spray painting	liquid paint is applied to automotive surfaces by airless, compression, electrostatic or other methods		Noise, dust, odour	200
Bakeries	small or day-time operations		Noise, odour	100
	large night-time operations		Noise, odour	500
Bauxite refining	premises on which alumina is produced		Noise, dust, odour	case by case
Beverage manufacturing	alcoholic beverages are manufactured – brewery, distillery or winery		Gaseous, noise, dust, odour	200-500
	non-alcoholic beverages are manufactured, processed or packaged		Noise, dust, odour	200-500
Boat building and maintenance	commercial premises on which vessels are built, maintained or refurbished - organotin compounds are not used or removed from vessels		Gaseous, noise, dust, odour	500
	commercial premises on which vessels are built, maintained or refurbished - organotin compounds are used or removed from vessels		Gaseous, noise, dust, odour	1000
Briquettes manufacture	compressed coal-dust or wood-dust production		Noise, dust, odour	300-500
Bulk material loading or unloading	clinker, coal, ore, ore concentrate or any other bulk granular material is loaded/unloaded from vessels – open materials loading system		Noise, dust, risk	1000-2000

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
	clinker, coal, ore, ore concentrate or any other bulk granular material is loaded/unloaded from vessels – closed materials loading system		Noise, dust, risk	300
Carbon stripping	reprocessing of carbon granules (gold extraction)		Gaseous (acidic fume), odour	200-300
Catteries			Noise, odour	200
Cement or lime manufacturing	Production of cement clinker or lime using a furnace or kiln; or cement clinker, clay, limestone or similar is ground or milled		Gaseous, noise, dust, odour	2000
Ceramic goods manufacturing	premises on which ceramic kitchen or table ware or other non- refractory ceramic products are made		Gaseous, noise, dust, odour	300-500
Char manufacturing	wood, carbon material or coal is charred to produce a fuel or material of enriched carbon content		Gaseous, noise, dust, risk	1000
Chemical blending or mixing	chemicals or chemical products are blended, mixed or packaged (includes paints and inks blending and mixing)		Gaseous, noise, dust, odour, risk	300-500
Chemical manufacturing	chemical products are manufactured by a chemical process (includes operations such paints and inks manufacturing, resins manufacturing and pharmaceuticals production)		Gaseous, noise, dust, odour, risk	1000
Chemical or oil recycling	waste liquid hydrocarbons or chemicals are refined, purified, reformed, separated or processed		Gaseous (VOCs), odour, risk	1000
Chemical Storage	bulk storage of acids, alkalis or chemicals		Gaseous, risk	500-1000
Chlor-alkali works	manufacture of caustic soda and chlorine		Gaseous (Cl ₂), noise, odour, risk	Case by case
Clay bricks or ceramic products manufacturing	premises on which fired- clay bricks, tiles, pipes or pottery are manufactured		Gaseous (HF, HCl, SO ₂), noise, dust,	500-1000

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
			odour	
Coal mining	extraction of coal		Noise, dust	5000
Coke production	coke is produced, quenched, cut, crushed and graded		Gaseous, noise, dust, odour, risk	1000-2000
Compost manufacturing and soil blending	outdoor uncovered		Noise, dust, odour	2,500 for up to 35,000t/y 1,800 for up to 20,000t/y 1,300 for up to 12,000t/y 800 for up to 5,000t/y 400 up to 2,000t/y Above 35,000t/y then case by case
	outdoor covered, turned windrows		Noise, dust, odour	2,200 for up to 50,000t/y 1,900 for up to 35,000t/y 1,500 for up to 20,000t/y 1,100 for up to 12,000t/y 650 for up to 5,000t/y 400 up to 2,000t/y Above 50,000t/y then case by case
	outdoor covered windrows with continuous aeration		Noise, dust, odour	1,600 for up to 50,000t/y 1,300 for up to 35,000t/y 1,100 for up to 20,000t/y 850 for up to 12,000t/y 600 for up to 5,000t/y 400 for up to 2,000t/y Above 50,000t/y then case by case

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Compost manufacturing and soil blending (cont.)	enclosed windrows with odour control		Noise, dust, odour	1,000 for up to 50,000t/y 900 for up to 35,000t/y 800 for up to 20,000t/y 700 for up to 12,000t/y 550 for up to 5,000t/y 400 for up to 2,000 t/y Above 50,000t/y then case by case
	in-vessel composting with odour control		Noise, dust, odour	600 for up to 50,000t/y 550 for up to 35,000t/y 500 for up to 20,000t/y 430 for up to 12,000t/y 350 for up to 5,000t/y 300 for up to 2,000t/y Above 50,000t/y then case by case
Concrete batching or cement products manufacturing	concrete or cement is mixed, prepared or treated	Environmental Protection (Concrete Batching and Cement Product Manufacturing) Regulations 1998	Noise, dust	300 - 500
Crematoria			Gaseous, noise, risk	200-300
Crushing of building material	crushing or cleaning of waste building or demolition material		Noise, dust	1000
Dairies	milking shed operations	Code of Practice for Dairy Shed Effluent WA (Dairy Australia)	Noise, dust, odour	500
Dog kennels			Noise, odour	1000
Dry-cleaners	dry-cleaning operations		Noise, odour	100

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Edible oil or fat processing	vegetable oil, oil seed or animal fat is processed – includes seed crushing and use of solvents to refine oils		Noise, dust, odour	500
Electric power generation	generating electricity – 20 megawatts or more (total) for natural gas & 10 megawatts or more (total) for other fuels		Gaseous (NO _x , SO _x), noise, dust	5000
	generating electricity - more than 10 megawatts or less than 20 megawatts (total)		Gaseous, noise	500
Extractive industries	hard rock quarrying (including blasting), crushing and screening		Noise, dust, risk	1500
	other rock quarrying, blasting, grinding and milling works – material processed by grinding, milling or separated by sieving, aeration etc		Noise, dust, risk	1000
	grinding and milling works – material processed by grinding, milling or separated by sieving, aeration etc, but no blasting		Noise, dust	500-1000
	sand limestone and clay extraction with no grinding or milling works		Noise, dust	300-500
Fellmongering	animal skins or hides are dried, cured or stored		Noise, odour	500
Fibreglass reinforced plastic manufacturing	using Low Styrene Emission (LSE) resins	Environmental Protection (Fibre Reinforced Plastics) Regulations 1998	Dust, odour	200
	using non-LSE resins	Environmental Protection (Fibre Reinforced Plastics) Regulations 1998	Dust, odour	500
Flour mill	grain or seed milling premises		Noise, dust	300-500
Fly ash disposal	premises on which fly ash is disposed		Dust	1000

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Foam products manufacturing	resin is used to prepare or manufacture plastic foam or foam products using MDI (diphenylmethane di-iso-cyanate) or TDI (toluene-2, 4-di-iso-cyanate)		Gaseous, odour, risk	500
Food processing	fruit, vegetables or meat is cooked, dried, preserved, bottled, canned or processed		Noise, dust, odour	200-500
Foundries – metal melting or casting	metal or scrap metal is melted in furnaces or cast		Noise, dust, odour	500
Fuel burning	gaseous liquid or solid fuel is burnt or pyrolised for the supply of steam or in power generation equipment		Gaseous (NO _x , SO _x), noise, dust, odour, risk	300-500
Fuel loading and unloading	fuel unloading from ships, storage and despatching		Risk	1000
Fuel storage – crude oil and petroleum products in tanks or vessels exceeding 2000 tonnes capacity	Fixed Roof	Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007 Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007 Storage and handling of dangerous goods Codes of Practice 2010 (DMP)	Odour, risk	200
	Floating Roof	Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007 Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007 Storage and handling of dangerous goods Codes of Practice 2010 (DMP)	Odour, risk	300-500

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Glass or glass fibre manufacturing	glass or glass fibre production		Gaseous, noise, dust	500
Gold ore processing	grinding and milling works – rock and ore processed by grinding or milling, or separated by sieving or aeration		Noise, dust	500-2000
Gold roaster	gold extraction from sulfide ores		Gaseous (SO ₂), noise, dust, odour	Case by case
Grain cleaning (no milling)	premises on which grain or seed is cleaned, graded, sorted or processed		Noise, dust, odour	300-500
Grain loading and unloading	grain transfer using conveyor belts etc		Noise, dust, risk	500
Greenhouse, hothouses and mushroom farms	Commercial using manure or compost (where compost is manufactured or blended, composting separation distances apply)	Guidelines for the Separation of Agricultural and Residential Land Uses (DoH, 2012)	Noise, odour	200-300
Hay processing plant	hay processing, handling or storage premises		Noise, dust, odour, risk	500-1000
Horse stables	keeping horses		Noise, dust, odour	100-500
Incineration	for biomedical, chemical or organic waste, plastic or rubber waste		Gaseous, noise, dust, odour, risk	1000
Industrial gases	production, processing, refining or storage of industrial gases		Gaseous, noise, odour, risk	1000
	commercial/retail outlets		Gaseous, noise, risk	50
Iron ore smelting	production of iron from iron ore		Gaseous, noise, dust, odour	Case by case
Joinery and wood working premises	production of wooden furniture & household items such as doors, kitchen fittings, flooring & mouldings		Noise, dust, odour	100-300

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Liquid Petroleum (LP) gas retailing	LP gas storage & handling at automotive retail outlets – above ground tanks	AS/NZS 1596:2014 – The storage and handling of LP gas	Odour, risk	Up to 8000 L tank - 55 From 8000L to 16 000L - 85
	LP gas storage & handling at automotive retail outlets – underground tanks	AS/NZS 1596: 2014 – The storage and handling of LP gas	Odour, risk	55
Livestock saleyard or holding pen	holding of live animals pending sale, shipment or slaughter		Noise, dust, odour	1000
Malt-works	malt production from grain		Noise, dust, odour	500
Market gardens	broad-scale operations	Guidelines for the Separation of Agricultural and Residential Land Uses (DoH, 2012)	Gaseous, noise, dust, odour	300-500
Metal coating	metal products are powder-coated or enameled	Environmental Protection (Metal Coating) Regulations 2001	Noise, dust, odour	200
Metal coating – industrial spray-painting	site on which spray- painting is conducted inside a spray booth	Environmental Protection (Metal Coating) Regulations 2001	Noise, dust, odour	200
	work is conducted in the open (no spray booth)	Environmental Protection (Metal Coating) Regulations 2001	Noise, dust, odour	500
Metal fabrication	sheet metal, structural metal and iron and steel products		Noise, dust	500-1000
Metal finishing	galvanizing		Gaseous (acid fume), noise, dust, odour	500
	other than galvanizing		Gaseous (acid fume), noise, dust, odour	200
Metal leaching – vat or <i>in situ</i>	metal extraction from ore with a chemical solution		Noise, dust, odour	500
Metal smelting or refining	where metal, metal ores, concentrates or wastes are smelted or refined)		Gaseous, noise, dust, odour, risk	Case by case
	where metal, metal ores, concentrates or wastes are melted or cast			500

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Milk processing	milk is separated, evaporated or a dairy product is manufactured		Noise, odour	200-500
Mine dewatering, tailings or residue disposal	water extracted and discharged to allow mining of ore; or mining or processing of ore occurs and tailings or residue are discharged into a dam		Noise, dust	500
Mineral sands mining or processing	mineral sands ore is mined, screened, separated or otherwise processed		Gaseous (H ₂ S), noise, dust, odour	2000
Mineral wool or ceramic fibre manufacturing	manufacture of mineral wool or ceramic fibre		Gaseous, noise, dust, odour	500
Motor body works	including panel beaters		Noise, dust, odour	200
Nurseries	no composting	Guidelines for the Separation of Agricultural and Residential Land Uses (DoH,2012)	Noise	100
Oil or gas production	crude oil, natural gas, and condensate is extracted, treated or separated.		Gaseous, noise, odour, risk	2000
Oil or gas refining	crude oil or condensate is refined or processed		Gaseous, noise, odour, risk	2000
Open cut mining	other than coal		Noise, dust, risk	Case by case
Orchards	broad-scale operations	Guidelines for the Separation of Agricultural and Residential Land Uses (DoH,2012)	Gaseous, noise	500
Pesticides manufacturing	herbicide, insecticide or pesticide manufacture by a chemical process		Gaseous, noise, dust, odour, risk	1000
Piggery – intensive	premises on which pigs are fed, watered and housed in pens	National Environmental Guidelines for Piggeries (Australian Pork Limited) 2010	Noise, odour	1000 Noise S-Factor Odour Refer to Level 1 only of the National Environmental

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
				Guidelines for Piggeries (Australian Pork Limited, 2010)
Piggery – extensive (all premises)	premises on which pigs are fed, watered and housed in outside paddocks or enclosures	National Environmental Guidelines for Piggeries (Australian Pork Limited) 2010	Dust, odour	1000
Plaster manufacturing	plaster, plasterboard, gyprock or other products comprised wholly or mostly of gypsum are made		Noise, dust, risk	200
Poultry industry	intensive farming	Environmental Code of Practice for Poultry Farms in WA (WA Broiler Growers Association; Poultry Farmers Association of WA) Environmental Guidelines for the Australian Egg Industry (Australian Egg Corporation Limited)	Noise, dust, odour	300-1000
Pulp, paper or paperboard manufacturing	manufacture of paper pulp, wood pulp, kraft paper, kraft paperboard, cardboard paper or paperboard		Gaseous (H ₂ S, SO ₂), noise, dust, odour	1000-1500
Rabbitries	intensive husbandry		Dust, odour	500
Raceways for motor vehicles	Speedways and drag strips		Noise, dust	case by case
Rendering operations	animal matter is processed or extracted for use as fertiliser, stock food or other purposes		Noise, odour	1000
Rubber products manufacturing	using either organic solvents or carbon black		Gaseous (VOCs), noise, dust, odour	300-500
Sawmill	timber (tree) milling		Noise, dust	500-1000
Scrap metal recycling works	scrap metal is fragmented or melted to recover metal (including lead battery reprocessing)		Noise, dust, odour	300-500

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Screening works	screening or sieving of sand, rocks, chemicals and minerals		Noise, dust	500-1000
Seafood processing	fish or other seafood is processed or packaged		Odour	500
Service stations , involving vehicle cleaning/detailing facilities & the retailing of spare parts & foodstuffs	for premises operating during normal hours, i.e. Monday - Saturday from 0700-1900 hours		Gaseous, noise, odour, risk	50
	freeway service centre (24 hour operations)		Gaseous, noise, odour, risk	100
	all other 24 hour operations		Gaseous, noise, odour, risk	200
Sewage facility	sewage (excluding septic tanks) or discharged onto land or into water		Gaseous, noise, odour, risk	Case by case
Smallgoods	not including abattoir facilities or rendering works		Noise, odour	100
Smoking, drying or curing operations	meat or other edible products are smoked, dried or cured		Gaseous, noise, odour	200-300
Solar salt manufacturing	salt is produced by solar evaporation		Noise, dust	1000
Starch manufacturing	starch or gluten is manufactured		Noise, dust, odour	300-500
Sugar milling or refining	sugar cane is crushed or sugar is refined		Noise, dust, odour	1000-1500
Tannery	tanning, dressing finishing or dyeing of animal skins and hides		Gaseous (H ₂ S), noise, odour	1000-2000
Textile production	cellulose nitrate, viscose fibre, cellophane, artificial rubber or other man-made textiles manufacture, bleaching, dyeing or finishing of cotton, linen, woollen yarns & other natural textiles		Noise, dust, odour	500
Timber preserving	timber preservation by chemical means, including chromated copper arsenate (CCA)		Noise, dust, odour	500

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
Transport vehicles depot	buses, trucks and other heavy vehicles depot		Gaseous, noise, dust, odour	200
Turf farms	broad-scale turf production	Guidelines for the Separation of Agricultural and Residential Land Uses (DoH,2012)	Noise, dust, odour	500
Used tyre storage	used tyres are stored associated with a tyre fitting business		Dust, risk	100-200
	bulk storage of used tyres		Gaseous, noise, dust, odour, risk	1000
Vineyards (viticulture)	broad-scale operations, with or without winery		Gaseous, noise, dust, odour	500
Waste disposal - liquid waste facility - solid waste facility - inert landfill site (Class I) - putrescible landfill site (Class II & III) - secure landfill site (Class IV) - intractable waste landfill site (Class V)	liquid waste from other premises is stored, reprocessed, treated or irrigated/discharged		Noise, odour	1000
	Solid waste produced on other premises is stored, reprocessed, treated or discharged to land		Noise, odour	500
	Waste, which meets the waste type as set out in "Landfill Waste Classification and Waste Definitions 1996" as amended from time to time, is accepted for burial		Noise, dust	300
	Waste, which meets the waste type as set out in "Landfill Waste Classification and Waste Definitions 1996" as amended from time to time, is accepted for burial	Environmental Protection (Rural Landfill) Regulations 2002	Gaseous, noise, dust, odour	1000
	Waste, which meets the waste type as set out in "Landfill Waste Classification and Waste Definitions 1996" as amended from time to time, is accepted for burial		Gaseous, noise, dust, odour, risk	1000
	Waste, which meets the waste type as set out in "Landfill Waste Classification and Waste Definitions 1996" as amended from time to time, is accepted for burial		Noise, dust, odour, risk	1000

Industry	Description of industry	Relevant codes of practice (CoP) and regulations	Emissions type or risk	Recommended separation distance in metres
solid waste depot	waste is stored or sorted, pending final disposal or re-use		Noise, dust, odour	200
Wastewater pumping stations	vacuum pumping station		Gaseous, noise, odour, risk	20
	wastewater pumping station (<= 40L/s)		Gaseous, noise, odour, risk	10
	wastewater pumping station (<= 90L/s)		Gaseous, noise, odour, risk	20
	wastewater pumping station (<= 180L/s)		Gaseous, noise, odour, risk	30
	wastewater pumping station (<= 350L/s)		Gaseous, noise, odour, risk	50
	wastewater pumping station – major		Gaseous, noise, odour, risk	150
Water treatment plants	including chemical dosing facilities for potable water		Gaseous, noise, odour, risk	Case by case
Wood-board manufacturing	premises on which particleboard or chipboard is fabricated or manufactured including MDF plants		Noise, dust, odour	1000-2000
Woolscouring	scouring and primary treatment of wool		Noise, dust, odour	500-1000
Wreckers (automotive)	vehicle parts recycling		Noise, dust	300