

Assessment of beverage production, milk processing, produce processing works

Introduction

This Guideline will assist a relevant authority (as defined by the *Development Act 1993*) to undertake an environmental assessment of a proposal for a beverage production, milk processing, or produce processing works.

The information contained in this Guideline is in lieu of the advice that was given by the Environment Protection Authority in responses to referred development applications prior to removal of the activities from Schedule 21 of the *Development Regulations 2008*.

Where a proposed development falls within the definition of brewery, milk processing or produce processing works set out in Schedule 22 of the *Development Regulations 2008*, the proposal must be referred to the Environment Protection Authority under Schedule 8(2)(11) of the same Regulations.

Assessing environmental issues

The potential environmental impacts of a beverage, milk or produce processing works are associated not only with the works themselves, but also with a range of activities that may be associated with such development including fuel burning (e.g. for drying or roasting), delivery and storage of raw materials, transport of products, by-products and wastes.

Air quality and noise

Air quality

Air and noise issues associated with beverage, milk processing, or produce processing works relate to the production or manufacturing process undertaken on site and to the nature of associated activities, and may result from:

- brewing, including odour during boiling and fermentation
- drying or roasting, which produces residual particles, and exhaust gases and odours
- baking, which produces flour and other dust particles
- wastewater management and storage/composting of solid wastes, which produce odour
- mechanical plant for example driers, fans, boilers, pumps, refrigeration units and aerators, crushers, forklifts and heavy vehicle movements, which produce noise.

The EPA's [Guidelines for separation distances \(2007\)](#) identifies the recommended separation distances between developments that may result in noise, odour, or polluting air emissions, and sensitive land uses. The following separation distances are recommended:

- Beverage production – a separation distance is not provided for beverage production, so the separation distance for breweries is applied - 500m where production capacity is between 2000 litres/day and 5000 litres/day.
- Milk processing – 100m where processing capacity is up to but not exceeding 5 megalitres/year.
- Produce processing
 - 150m where the deep fat frying, roasting or drying processing capacity is up to but not exceeding 30 kilograms/hour
 - 200m for agricultural crop material, where less than 10,000,000 litres of wastewater is generated and disposed of other than where the waste water is disposed to a sewer or community wastewater management system.

If the proposed development is within the recommended separation distance the applicant should demonstrate that a lesser distance would be appropriate. How this can be demonstrated will depend on how the activity is to be undertaken. The [Guidelines for separation distances \(2007\)](#) contains criteria in section '5 Amendments to Separation Distances' that should be addressed when a site-specific variation from the recommended separation distance is being sought. However, some of the criteria may be overly complicated for low risk activities, and it may not be necessary for them to be addressed. For example, it may be sufficient for an odour management plan to be prepared rather than odour modelling being undertaken.

The applicant will need to demonstrate that relevant indicative noise levels specified in Clause 5 of the *Environment Protection (Noise) Policy 2007* are not exceeded at any nearby sensitive land uses, both during the day and at night. This could be achieved by providing an acoustic report prepared by a suitably qualified and experienced acoustics engineer which demonstrates that noise meets the relevant noise levels, or provides details of what is required to ensure noise levels meet the relevant noise criteria.

Landfill sites

When considering a site for a facility for a beverage, milk processing, or produce processing works consideration needs to be given to the presence of any historic or currently operational landfills.

There are a range of inherent risks associated with landfills including adverse impact on the environment and human health due to odour, litter, vermin, dust, leachate, and landfill gas.

The EPA guideline [Environmental management of landfill facilities \(municipal solid waste and commercial and industrial general waste\) \(2007\)](#) recommends a minimum separation distance of 500m between development and a landfill boundary, including from historic, currently operational and future designated landfill areas, not just the active tipping face. The buffer should be maintained for the life of the landfill¹. Maintaining a 500m separation distance will reduce the likelihood of impacts from the landfill, including the accumulation of landfill gas in structures.

A proposed beverage, milk or produce processing works within 500m of a landfill should proceed only on the basis of a landfill risk assessment undertaken by a site contamination consultant or a site contamination auditor. Any development within the buffer should be assessed and determined as suitable and compatible. The EPA Information Sheet, [Landfill gas and development near landfills – advice for planning authorities and developers \(2012\)](#) contains further information.

¹ The life of the landfill includes the period after closure and capping, and continues for as long as the landfill has the potential to create off site impacts to the environment (particularly due to landfill gas emissions or leaching to groundwater), which may be decades after the landfill has closed.

Site contamination

The role of the planning system in relation to site contamination is to ensure the ongoing protection and sustainable management of our environment so that communities are protected and can enjoy a clean environment. Addressing site contamination through the planning system can ensure, as far as is practically possible, that land is not developed for a more sensitive use unless/until site contamination risks have been considered and it is ensured that the land is suitable for the proposed use.

Site contamination is addressed in the planning system via a risk-management approach which allows for progressive certainty to be delivered within the lowest prudent cost and time parameters. The *Framework for managing site contamination through the South Australian Planning System* describes the staged approach for addressing site contamination through the planning system to ensure that land that is being developed for a more sensitive uses does not move from one stage in the development process to the next without clear measures being in place to ensure that site contamination either:

- has been appropriately addressed; or
- will be appropriately addressed at or before occupation of development.

The *Framework for managing site contamination through the South Australian Planning System* should be consulted to determine the process for assessing site contamination.

Waste management

By-products of any manufacturing process or food processing (including food wastes) may be generated on site, together with empty storage containers and packaging, and general litter. Where there is on-site vehicle maintenance, petroleum products, coolants, degreasing agents, sediment, rubber particles, detergents, and other toxic materials are likely to be generated.

The proposed beverage production, milk processing, or produce processing works should include:

- provision for implementation of the waste management hierarchy (avoidance, minimisation, reuse, recycling, recovery, treatment, disposal)
- dedicated covered areas for all non-toxic solid waste materials
- dedicated covered and bunded areas for all toxic waste materials
 - liquid wastes should be contained and / or treated before transport off-site by an EPA-licensed transporter
 - solid toxic wastes, such as containers, should be removed from the site regularly by an EPA-licensed transporter.

The EPA guideline, [Bunding and Spill Management \(2012\)](#), contains further information on design, capacity, operation and maintenance of bunds.

Wastewater management

The *Water Industry Act 2012* prohibits the discharge of certain substances into the sewerage system and establishes a requirement for industries to have approval to discharge certain substances to sewer.

Wastewater, process liquors or sludges not permitted to be discharged to the sewer should be contained in approved blind tanks and be removed by a waste transporter licensed by the Environment Protection Authority to carry such material to an appropriate waste facility.

Under the *Environment Protection (Water Quality) Policy 2003* milk processing works must have an operational wastewater management system², but there is no similar requirement for beverage production or produce processing works.

Where disposal to sewer is not available due to the activity being located in a rural area, it may be acceptable to dispose of wastewater by irrigation to land. Developments proposing the use of land-based irrigation will need to demonstrate that the site is suitable for ongoing irrigation and the practice is sustainable. A wastewater irrigation management plan should be prepared in accordance with the EPA guideline, [Wastewater Irrigation Management Plan \(WIMP\) — a drafting guide for wastewater irrigators \(2009\)](#). Consideration will need to be given to (among other things) the:

- type and scale of the activity
- quality of wastewater to be used for irrigation, and variability in wastewater flow
- sensitivity of the site, eg location within a floodplain or water protection area, proximity to watercourses, depth to groundwater and seasonal water tables
- nature and properties of the soil
- site topography and climatic conditions
- available land area for irrigation, adjoining land uses and buffer distances.

Water quality

Pollutants found at beverage production, milk processing, or produce processing works include putrescible waste, detergents, wash down water from cleaning plant and equipment, and have the potential to contaminate stormwater. Under the *Environment Protection (Water Quality) Policy 2003*, contaminated stormwater is defined as 'wastewater' and should be managed as such.

Design of the production, storage, and loading and unloading areas is critical to minimise the potential to contaminate stormwater.

Production areas

To prevent activities in the processing areas contaminating stormwater:

- all processing areas should drain to a wastewater management system
- stormwater drains should not be positioned inside buildings or roofed areas
- stormwater and wastewater should be kept separate at all times
- tanks and containers storing process liquids, wastes and chemical solutions and finished product storage areas should be bunded.

Storage and handling of raw materials, production materials and products, loading and unloading areas

To minimise the potential for raw and production materials and products to cause stormwater contamination:

- all raw materials, chemicals, petroleum and degreasing products should be stored in dedicated bunded and, where practicable and economically viable, roofed compound areas.

² Refer Clause 29 *Environment Protection (Water Quality) Policy 2003* for further information.

- all raw materials, production materials and finished products should be loaded/unloaded on an impervious floor within a dedicated loading/unloading area, which is bunded to contain spills
- contaminated stormwater should be isolated from the stormwater system by spill containment devices such as a blind tank with a float actuated alarm system or similar.

Water sensitive urban design

Water sensitive urban design is an approach to urban planning and design that seeks to integrate the management of the total water cycle to minimise the impacts of development, protect water quality, make more efficient use of water, reduce the cost of water infrastructure, and address flooding.

Further information on water sensitive urban design can be found at <https://www.sa.gov.au/topics/housing-property-and-land/building-and-development/land-supply-and-planning-system/water-sensitive-urban-design>.

Construction management

Construction activities undertaken as part of a development can detrimentally affect the environment and community health. Air emissions, noise, site contamination, stormwater, and waste need to be managed to prevent impacts on nearby land uses and the natural environment.

The relevant authority may require a construction environmental management plan from the proponent. A construction environmental management plan describes how activities undertaken during the construction phase of development will be managed to avoid or mitigate negative environmental impacts on site and how the environmental management requirements will be implemented.

For further information on the impacts of construction activities and preparing a construction environmental management plan refer to the EPA's guideline, *Construction environmental management plans*.

Disclaimer

This publication is a guide only and does not necessarily provide adequate information in relation to every situation. This publication seeks to explain your possible obligations in a helpful and accessible way. In doing so, however, some detail may not be captured. It is important, therefore, that you seek information from the EPA itself regarding your possible obligations and, where appropriate, that you seek your own legal advice.

Further information

Legislation

Legislation may be viewed on the Internet at: <www.legislation.sa.gov.au>

Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet	Telephone:	13 23 24
Adelaide Service SA Centre	Facsimile:	(08) 8204 1909
108 North Terrace	Website:	< shop.service.sa.gov.au >
Adelaide SA 5000		

For general information please contact:

Environment Protection Authority	Telephone:	(08) 8204 2004
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