



ENVIRONMENT PROTECTION Odour legislation and Bird Lake

Issued Friday 3 February 2017

Odour, or smell, is experienced when one or more chemical compounds in a gaseous form stimulate the sense of smell. They can range from a pleasant fragrance or aroma to an unpleasant stink or stench. Odours can also cause significant impacts on people's lives and adversely affect their amenity.

The main effect of environmental odour is nuisance, but stronger or persistent odours can lead to nausea, headache, loss of sleep and other symptoms of stress. Reactions to odours can be subjective, and a smell that is pleasant to one person may be unpleasant to someone else. An offensive odour is one that affects an individual's general health and wellbeing as a result of the intensity, character, frequency and duration. Offensive odours can restrict outdoor activities, limit the opening of windows and generally create an unpleasant environment to live in.

Repeated exposure to nuisance levels of odour can lead to a high level of annoyance. While some people may become acclimatised to odours, others may become sensitised to them. An individual's response to odour may be influenced by a variety of factors including:

- the state of their health
- previous experience with the odour; and
- their relationship to the party generating the odour (if a person's livelihood is dependent on the facility the perception may be less than a person who does not benefit from it in any way).

Legislation

The principal legislation dealing with odour in South Australia is the *Environment Protection Act 1993*. In particular, section 25 imposes the general environmental duty on **all persons undertaking an activity that may emit odour to take all reasonable and practicable measures to prevent or minimise any resulting environmental harm**. In addition, causing an odour may constitute environmental nuisance, an offence under section 82 of the Act.

EPA odour requirements

The overall objectives in the management of potentially odorous activities are to:

- minimise odour emissions and their impacts
- ensure industry or facility does not expose neighbouring land users to an unacceptable level of odorous emission
- ensure that industry manages odour emissions within the accepted criteria; and
- apply ongoing risk evaluation and management principles that evolve as scientific understanding of odours and their potential health effects increases over time.

Measuring Odour

Dynamic olfactometry is the basis of odour management approved by the EPA. We test a number of people to ensure that their odour sensitivity is within a standard range. A panel of these people are presented with an odour of different dilutions until it reaches a dilution at which 50% of the panel perceive it and 50% do not. That level is considered to be 1 odour unit (OU) by definition, and the number of dilutions represents the Odour Unit level of the original sample.

The Nasal Ranger® field olfactometer helps people measure odour intensity in the field. The survey of odour can be taken upwind and downwind of potential contributors to ascertain the source of odours. Surveyors describe the odour using a list of descriptors of odour type and also reference weather conditions at the time of observations to ensure consistent reporting. Odour survey results can be used to infer OU.

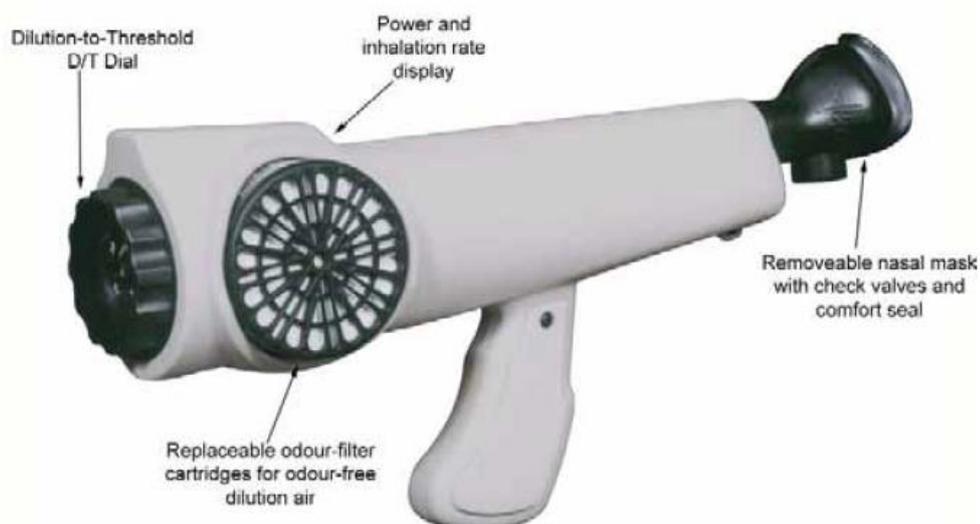
Odour criteria is population dependent. As the population density increases, this increases the possibility of sensitive individuals, which raises the potential for odour complaints and more stringent criteria are necessary.

The Nasal Ranger®

Odour criteria:

No. of people	Odour units*
2000 or more	2
350-1999 (inclusive)	4
60-349 (inclusive)	6
12-59 (inclusive)	8
Single residence**	10

*3 minutes average, 99.9% of time
**single residence of less than 12



Odour complaints

Odour complaints occur when individuals consider the odour to be unacceptable and are sufficiently annoyed by it to take action. As well as an individual's sensitivity, there are five factors that influence odour complaints:

- frequency of occurrence
- intensity
- duration of exposure
- offensiveness
- location of the odour source.

The offensiveness of an odour is very subjective and relates closely to an odour's 'hedonic tone', which is the degree to which an odour is perceived as pleasant or unpleasant.

Odour offensiveness is also related to its character - what the odour smells like. Character can distinguish between different odours, for example ammonia gas has a pungent and irritating smell. The character of an odour may also change with dilution. For these reasons, odour offensiveness is difficult to quantify; however, the other four factors are quantifiable and can be built into a regulatory guideline.

Bird Lake odour

Port Augusta City Council is leading the process of identifying and implementing a solution to the drying out of the lake, and working to identify a long-term solution to this issue, with support from the EPA and the state government.

Residents are also encouraged to record specific data around the odour they are experiencing and at what times.

Specially trained EPA staff have commenced odour surveying around Bird Lake and in the residential community to understand the nature and intensity of the odour being reported to the EPA from the community. This work will also help to determine what actions should be undertaken by responsible parties to address the odour.

Odour diaries have been distributed to residents who have contacted the EPA and handed out in the community for the purpose of developing a full and accurate recorded history and trend of odour observations. Please let us know if you would like to participate.

Port Augusta City Council engaged an environmental consultancy firm to explore three options to determine the most viable solutions for the long term rehabilitation of Bird Lake. Council will be presenting an executive summary of the preferred option that has been reached by all experts consulted, and will be engaging with the community and providing opportunities for residents to have input into providing feedback.

The EPA has been providing assistance and advice to the Port Augusta City Council, and assisted it to draft the consultancy brief for the long term management of the Bird Lake.

FURTHER INFORMATION

For further information please contact:

Telephone:
(08) 8204 2004

portaugustadust@epa.sa.gov.au
www.epa.sa.gov.au

(Click on the link if viewing this publication online) or follow the link at the bottom left hand corner to Port Augusta Power Station Site.

To request any of this information in the post, please do not hesitate to call us on the above number.

For health related information please contact:

Telephone:
(08) 8226 7100

Website: www.sahealth.sa.gov.au

(Click on the link if viewing this publication online, or type into the search window 'dust Port Augusta'.)

SA Health also has a fact sheet on dust and advises to stay indoors, use air conditioners wherever possible, and seek medical advice if you are experiencing any problems.

