

## Waste tyres

Updated November 2007\*

*EPA 183/07: This guideline replaces EPA Information Sheet No. 15, issued in May 2001.*

*Note: for the purposes of this guideline, 'waste tyres' are defined as used, discarded or rejected tyres that are either whole or in pieces greater than or less than 250 mm in width or length.*

### Introduction

It is estimated that around 18 million waste tyres (measured in equivalent passenger units) are generated in Australia each year.<sup>1</sup> The disposal of used tyres at waste depots can cause problems and therefore requires specialised methods of disposal.

The disposal of whole waste tyres at waste depots in South Australia was banned in 1992 for metropolitan waste depots, and in 1995 for all country waste depots. Waste tyres occupy large volumes of landfill space. They do not readily compact and can flex back to the surface after burial.

If tyres are stored in large quantities they can present a fire hazard, or can harbour disease vectors such as mosquitoes and vermin. The Environment Protection Authority (EPA) is committed to ensuring that tyres are stored, transported and disposed of in a manner that minimises their negative effects on the environment.

Should waste tyres be unsuitable for recycling or other uses, they can be shredded into pieces not larger than 250 mm in any direction and can be deposited at a waste depot licensed to dispose of waste tyres. The waste levy applies to tyres disposed of at landfills.

### Environmental and health risks

The risk of fire has been demonstrated with a number of tyre fires that have occurred in South Australia. The intense radiant heat can cause damage to neighbouring properties and inhibit fire-fighting efforts, and the incomplete combustion of tyres can cause a health risk through the inhalation of particulates. Tyre fires are very difficult to extinguish and are dangerous to firefighters. Environmental impacts to soil, watercourses and stormwater are likely, and clean-up costs can be extremely high.

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\* Updates to 'Waste tyre disposal companies' and 'Further information'

<sup>1</sup> [www.environment.gov.au/settlements/waste/tyres/index.html](http://www.environment.gov.au/settlements/waste/tyres/index.html)

Tyres stockpiled in the open provide an ideal habitat for vermin and mosquitoes. Mosquitoes are attracted to the rainwater that builds up in the wells of the tyres, and to the warm, dark environment; a single tyre can nurture hundreds of larvae. Diseases associated with mosquitoes include dengue fever and Ross River virus.

## Energy wastage

Tyres are approximately 60% hydrocarbon, and have a higher calorific value than fuel sources such as wood, coke and brown coal. It is therefore more desirable to recycle tyres, as this energy cannot be recovered from tyres buried with other wastes.

## Licence requirements

Under the *Environment Protection Act 1993* (the Act), an environmental authorisation (works approval, licence or exemption) is required for the reception, storage, treatment or disposal of waste, other than in certain circumstances. In the case of waste tyres or tyre pieces an environmental authorisation is not required if:

- the tyres are handled solely for recycling or reuse and are not in quantities exceeding five (5) tonnes per year (approximately 500 passenger vehicle tyres)
- or
- the EPA is satisfied that the waste or recycling depot will be conducted for such limited purposes that requiring an environmental authorisation would not be justified.

## Transporting waste tyres

Under the Act, an environmental authorisation is required to transport solid waste—including tyres— if transported for fee or reward. Licensed waste transporters must complete a waste tracking form (supplied by the EPA) identifying where tyres are collected and where they are taken. The form must be completed by the producer of the waste (in most cases the retailer), the licensed transporter and the licensed waste depot operator (the disposal operator).

Licensed transporters must take waste tyres to a waste or recycling depot licensed by the EPA, or to an unlicensed waste or recycling depot that can receive the tyres under exempted circumstances described above (refer licence requirements).

The transport of waste tyres interstate is subject to the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure* and requires approval from the environmental regulatory authority in the state or territory of destination. The EPA should be contacted for further information before waste tyres are transported out of South Australia.

## Structural uses

Proposals for the structural use of waste tyres (such as barriers for sporting activities, erosion control or for silage production) involving more than five (5) tonnes of tyres per annum will require development approval from the planning authority. Following development approval, a completed licence application form must be submitted to the EPA before any environmental authorisation can be issued. In some circumstances, the EPA may be satisfied that an environmental authorisation is not required (refer licence requirements).

Proposals for the use of waste tyres involving less than five (5) tonnes of tyres per annum require the consent of the local council, and the EPA should be advised.

## Storage measures

Tyres should be stored on a level site away from surface watercourses, flood zones and groundwater recharge points. The site should be securely fenced and have access gates wide enough to allow the entry of emergency vehicles. Flammable or combustible liquids, hazardous wastes or other ignitable materials should **not** be stored close to tyre stockpiles.

All tyre sites should comply with the *General Guidelines for the Outdoor Storage of Used Tyres* issued by the South Australian Fire Service Fire Safety Department.

Tyre storage in buildings must comply with the *Building Code of Australia*, Part E of Book 1; refer to your local council for further details.

## Recycling options for waste tyres

### Retreading

The best use for used tyres is retreading, provided that the casings are of good quality and meet Australian safety standards. A number of retreaders operate in South Australia, and approximately 30% of all waste tyres are retreaded. Retreads are now widely considered safe for general use; the transport industry is a major user of retreaded tyres.

### Rubber crumb

Rubber crumb is produced by buffing the tyre during the retreading process, or by a number of other technologies used in tyre disposal, including cryogenics and shredding.

The rubber crumb can be used for the production of:

- new tyres
- athletic field surfaces
- rubberised bitumen and asphalt
- rubber/plastic products
- moulded and extruded rubber products
- surface coatings
- playground surfaces.

### Tyre derived fuel

Subject to approval by the EPA, tyres can be used as a fuel substitute through burning in high temperature, purpose-built furnaces for:

- cement kilns
- power stations
- smelters.

Processes that use tyres as a fuel substitute must meet statutory air quality requirements for emissions.

## Other reuse options for waste tyres

### Tyres for use in arenas or as barriers

Waste tyres have been used as walls for horse arenas, motor sport protection barriers and retaining walls. Council approval should be sought before seeking approval from the EPA. In any case, for

those properties taking more than five tonnes of used motor vehicle tyres, an environmental authorisation from the EPA is required. In some circumstances, the EPA may be satisfied that an environmental authorisation is not required (refer licence requirements).

### Landscaping

There has been some use of tyres as a base for landscaping in raised garden beds and cascading rock gardens. Comment should be sought from the local council regarding development approval before commencing work.

### Silage production

Waste tyres are often used to hold plastic sheeting over silage pits. A *Silage Production* form can be obtained from the EPA. This will be issued to allow farmers to take tyres for this use without the need for licensing. Strict guidelines for storage must be adhered to when the tyres are not in use to minimise risks from disease and fire.

## Undesirable practices for reuse of waste tyres

### Tyres as tree guards

The EPA does not condone the use of tyres as tree guards because of public health, fire risk and environmental problems associated with their use. Anecdotal evidence suggests that rabbits do not eat seedlings surrounded by tyres; however, given the success of other means of eradicating rabbits, waste tyres should no longer be required as tree guards. If tree guards are required, other commercially available tree guards should be used.

### Erosion control

Tyres are not recommended for use in erosion control. They can become mobile in flood conditions and cause damage to neighbouring properties; they also harbour vermin and pose a major fire risk.

Erosion control programs using waste tyres must be licensed by the EPA. Proponents will also need to meet local council, Soil Board and Landcare requirements.

### Septic soakage trenches

Several soakage trenches using waste tyres have been approved on a pilot basis by the Department of Human Services. Approvals have been subject to monitoring of the performance of the soakage system using piezometers and groundwater bores. The EPA has reservations about the long-term implications of using tyres for this purpose; concerns include the stability and subsidence of tyres in the trench, undesirable air voids, and the intrusion of tree roots that may block up the soakage area. It is unlikely that further soakage trenches using waste tyres will be approved until the monitoring results indicate satisfactory performance.

## Waste tyre disposal

There are a number of companies licensed by the EPA for the storage and treatment of used tyres; some are listed at the end of this guideline. Most of these companies enter into arrangements to accept used tyres from businesses in the motor vehicle industry and may not deal directly with the public.

Illegal disposal of waste tyres carries heavy penalties. Significant fines and penalties for offenders are already in place in South Australia for illegal dumping and burning of waste tyres. The relevant sections of the Act are as follows:

- Section 34—contravening a mandatory provision of an Environment Protection Policy (EPP), for example, Clauses 4 and 5 of the Burning EPP: maximum fine of \$30,000

- Section 35—failing to obtain a works approval: maximum fine of \$120,000 for a body corporate, or \$60,000 for a natural person
- Section 36—failing to obtain an environmental licence to conduct a waste depot and/or transport waste for fee or reward: maximum fine of \$120,000 for a body corporate, or \$60,000 for a natural person
- Section 45—failing to comply with a condition of a works approval or an environmental licence: maximum fine of \$120,000 for a body corporate, or \$60,000 for a natural person
- Section 64B—failing to comply with a notice issued by the Minister regarding precautions to be taken to ensure that pollutants on land do not enter surface or underground water in a water protection area: maximum fine of \$120,000 for a body corporate, or \$75,000 for a natural person
- Section 79—offences of causing environmental harm: maximum fine of \$2,000,000 for a body corporate; \$500,000 or maximum four years imprisonment or both for a natural person
- Section 80—offences of causing environmental harm: maximum fine of \$500,000 for a body corporate; \$250,000 or maximum two years imprisonment or both for a natural person
- Section 82—offences causing environmental nuisance: maximum fine \$30,000
- Section 83—failing to notify the EPA of incidents causing or harm or threatened environmental harm: maximum fine of \$250,000 for a body corporate, or \$150,000 for a natural person.

Under Sections 93 and 99 of the Act, the EPA may also issue an environment protection order or a clean-up order requiring specified action within a specified period to remove waste tyres if illegally used or deposited:

- Section 93—failing to comply with an environmental protection order: maximum fine for a body corporate \$120,000, or \$60,000 for a natural person
- Section 99—failing to comply with a clean-up order: maximum fine of \$120,000 for a body corporate, or \$60,000 for a natural person.

## Waste tyre disposal companies

The following companies are licensed by the EPA to receive used tyres; the information is current at the time of publication.

Please ring the companies for opening times, costs and any further details.

COMPANY NAME	SITE ADDRESS	CONTACT NUMBER
Adelaide Independent Bandag Pty Ltd	100 Francis Road Wingfield SA 5013	(08) 8345 5922
SA Tyre Salvage	12 Bradpole Street Elizabeth West SA 5113	(08) 8252 7000
Cotton Tyre Service	32-38 Athol Street Athol Park SA 5012	(08) 8447 7559
Southern Tyre Disposals	6 Christie Road Lonsdale SA 5160	(08) 8326 8555
Budget Retreads Pty Ltd	265 Hanson Road Wingfield SA 5013	(08) 8347 2774

Contact your local tyre retailer, council or waste transfer station for alternative options.

## Currency of this guideline

This guideline offers advice to assist with compliance with the general environmental duty and specific environmental policies. It is subject to amendment and persons relying on the information should check with the EPA to ensure that it is current at any given time.

## FURTHER INFORMATION

### *Legislation*

Legislation may be viewed on the internet at: <[www.legislation.sa.gov.au](http://www.legislation.sa.gov.au)>

Copies of legislation are available for purchase from:

Service SA Government Legislation Outlet 101 Grenfell Street Adelaide SA 5000	Telephone: Fax: Internet: Email:	13 23 24 (08) 8204 1909 < <a href="mailto:shop.service.sa.gov.au">shop.service.sa.gov.au</a> > < <a href="mailto:servicesa@saugov.sa.gov.au">servicesa@saugov.sa.gov.au</a> >
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### *For general information please contact:*

Environment Protection Authority GPO Box 2607 Adelaide SA 5001	Telephone: Facsimile: Freecall (country): Internet: E-mail:	(08) 8204 2004 (08) 8124 4670 1800 623 445 < <a href="http://www.epa.sa.gov.au">www.epa.sa.gov.au</a> > < <a href="mailto:epainfo@epa.sa.gov.au">epainfo@epa.sa.gov.au</a> >
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