



**ACT**  
Government

# GUIDELINE FOR STOCKPILE MANAGEMENT

ACT ENVIRONMENT PROTECTION AUTHORITY

NOVEMBER 2019

**Produced by the Environment, Planning and Sustainable Development**

**© Australian Capital Territory, Canberra 2019**

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without written permission from:

Director-General, Environment, Planning and Sustainable Development  
Directorate, ACT Government, GPO Box 158, Canberra ACT 2601.

**Telephone:** 02 6207 1923

**Website:** [www.environment.act.gov.au](http://www.environment.act.gov.au)

**Acknowledgment to Country**

We wish to acknowledge the traditional custodians of the land we are meeting on, the Ngunnawal people. We wish to acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

**Accessibility**

The ACT Government is committed to making its information, services, events and venues as accessible as possible.

If you have difficulty reading a standard printed document and would like to receive this publication in an alternative format, such as large print, please phone Access Canberra on 13 22 81 or email the Environment, Planning and Sustainable Development Directorate at [EPSDDComms@act.gov.au](mailto:EPSDDComms@act.gov.au)

If English is not your first language and you require a translating and interpreting service, please phone 13 14 50.

If you are deaf, or have a speech or hearing impairment, and need the teletypewriter service, please phone 13 36 77 and ask for Access Canberra on 13 22 81.

For speak and listen users, please phone 1300 555 727 and ask for Canberra Connect on 13 22 81.

For more information on these services visit <http://www.relayservice.com.au>

# CONTENTS

SUMMARY.....	1
1. INTRODUCTION .....	1
2. APPLICATION OF THE GUIDELINE.....	2
2.1 Objectives.....	2
2.2 Purpose.....	2
2.3 Scope.....	2
2.4 Legislation .....	3
3. ENVIRONMENTAL MANAGEMENT PLANS.....	5
4. POTENTIAL RISKS AND IMPACTS.....	6
5. ASSESSMENT AND MANAGEMENT OF RISKS.....	7
5.1 Emissions.....	7
5.2 Risk assessment.....	8
5.3 Fire mitigation .....	9
5.4 Infrastructure and equipment.....	9
5.5 Water supplies .....	9
6. MATERIALS INVENTORY .....	10
6.1 Materials flow and management.....	10
6.2 Markets and timeframes .....	10
6.3 Stockpile site and surroundings.....	11
6.4 Stability .....	12
6.5 Material storage.....	12
6.6 Indoor storage .....	15
7. EMERGENCY MANAGEMENT .....	16
8. INCIDENT RISK MANAGEMENT.....	17
8.1 Incident management plan.....	17
9. COMMUNITY CONSULTATION.....	18
APPENDIX 1: RISKS ASSOCIATED WITH STOCKPILING OF MATERIALS.....	19
APPENDIX 2: DEFINITIONS.....	24
APPENDIX 3: FURTHER GUIDELINES AND INFORMATION.....	26
ACT Publications .....	26
NSW Publications.....	27
SA Publications.....	27
Other useful reference.....	27
APPENDIX 4: ONSITE INSPECTION CHECKLIST.....	28



# SUMMARY

This guideline outlines the potential risks associated with the stockpiling of materials for use, reuse and recycling, and provides guidance on the appropriate and relevant controls to reduce those risks.

The Environment Protection Authority (EPA) expects persons undertaking stockpiling activities to have regard to this guideline as the EPA will use it to assist in determining whether stockpile managers are meeting their general environmental duty and compliance under the [Environment Protection Act 1997](#) (the Act).

## 1. INTRODUCTION

A common aspect of bulk material management is the storage or stockpiling for use, reuse, recycling or disposal. The EPA requires this activity to be conducted in an appropriate manner so that the risk of harm to human health and the environment is prevented or minimised. Additionally, ACT Fire and Rescue requires that stockpiling is conducted in a manner that minimises the risk of harm to the environment, life and property, ACT Health requires that it is done in a manner that does not increase the chances of negative human health impacts and, when stockpiling waste materials, ACT No Waste promotes best-practice waste management. Storage or stockpiling must be undertaken only in suitable circumstances for genuine and beneficial purposes.

The EPA's minimum expectation for the management of potential risks is the focus of this guideline. In particular, the guideline addresses issues related to on-site layout, pollution controls, fire management, stability and dimensions of stockpiles and timeframes for storage.

# 2. APPLICATION OF THE GUIDELINE

## 2.1 OBJECTIVES

The objectives of this guideline are that stockpiled materials are:

- managed in a manner that minimises risks of fire, pollution and vermin that can lead to risks to human health, property and the environment
- stored for the purpose of transfer, sale, sorting, reuse, recycling, reprocessing or recovery.

## 2.2 PURPOSE

The guideline provides advice on how stockpiled materials can be managed to minimise risks of fire, pollution and vermin, and the subsequent harm to human health and the environment.

Specifically, this guideline:

- outlines requirements for a risk assessment
- identifies controls to reduce risks and respond to fires, pollution and vermin
- outlines site management plan requirements
- sets out material storage requirements.

## 2.3 SCOPE

In this guideline, stockpiled materials include:

- bulk materials awaiting sale, transfer, processing, recycling use or reuse
- combustible waste
- virgin excavated natural material
- construction and demolition (C and D) waste including, rubble and material excavated from roads
- timber
- steel
- paper
- organic materials
- waste derived products
- secondary or residual materials from material processing or industrial activities
- potentially contaminated materials<sup>1</sup>.

This guideline is aimed at bulk solid stockpiled materials, therefore issues regarding liquid storage have not been specifically addressed.

This guideline is not intended to be exhaustive in addressing every stockpiled material. The materials mentioned above tend to be the main types that are currently stockpiled and can give rise to human health and environmental risks. Refer to Appendix 1 for further detail of each risk associated with stockpiled materials.

This guideline does not address specific requirements for materials such as radioactive wastes, treated timber, liquid waste, clinical and quarantine waste, hazardous waste or scheduled chemical substances. Separate guidance for these substances is provided in the EPA's Hazardous Materials Environment Protection Policy and the Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes.

<sup>1</sup> A contaminant includes physical and chemical substances and these may have the potential to cause site contamination (refer to Appendix 2)

There are several activities that may involve the stockpiling of materials which require an environmental authorisation under the Act. Such activities include incineration facilities, landfill facilities, contaminated soil management, processing of agricultural crops, abattoirs, composting facilities, timber milling, concrete production, material crushing, grinding and separating, waste transfer stations, and forestry activities.

Irrespective of the need for an environmental authorisation or agreement under the Act or approval under any other Australian Capital Territory (ACT) law (e.g. [Waste Management and Resource Recovery Act 2016](#) or [Planning and Development Act 2007](#)), this guideline addresses issues that are applicable to the stockpiling of materials at the production site and at sites conducting processing, recycling and reuse of waste, waste derived materials, and other stockpiled materials with the potential to cause environmental harm. In all cases, this guideline will assist in determining whether stockpile managers are meeting their general environmental duty by taking all reasonable and practical measures to prevent or minimise environmental harm and environmental nuisance, as specified by section 22 of the Act.

The key risk factors are outlined in section 4 with further details provided in Appendix 1. These risk factors will be considered by the EPA when:

- assessing and determining conditions of an environmental authorisation or environmental protection agreement
- assessing development proposals referred to the EPA under the [Planning and Development Act 2007](#)
- assessing environment management plans
- considering compliance with an environmental authorisation
- assessing proposals for exemptions from requirements of the Act or similar
- assessing compliance with the Act (including the general environmental duty and actions following substantiated complaints).

## 2.4 LEGISLATION

The considerations and legislative mechanisms for stockpile management detailed in this guideline are shown schematically in **Figure 1**.

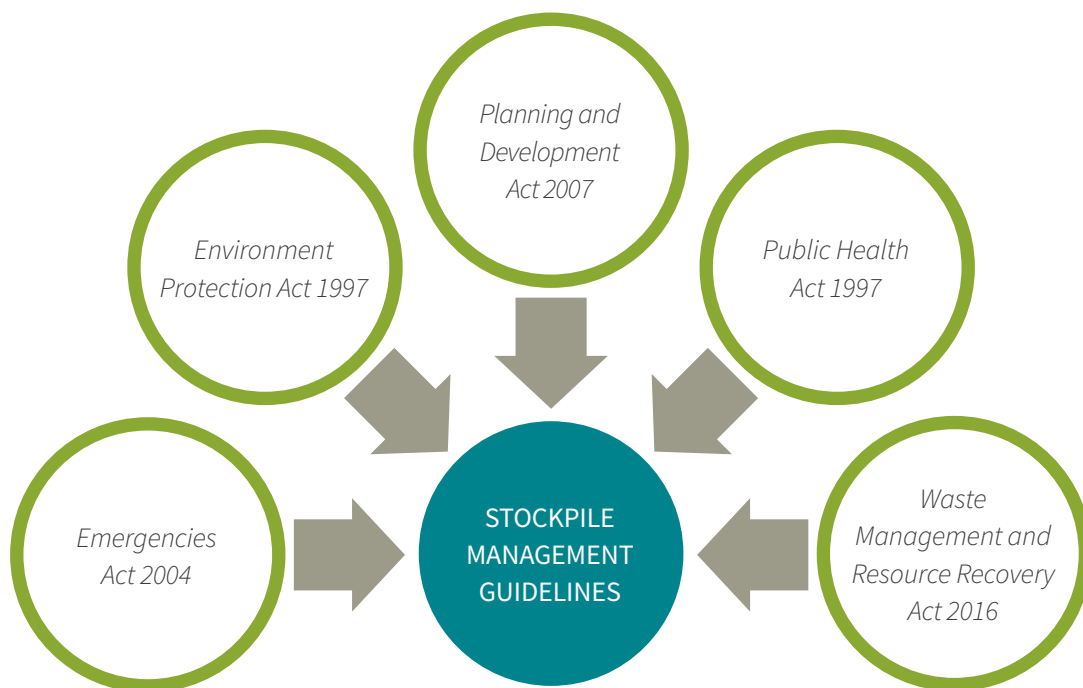
**Figure 1:** Considerations for the assessment and management of stockpile risks to prevent and minimise environmental harm



The objectives in the Act, [Emergencies Act 2004](#), [Planning and Development Act 2007](#), [Public Health Act 1997](#) and [Waste Management and Resource Recovery Act 2016](#) and associated regulations, policies and strategies, outline the regulatory and policy framework and the key principles that must be considered in addressing stockpile management issues to ensure that the objectives are met. The key objectives are to:

- prevent or minimise the risk of harm to the environment, life and property
- foster disease prevention
- manage waste according to the hierarchy of:
  - i. minimise the generation of waste
  - ii. maximise the recovery and re-use of resources
  - iii. minimise the amount of waste that goes to landfill
- support innovation and investment in waste management
- promote responsibility for waste reduction
- promote best-practice environmental management
- provide a planning and land system that contributes to the orderly and sustainable development of the ACT.

**Figure 2:** Legislative framework for the broader consideration of stockpile facility assessment and management





# 3. ENVIRONMENTAL MANAGEMENT PLANS

To assist with assessing proposed and existing developments and the preparation of environmental protection agreements and environmental authorisations, Environmental Management Plans (EMPs) should be developed and maintained by all agreement and authorisation applicants/holders. The objectives of an EMP are to:

- place the proposed/existing activity in the context of the local and regional environment
- adequately describe all components of the proposed/existing activity, so the EPA can consider approval of a well-defined project
- identify the environmental issues/risks associated with the activity
- provide the basis of the proponent's environment management program, which shows that the environmental impacts resulting from the activity, including cumulative impacts, can be acceptably managed
- provide a document that clearly sets out the reasons why the activity should be judged by the EPA to be environmentally acceptable.

The EMP should focus on the relevant environmental factors for the activity, and these should be agreed in consultation with the EPA and other relevant agencies. To assist with addressing the environmental factors the proponent may choose to document every activity, product and/or service that interacts, or has the potential to interact, with the environment beyond the stockpile management considerations detailed in this guideline.

# 4. POTENTIAL RISKS AND IMPACTS

A summary of key risks, factors affecting risk and suggested measures is included in Appendix 1. Where specific approvals are required, proponents will need to consider these risks in detail to ensure a robust risk assessment is conducted and acceptable management measures and procedures are put in place. Whether an environmental authorisation is required for the specific activity or not, the risks posed need to be considered by stockpile managers.

On-site risks will depend on factors such as:

- material type and chemical and physical characteristics
- location, topography and climate of the site
- hydrological and hydrogeological conditions including proximity to surface and ground waters, water quality and environmental values
- length of time materials will be stockpiled
- proposed management approach for the stockpiled materials.

Additional off-site risks need to be considered and depend on factors including:

- proximity to and sensitivity of the surrounding environment (including adverse impact to the environment, human health and amenity)
- exposure due to elevation in metres AHD<sup>2</sup> of the working floor level which the stockpile is situated upon and relative to the surrounding environment
- management of traffic in and around the site.

2 Australian Height Datum (mAHD)-the national level datum based on the average means sea level around the Australian coastline in metres.

# 5. ASSESSMENT AND MANAGEMENT OF RISKS

This section describes the key expectations for the assessment and management of stockpiles with the aim of preventing or minimising the potential negative impacts on the environment, life and/or property. In all cases, the site and material specific conditions need to be taken into account when determining the exact requirements relating to volumes, systems, bunding, on-site layout and community consultation.

If the risks listed in **Appendix 1** are not properly managed there is an increased risk of substantial costs to individuals, companies, the community and government to rectify any resulting impact on health and the environment. These would include costs associated with compliance and remedial action.

For sites requiring an environmental authorisation, the EPA may address the general expectations and request more specific requirements as conditions in the environmental authorisation.

## 5.1 EMISSIONS

The storage requirements for stockpiles need to be based on the material type and the associated risks they pose. These criteria will in turn determine what pollution controls are required to prevent or minimise any adverse impact.

### 5.1.1 Leachate, dust, odour and litter

Materials with a potential to produce leachate and contaminated runoff should be stored in a sealed and bunded area in order to divert uncontaminated stormwater away, and contain and prevent impact from potentially contaminated runoff. Covering these materials may also be required to reduce the potential for leachate generation and/or to prevent or minimise gaseous, dust or other emissions<sup>3</sup>.

Solid wastes, commercial and industrial waste, and C and D waste should be stored in an undercover enclosed facility<sup>4</sup> on a sealed<sup>5</sup> and bunded surface whilst awaiting transfer or processing.

Inert material, asphalt, green waste, untreated timber and wood may be stored outside. Appropriate management procedures should be in place, including fire and dust management and stormwater controls to ensure emissions are controlled to prevent environmental harm.

<sup>3</sup> Bunding and Spill Management (2016), Environmental management of on-site remediation (2006), Undercover storage requirements for waste/recycling depots (2010)

<sup>4</sup> Must have appropriate ventilation and access

<sup>5</sup> Sealed with a material of low permeability.

For sites with an environmental authorisation, conditions may be applied to specifically address these matters.

Where materials are temporarily stored on a site and no specific approvals are required, these guidelines should be considered in managing the risks associated with the stockpiles, particularly in relation to dust, odour, litter and leachate emissions, to reduce the potential to cause environmental harm.

Management options that can be taken to ensure that the premises can capture and manage leachate and other liquid run-off include:

- installing a drainage basin or catchment pit
- installing gate valves at appropriate positions in the immediate stormwater system - in the event of an emergency, these valves can be closed to create a drainage basin
- arrangements to remove waste-waters offsite (e.g. eductor pumps)
- pre-approval with the relevant water authority for disposal of waste-waters via a trade waste agreement.

## 5.1.2 Vermin

In addition to adverse health and amenity impacts from dust, odour, litter and leachate, outdoor stockpiles of materials can also harbour vermin, such as rodents and mosquitoes, which may lead to the risk of diseases. Controls such as barriers, covering, minimised storage timeframes and generally good housekeeping should be implemented to help mitigate potential impacts from vermin.

## 5.1.3 Fire

Materials that can produce heat through degradation (organic and other putrescible materials), combustible materials (paper, cardboard, wood, textile, rubber, and electronic material) and materials that may contain combustible substances (cars, oil drums, paint cans) should be stored in a manner to reduce any risk of overheating and spontaneous combustion. Regular internal stockpile temperature monitoring and control can provide information to assist with better management.

Depending on the size and composition of stockpiles, there should be sufficient spacing between them to allow access in case of emergency and to help prevent the spread of fire. This spacing should be at least equal to the height of the stockpile or adequate for emergency vehicle access, whichever is the greater.

Depending on the size and composition of the stockpile, flammable or combustible liquids and hazardous materials should not be stored near stockpiles. Similarly, maintenance and activities that can produce sparks such as welding should be conducted away from stockpile areas.

All outdoor used tyre storage sites should comply with the General Guidelines for the Outdoor Storage of Used Tyres issued by the South Australian EPA. Tyre storage in buildings needs to comply with the National Construction Code Volume 1 Part E1.10. Refer to Access Canberra for further details.

Stockpile managers should ensure they are meeting any specific requirements for building design, firefighting equipment, monitoring, management and training as required by Australian Standards (where relevant), the ACT Planning and Land Authority and the Emergency Services Commissioner.

# 5.2 RISK ASSESSMENT

Stockpile managers must:

- conduct a risk assessment for fire at the premises that:
  - > identifies hazards and their causes
  - > analyses consequences
  - > evaluates the likelihood
  - > determines controls
  - > details continuous improvement controls
- review the risk assessment at least every six months
- make the plans available to ACT Fire and Rescue upon request - if requested, these plans must be amended to the satisfaction of the Emergency Services Commissioner.

## 5.3 FIRE MITIGATION

Stockpile managers must implement controls to minimise risks to the environment, life and property from fire.

There are a range of controls that can be used to mitigate and respond to fires. As every site is unique, it is necessary to tailor firefighting equipment and infrastructure. A risk assessment will assist in identifying relevant controls for stockpile facilities.

As a minimum, stockpile managers must implement:

- adequate infrastructure and equipment to suppress fire
- measures to ensure adequate water supplies
- liquid run-off containment controls
- measures to ensure the availability of other emergency management equipment.

## 5.4 INFRASTRUCTURE AND EQUIPMENT

Stockpile managers must ensure that effective infrastructure and equipment is in place to suppress fire. The risk assessment will inform which of these controls are required. Controls which must be considered include:

- access for fire suppression vehicles
  - > ensure sufficient access for emergency vehicles, both between stockpiles and around the property boundary
- fire detection and warning systems
  - > fire detection systems may include smoke alarms and advanced fire detection systems such as thermal image detection systems
  - > fire warning systems include bells and fire alarms to alert people in the event of a fire
- first aid kits
- firefighting equipment
  - > including water and fire extinguishers

- hydrants
  - > special consideration should be given to the site layout to ensure adequate coverage
- sprinklers
  - > premises stockpiling combustible materials indoors should consider installing automatically activated sprinklers.

Stockpile managers should, as a minimum, comply with the relevant Australian Standards. Refer to Appendix 3 for further information.

## 5.5 WATER SUPPLIES

Stockpile managers must take all reasonably practicable measures to ensure that there is adequate water supply and pressure to combat high-risk fire scenarios identified in a risk assessment.

# 6. MATERIALS INVENTORY

It is important for stockpile managers, in addition to relevant authorities, to understand the types, location and volumes of any materials managed and stored at these facilities. Maintaining an inventory of materials that are managed and stored onsite informs the risk assessment and controls required to minimise the risk that fire can have on the environment, life and property.

Stockpile managers must:

- record inventory information on:
  - > the types of material stockpiled at the premises, particularly high risk materials
  - > the location of material stockpiled at the premises
  - > the volumes (tonnes and/or cubic metres) of material stockpiled at the premises
- ensure that the inventory is maintained on a daily basis and is easily accessible
- record the:
  - > date and time that material is transported into and out of the premises
  - > generation/source of material
  - > material type (e.g. paper, cardboard)
  - > material volume/size
  - > total volume of material stockpiled.

## 6.1 MATERIALS FLOW AND MANAGEMENT

The volumes of material stockpiled on a site can vary considerably depending on the nature of the markets that the activity is supplying or targeting. Stockpiling needs to be conducted with materials flow and site capacity in mind. That is, the stockpiling of materials must not be a process of continual growth, but a balanced and systematic approach to materials input, processing, output, storage, reuse or sale and removal offsite, to demonstrate responsible and sustainable management of stockpiles, particularly for material recycling and reuse.

For sites with an environmental authorisation, the EPA may require conditions such as reporting on materials flow and mass balances to demonstrate to the EPA's satisfaction that appropriate materials management is in place.

## 6.2 MARKETS AND TIMEFRAMES

To ensure a consistent approach to regulation, factors such as storage time and market availability are prime considerations of the EPA. Through this consideration the EPA aims to avoid inappropriate and speculative indefinite stockpiling of material, to minimise the risk of abandonment and to avoid legacy issues from arising, during the consideration of an application for an environmental authorisation.

The length of time required for stockpiling needs to be considered carefully and may relate to what procedures will be in place to manage risks and how and when the material will be removed. Environmental management plans should be developed and implemented to address any increased risks that extended stockpiling periods may present if required and should still be contingent on

the existence of a viable market. This may be required through conditions of the environmental authorisation.

Stockpiling should be considered as a temporary measure and there must be no stockpiling for speculative purposes, unless a feasible throughput of the material can be demonstrated (eg: timber for sale as firewood or chipping). An immediate market should exist for a material. An immediate market means that it is an identified and recognised market as demonstrated by the existence of a known customer with a demonstrated and available beneficial use for the material.

As a default for temporary stockpiling of materials the EPA does not generally support stockpiling while awaiting sale, recycling or reuse for longer than six (6) months in order to reduce potential abandonment or speculative indefinite stockpiling. Any proposals for stockpiling exceeding six (6) months will need to demonstrate the need/purpose and the existence of the market or buyer. If this cannot be demonstrated then the EPA may have cause for the stockpile manager to transport the material to a landfill or other suitable waste management facility for disposal, treatment or recycling.

Longer stockpiling for certain biosolids such as manures and sludge may be suitable to allow for stabilisation and drying prior to reuse, provided appropriate pollution controls are in place. Storage of biosolids is addressed in Environmental Guidelines: Use and disposal of biosolids products (NSW EPA, 2000). Managers of biosolids stockpiles will still need to consider and address any potential risks posed, such as odour, leachate, dust and vermin.

In general, at authorised biosolids recycling facilities:

- municipal, commercial and industrial, C and D, and putrescible biosolids must only be temporarily stockpiled while awaiting processing and/or transfer and disposal. Municipal and putrescible biosolids should be removed daily, but stockpile timeframes may be acceptable for up to 72 hours, depending upon the biosolids and the suitability of the facility design and operation. This is because stockpiling of these biosolids for longer periods may result in increased risks, particularly to human health and the environment. Stockpile timeframes may be specified as a condition of the environmental authorisation.
- Inert stockpiles of materials for processing and reuse (e.g. C and D materials) are normally ongoing activities. However, these will still need to operate on a materials flow basis to prevent accumulation of materials with no market or in excess of site capacity.

## 6.3 STOCKPILE SITE AND SURROUNDINGS

Stockpiled materials must be stored away from surface watercourses, flood zones and groundwater recharge areas to prevent environmental harm to water. There are obligations and associated offences under the *Environment Protection Act 1997* to not discharge waste to land or waters, including through infiltration.

The Separation Distance Guidelines for Air Emissions (2018) should be consulted to ensure the minimisation of the potential for adverse impacts from emissions to air including odour and dust.

The Noise Environment Protection Policy 2010 should be consulted to ensure appropriate management of noise emissions.

Sites should be secured to prevent unauthorised access but allow for entry of emergency vehicles by ensuring:

- areas between stockpiles and along the property's boundary are kept free of obstruction and allow easy movement of emergency vehicles - each stockpile needs to have adequate spacing to allow access for vehicles and materials handling, and attending and reducing the impact of emergency situations such as fire. See section 4 for further details.
- C and D materials that have been inspected and sorted must be stored in accordance with the following requirements:
  - > each individual material type (including each type of hazardous material) must be stored in a separate storage area that is clearly labelled or signposted to indicate the individual material type being stored in that area
  - > each label or signpost must be legible and clearly visible
  - > the labels or signposts at all storage areas containing materials awaiting compliance test results before re-use, must also contain the words 'awaiting validation'
- stockpiled materials should be segregated into discrete and manageable components with clear signage demarcating the various stockpile areas.

## 6.4 STABILITY

When considering stockpile stability, size and management, the issues that should be considered include:

- relevant sub-surface geology and geotechnical characteristics
- structure of the base and sub-base including ability to protect groundwater and susceptibility to dissolution from rainwater or materials held in the stockpile
- likelihood of stockpile failure due to:
  - > poor design and management including excessive height and side slope gradients
  - > decreased internal friction caused by water inundation or gas generation or other pressure on or within the stockpile
- proximity to extraneous sources of ground vibrations including railway lines, or other heavy vehicle movements or building activities
- materials handling procedures to prevent surface collapse of the land where the stockpile is placed
- climatic conditions.

## 6.5 MATERIAL STORAGE

Stockpile managers must take all reasonably practicable measures to prevent incidents by maintaining adequate separation between stockpiles. Tables 1 and 2 set out specifications for appropriate stockpile dimensions and separation between the stockpiles.

If the recommended dimensions are unsuitable for the premises, alternative stockpile dimensions can be used where stockpile managers can demonstrate a better or equivalent substitute for the dimensions provided in this guideline. The stockpile height limit is largely based on stockpile manageability, dust impacts, stability, potential impact to underlying infrastructure, aesthetics and fire risk. The height of stockpiles should generally be lower than surrounding structures. However, when sought, greater stockpile heights will need careful and adequate assessment of all the additional risks the increased height poses and it must be demonstrated that these risks can be managed, as excess height can also lead to other safety risks such as from instability.

### 6.5.1 Stockpile dimensions

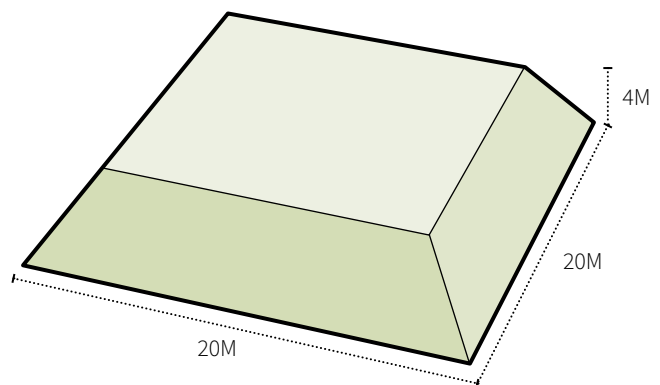
Stockpile managers must store stockpiled material in accordance with the following dimensions:

- maximum height of the stockpile for any type of loose material is four (4) metres
- maximum height of the stockpile for any type of baled material is four (4) metres or four (4) bales (whichever is lower in height)
- stockpile width must not exceed 20 metres for both loose and baled material of any type that is freestanding (i.e. not separated by walls or bunkered), with easy access from both sides (larger dimensions may be allowed through negotiation with relevant authorities)
- stockpile width must not exceed 10 metres for both loose and baled material of any type that is freestanding (i.e. not separated by walls or bunkered), with easy access from only one side (larger dimensions may be allowed through negotiation with relevant authorities).

In some situations (largely due to more sensitive nearby land uses) environmental risks may be considered to be higher, which may result in lower stockpile dimensions being required. Stockpiles should be below fence lines when within five metres of the site boundary.

The risks posed by specific materials should be considered when determining the suitable width and overall footprint of the stockpile. For example, accessibility or risk of fire.

**Diagram 1:** Schematic diagram of a loose material stockpile



**Notes:**

- 45 degree batter from base
- baled material should be pyramid stacked where persons access adjacent areas.



## 6.5.2 Separation between stockpiles

Stockpile managers must store material so that the minimum distance requirements, as set out in **Table 1**, are complied with.

For the purposes of calculating separation distances, the different types of stockpiled materials have been grouped (shown below) and require different separation distances depending on the burn temperature of the predominant material type.

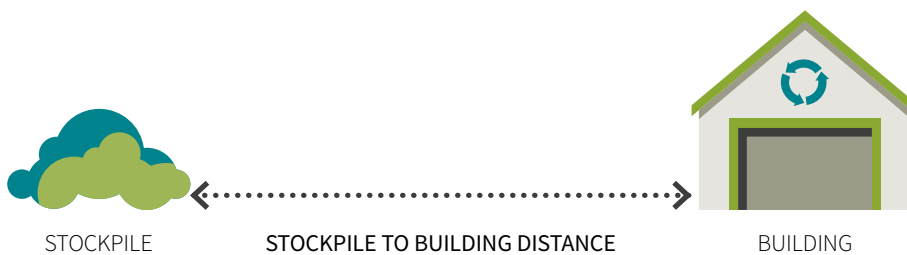
**Table 1:** Stockpile length and separation required for freestanding loose material and freestanding baled material.

		MATERIAL TYPE			
		Paper, cardboard, wood, textile, organic material, refuse derived fuel. Burn temperature 850-950°C		Rubber, plastic, specified electronic waste, metals. Burn temperature >1200°C	
		STOCKPILE TYPE			
		Free standing loose stockpiles	Free standing baled stockpiles	Free standing loose stockpiles	Free standing baled stockpiles
STOCKPILE LENGTH (METRES)		SEPARATION DISTANCE (METRES)			
10		7	13	15	20
15		9	15	20	24
20		10	17	21	27

## 6.5.3 Distances between stockpiles and buildings

Table 2 shows the minimum distance that must be kept between a stockpile and a building. Different distances apply depending on the predominant type of material. Buildings can be onsite or offsite (neighbouring property). The distances apply in both cases, including at site boundaries.

**Diagram 2:** Distance between stockpile and buildings



**Table 2:** Minimum separation between a building and stockpiled materials based on stockpile length, material type and stockpile type.

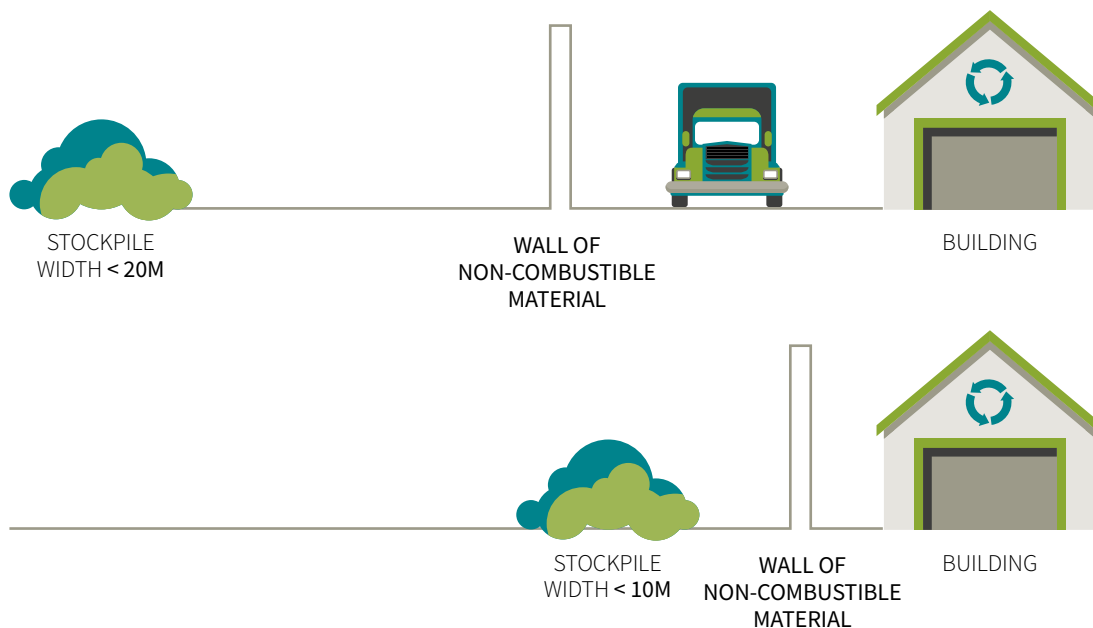
		MATERIAL TYPE			
		Paper, cardboard, wood, textile, organic material, refuse derived fuel. Burn temperature 850-950°C		Rubber, plastic, specified electronic waste, metals. Burn temperature >1200°C	
		STOCKPILE TYPE			
		Loose stockpiles	Baled stockpiles	Loose stockpiles	Baled stockpiles
STOCKPILE LENGTH (METRES)		SEPARATION DISTANCE (METRES)			
10	9	12	18	18	
15	12	14	22	22	
20	13	15	25	24	

### 6.5.4 Walls between stockpiles and buildings

When there is a wall between a stockpile and a building, the stockpile manager must ensure that:

- the wall is made of masonry, or other suitable non-combustible material
- there is a gap between the wall and building
  - > if the gap allows for firefighting access from both sides, the maximum width of the stockpile is 20 metres (Diagram 3A)
  - > if the gap allows for firefighting access from only one side, the maximum width of the stockpile is 10 metres (Diagram 3B).

**Diagram 3:** Separation when there is a wall between a stockpile and a building



## 6.5.5 Stockpiles separated by walls

For any type of stockpile that is separated by walls or bunkered, the stockpile width must not exceed 10 metres and a space of 1 metre should be left between the top of the stockpile and the top of the bunker.

## 6.6 INDOOR STORAGE

This guideline does not provide specific requirements for indoor stockpile management. If stockpiling inside a building or warehouse, the stockpile manager must:

- ensure compliance with the requirements of the *Planning and Development Act 2007*, *Building Act 2004* and National Construction Code
- determine stockpile dimensions (length, width, height) and separation distances, and maintain controls based on the risk assessment (section 4) to the satisfaction of the relevant authorities.

# 7. EMERGENCY MANAGEMENT

Emergency management equipment may be required to be stored onsite to manage and contain emergency situations. For example, equipment such as excavators may be required to separate burning materials or build containment ponds. Stockpile managers should:

- ensure that equipment that may be used during an emergency has the right specifications, for example machinery has heat-proof hydraulic fittings
- provide training to relevant staff on how to operate the equipment in the event of an emergency
- ensure that equipment operators are suitably protected from hazards such as thermal radiation, smoke inhalation, high or polluted water, and falling debris - certified self-contained breathing apparatus should be available and the equipment operators should be trained in their use
- for equipment that is not always available onsite, occupiers should enter into appropriate arrangements with suppliers so that equipment can be quickly obtained and deployed during an emergency.

# 8. INCIDENT RISK MANAGEMENT

After conducting a risk assessment, stockpile managers must implement controls to prepare for these risks and reduce the likelihood of them occurring. Should an emergency situation occur, premises must have plans in place to respond appropriately.

The *AS/NZS ISO 31000:2009: Risk Management – Principles and Guidelines* standard is the industry benchmark for effective risk management systems. It describes how to implement the findings from the risk assessment to a functioning risk management system.

## 8.1 INCIDENT MANAGEMENT PLAN

Stockpile managers must develop an incident management plan (IMP) to specifically address how they will respond to potential emergencies and other significant incidents identified during the risk assessment. The IMPs must be made available to the EPA, Chief Health Officer and Emergency Services Commissioner upon their request. If requested, IMPs must be amended to the satisfaction of the EPA, Chief Health Officer and Emergency Services Commissioner.

The IMP must include:

- information on who has responsibilities during an incident and what these responsibilities are - including fire wardens, people responsible for communications with emergency services and neighbours, and people responsible for critical functions such as shut-off of equipment
- staff training requirements and procedures
- procedures for raising alarms and notifying emergency services and people onsite - neighbouring properties and nearby key infrastructure, such as airports and essential services providers, may also need to be notified

- procedures for evacuating persons from the premises, and appropriate training and drills of these procedures
- location of all emergency equipment, including hydrants, boosters, fire service tapping(s), fire pumps, static water tanks, extinguishers and stocks of foam concentrate
- location of relevant plumbing infrastructure such as drains and isolation valves
- location of access points to the premises
- location of any hazardous materials or dangerous goods stored onsite
- traffic management plans to ensure continuous access for emergency services
- first aid plans appropriate to the site and scenario - different scenarios identified in the risk assessment may require different actions
- analysis and planning of water pressure onsite
- analysis and planning of required water volume, if mains water is unavailable
- deployment procedures for any of the site's equipment that may be used, for example using excavation equipment to transfer burning materials out of a fire
- location of any connections to the stormwater system
- procedures for controlling liquid run-off.

The IMP must be documented and located in the premises manifest.

It is best practice for premises to have an environment management plan (EMP) that addresses a broader range of risks, responses and controls. Where premises have an EMP, the stockpile manager is not required to develop an additional IMP as long the EMP addresses all possible incidents likely to be encountered.

# 9. COMMUNITY CONSULTATION

Depending on the location, potential off-site risks and level of community interest associated with an activity, an appropriate level of community consultation may need to be undertaken both at the planning and operational stages of stockpiling activities. In such cases stakeholders, including surrounding communities and local residents, should be advised of issues such as duration, potential risks and impacts and the related mitigation measures. Relevant contact details of company or project coordinators should also be provided to the community to allow queries or complaints to be addressed.

# APPENDIX 1: RISKS ASSOCIATED WITH STOCKPILING OF MATERIALS

RISK	POTENTIAL IMPACTS	EXAMPLES OF FACTORS AFFECTING THE RISKS AND RESULTING IMPACTS	SUGGESTED MEASURES
<b>1. Pollution of waters, leaching or runoff of contaminants and particulates</b>	<ul style="list-style-type: none"> <li>→ Reduced natural resource quality and potential use</li> <li>→ Site contamination (land, surface water and ground water)</li> <li>→ Site degradation</li> <li>→ Reduced ecosystem quality and function</li> <li>→ Could be considered disposal and subject to compliance action</li> </ul>	<ul style="list-style-type: none"> <li>→ Material type and leachability</li> <li>→ Climatic controls</li> <li>→ Effectiveness of management procedures and practice</li> <li>→ Engineering controls</li> <li>→ Topography and proximity to watercourses</li> </ul>	<ul style="list-style-type: none"> <li>→ Containment of leachate and diversion and control of stormwater</li> <li>→ Bunding</li> <li>→ Low permeability surface</li> <li>→ Cover/enclosure</li> <li>→ Stormwater runoff controls such as site traps and settlement ponds</li> <li>→ Environmental management plans</li> <li>→ Suitable site selection and separation distances</li> </ul>

RISK	POTENTIAL IMPACTS	EXAMPLES OF FACTORS AFFECTING THE RISKS AND RESULTING IMPACTS	SUGGESTED MEASURES
<b>2. Heat generation with potential to cause fire</b>	<ul style="list-style-type: none"> <li>→ Damage to property, risk to human health and the environment</li> <li>→ Pollution of atmosphere</li> <li>→ Offensive odours</li> <li>→ Loss of productivity</li> </ul>	<ul style="list-style-type: none"> <li>→ Material type</li> <li>→ Stockpile dimensions</li> <li>→ Climatic conditions</li> </ul>	<ul style="list-style-type: none"> <li>→ Minimise stockpile size</li> <li>→ Ensure suitable access and spacing</li> <li>→ Monitor stockpile temperatures</li> <li>→ Maintain aerobic conditions</li> <li>→ Implement operational procedures and contingency plans</li> <li>→ Maintain fire prevention and firefighting equipment</li> </ul>
<b>3. Generation of litter</b>	<ul style="list-style-type: none"> <li>→ Degradation of the environment Threat to fauna</li> <li>→ Adverse impact on amenity</li> </ul>	<ul style="list-style-type: none"> <li>→ Material type</li> <li>→ Management procedures</li> <li>→ Engineering controls</li> </ul>	<ul style="list-style-type: none"> <li>→ Housekeeping, litter collection and other operational procedures and management</li> <li>→ Containment such as fencing enclosures, cover and other physical barriers</li> </ul>
<b>4. Dust emissions</b>	<ul style="list-style-type: none"> <li>→ Adverse impact on amenity</li> <li>→ Damage to property</li> <li>→ Human health impacts (e.g. respiratory problems)</li> <li>→ Plant health impacts (e.g. reduced photosynthesis and growth)</li> </ul>	<ul style="list-style-type: none"> <li>→ Climatic conditions including exposure to winds</li> <li>→ Elevation</li> <li>→ Stockpile size</li> <li>→ Material type</li> <li>→ Exposed soils/unsealed roads</li> <li>→ Land use and compatibility with surrounding land use</li> </ul>	<ul style="list-style-type: none"> <li>→ Physical controls (sprays, covers, compaction, screening, enclosure, windbreaks, blinders and road surfacing)</li> <li>→ Traffic (control frequency and speed)</li> <li>→ Minimised stockpile height</li> <li>→ Suitable site selection and separation distances</li> <li>→ Materials handling, operational procedures and management, e.g. moisture content during handling or cessation of activities in adverse conditions</li> </ul>



RISK	POTENTIAL IMPACTS	EXAMPLES OF FACTORS AFFECTING THE RISKS AND RESULTING IMPACTS	SUGGESTED MEASURES
<b>5. Odour emissions</b>	→ Adverse impacts on amenity	<ul style="list-style-type: none"> <li>→ Material type</li> <li>→ Climatic conditions</li> <li>→ Management procedures</li> <li>→ Land use and compatibility with surrounding land use</li> </ul>	<ul style="list-style-type: none"> <li>→ Physical controls (e.g. containment, cover, enclosure, vapour filtration)</li> <li>→ Suitable site selection and separation distances</li> <li>→ Effective management and monitoring procedures maintain aerobic conditions</li> </ul>
<b>6. Biogas emissions</b>	<ul style="list-style-type: none"> <li>→ Adverse impacts on amenity</li> <li>→ Increased release of greenhouse gas to the environment</li> </ul>	<ul style="list-style-type: none"> <li>→ Material type</li> <li>→ Climatic conditions</li> <li>→ Management procedures</li> <li>→ Land use and compatibility with surrounding land use</li> </ul>	<ul style="list-style-type: none"> <li>→ Physical controls (e.g. aeration, extraction, filtration, containment, enclosure)</li> <li>→ Effective management and monitoring procedures</li> </ul>
<b>7. Vermin</b>	<ul style="list-style-type: none"> <li>→ Reduced productivity of land</li> <li>→ Pressure on native species</li> <li>→ Disease and other risks to human health</li> </ul>	<ul style="list-style-type: none"> <li>→ Material type</li> <li>→ Housekeeping and operational procedures and management</li> </ul>	<ul style="list-style-type: none"> <li>→ Suitable facility design</li> <li>→ Physical barriers and enclosure</li> <li>→ Implement effective management procedures</li> </ul>
<b>8. Adverse visual amenity</b>	→ Interference with the enjoyment of the area and creation of unsightly or offensive conditions	<ul style="list-style-type: none"> <li>→ Stockpile size</li> <li>→ Material type</li> <li>→ Land use and compatibility with surrounding land use</li> </ul>	<ul style="list-style-type: none"> <li>→ Minimise stockpile size</li> <li>→ Suitable site selection and separation</li> <li>→ Physical controls e.g. screening enclosure</li> </ul>
<b>9. Stockpile instability</b>	→ Stockpile collapse, potentially leading to human injury, environmental degradation and damage to infrastructure	<ul style="list-style-type: none"> <li>→ Material type</li> <li>→ Topography</li> <li>→ Climatic conditions</li> <li>→ Stockpile height</li> <li>→ Materials management</li> </ul>	<ul style="list-style-type: none"> <li>→ Implement appropriate materials handling procedures</li> <li>→ Minimise stockpile size</li> </ul>

RISK	POTENTIAL IMPACTS	EXAMPLES OF FACTORS AFFECTING THE RISKS AND RESULTING IMPACTS	SUGGESTED MEASURES
<b>10. Inadequate platform stability and suitability</b>	<ul style="list-style-type: none"> <li>→ Site contamination</li> <li>→ Infiltration of leachate into and damage to underlying groundwater aquifers</li> <li>→ Damage to stockpiled area and infrastructure</li> <li>→ Potential damage to capping material if storage is on old landfill leading to increased risk of emissions from leachate, gas generation and ground instability</li> </ul>	<ul style="list-style-type: none"> <li>→ Material type</li> <li>→ Sub-surface geology and structure below sub-base</li> <li>→ Sub-base material characteristics (e.g. particle size, atterberg limits, density)</li> <li>→ Likelihood of sub-base failure (e.g. faulting, sliding, slumping, caving or climatic impacts)</li> <li>→ Proximity to extraneous sources of ground vibrations including railway lines</li> </ul>	<ul style="list-style-type: none"> <li>→ Suitably designed and engineered facility</li> <li>→ Minimise stockpile size and adherence to recommended separation distances</li> </ul>
<b>11. Excessive accumulation of material</b>	<ul style="list-style-type: none"> <li>→ Adverse impact on amenity</li> <li>→ Increased risk of dust emission and other resulting impacts Exceeding capacity of site</li> </ul>	<ul style="list-style-type: none"> <li>→ Speculative stockpiling/ lack of market</li> <li>→ Lack of materials balance and flow management</li> <li>→ Acceptance of inappropriate materials</li> <li>→ Ineffective or lack of planning and management procedures</li> </ul>	<ul style="list-style-type: none"> <li>→ Pre-planning</li> <li>→ Appropriate materials flow calculations, management and procedures</li> <li>→ Contingency plans</li> <li>→ Acceptance of appropriate materials (e.g. types, volumes)</li> <li>→ Ensuring existence and availability of markets</li> </ul>
<b>12. Abandonment of stockpiles and avoidance of regulatory regime</b>	<ul style="list-style-type: none"> <li>→ Adverse impact on amenity</li> <li>→ Distortion of market and avoidance of levy by diverting material to stockpile with no sustainable end use</li> <li>→ Increased risk of harm occurring due to lack of management</li> </ul>	<ul style="list-style-type: none"> <li>→ Speculative or long term stockpiling</li> <li>→ Lack of market</li> <li>→ Lack of planning</li> <li>→ Inappropriate management</li> <li>→ Unsuitable persons accepting material</li> </ul>	<ul style="list-style-type: none"> <li>→ Existence and availability of markets</li> <li>→ Pre-planning</li> <li>→ Contingency plans</li> <li>→ Sustainable materials flow practices</li> <li>→ Appropriate ownership, contractual and management arrangement financial assurance</li> </ul>

RISK	POTENTIAL IMPACTS	EXAMPLES OF FACTORS AFFECTING THE RISKS AND RESULTING IMPACTS	SUGGESTED MEASURES
13. Mischievous or criminal vandalism	<ul style="list-style-type: none"> <li>→ Damage to property</li> <li>→ Financial losses</li> <li>→ Harm to the environment (e.g. fire or spills)</li> <li>→ Harm to human health (e.g. fire, chemical release, accident)</li> </ul>	<ul style="list-style-type: none"> <li>→ Accessibility of the site</li> <li>→ Visibility of the site</li> <li>→ Supervision of the site</li> <li>→ Contingency planning</li> </ul>	<ul style="list-style-type: none"> <li>→ Secure fencing</li> <li>→ Security cameras</li> <li>→ Automated alarms and incident response systems/plan</li> <li>→ Supervision</li> </ul>

**Note:** The local conditions of a site along with the risks listed above are major considerations in determining if the site is suitable to stockpile particular types of materials. The likelihood of harm occurring is also dependent on supervision and implementation of appropriate management plans. Inappropriate management of such risks may lead to a breach of the *Environment Protection Act 1997* including causing environmental harm or environmental nuisance.

# APPENDIX 2: DEFINITIONS

## Atterberg limits

A measure of the critical water contents of a fine-grained soil, with four states: solid, semi-solid, plastic and liquid. In each state, the consistency and behaviour of a soil is different and consequently so are its engineering properties. The boundary between each state can be defined based on a change in the soil's behaviour.

## Biosolids

The organic products that results from sewage treatment processes (namely, material referred to alternatively as sewage sludge)

## Commercial and industrial waste

As defined in the *Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes* - Inert, solid, industrial or hazardous wastes generated by businesses and industries (including shopping centres, restaurants and offices) and institutions (such as schools, hospitals and government offices), excluding building and demolition waste and municipal waste.

## Construction and demolition waste (C and D)

Waste generated through construction and demolition activities including:

- rubbish and unwanted material
- excavated material such as rock and soil
- waste asphalt, bricks, concrete, plasterboard, timber and vegetation
- paper, plastics, glass and metal

which:

- is not mixed with any other type of waste, and
- does not contain any asbestos waste.

## Contaminant

For the purpose of waste derived products, means a chemical substance that has no beneficial effects for the stated purpose and may have the potential to cause harm to the environment, human health or agriculture.

## Groundwater

Water occurring or obtained from below the surface of the ground, including water occurring in or obtained from a bore or an aquifer, but not including water occurring in or obtained from any other system for the distribution, reticulation, transportation, storage or treatment of water or waste.

## Hazardous waste

As defined in the *Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes* - Any liquid or non-liquid waste that is:

- a. specified in Table 4 of SECTION 2 of the standards, or
- b. otherwise assessed and classified as hazardous waste in accordance with the procedures set out in Technical Appendix 1 of the standards.

## Industrial waste

As defined in the *Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes* - Any non-liquid waste that is:

- a. specified in Table 3 of these standards, or
- b. otherwise assessed and classified as industrial waste in accordance with the procedures set out in Technical Appendix 1 of these standards.

### **Inert waste**

As defined in the *Environmental Standards: Assessment and Classification of Liquid and Non-liquid Wastes* - Any non-liquid waste that is:

- a. specified in Table 1 of these standards, or
- b. otherwise assessed and classified as inert waste in accordance with the procedures set out in Technical Appendix 1 of these standards .

### **Municipal Waste**

Waste consisting of:

- household domestic waste that is set aside for kerb side collection or delivered by the householder directly to a waste facility
- other type of domestic waste (e.g. domestic clean-up and residential garden waste)
- local council generated waste (e.g. waste from street sweeping, litter bins and parks).

### **Pollutant**

- a gas, liquid or solid
- dust, fumes, odour or smoke
- an organism (whether alive or dead), including a virus and a prion
- energy, including heat, noise or radioactivity, or light or other electromagnetic radiation
- anything prescribed
- a combination of one or more of the things described above

that when discharged, emitted, deposited, or disturbed, may cause environmental harm.

### **Pollute**

To cause, or fail to prevent, the discharge, emission, depositing, disturbance or escape of a pollutant.

### **Scheduled chemical substance**

Any waste liquid, sludge or solid (including waste articles and containers) that contain one or more of the constituents listed in *Schedule A of the Scheduled Chemical Waste Chemical Control Order 1994* (NSW) where the total concentration of those constituents if more than one milligram per kilogram (For a list of scheduled chemical wastes see Technical Appendix 3 of these standards).

### **Site contamination**

Exists at a site if a condition or state which represents or potentially represents an adverse health or environmental impact because of the presence of potentially hazardous substances

### **Solid waste**

Any waste that:

- has an angle of response of greater than 5 degrees above horizontal; or
- does not become free-flowing at or below 600C or when it is transported; or
- is generally not capable of being picked up by a spade or shovel.

### **Stormwater**

Means water run-off from an urban area that is normally collected by the stormwater system.

### **Treated timber**

Timber treated with a chemical, such as copper chrome arsenate (CCA), high temperature creosote (HTC), pigmented emulsified creosote (PEC) and light organic solvent preservative (LSOP), which may accumulate in and/or be hazardous to the environment and human health.

### **Waste**

*The Environment Protection Act 1997* defines waste as - any solid, liquid or gas, or any combination of them, that is a surplus product or unwanted by-product of an activity, whether the product or by-product is of value or not.

*The Waste Management and Resource Recovery Act 2016* defines waste as -

- a. any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment
- b. any discarded, rejected, unwanted, surplus or abandoned substance, whether or not intended for sale, recycling, reprocessing, recovery or purification by a separate operation from that which produced it
- c. any other substance declared by regulation to be waste.

# APPENDIX 3: FURTHER GUIDELINES AND INFORMATION

## ACT PUBLICATIONS

- [Contaminated Sites Environment Protection Policy 2017](#)
- [Separation Distance Guidelines for Air Emissions 2014](#)
- [Environmental Standards; Liquid and Non-liquid Waste Classification Guidelines 2000](#)
- [General Environment Protection Policy 2016](#)
- [Hazardous Material Environment Protection Policy 2010](#)
- [Noise Environment Protection Policy 2010](#)
- [Water Quality Environment Protection Policy 2008](#)

## EPA Information Sheets relevant to stockpile management

- **Building and construction – General information sheets**
  - > [Minimum standards for submission of pollution control plans](#)
  - > [Dust suppression during construction](#)
  - > [Spoil management in the ACT](#)
- **Building and construction - Residential building information sheets**
  - > [Prevent pollution from residential building sites](#)
  - > [Site excavation and diversion or catch drains](#)
  - > [Material stockpile and waste management](#)
- **Waste Management and Hazardous Materials**

## Information sheets

- > Responsibilities of controlled waste producers
- > Responsibilities of controlled waste transporters
- > Responsibilities of interstate controlled waste producers
- > Guide to using a waste transport certificate
- > Requirements for transport and disposal of asbestos contaminated wastes
- > Management of small scale low risk soil asbestos contamination
- > Guidance for undertaking preliminary contamination investigations for development or lease variation purposes
- > [Requirements for the classification and reuse of drilling mud waste in the ACT](#)
- **Contaminated Sites Information Sheets**
  - > [Requirements for re-use and disposal of contaminated soil](#)
  - > [Guidance for undertaking preliminary contamination investigations for development purposes](#)
- **Other industry information sheets**
  - > [Auto dismantlers](#)
  - > [Landscape gardening and maintenance](#)

## NSW PUBLICATIONS

- [Environmental Guidelines: Use and disposal of biosolids products, publication EPA 97/62](#)

## SA PUBLICATIONS

- [Bunding and spill management, publication 080/16](#)
- [Copper chromated arsenate \(CCA\) timber waste— storage and management, publication 572/04](#)
- [EPA Guidelines for Environmental management of on-site remediation, publication 623/06](#)
- [General Guidelines for the Outdoor Storage of Used Tyres, publication 183/10](#)
- [Environmental guidelines: Resource recovery and waste transfer depots, publication 390/01](#)
- [South Australian biosolids guideline for the safe handling reuse or disposal of biosolids, publication 093/97](#)
- [Undercover storage requirements for waste/recycling depots, publication 845/10](#)
- [General Guidelines for Rubber Tyre Storage](#)

## OTHER USEFUL REFERENCE

- [Australian Quarantine Inspection Service](#)
- [General Guidelines for the Outdoor Storage of Used Tyres \(2005\), South Australian Fire Services, Guideline 013, Amendment A](#)

## Australian Standards

AS/NZS ISO 31000:2009: Risk Management – Principles and Guidelines

AS 1141: Methods for sampling and testing aggregates

AS 1289: Methods for testing soils for engineering purposes

AS 2891: Methods for sampling and testing asphalt

AS 2758: Aggregate and rock for engineering purposes

AS 4439: Wastes, sediments and contaminated soils – Preparation of leachates

AS 1851: Maintenance of fire protection systems and equipment

AS 4655: Guidelines for fire safety audits for buildings

National Construction Code 2015: Building code of Australia - Volume 1 Part E1.10

# APPENDIX 4: ONSITE INSPECTION CHECKLIST

## 1. General information

Date of visit:		Authorised Officer name:	
Site name:			
Address:			
Suburb:	State:	Postcode:	
Contact person(s):		Contact phone number(s):	
Contact email(s):			
Context of site (circle correct site context): corporation owned, Dealer, Lease, Franchise			
EPA identification number:			

## 2. Company information

Site occupier/authorisation holder name:		
Street address:		
Suburb:	State:	Postcode:
Contact person:	Contact phone#:	
Contact Email:		



### 3. General prevention measures

1. Separate and/or designated areas for materials drop-off, materials processing and materials storage activities? <input type="checkbox"/> Yes <input type="checkbox"/> No
2. All emergency exits, equipment and access points are clear? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Records, documents and procedures documented and retained for a minimum of one year? <input type="checkbox"/> Yes <input type="checkbox"/> No
4. Staff trained in use of first aid and firefighting equipment? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Perimeter of the site secured by an effective barrier to prevent unauthorised entry? <input type="checkbox"/> Yes <input type="checkbox"/> No
6. Arrangements to monitor the site? <input type="checkbox"/> Alarms <input type="checkbox"/> CCTV <input type="checkbox"/> Hired security <input type="checkbox"/> other Details if "other" _____

### 4. Fire prevention

1. Regular cleaning programs to remove litter and dust? <input type="checkbox"/> Yes <input type="checkbox"/> No
2. Good housekeeping maintained onsite? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Hot works permit procedures in place? <input type="checkbox"/> Yes <input type="checkbox"/> No
4. Procedures for regular inspections, testing and maintenance of electrical equipment? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Smoking restricted to designated areas? <input type="checkbox"/> Yes <input type="checkbox"/> No
6. No open fire policy? <input type="checkbox"/> Yes <input type="checkbox"/> No
7. Safe storage of gas cylinders, dangerous goods, hazardous substances and other combustible material? <input type="checkbox"/> Yes <input type="checkbox"/> No

### 5. Leachate prevention

1. Regular inspection and maintenance of site bunding? <input type="checkbox"/> Yes <input type="checkbox"/> No
2. Good housekeeping maintained onsite? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Impervious ground surface? <input type="checkbox"/> Yes <input type="checkbox"/> No

4. Procedures for regular inspections, testing and maintenance of leachate containment devices? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Safe storage of toxic/dangerous goods, hazardous substances and other potential leachate material? <input type="checkbox"/> Yes <input type="checkbox"/> No

6. Vermin prevention

1. Regular cleaning programs to remove organic matter (other than stockpiled organic materials)? <input type="checkbox"/> Yes <input type="checkbox"/> No
2. Pre-emptive vermin control measures maintained onsite? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Procedures for regular inspections and addressing vermin occurrences? <input type="checkbox"/> Yes <input type="checkbox"/> No

7. Risk assessment

1. Riskassessment(s) for fire, leachate and vermin conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No
2. If "Yes" does the risk assessment: - Identify and document hazards, both onsite and offsite? <input type="checkbox"/> Yes <input type="checkbox"/> No - Analyse the consequences of identified risk scenarios for people, property and the environment (external/internal)? <input type="checkbox"/> Yes <input type="checkbox"/> No - Analyse the likelihood of identified risk scenarios? <input type="checkbox"/> Yes <input type="checkbox"/> No - Analyse the optimal and appropriate controls? <input type="checkbox"/> Yes <input type="checkbox"/> No - Detail continuously improving controls? <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Date of last review? <span style="margin-left: 150px;">Within last six months?</span> <input type="checkbox"/> Yes <input type="checkbox"/> No
4. Satisfied with assessment(s)?  ACT Fire and Rescue <span style="margin-left: 100px;"><input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>Not yet</span>  ACT Health <span style="margin-left: 100px;"><input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>Not yet</span>  ACT Environment Protection Authority <span style="margin-left: 50px;"><input type="checkbox"/>Yes <input type="checkbox"/>No <input type="checkbox"/>Not yet</span>  <u>Comments</u>

## 8. Fire mitigation

Emergency access
1. Sufficient access for emergency vehicles? <input type="checkbox"/> Yes <input type="checkbox"/> No
Fire detection and warning systems
2. Systems in place to detect fires and alert people (staff)? <input type="checkbox"/> Yes <input type="checkbox"/> No Provide details of the systems in place (e.g. smoke alarms, alerts for staff, thermal cameras)  _____
Fire protection
3. Adequate first aid and fixed firefighting equipment provided? <input type="checkbox"/> Yes <input type="checkbox"/> No Provide details of the equipment available (e.g. fire extinguishers, foam hose reels)  _____
4. Staff provided with training on the operation of firefighting equipment? <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Potential ignition sources onsite identified and distanced from flammable/combustible material stockpiles (includes smoking areas, electrical equipment)? <input type="checkbox"/> Yes <input type="checkbox"/> No
Hydrants
6. Hydrant system present and maintained onsite? <input type="checkbox"/> Yes <input type="checkbox"/> No  <u>Comments</u>
Sprinkler systems
7. Sprinkler system available and maintained onsite? <input type="checkbox"/> Yes <input type="checkbox"/> No  <u>Comments</u>
Water supplies
8. Adequate town/mains water supply with sufficient pressure available onsite? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> other  <u>Comments</u>

9. If “No” and /or no mains water available, is a minimum of 2×250,000 L tanks installed diagonally at opposed positions available? <input type="checkbox"/> Yes <input type="checkbox"/> No Details of “other” _____
10. What is the water quality for firefighting? <input type="checkbox"/> Potable <input type="checkbox"/> Class A recycled <input type="checkbox"/> Non-potable
Site containment
11. Bunding installed onsite? <input type="checkbox"/> Potable
12. Drainage basin or catchment pits installed onsite? <input type="checkbox"/> Potable
13. Provision to isolate local stormwater infrastructure to capture run-off? <input type="checkbox"/> Yes <input type="checkbox"/> No
14. Arrangements to remove fire waste-waters offsite(e.g. eductor pump)? <input type="checkbox"/> Yes <input type="checkbox"/> No
15. Pre-approval with relevant water authority for disposal of fire waste-waters via trade waste agreement? <input type="checkbox"/> Yes <input type="checkbox"/> No
In the event of an emergency: 16. Can the stormwater access valves be shut off? <input type="checkbox"/> Yes <input type="checkbox"/> No 17. Can firewater be contained within the site as per the requirements of relevant fore authorities? <input type="checkbox"/> Yes <input type="checkbox"/> No
18. Firewater capture capacity requirements have been assessed and structures (bunds, dams etc.) constructed in accordance with modelling/storage requirements? <input type="checkbox"/> Yes <input type="checkbox"/> No
Other equipment
19. Equipment such as excavators available onsite to separate burning material? <input type="checkbox"/> Yes <input type="checkbox"/> No If “No” are appropriate arrangements in place to acquire the required equipment in a timely manner in the event of a fire? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
20. Self-contained breathing apparatus (SCBA) available and maintained onsite? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
21. Relevant staff trained in the use of SCBA? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

9. Fire management plan

Note: these management plans can be a subset of a broader management plan.

1. Staff trained in site fire management plan and emergency response procedures? <input type="checkbox"/> Yes <input type="checkbox"/> No
2. Documented fire management plan available and displayed prominently onsite to be used by fire authorities and other personnel? <input type="checkbox"/> Yes <input type="checkbox"/> No

3. Documented fire management plan available and located in the site's emergency manifest (red box)? Yes No

---

4. If "Yes", does the fire management plan:

- Clearly outline who has responsibilities, and what responsibilities each person has in the event of a fire? Yes No
- Detail procedures for raising the fire alarm and notifying emergency services and people onsite? Yes No
- Detail procedures for evacuating persons from the premises? Yes No
- Identify the location of fire equipment (hydrants, boosters, fire service tapping, fire pumps, static water tanks, stocks of foam concentrate etc.)? Yes No
- Identify the location of relevant plumbing infrastructure such as drainage maps and isolation valves? Yes No
- Identify the location of access points for fire equipment to the site? Yes No
- Identify the location of any hazardous materials or dangerous good stores onsite? Yes No
- Detail traffic management procedures to ensure continuous emergency access? Yes No
- Detail the first aid firefighting actions appropriate to the site and scenario? Yes No
- Include analysis and planning of water pressure onsite? Yes No
- Include analysis and planning of required water volume, if mains water is unavailable? Yes No
- Detail the development procedures for any of the site equipment that may be used in an emergency (e.g. excavation equipment to transfer burning material)? Yes No
- Detail the procedures in place to control liquid run-off from a fire? Yes No

10. Storage inventory: Combustible material

1. Combustible material inventory maintained onsite?	Yes	No
2. Inventory maintained daily?	Yes	No
3. Details of combustible material located onsite:		
Material type	Location onsite	Quantity



8. Material stockpiles

Material type	No. of stockpiles	Stock type				Access		Stockpiles measurements(m)			Separation (m)		Compliant with the guidelines (Y/N)	
		Freestanding loose(Y/N)	Freestanding baled(Y/N)	Separated by walls	Bunkered loose(Y/N)	From both sides (Y/N)	Only from one side(Y/N)	Height	Length	Width	To other stockpiles	To buildings (if applicable)		

## 9. Notes/Comments/Follow up actions

Documents required:

To be followed up:

Fire and Rescue-

Worksafe-

EPA-

Health-

Other-

Notes:

### 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.





