

# Environment Protection (Contaminated Sites) Environment Protection Policy 2012 (No1)

## Notifiable instrument NI2012–301

made under the

Environment Protection Act 1997, s 28 (1) (Notification of environment protection policies etc), s 29 (Inspection)

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### 1 Name of instrument

This instrument is the *Environment Protection (Contaminated Sites) Environment Protection Policy 2012 (No 1)*.

### 2 Commencement

This instrument commences on the day after notification.

### 3 Notification

Notice is hereby given that the Environment Protection Authority has made an Environment Protection Policy in Annexure A.

#### Title of Policy

Contaminated Sites  
Environment Protection Policy

#### Brief Description of the Policy

The Contaminated Sites Environment Protection Policy is designed to assist people in understanding the procedures used by the Environment Protection Authority to manage contaminated land in the ACT. It also provides guidance for owners and occupiers of contaminated land to meet their legislative obligations under the *Environment Protection Act 1997* and the Environment Protection Regulation 2005.

### 4 Inspection

In accordance with s 29 of the *Environment Protection Act 1997*, copies of the Contaminated Sites Environment Protection Policy are available for public inspection at the following locations:

During business hours, at Environment Protection Unit, Level 3 South Wing, Macarthur House, 12 Wattle Street, Lyneham ACT 2602; and

electronic copies are available from the Environment and Sustainable Development Directorate website at <http://www.environment.act.gov.au>.

## **5 Revocation**

This instrument revokes Environment Protection (Environment Protection Policy) Notice 2010 (No 1) NI2010-7.

Daniel Walters  
Environment Protection Authority  
14 June 2012

# CONTAMINATED SITES ENVIRONMENT PROTECTION POLICY

Environment Protection Authority | November 2009





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# 1. BACKGROUND

## 1.1 What is the purpose of this EPP?

This Contaminated Sites Environment Protection Policy (**EPP**) is designed to help people understand the *Environment Protection Act 1997* (the Act) and the Environment Protection Regulation 2005 (the Regulation) as they apply to **contaminated land**. There are general offences in the Act and specific provisions for **contaminated land**, which carry substantial penalties. This **EPP** provides guidance on meeting these legislative requirements, including the need to adopt the general **environmental duty** as specified in the Act to minimise **environmental harm**. This **EPP** has been prepared by the **Environment Protection Authority (EPA)** in accordance with Part 4 of the Act.

The role of **EPPs** and their relationship to the Act and the Regulation is explained in the General **EPP**. The General **EPP** also contains other material of relevance to this **EPP** such as environmental management instruments, policies on enforcement and access to information held by the **EPA**. This **EPP** should be read together with the General and other **EPPs**.

This **EPP** contains information and policies relating to the assessment and **remediation** (including management) of **contaminated land** and aims to minimise the risk of adverse impacts of **contaminated land** on the **environment** and human health. This **EPP** explains the procedures used by the **EPA** to manage **contaminated land** within the Australian Capital Territory (the ACT) and provides guidance for owners and occupiers of **contaminated land** to meet their legislative obligations under the Act.

In the past, hazardous substances have been manufactured, used and disposed of without a full knowledge of the potential impacts of these activities on human health and the **environment**.

Examples of hazardous substances associated with activities known to have caused an unacceptable risk to human health or the **environment** through **land** contamination include: polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs), heavy metals (for example, arsenic, lead, chromium, cadmium and mercury), and hydrocarbons. In most cases **land** contamination is the result of past activities which have been poorly managed or where there was a general lack of knowledge of the potential impacts that certain substances may have on human health and the **environment**.

At present, although hazardous substances are generally managed in a responsible manner, there is still potential for **land** contamination to occur due to unforeseen circumstances, accidents or criminal acts.

The policies outlined in this **EPP** for the management of **contaminated land** are designed to minimise the risk from sites **contaminated** with hazardous substances.

## 1.2 Administration consistent with objects of the Act

Section 2 of the Act requires that the Act be construed and administered consistently with the **Objects** of the Act. This **EPP** should be read and applied to best give effect to the **Objects** of the Act.

This **EPP** has been developed in accordance with the following principles that, in the view of the **EPA**, are derived from, or consistent with, the objects and provisions of the Act and Regulation:

- The level of regulatory control over **contaminated land** should reflect the risk to the **environment** and human health arising from that **land**. For example, the risk to the **environment** or human health arising from an existing operational service station site with some hydrocarbon contamination present is not likely to be as great as a former sheep dip site that has been proposed for redevelopment for residential housing. The past use of the sheep dip site may have resulted in contamination of soils and groundwater with arsenic and organochlorine compounds.
- Where possible, regulatory controls on **contaminated land** should not adversely impact on regional commerce and should be consistent with national competition policy principles. Specifically, any restriction on competition should apply on the basis that the public benefit from the restriction outweighs the public interest in competition.
- The **EPP** should be consistent with national and international agreements relating to **contaminated land**. For example in 1992 the Commonwealth, all States and Territories, and the Australian Local Government Association signed the *Intergovernmental Agreement on the Environment* (the Agreement). The Agreement clarified the role of the three levels of Government in management of the **environment**. It set out nationally agreed principals of environmental policy, such as the principle of *polluter pays*, which details that those who generate contamination should bear the costs of any assessment and **remediation** that may be required.
- The Agreement also provided for the National Environment Protection Council (NEPC). This is a Ministerial Council with powers to establish, monitor and report on National Environment Protection Measures (NEPMs), which include standards, guidelines, goals and associated protocols for various aspects of environment protection. Existing NEPMs include: Air Toxics, Ambient Air Quality, Diesel Vehicle Emissions, Used Packaging Materials, National Pollutant Inventory, Movement of Controlled Waste between States and Territories and the Assessment of Site Contamination.
- An integrated approach should be taken to manage **contaminated land**. The **EPA** works with other regulatory agencies such as public health, planning, occupational health and safety, waste management and dangerous goods authorities to ensure an integrated approach. For example, all development applications in the ACT are referred to the **EPA** and other relevant Government agencies for comment.

## 1.3 Activities addressed by this EPP

This **EPP** provides guidance on the procedures for assessing and remediating **contaminated land** resulting from activities that have caused or are likely to cause a significant risk of harm to human health and/or **material** or **serious environmental harm**.

**Land** contamination can arise from a range of commercial, industrial or agricultural land uses and activities, particularly when the land use has involved hazardous substances. These substances, if not properly managed, may threaten human health or the environment, or may affect the current or future land use.

Specific guidance relating to the management of these activities is contained in the General and other **EPPs**, for example, the Hazardous Materials and Water Quality **EPPs**.



## 1.4 What about other legislation?

This **EPP** is complemented by other environmental programs and legislation aimed at protecting human health and the environment.

More detailed information is available as follows:

<b>Activity</b>	<b>Act</b>	<b>Contact</b>
Handling and storage of dangerous goods	<i>Dangerous Substances Act 2004</i>	Office of Regulatory Services, WorkCover by calling Canberra Connect on 13 22 81
Waste management	<i>Waste Minimisation Act 2001</i>	ACT NOWaste by calling Canberra Connect on 13 22 81
Land use and design & siting	<i>Planning and Development Act 2007</i>	ACT Planning & Land Authority by calling Canberra Connect on 13 22 81
Protection of public health	<i>Public Health Act 1997</i>	ACT Health, Health Protection Service by calling Canberra Connect on 13 22 81
Working with hazardous materials	<i>Occupational Health and Safety Act 1989</i>	Office of Regulatory Services, WorkCover by calling Canberra Connect on 13 22 81
Water extraction, work in waterways	<i>Water Resources Act 2007</i>	Water Resources Unit by calling Canberra Connect on 13 22 81

## 1.5 Notes on reading this EPP

1. Where the **EPP** refers to a legal requirement, it will give the source of this requirement for reference. References to 'the Act' refer to the *Environment Protection Act 1997* (as amended) whilst 'the Regulation' refers to the *Environment Protection Regulation 2005* (as amended).
2. Wherever a term is used that is defined in the Act or Regulation, it appears in **bold**.
3. Copies of the documents cited in this **EPP** may be inspected at the following locations:
  - Environment Protection Authority  
Macarthur House  
12 Wattle St  
Lyneham ACT 2602
  - Department of the Environment, Climate Change, Energy and Water website: [www.environment.act.gov.au](http://www.environment.act.gov.au)

## 2. POLICY OBJECTIVES

The Objectives of this Contaminated Sites **EPP** are to provide information to the community and:

- to minimise the risk of adverse impacts of **land** contamination on the **environment** and human health within the ACT and elsewhere;
- to ensure that the approved land use (or uses) can be conducted without contamination presenting, or being likely to present a significant risk of harm to human health or a significant risk of **material** or **serious environmental harm**;
- to establish a process for assessing and, where appropriate, remediating **contaminated land** which presents, or is likely to present, a significant risk of harm to human health or a significant risk of **material** or **serious environmental harm**; and
- to ensure that the ACT meets its national obligations and plays its part in Australia meeting its international obligations under national and international agreements relating to **contaminated land**.

## 3. COMPLIANCE WITH THIS EPP

**EPPs** are not legally binding in themselves, they are statements of policy, guidelines and explanations of legal requirements. If something is legally required, this **EPP** refers to the source legal document (usually the Act or Regulation). **EPPs** have been developed to help people comply with the legal requirements of the Act and Regulation and the **general environmental duty**, which requires people to take practicable and reasonable steps to prevent or minimise **environmental harm** or **environmental nuisance**.

The role of this **EPP** and its relationship to other **EPPs**, the Act and the Regulation is explained in the General **EPP**.

## 4. ENFORCEMENT POLICY

The **EPA's** general approach to enforcement, consistent with the duty in Section 2 to administer the Act and give effect to its objects, will be:

- first, to seek to work in partnership with business and the community as “co-regulators” and educators;
- secondly, to warn;
- thirdly, to take non-criminal statutory action such as authorisation variations and issuing **environment protection orders**, together with on-the-spot fines as appropriate and requiring compulsory **environmental audits**; and
- finally, to consider suspension or cancellation of an authorisation, or referral to the Director of Public Prosecutions (DPP) for a decision on prosecution, or both, as appropriate.

*Note: This approach is adopted for guidance only and that serious cases may justify immediate application of a strict approach to enforcement.*

The **EPA** encourages a voluntary approach to **contaminated land** assessment and **remediation**. Generally, the **EPA** will use enforcement instruments available under the Act only where no resolution to the problem can be reached through the co-operative approach. In most cases **land contamination** is dealt with on a voluntary basis through the development application process.

Consistent with the **EPA's** approach to enforcement above, the **EPA** produces a range of educational information, including industry specific information and codes of practice to educate and inform the public of their responsibilities under the Act.

## 5. REVIEW OF EPA DECISIONS

A number of decisions made by the **EPA** are reviewable by the ACT Civil and Administrative Tribunal (ACAT). Under Section 136 of the Act, which specifies the reviewable decisions, an **eligible person** can make an application to the ACAT for review of an **EPA** decision.

## 6. DEFINITION AND MANAGEMENT OF CONTAMINATED LAND

### 6.1 What is contaminated land?

**Contaminated land** is land (including buildings and structures on land and surface and underground water) on and/or in which:

- a **substance** is present at a concentration which exceeds that normally present (i.e. commonly referred to as the background level); and the presence of which presents, or would be likely to present a risk of harm to human health and/or a risk of **environmental harm**.

However for the purposes of the Act, **land** would not be considered contaminated merely due to the presence of hazardous substances in, on or under the land. For example an approved landfill site authorised under the Act may have substances above those normally found (i.e. above background levels); however, if these substances are managed in an appropriate manner the site would not pose a significant risk of harm to human health or the **environment**.

**Land** may be **contaminated land** even if it became **contaminated** partly or entirely by the migration of contaminants into, onto or under the **land** from other **land**. For example petroleum products leaking from underground fuel storage tanks have been known in the past to cause **contamination** of the surrounding soils and groundwater. In some cases this **contamination** has been known to migrate through the soils and groundwater to an adjacent site.

For the precise definitions of terms '**contaminated**' and '**land**' please refer to the Act.

### 6.2 Managing contaminated land

Generally, the process of managing contaminated land can include any or all of the following:

- site assessment;
- site remediation; and
- audit of assessment and remediation.

## 7. LEGISLATIVE REQUIREMENTS

This section describes the legislative framework used to manage the human health and environmental risks associated with **contaminated land**.

### 7.1 Environmental duties

The Act creates environmental duties: a **general environmental duty** and the duty to notify the **EPA** of actual or threatened **environmental harm** (Sections 22 and 23 of the Act).

#### 7.1.1 General environmental duty

The **general environmental duty** requires all people to take practicable and reasonable steps to prevent or minimise any **environmental harm** or **environmental nuisance** their actions may cause. **Environmental harm** is defined as any impact that has the effect of degrading the **environment**. Therefore any activity leading to the creation of **contaminated land** (which will constitute a degrading of the **environment**) or any activity associated with the management of **contaminated land** that has a similar effect, is unlawful.

#### 7.1.2 Duty to notify actual or threatened environmental harm

The duty to notify actual or threatened **environmental harm** requires a person, when they realise their actions have caused or might cause **serious** or **material environmental harm** from pollution, to report the matter to the **EPA** as soon as possible. This requirement applies even if reporting an incident might involve admitting to something unlawful. To encourage compliance with this provision, Section 140 provides that this information is not admissible in evidence against the person in a prosecution under the Act.

### 7.2 Environmental management instruments

The Act creates a number of environmental management instruments. An explanation and general policies on the use of the instruments are described in Section 9 of the General **EPP**. The application of these instruments to **contaminated land** is described below.

#### 7.2.1 Environmental authorisations

An **environmental authorisation** is a form of licence to conduct an activity which has a significant potential to cause environmental harm (Part 8 of the Act), and sets out conditions under which the activity must be conducted. Although **environmental authorisations** are not provided for **contaminated land**, they are required for activities which have the potential to cause contamination. Examples of activities which have the potential to adversely impact on human health and the environment which require an environmental authorisation under the Act, are:

- commercial incineration of wastes (including medical, chemical and municipal wastes);
- commercial landfills;
- sewerage treatment works;
- petroleum storage;
- electricity generation;
- commercial use of chemicals; and
- preservation of timber.

### 7.2.2 Environmental protection agreements

An **environmental protection agreement** is a formal agreement under Part 7 of the Act between the **EPA** and a business. The **EPA** may request a person voluntarily conducting an assessment of **contaminated land** to enter into an **environmental protection agreement** under Section 38 of the Act. The terms of such an agreement would depend on the potential nature and extent of the contamination and the location of the site.

The **environmental protection agreement** would include the requirements for the assessment, **remediation** (if required) and independent audit to ensure the site is suitable for the intended and permitted uses. For example, there are specific guidelines dealing with the assessment and validation of sites containing above and below ground fuel storage tanks. The **EPA** endorses the use of the NSW EPA 1994, Guidelines for Assessing Service Station Sites for the assessment of sites containing fuel storage tanks. Information sheets containing the **EPA** requirements for sites containing above ground and underground storage tanks and the disposal of soil from these sites can also be found at [www.environment.act.gov.au](http://www.environment.act.gov.au).

### 7.2.3 Environment protection orders

An **environment protection order** is an instrument issued by the **EPA** under Section 125 of the Act, where the **EPA** is satisfied that the person has breached the Act or an **environmental authorisation** condition. The **EPA** may issue an **environment protection order** for land which is known to be **contaminated** where the land is still suitable for its current use (or another approved use) to permit the current use (or another approved use) pending compliance with certain conditions.

This option may be adopted where:

- the site would not present, or would not be likely to present, a significant risk of harm to human health or a significant risk of **material** or **serious environmental harm**; or
- the site would not present, or would not be likely to present, a significant risk of harm to human health or a significant risk of **material** or **serious environmental harm** while measures for its containment continue.

An example of this is where an assessment finds that an industrial site is **contaminated** with hydrocarbons in excess of levels suitable for certain sensitive land (eg residential) uses but below those suitable for its current use. In this case the conditions in an **environment protection order** may include that provided the current land use continues and measures employed to contain and monitor the **contamination** are in place the site would not pose a significant risk of harm to human health or the environment.

### 7.2.4 Other environmental management instruments

The other environmental management instruments, **environment improvement plan**, **emergency plans** and **financial assurances**, are unlikely to be used in managing **contaminated land**.

## 7.3 Specific contaminated sites legislative provisions

### 7.3.1 Duty to notify the existence of contaminated land

A lessee or occupier of **land** must notify (under Section 23A of the Act) the **EPA** in writing when:

- they become aware that the **land** is **contaminated**; and
- the **land** is **contaminated** in such a way as to present or be likely to present a significant risk of harm to human health and/or a significant risk of **material** or **serious environmental harm**.

A notice under this Section of the Act should specify the following details<sup>1</sup>:

- the location of the land (block, section and suburb or street address);
- the activity that has **contaminated** the **land**;
- the nature of the contamination;
- the nature of the risk ; and
- any other matter the person making the notification believes is relevant to the contamination.

Examples of indicators of contamination or harm may include<sup>2</sup>:

- plausible illness or health impairment of occupiers from exposure to **contaminated land**;
- the presence of phase separated hydrocarbons in groundwater at a site;
- evidence of off-site migration of contaminants which may impact sensitive receptors such as adjacent residential premises, groundwater, waterways, wetlands etc;
- on-site loss of stored chemicals or dangerous goods (for example, fuel losses from underground storage tanks);
- visible signs of impacts on flora and fauna (for example dead birds on or near the site, distressed or dead plant growth etc.);
- unusual odours emanating from the soils on site;
- the visual presence of chemicals on or in the soils or surface waters on or adjacent to the site;
- odours or visual contamination of the soils in service trenches either on or off-site; and
- liquid or solid chemicals or chemical wastes found during excavations on site.

This is not an exhaustive list and there may be additional indicators of harm evident.

The Act provides for penalties for non-compliance with this duty to notify.

The notification should be completed using the form provided in Appendix D of this **EPP**.

*Note: The information provided in the notice is not admissible as evidence in any proceedings against the person for an offence under the Act. However this does not prevent the **EPA** from issuing an order to assess or remediate **contaminated land**.*

### 7.3.2 Assessment, remediation and costs

Division 9.5 of the Act outlines provisions allowing the **EPA** to order an assessment and/or **remediation** of land, notification of orders for assessment or **remediation** and choice of appropriate person. See Section 8.1, 8.3 and 8.4 for further information on assessment and **remediation** orders.

<sup>1</sup> Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report, NSW EPA 1999

<sup>2</sup> Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report, NSW EPA 1999

Division 9.6 of the Act outlines provisions relating to the recovery of costs associated with assessment or **remediation**. See Section 8.6 for further information.

### 7.3.2.1 Assessment of harm

The EPA will consider the following matters in assessing whether **land** is **contaminated** with one or more substances in such a way as to present, or be likely to present, a significant risk of harm to human health or a significant risk of **material** or **serious environmental harm**, under Section 91B of the Act:

- whether the contamination of the **land** has already caused harm;
- whether the substances are toxic, persistent or bioaccumulative or are present in large quantities or high concentrations or occur in combinations;
- whether there are routes by which the substance may proceed from the source of the **contamination** to a human being or other aspects of the environment;
- whether the uses to which the **land** and **land** adjoining to it are currently being put are such as to increase the risk of harm;
- whether the use of the **land** and the **land** adjoining it, being a use permitted by the lease to which the **land** is subject, is such as to increase the risk of harm;
- whether the substances have migrated or are likely to migrate from the **land** (whether because of the nature of the substances or the nature of the **land**);
- the contents of this **EPP** (and any other **EPP** relating to contamination and **remediation**); and
- any relevant National Environment Protection Measures (NEPM), in particular the Assessment of Site Contamination NEPM.

For specific examples of activities and concentrations of hazardous substances in soils and/or water, which would be considered to present a significant risk of harm to human health, see the 1999 NSW EPA *Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report*, which is available from the website, [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au).

The General **EPP** also provides guidance on whether **material** or **serious environmental harm** has occurred. For example if the remedial action required to address contamination at a site exceeds \$5,000, the pollution is deemed to have caused **material environmental harm**.

### 7.3.2.2 Appropriate person

Consistent with the **polluter pays** principle the Act introduces a concept of an **appropriate person** (Section 91I) to rank the responsibility for **contaminated land**.

The **appropriate person(s)** is chosen in the following order:

- the person(s) who was responsible for **contamination** of the **land**; or, if not practicable:
- a lessee of the **land** (whether or not the person had any responsibility for such contamination); or, if not practicable:
- a **notional lessee** of the **land** (whether or not the person had any responsibility for such contamination).

It is possible that an **appropriate person** cannot be chosen because the person(s) cannot be identified or located, or the person(s) does not have adequate resources to remediate the contamination.

Where an **appropriate person** cannot be identified, the ACT Government in the case of Territory land and the Commonwealth Government in the case of National land shall take the necessary action to remediate the land.

## 8. SITE ASSESSMENT AND REMEDIATION

### 8.1 When is a site assessment required?

A site assessment would normally be required where there is a change to the lease purpose, or **land** use where the past use of the **land** may have caused contamination. See Appendix A for a list of specific industries and **land** uses that have previously been associated with **land contamination**.

The exact level of risk of site contamination associated with any particular industrial, commercial or agricultural practice will depend upon the standard of management, including the past regulatory framework and safety procedures employed at individual sites<sup>3</sup>.

In the ACT an assessment is usually triggered by a change in lease purpose or **land** use where potentially contaminating activities have occurred at a site. In these cases the assessment is undertaken voluntarily by the lessee or developer who will benefit from the redevelopment of the site, an example being the redevelopment of disused service station sites throughout the ACT. Site specific requirements are included in the development approval granted by the ACT Planning and Land Authority regarding the assessment, **remediation** (if required) and independent audit of a site to ensure it is suitable for the intended and permitted uses.

An assessment can be carried out voluntarily; this is the preferred option by the **EPA**. A voluntary assessment may require an environmental audit depending upon the complexity of the issue. The **EPA** can also order an assessment to be carried out by the appropriate person (under Section 91C of the Act) if required. An environmental audit must be carried out on an assessment ordered by the **EPA**. Any site subject to an assessment order for contamination will be placed on the **Register** of contaminated sites (see Section 11.1 for further information).

Where a voluntary assessment is proposed, the person may also be asked to enter into an **environmental protection agreement** with the **EPA** under Section 38 of the Act. The terms of such an agreement would depend on the potential nature and extent of the contamination and the location of the site.

An assessment may also be required where the **EPA**:

- has been notified of the existence of **contaminated land** (under Section 23A of the Act); or
- has reasonable grounds for believing that **land** is **contaminated** and the **contamination** presents, or would be likely to present a significant risk of harm to human health and/or a significant risk of **material** or **serious environmental harm**.

In these cases the **EPA** in the first instance would request that the **appropriate person** enter into an **environmental protection agreement** to undertake a voluntary assessment of the land. If agreement cannot be reached the **EPA** may (under Section 91C of the Act):

- order the appropriate person to conduct an assessment of the **land** contamination; or
- conduct such assessment itself.

<sup>3</sup> Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, ANZECC & NHMRC 1992



The method of choosing an **appropriate person** is explained above in Section 7.3.2.2.

Refer to section 8.4 for further information regarding the content of an order to assess **land** contamination.

The Act provides for penalties for non-compliance with the requirements to conduct an assessment and to commission an **environmental audit** of the assessment.

In all cases the person proposing to undertake an assessment of contaminated **land** should discuss the proposal with a suitably qualified environmental consultant familiar with contaminated site assessments. If a change in lease purpose or land use for the site is proposed then the proposal should also be discussed with the **EPA** and the ACT Planning and Land Authority.

A national approach to the assessment of **contaminated land** has been developed. The National Environment Protection (Assessment of Site Contamination) Measure (the Contaminated Sites NEPM) made by the National Environment Protection Council under the *National Environment Protection Council Act 1994* applies in the ACT.

*Note: If an assessment finds that the **land** is **contaminated** in such a way as to present or be likely to present a significant risk of harm to human health and/or a significant risk of **material** or **serious environmental harm**, the lessee or occupier is required to notify the **EPA**. This duty to notify is discussed in more detail in section 7.3.1 of this **EPP**.*

*Note: The removal of fuel storage tanks from a site constitutes development under the Planning and Development Act 2007 and development approval is required for the works. Approval for the method of abandonment is also required from Office of Regulatory Services (ORS) WorkCover. Information sheets on the decommissioning, assessment and validation of above ground and underground fuel storage facilities can be found at [www.environment.act.gov.au](http://www.environment.act.gov.au). Further information can also be found in the *Environmental Guidelines for Service Station Sites and Hydrocarbon Storage (EPA 2009)*.*

## 8.2 Who can conduct an assessment?

Specialist environmental consulting firms drawing on a number of disciplines can undertake environmental assessments of contaminated sites. The consultant must have a range of professional competencies consistent with the requirements of Schedule B(10) of the Contaminated Sites NEPM and be able to recognise the need for supporting professional advice beyond their expertise when assessing contamination and its effects on human health and the **environment**.

It is accepted that one person will not have all the knowledge required to assess a complex site, therefore their access to relevant expertise in other fields (e.g. toxicology, hydrology etc.) is critical to a thorough site assessment. The extent to which these competencies apply depends on the complexity of the contamination issues and the particular site.

## 8.3 When is remediation of contaminated land required?

**Remediation** is required where an assessment indicates there is a significant risk of harm to human health or significant risk of **material** or **serious environmental harm**.

**Remediation** of **contaminated land** can be undertaken voluntarily, which is the preferred option of the **EPA**. Generally the **EPA** will take a cautious approach and require an **environmental audit** on voluntary remediation. The **EPA** can also order **remediation** be carried out by the **appropriate person** (under Section 91D of the Act). An **environmental audit** must be carried out on **remediation** ordered by the **EPA**. Any site subject to a remediation order will be placed upon the contaminated sites **Register**.

**Remediation** in relation to **contaminated land** includes:

- preparing a long-term management plan;
- removing, dispersing, destroying, reducing, mitigating or containing the **contamination**; and
- eliminating or reducing any hazard arising from the **contamination**, including restricting access to the **land**.

An example of this was the remediation of sheep dip sites in the ACT in the 1990s that had been redeveloped for residential housing. The assessment determined there was a significant risk to human health from elevated levels of arsenic in the soils, and **remediation** was required to protect human health and the **environment**.

Due to the complex nature of **contaminated land** remediation, remedial actions are developed on a site-specific basis utilising best practice methodology and remedial techniques. The preferred order of options for site **remediation** and management are:

- on-site treatment of the soil so that the contaminant is either destroyed or the associated hazard is reduced to an acceptable level; and
- off-site treatment of excavated soils which, depending on the residual levels of contamination in the treated material, is then returned to site, removed to an **EPA** approved site for beneficial re-use or removed as waste to an **EPA** approved landfill.

In the ACT the **EPA** manages an approval process for controlling the beneficial reuse and disposal of **contaminated** soil. (See Information Sheet No. 4)

Should **remediation** be proposed in-situ the approval of the **EPA** must be sought. For example, if a landfarm is proposed to treat hydrocarbon **contaminated** soils, a sediment and erosion control plan must be submitted to the **EPA** for endorsement prior to works commencing.

Where the **EPA** has reasonable grounds for believing that the **land** to which an audit (Section 91C of the Act) relates is **contaminated** and this **contamination** presents, or would be likely to present, a significant risk of harm to human health and/or a significant risk of **material** or **serious environmental harm** the **EPA** may (under Section 91D of the Act):

- order the **appropriate person** to remediate the **land** contamination; or
- conduct the **remediation** itself.

The method of choosing an **appropriate person** is explained in Section 7.3.2.2.

Refer to Section 8.4 for further information regarding the content of an order to remediate **land** contamination.

Actions to remediate a **contaminated** site may range from managing the effects without destroying or removing the contaminants to a complete clean-up of the site. Examples of actions to manage the effect of contamination are fencing off areas, sealing areas with concrete, covering with well-maintained grass, or changing **land** use at the site to a less sensitive use.

If the preferred option is clean-up, there are two broad approaches to determining clean-up standards. The first is to decontaminate the site, by bringing the level of **contamination** back to background levels. This approach preserves the multifunctionality of the **land**, rendering the site suitable for any future **land** use.

The second approach is to set the standard of clean-up no higher than necessary to be compatible with the intended or permitted uses of the site. This fit-for-use approach recognises that resources are always limited; and in some circumstances it may not be necessary or desirable for economic, social or environmental reasons to have the site suitable for any use. For example, if the site were in an industrial area, there would be no benefit in cleaning the site to a level suitable for residential housing.

The Act provides for penalties for non-compliance with the requirements to conduct **remediation** and to commission an **environmental audit** of such **remediation**.

The principle guideline for the remediation and management of contaminated sites in the ACT is the *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*, Australian and New Zealand Environment and Conservation Council and the National Health and Medical Research Council, January 1992 (ANZECC & NHMRC).

## 8.4 Orders for assessment or remediation of contaminated land

An order to assess or remediate **land** contamination will be issued in writing and specify:

- the person to whom it relates;
- the **land** to which it relates;
- the period within which the assessment or **remediation** is to be conducted;
- the nature of the actual or possible contamination;
- the action that the person subject to the order must take in assessing or remediating and reporting; and
- any other requirements the **EPA** considers appropriate having regard to the nature and extent of the contamination and the physical attributes of the **land**.

The actions referred to in the fifth point of the previous paragraph may include:

- serving a notice of the order on the occupiers of **land** access to which is necessary for the person to carry out the assessment or **remediation** and, if an occupier is not the lessee of that **land**, serving a notice on the lessee (this might be a case where the order is being served on a polluter who is not the lessee of the **land**);
- making progress reports on the assessment or **remediation** to the **EPA**; and/or
- advertising and conducting meetings to give progress reports to the public, and to receive public comment, on the assessment or **remediation**.

A person to whom an order to assess or remediate the **land** has been served must:

- conduct, within the time period specified in the order, the assessment or **remediation** in accordance with the prescribed standards and procedures for carrying out the assessment or **remediation**, including standards and procedures specified in a relevant National Environment Protection Measure and in accordance with the terms of the order;
- commission an environmental audit of the assessment or **remediation**; and
- provide to the **EPA** within 10 working days from the date of the order the name of the auditor who will conduct an environmental audit of the assessment or remediation (such an audit can only be conducted by an auditor accredited for this purpose under Section 75 of the Act).

## 8.5 Notification of site assessment or remediation (including access to relevant documents)

Section 91E and Section 91F of the Act determine notification requirements. They also set out the mechanism through which certain documents related to a specific site are made available. The **EPA** provides written notification to the occupier and, if the occupier is not the lessee, to the lessee of any **land** adjacent to the **land** in relation to which an order to assess or to remediate has been issued or which is being assessed or remediated by the **EPA**.

The intention of Subsection 91E(2)(a) and Subsection 91E(2)(b) of the Act are that such notice will:

- state that assessment or **remediation** is taking place;
- invite the person to whom the notice is given to make written submission to the **EPA** within 21 days from the day after the date of the notice; and
- state the places where a copy of any of the following documents (if available) may be inspected:
  - a report of the outcome of the assessment;
  - a progress report on the assessment;
  - an audit of the assessment;
  - a report of the outcome of the **remediation**;
  - a progress report on the **remediation**; and
  - an audit of the **remediation**.

The documents specified above are available free of charge from the **EPA**.

## 8.6 Cost of assessment and remediation – who is financially liable?

Where the **EPA** has conducted an assessment or **remediation** of **contaminated land** itself, the **EPA** may (under Section 91K of the Act) recover costs of such assessment or **remediation** from an **appropriate person**.

If the **EPA** undertook assessment or **remediation** of **contaminated land**, in lieu of this being done by an insolvent lessee, the **EPA** may (under Section 91L of the Act) recover costs of such assessment or **remediation** in priority to other parties. This provision only applies in the very limited circumstances where a liquidator or trustee in bankruptcy appointed under Commonwealth law has disclaimed the **land** as onerous property (i.e. where the liquidator or trustee believes the **land** has a negative worth).

Where the **EPA** served an order to assess or remediate **contaminated land** on a person and the person has incurred costs as a result of this action that person may (under Section 91M of the Act) recover from another responsible party the whole or a portion of those costs through the courts. This provision applies only if the person is either not responsible or only partially responsible for the contamination. Section 91N of the Act identifies those persons responsible for the contamination in any proceedings under Section 91M and creates a rebuttable presumption that a previous occupant of **land**, who carried out activities generating the substances that have caused contamination of the **land**, is responsible for the contamination.

Lessees or occupiers of the **land** may recover (under Section 91O of the Act) loss and damages from a person conducting assessment or **remediation** work on their **land**. This situation may arise where the lessee or occupier has consented to a person (typically a former lessee or occupier who was the polluter) entering the **land** to comply with an order to assess or remediate.

The **EPA** may apply (under Section 91P of the Act) to the Supreme Court for an order that a person who was a director of a wound-up body corporate be made personally liable for the costs of assessment or **remediation**. The Court may make such an order if satisfied that the company failed to comply with an order to assess or remediate, or only partially completed the order, or was wound up to avoid compliance.

The **EPA** may apply (under Section 91Q of the Act) to the Supreme Court for an order that a person who was a director of a body corporate be made personally liable for the costs of assessment or **remediation**. The Court may make such an order if satisfied that the body corporate of which the person was a director disposed of the **land** to avoid having to comply with an assessment or **remediation** order in respect of the **land**.

Under Section 91R of the Act the **EPA** may pursue a corporation through the Court, where a holding company of the corporation is wound up to avoid costs of complying with an Order to assess or remediate.

## 9. ENVIRONMENTAL AUDITS

### 9.1 What is a site audit?

A site audit of **contaminated land** is an independent review of an assessment or remediation by an accredited **contaminated land** auditor.

An audit can be conducted for the purpose of determining any one or more of the following matters<sup>4</sup>:

- the nature and extent of any **contamination** of the **land**;
- the nature and extent of the assessment or **remediation**;
- what assessment or **remediation** remains necessary before the **land** is suitable for any specified use or range of uses; and
- the comprehensiveness of a remedial action plan for **contaminated land**.

On completion of an audit, the auditor is required to issue a site audit statement (or certificate of environment audit), refer to Appendix E. Prior to issuing a site audit statement, the auditor must complete a site audit report which summarises the basis and rationale for the conclusions in the site audit statement.

*Note: A draft site audit statement and site audit report must be submitted to the **EPA** for comment prior to the submission of the final document.*

The main purpose of an audit is to determine whether a site is suitable for a particular use or range of uses.

<sup>4</sup> Guidelines for the NSW Site Auditor Scheme, NSW DEC, 2006

## 9.2 When is a site audit required?

An independent audit is required if the **EPA** has issued an order to assess (under Section 91C of the Act) or remediate (under Section 91D of the Act) **contaminated land**.

The **EPA** can also require a person to undertake an audit under Subsection 76(1)(a) of the Act. This may occur where the **EPA** wishes to verify a voluntary assessment or **remediation** of **contaminated land**.

An audit is usually required when a more sensitive **land** use is proposed for a site where past activities may have caused **land contamination**. For example where a disused sewerage treatment works is to be redeveloped for residential or commercial purposes. Sewerage treatment works have been associated in the past with significant **contamination** of soils and groundwater, which may pose a significant risk of harm to human health or the **environment**. In this case an assessment would be required, followed by an independent audit to certify that the site is suitable for the intended and permitted uses.

Generally the **EPA** will take a precautionary approach where past activities at a site may have resulted in **land contamination**, and will require that a site audit be conducted to ensure the accuracy of any assessment or **remediation**. The resultant audit statement serves as an assurance to the actual or prospective lessees/occupiers of the site, including Government and the community that the site is suitable for a particular land use or range of uses.

## 9.3 Who can undertake a site audit?

The *Contaminated Land Management Act 1997* (NSW) and *Environment Protection Act 1970* (Vic) have provisions for accrediting contaminated land Auditors. The Auditors accredited under these schemes are being used in the ACT and are recognised under Section 75 of the Act as suitable for the purposes of undertaking environmental audits of **contaminated land**. Only these Auditors can undertake statutory audits under this Act.

The list of accredited Auditors is available for inspection at:

- Environment Protection Authority  
Macarthur House  
12 Wattle Street  
Lyneham ACT 2602
- or can be viewed on the Environment Protection Authority Victoria and New South Wales Department of Environment and Climate Change web sites at:  
EPA Victoria: <http://www.epa.vic.gov.au>  
NSW DECC: <http://www.environment.nsw.gov.au>
- Auditors accredited under similar schemes by other States and Territories would be eligible to conduct audits if such schemes are established.

By virtue of Subsection 91C(4)(b) and Subsection 91D(4)(b) and Section 75 of the Act, an auditor conducting an audit of an assessment or **remediation** of **contaminated land** must be approved by the **EPA**.

Subsection 91C(7) and Subsection 91D(7) stipulate that the **EPA** will not approve an auditor for the purpose of Section 91C and Section 91D of the Act unless the auditor meets the prescribed criteria. As at this time there are no prescribed criteria for that purpose, it is sufficient if auditors meet the criteria specified in Section 75 of the Act (i.e. accredited as a contaminated land auditor by another State or Territory).

In accordance with Subsection 91C(5) and Subsection 91D(5) an auditor preparing an audit of an assessment or **remediation** must consider:

- the provisions of this Act and Regulations;
- the permitted and approved uses of the **land** to which the assessment relates (Note it is extremely important that the auditor discuss the certification criteria for a particular site with the **EPA** and ACT planning authorities prior to issuing the audit statement to ensure compatibility with land use policy and legislative requirements in the ACT);
- the degree or extent of **contamination**;
- any relevant **EPPs**; and
- any relevant NEPMs.

Under Subsection 91C(4)(b) and Subsection 91D(4)(b) of the Act a person on whom an order to assess or remediate has been served must also commission an audit of the assessment or **remediation**. Additionally, under Section 76 of the Act the **EPA** may require an **environmental audit** of **contaminated land**. This Section may be invoked where an assessment or **remediation** is not automatically followed by an audit, such as a voluntary assessment and/or **remediation**.

Section 76A of the Act requires an auditor to provide to the **EPA**, within 7 days of receiving a request under this or another Act (for example, conditions of approval in a Notice of Decision under the *Planning and Development Act 2007*) to carry out an audit, the following information:

- the name of the person making the request;
- the location of the land to which the audit relates; and
- an estimation of the time within which the audit will be completed.

The notification should be completed using the form provided at Appendix B in this **EPP**.

Section 76B of the Act requires the auditor to provide to the **EPA**, within 60 working days after the end of each financial year, a report about each audit of **contaminated land** carried out in the ACT under this, or any other Act. The report must be provided in a form approved by the **EPA** (see Appendix C).

Under Section 91H the **EPA** may, by notice in writing, require an auditor to provide further information relating to a specific assessment or **remediation**. This may be the case where the **EPA** wishes to verify the findings of the audit or where more information is required to satisfy community concerns.

Under Subsection 76(3) of the Act an auditor shall not carry out an audit for the purposes Subsection 76(1) of this Act if he or she was involved in the assessment or remediation for a particular site.

*Note: Any condition applying to a person accredited as a **contaminated land** auditor by another State or Territory applies to that person when conducting an audit under this Act or another Act of the Territory.*



## 10. CONTINUING USE OF CONTAMINATED LAND

Where the **contaminated land** is still suitable for its current use (or another approved use) the **EPA** may issue on the occupier of the **land**, and if the occupier is not the lessee, on the lessee (under Section 125 of the Act) an **Environment Protection Order** permitting the current use (or another approved use) pending compliance with certain conditions.

This option may be adopted where:

- the site would not present, or would not be likely to present, a significant risk of harm to human health or a significant risk of **material** or **serious environmental harm**; or
- the site would not present, or would not be likely to present, a significant risk of harm to human health or a significant risk of **material** or **serious environmental harm** while measures for its containment continue.

An example of this is where an assessment finds that an industrial site is **contaminated** with hydrocarbons in excess of levels suitable for other uses (e.g. residential) but below those suitable for its current use. In this case the conditions in an **environment protection order** may include that provided the current land use continues and measures employed to contain and monitor the **contamination** are in place the site would not pose a significant risk of harm to human health or the **environment**.

## 11. CONTAMINATED SITES REGISTER AND DATABASE

### 11.1 Register of contaminated sites

Under Section 21A of the Act the **EPA** is required to keep a **register of contaminated sites**.

The following will be included on the **register**:

- an order under Subsection 91C(1) of the Act to assess whether **land** is **contaminated**;
- an order under Subsection 91D(1) of the Act to remediate **contaminated land**; or
- an **environment protection order** under Subsection 125(2) or Subsection 125(3) of the Act to manage **contaminated land**.

The **EPA** will remove the site from the **register** (as permitted under Subsection 21A(5) of the Act) where the actions required under the order to assess if the **land** is **contaminated** have been:

- completed; and
- audited by an accredited auditor; and
- as a result of an assessment, the land is found not to be contaminated.

In any other case the site entered to the **register** will remain on the **register** in perpetuity. The **register** will carry appropriate entries to show what assessments and orders have been made or issued and whether any orders have been complied with or revoked.

The **EPA** will advertise in the ACT Legislation Register and The Canberra Times (within 10 working days) when a record is entered to, or removed from, the **register**.



The EPA will also provide written notification of an entry or removal of an entry in the **register** to the relevant planning authority. For all land in the ACT notification is to the ACT Planning Land Authority, and for land in a **Designated Area**, to the National Capital Authority.

Information on sites included in the **register** can be obtained from:

- Environment Protection Authority  
Macarthur House  
12 Wattle St  
Lyneham ACT 2602  
Phone: 13 22 81  
Fax: (02) 6207 6084

## 11.2 Contaminated sites management database and GIS

Environment Protection is responsible for recording information held by the ACT Government on **contaminated** sites in the ACT.

Environment Protection maintains two data systems for recording information on sites which are known to be, have been or have the potential to be **contaminated**. These data systems are the Contaminated Sites Management Database (CSMD) and the Contaminated Sites Geographic Information System (GIS).

The CSMD is used as an electronic means of recording correspondence on the contamination status of sites in the ACT whilst the GIS is used to spatially record information on known or potentially contaminated sites in the ACT. The CSMD and the GIS also contain records of potential **contaminated** sites which do not present a significant risk of harm while the current land use continues (e.g. old municipal landfill sites or rural sheep dip sites).

## 11.3 Contaminated land search

Information on the sites recorded in the CSMD and GIS systems is generally available to the public through a contaminated land search. In some cases the information is the intellectual property of the lessee and is only available with the written consent of the lessee. Consent is typically given as part of a conveyancing process (i.e. similar to a building file search).

Information on whether a site is included in the CSMD and/or the GIS can be obtained from:

- Environment Protection Authority  
Macarthur House  
12 Wattle St  
Lyneham ACT 2602  
Phone: 13 22 81  
Fax: (02) 6207 6084

All contaminated land search requests should be in writing and include:

- name and contact details of the person making the request;
- nature of the request (land purchase, due diligence, environmental reports, etc.);
- site location, including block, section and suburb; and
- street address (if known).

A Contaminated Land Search Form can be found on the Department of the Environment, Climate Change, Energy and Water website at [www.environment.act.gov.au](http://www.environment.act.gov.au)

## 11.4 Conveyancing or due diligence enquiries

To facilitate access to information contained on both the **register of contaminated sites** and GIS for **land** purchases in the ACT, a query is included in the Lease Conveyancing Enquiry administered by ACT Planning and Land Authority. This query flags whether a site is on the **register** or the GIS and provides contact details where further information is available. The ACT Planning and Land Authority can be contacted by calling Canberra Connect on 13 22 81.

When considering the purchase of land or the transfer of a land title, due diligence should be exercised. Any site flagged by the query should be investigated and all **EPA** records should be checked for information in relation to the particular land title through a contaminated land search. The **EPA** can be contacted by calling Canberra Connect on 13 22 81 for further information.

## 12. GUIDELINES

There are numerous guidelines, standards and general reference documents available dealing with **contaminated land** assessment and **remediation**. Some of these are of a general nature while others refer to specific types of activities known to cause **contamination**. For example the NSW EPA 1994 *Guidelines for Assessing Service Station Sites*.

Currently, there are no guidelines, standards or procedures, other than the Contaminated Sites NEPM, prescribed under the Act. Nonetheless, the guidelines and references listed below constitute a good reference source and should be used, as appropriate, for **contaminated land** assessment or **remediation**. If there are inconsistencies between any of these guidelines and the Act, the Regulation, the ANZECC & NHMRC 1992 *Guidelines for the Assessment and Management of Contaminated Sites* or the Contaminated Sites NEPM, the latter prevails.

Note the Contaminated Sites NEPM only deals with the assessment of **contaminated** sites and does not provide guidance on the **remediation** and management of **contaminated land**. The Contaminated Sites NEPM was developed to provide a nationally consistent approach to the assessment of contaminated sites. The NEPM supplements the ANZECC & NHMRC 1992 *Guidelines for the Assessment and Management of Contaminated Sites*, which is the principal guideline for the management of contaminated sites in Australia.

### **ACT EPA publications**

- ACT's Environmental Standards: Assessment and Classification of Liquid and Non-liquids Wastes, June 2000
- Information Sheet No.1 - Contaminated Sites - Decommissioning, Assessment and Audit of Sites Containing Above Ground or Underground Fuel Storage Tanks, May 2009
- Information Sheet No.2 - Contaminated Sites - Requirements for the Assessment and Validation of Former Service Station Sites in the ACT, May 2009
- Information Sheet No.3 - Contaminated Sites - Requirements for the Assessment and Validation of Sites Containing Above Ground or Underground Fuel Storage Tanks in the ACT, May 2009
- Information Sheet No.4 - Contaminated Sites - Requirements for Re-use and Disposal of Contaminated Soil, May 2009
- Environmental Guidelines for Service Station Sites and Hydrocarbon Storage, May 2009
- Environmental Protection Guidelines for Construction and Land Development in the ACT, August 2007
- General Environment Protection Policy, August 2007
- Water Quality Environment Protection Policy, April 2008
- Hazardous Materials Environment Protection Policy, December 2000.

### **ANZECC, ARMCANZ, enHealth and NHMRC publications**

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand, Paper No. 4, October 2000
- Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, Australian and New Zealand Environment and Conservation Council and National Health and Medical Research Council, January 1992
- Financial Liability for Contaminated Sites Remediation: A Position Paper, Australian and New Zealand Environment and Conservation Council, 1994
- Guidelines for Groundwater Protection in Australia, Agriculture and Resources Management Council of Australia and New Zealand & Australian and New Zealand Environment and Conservation Council, 1995
- National Water Quality Management Strategy, Australian Drinking Water Guidelines 6, 2004, National Health and Medical Research Council, Natural Resources Management Ministerial Council, 2004
- Polychlorinated Biphenyls Management Plan, Australian and New Zealand Environment and Conservation Council, Canberra, April 2003
- Minimum Construction Requirements for Water Bores in Australia, Agriculture and Resources Management Council of Australia and New Zealand, Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand 1997
- Guidelines for the Assessment of On-Site Containment of Contaminated Soil, Australian and New Zealand Environment and Conservation Council 1999
- Management of Asbestos in the Non-occupational Environment, enHealth 2005

### **NSW DECC publications**

- Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report, NSW EPA, 1999
- Guidelines for the NSW Site Auditor Scheme, NSW DEC, 2006
- Guidelines for Assessing Service Station Sites, NSW EPA, 1994
- Sampling Design Guidelines, NSW EPA, 1995
- Guidelines for Consultants Reporting on Contaminated Land, NSW EPA, 1997
- Guidelines for the Vertical Mixing of Soil on Former Broad-Acre Agricultural Land, NSW EPA, 1995
- Guideline for Assessing Former Orchards and Market Gardens, NSW EPA, 2005

### **EPA Victoria publications**

- Groundwater Sampling Guidelines: Publication 669, EPA Victoria, 2000
- Hydrogeological Assessment (Groundwater Quality) Guidelines, Publication 668, EPA Victoria, 2006
- A guide to the Sampling and Analysis of Waters, Wastewaters, Soils and Wastes, 7th Edition, Publication 441.7, EPA Victoria, 2000
- Classification of Wastes, Publication 448.3, EPA Victoria, 2007

### **Australian Standards**

- AS 4482.1 : 2005 Guide to the investigation and sampling of sites with potentially contaminated soil - Non-volatile and semi-volatile compounds
- AS 4361.2-1998 : Guide to lead paint management - Residential and commercial buildings
- AS/NZS 5667.11:1998 : Water quality - Sampling - Guidance on sampling of groundwaters
- AS/NZS 5667.1:1998 : Water quality - Sampling - Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples

### **Other publications**

- Remediation of Contaminated Soil and Groundwater: Proposals for Criteria and Priority Setting, (The Revised Dutch Guidelines), Swartjes, F. A., & van den Berg, R., 1993

## **13. REFERENCES**

### **National Environmental Health Forum monographs**

Imray, P & Langly, A. (1996) Health-Based Soil Investigation Levels. National Environmental Health Forum Monographs, Soil Series No.1, SA Health Commission, Adelaide.

Taylor, R & Langly, A. (1996). Exposure Scenarios and Exposure Settings. National Environmental Health Forum Monographs, Soil Series No.2, SA Health Commission, Adelaide.

Lock, W. H. Composite Sampling. National Environmental Health Forum Monographs, Soil Series No.3, SA Health Commission, Adelaide.

## South Australian Health Commission contaminated sites monograph series

El Saadi O. & Langley A., eds (1991). The Health Risk Assessment and Management of Contaminated Sites: Workshop Proceedings of the National Workshop on the Health Risk Assessment and Management of Contaminated Sites, SA Health Commission, Adelaide.

Langley A. & Van Alphen M., eds (1993). The Health Risk Assessment and Management of Contaminated Sites: Proceedings of the Second National Workshop on the Health Risk Assessment and Management of Contaminated Sites. Contaminated Sites Monograph Series No.2, SA Health Commission, Adelaide.

Edwards, J. W., Van Alphen, M & Langley, A (1994). Identification and Assessment of Contaminated land- Improving Site History Appraisal. Contaminated Sites Monograph series, No.3, SA Health Commission, Adelaide.

Olszowy, H., Torr, P., Imray, P. Trace Element Concentrations in Soils from Rural and Urban Areas of Australia, Contaminated Sites Monograph Series No.4, 1995, SA Health Commission, Adelaide.

Langley A., Markey B., & Hill H., eds (1996). The Health Risk Assessment and Management of Contaminated Sites: Proceedings of the Third National Workshop on the Health Risk Assessment and Management of Contaminated Sites. Contaminated Sites Monograph Series, No. 5, SA Health Commission, Adelaide.

## 14. GLOSSARY OF TERMS

The definitions of the terms listed in this glossary are provided to assist in reading this EPP.

<i>Term</i>	<i>Definition</i>
Contaminated Sites NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999 made by the National Environment Protection Council on 10 December 1999.
EPA	Environment Protection Authority - a statutory office established under Part II of the Act to administer the Act
<b>Environmental Protection Agreement</b>	a written agreement with the EPA where the person is, or, proposes to conduct an activity listed in Schedule 1 B of the Act or for the purposes of giving effect to the objects of this Act
<b>Environment Protection Order</b>	an instrument, issued by the EPA where the EPA is satisfied that a person has breached the Act or an authorisation condition, specifying that certain actions be or not be taken
<b>EPP</b>	Environment Protection Policy
National Environment Protection Council	a council of Commonwealth, State and Territory Ministers established under complementary legislation (the <i>National Environment Protection Act 1994</i> in the ACT) to make and monitor the implementation of NEPMs
National Environment Protection Measure [NEPM]	A form of delegated legislation under the <i>National Environment Protection Council Act 1994</i> .

## APPENDICES

### APPENDIX A – INDUSTRIES AND LAND USES ASSOCIATED WITH CONTAMINATED LAND

Specific industries and **land** uses that previously have been associated with **land contamination**<sup>5</sup> include:

- acid/alkali plant and formulation;
- agricultural/horticultural activities (orchards, vineyards etc.);
- airports;
- asbestos production and disposal;
- asphalt plants;
- battery manufacture, recycling;
- brickworks;
- cement works;
- ceramic works;
- chemical manufacture, formulation and storage;
- concrete batch plants;
- defence establishments and training areas (for example field firing ranges);
- drum re-conditioning works;
- dry cleaning establishments;
- electroplating and heat treatment premises;
- engine works;
- explosives production and storage;
- field firing ranges (for example gun, pistol and rifle clubs);
- gas works;
- iron and steel works;
- landfill sites;
- metal treatment;
- mining and extractive industries;
- oil production and storage (including fuel depots);
- paint formulation and manufacture;
- pest controllers being areas where pest control chemicals are stored or vehicles and tanks used in connection with pest control are washed;
- pesticide manufacture and formulation;
- power stations;
- printers;
- railway yards;

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<sup>5</sup> *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*, ANZECC & NHMRC, 1992

- scrap yards;
- service stations
- sewerage treatment works;
- sheep and cattle dips;
- smelting and refining;
- tanning and associated trades;
- vehicle maintenance and brake testing;
- waste storage, treatment or disposal (for example, incinerators); and
- wood preservation.

This is not an exhaustive list and other activities where hazardous substances were used may have resulted in **contamination** of the **land**. A good reference is the South Australian Health Commission, Adelaide Contaminated Sites Monograph series, No.3, *Identification and Assessment of Contaminated land: Improving Site History Appraisal*, Edwards J, Van Alphen M, Langley A (1994).

## APPENDIX B – STATUTORY SITE AUDIT NOTIFICATION FORM



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### ENVIRONMENT PROTECTION AUTHORITY STATUTORY SITE AUDIT NOTIFICATION

*Environment Protection Act 1997*

#### SITE AUDITORS DETAILS:

Name:

Company:

Address:

Ph:

Fax:

Accreditation No.:

File Reference No:

NOTIFICATION NUMBER: \_\_\_\_\_

#### SITE LOCATION:

Block: \_\_\_\_\_ Section: \_\_\_\_\_ Division: \_\_\_\_\_ District: \_\_\_\_\_

Deposited Plan No.: \_\_\_\_\_

Street Address: \_\_\_\_\_

\_\_\_\_\_ Postcode: \_\_\_\_\_

#### SITE AUDIT REQUESTED BY:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_ Postcode: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Date request received: \_\_\_\_\_

Notification must be sent to the EPA within 7 days of receiving the request.



**NATURE OF STATUTORY REQUIREMENTS:**

A Requirement under the *Environment Protection Act 1997*

Type of instrument imposing the requirement (e.g. assessment order):

\_\_\_\_\_

**Date of issue:** \_\_\_\_\_

A requirement imposed by an environmental planning instrument (EPI)

Name and number of EPI: \_\_\_\_\_

A development approval given under the *Land (Planning and Environment) Act 1991*

Approval authority: \_\_\_\_\_

Date approval granted: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**This statutory audit site audit is conducted for the purpose of determining:**

The nature and extent of the assessment or remediation undertaken, as the case requires; and/or

The nature and extent of any contamination or remaining contamination of the land; and/or

What further assessment or remediation, as the case requires, is necessary before the land is suitable for any specified use or range of uses; and/or

The suitability and appropriateness of an assessment proposal, remediation proposal, remedial action plan or environment management plan.

**Estimated time within which audit will be completed:** \_\_\_\_\_

I certify that the information supplied in this form and any attached pages are correct.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

## APPENDIX C – AUDITOR’S ANNUAL RETURN FORM



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### ENVIRONMENT PROTECTION AUTHORITY AUDITOR’S ANNUAL RETURN

Environment Protection Authority  
GPO Box 158  
CANBERRA ACT 2601

#### ANNUAL RETURN COVERSHEET

#### SITE AUDITORS DETAILS:

Name:

Company:

Address:

Ph:

Fax:

Accreditation No.:

File Reference No:

ANNUAL RETURN PERIOD:

NUMBER OF STATUTORY SITE AUDITS:

NUMBER OF NON-STATATORY SITE AUDITS:

I certify that the information supplied in this form and any attached pages are correct.

(Auditor’s Signature)

(Auditor’s Name)

Date: \_\_\_\_\_

---

**AUDITOR'S ANNUAL RETURN FORM**  
***Environment Protection Act 1997***

Under Section 76B of the *Environment Protection Act 1997*, the following must be completed for each audit conducted (whether completed or not) under this Act or another Act within the financial year. The completed form must be forwarded within 60 working days after the end of each financial year to:

Environment Protection Authority  
GPO Box 158  
CANBERRA ACT 2601

**IMPORTANT**  
TYPE OR PRINT

**1. Auditors details:**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Facsimile: \_\_\_\_\_

Accreditation No: \_\_\_\_\_

Audit Reference Number: \_\_\_\_\_

**2. Site Location:**

Block: \_\_\_\_\_ Section: \_\_\_\_\_ Suburb: \_\_\_\_\_

Street Address: \_\_\_\_\_

Size of the site: \_\_\_\_\_

**3. Land use details:**

Land uses permitted under the Territory Plan:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Uses permitted by the lease purpose clause:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Proposed lease purpose changes or changes to the Territory Plan:

\_\_\_\_\_  
\_\_\_\_\_

**4. Lessee(s)/occupier(s) details**

Current lessee(s): \_\_\_\_\_

Current occupier(s): \_\_\_\_\_

Previous lessee(s): \_\_\_\_\_

Previous occupier(s): \_\_\_\_\_

**5. Audit details:**

The name of the person who requested the audit: \_\_\_\_\_

The date when the auditor received the request: \_\_\_\_\_

The date of commencement of the audit: \_\_\_\_\_

The date or expected date of completion of the audit: \_\_\_\_\_

The use or uses of the site that have caused the contamination for which assessment or remediation was undertaken: \_\_\_\_\_

\_\_\_\_\_

The current and proposed uses for the site: \_\_\_\_\_

\_\_\_\_\_

The auditor's opinion as to the suitability of the site for the current , proposed and permitted uses: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The name of the person(s) who carried out the assessment or remediation works that were reviewed or is being reviewed by the auditor and the titles of the reports that were or are being reviewed: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Details of any impacts on land adjacent to the site (including groundwater): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Auditor's Signature)

Auditors Name:

Date: \_\_\_\_\_

## APPENDIX D – CONTAMINATED LAND NOTIFICATION FORM



**ENVIRONMENT PROTECTION AUTHORITY**  
**Contaminated Land Notification Form**  
 Section 23A of the *Environment Protection Act 1997*

<b>1. Where to send completed forms</b>		<b>IMPORTANT PRINT CLEARLY</b>
Environment Protection Authority GPO Box 158 Canberra ACT 2601 Fax: 6207 6084 Email: Environment.Protection@act.gov.au		
<b>2. Lessee or Occupier details</b>		
Name:	Telephone Numbers (business hours): Fax Numbers (business hours):	
Address:	I am:	
	<input type="checkbox"/> the lessee of the site	
	<input type="checkbox"/> the occupier of the site	
<b>3. Site Details</b>		
Site or Establishment Name (if appropriate):		Street Address:
		Post Code:
Block(s):	Section:	Suburb:
Owners(s) / Lessee(s):		Occupier(s):
<b>4. Cause of Contamination</b>		
<b>5. Contamination</b>		
Contaminants of concern		Source of information on contamination:

6. What aspects of the environment are/may be affected?	7. Who/what is potentially at risk?
---	-------------------------------------

<p>Tick all that apply:</p> <p><input type="checkbox"/> Air</p> <p><input type="checkbox"/> Stormwater</p> <p><input type="checkbox"/> Groundwater</p> <p><input type="checkbox"/> Drinking water</p> <p><input type="checkbox"/> Surface Water</p> <p><input type="checkbox"/> Wetlands</p> <p><input type="checkbox"/> Soil</p> <p><input type="checkbox"/> Sediments</p> <p><input type="checkbox"/> Other (please specify)</p> <p>_____</p>	<p>Tick all that apply:</p> <p><input type="checkbox"/> Residents</p> <p><input type="checkbox"/> Aquatic life</p> <p><input type="checkbox"/> Workers</p> <p><input type="checkbox"/> Plants</p> <p><input type="checkbox"/> School/kindergarten children</p> <p><input type="checkbox"/> Animals</p> <p><input type="checkbox"/> Threatened species</p> <p><input type="checkbox"/> Other (Please specify)</p> <p>_____</p>
---	---

8. Are any other sites effected or at risk? (ie. outside the lease/sub lease boundary)

Tick appropriate box:  No  Yes

If “Yes” is ticked, indicate which of the matters listed in item 6 and 7 apply to other sites:

Details of other sites affected: \_\_\_\_\_

\_\_\_\_\_

9. Additional pages attached (eg. Results of sampling, photographs, environmental reports, etc.)

If you have attached additional pages to this notification, indicate the number of pages. When the notification is certified, the person(s) who certify the notification must initial each page attached.

Number of pages attached: \_\_\_\_\_

10. Certification (in the case of a notice lodged on behalf of a body corporate)

I certify that:

(a) I have personally examined and am familiar with the information contained in this notification; and

(b) to the extent they are within my knowledge, the matters contained in this notification are true, accurate and complete.

Name:	Name:	CORPORATE SEAL AFFIXED IN ACCORDANCE WITH CONSTITUTION OF BODY CORPORATE
Position:	Position:	
Signature:	Signature:	
Date:	Date:	

### 11. Signature (in the case of a notice lodged by one or more individuals)

The matters contained in this notification are, to the best of my knowledge, true, accurate and complete.

Name:

Name:

Signature:

Signature:

Date:

Date:

If the notification is made by one or more individuals, the form must be signed by each individual concerned.

If the notification is made by a corporation, the form must be signed:

- (a) by affixing the common seal of the corporation; or
- (b) personally by a person authorised to do so by the corporation

## APPENDIX E – SITE AUDITORS STATEMENT FORM



### ENVIRONMENT PROTECTION AUTHORITY SITE AUDIT STATEMENT *Environment Protection Act 1997*

***A site audit statement summarises the findings of a site audit. For full details of the site auditor's findings, evaluations and conclusions, refer to the associated site audit report.***

#### **PART I: Site audit identification**

**Site audit statement no.** .....

This site audit is a **statutory audit/non-statutory audit\*** within the meaning of the *Environment Protection Act 1997*.

**Site auditor details** (approved under the *Environment Protection Act 1997*)

Name ..... Company .....

Address .....

..... Postcode .....

Phone ..... Fax .....

#### **Site details**

Address .....

..... Postcode .....

Property description (*attach a list if several properties are included in the site audit*)

Block ..... Section ..... Division..... District.....

Area of site (e.g. hectares) ..... Current zoning.....

To the best of my knowledge, the site **is/is not\*** the subject of an order or agreement under the

***Environment Protection Act 1997***.

**Order/Agreement \* no(s)** .....

*\* Delete as appropriate*



**Site audit commissioned by**

Name ..... Company .....

Address .....

..... Postcode .....

Phone ..... Fax .....

Name and phone number of contact person (if different from above)

.....

A. To determine land use suitability (please specify intended use[s])

.....

**OR**

B(i) To determine the nature and extent of contamination, and/or

B(ii) To determine the appropriateness of an **investigation/remedial action/management plan\***, and/or

B(iii) To determine if the land can be made suitable for a particular use or uses by implementation of a specified **remedial action plan/management plan\*** (please specify intended use[s])

.....

**Information sources for site audit**

Consultancy(ies) which conducted the site investigation(s) and/or remediation

.....

Title(s) of report(s) reviewed .....

.....

.....

Other information reviewed (including previous site audit reports and statements relating to the site)

.....

.....

.....

**Site audit report**

Title .....

Report no. .... Date .....

*\* Delete as appropriate*

## PART II: Auditor’s findings

Please complete either Section A or Section B, **not** both. (Strike out the irrelevant section.)

Use Section A where site investigation and/or remediation has been completed and a conclusion can be drawn on the suitability of land use(s).

Use Section B where the audit is to determine the nature and extent of contamination and/or the appropriateness of an investigation or remedial action or management plan and/or whether the site can be made suitable for a specified land use or uses subject to the successful implementation of a remedial action or management plan.

### Section A

I certify that, in my opinion, the site is **SUITABLE** for the following use(s) (*tick all appropriate uses and strike out those not applicable*):

- Residential, including substantial vegetable garden and poultry
- Residential, including substantial vegetable garden, excluding poultry
- Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- Day care centre, preschool, primary school
- Residential with minimal opportunity for soil access, including units
- Secondary school
- Park, recreational open space, playing field
- Commercial/industrial
- Other (please specify)

**subject to compliance with the following environmental management plan** (*insert title, date and author of plan*) **in light of contamination remaining on the site:**

.....  
.....  
.....

OR

I certify that, in my opinion, the site is **NOT SUITABLE** for any use due to the risk of harm from contamination.

**Overall comments**

.....  
.....  
.....

## Section B

Purpose of the plan<sup>1</sup> which is the subject of the audit .....

.....

**I certify that, in my opinion:**

**the nature and extent of the contamination HAS/HAS NOT\* been appropriately determined**  
**AND/OR**

**the investigation/remedial action plan/management plan\* IS/IS NOT\* appropriate for the purpose stated above**

**AND/OR**

**the site CAN BE MADE SUITABLE for the following uses** (*tick all appropriate uses and strike out those not applicable*):

- Residential, including substantial vegetable garden and poultry
- Residential, including substantial vegetable garden, excluding poultry
- Residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry
- Day care centre, preschool, primary school
- Residential with minimal opportunity for soil access, including units
- Secondary school
- Park, recreational open space, playing field
- Commercial/industrial
- Other (*please specify*) .....

**if the site is remediated/managed\* in accordance with the following remedial action plan/management plan\*** (*insert title, date and author of plan*)

.....

.....

.....

.....

**subject to compliance with the following condition(s):**

.....

.....

.....

<sup>1</sup> For simplicity, this statement uses the term 'plan' to refer to both plans and reports.

\* Delete as appropriate

**Overall comments**

.....  
.....  
.....  
.....  
.....  
.....

**PART III: Auditor’s declaration**

I am accredited as a site auditor by the NSW Environment Protection Authority under the *Contaminated Land Management Act 1997* (Accreditation No. ....), and therefore approved as an Environmental Auditor under the *Environment Protection Act 1997*.

I certify that:

- I have completed the site audit free of any conflicts of interest and have not carried out an assessment or remediation of the land to which the audit relates, and
- with due regard to relevant laws and guidelines, I have examined and am familiar with the reports and information referred to in Part I of this site audit, and
- on the basis of inquiries I have made of those individuals immediately responsible for making those reports and obtaining the information referred to in this statement, those reports and that information are, to the best of my knowledge, true, accurate and complete, and
- this statement is, to the best of my knowledge, true, accurate and complete.

I am aware that there are penalties under the *Environment Protection Act 1997* for wilfully making false or misleading statements.

Signed ..... Date .....

