



New South Wales  
Government

State Environmental Planning Policy No. 55—Remediation of Land

# Managing land contamination: guidelines

November 2008 | Consultation draft

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NSW Department of Planning &  
NSW Department of Environment and Climate Change

Managing land contamination: guidelines—consultation draft  
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& Department of Environment and Climate Change

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# Summary

## Background

In 1997, the NSW Government introduced a package of reforms to provide a comprehensive, consistent and whole-of-government approach to the management and remediation of contaminated land. The *Contaminated Land Management Act 1997* (CLM Act) and State Environmental Planning Policy (SEPP) No. 55—Remediation of Land represent complementary parts of that package.

As an integral component of the reform package, the 1998 *Managing Land Contamination: Planning Guidelines* (the Planning Guidelines), jointly prepared by the Department of Planning and the Environment Protection Authority (EPA)<sup>1</sup>, were designed to assist planning and consent authorities to undertake their responsibilities under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

In 2003 the former Department of Environment and Conservation (DEC)<sup>1</sup> initiated a review of the CLM Act. Feedback obtained during the review, as well as ongoing experience with the application of SEPP 55 since the policy was made in 1998 led to a formal review of SEPP 55 and the associated planning guidelines, which has culminated in the current revision.

## Guideline Structure and Content

The Guidelines structure is virtually unchanged from the 1998 guidelines. The structure reflects a logical progression through the planning and development control process and is as follows:

- basic principles (section 1)
- what decisions need to be made (section 2)
- what information is needed to make a decision (section 3)
- decision-making (section 4)
- recording information for the future, including the decisions made (section 5)
- using information to prevent future contamination and harm (section 6)
- appendices.

## What Has Changed in This Edition of the Guidelines?

Changes between the 1998 and proposed 2008 guidelines have been in two main areas: changes in regulatory requirements and clarification of advice.

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<sup>1</sup> The Environment Protection Authority (EPA) is integrated within the Department of Environment and Climate Change (DECC), which has replaced the DEC.

## Changes in Regulatory Requirements

The guidelines have been updated to reflect changes in the underlying regulatory framework since 1998. These include:

- the introduction of Part 3A of the EP&A Act and State Environmental Planning Policy (Major Projects) 2005. Clause 11 of SEPP 55 has been repealed. Category 1 remediation work on land which is a remediation site, which would previously have been State Significant Development, is now a Major Project (see Schedule 1, clause 28 of the Major Projects SEPP)
- amendments to the *Contaminated Land Management Act 1997* arising out of the Contaminated Land Management Amendment Bill 2008.

Note: At the time of writing, the Contaminated Land Management Amendment Bill 2008 was still before the Parliament. Details of the changes will be included here, once they are finalised.

## Clarification of Advice

The key changes include:

- the use of accredited site auditors and environmental consultants. Greater emphasis has been placed on the use of suitable qualified environmental consultants in those cases where there is not a statutory requirement to employ an accredited site auditor
- the role of Principal Certifying Authorities (PCAs) and Contaminated Sites Auditors
- further guidance on how to use section 149 certificates to manage contaminated sites
- assessment of the potential for contamination of a site as a result of the contamination of an adjacent land
- further advice on post-remediation site management and the use of Environmental Management Plans.

# 1 Introduction

## 1.1 Purpose

In some situations, the use of land can result in its contamination by chemicals, posing a risk to human health or the environment and precluding later development of a site for particular uses. The purpose of these Guidelines is to establish 'best practice' for managing land contamination through the planning and development control process. The Guidelines explain what needs to be done to show that planning functions have been carried out in good faith. Obviously they cannot provide a definitive answer in all cases, so planning authorities will also need to exercise their judgement.

The Guidelines include:

- information to assist in the investigation of contamination possibilities
- a decision making process that responds to the information obtained from an investigation
- information on how planning and development control can cover the issues of contamination and remediation
- a suggested policy approach for planning authorities
- discussion of information management systems and notification and notation schemes, including the use of s. 149 planning certificate notations
- approaches to prevent contamination and reduce the environmental impact from remediation activities.

Though written primarily for planning authorities, in particular local councils, the Guidelines are also relevant to:

- developers, lenders, property insurers, property owners and consultants such as site auditors, valuers and remediators
- determining authorities for activities under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (that is, those activities not requiring consent but requiring an approval from a public authority)
- major projects falling within Part 3A of the EP&A Act
- interested members of the community.

Note that for the purpose of the Guidelines the person or body seeking to develop land is known as 'the proponent'.

## 1.2 Context

The Guidelines replace those published in 1998. The details in these new Guidelines reflect current departmental views and address issues raised in day to day use of the Guidelines and at a series of workshops with local councils and contaminated land practitioners. It is intended to continue to monitor their use and to review them if, and when, necessary.

## 1.3 Key Principles

The planning and development control process as provided for in the EP&A Act plays an important role in the management of land contamination. The integration of land contamination management into the planning and development control process will:

- ensure that changes of land use will not increase the risk to health or the environment
- avoid inappropriate restrictions on land use
- provide information to support decision making and to inform the community.

A key message for planning authorities is the need to:

- consider the likelihood of land contamination as early as possible in the planning and development control process
- link decisions about the development of land with the information available about contamination possibilities
- adopt a policy approach that will provide strategic and statutory planning options based on the information about contamination
- exercise statutory planning functions with a reasonable standard of care.

## 1.4 Compliance

Part 7A of the EP&A Act provides that planning authorities who act substantially in accordance with these Guidelines are taken to have acted in good faith. This means that before an authority can be found negligent of an act or omission related to a particular planning function, it must be shown that they did not substantially comply with the Guidelines.

The planning functions covered by this statutory protection are:

- a) the preparation or making of an environmental planning instrument
- b) the preparation or making of a development control plan
- c) the processing and determination of a development application d) the modification of a development consent
- d) the furnishing of advice in a planning certificate under s. 149 of the Act
- e) anything incidental or ancillary to the carrying out of any function listed in paragraphs (a) - (e)

The Guidelines offer guidance and recommend strategies for each of these functions. Any significant departure from the Guidelines should be justified by demonstrating that their overall aims and principles have been met.

## 1.5 Structure

The Guidelines reflect a logical progression through the planning and development control process and are structured as follows:

- what decisions need to be made
- what information is needed to make a decision
- how to get the necessary information
- how to interpret the information
- options available in making decisions
- recording information for the future (including the decisions made)

- releasing information to the public
- using information to prevent future contamination and harm.

## 2 What needs to be decided

### 2.1 Introduction

Land contamination is most often the result of past uses. It can arise from activities that took place on or adjacent to a site and be the result of improper chemical handling or disposal practices, or accidental spillages or leakages of chemicals during manufacturing or storage. Activities not directly related to the site may also cause contamination; for example, from diffuse sources such as polluted groundwater migrating under a site or dust settling out from industrial emissions.

When carrying out planning functions under the EP&A Act, a planning authority must consider the possibility that a previous land use has caused contamination of the site as well as the potential risk to health or the environment from that contamination. Decisions must then be made as to whether the land should be remediated, or its use of the land restricted, in order to reduce the risk.

Failure to consider the possibility of contamination at appropriate stages of the planning decision process may result in:

- inappropriate land use decisions
- increased risk to human health
- detrimental effects on the biophysical environment
- impacts on the safety of existing and new structures
- delay in realising developments
- substantial fall in the land value and the passing on of unanticipated development costs to other parties.

### 2.2 What Decisions Need to be Made

The decisions that a planning authority will need to make relate to the planning functions with which it is charged.

Planning Function	Decisions to be made
Preparing and making a planning instrument	Is the land suitable or can it be made suitable for the rezoned use?
Preparing and making a development control plan (DCP)	Are appropriate issues covered in the DCP?
Processing and determining a development application?	Is the land suitable, or can it and will it be made suitable, for the proposed development?
Modifying a development consent	Will the land be suitable for the proposed use under the modified consent?

When an authority carries out a planning function, the history of land use needs to be considered as an indicator of potential contamination. **Where there is no reason to suspect contamination after acting substantially in accordance with these Guidelines, the proposal may be processed in the usual way.** However, where

there is an indication that the land is, or may be, contaminated, the appropriate procedures outlined in these Guidelines should be followed. Table 1 lists activities that may cause contamination. Appendix 1 provides further information on industries that may cause contamination and chemicals associated with those industries.

Essentially, the Guidelines recommend that rezonings, development control plans and development applications (DAs) should be backed up by information demonstrating that the land is suitable for the proposed use or can be made suitable, either by remediation or by the way the land is used. Where remediation has already occurred but residual contamination is above the recommended thresholds, it may be necessary to restrict the land uses allowed. This approach may also be appropriate for cases where investigation shows that only some land uses would be suitable. In situations where the land is not suitable for the proposed use and cannot be rendered suitable for technical or practical reasons, the proposal should be refused.

Generally, the proponent or person(s) who will benefit from the granting of the approval must prove that the land is, or can be made, suitable for the proposed use. However, planning authorities are required to exercise their planning functions in good faith; in some cases this may require a detailed analysis by the planning authority, or an independent review, of the information provided by the proponent and the planning authority's records to confirm the proponent's claims.

## 2.3 The Strategic Context: Making a Council Policy

The general principle of the Guidelines is that planning authorities should adopt a cautionary approach when exercising a planning function. The object of this approach is to enable any land contamination issues to be identified and dealt with at an early stage in the planning process in order to prevent harm and reduce delays and costs.

Consideration of contamination at a strategic level provides an opportunity to consider contamination issues early, well in advance of statutory approvals for land use changes. An assessment of a planning authority's broad strategies and policies should be made, based on a general knowledge of past land uses and the potential for contamination. This then provides a context for future decision making.

To supplement these Guidelines, it is strongly recommended that each local council develop and adopt a formal policy for managing land contamination to provide a local context for decision making. The policy should be consistent with these Guidelines and either adopt or be based on them, with variations based on local conditions and procedures.

The preferred approach is to have a policy that applies to all land in the local government area because the consideration of contamination must be undertaken for all land use changes. State Environmental Planning Policy No. 55 – *Remediation of Land* (SEPP55) requires the issue of contamination be considered whenever a planning authority considers a development or rezoning proposal where the new use may increase risk from contamination, if it is present (see Table 1). This means that the planning authority must routinely consider whether land is suitable for a proposed use in terms of the risk from contamination. However, restrictions on land use due to contamination will only apply to certain land and the council's policy needs to state the circumstances in which this applies.

While it is up to each council to determine the content and wording of an appropriate policy for its local government area, the policy might usefully include:

1. reference to the key principles outlined in section 1.3 of the Guidelines
2. a statement on the council's policy on the restriction of land use under particular circumstances. The following considerations may be relevant:
  - if the contamination status of land is unknown, no change in use should occur which may increase the risk of harm until the land has been investigated

- if contamination causes an unacceptable risk of harm, the use of the land should be restricted to reduce the risk to acceptable levels
  - if remediation has reduced the risk to acceptable levels, no restriction on land use is necessary
3. a statement on the council's policy on the conduct of remediation work. The following considerations may be relevant, for either the whole local government area or for certain identified areas:
- restrictions on the hours of operation of remediation work
  - restrictions on the routes to be used by vehicles associated with the remediation work
  - restrictions on parking
  - restrictions on the disposal of contaminated spoil removed from remediated land
4. a statement on the council's policy on the use of site audits in the planning decision process. The following considerations may be relevant:
- under what circumstances will council require a site audit or site audit statement to be conducted by a site auditor accredited under the *Contaminated Land Management Act 1997* (CLM Act)?
  - does the council have any requirements for how auditors should be appointed?
  - what does the council require from the auditor; for example, to review and provide comments on every report provided by the proponent, or to provide a summary report? Note that the DECC's<sup>2</sup> *Guidelines for the NSW Auditor Scheme* (2<sup>nd</sup> Edition) (Ref 6) provides information about how an auditor is engaged
5. a statement on the council's policy on access to information on council records relevant to contamination. The following considerations may be relevant:
- if restrictions are placed on the use of the land, this information should be available to any enquirer
  - if no restrictions are placed on the use of the land, but information on contamination exists, this should be available to any enquirer
  - councils should access their records on contamination before answering enquiries
  - if a site audit statement exists, this must be noted on any s. 149(2) planning certificate and may be attached to a planning certificate under s. 149(5)
6. the notation system for s. 149 planning certificates, for example, the sort of information council may provide under s. 149(5). See section 5.3.3

Note that council's policy on contaminated land may be contained within a number of documents, such as planning instruments that contain land use restrictions relevant to contamination and a development control plan or plans. However, it is also advisable to have a formal 'stand-alone' policy document that addresses the matters listed above.

Further discussion on these matters is contained in the following chapters.

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<sup>2</sup> The Department of Environment and Climate Change incorporates the EPA.

# 3 What information is needed to make a decision

## 3.1 Introduction

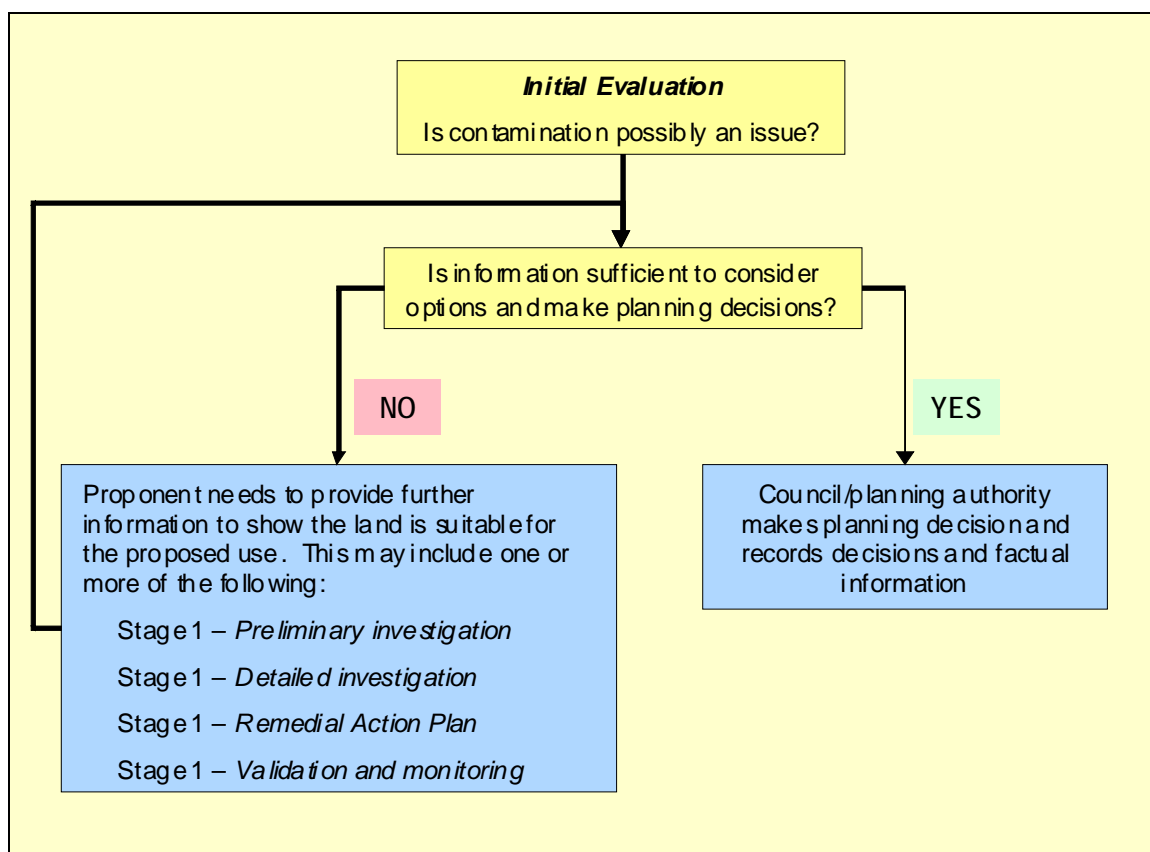
This chapter focuses on the process for evaluating and assessing contamination issues.

Before carrying out a planning function, it is essential to consider whether the issue of contamination is relevant. If it is, investigations might be needed to provide information about the land to enable that function to be carrying out in good faith.

When defining the area to be investigated, all land subject to the planning decision must be considered. For example, a council’s decision to accept a dedication of land for open space as part of a development proposal might need an investigation into its suitability, and because it involves a change of use even if no development is proposed on the land at the time.

For the purpose of these Guidelines, the process for making a decision on a change of land use is as shown in Figure 1.

**Figure 1: Decision-making Process for Land Use Changes**



## 3.2 Initial Evaluation by the Planning Authority

An initial evaluation is essential to determine whether contamination is an issue and whether sufficient information is available to carry out a planning function in good faith. The purpose of the initial evaluation is for the planning authority, before a planning function is exercised, to determine whether land contamination is relevant to the decision being made and whether further information is required from the proponent.

The initial evaluation can be based on **readily available factual information and should be carried out regardless of the nature of the proposed use or the current use**. Readily available information may include: current zoning and permissible uses, records from previous rezonings, development applications and building applications for the site, property files, information provided by the proponent such as a development application or rezoning request or an investigation, and the knowledge of council staff. Information provided by the owner or proponent should be checked against information held by the planning authority on the subject land and, if available, adjoining properties.

Further information may be gained by visiting the site. Site inspections can provide valuable information on previous land uses that may have resulted in land contamination, especially if the inspector already has information on the history of the site. However, it is recognised that a site inspection may not be feasible or practical in all cases and it is not suggested as a mandatory requirement.

### 3.2.1 Suggested Checklist for Initial Evaluation

The potential for contamination is often linked to past uses of land and a good early indicator of possible uses is land zoning. Contamination is more likely to have occurred if the land is currently, or was previously, zoned for industrial, agricultural or defence purposes. The following is a brief checklist for doing an initial evaluation.

- Is the planning authority aware of any previous investigations about contamination on the land? What were the results, including any previous initial evaluations?
- Do existing records held by the planning authority show that a potentially contaminating activity listed in Table 1 has ever been approved on the subject land? (The use of records held by other authorities or libraries is not required for an initial evaluation.)
- Was the subject land at any time zoned for industrial, agricultural or defence purposes?
- Is the subject land currently used for a potentially contaminating activity listed in Table 1?
- To the planning authority's knowledge was, or is, the subject land regulated through licensing or other mechanisms in relation to any potentially contaminating activity listed in Table 1?
- Are there any land use restrictions on the subject land relating to possible contamination, such as notices issued by the DECC or other regulatory authority?
- Does any site inspection conducted by the planning authority suggest that the site may have been associated with any potentially contaminating activities listed in Table 1?
- Is the planning authority aware of information concerning contamination impacts on land immediately adjacent to the subject land which could affect the subject land?
- Are there known to be normal background levels of substances present that present a risk of harm to human health or to any other aspect of the environment?

**Note:** Such levels would not cause the land to be regarded as contaminated (see s.145A of the EP&A Act) but would need to be taken into account in considering whether the land was suitable for a proposed use.

**Table 1: Some Activities that may Cause Contamination**

- acid/alkali plant and formulation
- agricultural/horticultural activities
- airports
- asbestos production and disposal
- chemicals manufacture and formulation
- defence works
- drum re-conditioning works
- dry cleaning establishments
- electrical manufacturing (transformers)
- electroplating and heat treatment premises
- engine works
- explosives industry
- gas works
- iron and steel works
- landfill sites
- metal treatment
- mining and extractive industries
- oil production and storage
- paint formulation and manufacture
- pesticide manufacture and formulation
- power stations
- railway yards
- scrap yards
- service stations
- sheep and cattle dips
- smelting and refining
- tanning and associated trades
- waste storage and treatment
- wood preservation

Source: ANZECC & NHMRC 1992 *The Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites* (Ref 2). For information on chemicals commonly associated with these activities see Appendix 1.

**Note:** It is not sufficient to rely solely on the contents of this Table to determine whether a site is likely to be contaminated or not. The Table is a guide only. A conclusive status can only be determined after a review of the site history and, if necessary, sampling and analysis.

For example, where agricultural activities have been carried out using organic farming techniques and without the application of herbicides and pesticides, contamination from this use would not usually be suspected, notwithstanding the activities inclusion in Table 1.

### 3.3 Is the Information Sufficient to Consider Options and Make Planning Decisions?

#### 3.3.1 Instances where No Further Information is Required

If, after carrying out an initial evaluation, none of the enquiries suggest that the land might be contaminated or that further enquiry is warranted, the planning process should proceed in the normal way.

Further, if there is known contamination but the contamination does not pose a risk and does not preclude development to proceed, further information does not need to be sought, provided there are adequate ongoing measures to ensure the contamination is managed so as to prevent any future risk increase.

The planning authority may not need more information to make a decision about previously investigated or remediated land if sufficient information has already been provided. However, proposals on such land should be carefully managed through the planning and development control process. The nature, distribution and levels of residues remaining on the land need to be considered when a planning authority makes a planning decision.

Clause 6(2) of SEPP 55 has sometimes been interpreted as always requiring consideration of the findings of a preliminary investigation, when including land in a particular zone. This interpretation is incorrect. The requirement only applies to land covered by clause 6(4).

If the land does not fall within clause 6(4) and the initial evaluation does not indicate possible contamination, a preliminary investigation is not required.

#### 3.3.2 Instances where Further Information is Required

After carrying out an initial evaluation, if there are indications that contamination is, or may be, present and the planning authority has insufficient information on which to make a planning decision, the proponent should be asked to provide further information.

A planning authority may need to seek further information when:

- the subject site or land in the vicinity is, or may be, associated with potentially contaminating activities listed in Table 1 but it is not known whether contamination exists
- the land was, or is, regulated by the DECC or other regulatory authority in relation to land contamination, and there is insufficient information available about the nature and extent of contamination
- the land has been investigated or remediated but there is insufficient information available about the nature and extent of contamination, or the circumstances have changed
- there are restrictions on, or conditions attached to, the use of the site by regulatory or planning authorities that are, or may be, related to contamination, but there is insufficient information available about the nature and extent of contamination
- council records have demonstrated that the land is associated with complaints about pollution or illegal dumping of wastes but it is not known whether contamination exists

- a sensitive use including, but not necessarily limited to, residential, educational, recreational, hospital or childcare is proposed on the land and records on the site history are unclear about whether the land has been used in the past for a purpose listed in Table 1.

A site history may be 'unclear' if there are significant gaps in historical information, or land uses are not described in sufficient detail to identify the presence or absence of uses listed in Table 1 during periods in which such uses were permissible under the zoning.

The proponent **must** furnish a report of a preliminary investigation carried out on land that is covered by clause 6(4) or clause 7(4) of SEPP 55.

A report of a detailed investigation may be used to satisfy this requirement.

### 3.3.3 Considering Contamination on Adjacent Land

Section 3.3.2 indicates that a planning authority may need to seek further information when the subject site or land in the vicinity is, or may be, associated with potentially contaminating activities listed in Table 1.

SEPP 55 focuses primarily on remediation of contaminated land. However, if there is suspected or known contamination on adjacent land, the possible impact of that contamination on the suitability of the land proposed to be rezoned or developed needs also to be included in the assessment and decision-making process.

Two situations which may need to be considered are:

1. Contamination of adjacent land is suspected but may not have been formally investigated.

Here, the primary concern is that the contamination may affect the suitability of the land, which is proposed to be rezoned or developed, for its intended use. It is therefore necessary for the proponent to carry out an investigation sufficient to demonstrate that the adjacent contamination (if any) will not adversely impact the proposed land use.

It should be noted that this is quite distinct from an investigation into the feasibility of necessary remediation, which would be the responsibility of the polluter or owner of the contaminated land. The investigation need only proceed to the extent necessary to show that the contamination will not affect the proposed subject land use.

Depending on the circumstances of the case, the investigation could range from a review of available historical information to a preliminary or detailed investigation. In the latter case, the proponent would need to liaise with the owner of the possibly contaminated land.

2. The adjacent land is known to be contaminated but the contamination does not pose a present risk. However, there is potential for activities arising out of the proposed rezoning or development to disturb the *status quo*.

This latter situation may arise in relation to marine sediments contaminated by past industrial activities or polluted water, which do not present a risk while they are undisturbed (examples are parts of Sydney Harbour). Marine activities associated with foreshore development have a potential to disturb the sediments and pose an increased health and/or environmental risk.

In this case, the onus should be on the proponent to demonstrate that the proposed use of the subject land will not give rise to activities that may disturb the contaminated area(s). Alternatively, the proponent may negotiate with the owner of the affected land to ensure appropriate remediation is carried out.

## 3.4 Information to be Provided by the Proponent

If contamination is, or may be, present the proponent must investigate the site and provide the planning authority with the information it needs to carry out its planning functions. The appropriate level of investigation will depend on the circumstances and may involve one or more of the stages described below in the site investigation process.

### 3.4.1 A Summary of the Site Investigation Process

*Stage 1 - Preliminary Investigation.* The main objectives of a preliminary investigation are to identify any past or present potentially contaminating activities, provide a preliminary assessment of any site contamination and, if required, provide a basis for a more detailed investigation. A preliminary investigation is not necessary where contamination is not an issue.

*Stage 2 - Detailed Investigation.* A detailed investigation is only necessary when a preliminary investigation indicates that the land is contaminated or that it is, or was, formerly used for an activity listed in Table 1 and a land use change is proposed that has the potential to increase the risk of exposure to contamination. A detailed investigation will also need to be conducted as part of a remediation proposal. The objectives of a detailed investigation are to define the nature, extent and degree of contamination; to assess potential risk posed by contaminants to health and the environment; and to obtain sufficient information to develop a remedial action plan (RAP), if required.

*Stage 3 - Remedial Action Plan.* The objective of an RAP, or plan of remediation, is to set objectives and document the process to remediate the site.

*Stage 4 - Validation and Monitoring.* The objective of validation and monitoring is to demonstrate whether the objectives stated in the RAP and any conditions of development consent have been achieved. SEPP 55 requires a notice of completion for all remediation work. Validation is an important prerequisite of this notice.

It should be emphasised that not every site will require all four stages of investigation. An investigation may proceed directly to Stage 2 for example, if it is clear early on that the land has been used for an activity listed in Table 1 and the proposed change of use would increase the risk from contamination.

Proponents may also choose not to proceed with the proposal and terminate the site investigation process at any stage. If a proponent decides to proceed with the proposal and provide the necessary information for consideration by the planning authority, they should engage suitably qualified contaminated land professionals who are experienced in contaminated site assessment and management.

The following sections provide further guidance on what needs to be considered in the review of information and the issues that should be considered at each stage of the site investigation process.

## 3.5 Evaluation of the Information Provided by the Proponent

The EP&A Act and SEPP 55 require a planning authority to consider the suitability of land for a proposed development. Ultimately, a planning authority needs to be satisfied that a site is suitable for its proposed use or can and will be made suitable, based on what they know of the site. This will involve an evaluation or review of the information submitted by the proponent.

While the planning authority should, as far as possible, conduct the appropriate evaluation internally, it may be necessary for an independent expert to assist in the evaluation. The expert chosen should be qualified to deal with the type of land

contamination in question and be independent of both the proponent and the proponent's consultant.

### 3.5.1 What are Some of the Issues in the Site Investigation Process?

The following sub-sections outline some issues to consider when evaluating reports during various stages of the site investigation process. Some issues could be technically difficult and the assistance of an experienced consultant may be needed. Further assistance may also be sought from the DECC's *Guidelines for Consultants Reporting on Contaminated Sites* (Ref 15) and from Edwards et al (Ref 4).

If a planning authority considers, or is advised by the proponent, their consultant or site auditor, that the contamination at the subject site is significant and warrants regulation under the CLM Act, the DECC may need to be notified. There is a legal duty on owners of land as well as persons whose activities have contaminated land to notify the DECC as soon as practicable after becoming aware that contamination poses a significant risk of harm to human health or the environment (see s. 60 of the CLM Act).

### 3.5.2 Stage 1 - Preliminary Investigation

The preliminary investigation contains a detailed appraisal of the site's history and a report based on a visual site inspection and assessment. It is important that all relevant information about the site is assessed to determine the potential for site contamination.

Where contaminating activities are suspected to have had an impact on the land, sampling and analysis will be required to confirm and support any conclusion reached from the site history appraisal. Through the assessment of sampling results, an assessment of contamination can be established.

A preliminary investigation is an important step in deciding whether or not a more detailed investigation is needed. Where the results of a preliminary sampling program demonstrate the potential for, or the existence of contamination, a detailed investigation should be undertaken; not necessarily immediately after the preliminary investigation but before the new use commences. Where the preliminary investigation shows a history of non-contaminating activities at a site or demonstrates that any site contamination does not present an unacceptable risk to the proposed land use(s), there will be no need for further investigation, unless there is other contrary evidence.

#### **Issues to consider**

- Is the information about the site's history adequate:
  - are the descriptions of activities on the site detailed enough to identify a use listed in Table 1?
  - are there any big gaps in the history that might hide a use listed in Table 1?
  - are the sources reliable?
  - is the information verifiable?
- Does the information conform with the relevant DECC guidelines?
- If contamination or a contaminating activity, whether previous or existing, is confirmed should the proponent conduct a detailed investigation to further define the extent and degree of contamination?
- If the site history suggests that the site is unlikely to be contaminated but there are gaps in the history and Table 1 uses were permissible under the zoning during those periods, is limited site sampling needed to confirm the site is not contaminated? Consult a site auditor if necessary.
- Does this site pose a significant threat to human health or the environment? If so, refer to the CLM Act in relation to duty to notify the DECC.

- Is a site audit of the preliminary investigation necessary? See section 3.6.1

If there is sufficient information to satisfy the planning authority that the site is suitable for the proposed use, the planning process should proceed in the normal way.

### **3.5.3 Stage 2 - Detailed Investigation**

A detailed investigation should provide information about the extent and degree of contamination. It should also include an assessment of the risk posed by the contaminants to health and the environment. Generally, the risk can be assessed by comparing the levels of residue on-site with appropriate predetermined thresholds such as the soil investigation levels specified in the DECC's guidelines (Ref 15) and the NEPM (Ref 19). The risks can also be determined by a site-specific risk assessment undertaken by the proponent's consultant.

#### ***Issues to consider***

- Is the sampling program that has been undertaken by the consultant adequate to identify hot spots of contamination on the site? Does it conform with the relevant DECC guidelines? Check the sampling program against the DECC's guidelines or consult a site auditor if necessary.
- Have appropriate thresholds and criteria been used for the assessment? Compare with appropriate criteria or consult a site auditor if necessary.
- Do the levels of contamination on the site need to be reduced in order for the site to be suitable for the proposed use? If so, progress to Stage 3 - Site Remedial Action Plan.
- Does this site pose a significant threat to human health or the environment? If so, refer to the CLM Act in relation to duty to notify the DECC.
- Is a site audit of the detailed investigation necessary, or required under the CLM Act? See section 3.6.1

### **3.5.4 Stage 3 - Site Remedial Action Plan**

An RAP, or plan of remediation, should be based on the information from investigations and on the proposed land use. The objectives of the remediation strategy and the recommended clean-up criteria should be clearly stated in the RAP. The RAP should demonstrate how the proponent or their consultant proposes to reduce risks to acceptable levels and achieve the clean-up objectives for the site.

It is important to note that the remediation of contaminated land is considered to be development and may require planning approval, even if the proposed land use does not require approval. If development consent is required, an RAP must be submitted with the development application for approval. Refer to SEPP 55 for further information.

#### ***Issues to consider when an RAP is received***

- Can the site be appropriately remediated? Consider the RAP and any statement by the proponent's consultant certifying that remediation is practical. If necessary, consult a site auditor.
- Are the proposed clean-up criteria appropriate for the future use of the site, considering possible human health and environmental impacts? Consult a site auditor if necessary, or check DECC guidelines.
- Are the proposed plans for remediation work acceptable? For example, do they include an occupational health and safety plan, site environmental management plan, community relations plan, contingency plan? For more information consult the section on RAPs in the DECC's guidelines (Ref 15).
- Is a site audit of the RAP necessary? See section 3.6.1

### 3.5.5 Stage 4 - Validation and Monitoring

Validation is an important part of the site investigation and remediation process. The purpose of validation is to confirm whether the predetermined clean-up objectives have been attained and whether any further remediation work or restrictions on land use are required. Ideally, validation should be conducted by the same consultant that conducted the rest of the site investigation and remediation process.

Validation must confirm statistically that the remediated site complies with the clean-up criteria set for the site. The consultant should follow the relevant DECC guidelines when validating the site.

A report on the validation must assess the results of the post-remediation testing against the clean-up criteria stated in the RAP, or where there is no RAP, against standards endorsed by the DECC. Where the targets have not been achieved, reasons for such failure must be stated and additional site work should be proposed that will achieve the original objectives.

The validation report should also include information confirming that all licences, approvals and development consents have been complied with. In particular, documentary evidence should be provided to confirm that any contaminated soil that has been disposed of off-site or removed for re-use has been dealt with as specified by the relevant authority.

In situations where full clean-up is not feasible or on-site containment of contamination is proposed, the need for an environmental management plan should be assessed by both the proponent's consultant and the planning authority. If required, this environmental management plan should include: how the EMP can be legally enforced, the proposed monitoring strategy, the party responsible for the maintenance and monitoring, the parameters to be monitored, the monitoring locations, the frequency of monitoring, public notification of any restrictions and reporting requirements. Refer to the DECC's guidelines (Ref 14).

SEPP 55 requires that notice of completion of remediation be submitted to the local council, or the Minister for Planning if consent was given by the Minister. Further details on the notification requirements are provided in section 4.4.2

#### **Issues to consider**

- Is the monitoring program proposed by the proponent adequate? Does it conform with the relevant DECC guidelines?
- Has the proponent or the consultant provided a clear statement on the suitability of the proposed site use? Refer to the DECC's guidelines (Ref 15) for reporting requirements.
- Are there any ongoing site management requirements, for example, restrictions on use to be notified pursuant to s. 149(2), covenants on title or annual reporting and other information made available under s. 149(5)?
- Are there any other uncertainties?

Is a site audit of the validation necessary? See section 3.6.1

## 3.6 What is a Site Audit?

A *site audit* is an independent review of any or all stages of the site investigation process, conducted in accordance with the CLM Act. A site audit may review a preliminary investigation, a detailed investigation, a remedial action plan, or a validation report.

A site audit will lead to the provision of a certificate called a *site audit statement*, stating for what use the land is suitable. Only site auditors accredited by the DECC can issue site audit statements.

Another document prepared by site auditors which could be of use to planning authorities is a site audit report. A site audit report is a requirement of the CLM Act. It contains the key information and the basis of the considerations which lead to the issue of the site audit statement.

Site auditors are accredited by the DECC under the CLM Act. They are environmental professionals with demonstrated expertise and broad experience in the assessment and remediation of contaminated sites and have a good understanding of relevant NSW legislation, regulations and guidelines.

Site auditors can assist a planning authority by commenting on or verifying information provided by a proponent in relation to site assessment, remediation or validation - such as whether they have adhered to relevant standards, procedures and guidelines. Engaging a site auditor can also provide greater certainty about the information on which the planning authority is basing its decision, particularly where sensitive uses are proposed on land that may be contaminated and a statement about the suitability of the site is required.

Further information about the NSW site auditor scheme and the appointment, role and technical requirements of auditors are contained in the DECC's guideline (Ref 6).

### **3.6.1 When is a Site Audit Necessary?**

SEPP 55 does not require a mandatory site audit at any stage of the planning process for remediation work, although the CLM Act allows the SEPP to require a site audit. Any appropriately qualified and experienced contaminated land consultant may provide an independent review of another consultant's work. The DECC has provided guidance on how to select a appropriately quality and experienced contaminated land consultant through its web site:

<http://www.environment.nsw.gov.au/clm/selectaclmcons.htm>

As a general principle, an independent review is only necessary when the planning authority:

- believes on reasonable grounds that the information provided by the proponent is incorrect or incomplete
- wishes to verify the information provided by the proponent adheres to appropriate standards, procedures and guidelines
- does not have the internal resources to conduct its own technical review.

Provided there is reasonable evidence that the DECC's *Guidelines for Consultants Reporting on Contaminated Sites* have been complied with, planning authorities should only need to obtain an independent review of the work done if the degree of uncertainty makes this clearly necessary.

Points at which an independent review may be appropriate are shown in Figure 2, Figure 3 and Figure 4. Normally, it is unnecessary to have more than one independent review for the same stage of the process.

Section 47(2) of the CLM Act specifies when the involvement of a site auditor accredited by the DECC is mandatory. In such instances, the independent review will take the form of a site audit, which must be performed by a site auditor accredited by the DECC under the CLM Act.

If a planning authority considers that it needs an independent review or a site audit in order to make its planning decision, the cost should be borne by the proponent and not the planning authority.

### **3.6.2 Role of Principal Certifying Authorities**

On occasion, DECC accredited auditors have been advised by landholders/developers that the Principal Certifying Authority (PCA) appointed to issue occupation and/or

subdivision certificates is able to “sign off” on matters relating to contamination in lieu of the consent authority.

Under s.109O of the EP&A Act and clause 161 of the EP&A Regulation, where a condition of a development consent requires a consent authority or council to be satisfied of those matters listed in clause 161(1) of the EP&A Regulation, it will be sufficient for a certifying authority to be satisfied of those matters where a certifying authority is engaged to issue a Part 4A certificate.

However, clause 161 of the EP&A Regulation only applies where a condition of development consent requires a consent authority/council to be satisfied of those matters listed in clause 161(1) of the EP&A Regulation. It does not apply to a site audit carried out under the CLM Act and does not apply to the section of the DECC’s *Auditor Guidelines* (Ref 14) which deals with site audit statements. Accordingly, a PCA is not taken to be the “relevant authority” for the purposes of clause 3.4.5 of the *Auditor Guidelines*. The phrase “relevant authority” in clause 3.4.5 of the *Auditor Guidelines* refers to the DECC or the consent authority/council.

### 3.7 Record Decisions and Information

A planning authority should keep its information up-to-date by recording all planning decisions or activities relating to a specific parcel of land. This information should then be used when carrying out subsequent planning functions, for example, when a council applies their contaminated land policy or issues a s. 149 planning certificate. The information that needs to be recorded is listed in more detail in section 5.2.

### 3.8 Summary

The proponent is responsible for investigating contamination issues on the land and demonstrating to the planning authority that planning approval should be granted.

When approval is required, the planning authority must evaluate the information it already has and the information provided by the proponent before making a decision.

The planning authority should seek further information from the proponent if the information available is insufficient.

Planning decisions and factual information must be recorded for future use.

## 4 Making the decision

This chapter will help decision makers carry out planning functions in good faith under the EP&A Act in relation to land contamination. Decision making must be based on adequate and appropriate information. This can necessitate an investigation of land and an evaluation of the information from this investigation, as discussed in Chapter 3.

The possible planning responses listed in this chapter are based on the assumption that adequate information is available to make a decision. If this is not the case, refer to Chapter 3 before proceeding.

The planning functions discussed in this chapter are the subject of the statutory protection described in Part 7A of the EP&A Act (see section 1.4). These functions are:

- the preparation or making of an environmental planning instrument (rezoning)
- the preparation or making of a development control plan
- the processing and determination of a development application
- the modification of a development consent
- anything incidental or ancillary to these functions.

The function of giving advice in a certificate under s. 149 of the EP&A Act is also the subject of the statutory protection, but is covered separately in Chapter 5.

### 4.1 Rezoning Decisions

SEPP 55 requires consideration of contamination issues when rezoning land. If a rezoning allows a change of use that may increase the risk to health or the environment from contamination, then the planning authority must be satisfied that the land is suitable for the proposed use or can be remediated to make it suitable. If remediation is necessary, the planning authority must be satisfied that suitable planning controls are in place to ensure that this occurs. To assist in considering these matters, the SEPP requires consideration of a report on a preliminary investigation where a rezoning allows a change of use that may increase the risk to health or the environment from contamination.

It must be emphasised that the level of investigation must be appropriate to the potential risk from contamination. An investigation is not necessary at the rezoning stage if there is no reason to suspect contamination. An investigation is necessary where:

- land is within a current investigation area under Part 3 of the CLM Act
- an activity referred to in Table 1 is being carried out on the land and is potentially causing contamination
- records show that such a potentially contaminating activity has been carried out on the land
- there are incomplete records about the use of the land, and
  - it is proposed to be used for residential, educational, recreational or childcare purposes, or for the purposes of a hospital, and
  - during the periods not covered by those records it would, according to the uses permitted on the land, have been lawful to carry out a potentially contaminating activity referred to in Table 1.

### **4.1.1 Spot Rezoning**

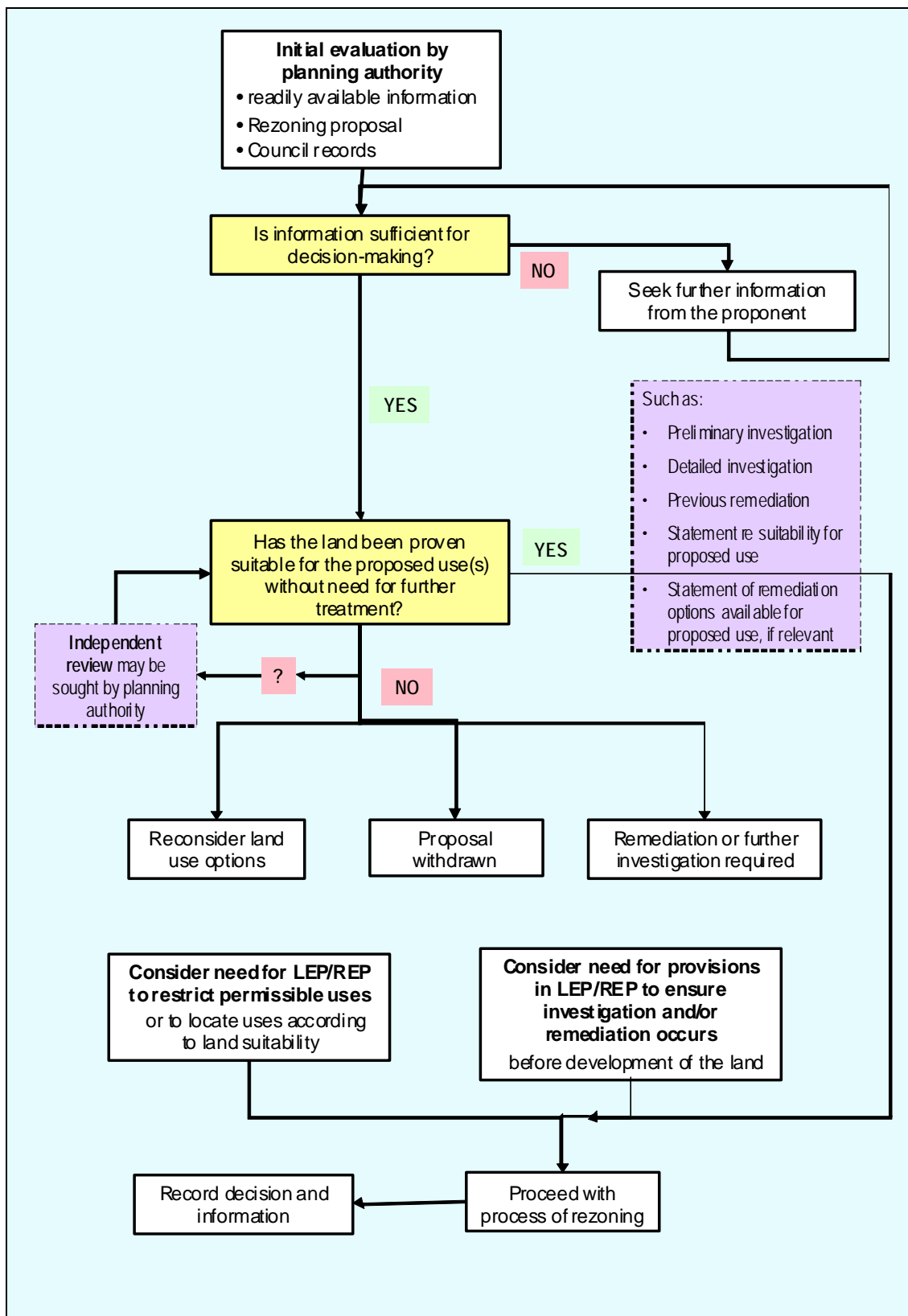
When a spot rezoning is requested there is usually a specific development or land use associated with the proposal. In such cases it would not be appropriate to proceed with the rezoning unless the land was proven suitable for that development or it could be demonstrated that the land can, and will be, remediated to make the land suitable. This would be particularly important if the land was proposed to be developed for residential, educational, recreational or childcare purposes, as the risk to health is higher under those uses than most other uses. Under these circumstances, the rezoning should be treated like a development application in considering contamination issues. It may even be necessary for a detailed investigation to be carried out at the rezoning stage.

### **4.1.2 Generalised Rezoning**

Rezoning that cover a large area, for example, more than one property, usually describe proposed land uses very generally both in type and location. This makes it difficult for a planning authority to be satisfied that every part of the land is suitable for the proposed use(s) in terms of contamination at the rezoning stage. In these cases, the rezoning should be allowed to proceed, provided measures are in place to ensure that the potential for contamination and the suitability of the land for any proposed use are assessed once detailed proposals are made. However, if the rezoning includes the identification of locations for sensitive uses, such as childcare centres, then it will be necessary to determine the suitability of the land in those locations at the rezoning stage (see section 3.3.2).

For some rezoning contamination will not be an issue if, for example, there is no change of use or where there is a change to a similar use.

**Figure 2: Options Available in the Rezoning Process where the Specific End Use is Known**



### ***Suggestions for possible planning responses for planning instruments***

- If investigations find that contamination makes some land unsuitable for particular uses and the land may be appropriately remediated for those uses, provisions are needed to require the remediation of that land before those uses can occur. SEPP 55 contains a general provision that requires consideration of contamination for all development proposals which require development consent. However, planning authorities may wish to include a more specific requirement for remediation work in their own plans if development might occur on contaminated land without development consent. These plans could also further clarify the way the planning authority will deal with contamination issues, provided the provisions are consistent with the SEPP.
- For most large area rezonings, where a detailed site history is not available for all the land, additional provisions to those in SEPP 55 are probably not necessary.
- If an investigation indicates that contamination makes the land unsuitable for some uses and remediation may not be appropriate, either the rezoning should not proceed or the range of permissible uses should be restricted in the local environmental plan or regional environmental plan; that is, the land use options should be reconsidered.
- Information on contamination possibilities can be used to locate uses according to land suitability; for example, sensitive uses only being allowed in areas of low contamination probability.

## 4.2 Development Control Plans

Consideration of contamination issues when preparing a development control plan (DCP) should be similar to the rezoning process. However, given that the provisions in a DCP are more detailed provisions than a planning instrument, the investigation of contamination will also need to be more detailed where it is a relevant issue. The level of detail in the investigation will depend on the nature of the planning decision being made in the preparation of the DCP and the degree of certainty which is required. Land should not be identified in a DCP for a particular use unless it has been demonstrated that the land is suitable in terms of levels of contamination, or can and will be made suitable.

### ***Suggestions for possible uses of DCPs***

If council planning instruments contain provisions relating to contaminated land, for example, if they incorporate the SEPP 55 provisions, it may be useful to have a DCP that maps previous land uses associated with the activities listed in Table 1 of the Guidelines. This could be used as a guide to the areas where further investigation is required before any redevelopment takes place. The DCP should contain a qualification that there may be land uses unknown to council that are not mapped and that an enquirer should also conduct their own investigations.

It should be made clear that the mapping of land in a DCP is only for the purpose of stating council planning requirements that apply to that land and that DCPs should not be used as a de facto register to label or classify land.

## 4.3 Development Applications

The relevance of contamination to a decision on a development application (DA) will vary depending on the uses specified in the application and the risk associated with those uses. However, this section is still relevant for all development applications, with the exception of applications specifically for remediation work, which are dealt with separately in section 4.4.

When assessing DAs, s. 79C EP&A Act requires consent authorities to consider, among other things, ‘...the suitability of the site for the development.’ The risk to health and the environment from contamination must be included in this assessment

Consideration of risk must include risks during the construction and operation of the development. The former includes work safety issues, as well as the potential for construction to disturb contamination and cause off-site movement of chemicals. Where land has been remediated in the past, contamination issues will still need to be considered when the land is proposed for redevelopment. Planning authorities will need to ensure that any residual contamination is dealt with to permit the proposed new land use, particularly if clean-up standards have changed or there is on-site encapsulation of contaminated material.

### ***Suggestions for possible planning responses for DAs***

If investigations find that contamination makes the land unsuitable for the proposed use and requires remediation, this may be enforced by:

- if the remediation requires consent under SEPP 55 (category 1 work):
  - requiring the applicant to **amend the DA** to include a remediation proposal, or
  - requiring a **new and separate DA** for the remediation before the DA for the use is considered
- if the remediation may be carried out without consent under SEPP 55 (category 2 work):
  - imposing **conditions** on the development consent for the use, requiring remediation to be carried out and validated either before other work commences or before occupation of the site, or
  - issuing a **deferred commencement** consent for the use, and requiring remediation to be carried out and validated before other work commences.

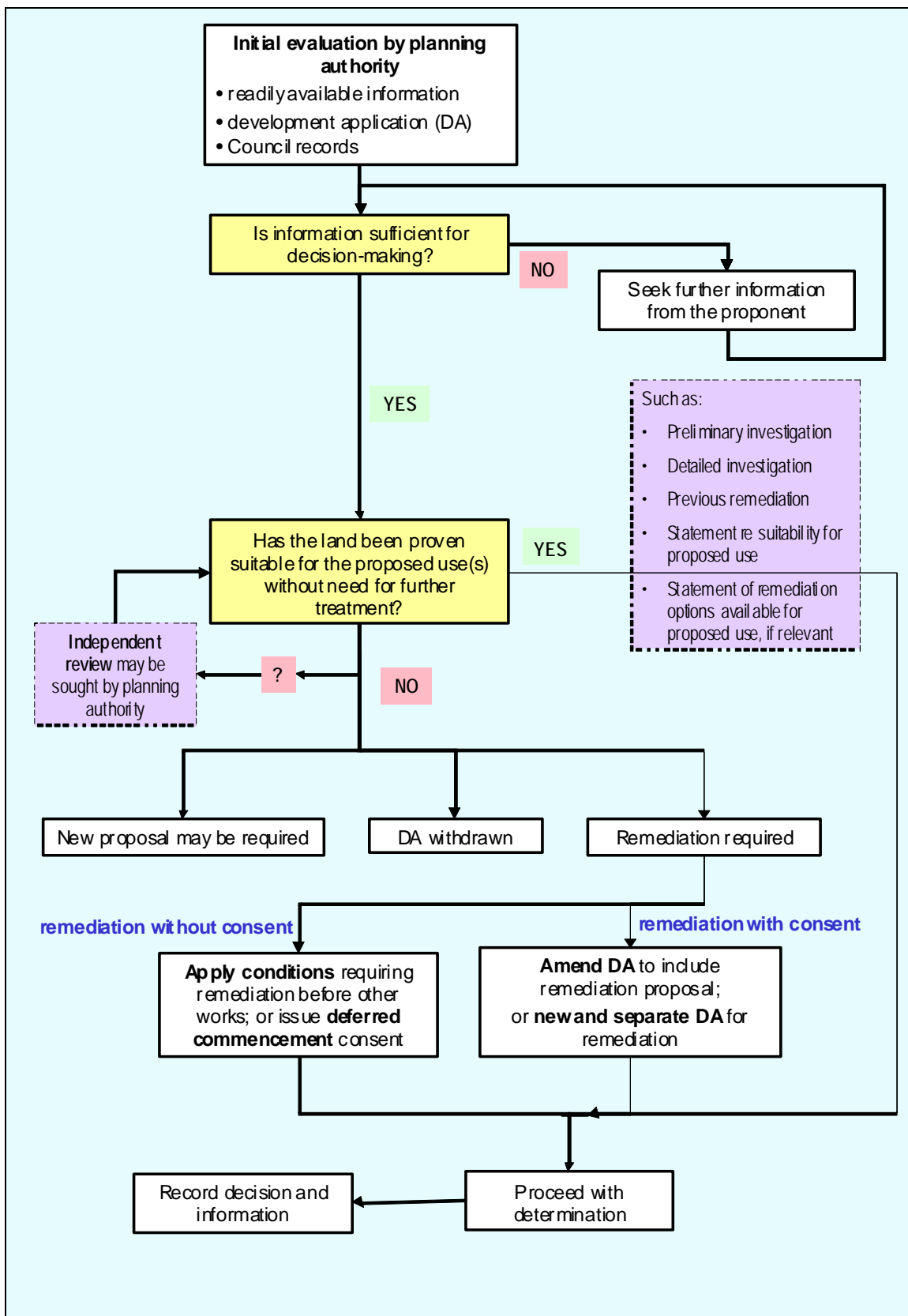
**Note:** A deferred commencement consent should only be considered if it is certain that remediation is feasible and the land will be suitable for its proposed use following remediation (see section 4.4.5).

- Information on contamination may be used to locate uses or structures within a site to minimise risk; and to place controls on construction methods, operation, and environmental management. The types of issues that may need to be covered in conditions of approval are listed in Appendix 3.
- If investigations find that contamination makes the land unsuitable for the proposed use and either the land may not be appropriately remediated or the proponent does not wish to remediate:
  - the proposal may be modified to a use that is suitable for the land without remediation, provided a new DA is not required, or
  - the application may be withdrawn, or
  - the application should be refused.

### **When can land be appropriately remediated?**

A consultant experienced in contamination issues can advise on what remediation options are available to reduce contaminant concentrations to an appropriate level for a particular land use. Although proceeding with remediation may be an economic decision for the proponent, a consent authority should make a preliminary assessment of whether remediation would be acceptable on planning grounds, that is, the potential environmental impact of the works.

Figure 3: Options Available in the Development Application Process



## 4.4 Control of Remediation Work

Remediation is generally considered beneficial as it improves the quality of the environment, reduces health risks and restores land to productive use. Care must therefore be taken not to create disincentives to remediation through complicated and costly planning procedures. However, in some situations remediation work itself has the potential for environmental impact and the planning process must ensure that these impacts are adequately identified and mitigated.

SEPP 55 provides consistent state wide planning and development controls for the remediation of contaminated land.

In summary, the SEPP ensures that:

- land use changes do not occur until planning authorities consider whether the land is contaminated and whether it needs to be remediated to make it suitable for the proposed use
- remediation of contaminated land is permissible throughout the State
- remediation requires consent only where it has the potential for significant environmental impacts or does not comply with a council's policy for contaminated land
- most remediation proposals which require consent are advertised for public comment
- all remediation is carried out in accordance with appropriate standards and guidelines
- applications for remediation are not refused without substantial justification
- councils are notified at commencement and completion of remediation.

### 4.4.1 When is Consent Required for Remediation?

Development consent is generally only required for remediation work where there is potential for significant environmental impacts from the work.

Remediation work which requires development consent is known as category 1 work. Category 1 refers to work:

- which is designated development under Schedule 3 of the EP&A Regulation or under a planning instrument
- proposed on land identified as critical habitat under the *Threatened Species Conservation Act 1995*
- where consideration of s. 5A of the EP&A Act indicates the remediation work is likely to have a significant effect on threatened species, populations, ecological communities or their habitats
- proposed in an area or zone identified in a planning instrument as being an area of environmental significance such as scenic areas, wetlands. These are listed in the SEPP
- which requires consent under another SEPP or a regional environmental plan.

All other remediation work may be carried out without development consent and is known as category 2 work. However, if the work is proposed to be carried out in a manner which is inconsistent with a council's policy on contaminated land (made in accordance with these Guidelines), then the work becomes category 1 and needs development consent (see point 3 in section 2.3).

### ***Inappropriately requiring consent***

Some councils have developed contaminated land policies, which stipulate that all remediation work within the local government area requires consent and thus falls into Category 1.

While this is allowed under clauses 9(d) and 9(f) of SEPP 55, this suggests some misunderstanding of the objectives of the SEPP 55 in relation to promoting remediation.

It is recognised that, in the early stages of implementing SEPP 55, many councils had limited information on contamination issues and that a 'blanket' requirement for development consent was seen as a conservative approach to dealing with the issue. However, it should be noted that clause 17(1) of SEPP 55 specifies that all remediation work must be carried out in accordance with the contaminated land planning guidelines, and the guidelines (if any) in force under the *Contaminated Land Management Act 1997*.

Those carrying out Category 2 remediation work already have an obligation to provide information to Council before commencement, and at the conclusion, of remediation, even though development consent is not required. This provides councils with opportunity to verify that any remediation has been appropriately carried out and to update council records.

A council policy, which requires development consent for all remediation work, irrespective of any consideration of whether the work falls within the descriptions of clauses 9(a) to (c) and clause 9(e) of SEPP 55, is contrary to the spirit of the policy. This is equally true of any planning instrument that makes all remediation work category 1, without considering the particular circumstances.

As noted earlier, remediation work should not generally require consent unless the potential environmental impacts of the remediation are significant.

Remediation work should be treated as Category 2 unless it explicitly falls within the descriptions of Category 1 work. Planning instruments and council policies should be updated accordingly.

### ***Confirmation that remediation is category 2***

SEPP 55 requires that local councils be notified 30 days before category 2 remediation works commence. This notification will provide councils with the information needed to verify that the work is not category 1 by reference to the criteria summarised above.

The 30-day limit does not apply to works that are category 2 regardless of whether they meet the criteria, for example, works that may be carried out without consent under SEPP 4.

If councils consider that the work needs consent under the SEPP, s. 76 of the EP&A Act provides councils with the power to prevent the work from proceeding. The 30-day limit does not prevent council intervention after that time for a breach of the Act or non-compliance with the SEPP.

The notification also serves as the basis for updating council records on properties in its area. The minimum content of the notification is set by the SEPP.

### ***Relationship to other planning instruments***

SEPP 55 contains some exceptions to the consent requirements outlined above where another SEPP or a regional environmental plan applies. The SEPP does not apply to development under SEPP No. 38 - Olympic Games and Related Facilities.

### ***Ancillary development***

Remediation is often carried out in conjunction with other development, to make the land suitable for that development. The SEPP contains the following rules for remediation as ancillary development:

- remediation work may be treated as category 2 work instead of category 1 if the only reason it is in category 1 is that it is ancillary to designated development
- remediation work that meets the criteria for category 1 work may not be treated as category 2 just because it is ancillary to development without consent
- if category 1 remediation work is carried out ancillary to development without consent, this does not result in a requirement for consent for that development
- if remediation work is designated development under Schedule 3 of the EP&A Regulation or the provisions of a planning instrument, this does not mean that any associated development is also designated.

#### **4.4.2 What is the Planning Process for Remediation Work?**

Appendix 2 sets out the steps in the planning process for remediation work. The process differs slightly depending on whether consent is required, whether the work is designated development, and whether the work is on a site declared by the DECC as a remediation site.

Under the CLM Act, the DECC may regulate site contamination if it forms a view that the contamination is significant and warrants regulation. There does not have to be a new use proposed on the land for this to occur. The DECC may issue a regulatory instrument to investigate and/or remediate a site. The instrument may also specify whether the work is to be audited by a site auditor accredited by the DECC. Remediation work on a regulated site may be either category 1 or category 2 work under the SEPP, depending on whether it meets the criteria for category 1 work<sup>3</sup>.

Where the required work on a declared remediation site is category 1, the Minister for Planning is the consent authority and the project application will be lodged with the Department of Planning (DoP) (on behalf of the Minister). The relevant councils will be notified when the application is received and copies of the application, remedial action plans and notifications of remediation will be provided to councils for their records.

#### **4.4.3 What are the Standards for Remediation Work?**

All remediation work, both category 1 and category 2, must:

- be consistent with these Guidelines
- be carried out in accordance with standards in DECC guidelines made under the CLM Act.

#### **4.4.4 How should Remediation Proposals be Assessed?**

The environmental impact of remediation work should be assessed like any other development proposal but for one difference, that is, the consequences of not carrying out the remediation will need to be considered and weighed up against the environmental impacts of carrying out the work. This involves an assessment of matters such as how the work will contribute to a net improvement in environmental quality, reduce health risks or promote the economic use and development of the land. Both the applicant and the consent authority need to consider this issue.

There must be substantial planning justification to refuse an application for remediation. SEPP 55 allows refusal only where the environmental impacts of the method of remediation would pose a more adverse impact on human health or the environment than if the land were not remediated in that manner. The consent authority may need to seek advice from an independent consultant, a site auditor or DoP in determining the

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<sup>3</sup> Development consent is not required for remediation work subject to a remediation order that is declared by the DECC to be emergency work. This work is automatically treated as category 2.

relevant risk. If the proposed method of remediation is unsatisfactory, the consent authority should negotiate modifications with the applicant. If the consent authority cannot reach an agreement with the applicant, DoP may be approached to mediate.

#### ***Issues to consider when assessing a remediation proposal***

In addition to the matters listed for consideration under s. 79C of the EP&A Act, the following issues may be relevant:

- Is the operational plan acceptable, for example, operation hours, site environmental management plans?
- Does the proposal require approvals from regulatory authorities?
- Is the remediation work proposed to be supervised by an appropriately qualified consultant?
- Is the proposal for validating the remediation adequate?
- Are reporting and monitoring mechanisms and proposals adequate?

### **4.4.5 Staged or Deferred Commencement Consent**

In some cases, it may not be practical to finalise all details of a RAP at the time a development application is submitted.

#### ***Staged Development***

One such case is where there is an application for staged development under Section 83B of the EP&A Act.

A staged development application is a development application that sets out concept proposals for the development of a site, and for which detailed proposals for separate parts of the site are to be the subject of subsequent development applications. The application may set out detailed proposals for the first stage of development.

Before giving consent to an application for staged development requiring remediation, a planning authority must be satisfied that:

- a preliminary or detailed site investigation has demonstrated that the entire area covered by the development can be remediated to a level that will make the land suitable for the proposed use
- a detailed RAP has been prepared for the first stage of the development in addition to a concept proposal for remediation for the site as a whole
- remediation of subsequent stages will not be impeded by, or create a risk to, preceding stages

A detailed RAP should be submitted with the development application for each subsequent stage.

#### ***Deferred Commencement***

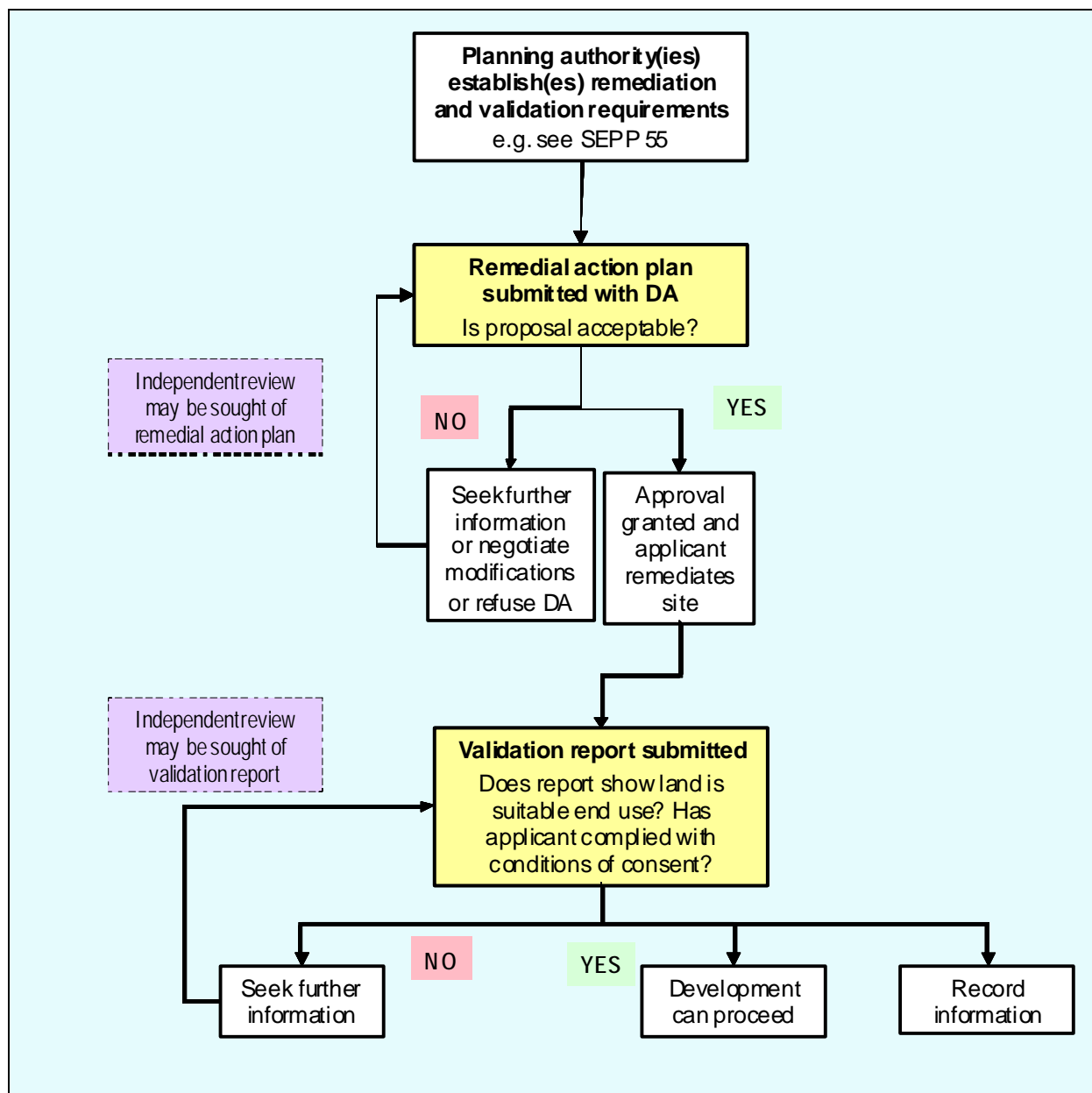
A deferred commencement consent may be warranted in instances where an applicant has satisfactorily demonstrated that the land can be remediated to make it suitable for its proposed use but further investigation is required to determine the most effective means of conducting the remediation.

If the investigations are likely to be time consuming or expensive, the applicant may be unwilling to proceed without the assurance of being given a development consent.

A development consent may be granted subject to a condition that the consent is not to operate until the applicant provides a detailed RAP to the satisfaction of the consent authority.

A deferred commencement consent cannot be used to defer adequate investigation of the nature and extent of contamination. A consent authority must be satisfied that remediation is feasible before granting a consent.

Figure 4: Process for Category 1 Remediation Work



Note: The above assessment principles are also broadly applicable to Category 1 remediation work that is a Major Project under Part 3A of the EP&A Act

#### 4.4.6 When is a Remedial Action Plan Required?

Ideally, a remedial action plan (RAP) should be prepared for all remediation proposals, as a guide to the objectives of the remediation and to assist in the planning of work. An

RAP also provides a useful measure for validation of the work after it is completed. However, an RAP is a mandatory requirement only for category 1 remediation work. For this work the RAP must be submitted to the consent authority with a development application for approval. The RAP may form part of an environmental impact statement if the remediation work is designated development.

An RAP must be prepared by an appropriately qualified consultant in accordance with the DECC's guidelines (Ref 15). For further information see Chapter 3.

## 4.5 Post-Remediation Management

Appendix 3 covers a number of post-remediation management issues that should be addressed in setting conditions of consent/approval for category 1 remediation. They also represent a valuable check list for those undertaking category 2 remediation work.

In particular, there needs to be a "fit-for-purpose" Environmental Management Plan (EMP) for any sites for which there is a potential for future contamination due to the type of remediation carried out. An example is the case where contamination cannot practically be removed and is contained by way of a barrier.

The EMP should provide for ongoing checking of the integrity of the barrier and may also include ongoing groundwater monitoring.

The Department of Planning has produced a useful guideline on the preparation of EMPs.<sup>4</sup>

## 4.6 Determining Activities Under Part 5 of the EP&A Act

Part 5 of the EP&A Act applies where development consent is not required under a planning instrument but an approval from a public authority is required. Under Part 5, a determining authority, that is, the authority determining whether to grant an approval (in some cases the proponent may be the determining authority) must take full account of all matters likely to affect the environment. When an activity is likely to significantly affect the environment, an environmental impact statement (EIS) is required.

### 4.6.1 When is Remediation a Part 5 Activity?

Remediation is a Part 5 activity when:

- it is carried out ancillary to an activity under Part 5, for example, development which does not require consent under SEPP 4 and which requires an approval from a public authority, or
- it is in category 2 (without consent) under SEPP 55 and an approval from a public authority is required.

### 4.6.2 When is an EIS Required under Part 5?

If consent is not required for remediation under the SEPP, it is unlikely that the remediation will significantly affect the environment (as the criteria for requiring consent relate to the potential for a development to significantly affect various aspects of the environment) and therefore an EIS will probably not be necessary. However, this will be a decision that must be made by the relevant determining authority on a case by case basis.

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<sup>4</sup> Available on the Department's website at [http://www.planning.nsw.gov.au/assessingdev/emp\\_guideline\\_publication\\_october\\_2004.pdf](http://www.planning.nsw.gov.au/assessingdev/emp_guideline_publication_october_2004.pdf)

If the remediation work is ancillary to an activity for which an EIS is being prepared, then the proponent should consider covering the remediation work in the EIS.

## 4.7 Summary

In carrying out planning functions under the EP&A Act in relation to land that is, or may be, contaminated, planning authorities should take account of the principles summarised below.

- No planning decision should be made unless sufficient information is available to make the decision.
- Development applications should include sufficient information on past uses of the subject land to allow the suitability of the land for the proposed use to be assessed.
- Changes of use on contaminated land may proceed provided:
  - the land is suitable for the intended use, or
  - provisions are included in the planning instrument to require appropriate investigation or restrictions on any subsequent development applications, or
  - conditions are attached to the development consent to ensure that the subject land can and will be remediated to a level appropriate to its intended use prior to, or during, the development stage.

## 5 Recording and use of information

By following the procedures discussed in Chapters 3 and 4, planning authorities will build up information on land use history, contamination and remediation in their areas. If this information is recorded and managed, it can be a valuable resource for use in decision making.

Reliable information is also important in providing accurate advice to the community. It is recognised that land contamination may cause concern, in particular regarding any potential risk that may be associated with such contamination. It is understandable, therefore, that the community seeks access to information held by government and councils on the issue of contamination and the remediation of land.

### General objectives

An information system should:

- record information in a manner appropriate to current legislation, and which assists planning authorities to carry out planning functions in the context of land use history
- ensure a fair and equitable means of informing stakeholders, especially potential purchasers or occupiers, of the presence of, or potential for, contamination on specific parcels of land
- provide relevant information which facilitates the control of land use, to minimise the risk to health and the environment
- encourage an approach which does not unnecessarily place restrictions on land or otherwise unnecessarily affect its value
- acknowledge any limitations on information, such as its degree of uncertainty and accuracy, and the purpose and time it was collected.

### 5.1 How Should Information be Recorded and Managed?

Information should be managed to enable easy access to all the relevant information for a particular parcel of land. This may mean that the relevant information for each parcel of land is kept in a single location such as a file, or that a centralised record is kept of the various sources of information for each parcel of land. For strategic planning purposes, it may also be appropriate to record some information on files relating to a broader area of land or subject, for example, a residential strategy file.

A flexible information system is needed to accommodate the dynamic nature of land contamination management. Knowledge about contamination and the relevance of contamination as an issue will change over time, as land is investigated further, is remediated for particular uses, or as standards for remediation change to accommodate changing community values. This is one of the reasons why a register of contaminated sites is not the preferred approach in NSW. A register falsely implies that information held by the planning authority at and beyond the time of registration is complete and comprehensive, and that land may be clearly classified as 'contaminated' or 'not contaminated'. It is difficult for a register to adjust to new information about land.

### 5.1.1 Property Information Systems

Property information systems have been installed in many councils to handle various types of information and enquiries. Where these are available, they may provide a helpful administrative tool for managing information on land relating to contamination. Property files should be accessed each time a planning authority takes any planning action.

### 5.1.2 Mapping Systems

In many instances, computerised geographic information systems (GISs) have been installed to assist councils with the management of information. Where available, such systems may provide a very useful tool for mapping existing or previous land uses as a guide to the relevance of contamination issues. Experience suggests that GISs, while a substantial cost initially, are a worthwhile investment for the effective long-term management of land.

## 5.2 What Information Needs to be Recorded?

The future uses of the information should be kept in mind when deciding what information to record on files or the GIS. All information which may assist in carrying out the planning functions covered in Chapter 4 should be recorded. This may include the following:

- previous property descriptions, for cross-referencing purposes
- chronological land use history
- complaints about contamination or potentially contaminating activities and whether these were substantiated
- information from any initial evaluations
- information from any site investigations
- notifications of remediation
- any site audit statements
- previous zones and permissible uses, particularly uses listed in Table 1
- approved DAs for uses listed in Table 1 or uses where contamination was an issue
- refused DAs where they have been refused on the basis of contamination-related issues
- rezoning requests approved and refused on the basis of contamination-related issues
- notices issued under the POEO Act
- DECC declarations, orders and notices under the CLM Act, and resulting action.

Copies of relevant documents such as remedial action plans may also be useful on the files. The sources of information and the purpose for which it was collected should also be recorded. This includes the date of the information and the date on which it was recorded.

It is clear that much of this information will also be useful for exercising planning functions where contamination is not an issue.

### 5.2.1 Maintaining a Record of Remediation Work

An important category of land use information that should be maintained is information on remediation work. SEPP 55 requires that the relevant consent authority, usually the

council, be notified prior to and at the completion of remediation work. This notification is required of all remediation work, regardless of whether or not consent is required.

## 5.3 Notifying Restrictions on Land Use and Additional Information

If contamination present on a parcel of land may cause an unacceptable risk to human health or the environment, a planning authority should restrict the use of that land so the risk is minimised. When a restriction is placed on land, information about that restriction should be available to any enquirer.

If there is no need to restrict the use of land due to the risk from contamination, but information is held by the planning authority that may assist others in making decisions about that land, this information should also be made available to enquirers.

These matters are discussed in more detail in the following sections.

### 5.3.1 How Should Section 149 Planning Certificates be Used?

#### *Restrictions on land use – certificates under section 149(2)*

Under s. 149 of the EP&A Act, a person may request from a council a planning certificate containing advice on matters about land that are prescribed in the Regulation. One such prescribed matter is the existence of a council policy to restrict the use of land. This is taken to include restrictions on land use due to risks from contamination. Certificates are issued under s. 149(2).

It should be noted that a s. 149(2) planning certificate does not, in itself, restrict the use of land. It is simply the mechanism for recording the fact that a council policy applies which restricts the use of land. Section 2.3 of these Guidelines deals with the preparation of a council policy.

Other matters prescribed for inclusion on planning certificates under s. 149(2) in relation to contaminated land are whether the land:

- is within land declared to be an investigation area or remediation site
- is subject to an investigation order or a remediation order
- is the subject of a voluntary investigation proposal (or voluntary remediation proposal)
- is the subject of a site audit statement (if a copy of such a statement has been provided at any time to the local authority issuing the certificate).

These matters are required under the CLM Act and are listed in clause 10 of Schedule 3 of the EP&A Regulation. **Note** that there is no requirement to include copies of site audit statements or reports on remediation with planning certificates under s. 149(2).

It is important to recognise that no notation is necessary under s. 149(2) where council's policy **does not restrict** the use of land, and is unlikely to result in a restriction once the land has been further investigated. This would include:

- land which has been used for a purpose listed in Table 1, but which has been remediated to an extent that no restriction on land use is necessary, or
- there is a history of non-contaminating activities on the land and there is no contrary evidence to suggest that the land has been used for a purpose listed in Table 1.

The “blanket approach” issue typically arises in situations where councils have responded to uncertainties over site histories by adopting a policy which essentially

requires all land to be regarded as contaminated until an initial evaluation or more detailed investigation indicates that contamination is not an issue.

Uncertainty may be caused by previous agricultural or industrial use of land, which may have occurred several decades before a longstanding current residential use. Under these circumstances, the Planning Guidelines (section 5.3.3) indicate that, where council cannot determine whether or not the land is contaminated, and therefore the extent to which council's policy should apply, a cautious approach to notation may be taken.

**It is important that such an approach be the exception, rather than the rule. An overly cautious approach to notation, which can have significant adverse blighting effects on land should not be used as a substitute for assessment.**

Planning authorities should take reasonable steps to review available information in order to form a judgement as to whether the use of land, as currently zoned, is likely to be restricted by virtue of past use. When a blanket 149(2) notation flags contamination as a potential land use restriction over a large portion of a local government area, the value of the notation as an information management and decision-making tool is severely diminished.

#### ***Factual information – certificates under section 14(5)***

Section 149(5) provides councils with the opportunity to record additional property information, of a **factual nature**. Any limitations on the information should be made clear, such as the purpose for which the information was collected, or the reliability of the source of the information.

There are a number of critical differences between those planning certificates issued under s. 149(2) with additional information provided in accordance with s. 149(5), and those issued without such additional information (a basic planning certificate).

A basic planning certificate must be provided to every prospective purchaser under provisions in vendor disclosure legislation<sup>5</sup>. If information noted under the basic planning certificate is not disclosed or is incorrect, the purchaser may be able to rescind the contract. There are, however, no such obligations for the vendor to include information under s. 149(5). The decision to check information under s. 149(5) on a property is at the purchaser's discretion, and may require payment of an additional fee.

The EP&A Act was amended in 1996 so that councils do not incur any liability for advice provided in good faith under s. 149(2) or s. 149(5) relating to contaminated land, provided it is provided substantially in accordance with the Planning Guidelines in force at the time (s. 145B).

### **5.3.2 What Investigation is Required when Issuing Section 149 Planning Certificates?**

Ultimately, the responsibility for investigating the potential for contamination during the sale of land rests with vendor and purchaser (vendor disclosure and 'buyer beware'). However, a council has an obligation under s. 149 of the EP&A Act to provide certain information relevant to contamination when requested. This means that council records should be checked before a planning certificate is issued. For contamination issues, this check may be similar to an initial evaluation described in Chapter 3. The objective in checking council records is to determine the type of notation that should be recorded on the planning certificate under s. 149(2), that is, the degree to which the council policy

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<sup>5</sup> Section 52(A) of the Conveyancing Act sets out the 'duty of disclosure' requirements. This legislation requires the vendor of a property to disclose to the potential purchaser any prescribed documents relating to that property. If this is not done, the purchaser may rescind the contract. Clause 4 of the Vendor Disclosure Regulation specifies a planning certificate issued under s. 149(2) of the EP&A Act as a prescribed document in relation to land the subject of a contract of sale.

and other prescribed information is likely to apply, and any additional information that may be useful to the enquirer under s. 149(5).

### 5.3.3 Suggestions for Notations on Section 149 Planning Certificates

#### ***The basic certificate under s. 149(2)***

The following notations are only suggestions. Substantial compliance with the Guidelines under Part 7A of the EP&A Act does **not** require the adoption of these notations, word for word.

Where council's contaminated land policy restricts the use of land which:

- has a previous land use history which could have involved use of contaminants on the site, for example, land which may have been used for a potentially contaminating activity listed in Table 1, or
- is known to be contaminated, but
- has not been remediated,

an appropriate notation may be:

*'Council has adopted by resolution a policy on contaminated land which may restrict the development of the land. This policy is implemented when zoning or land use changes are proposed on lands which have previously been used for certain purposes. Consideration of council's adopted policy and the application of provisions under relevant State legislation is warranted.'*

Where council's contaminated land policy restricts the use of land which:

- is known to contain contaminants, but
- has been remediated for a particular use or range of uses and some contamination remains on the site, for example, encapsulated,

an appropriate notation might be:

*'Council has adopted by resolution a policy on contaminated land which may restrict the development of the land. This policy is implemented when zoning or land use changes are proposed on lands which are considered to be contaminated, or on lands which have been remediated for a specific use. Consideration of council's adopted policy and the application of provisions under relevant State legislation is warranted.'*

Where council records **do not contain a clear site history without significant gaps in information** and council cannot determine whether or not the land is contaminated, and therefore the extent to which council's policy should apply, council may decide to take a cautious approach. In such cases an appropriate notation might be:

*'Council has adopted by resolution a policy on contaminated land which may restrict the development of the land. This policy is implemented when zoning or land use changes are proposed on lands which have previously been used for certain purposes. Council records do not have sufficient information about previous use of this land to determine whether the land is contaminated. Consideration of council's adopted policy and the application of provisions under relevant State legislation is warranted.'*

When issuing a planning certificate under s. 149(2), councils should consider advising the enquirer whether further information is available under s. 149(5).

#### ***Information under s. 149(5)***

Information may be provided under s. 149(5) even if no restriction is placed on the land under s. 149(2). This means that if land has been remediated, or investigated and found to be uncontaminated, this information could be included on planning certificates under s. 149(5) as factual information about the land.

Other information that may be relevant to an enquirer may include any of the information recorded by council, which is listed in section 5.2 of these Guidelines. As a minimum, these Guidelines suggest that the following information be provided on all planning certificates under s. 149(5):

- any activities listed in Table 1 of these Guidelines that council records show have occurred on the land
- the results of any site investigations held by the council
- any notifications of remediation
- copies of any site audit statements held by the council.

## 5.4 Summary

- Councils should maintain efficient property information systems on which factual information pertinent to contamination is recorded.
- Councils must ensure their records are accurate and up-to-date. They should ensure that stakeholders are aware of the status of the subject land and the planning policy requirements relating to contamination.
- Section 149(2) planning certificates issued under the EP&A Act are an appropriate system of legal notification of the application of council policies which place restrictions on land use due to risks from contamination.
- Factual information relating to past land use and other matters relevant to contamination may also be provided, even when land use is not restricted. Provision of information under s. 149(5) is a useful means of recording details of land history, assessment, testing and remediation.
- When council receives a request for a certificate under s. 149(2), it is suggested that applicants be informed that further information is available under s. 149(5).
- When land has been investigated and is considered suitable for the permissible uses, this information should be retained in council records and provided under s. 149(5).

# 6 Preventing contamination and harm

## 6.1 Introduction

Almost all measures dealt with so far in these Guidelines have been of a remedial nature rather than anticipatory. The prevention of future contamination and the minimisation of risk from existing contamination may be achieved by diligent investigation of contamination issues and the appropriate recording of information on land use and potentially contaminating activities.

## 6.2 Preventing Harm

With time, the application of the procedures described in these Guidelines will help councils to build up their records on past land uses. Knowledge gained through the investigation process and the notification of remediation work will help to reduce risk and prevent harm to health and the environment by increasing understanding of the relationship between previous land uses, contamination and environmental impacts. Making factual information available to enquirers will also raise general awareness of contamination issues.

## 6.3 Preventing Future Contamination

Measures to prevent possible pollution at its source may help to reduce future land contamination and the need for remedial action. Once contamination has been detected, environmental damage may have occurred and clean-up bills could be high. Therefore, future economic consequences of contamination play a part in the current motivation for prevention.

A pro-active approach which ensures that the potential for contamination is reduced or that it does not occur must be linked to the nature of an activity on a particular site. Contamination of land may often be associated with new developments involving potentially contaminating activities (see Table 1). Such activities may result in accidental releases of chemicals to land which in turn will render the land contaminated. It is therefore suggested that the following principles for a pro-active approach could be applied by planning authorities:

- Development applications for new or expanding developments may be required to include information on the potential for the activity to contaminate; this will be particularly relevant for uses listed in Table 1. Consent authorities may require information to be provided on the chemicals proposed to be used.
- Environmental impact assessment should cover different aspects of contamination. This will ensure that effective environmental management is maintained.
- In assessing development applications for activities which could be potential sources of contamination, planning authorities should ensure that technical and management controls are adequate to prevent contamination and should impose appropriate conditions of consent or approval (such as a requirement for monitoring and environmental management plans) to ensure that such controls are applied. Plant design should aim to reduce the waste produced and eliminate or

minimise the release of waste into the environment by, for example, appropriate primary and secondary containment and good work practices.

- Periodic environmental audits should be encouraged and the introduction of 'clean' technologies promoted; for example, the production of new alternative products.
- Better technologies, waste management practices, and environmental management practices should be promoted.

# Appendix 1

## Industries and Chemicals Used<sup>6</sup>

Industry	Type of Chemical	Associated Chemicals	
Agricultural/horticultural activities		See Fertiliser, Insecticides, Fungicides and Herbicides under 'Chemicals manufacture and use'	
Airports	Hydrocarbons	Aviation fuels	
	Metals	Particularly aluminium, magnesium, chromium	
Asbestos production and disposal		Asbestos	
Battery manufacture and recycling	Metals	Lead, manganese, zinc, cadmium, nickel, cobalt, mercury, silver, antimony	
	Acids	Sulfuric acid	
Breweries/distilleries	Alcohol	Ethanol, methanol, esters	
Chemicals	Acid/alkali manufacture and use	Mercury (chlor/alkali), sulfuric, hydrochloric and nitric acids, sodium and calcium hydroxides	
	Adhesives/resins	Polyvinyl acetate, phenols, formaldehyde, acrylates, phthalates	
	Dyes	Chromium, titanium, cobalt, sulfur and nitrogen organic compounds, sulfates, solvents	
	Explosives	Acetone, nitric acid, ammonium nitrate, pentachlorophenol, ammonia, sulfuric acid, nitroglycerine, calcium cyanamide, lead, ethylene glycol, methanol, copper, aluminium, bis(2-ethylhexyl) adipate, dibutyl phthalate, sodium hydroxide, mercury, silver	
	Fertiliser	Calcium phosphate, calcium sulfate, nitrates, ammonium sulfate, carbonates, potassium, copper, magnesium, molybdenum, boron, cadmium	
	Flocculants	Aluminium	
	Foam production	Urethane, formaldehyde, styrene	
	Fungicides	Carbamates, copper sulfate, copper chloride, sulfur, chromium, zinc	
	Paints	heavy metals	Arsenic, barium, cadmium, chromium, cobalt, lead, manganese, mercury, selenium, zinc, titanium
		solvents	Toluene oils either natural (e.g. pine oil) or synthetic

<sup>6</sup> See Appendix 1 of Australian Standard AS4482.1-2005—Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil. Part 1: Non-Volatile and Semi-Volatile Compounds.

Industry	Type of Chemical	Associated Chemicals
	Pesticides	
	<ul style="list-style-type: none"> <li>active ingredients</li> <li>solvents</li> </ul>	<p>Arsenic, lead, organochlorines, organophosphates, sodium tetraborate, carbamates, sulfur, synthetic pyrethroids</p> <p>Xylene, kerosene, methyl isobutyl ketone, amyl acetate, chlorinated solvent</p>
	Pharmaceutical	
	<ul style="list-style-type: none"> <li>Solvents</li> </ul>	Acetone, cyclohexane, methylene chloride, ethyl acetate, butyl acetate, methanol, ethanol, isopropanol, butanol, pyridine methyl ethyl ketone, methyl isobutyl ketone, tetrahydrofuran
	Photography	Hydroquinone, sodium carbonate, sodium sulfite, potassium bromide, monomethyl para-aminophenol sulfate, ferricyanide, chromium, silver, thiocyanate, ammonium compounds, sulfur compounds, phosphate, phenylene diamine, ethyl alcohol, thiosulfates, formaldehyde
	Plastics	Sulfates, carbonates, cadmium, solvents, acrylates, phthalates, styrene
	Rubber	Carbon black
	Soap/detergent	
	<ul style="list-style-type: none"> <li>general</li> <li>acids</li> <li>oils</li> </ul>	<p>Potassium compounds, phosphates, ammonia, alcohols, esters, sodium hydroxide, surfactants (sodium lauryl sulfate), silicate compounds</p> <p>Sulfuric acid and stearic acid</p> <p>Palm, coconut, pine, teatree</p>
	solvents	
	<ul style="list-style-type: none"> <li>general</li> <li>hydrocarbons</li> <li>chlorinated organics</li> </ul>	<p>Ammonia</p> <p>e.g. BTEX (benzene, toluene, ethylbenzene, xylene)</p> <p>e.g. trichloroethane, carbon tetrachloride, methylene chloride</p>
Defence works		See Explosives under 'Chemicals manufacture and use'; also 'Foundries', 'Engine works' and 'Service stations'
Drum reconditioning		See 'Chemicals manufacture and use'
Dry cleaning		Trichlorethylene, 1,1,1-trichloroethane, carbon tetrachloride, perchlorethylene
Electrical		PCBs (transformers and capacitors), solvents, tin, lead, copper, mercury
Engine works	Hydrocarbons, Metals, Solvents, Acids/Alkalis	
	Refrigerants	Chlorofluorocarbons, hydrochlorofluorocarbons, hydrofluorocarbons
	Antifreeze	Ethylene glycol, nitrates, phosphates, silicates

Industry	Type of Chemical	Associated Chemicals
Foundries	Metals	Particularly aluminium, manganese, iron, copper, nickel, chromium zinc, cadmium and lead and oxides, chlorides, fluorides and sulfates of these metals
	Acids	Sulfuric and phosphoric Phenolics and amines coke/graphite dust
Gas works	Inorganics	Ammonia, cyanide, nitrate, sulfide, thiocyanate Aluminium, antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, vanadium, zinc
	Organics	BTEX, phenolics, PAHs and coke
Iron and steel works		BTEX, phenolics, PAHs, metals and oxides of iron, nickel, copper, chromium, magnesium, manganese and graphite
Landfill sites		Alkanes and ammonia, sulfides, heavy metals, organic acids
Marinas		See 'Engine works' and Electroplating metals under 'Metal treatments'
	Antifouling paints	Copper, tributyltin (TBT)
Metal treatments	Electroplating	
	• metals	Nickel, chromium, zinc, aluminium, copper, lead, cadmium, tin
	• acids	Sulfuric, hydrochloric, nitric, phosphoric
• general	Sodium hydroxide, 1,1,1-trichloroethane, tetrachloroethylene, toluene, ethylene glycol, cyanide compounds	
	Liquid carburizing baths	Sodium, cyanide, barium, chloride, potassium chloride, sodium chloride, sodium carbonate, sodium cyanate
Mining and extractive industries		Arsenic, mercury and cyanides and also explosives under 'Chemicals manufacture and use' Aluminium, arsenic, copper, chromium, cobalt, lead, manganese, nickel, selenium, zinc and radio-radionuclides The list of heavy metals should be decided according to the composition of the deposit and known impurities
Power stations		Asbestos, PCBs, fly ash metals, water treatment chemicals
Printing shops		Acids, alkalis, solvents, chromium See also Photography under 'Chemicals manufacture and use'
Railway yards		Hydrocarbons, arsenic, phenolics (creosote), heavy metals, nitrates, ammonia
Scrap yards		Hydrocarbons, metals, solvents

<b>Industry</b>	<b>Type of Chemical</b>	<b>Associated Chemicals</b>
Service stations and fuel storage facilities		Aliphatic hydrocarbons BTEX (i.e. benzene, toluene, ethylbenzene, xylene) PAHs Phenols Lead
Sheep and cattle dips		Arsenic, organochlorines, organophosphates, carbamates, synthetic pyrethoids
Smelting and refining		Metals, the fluorides, chlorides and oxides of copper, tin, silver, gold, selenium, lead and aluminium
Tanning and associated trades	Metals	Chromium, manganese, aluminium
	General	Ammonium sulfate, ammonia, ammonium nitrate, arsenic phenolics, formaldehyde, sulfide, tannic acid
Water and sewage treatment plants	Metals	Aluminium, arsenic, cadmium, chromium, cobalt, lead, nickel, fluoride, lime, zinc
Wood preservation	Metals	Chromium, copper, arsenic Naphthalene, ammonia, pentachlorophenol, dibenzofuran, anthracene, biphenyl, ammonium sulfate, quinoline, boron, creosote, organochlorine pesticides

# Appendix 2

## Planning Process for Different Types of Remediation Work

Please note that category 1 refers to remediation work that needs development consent (or project approval) under SEPP 55 and category 2 refers to remediation work that does not. The integrated development provisions of the *Environmental Planning and Assessment Act 1979* may also apply.

### **Category 1 Remediation Work - with Council Consent**

- If the proposal is designated development, the Director-General's requirements sought for the environmental impact statement (EIS)
- Development application (DA) prepared, including Remedial Action Plan (RAP) (and EIS if required)
- DA and RAP (and EIS if required) lodged with council
- Council may request an audit of the DA or RAP by a site auditor. Note that this is not mandatory
- DA and RAP advertised and submissions received
- If proposal is designated and objections are received, these are sent to the Department of Planning (DoP) for comment
- Council determines proposal (after DoP comments received)
- Proposal carried out in accordance with approval
- Validation obtained from qualified expert at completion of remediation work
- Council notified of validation within a month of completion of work
- Council may request an audit of the validation by a site auditor. Note that this is not mandatory.

Note: This general process should also be followed for remediation work which falls within Part 3A of the EP&A Act and for which the Minister for Planning is the approval authority

### **Category 1 Remediation Work on a Site Declared by the DECC as a Remediation Site**

Note Under SEPP (Major Projects) 2005, such work is a Major Project which falls under the processes of Part 3A of the EP&A Act.

- Site declared by the DECC to be a remediation site
- Director-General's requirements sought for the EA
- Project application and Draft EA prepared, including RAP, in consultation with the DECC
- Application lodged with DoP
- Draft EA is checked for adequacy
- DoP may request an audit of the DA or RAP by a site auditor. Note that this is **not** mandatory
- DoP sends copies of EA and RAP to the DECC

- Project Application, Final EA and RAP are advertised and submissions received
- Minister determines proposal, in consultation with the DECC
- Proposal carried out in accordance with approval
- Validation obtained from qualified expert at completion of remediation work
- DoP notified of validation within a month of completion of work
- DoP sends copy of validation notice to council and the DECC
- DoP may request an audit of the validation by a site auditor. Note that this is **not** mandatory.

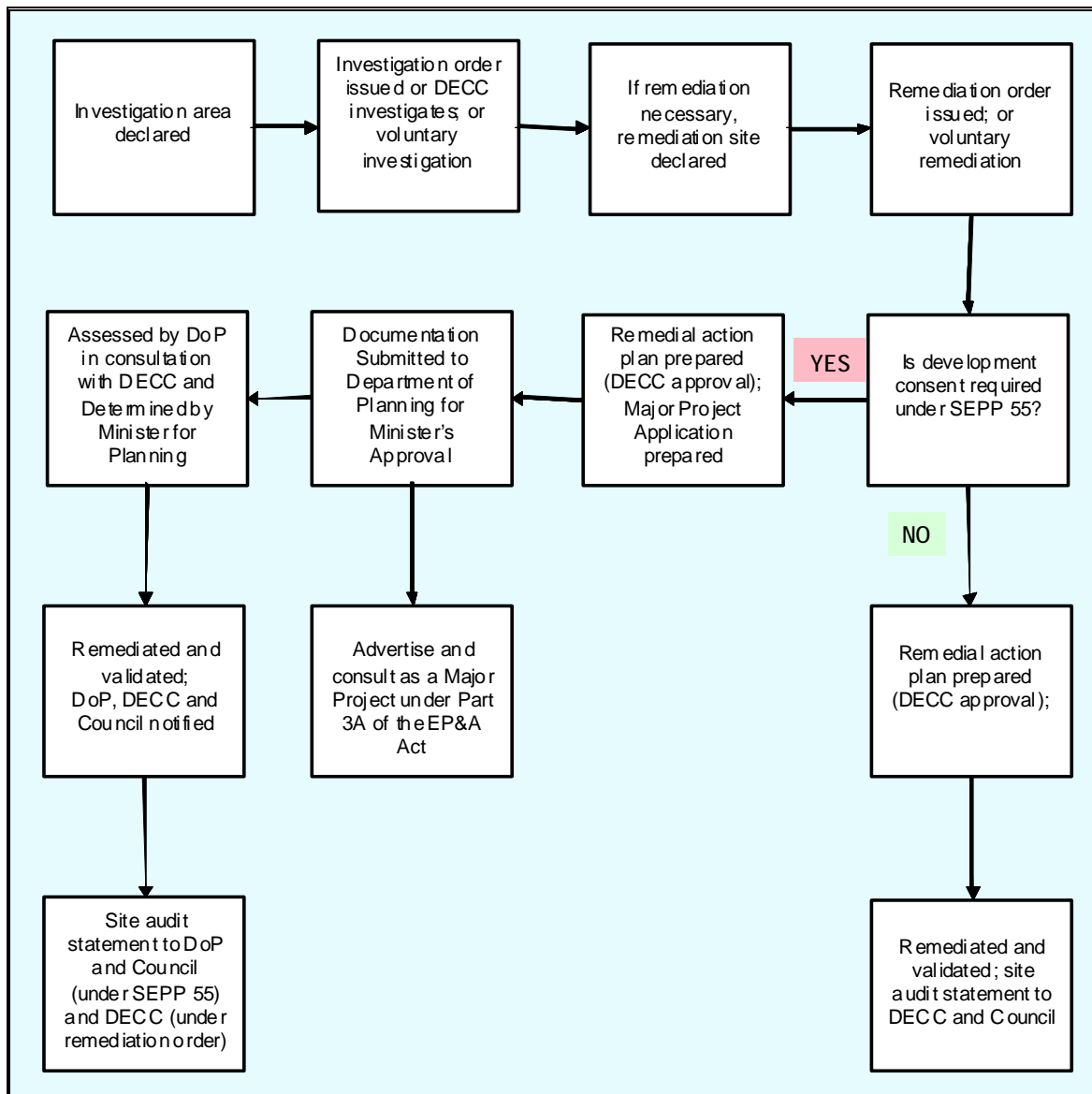
***Category 2 Remediation Work - without Consent***

- Council notified of proposed remediation
- Proposal documentation prepared, including RAP if proponent considers it necessary
- Proposal carried out in accordance with submitted information
- Validation obtained from qualified expert at completion of remediation work
- Council notified of validation within a month of completion of work.

***Category 2 Remediation Work on a Site Declared by the DECC as a Remediation Site***

- Site declared by the DECC to be a remediation site
- Council notified of proposed remediation
- Proposal prepared, including RAP if required, in consultation with the DECC
- Proposal lodged with the DECC
- Proposal determined by the DECC
- Proposal carried out in accordance with approval
- Validation obtained from qualified expert at completion of remediation work
- The DECC notified of validation
- Council notified of validation within a month of completion of work.

**Figure 5: Relationship between the Planning System and the Contaminated Land Management Act**



Note: The local council and/or the consent authority receives copies of DA, EIS/EA, notifications and site audit statement.

# Appendix 3

## Conditions of Consent/Approval

It is suggested that conditions of consent for remediation work cover the following.

### ***Statutory requirements***

- meet requirements such as those of the DECC, Sydney Water, Department of Health, council and WorkCover NSW
- meet relevant regulations, and Australian standards and codes. See (Ref 6)

### ***Health and safety***

- prepare a health and safety plan in accordance with WorkCover NSW requirements
- meet all occupational health and safety and construction safety regulations
- establish site fencing, public safety warning signs, and security surveillance

### ***Air quality***

- ensure no burning of material on site
- maintain equipment in functional manner to minimise exhaust emissions
- cover vehicles entering and leaving the site with soil/fill material
- regularly monitor air quality throughout work
- establish dust suppression measures to minimise wind borne emissions of dust, having regard to site specific wind conditions

### ***Water quality***

- regularly monitor water quality throughout work
- store water for dust suppression in adequately bunded area and drain to a central collection sump and treat, if necessary, to meet DECC discharge criteria

### ***Erosion and sediment control***

- establish temporary erosion and sediment control measures prior to commencement
- maintain erosion and sediment control measures in functional condition
- submit detailed designs for pollution control system, including leachate collection and disposal, before commencement of work
- store any temporary stockpiles of contaminated materials in a secure area
- clean vehicles leaving the site

### ***Noise***

- control noise emissions in accordance with the *POEO Act*
- ensure plant equipment is noise suppressed
- regularly monitor noise quality throughout work and send results to appropriate regulatory authority

### **Waste**

- remove, dispose of and monitor, in accordance with the requirements of the the *POEO Act* and regulations and relevant chemical control orders issued under the *Environmentally Hazardous Chemicals Act 1985*
- prepare, if contaminated solid is to be removed from site, a waste management plan and annual report detailing issues such as where it will go, how it will be treated and transportation issues

### **Landscaping and rehabilitation**

- prepare landscaping plan for approval of consent authority
- landscape site in accordance with landscape plan
- progressively stabilise and revegetate disturbed areas in accordance with landscape plan

### **Consultants**

- ensure professionals undertaking remediation are appropriately qualified and experienced

### **Validation**

- prepare final soil validation program in accordance with DECC guidelines
- submit validation notice to consent authority within a month of completion
- prepare and submit a detailed survey of all sites used as landfill disposal pits, identifying the boundaries and depth of disposal pits in relation to existing roadways and buildings

### **Performance bonds**

#### **Ongoing monitoring**

- periodically monitor material containment areas for the leaching of contaminants
- the need for a formal Environmental Management Plan (see section 4.5)

# Appendix 4

## Abbreviations

ANZECC	<i>Australian and New Zealand Environment and Conservation Council</i>
ARMCANZ	<i>Agriculture and Resource Management Council of Australia and New Zealand</i>
CLM Act	<i>Contaminated Land Management Act 1997</i>
DA	development application
DCP	development control plan
DEC	the former Department of Environment and Conservation, now the DECC
DECC	Department of Environment and Climate Change
DoP	Department of Planning
EA	environmental assessment
EIS	environmental impact statement
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environment Protection Authority (now incorporated into the DECC)
LEP	local environmental plan
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
RAP	remedial action plan
REP	regional environmental plan
SEPP	State environmental planning policy

# Appendix 5

## Glossary

category 1 remediation work under SEPP 55	remediation work that needs development consent
category 2 remediation work	remediation work that does not need development consent under SEPP 55
contaminated land	land in, on or under which any substance is present at a concentration above that naturally present in, on or under the land and that poses, or is likely to pose, an immediate or long-term risk to human health or the environment <sup>7</sup>
contamination	concentration of substances above that naturally present that poses, or is likely to pose, an immediate or long-term risk to human health or the environment
detailed investigation	an investigation to define the extent and degree of contamination, to assess potential risk posed by contaminants to health and the environment, and to obtain sufficient information for the development of a remedial action plan if required. See section 3.5.3
independent review	an evaluation by an independent expert required by a planning authority of any information submitted by a proponent, conducted at the proponent's expense
initial evaluation	an assessment of readily available factual information to determine whether contamination is an issue relevant to the decision being made. See section 3.2
investigation order	an order by the DECC under the Contaminated Land Management Act to investigate contamination at a site or within an area <sup>8</sup>
notice of completion	notice to the council (or Minister for Planning where he is the consent authority) in accordance with SEPP 55 that remediation work has been completed <sup>9</sup>
notification of remediation	prior notice of a category 2 remediation work <sup>9</sup> given to the council in accordance with SEPP 55
planning authority	a public authority or other person responsible for exercising a planning function
planning function	function exercised by a planning authority under the Environmental Planning and Assessment Act 1979, such as the preparation or making of an environmental planning instrument <sup>7</sup>

<sup>7</sup> As defined in the EP&A Act

<sup>8</sup> As defined in the CLM Act.

<sup>9</sup> As defined in SEPP 55.

preliminary investigation	an investigation to identify any past or present potentially contaminating activities and to provide a preliminary assessment of any site contamination. See section 3.5.2.
remedial action plan	a plan which sets remediation goals and documents the process to remediate a site. See section 3.5.4.
remediation order	a direction <sup>8</sup> from the DECC under the Contaminated Land Management Act to remediate
remediation site	a site declared by the DECC under the Contaminated Land Management Act as posing a significant risk of harm <sup>8</sup>
remediation work	a work means a work in, on or under contaminated land, being a work that: (a) removes the cause of the contamination of the land, or (b) disperses, destroys, reduces, mitigates or contains the contamination of the land, or (c) eliminates or reduces any hazard arising from the contamination of the land (including by preventing the entry of persons or animals on that land) <sup>9</sup>
site audit	an independent review by a site auditor <sup>8</sup> of any or all stages of the site investigation process conducted in accordance with the Contaminated Land Management Act. See section 3.6
site auditor	a person accredited by the DECC under the Contaminated Land Management Act to conduct site audits <sup>8</sup>
site audit statement	a certificate issued by a site auditor stating for what use the land is suitable <sup>8</sup>
site audit report	a report containing the key information and the basis of consideration which leads to the issue of a site audit statement <sup>8</sup> . See (Ref 6)
site history	a land use history of a site which identifies activities or land uses which may have contaminated the site, establishes the geographical location of particular processes within the site, and determines the approximate time periods over which these activities took place (See Ref 4)
site investigation process	the process of investigating land which may be, or is, contaminated, for the purpose of providing information to a planning authority. See section 3.4
soil investigation levels	See (Ref 6 and 19)
spot rezoning	rezoning of a small area of land, as opposed to a large area rezoning
Statement of Affairs	published annually by each government agency as a requirement under the Freedom of Information Act
validation	the process of determining whether the objectives for remediation and any conditions of development consent or project approval have been achieved

# Appendix 6

## Bibliography

1. ANZECC & ARMCANZ 2002 *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Paper No 4.
2. ANZECC & NHMRC 1992 *The Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*.
3. Standards Australia 2005 Australian Standard AS4482.1. Appendix 1 - Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil. Part 1: Non-Volatile and Semi-Volatile Compounds.
4. Commonwealth Department of Health and Ageing and EnHealth Council 2002 *Environmental Health Risk Assessment: Guidelines for assessing human health risks from environmental hazards*.
5. DEC 2005 *Contaminated Sites: Guidelines for Assessing Former Orchards and Market Gardens*.
6. DEC 2006 *Contaminated Sites: Guidelines for the NSW Auditor Scheme (2<sup>nd</sup> edition)*.
7. DECC 2007 *Guidelines for the Assessment and Management of Groundwater Contamination*.
8. Department of Infrastructure, Planning and Natural Resources 2004 *Guideline for the Preparation of Environmental Management Plans*.
9. 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. South Australian Health Commission.
10. EPA<sup>10</sup> 1994 *Contaminated Sites: Guidelines for Assessing Service Station Sites*.
11. EPA 1994 *Guideline for the Management of Materials Containing Polychlorinated Biphenyls (PCBs) below 50 Milligrams per Kilogram*.
12. EPA 1995 *Contaminated Sites: Sampling Design Guidelines*.
13. EPA 1995 *Contaminated Sites: Guidelines for the Vertical Mixing of Soil on Former Broad-Acre Agricultural Land*.
14. EPA 1997 *Contaminated Sites: Guidelines for Assessing Banana Plantation Sites*.
15. EPA 1997 *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*.
16. EPA 1999 *Contaminated Sites: Guidelines on Significant Risk of Harm from Contaminated Land and the Duty to Report* (reprinted July 2003).
17. Imray, P. & Langley, A. 1996 *Health-Based Soil Investigation Levels*. National Environmental Health Forum Monographs, Soil Series No.1, South Australian Health Commission.

18. Lock, W. H. 1996 *Composite Sampling*. National Environmental Health Forum Monographs, Soil Series No.3, SA Health Commission, Adelaide.
19. National Environment Protection Council 1999 *National Environment Protection (Assessment of Site Contamination) Measure 1999*.
20. NSW Department of Agriculture and CMPS&F Environmental 1996 *Guidelines for the Assessment and Clean Up of Cattle Tick Dip Sites for Residential Purposes*.

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<sup>10</sup> The EPA is now incorporated within the DECC.

# Appendix 7

## State Environmental Planning Policy No 55—Remediation of Land

These guidelines should be read in conjunction with State Environmental Planning Policy 55 – *Remediation of Land* which is available for download from [www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au)