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Abbreviations

BTEX	Benzene/Toluene/Ethylbenzene/Xylene
DA	Development Application
d(BA)	Decibels - A Weighted
DCP	Development Control Plan
DEC	Department of Environment and Conservation
DIPNR	Department of Infrastructure, Planning and Natural Resources
EPA	NSW Environmental Protection Authority (The EPA is now part of the Department of Environment and Conservation. Certain statutory functions and powers continue to be exercised in the name of the EPA).
HCB	Hexachlorobenzene
LEP	Local Environment Plan
LGA	Local Government Authority
RAP	Remedial Action Plan
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Poly Chlorinated Biphenol
SEPP 55	State Environmental Planning Policy No. 55 - Remediation of Land
SSROC	Southern Sydney Regional Organisation of Councils
TPH	Total Petroleum Hydrocarbons

I. Introduction

Due to previous and existing land uses, sites within the City of Sydney may be contaminated, posing a risk to human health or the environment. Contamination may preclude or impede later development of a site for particular uses.

As required by legislation this Development Control Plan (DCP) establishes a procedural framework for the integration of contaminated land management into the planning and development processes within the City of Sydney.

I.1. Citation

This DCP is called the *City of Sydney Contaminated Land Development Control Plan 2004*.

I.2. Area to which the development control plan applies

This DCP applies to all land within the City of Sydney, where the Council and the Central Sydney Planning Committee are the consent authority, as shown in the figure 1.

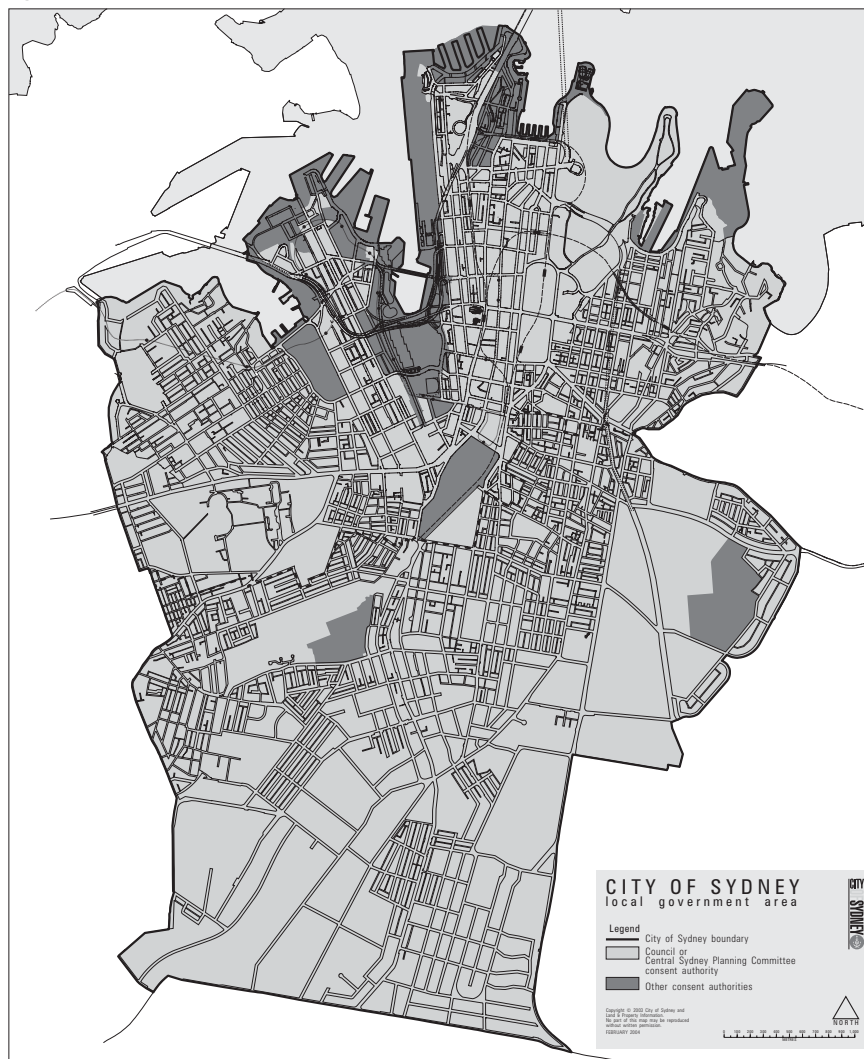


Figure 1: The City of Sydney Local Government Area

1.3 Commencement

This DCP was adopted by the Council of the City of Sydney on 7th June 2004 and the Central Sydney Planning Committee on 3rd June 2004. The DCP commenced operation on 28th June 2004

1.4 Relationship to other environmental planning instruments and development control plans

This DCP has been prepared by the City of Sydney to complement the requirements of the following:

- *State Environmental Planning Policy No.55 - Remediation of Land;*
- *Managing Land Contamination - Planning Guidelines (to be used in association with SEPP 55);*
- *Environmental Planning and Assessment Act 1979;*
- *Environmental Planning and Assessment Regulation 2000;*
- *Contaminated Land Management Act (CLM Act) 1997; and*
- *Contaminated Land Management Regulation 1998;*

This package of legislation and guidance is cross-referenced and the documents work in conjunction with each other. If, when using the DCP, clarification of any matter is required, refer to the above primary legislative documentation.

This DCP repeals the following development control plans insofar as they apply to the City of Sydney:

- *Development Control Plan No.42 - Contaminated Land Management (prepared by Leichhardt Council) - June 2000 (amended January 2001);*
- *Development Control Plan - Contaminated Land (prepared by South Sydney City Council), and*
- *South Sydney Development Control Plan 1997 - Part E: Section 1.8 Site Contamination (prepared by South Sydney City Council)*

1.5 Further Information

For information on the *Contaminated Land Management Act 1997* contact:

Department of Environment and Conservation (incorporating the EPA)
59-61 Goulburn Street, Sydney
PO Box A290, Sydney South 1232
Phone: (02) 9995 5000 (switch)
Fax: (02) 9995 5999
www.epa.nsw.gov.au

For information regarding State Environmental Planning Policy No. 55 – Remediation of Land contact:

Department of Infrastructure, Planning and Natural Resources
20 Lee Street
Sydney NSW 2000
GPO Box 3927
Sydney NSW 2001
Ph: (02) 9762 8000 (switch)
Ph: (02) 9762 8044 (enquiries)
Fax: (02) 9762 8701

For information regarding Occupational Health and Safety contact:

NSW WorkCover Authority
Locked Bag 2906
Lisarow, NSW 2252
Phone: (02) 4321 5000
Fax: (02) 4325 4145
www.workcover.nsw.gov.au

NSW Legislation can be downloaded from:

www.legislation.nsw.gov.au

1.6 Definitions

In the application of the provisions of this DCP, the following definitions shall apply:

Category 1 Remediation Work is remediation work that needs development consent.

Category 2 Remediation Work is remediation work that does not need development consent under SEPP 55.

Contamination of Land means the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment. Land may be contaminated land even if it became contaminated partly or entirely by the migration of contaminants into, onto or under the land from other land.

Detailed Investigation is an investigation to define the extent and degree of contamination, to assess potential risk posed by contaminants to health and the environment, and obtain sufficient information for the development of a remedial action plan if required.

Investigation Area means land declared to be an investigation area under Division 2 of Part 3 of the *Contaminated Land Management Act 1997*.

Notice of Completion is a notice to the Council (or Minister for Infrastructure and Planning where he is the consent authority) in accordance with SEPP 55 that remediation work has been completed.

Notice of Remediation is issued prior notice of category 2 remediation work given to the Council in accordance with SEPP 55.

Preliminary Investigation (Stage I Investigation) is an investigation to identify any past or present potentially contaminating activities and to provide a preliminary assessment of any site contamination.

Remedial Action Plan is a plan, which sets remediation goals and documents the process to:

- Remove, disperse, destroy, reduce, mitigate or contain the contamination of the land; and
- Eliminate or reduce any hazard arising from the contamination of the land (including by preventing the entry of persons or animals on the land),

In accordance with the contaminated land planning guidelines and *Contaminated Land Management Act 1997*.

Remediation means:

- Preparing a long-term management plan (if any) for the land, and
- Removing, dispersing, destroying, reducing, mitigating or containing the contamination of the land, and
- Eliminating or reducing any hazard arising from the contamination of the land (including by preventing the entry of persons or animals on the land)

Site Audit is an independent review of any or all stages of the site investigation process, conducted in accordance with the *Contaminated Land Management Act 1997*. A site audit may review a preliminary investigation, a detailed investigation, a remedial action plan, or a validation report. A Site Audit must be prepared in accordance with the prescribed form located in the *Contaminated Sites Auditor Scheme Guidelines*.

Site Auditor is a person for the time being accredited under Part 4 of the *Contaminated Land Management Act 1997* as a site auditor.

Site Audit Report means a site audit report prepared by a site auditor in accordance with Part 4 of the *Contaminated Land Management Act 1997*.

Site Audit Statement means a written statement prepared by a site auditor in accordance with Part 4 of the *Contaminated Land Management Act 1997*. Please note that the form for statements is now approved by the EPA (DEC) under s53B of the CLM ACT.

Site History is 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.

Statutory Site Audit means a site audit required under legislation or a regulatory instrument carried out only by site auditors accredited under the *Contaminated Land Management Act 1997*.

Validation means the process of determining whether the objectives for remediation and any conditions on the development consent have been achieved.

Validation Report outlines the evidence or documentation of an assessment as to whether the remediation work undertaken has achieved the desired clean up standard.

Zoning is the system of categorising land uses within particular areas. Zones (such as residential or city centre) are described and shown in plan form within the relevant environmental plans.

2. Purpose and objectives

2.1 Purpose

This DCP is designed to provide a procedure for dealing with contamination issues as they arise in the City's planning, assessment and administrative roles and to ensure that the Council of the City of Sydney carries out its legal responsibilities.

2.2 Objectives

The key objectives of the DCP are to:

- Ensure that changes of land use will not increase the risk to health or the environment;
- Avoid inappropriate restrictions on land use; and
- Provide information to support decision making and to inform the community.

3. Procedures: decision making

3.1 Initial evaluation

The City of Sydney will conduct an initial evaluation as part of the development assessment process to determine whether contamination is an issue, and whether sufficient information is available for Council to carry out its planning functions (i.e. determination of the development application) in good faith. Further information (if required) may take the form of a site investigation process of up to four stages, which is to be undertaken by the applicant. The appropriate level of evaluation/ investigation will depend upon the circumstances of each site. The four stages that an applicant may be required to undertake are:

- Stage 1 - Preliminary Investigation;
- Stage 2 - Detailed Investigation;
- Stage 3 - Remedial Action Plan (RAP);
- Stage 4 - Validation and Monitoring.

Note: The proponent is responsible for engaging a suitably qualified and experienced consultant to undertake the contamination investigation. In addition, the proponent is responsible for all costs borne in engaging the consultant and site auditor, where necessary.

The Department of Environment and Conservation's intervention in relation to contaminated land is triggered when land contamination poses a significant risk of harm to public health or the environment (*s.7 Contaminated Land Management Act 1997*).

The initial evaluation will be based on readily available factual information provided by the applicant and information available to Council such as previous investigations about contamination on the land, previous zonings and uses of the subject land.

Specifically, the initial evaluation checklist should include such matters as:

- What is the current zoning and range of permissible uses?
- What do records from previous zoning and uses of the subject land reveal about previous uses?
- Was the land ever zoned for industrial or defence purposes?
- What do records from development applications, building applications and property files for the site reveal about previous uses?
- Are there gaps in the site history that may conceal land uses listed in Table 1*?
- Is the City of Sydney aware of any previous investigations addressing contamination on the land, and if so, what were the results?
- Are previous remediation processes undocumented?
- Are previous remediation processes suitable for the intended use?
- Can the available information be verified?

* Table 1 of the *Managing Land Contamination - Planning Guidelines 1998* DUAP/ EPA is provided at Appendix 1 Of this DCP

- Does the site pose a significant threat to human health or the environment?
- Are previous or existing adjoining land uses likely to have contaminated the site?
- Have previous or present zonings permitted uses listed in Table 1*?
- Are there any restrictions relating to possible contamination, such as notices issued by the EPA or another regularity authority?
- Do existing records held by the City of Sydney show any activities listed in Table 1* have ever been approved on the subject land?
- Is the subject land currently used for an activity listed in Table 1*?
- To the knowledge of the City, was, or is, the subject land regulated through licensing or other mechanisms in relation to any activity listed on Table 1*?
- Is the site likely to contain fill deposited during the 19th century and or early 20th century?

Information provided by the proponents should be cross referenced with information held by the consent authority. The consent authority may also wish to conduct a site inspection of the subject site.

If, after undertaking the initial evaluation, the enquiries suggest that land contamination is not present or that further enquiry is unwarranted, the planning process should proceed in the normal way to determination of the application.

However, if, after undertaking the initial evaluation, there are indications that contamination is, or may be, present and the consent authority has insufficient information to make a planning decision in good faith, then the proponent is required to provide further information.

3.2 Site Investigation Process

Generally if there is sufficient information and a site is found not to pose a significant risk of harm, then the consent authority under the provisions of the *Environmental Planning and Assessment Act 1979*, shall continue in accordance with *Managing Land Contamination - Planning Guidelines and State Environmental Planning Policy No. 55*.

Consent authorities who act substantially in accordance with these guidelines when carrying out specified planning functions are taken to have acted in good faith and receive statutory protection under s.145B and s.145C of the *Environmental Planning and Assessment Act 1979*.

3.3 Rezoning applications

In the City of Sydney, existing zones are broad inclusionary zones allowing for a wide range of urban land uses. The absence of more specific zones and also of non-urban zones means that change of use rezoning applications rarely occur in the central Sydney area.

* Table 1 of the *Managing Land Contamination - Planning Guidelines 1998 DUAP*/EPA is provided at Appendix 1 Of this DCP

However, where such rezoning would permit a change in use (to a more sensitive land use), *State Environmental Planning Policy 55 (SEPP 55)* requires the consent authority to consider contamination issues (including when the consent authority is the proponent of the rezoning) and will not include land in a zone that would permit a change of use of the land from the existing use unless it has considered the provisions of section 6 of SEPP 55.

In addition to the requirements outlined in Section 6 of SEPP 55, the consent authority may also require a stage 1 - preliminary investigation to be submitted in cases where rezonings propose to change the permitted land uses on a site or sites, allowing a broader range of sensitive land uses than where previously permitted.

For minor rezoning applications, where a specific development or a land use associated with the proposal is known, and the consent authority has reasonable grounds to believe the land may be contaminated because of its history, condition, or other information known to the consent authority, the consent authority may also require a stage 2 - detailed investigation to be undertaken prior to determining the rezoning application.

For general rezoning applications that cover more than one property; the consent authority itself proposes general rezoning; or the proposed rezoning does not permit any additional land uses, it may be difficult or unnecessary for the consent authority to be satisfied that every part of the land is suitable for the permissible use(s) at the rezoning stage.

In these circumstances the consent authority may consider the findings of a stage 1 - preliminary investigation. These may include preparing LEP/DCP provisions to ensure that the potential for contamination and the suitability of the land for any proposed use is further addressed prior to the redevelopment of the land.

3.4 Development applications

When assessing development applications, Section 79C (1) of the *Environmental Planning and Assessment Act 1979* requires the consent authority to consider "...the suitability of the site for the development". The risk to health and the environment from contamination is included in this assessment. The consent authority must also consider clause 7 of SEPP 55, which states that a consent authority will not consent to the carrying out of any development on land unless:

- "(a) it has considered whether the land is contaminated, and
- (b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and
- (c) if the land requires remediation to be made suitable for any purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose." (DUAR, 1998)

Where land is intended to be dedicated for a particular use as part of a development proposal, the consent authority will also consider the above clause 7 of SEPP 55. Where contamination exists, it shall be appropriately remediated by the applicant at no cost to the consent authority prior to the proposed use of the land commencing.

The following subsections outline when site contamination information is to be submitted with development applications. The procedure for considering land contamination issues for development applications is shown in Figure 2.

3.4.1 When is a Stage I - Preliminary Site Contamination Investigation required?

The objective of a stage I - preliminary investigation is to identify any past or present potentially contaminating activities and to provide a preliminary assessment of site contamination. The preliminary investigation typically contains a detailed appraisal of the site history and a report based on visual site inspection and assessment. Where information on site contamination is limited, some soil sampling may be warranted.

SEPP 55 requires the consent authority to consider contamination issues in determining development applications. In accordance with clause 7(4) of SEPP 55, the consent authority requires a preliminary investigation to be submitted with a development application where the land concerned is:

- "(a) land that is within an investigation area,
- (b) land on which development for a purpose referred to in Table 1* to the contaminated land planning guidelines is being, or is known to have been, carried out,
- (c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital-land:
- (i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1* to the contaminated land planning guidelines has been carried out, and
- (ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge)."
- (DUAP, 1998)

In addition to the requirements outlined in clause 7(4) of SEPP 55, the consent authority may also require a preliminary investigation to be submitted when:

- there are reasonable grounds to believe the land is contaminated because of the land's history, condition, or other information known to the consent authority;
- The site has been investigated and/or remediated but there is insufficient information available about the nature and extent of contamination and/or remediation, or the circumstances have changed;
- There are restrictions on, or conditions attached to, the use of the site by a regulatory or planning authority 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 site is associated with pollution incidents or dumping of wastes; and
- The site is adjoining land that has been associated with activities that may cause contamination listed in Appendix I and it is likely that this may have contaminated the subject premises.

* Table 1 of the *Managing Land Contamination - Planning Guidelines 1998* DUAP/ EPA is provided at Appendix I Of this DCP

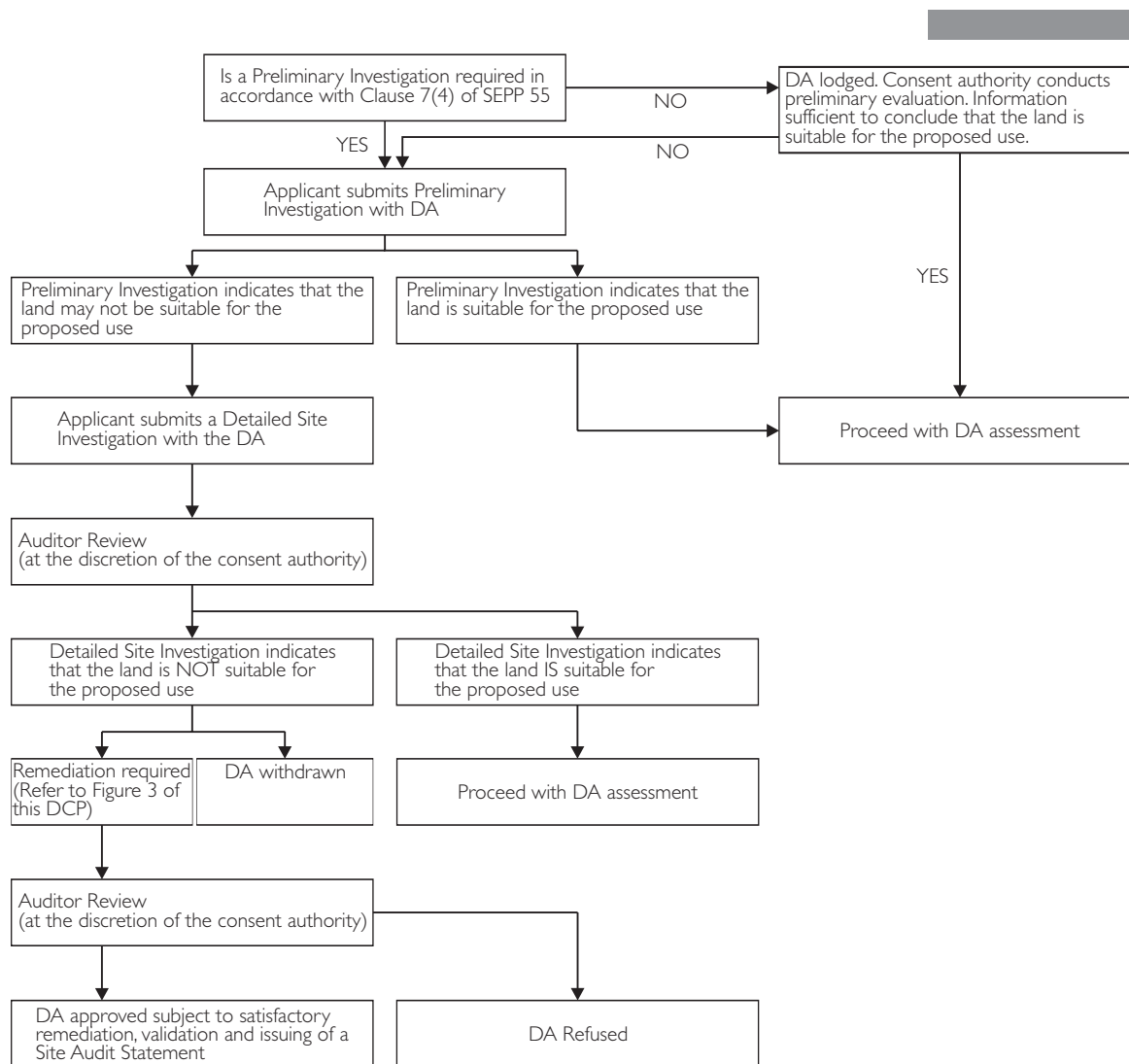


Figure 2: Procedure for considering land contamination issues for development applications

The stage 1 preliminary site contamination investigation shall be carried out in accordance with the requirements of the relevant EPA (now Department of Environment and Conservation) guidelines.

The applicant is responsible for engaging a contaminated land consultant to undertake the preliminary site contamination investigation. The contaminated land consultant may be an external or in-house experienced expert, competent in the assessment, remediation, management and validation of contaminated sites. The applicant is also responsible for all costs borne in engaging the consultant and site auditor, if requested by the consent authority (see Section 6.0 - Independent Auditing).

A list of information sources that may be useful in understanding the history of the site is included in Appendix 2 of this DCP. Applicants may also request the City to perform a search of its records to determine previous approved developments at the site (see Section 7 - Records and Community Information).

If the consent authority is satisfied that the preliminary site contamination investigation concludes that the site is suitable for the proposed use, then no further investigations will be required. However, a site audit statement prepared by an EPA accredited auditor may be required to be submitted to Council certifying that the site is suitable for the intended use.

3.4.2 When is a Stage 2 - Detailed Site Contamination Investigation required?

The objectives of a stage 2 - detailed site investigation are to:

- define the extent and degree of contamination;
- assess the potential risk posed by contaminants to human health and the environment; and
- obtain sufficient information for the development of a remedial action plan (if necessary).

A stage 2 - detailed site investigation will be required when the results of the preliminary investigation demonstrate the potential for, or existence of contamination that may not be suitable for the proposed use of the land. (In some cases stage 1 and stage 2 investigations may be combined where the land is known to contain or have contained a potentially contaminating activity).

A stage 2 - detailed site investigation will also be required when the site is known, or suspected to have (or is adjacent to site that has) undertaken land uses listed in Appendix 1. A detailed investigation will also need to be conducted as part of a remedial proposal.

The stage 2 - detailed site investigation is to be carried out in accordance with the requirements of the relevant NSW EPA Guidelines. The applicant is responsible for engaging a suitability qualified consultant to undertake the detailed site contamination investigation. In addition, the proponent is responsible for all costs borne in engaging the consultant and site auditor (Refer to Section 6 - Independent Auditing).

The stage 2 - detailed site investigation is to include a statement that describes whether the site is suitable for the proposed use, or if remediation is necessary to make the site suitable for the proposed use. Where remediation is required, the report is to also provide the feasible remediation options for the site.

3.4.3 When is a Stage 3 - Remedial Action Plan (RAP) 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. However, a RAP is only mandatory for category 1 remediation work (refer to section 4). For category 1 work, the RAP must be submitted to the consent authority with a development application.

The submission of a RAP is required if the stage 2 detailed investigation concludes that the land is not suitable for the proposed use in its present state. Prior to determining the development application, the consent authority must be satisfied that remedial measures have been, or will be undertaken in accordance with the submitted RAP, in order to make the site suitable for the proposed use.

The RAP shall be reviewed by a NSW EPA accredited site auditor and include a statement issued by that auditor certifying that the RAP is practical and the site will be suitable after remediation for the proposed use.

Variations to the proposed RAP are to be approved in writing by the accredited site auditor and Council prior to the commencement of work.

The objectives of a remedial action plan are to:

- set remediation objectives;
- determine the most appropriate remedial strategy; and
- identify necessary approvals that need to be obtained from regulatory authorities.

The RAP document should consider:

- the remedial works to be undertaken at the site;
- whether the site can be appropriately remediated;
- whether the proposed clean-up criteria is suitable for the proposed site;
- whether a site audit of the RAP is necessary;
- an environmental management plan; and
- an occupational health and safety plan for the remedial works.

3.4.4 When is a Stage 4 - Validation and Monitoring Report required?

The objectives of stage 4 - validation and monitoring report are to demonstrate:

- the objectives stated in the RAP have been achieved;
- compliance with the appropriate development consent conditions have been achieved; and
- any future need for a continued monitoring programme.

A stage 4 - validation and monitoring report must be submitted to the consent authority within 30 days of completing remediation works and prior to the commencement of building construction works, pursuant to clause 18 of SEPP 55. In cases of remediation, the consent authority will require a stage 4 report as a condition of consent or a deferred commencement consent may be issued, with full consent being conditioned on successful remediation and validation taking place.

Successful validation is the statistical confirmation that the remediated site complies with the clean-up criteria set for the site.

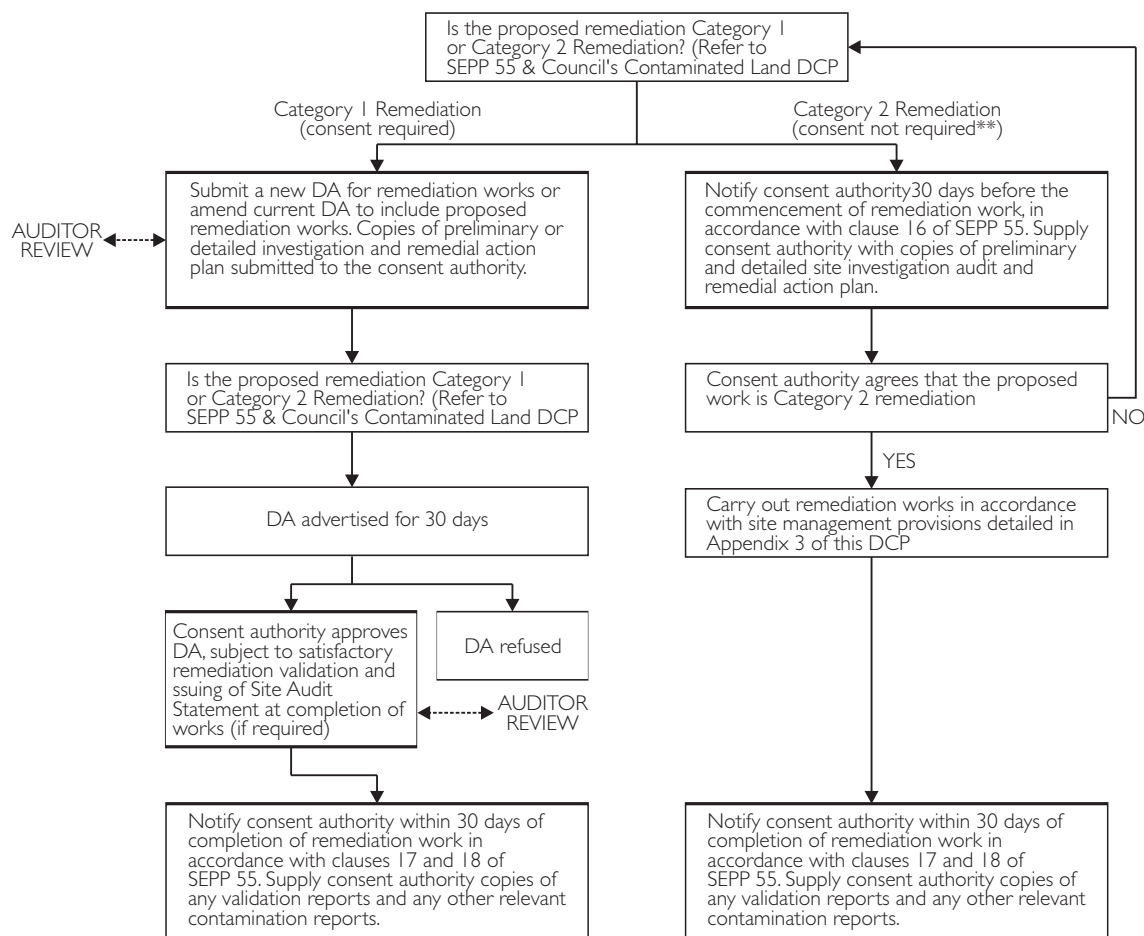
4 Procedures: remediation

For remediation work, SEPP 55 specifies when development consent is required, and when it is not required. This section defines:

- category 1 remediation work;
- category 2 remediation work; and
- outlines the site management provisions

Appendix B of the Planning Guidelines for SEPP 55 sets out the steps in the planning process for remediation work and Figure 3 provides the procedure for considering site remediation proposals .

Figure 3: Procedure for considering site remediation proposals



** NOTE: Development consent may be required if works such as shoring are involved.

4.1 Category 1 Remediation Work

Development consent is generally only required for remediation work where there is potential for significant environmental impact from the work. Remediation work that requires consent is known as category 1 work. Category 1 refers to work that is:

- Designated development under Schedule 3 of the EP&A Regulations or under a planning instrument;
- State significant development under s. 76 A of the EP&A Act 1979;
- Proposed on land identified as a critical habitat under the Threatened Species Act 1995;
- Likely to have a significant effect on threatened species, populations, ecological communities or their habitats as described in s. 5A of the EP & A Act 1979;
- Proposed in an area or zone identified in a planning instrument as being an area of environmental significance such as scenic areas, wetlands, as listed in SEPP 55; and
- Required to obtain consent under another SEPP or a regional environmental plan.
- Remediation works involving onsite treatment of groundwater.
- Remediation works involving onsite treatment of contaminated soil (eg. soil stabilisation, land farming, soil washing).
- Remediation work that does not comply with the Council's site management provisions discussed in Section 5 of this DCP.

Note: Should the remediation works involve ancillary works such as shoring or excavations, a development application and/or construction certificate may be required for that work.

All proposed category 1 works are identified as Advertised Development, unless identified as State Significant Development or Designated Development, and are required to be advertised for 30 days pursuant to s. 29A of the *Environmental Planning and Assessment Act 1979*.

If remedial works constitute category 1 remediation work, the applicant may either amend their current application to include a remediation proposal (if applicable) or lodge a new and separate development application for the remediation works.

4.2 Category 2 Remediation Work

All other remediation work may be carried out without consent and is known as category 2 remediation works. However, if the work is proposed to be carried out in a manner which is inconsistent with the procedures outlined in Appendix 3 of this DCP, then the work becomes category 1 and requires development consent.

In accordance with clause 16 of SEPP 55, prior notice of category 2 remediation work to the consent authority is required at least 30 days before commencement of works.

In addition to the information that must be submitted to the consent authority under clause 16(2) of SEPP 55, the consent authority will require the following information to be submitted at least 14 days prior to the commencement of category 2 remediation works:

- copies of any preliminary investigation, detailed investigation and remedial action plan for the subject site; and
- contact details for the remediation contractor and party responsible for ensuring compliance of remediation work with all relevant regulatory requirements (if different to remediation contractor).

The Managing Land Contamination – Planning Guidelines further require that Council be notified of validation within a month of completion of remediation work (Appendix B – Planning Process for Different Types of Remediation Work).

Although consent is not required for category 2 remediation work, the consent authority will need to be satisfied that the site is suitable for the proposed use when considering any subsequent development applications for the subject site. It is recommended that comprehensive records are maintained during the remediation and validation works for all sites.

4.3 Issues considered when assessing a remedial proposal

In addition to the matters listed for consideration under s. 79C of the EP&A Act 1979, the following questions may be relevant:

- *"Is the operational plan acceptable, for example, operation hours, site environmental management plan?"*
- *Does the proposal require approvals from regulatory authorities?*
- *Is the remediation work proposed to be supervised by an appropriately qualified and experienced consultant?*
- *Is the proposal for validating the remediation adequate?*
- *Are reporting and monitoring mechanisms and proposals adequate?"* (DUAP, 1998)

5. Site management

A number of site management provisions have been identified for the conduct of category 2 remediation work. These provisions have been formulated to ensure that category 2 remediation work does not adversely impact on the environment or public amenity.

All category 2 remediation work shall be conducted in accordance with the site management provisions listed in Appendix 3. The site management provisions apply to all of the City of Sydney Local Government Area (LGA). Category 2 remediation work that does not comply with the site management provisions outlined in Appendix 3 will be classified as category 1 remediation work and will require consent.

Development applications lodged for category 1 remediation works should identify any areas of non-compliance with the site management provisions listed and identify any alternative site management measures to be implemented.

Note: It is the responsibility of those remediating a site to ensure compliance with all relevant environmental legislation and regulations. Compliance with the site management provisions outlined in Appendix 3 must be accompanied by compliance with relevant environmental legislation and regulations. Non-compliance with relevant environmental legislation and regulations may incur on-the-spot fines for minor offences, or larger fines and imprisonment for more serious offences.

6. Independent auditing

6.1 NSW Site Auditor Scheme

The NSW Site Auditor Scheme commenced on 1 June 1998. Site Auditors are experts who can provide an independent review of the work of a primary consultant for all types of contaminated sites. Part 4 of the *Contaminated Land Management Act 1997* allows the Department of Environment and Conservation to accredit suitably qualified and experienced individuals as site auditors.

6.2 Site Audits

A site audit is defined as:

'An independent review:

- (a) *that relates to investigation, or remediation, carried out (whether under this Act or otherwise) in respect of the actual or possible contamination of land, and*
- (b) *that is conducted for the purpose of determining any one or more of the following matters:*
 - (i) *the nature and extent of any contamination of the land,*
 - (ii) *the nature and extent of the investigation or remediation,*
 - (iii) *what investigation or remediation remains necessary before the land is suitable for any specified use or range of uses?'*

(Section 47(1) of the Contaminated Land Management Act, 1997)

The NSW EPA have also prepared (2nd edition draft) Guidelines for the NSW Site Auditor Scheme June 2002, which outline the NSW Site Auditor Scheme, the process of appointing site auditors, and the legal, administrative and technical directions and guidelines for site auditors and the preparation of site audits statements.

6.3 Site Audit Statements

A site audit statement provides a clear statement about what land use is suitable for the site, including any conditions on that suitability (eg to maintain capping). A site audit statement must be prepared on a prescribed form (see *Contaminated Land Management (Site Auditor) Regulations 1998*). When an accredited auditor for contaminated land is requested to conduct a site audit, they must also prepare a site audit statement.

Section 47(2) of the *Contaminated Land Management Act, 1997* states that:

"a reference to a statutory site audit is a reference to a site audit carried out in order to secure compliance with:

- (a) *requirement under this Act, or*
 - (a1) *a voluntary investigation proposal that has been the subject of the EPA's agreement under section 19 or a voluntary remediation proposal that has been the subject of the EPA's agreement under section 26, or*
- (b) *requirement imposed by State Environmental Planning Policy No 55 Remediation of Land or by any other environmental planning instrument made under the Environmental Planning and Assessment Act 1979 or by any development consent given under that Act, or*

- (c) *any other requirement imposed by or under an Act, unless it is carried out only in order to secure compliance with a legal obligation arising from an agreement or arising in such circumstances as the regulations may prescribe.*"

Some examples of when statutory site audits are required include:

- The Department of Environment and Conservation has issued a remediation order;
- The engagement of a site auditor within the meaning of the *Contaminated Land Management Act 1997* is specified in a development consent condition, or
- Site audits under the *Contaminated Land Management Act 1997* are specified in an environmental planning instrument.

A statutory site audit statement may only be conducted by a NSW EPA accredited site auditor. A copy of all statutory site audit statements must be given to the Department of Environment and Conservation and the Council at the same time as the site auditor gives the statutory site audit statement to the person who commissioned the site audit. An up-to-date list of NSW EPA accredited auditors is available through the Department of Environment and Conservation's website www.environment.nsw.gov.au.

6.4 When is a Site Audit required?

The consent authority may request a site audit to be prepared by a NSW EPA accredited auditor for contaminated land as a condition of consent, if the consent authority:

- *"believes on reasonable grounds that the information provided by the applicant is incorrect or incomplete;*
- *wishes to verify whether the information provided by the proponent has adhered to appropriate standards, procedures and guidelines; or*
- *does not have the internal resources to control its own technical review."* (NSW EPA, p19).

The consent authority will inform the applicant if a site audit is required after conducting a review of the contamination reports and associated documents (e.g. development application) submitted. The applicant is then responsible for engaging a NSW EPA accredited auditor for contaminated land to perform a site audit. In addition, the applicant is responsible for all costs borne in engaging a NSW EPA accredited auditor for contaminated land.

For sites which have complex issues associated with either the contamination assessment or remediation, engaging a NSW EPA accredited auditor early in the process is recommended.

6.5 What Should a Site Audit Cover?

The EPA Guidelines for the NSW Site Auditor Scheme outline what should be included in a site audit, however the guidelines state that in some situations the consent authority may also need to contribute to defining the scope of the site audit.

When the consent authority requests a site audit, they may also specify any issues to be included in the scope of the site audit. As well as requiring a site audit to address any issues raised in s. 47(1)(b) *Contaminated Land Management Act 1997*,

the following are questions that the consent authority may request a NSW EPA accredited auditor for contaminated land to address when conducting a site audit:

- "Has the contaminated *land consultant* complied with all appropriate standards, procedures and relevant NSW EPA guidelines?
- What further investigations or remediation is required before the land is suitable for any specified use or range of uses?
- Whether the auditor considers that the proposed remediation is adequate, and if undertaken, will render the site to be suitable for the proposed use?
- Whether it can be concluded that there is no unacceptable off-site migration of contaminants, particularly via ground water?
- Whether the contamination conditions at the site are suitable for in-ground absorption of stormwater?" (Leichhardt, 2001, p. 22).

The applicant or the appointed NSW EPA accredited auditor for contaminated land shall liaise with the consent authority during the preparation of the site audit to ensure that the scope of the site audit is sufficient before issuing a site audit statement, the site auditor must prepare and finalise a summary site audit report. The EPA Guidelines for the NSW Site Auditor Scheme outlines what must be included in a site audit report.

Where a Site Audit Statement is subject to conditions that require ongoing review by the Auditor or Council these should be discussed with Council before the Site Audit is issued.

7. Council records & community information

The consent authority has an important role in supplying the community with information regarding land use history, land contamination and remediation. The consent authority also has a statutory responsibility under s.59 of the *Contaminated Land Management Act 1997* to include information provided to the consent authority by either the EPA or accredited auditors on certificates issued for the purposes of s. 149 *Environmental Planning and Assessment Act 1979*.

The process of information collection about land contamination is ongoing. Information concerning contaminated land will be added to the City of Sydney's property information system when development applications are processed or when information is provided to the consent authority via other sources.

7.1 Information Management

The City's records regarding contamination issues will change over time as land is investigated, remediated and validated. Standards for remediation may also change over time to accommodate changing community values. Records in relation to site contamination issues are kept on individual property files for each parcel of land. To assist Council in the management of land contamination issues the following information is recorded for individual parcels of land:

- Site contamination reports submitted to the consent authority as they are completed (i.e. preliminary Investigation, detailed investigation, remedial action plans, validation and monitoring reports);
- site audit statements received by the consent authority;
- EPA declarations and orders issued under the CLM Act 1997 (including voluntary investigation & remediation proposals agreed by the EPA);
- prior notification of category 2 remediation works; and
- notification of completion of category 1 and category 2 remediation work.

7.2 Section 149 Certificates

Under s.149 of the *Environmental Planning & Assessment Act 1979*, a person may request from 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.

It should be noted that a s.149 (2) planning certificate does not itself restrict the use of land. It is simply the mechanism for recording the fact that a Council policy applies which may restrict the use of land.

Section 59(2) of the *Contaminated Land Management Act, 1997* provides that specific notations relating to contaminated land issues must be included on s.149 certificates where:

- "(a) the land to which the certificate relates is within an investigation area or remediation site - if it is within such an area or site at the date when the certificate is issued,*
- (b) the land to which the certificate relates is subject to an investigation or remediation order - if it is subject to such an order at that date,*
- (c) the land to which the certificate relates is the subject of a voluntary investigation proposal (or voluntary remediation proposal) that is the subject of the EPA's agreement under section 19 (or 26) if it the subject of such a proposal, and the proposal has not been fully carried out, at the date when the certificate is issued,*
- (d) the land to which the certificate relates 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."*

Section 149(2) certificates issued by Council will contain information on the prescribed matters listed above, where applicable. Council will not provide any additional information in relation to site contamination issues under the provisions of s.149(5).

Appendix I Schedule of Potentially Contaminating Activities

Indicative land uses / activities that have potential to cause contamination:

- acid/alkali plant and formulation
- agricultural/horticultural activities
- airports
- asbestos production and disposal
- brewery
- chemicals manufacture and formulation
- defence works
- drum re-conditioning works
- dry cleaning establishments
- electrical manufacturing (transformers)
- electroplating and heat treatment premises
- engine works
- explosive industry
- gas works
- iron and steel works
- landfill sites - particularly involving 19th century and / or early 20th century fill
- 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
- slaughter houses
- smelting and refining
- sugar refinery
- tanning and associated trades
- waste storage and treatment
- wood preservation

Note: This table is not definitive and is meant as a guide only - a sites contamination status can only be determined after a review of the site history, and if necessary sampling and analysis.

Due to the possibility of leaching and / or transmission of airborne contaminants, sites adjacent to those with an above listed use may also be at risk of contamination and warrant further investigation.

Source: *Managing Land Contamination Planning Guidelines SEPP 55 - Remediation of Land, 1998*, Department of Urban Affairs and Planning & NSW Environment Protection Authority

Appendix 2 Sources of Site History Information

Stage I - Preliminary site investigations:

Sources of site history information

- Past aerial photographs
- Council records - town planning, development and building applications, complaints, pollution incident reports
- Local Historical Publications
- Current and previous site owners
- Current and previous site workers
- Long-term residents
- Past and Present Telephone Books
- Noxious Trades Act register of Noxious Trades
- Sand's Sydney and New South Wales Directory 1858-1932/3
- NSW Environment Protection Authority Section 35 Notices, past and present scheduled premises, unhealthy building land
- Sydney Water Corporation Trade Waste Agreements
- WorkCover Authority Dangerous Goods Branch
- Pacific Power sites containing present and past electrical substations
- Other databases, documents or archival systems with relevant site history information.

Appendix 3 - Criteria to be met in carrying out Category 2 remediation works

1.0 Hours of Operation

All remediation work shall be conducted in accordance with the standard City of Sydney hours of construction and work.

2.0 Soil and Water Management

All remediation works shall be conducted in accordance with a soil and water management plan prepared prior to commencement of any remediation work or activities. A copy of the plan shall be kept on-site and made available to Council Officers on request. All erosion and sediment measures must be maintained in a functional condition throughout the remediation works and sediment laden stormwater run-off shall be controlled using sediment control measures outlined in the manual Urban Stormwater -Soils and Construction (published by the NSW Department of Housing).

A summary of the soil and water management measures for category 2 remediation work in relation to stockpiles, site access, excavation pump-out, landscaping/rehabilitation and bunding are discussed below:

2.1 Stockpiles

- No stockpiles of soil or other materials shall be placed on footpaths or nature strips unless prior Council approval has been obtained.
- All stockpiles of soil or other materials shall be placed away from drainage lines, gutters or stormwater pits or inlets.
- All stockpiles of soil or other materials likely to generate dust or odours shall be covered.
- All stockpiles of contaminated soil shall be stored in a secure area and be covered if remaining more than 24 hours.
- All stockpiles be placed on a level area as a low, elongated mound.

2.2 Site Access

Vehicle access to the site shall be stabilised to prevent the tracking of sediment onto the roads and footpath. Soil, earth, mud or similar materials must be removed from the roadway by sweeping, shovelling, or a means other than washing, on a daily basis or as required. Soil washings from wheels shall be collected and disposed of in a manner that does not pollute waters.

2.3 Excavation Pump-out

All excavation pump-out water must also be analysed for suspended solid concentrations, pH and any contaminants of concern identified during the preliminary or detailed site investigation, prior to discharge to the stormwater system. The analytical results must comply with relevant EPA and ANZECC standards for water quality.

Other options for the disposal of excavation pump-out water include disposal to sewer with prior approval from Sydney Water or off-site disposal by a liquid waste transporter for treatment/disposal to an appropriate waste treatment/processing facility.

2.4 Landscaping/Rehabilitation

All exposed areas shall be progressively stabilised and revegetated on the completion of remediation works.

2.5 Bunding

All landfarming areas for hydrocarbon contaminated soils shall be bunded to contain surface water runoff from the landfarm areas and to prevent the leaching of hydrocarbons into the subsurface. All surface water discharges from the bunded areas to Council's stormwater system shall not contain detectable levels of TPH or BTEX.

3.0 Noise

All remediation work / activities shall comply with *The City of Sydney Code of Practice 1992 - for Construction of Hours / Noise within the Central Business District* and *Australian Standard 2436-1981 Guide to Noise Control on Construction, Maintenance Demolition Sites* and the *Environment Protection Authority Environmental Noise Manual* for the control of construction site noise (as applicable to the relevant site).

No "offensive noise" as defined under the *Protection of the Environment Operations Act, 1997* shall be created during remediation works/activities.

All associated mechanical plant, equipment and the like used during remediation works/activities shall use all practical and reasonable noise attenuating devices and measures to minimise noise being transmitted from the site.

All equipment and machinery shall be operated in an efficient manner to minimise the emission of noise.

4.0 Vibration

Vibration emissions during remediation works/activities must not result in damage to nearby premises or result in an unreasonable loss of amenity to nearby residents. The relevant provisions of the *Protection of the Environment Operations Act, 1997* must be satisfied at all times.

5.0 Air Quality

5.1 Dust Control

Dust emissions shall be confined within the site boundary. The following dust control procedures may be employed to comply with this requirement:

- erection of dust screens around the perimeter of the site;
- securely covering all loads entering or exiting the site;
- use of water sprays across the site to suppress dust;
- covering of all stockpiles of contaminated soil remaining more than 24 hours; and
- keeping excavation surfaces moist.

Dust emissions shall also be controlled by ensuring vehicles leave via stabilised site access and all equipment has dust suppressors fitted. Large sites may require dust monitoring (NHMRC guidelines).

5.2 Odour Control

No odours shall be detected at any boundary of the site during remediation works by an authorised officer relying solely on sense of smell. The following procedures may be employed to comply with this requirement:

- use of appropriate covering techniques such as the use of plastic sheeting to cover excavation faces or stockpiles;
- use of fine mist sprays;
- use of a hydrocarbon mitigating agent on the impacted areas/materials; and
- adequate maintenance of equipment and machinery to minimise exhaust emissions.

Records of volatile emissions and odours shall be logged, kept on-site and made available on request of the consent authority. Discharges from soil vapour extraction systems shall be regularly monitored in order to determine the mass of hydrocarbons that are being discharged to the atmosphere. Contingency measures for the collection and treatment of hydrocarbon offgas shall be put in place prior to the commissioning of the soil vapour extraction systems. All discharge vents from soil vapour extraction systems shall be located a minimum of 50 metres from any residential property boundary, road or recreational area. No material shall be burnt on-site.

Note: Volatile or semi-volatile compounds that could generate odours include monocyclic aromatic hydrocarbons (styrene, benzene, toluene, xylene, ethyl benzene, butyl benzene), polycyclic aromatic hydrocarbons (PAHs), hydrogen sulphide, hydrogen cyanide, pesticides, PCBs, and herbicides.

6.0 Groundwater

Any proposal to dewater will require a development application to be submitted to the Consent Authority (see Section 4.1)

Any proposal to dewater within the Botany Sands Aquifer (See Appendix 4) may constitute integrated development, as approval may be required from the Department of Infrastructure, Planning and Natural Resources (DIPNR), if dewatering is to take place onsite.

Note: DIPNR instructions to Council are that they will not endorse the extraction of groundwater in perpetuity, i.e. permanent dewatering around a development site, because it considers such a development to be unstable. For this reason, any proposed basement or other area that requires dewatering on an ongoing basis will be required to be fully tanked.

7.0 Transport

All haulage routes for trucks transporting soil, materials, equipment or machinery to and from the site shall be selected to meet the following objectives:

- must comply with all road traffic rules;
- must aim to minimise noise, vibration and odour to adjacent premises; and
- must utilise State Roads and minimise use of local roads.

Applicants may consult the consent authority prior to selecting the most suitable transport route.

Category 2-remediation work shall ensure that all site vehicles:

- conduct deliveries of soil, materials, equipment or machinery during the hours of remediation work identified in Section 4.1;
- securely cover all loads to prevent any dust or odour emissions during transportation;
- exit the site in a forward direction; and
- do not track soil, mud or sediment onto the road.

8.0 Hazardous Materials

Hazardous and/or intractable wastes arising from the remediation work shall be removed and disposed of in accordance with the requirements of the NSW EPA and WorkCover Authority, together with the relevant regulations, namely:

- (a) New South Wales Occupational Health and Safety Act 2000;
- (b) Occupational Health and Safety Regulation 2001;
- (c) Contaminated Land Management Act and Regulations; and
- (d) Environmentally Hazardous Chemicals Act 1985 and Regulations.

Under the *Protection of the Environment Operations Act 1997* the transportation of wastes that are classified as "Hazardous" (as per the NSW EPA Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes, 1999) must be carried out by a transporter licensed by the NSW Environment Protection Authority.

9.0 Disposal of Contaminated Soil

The disposal of contaminated soil shall have regard to the provision of both the *Protection of the Environment Operations Act and Regulations* and any relevant EPA guidelines such as the NSW EPA publication *NSW EPA Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes (1999)*.

Any queries associated with the off-site disposal of waste from a contaminated site should be referred to the DEC's Pollution Line on 131 555. If contaminated soil or other waste is transported to a site unlawfully, the owner of the waste and the transporter are both guilty of an offence.

10. Importation of Fill

All fill imported on to the site shall be validated to ensure the imported fill is suitable for the proposed land use from a contamination perspective. Fill imported on to the site shall also be compatible with the existing soil characteristic for site drainage purposes.

The consent authority may require details of appropriate validation of imported fill material to be submitted with any application for future development of the site. Hence all fill imported onto the site should be validated by either one or both of the following methods during remediation works:

- Imported fill should be accompanied by documentation from the supplier which certifies that the material is not contaminated based upon analyses of the material or the known past history of the site where the material is obtained; and/or

- Sampling and analysis of the fill material should be conducted in accordance with the EPA Sampling Design Guidelines (1995) to ensure that the material is not contaminated.

11.0 Containment / Capping of Contaminated Soil

Site capping is permissible where it can be shown that all other options have been exhausted, and that more preferable options for site contamination as listed in the remediation hierarchy of the ANZECC & NHMRC 1992 cannot be executed. Site auditors must, where relevant, demonstrate in their site audit reports that they have considered the technical issues associated with on-site capping or the use of other physical barriers to contain contamination.

Where site capping is carried out on a site and further maintenance is required, Council will require the placement of a covenant on the title to the land. The covenant will advise of any maintenance works required to be carried out.

If maintenance is to be carried out, the owner or person proposing to carry out the maintenance, should contact an Environmental Health Officer from Council. Records of any maintenance undertaken on the site should be kept for future reference.

12.0 Site Signage and Contact Numbers

A sign displaying the contact details at which the remediation contractor may be contacted outside working hours (and site facilitator if different to remediation contractor) shall be displayed on the site adjacent to the site access. This sign shall be displayed throughout the duration of the remediation works.

13.0 Community Consultation

Owners and/or occupants of premises adjoining, and across the road, from the site shall be notified at least two days prior to the commencement of category 2 remediation works.

14.0 Site Security

The site shall be secured to ensure against unauthorised access by means of an appropriate fence.

15.0 Occupational Health and Safety

It is the employer's responsibility to ensure that all site remediation works shall comply with all Occupational Health and Safety and Construction Safety Guidelines of the NSW WorkCover Authority. Safety monitoring for hydrocarbon emissions should be undertaken in accordance with *WorkSafe Time Weighted Averages Guidelines, 1991*.

16. Removal of Underground Storage Tanks

The removal of underground storage tanks shall be undertaken in accordance with NSW WorkCover requirements which includes writing to the Chief Inspector of Dangerous Goods and complying with any conditions imposed.

The tank removal shall be conducted in accordance with the Australian Institute of Petroleum's Code of Practice *"The Removal and Disposal of Underground Petroleum Storage Tanks (AIP CP22-1994)*. In the event of conflict between the Code of Practice and NSW WorkCover requirements, the latter shall prevail.

Note: If shoring is required a development application may need to be submitted.

17. Acid Sulphate Soils

Remediation work involving the excavation of soil should consult the Department of Urban and Transport Planning Acid Sulphate Soil Planning Map to assess whether a preliminary assessment of the potential acid sulphate soil is required.

18. Lead Contamination

An aging building stock combined with past industrial uses and concentrated vehicle use increases the risk of lead contamination (Leichhardt, 2000). It is also important to note that works that do not need development consent could expose humans or the environment to lead contamination. Consequently, those people carrying out work should consider the following when Council consent is not required.

The following circumstances may increase the risk of lead contamination occurring:

- previous history of industrial land uses;
- within close vicinity of older structures such as bridges, water tanks, and towers;
- the building/structure subject to development/activity was painted before 1970;
- evidence of demolition or renovations to pre 1970's buildings;
- soil on the site which has been sourced from a lead contaminated site; and,
- land which has been used for orchards, market gardens or other agricultural purposes in which lead arsenate could have been used.

Further information relating to the management of lead contamination can be obtained from the Department of Environment and Conservation.

Appendix 4 – Botany Sands Aquifer

