

# Guide for Developers

Contaminated Land

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# Introduction

This guidance is aimed at owners, property developers, architects and surveyors who want to know what information they should submit to the Planning Department when they apply to re-develop, or significantly change the use of a piece of land, which could potentially be contaminated.

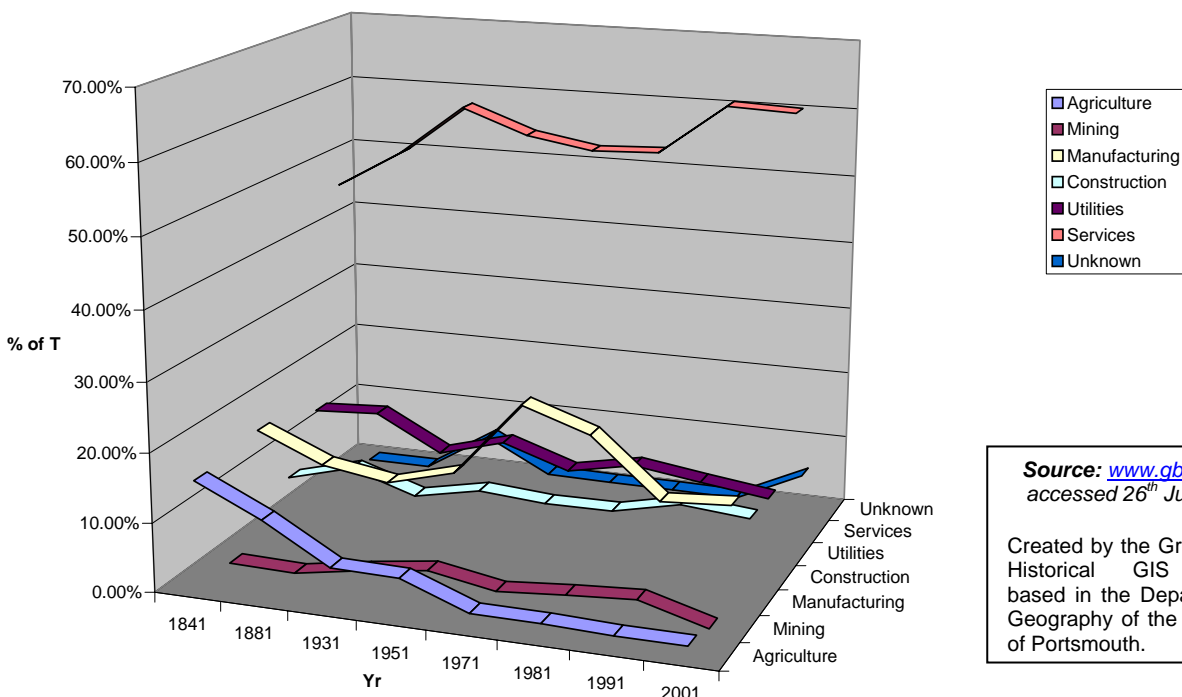
Contamination is most likely to arise from previous industrial use of the site or adjacent sites or from known pollution incidents. The onus for cleaning up such land under the planning process is not the same as cleaning up land under Part IIA of the Environment Protection Act 1990 – although the information we would request is similar. The conditions for cleaning up land under the planning process are to achieve a minimum standard that the property cannot be registered under Part IIA of the EPA 1990.

This document is for guidance purposes only. We are aware that the contents of any site investigation report will vary due to site-specific issues, e.g. the past use of the site, the nature and extent of the contamination and the proposed end use of the site. Developers are therefore recommended to seek the advice of an Environmental Consultant and the Local Authority if it is suspected that contamination may exist.

# Thanet's Heritage

In common with many other parts of the country, Thanet has a proud legacy of industrial activity dating back over the last few hundred years. During this time, Thanet has been home to numerous industries, including mining, manufacturing, construction, farming, gas works, chemical works and military activities. The infilling of former clay and sand pits has also taken place in Thanet. The following graph gives an indication of the prevalence of these types of industrial activity over the past 150 years.

Thanet District - Standardised Industry Data



Source: [www.gbhgis.org](http://www.gbhgis.org), accessed 26<sup>th</sup> July, 2007

Created by the Great Britain Historical GIS Project, based in the Department of Geography of the University of Portsmouth.

In the past there were far fewer restrictions on industry than are in place today and many facilities operated with little regard to their impact on the environment. These former industrial activities may have left contamination in the ground, which if not properly dealt with can pose a risk to public health or the environment. The type of contamination can vary substantially from site to site, but some of the more common causes for concern include heavy metals (e.g. mercury and lead), hydrocarbons (e.g. oils, fuels and solvents) and domestic and industrial wastes.

## The Developer's Responsibilities

The Government recognises that land contamination is a material planning consideration and that the development phase is the most cost-effective time to resolve any problems. The Government's approach is set out in Planning Policy Statement 23: Planning and Pollution Control.

It is the developer's responsibility to ensure that the development is safe and that the Local Planning Authority is satisfied that any risks from potential contamination have been adequately addressed. To this end, the developer should carry out a satisfactory assessment of the site, considering the potential for contamination, including a ground investigation, where necessary, to confirm the level and extent of any contamination.

If significant contamination is identified, then appropriate remediation should be undertaken to render the site suitable for its intended use. Failure to properly address contamination issues during development could lead to a future liability under the Contaminated Land Regulations (Part IIA of the Environmental Protection Act 1990). Other liabilities may arise from the subsequent pollution of controlled waters, failure of building materials or civil claims resulting from alleged health effects.

In addition, the developer has a responsibility to protect the welfare of construction workers operating on potentially contaminated sites and to adequately manage other potential environmental impacts of development, such as dust and odour, as well as the appropriate management and disposal of any contaminated spoil.

## The Council's Approach

Whilst this Authority supports proposals for the redevelopment of brownfield sites, the potential for land to be contaminated is an essential consideration for the purposes of Planning, and it places the responsibility on owners and developers to establish the extent of any potentially harmful materials on their sites.

As regulators, it is the Local Authority's duty to ensure that owners and developers carry out the appropriate investigations and formulate proposals for dealing with any contamination in a responsible and effective manner. It is necessary to ensure that land is, or will be made, suitable for any proposed end use. During liaison with your environmental consultant, it is required that you assess the potential risks of contamination on the basis of the proposed end use of the site and in relation to local environmental circumstances.

This can be done before formal planning permission is given for the development. However, in some circumstances, permission can also be granted subject to a condition, which will require you to investigate whether any land contamination exists and, if necessary, devise a strategy to deal with it. If potential risks are identified, the land will then need to be remediated, as part of the development process, to mitigate risks to human health and the environment, including controlled waters.

Where there is reason to believe land may be contaminated, or the proposed development is particularly sensitive to potential contamination (such as a school or hospital), developers are strongly encouraged to engage in pre-application consultations with both the Council's Contaminated Land Officer and the Environment Agency. The presence of contamination does not necessarily present an unacceptable risk. However, risk arises when a pathway is created between a contaminant and a vulnerable receptor. The contaminant may be chemical, biological, physical or radioactive. Development can create a risk by introducing new pathways and also by introducing new receptors (e.g. children playing in gardens of new residential dwellings). Submission of a desk-study report or other supporting information with the application will assist in the decision making process.

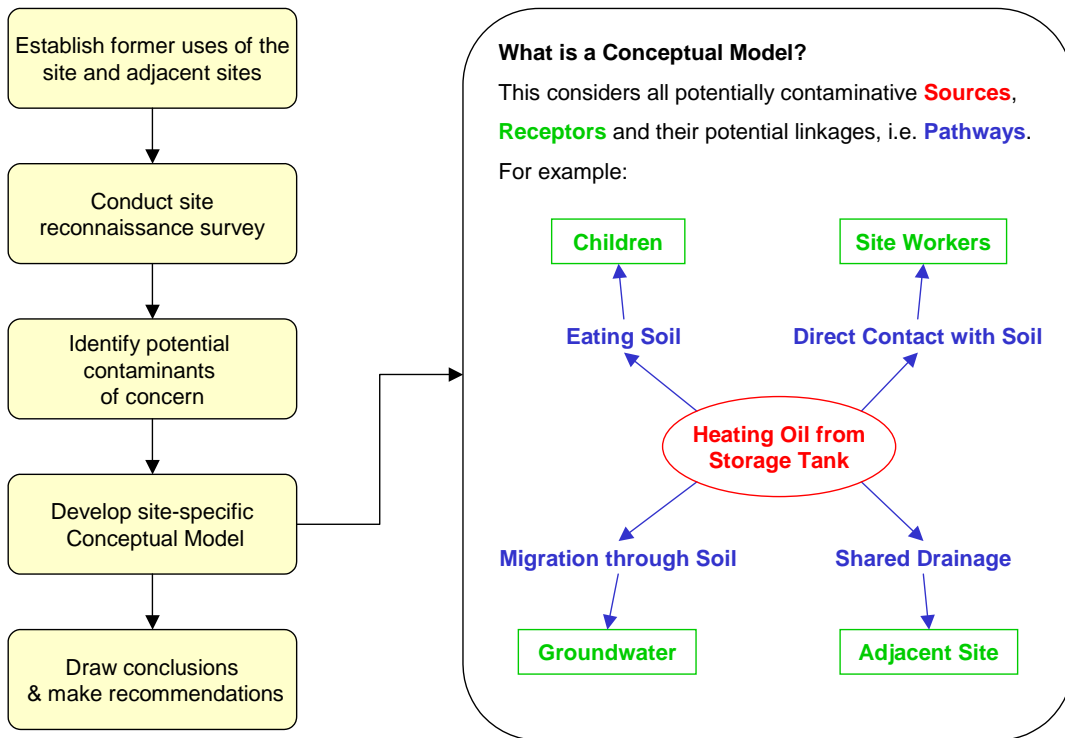
## Liaison with the Council

Where a developer is proposing to develop land that is suspected of being contaminated, it is advisable to contact the Contaminated Land Officer before submitting the planning application. It is useful to do this as the Council may have additional information that you are unaware of, and will also be able to answer any particular questions that you have in relation to this process.

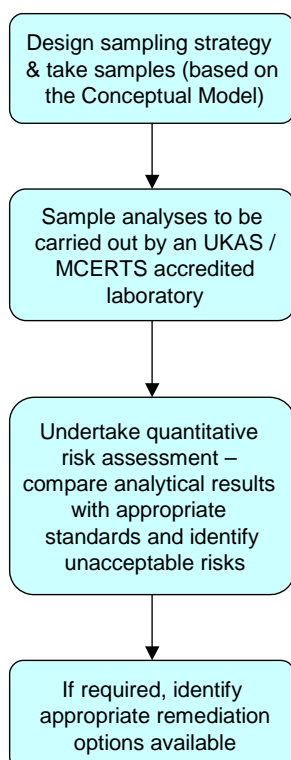
During site investigation works (e.g. sample collection) and remedial works (e.g. installation of gas resistant membranes), the Contaminated Land Officer may wish to visit the site. It would therefore be useful to know when this work is timetabled to take place. This will also give further opportunity to discuss any problems or queries that may have arisen. The flow diagram overleaf provides a summary of the steps that are required when dealing with a site where contamination is suspected. More detailed information on the full nature of this process can be found in the appended Technical Checklist.

# Dealing with Land Affected by Contamination

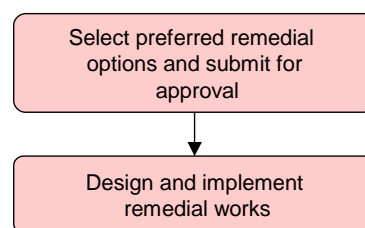
## Step 1 – Desktop Study



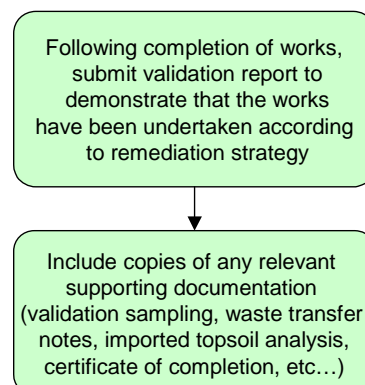
## Step 2 – Detailed Site investigation (if required)



## Step 3 – Remediation Strategy (if required)



## Step 4 – Validation Report (following remediation works)



## Submission Guidelines

The Contaminated Land Officer will be happy to discuss findings, proposals and other issues at any stage of the development. As such, it is strongly encouraged that draft copies of reports be submitted to the Contaminated Land Officer as part of these ongoing discussions.

Formal submission of reports, for the purposes of discharging planning conditions, should be made directly to the relevant Planning Officer; two hard copy reports should be submitted. Additional requirements may be required regarding submission of reports to the Environment Agency.

## The Role of Other Organisations

The Environment Agency is a statutory consultee for many planning applications where development is proposed on potentially contaminated land or close to surface water features like streams or canals. The Environment Agency has a duty to protect groundwater and surface waters and the developer will need to ensure that any concerns of the Environment Agency are satisfied.

The Building Control Inspector will also need to be satisfied that any risks to the development from potential contamination have been adequately addressed. The Building Regulations require that builders demonstrate that hazards from potential contamination have been properly assessed and appropriate measures put in place to address any risk. Most new building warranties require some level of assessment to be carried out if contamination is suspected at the site.

## Discharge of Conditions

Upon receipt of a satisfactory Phase I - Desk Study Report or Phase II – Site Investigation, indicating no further investigation or remediation is necessary, or a satisfactory Closure report following remediation work, the Contaminated Land Officer will recommend discharge of the relevant planning condition. This will actually be implemented on a phased basis as specified by the conditions.

If required, a completed Certificate of Completion will be endorsed by the Contaminated Land Officer, detailing the information submitted to the Local Planning Authority for the purpose of achieving discharge of the contaminated land planning condition imposed on the development and/or acceptance of remediation for NHBC requirements. No other warranty or indemnity from future regulatory action is intended by this Certificate.

## Environmental Information

Information held by TDC is governed by the requirements of the Environmental Information Regulations 2004, the Freedom of Information Act 2000 and the Data Protection Act 1998. The Town and Country Planning Act also requires that information submitted to the Council be placed on the Planning register. However, intellectual property rights and copyright laws will normally be respected. The Environmental Health Department may charge a research fee for more detailed environmental information requests.

# Frequently Asked Questions

## 1. Who should conduct this work?

The person or organisation carrying out the work must have the experience, qualifications and skills to do so and must meet the following criteria:

1. They should be a competent person - either an environmental scientist, chemist or hydrogeologist;
2. They must belong to an accredited body or must be able to demonstrate that they operate within a quality assurance system;
3. They must use an accredited and quality assured laboratory (UKAS/MCERTS) to analyse samples and prepare conclusive reports;
4. They must be aware of current legislative requirements including health and safety and the relevant codes of practice.
5. They must be able to carry out risk management assessments and produce clear reports on the findings;
6. They must have, and maintain, appropriate professional indemnity insurance.

## 2. Why might the Planning Authority deem a report to be inadequate?

There are several reasons why a Planning Authority may reject a report, for example:

1. It does not contain all the information required;
2. Some of the information is not presented clearly and requires clarification;
3. Important maps are missing;
4. The report does not sufficiently address the concerns of the Planning Authority.

The Planning Authority will then contact you with details of why it has been rejected and ask you to re-submit an amended copy. If you are unclear about anything, you should make an appointment to meet with the relevant Council Officer.

## 3. Apart from the local Planning Authority, whom else should I be consulting?

It may be appropriate to consult a number of statutory bodies including the Environment Agency, Southern Water and English Nature. The planning authority will also consult other departments within the Council, for example, Environmental Health.

The Environment Agency has a number of regulatory responsibilities. They must, therefore, be consulted if it is possible that:

1. The pollution of surface or groundwater is involved;
2. The water environment is at risk of pollution;
3. An application is within a flood-plain area;
4. Where the development is on a closed landfill or on/within 250 metres of an active landfill.

N.B. The Planning Department of the Environment Agency can provide further details on what they should be consulted on. If remedial works are required, it may be necessary to inform neighbouring residents – the Local Planning Authority will be able to advise you further on this.

#### 4. What are the effects of contaminated land?

If the land is contaminated it may present a hazard to potential uses of the land. Exposure to contaminants may occur through inhalation (e.g. of dust or gasses), direct contact with soil, through ingestion of food grown on the land, etc... - as indicated in the 'source-pathway-receptor' Conceptual Model on page 6.

Leachates (pollutants draining from the site in liquid form) can pollute groundwater and rivers or ponds. Some contaminants may be corrosive, and some can pose a risk of explosion or fire. Contamination within the soil and unsaturated zone can potentially have an impact on groundwater quality, this can move off-site and affect nearby surface water features as well as abstractions.

#### 5. What are the appropriate standards to use?

In December 2002, the Department for the Environment Food and Rural Affairs, officially withdrew the Interdepartmental Committee for the Redevelopment of Contaminated Land (ICRCL) guidance note 59/83 (2nd Edition), therefore these are no longer valid and must not be used. In addition, the Dutch Standards are not officially recognised as being authoritative standards in this country.

Please ensure that all soil sample results are assessed in accordance with the Contaminated Land Exposure Assessment Model (CLEA) and the Contaminated Land Research (CLR) Reports, where Soil Guideline Values (SGVs) have been derived. If using CLEA UK, all workings must be provided. Where Soil Guideline Values (SGVs) are not available for the appropriate pollutants, suitable site specific criteria must be derived in accordance with CLR9, *Collation of Toxicological Data and Intake Values for Humans*, and submitted for our approval. Alternatively, if it can be shown that CLEA is not the appropriate model to use then other appropriate packages (with the Council's agreement) can be used (e.g. SNIFFER).

The recently published (Nov 2006) Land Quality Management Generic Assessment Criteria values also provide useful guidelines for determining levels to which a site should be remediated. Your Environmental Consultant and Contaminated Land Officer will be able to advise you further on these requirements.

#### 6. What will happen if I do not submit a desktop study and information relevant to any site investigation?

If a desktop study is not submitted and information is not included as part of the site investigation information, then one of two things is likely to happen:

1. You will receive a letter from the Planning Department informing you that you must supply it before the condition can be discharged. The condition will not be discharged until the planning authority is satisfied that all information has been provided.
2. Enforcement Action.

## Contact Details

<b>Thanet District Council</b> PO Box 9, Cecil Street, Margate, Kent. CT9 1XZ.	<b>Contaminated Land Officer</b> Environmental Health Morgan Sproates morgan.Sproates@thanet.gov.uk	<b>01843 577081</b>
<b>Environment Agency</b> Endeavour Park, London Road, Addington, West Malling, Kent. ME19 5JH.	<b>National Enquiries</b> enquiries@environment-agency.gov.uk	<b>08708 506506</b>
<b>Southern Water</b>	<b>Enquiries</b>	<b>0845 272 0845</b>
<b>Natural England</b>	<b>Enquiries</b>	<b>0845 600 3078</b>

## Bibliography

- Mark Thorne – Contaminated Land Officer, Elmbridge Borough Council.
- Rob Ivens – Contaminated Land Officer, Mole Valley Borough Council.
- Kathy Adams – Pollution Team, London Borough of Bromley.
- BS 10175:2001. British Standards Institution. (2001) Code of Practice for the Identification of Potentially Contaminated Land and its Investigation. London: BSI. ISBN 0580 33090 7.
- Joint publication by Environment Agency and NHBC (2000) Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D Publication 66. ISBN 0-11-310177-5.

# Appendix 1

## Checklist for Reports Submitted in Support of Planning Applications

The following list provides a guide on what we may require when assessing your particular planning application. It has been divided into 4 sections:

Step 1 – The desktop study.

Step 2 – The site investigation (where appropriate).

Step 3 – Remediation recommendations (following site investigation).

Step 4 – The closure report (following remediation works).

If any items are not supplied, please include a detailed explanation within your reports explaining why they have been omitted. Each section may be submitted separately, or sections 1, 2 or 3 could be put together in one document. These sections must be submitted and approved prior to development commencing.

They should follow logically on from one another to give a complete picture of the historical context and contamination potential, about what has already gone on on-site and what is still to happen. Section 4, the completion report, should be submitted after the remediation has taken place.

If you require any further guidance please contact your local Contaminated Land Officer. Early involvement will ensure that these issues are dealt with in a timely manner.

This checklist is not exhaustive and, as previously stated, the contents of any site report will vary due to site-specific issues. You should be aware that investigations carried out for geotechnical purposes (for example, for building structures) are not sufficient because they do not specifically address the risk to human health and the environment.

## Step One – Desktop Study and Site Reconnaissance

Please complete in accordance with BS10175:2001 - Investigation of potentially contaminated sites Code of Practice and / or the Environment Agency - Contaminated Land Report (CLR) 11: Model Procedures for the Management of Land Contamination.

<b>Phase I - Desktop Study &amp; Site Reconnaissance</b>	<b>Included?</b>
• Purpose and aims of study (summary)	<input type="checkbox"/>
• Use of CLR11, CLR4, CLR2 and BS10175:2001, BS5930:1999 to design the investigation.	<input type="checkbox"/>
• Use of other guidance documents: <ul style="list-style-type: none"> <li>- Environment Agency (EA) / National House Building Council (NHBC) R&amp;D 66 Guidance for the Safe Development of Housing on Land Affected by Contamination</li> <li>- EA: Detailed Quantitative Assessment of Chronic Risks to Human Health from Contaminated Soils.</li> <li>- EA: Guidance on Requirements for Land Contamination Reports</li> <li>- EA: R&amp;D Technical Report P5-065/TR, Technical Aspects of Site Investigation in Relation to Land Contamination. Vol. 1 &amp; Vol. II</li> <li>- Construction Industry Research &amp; Information Association (CIRIA): Contaminated Land Risk Assessment (C552) A Guide to Good Practice 2001</li> <li>- EA: CIRIA: Remedial Treatment for Contaminated Land Vol. III (SP103) Site Investigation &amp; Assessment 1995.</li> <li>- EA: British Urban Regeneration Association (BURA): Guide to Contaminated Land Assessment &amp; Development April 2001.</li> </ul>	<input type="checkbox"/>
• Use of the Building Regulations Approved Document C to assess the risk to proposed building structures from contamination	<input type="checkbox"/>
• Site location and physical characteristics.	<input type="checkbox"/>
• Appraisal of site history including appropriately scaled and annotated historical maps.	<input type="checkbox"/>
• Review of aerial photographs where available	<input type="checkbox"/>
• Site walkover – assessment of site in its current condition	<input type="checkbox"/>
• Overview of environmental setting, including: <ul style="list-style-type: none"> <li>◦ Geology, Hydrology, Hydrogeology (flood risk, subsidence risk, groundwater vulnerability)</li> <li>◦ Ecologically designated sites.</li> <li>◦ Archaeological considerations.</li> <li>◦ Fuel storage history or records (Petroleum Officer)</li> <li>◦ Abstraction licences, discharge consents to sewer or surface waters, landfill sites within 250m, IPC authorisations, pollution incidents as recorded by the Local Authority or the Environment Agency, radioactive consent, chemical release inventory, waste treatment site, hazardous substances, mobile plant licence.</li> </ul>	<input type="checkbox"/>
• Assessment of any previous site investigation reports - detailing desk study research, intrusive investigation or remediation.	<input type="checkbox"/>
• Preliminary assessment of risks to human health and the wider environment including: <ul style="list-style-type: none"> <li>◦ Identification of pollutant linkages (source-pathway-receptor) i.e. end users, site workers, below ground services, building structure.</li> <li>◦ Develop a conceptual model (diagrammatical).</li> </ul>	<input type="checkbox"/>
• Environment Agency consultation for investigation (if applicable).	<input type="checkbox"/>
• Site made safe to public – fenced off (if applicable).	<input type="checkbox"/>
• Conclusions and recommendations from Phase I investigation.	<input type="checkbox"/>

## Step Two - detailed site investigation report (where appropriate)

Please complete in accordance with BS10175:2001 - Investigation of potentially contaminated sites Code of Practice and / or the Environment Agency - Contaminated Land Report (CLR) 11: Model Procedures for the Management of Land Contamination.

<b>Phase II - Intrusive Investigation</b>	<b>Included?</b>
• Aims and objectives of intrusive sampling (summary)	<input type="checkbox"/>
• Investigation methodology:	<input type="checkbox"/>
◦ Site plan showing sample locations and justification for this choice.	<input type="checkbox"/>
◦ Details of calibrated equipment to be used/method of soil and groundwater sample collection, sample storage and transport to the laboratory.	<input type="checkbox"/>
◦ Details of groundwater sampling methodology – i.e. pumped out, disposable bailer.	<input type="checkbox"/>
◦ Details of laboratory accreditation (UKAS, MCERTS).	<input type="checkbox"/>
◦ Details of landfill gas monitoring methodology. Use of guidance documents:	<input type="checkbox"/>
- Environment Agency (EA) Guidance on the Management of Landfill Gas and the Development and Operation of Landfill sites	
- EA Building Research Establishment (BRE): Report 414, Protective Measures for Housing on Gas Contaminated Land 2001	
- BRE Report 212, Construction of New Buildings on Gas Contaminated Land 1991	
- Construction Industry Research & Information Association (CIRIA): Report 131, Measurement of Methane and Other Gases in the Ground	
- CIRIA: Report 149, Protecting Development From Methane	
- CIRIA: Report 150, Methane Investigation Strategies	
- CIRIA: Report 152, Risk Assessment for Methane and Other Gases from Ground	
• Results of sampling to include:	<input type="checkbox"/>
◦ Ground conditions (soil, water, made ground).	<input type="checkbox"/>
◦ Contamination status of the samples taken.	<input type="checkbox"/>
◦ Gas assessment.	<input type="checkbox"/>
• Delineation of areas of contamination – show in a conceptual model / site plan / diagram	<input type="checkbox"/>
• Secondary assessment of risk to human health and the wider environment including:	<input type="checkbox"/>
◦ Details of the Quantitative Risk Assessment models used and justification for their choice e.g. CLEA, SNIFFER, RBCA	<input type="checkbox"/>
◦ Reassess the pollutant linkages (source - pathway - receptor).	<input type="checkbox"/>
◦ Reassess the conceptual model (diagrammatical).	<input type="checkbox"/>
◦ Assess the need for supplementary investigation.	<input type="checkbox"/>
◦ Details of procedure to deal with unsuspected contamination during site works	<input type="checkbox"/>
◦ Conclusions and recommendation for remediation or risk management and justification for this.	<input type="checkbox"/>

## Step Three – Remediation Strategy (where appropriate)

*The remediation proposals will need to be agreed by the Local Planning Authority and must take into account the intended end use of the site.*

### Phase III – Remediation Proposals

#### Included?

- Aims and objectives of the remediation proposals (summary).
- Details of the scheme of works to be undertaken including: 
  - Ground works (soil, surface water, groundwater).
  - Details of contamination including:  
Type, scale and location of each identified.
  - Method of scheme chosen together with justification
  - Gas protection scheme details.

### Phase III – Agreed Remediation Works

#### Included?

- Requirement for discharge consents, waste licences, transfer tickets, classification of waste prior to removal or stockpiling under 'Duty of Care' EPA 1990. Waste Carriers 'Certificate of Regulation'
- Piling proposals. See Environment Agency document: Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention. (National Groundwater and Contaminated Land Centre Report NC/99/73, May 2001)
- Details of validation proposals to ensure the remediation works are successful and carried out to the Method Statement proposals. 
  - Contaminant target values for validation, including justification of how these values were derived.
  - Duration of monitoring / validation scheme.

## Step Four - Validation Report (following completion of remediation)

*To be submitted for approval after the remediation works have been undertaken.*

<b>Phase IV - Closure Reports</b>	<b>Included?</b>
• Include all aspects of the remediation as outlined in Phase III	<input type="checkbox"/>
• Details of who carried out the works and dates the work was carried out.	<input type="checkbox"/>
• Deviations from the proposed remediation statement, including justification for this.	<input type="checkbox"/>
• Evidence of waste transfer tickets, classification of waste under 'Duty of Care' log of materials removed from site.	<input type="checkbox"/>
• Data from validation sampling:	
◦ Results of validation sampling to assess achievement of target values	<input type="checkbox"/>
◦ Groundwater and gas testing results.	<input type="checkbox"/>
◦ Map of sampling locations and final delineation of contamination.	<input type="checkbox"/>
◦ Map of treatment areas and differences from the Remediation Method Statement.	<input type="checkbox"/>
◦ Details of any ongoing monitoring program, including proposed duration.	<input type="checkbox"/>
◦ Details & UKAS/MCERTS Accredited Analysis of Imported Topsoil.	<input type="checkbox"/>
• Confirmation that remediation objectives have been achieved, for example, a certificate of completion.	<input type="checkbox"/>

## Appendix 2

### Certificate of Completion Template

# CERTIFICATE OF COMPLETION

To be completed by the developer

Development:

Planning Application Ref:

Undertaken Between the Dates of:  and

## Notes to the Developer:

1 - The purpose of this Certificate is to collate and document the investigation and remediation undertaken during this development in order to achieve discharge of the planning conditions and/or NHBC requirements.

2 - Please complete all sections that are appropriate.

3 - List all reports that apply in each section.

### **Desktop Study**

*Confirmation that an acceptable Phase I Assessment has been undertaken for the above development, detailed in the Phase I report(s):*

Title:	Ref:	Author:	Date:

### **Intrusive Investigation**

*Confirmation that an acceptable Phase II Assessment has been undertaken for the above development, detailed in the Phase II report(s):*

Title:	Ref:	Author:	Date:

### **Remediation Proposals**

*Confirmation that acceptable remediation measures to afford protection from identified risks have been proposed for the above development, detailed in the report(s):*

Title:	Ref:	Author:	Date:

### **Implementation of Remediation**

*Confirmation that proposed remedial measures were satisfactorily implemented, as per the agreed report(s), & detailed in the Validation Documentation:*

Title:	Ref:	Author:	Date:

<b>Imported Topsoil Quality</b>			
<i>Confirmation that all soils imported as part of the development were confirmed to be free from significant contamination, &amp; detailed in the Report(s):</i>			
Title:	Ref:	Author:	Date:

<b>Management of Remediation Works</b>			
<i>Confirmation that all site contractors were required to be alert for, and report any evidence of, further, unsuspected contamination, &amp; either none was identified or having been identified, was satisfactorily remediated, detailed in the Report(s):</i>			
Title:	Ref:	Author:	Date:

<b>DECLARATION</b>	
<b>Signed:</b>	<b>Date:</b>
 <b><u>Person(s) Supervising Works on Site</u> – please detail position &amp; company:</b>	
<b>Signed:</b>	<b>Date:</b>
 <b><u>On behalf of the Developer</u> – please detail position &amp; company:</b>	
<b>Signed:</b>	<b>Date:</b>
 <b><u>Contaminated Land Officer – Thanet District Council</u></b>	
<i>I confirm the above reports were received and found acceptable for the purposes of recommending discharge of the contaminated land planning condition imposed on the development and/or acceptance of remediation for NHBC requirements. No other warranty or indemnity from future regulatory action is intended by this Certificate.</i>	

# Appendix 3

## Selected Guidance & Resources

- **Thanet District Council Website**  
[http://www.thanet.gov.uk/environment\\_planning/pollution/contaminated\\_land.aspx](http://www.thanet.gov.uk/environment_planning/pollution/contaminated_land.aspx)
- **Contamlinks Website**  
[www.contamlinks.co.uk](http://www.contamlinks.co.uk)
- **CIRIA Contaminated Land Website**  
[www.contaminated-land.org](http://www.contaminated-land.org)
- **Department of Environment, Food and Rural Affairs (DEFRA)**  
[www.defra.gov.uk](http://www.defra.gov.uk)
- **Environment Agency**  
[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)
  - BS 10175:2001. British Standards Institution. (2001) Code of Practice for the Identification of Potentially Contaminated Land and its Investigation. London: BSI. ISBN 0580 33090 7.
  - Joint publication by Environment Agency and NHBC (2000) Guidance for the Safe Development of Housing on Land Affected by Contamination. R&D Publication 66. ISBN 0-11-310177-5.
  - CIRIA (1995) Risk Assessment for Methane and Other Gases from the Ground, Report 152, CIRIA, London.
  - CIRIA (2001) Remedial Processes for Contaminated Land, CIRIA, London.
  - Department of the Environment Industry Profiles: 1-26
  - Department of the Environment (1994) Planning Policy Guidance Note 23, Planning and Pollution Control HMSO, London.
  - Department of the Environment, Transport and the Regions and Environment Agency (2000) Model Procedures for the Management of Contaminated Land. Contaminated Land Research Report No11, London: DETR (in press).
  - Department of the Environment, Transport and the Regions, Circular 02/2000
  - Environmental Protection Act 1990: Part IIA – Contaminated Land – HMSO 2000.
  - Department for the Environment, Food and Rural Affairs (2002) CLR 11: Model Procedures for the Management of Land Contamination.
  - Exposure Assessment Model (CLEA): Technical Basis and Algorithms London, DEFRA.
  - Environment Agency R&D Publication 20 – Methodology for the Derivation of Remedial Targets for soil and groundwater to protect water resources.
  - Environment Agency and NHBC. (2008) Guidance for the Safe Development of Housing on Land Affected by Contamination.
  - Environment Agency (2000) Technical Aspects of Site Investigations - Volumes I & II Research and Development Technical Report P5-065/TR. Water Research Centre, London.

- Environment Agency (2001) Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination. R&D Technical Report P5