

Health Protection



Guidance for Owners, Developers, Agents and Consultants on Dealing with Contaminated Land

Policy Guidance No.2

States 
of Jersey

This document has been produced with the assistance of Officers from Planning and Building Services Department, Health and Safety Inspectorate and the Public Services Department. Thanks to Lancaster City Council and City of Stoke on Trent Council for the use of some material in this leaflet.

Health Protection Investigation and Remediation of Potentially Contaminated Land

Guidance for Owners, Developers, Agents and Consultants

Introduction

This leaflet gives an overview of land contamination issues for anyone submitting a planning application where there is potential for land contamination, for prospective purchasers of sites for development and for existing property owners who are concerned about contamination issues.

Past developments and processes can result in the contamination of land in both urban and rural areas. Examples of potentially contaminated land include industrial sites where hazardous materials have been used and former gas works where toxic substances may have built up in the land (see Table 1). Contamination can pose a threat to the health of future users of the site and to the surrounding environment. Few sites are so badly contaminated that they cannot be re-used at all, but the contamination may limit the range of potential uses. The re-use of contaminated land is in line with the principle of sustainable development, because it effectively recycles the land and reduces pressure for development of greenfield sites. However, a balance needs to be struck between the need to bring the land back into beneficial use and the risks and liabilities posed by the contamination.

This general guidance for Owners, Developers, Agents and Consultants provides information on requirements for site investigations, risk assessments and completion certificates of works where appropriate. The specific aim is to encourage a consistent approach to the structure and information content of contaminated land reports.

Development proposals

The Planning and Environment Department have advised that land contamination, or the possibility of it, is a material planning consideration in the decision on determining applications.

Jersey's 2002 Island Plan - Policy G17 – Contaminated Land sets out the approach to development on potentially contaminated sites. The States of Jersey will encourage the redevelopment of contaminated sites, provided that this does not pose an unacceptable risk to human health or the wider environment. Responsibility for determining the extent and effects of contamination rests primarily with the developer.

The Planning and Environment Department have indicated they will continue to use planning conditions to require the investigation and, where required, the remediation (treating of contamination) of land to an acceptable condition as part of the development control process.

Which areas of Jersey are contaminated?

It is not known in detail how much of Jersey's land may be affected by contamination. Jersey does not have a history of heavy industrial uses to leave a legacy of sites, which may have been affected by contamination to the same extent as many other countries. A number of key sites are affected by contamination and certain historic and current practices have caused and have the potential to cause contamination of land. Contamination can also occur naturally. However, international experience suggests that only a small proportion of potentially affected sites posed an immediate threat to human health and the environment.

Table 1

Some land uses which may have caused land to be contaminated include:

- | | |
|---------------------------------|---------------------------------------|
| ● Animal products works | ● Glass manufacture |
| ● Asbestos products manufacture | ● Petrol stations |
| ● Burial grounds | ● Printworks |
| ● Cement and lime production | ● Railway land |
| ● Ceramics and colour works | ● Steelworks |
| ● Chemical works | ● Sewage works |
| ● Dry cleaners | ● Textile and dye works |
| ● Engineering works | ● Timber products manufacture |
| ● Garages / vehicle repair | ● Waste disposal and land reclamation |
| ● Gas works | |

(not an exhaustive list)

Public Register and Environmental Information

The development of a public register of contaminated land to be held by the States of Jersey is currently being investigated.

However where available, departments of the States of Jersey can supply environmental information for a site, including matters such as landfill sites nearby, made ground, radiation, water resources and pollution incidents. A modest charge is made for producing these reports, to cover officer time. For more information of who to contact see Table 2.

Having obtained information indicating a possible contamination problem, the next step is to commission an Environmental Consultant to investigate the site for you, more information on this is given in the following sections. A list of known consultants is available at www.ends.co.uk, www.health.gov.je and www.esu.gov.je

Table 2

Department	Contact number	Subject areas
Health Protection	01534 623712	Human health and Nuisance issues
Environment Department	01534 866200	Water pollution/Waste regulation
Public Services Department	01534 601690	Disposal of contaminated material
The Health and Safety Inspectorate	01534 280000	Health and safety of workers on site
The Planning and Building Services Department	01534 725511	Planning and Building Control permissions/conditions

Some information about the approach to contaminated land in Jersey

For a site to meet the definition of contaminated land (see below), a pollutant linkage must be established. A pollutant linkage consists of three parts:

- i A **source** of contamination in, on or under the ground
- ii A **pathway** by which the contaminant is causing significant harm (or which presents a significant possibility of such harm being caused)
- iii A **receptor** of a type specified in Table 3 overleaf.

Section 78A(2) of the UK Environmental Protection Act 1990 defines contaminated land for the purposes of Part IIA as:

“any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) pollution of controlled waters is being, or is likely to be caused.”

(Note: For human beings, **“significant harm”** is defined as:

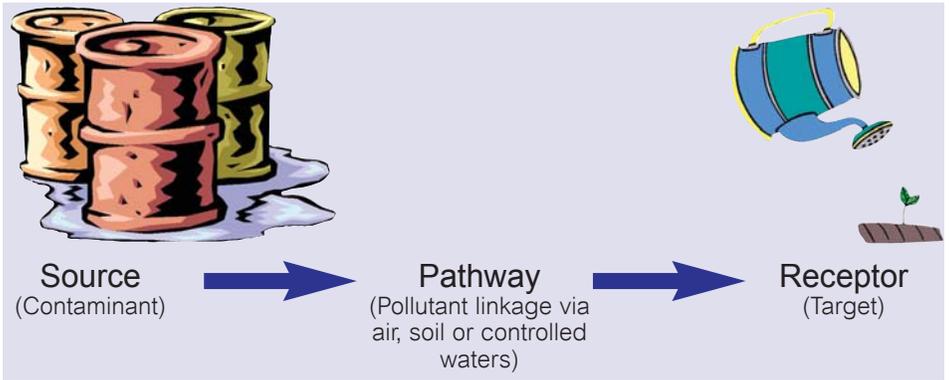
“Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.”

For human beings **“significant possibility of significant harm”**, are defined as:

“Human health effects arising from the intake of a contaminant, or other direct bodily contact with a contaminant.”)

Table 3: Receptor types

Human beings	Site investigation and construction workers or trespassers, for example, children getting on to the site during construction work. Various occupants and users of land after its developers e.g. occupiers and maintenance personnel. Various occupants and users of adjacent sites, whether used for residential or other purposes.
Eco-systems	Local nature reserves Sites of Special Interest Any other Ecosystem identified in a biodiversity action plan
Property	Buildings Conservation areas Ancient/scheduled Monuments All crops Produce grown domestically or on allotments Livestock Park or garden of special historic interest Owned or domesticated animals
Water	Ground waters – major aquifers Inland waters (lakes, rivers, streams – including the bed if dry) Drinking water abstractions – public and private Non drinking water abstractions – industrial and agricultural



It is important to understand that even if a site has pollutants on it, it is not automatically contaminated. However, if the three components of the pollutant linkage exist, a risk assessment must be undertaken to determine the likelihood of harm being caused, and the likely nature and extent of the harm caused if the predicted event actually occurred.

Table 4: Relevant legislation, applicable in Jersey, includes:

Legislation	Objective	Administered by
The Statutory Nuisances (Jersey) Law 1999 Public Health Law 1934	Abatement of matters prejudicial to health or a nuisance. Abatement of anything injurious to Health	Health Protection
Water Pollution (Jersey) Law 2000	To prevent Pollution of controlled waters	Environment Department
Building Byelaws(Jersey)1997	The construction of safe buildings	Building Control
Health and Safety at Work (Jersey) Law 1989	The protection of the Health of workers and safe work places	Health and Safety Inspectorate
Drainage (Jersey) Law 2005	Consents to discharge liquid waste to public sewer	Public Services Department
Island Planning (Jersey) Law 1964 to be replaced by Planning and Building (Jersey) Law 2002	Contamination, or the possibility of it, is a material planning consideration in the decision on determining applications	Planning Department
Waste Management Law 2005 (comes into force 01-07-06)	The Control of and management of waste and waste disposal	Environment Department

Developing on potentially contaminated land

All applications for planning permission are screened by the Environment Department and the Health Protection Department for potential contamination. In addition, if proposing to redevelop a site which has been previously used for a potentially contaminative use the applicant may wish to make contact with either Department in advance, for advice on how to proceed.

However, all correspondence on a planning application once submitted should be via the appropriate Planning Officer at The Planning and Environment Department as they hold the responsibility for the planning process.

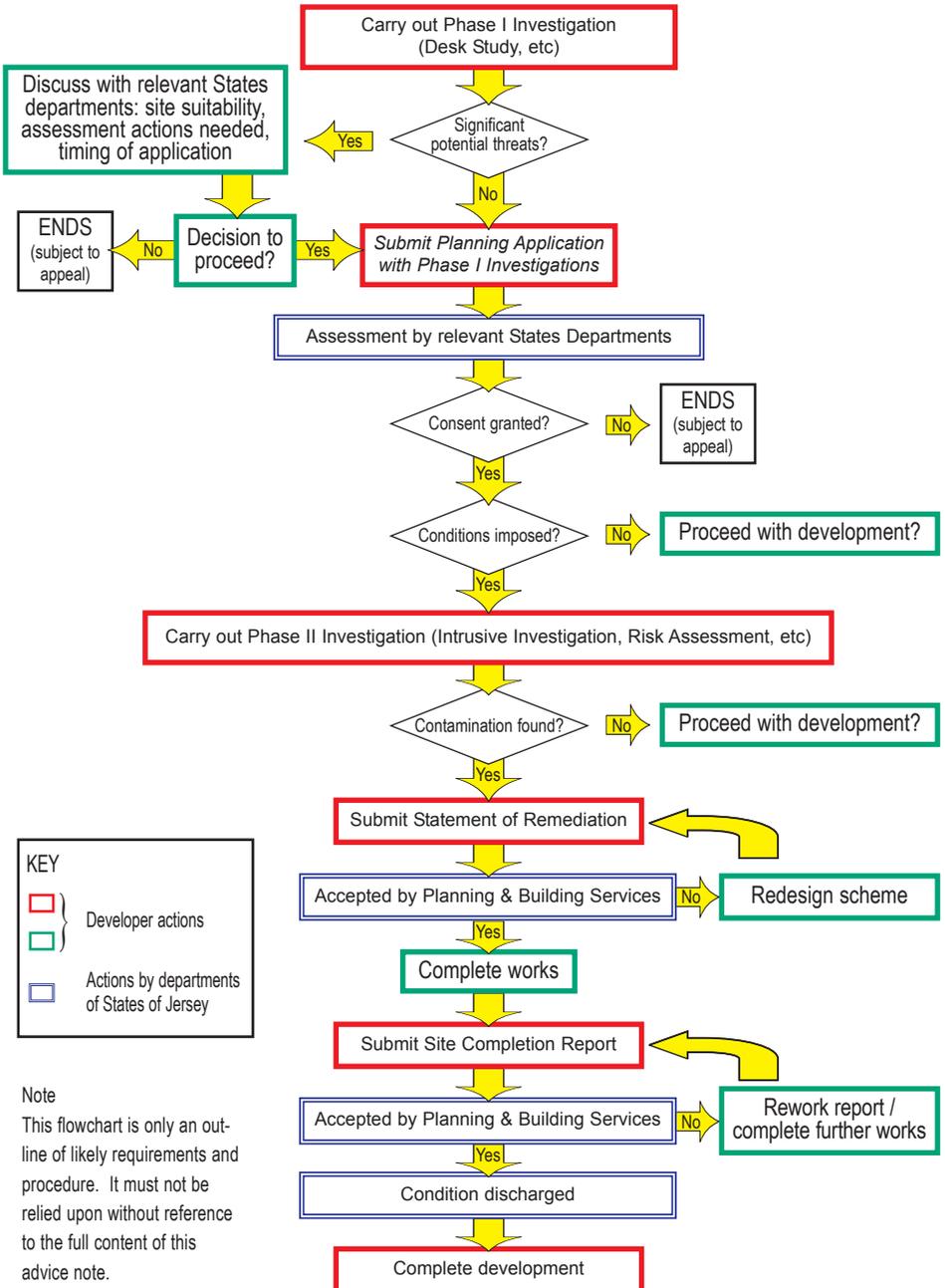
The following section is a guide to information the States of Jersey will require in order to assess an application for redevelopment of a potentially contaminated site. By ensuring that the relevant information is submitted, time delays by the need to request further information can be minimised. It is important that sufficient hard copies are provided for consideration (i.e. 6 hard copies) or, preferably, in electronic format.

Each phase of the work detailed may not need to be carried out for each site, but this can only be determined on a site by site basis. You may combine some of the phases into one report or issue them as separate reports. The following details are a summary of requirements. Each element should be carried out in accordance with published guidance and best practice documents. A list of useful information is available at the end of this guidance.

To prevent duplication and assist developers the process is coordinated by the Environment Department, however Developers should contact the Environment Department as early as possible to ensure the process runs efficiently and effectively.

It is important that the relevant Departments are satisfied that the land is uncontaminated and/or is remediated sufficiently for the proposed usage otherwise the subsequent sale of the completed development may be hampered.

FlowChart – Typical land contamination requirements and procedure



Investigation and remediation of historic potentially contaminated land

There are three phases to contaminated land investigation and management, each requiring a risk assessment to be undertaken based upon the information gathered:

- Phase I: Desk study, site walkover and risk assessment.**
- Phase II: Intrusive investigation and risk assessment.**
- Phase III: Remediation and/or risk management**

In the tables that follow, guidance is given for each phase, to indicate the component and objective. The information listed in each table is intended to give a guide as to that necessary for the risk assessment exercise and is not comprehensive or exhaustive in content. In each phase the greater the information provided, and the earlier this is made available, the sooner the scope and cost of any subsequent Phase II or Phase III exercise that may be required can be established.

Upon completion of Phase III a completed remediation report and Certificate should be provided required from the developer that the work has been undertaken and achieved to the specification approved by the relevant States Departments. An example of a completion certificate can be found at the end of this document.

Phase I – Desk study, site walkover and risk assessment	
Component and Objectives	Relevant Information
<p>Desk Study</p> <p><i>Objective</i> - From historical and present day data establish past use of site, potential contaminative use and types of contaminant that may be present. Identify all potential receptors, human health, controlled water, vegetation and buildings. Obtain a good understanding of the site and its general surroundings.</p>	<ul style="list-style-type: none"> ● Site location map with OS Grid reference. ● Site plan (layout) - current and proposed. ● Past uses of the site (historic mapping and local history collection. ● Soils and geology. ● Controlled waters - location, quality. Ground water vulnerability ● Underground services, on and near site. ● Pollution incidents, location of former landfills. ● Review previous site reports. ● Identify need for contact with regulatory bodies.

Phase I – Desk study, site walkover and risk assessment	
Component and Objectives	Relevant Information
<p>Walkover</p> <p>Objective - Visually assess the site for signs of contamination and activities/structures than may lead to contamination. Record any information and question current occupier to gain anecdotal evidence.</p>	<ul style="list-style-type: none"> ● Observations of site topography. ● Condition of soils, vegetation and water courses, drains, other site features. ● Physical condition of structures, signs of chemical attack on concrete. ● Do structures comply with regulations, e.g. are fuel tanks correctly installed and maintained? ● Are waste materials present on site? What are they? How are they stored? ● Photographs. ● Question current occupiers of the site. ● Possible surface sampling and consideration of intrusive investigation design.
<p>Environmental Risk Assessment</p> <p>Objective - to identify any source-pathway-receptor contaminant linkage, establish if Phase II required. Produce simple Conceptual Model if links exist.</p>	<ul style="list-style-type: none"> ● Identify possible contamination sources. ● Identify receptors (human, controlled water, vegetation, buildings) ● Identify pathways (e.g. soils, water, air). ● Identify links and consider “suitable for use” approach to the proposed development on site. ● Details of any specific methodology, any assumptions, references.

Phase II – Intrusive investigation and risk assessment	
Component and Objectives	Relevant Information
<p>Design of investigation</p> <p>Objective - to ensure that sufficient information is gathered from the site or site areas identified in Phase I in order to carry out the risk assessment.</p>	<ul style="list-style-type: none"> ● Devise sampling and testing programme based on findings Phase I data (See references for technical guidance). ● Details of contamination migration or potential risks of performing the intrusive investigation. ● Indication of Health and Safety implications of proposed works¹

¹ See ref. CIRIA (Construction Industry Research and Information Association) report 132 A Guide for Safe Working on Contaminated Sites

Phase II – Intrusive investigation and risk assessment	
Component and Objectives	Relevant Information
<p>Intrusive investigation</p> <p><i>Objective</i> - to provide high quality information for the Phase II environmental risk assessment.</p>	<ul style="list-style-type: none"> ● Appropriate supervision by a suitably qualified engineer/consultant/scientist. ● Measures to stop cross-contamination ● Chain of custody for samples, appropriate sampling containers and storage/dispatch times. ● Laboratory involved and whether accredited, methods used. ● Trial pit and site photographs, borehole logs, ground water levels, location plans and ground levels. ● Site has been left in a safe and secure state.
<p>Reporting</p> <p><i>Objective</i> - to present full and accurate information for risk assessment.</p>	<ul style="list-style-type: none"> ● Details of all sampling points, depths, methodology and procedures. ● Monitoring and all results (see references for technical guidance). ● Reference to any earlier site investigation reports. ● Long term monitoring for gases and groundwater - that may also be on-going.
<p>Environmental Risk Assessment</p> <p><i>Objective</i> - to identify any source-pathway-receptor Significant Pollutant Linkages (SPL) are present on site and establish if Phase III remediation/risk management is required.</p>	<ul style="list-style-type: none"> ● Perform site specific risk assessment (refine the Conceptual Model). ● Detail all methods used, the assumptions made and references. Provide full discussion of conclusions reached, referenced to the “suitable for use” approach to development and site utilisation².

² In line with current Defra and EA guidance, the CLEA package and Soil Guideline Values should be used to assess human health risks. See references for technical guidance.

Phase III – Remediation and/or risk management	
Component and Objectives	Relevant Information
<p>Design</p> <p><i>Objective</i> - to define the aims and methodology of the remediation exercise relative to the finding of Phase I & II risk assessments.</p>	<ul style="list-style-type: none"> ● Provide Remediation Statement to Environment Department and Health Protection Department prior to commencing any Phase III site work. To include explanation of method and basis of selection. ● Define the end-point of remediation (targets for relative contaminants and actions).
<p>Remediation</p> <p><i>Objective</i> - to reduce risks to potential receptors to acceptable level relative to best practice and current technical guidance.</p>	<ul style="list-style-type: none"> ● Management records and monitoring. ● Supervision and reporting by suitably qualified scientist/engineers and employment of experienced contractors. ● Unexpected situations/changes to method fully documented - seek approval from regulator prior to action. ● Waste management documentation and detailed records of materials remediated/removed.
<p>Completion Report</p> <p><i>Objective</i> - to provide evidence of completion of works and reduction of risk to acceptable level.</p>	<ul style="list-style-type: none"> ● Written statement upon completion ● Confirmation targets have been met, laboratory testing, field testing, related back to the design stage of remediation. ● Limitations of process, site areas that may require long term monitoring. ● Preparation of completion certificate.

Frequently asked questions

How much clean subsoil and topsoil should I expect to put in place?

This depends on the type of development, the contamination on site, what other remediation work is carried out and is judged on a site by site basis. As a general rule, for housing developments where soil concentrations (of non mobile contaminants) exceed Soil Guideline Values we require a minimum of 800 – 1000mm of clean cover to be put into place unless further risk assessment and site characterisation takes place. We welcome discussions with developers on remediation plans for a site. However all sub/top soil imported to a site is required to be tested to ensure it is suitable for use.

Will the States of Jersey sign off my site as clean?

No, we can only discharge the planning conditions relating to contamination. Site developers are strongly advised to gain professional advice and ensure that all site investigations and remediation strategies are conducted by consultants with experience and appropriate qualifications. The site developer and their consultants hold the responsibility for whether the site investigation, risk assessment and proposed remediation is adequate to protect future users / occupiers of the site. The Planning and Building Services Department is entitled to require the developer to provide certified advice to enable the application and conditions to be determined but those providing the advice should be aware of the future reliance that may be placed upon it.

Can I submit a combined geotechnical and environmental site report?

Yes, providing the information relating to contamination as detailed in the previous section is included. A geotechnical report alone will not address these issues. Where contamination and geotechnical reports are combined, the developer should ensure that the consultant engaged is skilled in **both** these areas.

How should I find a suitable environmental consultant?

The States of Jersey cannot recommend a consultant to you. The Ends Consultants Directory is a good place to start (www.ends.co.uk) or a list of known consultants is available at www.health.gov.je and www.esu.gov.je

What chemical tests should I carry out?

Chemicals tested for should include all contaminants of concern. Contaminants suspected to be present on the site which are not part of a generic test suite (such as the ICRCCL suite) should not be missed out of the analysis for this reason. You should also carry out leachability tests to assess how mobile a contaminant is and whether it may pose a risk to water resources. Laboratories used must be UKAS (United Kingdom Accreditation Service) accredited for all tests on contaminants of concern which they carry out. Please speak to the States Official Analyst on Tel: 736455 for further advice.

Will the States Departments make a site visit?

We may make a prearranged visit or come to the site unannounced to observe any investigation or remediation works to ensure that an adequate standard of work is being carried out in a safe manner.

Why must I supply a post completion validation report?

You should supply a validation report to demonstrate that the remediation has been successful in achieving its aims. This should be carried out before the development is brought into use, the planning conditions relating to contamination cannot be discharged until this is received. We get enquiries from prospective buyers of new developments regarding remediation work carried out on sites, without the validation report to demonstrate that the site has been adequately dealt with we are unable to give any reassurance that remediation has been carried out. This would normally include: sampling information/results, photographs and proof of remediation/disposal and any correspondence with the Regulatory authorities.

Where can I find more information on Contaminated Land?

- Draft Contaminated Land Strategy for Jersey 2005
- Environment Agency website at <http://www.environment-agency.gov.uk/>
- DEFRA website:
<http://www.defra.gov.uk/environment/land/contaminated/index.htm>
- Both the DEFRA and Environment Agency sites have lists of further publications and guidance related to contaminated land.
- British Standards Institution. 1999. BS5930, Code of Practice for Site Investigation
- British Standards Institution. 2001. BS 10175, Investigation of potentially contaminated sites'. Code of practice
- CIRIA. Remediation Treatment of Contaminated Land, 12 Volumes, SP101-112. (Note this pre-dates introduction of Part IIA, Environmental Protection Act 1990). Comprehensive guidance on all aspect of managing contaminated land.
- DEFRA/EA, 2002. CLR7: Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research.
- DEFRA/EA, 2002. CLR8: Priority Contaminants for the Assessment of Land
- DEFRA/EA, 2002. CLR9: Contaminants in soils: Collation of Toxicological Data and Intake Values for Humans
- DEFRA/EA, 2002. CLR10: Contaminated Land Exposure Assessment Model (CLEA): Technical Basis and Algorithms.
- "Tox" series: Contaminants in Soil: Collation of Toxicological Data and Intake Values for Humans [name of contaminant]. TOX1 Arsenic; TOX3 Cadmium; TOX4 Chromium; TOX5 Inorganic cyanide; TOX6 Lead; TOX7 Mercury; TOX8 Nickel; TOX10 Selenium.
- "SGV"series: Soil Guideline values for [name of contaminant] contamination in soils. SGV1 Arsenic;SGV3 Cadmium; SGV4 Chromium; SGV5 Inorganic Mercury; SGV7 Nickel; SGV9 Selenium; SGV10 Lead
- Department of the Environment, 1992. Waste Management Paper No. 27. Landfill Gas: A Technical Memorandum Providing Guidance on the Monitoring and Control of Landfill Gas.
- ODPM, 2004: Planning Policy Statement 23: Planning and Pollution Control
- Development of Land Affected by Contamination' has been released and the final version will replace the parts of PPG23 relating to land contamination)
- Department of the Environment, 1995/96. DOE Industry Profile Series.
- DETR, 2000. Circular 02/2000 Contaminated Land.
- DETR, 2000. The Contaminated Land (England) Regulations 2000

- Environment Agency, 2001. Secondary Model Procedures for the Development of Appropriate Soil Sampling Strategies for Land Contamination. Environment Agency R&D Technical Report P5-066/TR
- Environment Agency, 2001. Technical aspects of site investigation. Environment Agency R&D Technical Report P5-065/TR
- Environment Agency & NHBC, 2000. R&D Publication 66. Guidance for the Safe Development of Housing on Land Affected by Contamination.
- Health & Safety Executive, 1991. Protection of Workers & the General Public during the Development of Contaminated Land

Contact details

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www.planning.gov.je

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Contaminated Land Completion Certificate

This is to Certify that the scheme of decontamination and reclamation at the site known as
(grid reference) (in relation to planning application)
was carried out between the dates of and
and was completed in accordance with best practice and to the specification detailed in the document reference entitled
.....and plan numbers which were designed to afford protection from contamination* on the site to all known receptors* at that time.

If contamination remains in the ground excavations following completion of the development should be approved by Health Protection and the Water Resources Section prior to work commencement.

Signed this day of 200
The Developer of the Site

(Typed name, company, address and position)

* 'Contamination' and 'receptor' to have the same meaning as in Part IIA of the UK Environmental Protection Act 1990

