NORTHERN IRELAND (NI) COUNCIL GUIDE:

"PLANNING AND THE DEVELOPMENT ON LAND AFFECTED BY CONTAMINATION"

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1.0 PURPOSE OF THIS GUIDANCE

1.1 To provide guidance and advice to local councils on what factors need to be considered where development is proposed on land, which may be affected by contamination.

1.2 To promote and encourage an informed and consistent approach (for local government regulators) with regard to the consideration of planning consultations in relation to proposed development and use of land where land contamination may be a material planning consideration.

1.3 Although this guide is targeted specifically at local government officials/regulators involved in the planning consultation process falling within the scope of this document, it may provide useful information and increase awareness to other relevant and interested stakeholders involved in dealing with proposals for the development of land where contamination may be a possibility.

1.4 The overarching objective is that this guidance which includes signposting and links to other relevant technical guidance and standards will facilitate a better understanding and awareness of the issues which require to be addressed through the development control process and as such enable local government officials in their capacity as consultees to the Planning Service to provide informed comments to assist Planning officers with their determination of proposed development/use of land applications.

2.0 SCOPE

What land contamination issues does this guide apply to?

2.1 This guide covers potential land contamination issues in the broadest sense. This means that it may encompass both the general spectrum of the site and soil conditions.

Land contamination can include areas where there may be elevated levels of **naturally** occurring substances including e.g. (elevated ground gases e.g. methane and carbon dioxide due to ground conditions (marshland); radon and heavy metals (due to geological formations), as well as specific sites which may have been affected by **anthropogenic** sources e.g. by **former industrial uses** which may have left a legacy of contamination from operational activities (which may have included on site disposal of wastes). It can also include areas of land affected by **human activities** e.g. where substances have been deposited by direct or indirect events, such as **pollution accidents or spillages of pollutants**.

This guide is not limited to "contaminated land" as statutorily defined within the Part III Waste and Contaminated Land Order (NI) 1997 (legislation which at the time of writing of this guidance has yet to be commenced from now referred to as Part III). It also addresses land contamination (land affected by contamination) in relation to the range of contamination and receptors relevant to planning legislation, which is wider spatially, to reflect the context and scope of planning control. *The principal planning objective being to ensure that any unacceptable risks to human health, buildings and other property, and the natural and historical environment from the contaminated condition of land are identified and appropriate actions taken to deal with those risks.*

What does the term land affected by contamination mean?

2.2 This is intended to cover all cases where the actual or suspected presence of substances and materials in, on or under land may cause risks to people, property, human activities or the environment, regardless of whether it meets the statutory definition of "contaminated land" in Part III legislation when commenced.

What information sources have been focused on within this guide?

2.3 This guide focuses on a review of UK based information sources and within a UK risk based approach, which is the underlying approach to identifying and dealing with risk(s) due to land contamination. The overarching objective of this planning guidance is to safeguard human health and the environment, where proposed development and/or use of land may be affected by land contamination.

What type of development proposal does this guide apply to?

2.4 This guide should be applied where there are proposals for development and/or change of use of land. On a precautionary approach, the possibility of contamination should be assumed in relation to **all land subject to or adjacent to previous industrial use and also where uses are being considered that are particularly sensitive to potential contamination – including but not exclusively – housing, schools, hospitals and children's play areas.**

How should this document be used?

2.5 An overriding caveat with regard to this guide is that it must not be utilised in isolation to other UK adopted guidance and standards with regard to land contamination issues. **(A number of key references are included within the body of this document, with signposting (see paragraph 2.7) to relevant guidance and standards (contained within information boxes).**

2.6 The council is a statutory consultee to the Planning Service and thus receives consultation with regard to applications for development or change of use of land. This guide is issued to ensure that relevant technical advice is submitted through the consultation process to the Planning Service where such planning proposals may be affected by contamination. This guide is a document to be followed in terms of the approach to be taken when considering planning application consultations where there may be unacceptable risks to the end users of the proposed development site due to land contamination.

2.7 Within this document references are made to other sources of information by means of **signposting (►**= signpost symbol**)** and **links** where appropriate. These are referred to within information boxes, inserted at the end of text. The reader is encouraged to refer and have full regard to such other sources of technical guidance as applicable.

3.0 WHAT DOES THIS GUIDE CONTAIN?

3.1 A brief outline on land contamination and its significance in the context of the planning and development control system.

3.2 An overview of what is meant by the term contamination and the assessment of its potential impact in terms of human health and the environment where there is proposed development and/or use of land including a brief outline of risk and risk assessment.

3.3 A review of the roles and responsibilities of key stakeholders involved in the planning/development control process where the proposed development and/or use of land may be affected by land contamination. Stakeholders include – Applicant/Developer, Council, Planning Service, Environment and Heritage Service, Building Control and the Health and Safety Executive (NI).

3.4 Procedure and process to be considered when reviewing planning application consultation information with regard to development proposals and/or use of land where land may be affected by contamination.

3.5 Signposting to relevant and current UK adopted technical guidance and standards with regard to the investigation, assessment and remediation of land contamination issues.

3.6 A "Guide for Interested Parties on the development of land which might be affected by land contamination" which may be provided to interested parties (developers, consultants planning service and anyone else

involved in dealing with land contamination) at the pre-application/application consultation stages. The Guide provides a useful overview of the matters to be addressed through the planning/development control process and the information, which is required in order for the council (as technical advisors) to the Planning Service to appraise redevelopment/ change of use applications where the land may be affected by contamination. (Appendix 3)

3.7 A template of generic based planning conditions in relation to land contamination. (Appendix 4)

4. 0 BACKGROUND – PLANNING POLICY

4.1 Recent UK Government policy has meant that more buildings (including residential and commercial/industrial) will need to be developed on "brownfield land" in the future.

4.2 Within Northern Ireland, the regional development strategy *(RDS)*, *Shaping our Future – Regional Development Strategy for Northern Ireland* and NI Planning Policy Statement 12 set out the position with regard to housing development. The RDS prioritises the location of more housing within existing urban areas and it sets out ambitious brownfield targets of 60% in existing urban areas. The development of previously used land (e.g. brownfield) may include land which has the potential to be affected by contamination.

(►RDS, 2001- Strategic Planning Guideline, Meeting Housing Needs (SPG- Hou 4.1)).

4.3 As a result there is potential that increased building development may be proposed on sites where the land may have been affected by contamination with the potential for unacceptable risks to the end users of the site and/or the environment. However it should be emphasised that the term "brownfield land/site" does not necessarily define such land/site as affected by contamination, what may be said is that

contamination may be present and thus be a consideration where such land is proposed for redevelopment/change of use.

4.4 This guidance is required in order to ensure that through the town and country development control process there is consistent and sufficient cognisance given to the potential for development to be affected by contamination at the appropriate stage/s in the planning process and all necessary actions are taken to ensure that any investigation and any mitigation measures have been secured in relation to potential land contamination risks through the development control process.

4.5. This guidance is intended to reflect and promote good practice. It is applicable, but not exclusively, for use in the absence of an equivalent NI based planning policy document equivalent to the planning policy documents relating to land contamination issues which are available, namely; ► PPS 23 and Annex 2, 2004 - England, ►Planning Policy Wales and ►Planning Advice Note 33, 2004 – Scotland – (See Box 1 Planning Policy).

4. 0 BACKGROUND – PLANNING POLICY

Box 1 – UK Planning Policy on Development of Land Affected by Contamination

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PPS 23 Planning and Pollution Control and Annex 2 Development on Land Affected by Contamination
http://www.odpm.gov.uk/stellent/groups/odpm_control/documents/contentservertemplate/odpm_index.hcst?n=5453&l=3

►

Planning Guidance for Wales

http://www.wales.gov.uk/subiplanning/content/planningpolicy/planningpol_e.pdf

►

PAN 33 – Planning Advice Note - Scotland

http://www.scotland.gov.uk/library/pan/pan33-00.asp

4.6 Planning Policy Statement 23 and Annex 2, 2004 are relevant documents which have been published in England relating to planning and pollution control, and development of land affected by contamination respectively. This documentation provides the core policies and principles relating to the development of land affected by contamination.

In the absence of specific PPS on pollution control and more specifically an Annex 2 document, which covers development on land affected by contamination within NI, it is custom and practice to adopt and have full regard to the other relevant UK policy. For the purpose of this guide regard has been made to PPS 23 and Annex 2. Readers of this guidance should be aware that regard may also be had to other planning policy guidance relevant to contamination within the UK, namely Planning Advice Note (PAN 33) - Scotland and Planning Policy Guidance for Wales (Chapter 13 - contamination).

4.7 The impending Part III regime will be designed to address the historical legacy of land contamination, which must meet with the statutory definition of "contaminated land" within the legislation. When implemented Councils will acquire primary regulatory status for this regime, with the Department of the Environment (Environment and Heritage Service), also being an enforcing authority. The Part III regime will not be directed to assessing the risks in relation to a future use of land that would require a specific grant of planning permission. **This is the task of the planning system, which aims to control development and land use in the future. Consequently for planning purposes the assessment of risks arising from contamination and remediation requirements require to be considered on the basis of both the current use and circumstances and its proposed new use.**

4.8 Under the Planning Order (NI) 1991, the Planning Service is responsible for the preparation of development frameworks (Area Plans) and for the control of development and as such **the Planning Service has a duty to take account of all material considerations, including contamination.** (See section 6.0 for roles and responsibilities of the Planning Service).

4.9 The planning regime is a vital regulatory vehicle to ensure that potential land contamination is dealt with at the appropriate stage (i.e. through the planning/development process), i.e. that the legacy of contamination is dealt with and any future new Part III "contaminated land" is prevented. This approach is broadly indoctrinated through the commitment within the UK for sustainable development, the UK government's first priority has been emphasised within the Part IIA Environmental Protection Act 1990 statutory guidance (DETR Circular 02/2000) as being to prevent the creation of new contamination. With regard to land contamination the government's objectives are stated as follows;

- To identify and remove unacceptable risks to human health and the environment;
- To seek to bring damaged land back into beneficial use; and

- To seek to ensure that the cost burdens faced by individuals, companies and society as a whole are proportionate, manageable and economically sustainable.

In NI there is a link to sustainable development allied within the targets set out in the RDS, 2001 in relation to targets for the redevelopment of "brownfield land" for housing (see paragraph 4.2).

Thus in pursuing policies to re-use and redevelop sites, there is a need to ensure that there is awareness of contamination issues and the role of the planning system in dealing with them.

4. 0 BACKGROUND – PLANNING POLICY

4.10 The position with regard to planning and contamination issues (England) is stated within Planning Policy Statement 23 "Planning and Pollution Control".

"In considering individual planning applications, the potential for contamination to be present must be considered in relation to the existing use and circumstances of the land, the proposed new use and the possibility of encountering contamination during development", (ODPM, 2004).

4.11 In the absence of equivalent NI policy/guidance this document will aim to incorporate UK based guidance and policy on the issues of land contamination and planning. This guidance will also consider the development control process where land contamination is a material planning consideration and distil out pertinent UK based policy, standards and technical documentation available currently with regard to the development of sites where there is potential that such sites may be affected by contamination.

4.0 BACKGROUND

- **UNDERSTANDING LAND CONTAMINATION**

What is land contamination?

4.12 Land may be affected by contamination by a variety of substances and materials in the form of solids, liquids or gases. Contamination may occur in, on or below land, where there is presence of substances and/or materials whether, naturally occurring, anthropogenic or from human activities (see paragraph 2.1) with the potential to have a deleterious effect to human health and/or the environment.

4.13A wide range and combination of contaminants may be present on a site affecting soil/water/air media. PPS 23 Annex 2 paragraph 2.35, 2004 states that, "Less stringent pollution control and less careful site management in

the past has led to substantial legacy of sites contaminated by former uses".

4.14 Former use relates to a use of land, which has the potential to have led to past contamination, for example former uses may include; commercial, industrial, and waste disposal operations on land. In addition to the potential for land to be affected by contamination due to former uses there is also the potential that land may have been subjected to a pollution incident/ accidental spillage and/or has naturally occurring substances and materials present, which may have contaminated the site.

4.15 Examples of potentially contaminating uses of land and situations where land may be affected by contamination is provided within Appendix 1. The Department of the Environment (DOE 1996) ►Industry Profile publications provide further detail with regard to contamination from industrial uses of land. The profiles, document the history of the industry and outline contaminants which may be present, and their contaminant characteristics. The Department of the Environment Food and Rural Affairs/Environment Agency (DEFRA/EA) have published a contaminated land report (CLR) with regard to priority contaminants, ► CLR 8.

4.0 BACKGROUND

- UNDERSTANDING LAND CONTAMINATION

Box 2 – Land Contamination

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The DOE Profiles provide further detail on contamination potential from industries (See Appendix 2 – DOE Industry Profile List). The profiles provide a useful source of technical based information with regard to potential contamination sources/contaminants of concern linked to industry types. The profiles may be accessed at http://www.environment-agency.gov.uk/subjects/landquality/113813/1166435/?version=1&lang=_e.

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Contaminated Land Report - Priority Contaminants - CLR 8, 2002. This document presents a selection of contaminants that may be relevant for the assessment of contaminated land. The selection of contaminants included within this document have been specified because they are likely to be found on a large number of industrial sites in the UK and have the potential to affect human health and the environment.

The report identifies contaminants that are important on both a national basis but also for the assessment of individual sites, any necessary investigation being targeted on a site-specific basis. The report provides criteria for selection, the risks such contaminants are likely to pose and the reasoning for the non-selection of certain substances.

This document may be accessed from the EA website www.environment-agency.gov.uk

When is land contamination a problem?

4.16 Land may be affected by contamination due to elevated levels of contaminants (paragraphs 4.12 – 4.13), there is/are problem/s where the concentration and environmental availability of any contaminant/s present in any media (soil/water/air) give rise through a **pollutant linkage** to harm to human health and/or the wider environment.

4.17 The questions that require to be asked and answered are therefore as follows;

1. Do the contaminant/s present matter?
2. Is there a need to do something about it?

Land contamination matters **not simply** because there is an **amount or concentration** of a specific contaminant present, although this is a significant factor it is not the only factor. It is essential that there is consideration given to the **extent** by which such contaminants may give rise to harm to human health and/or the wider environment, i.e. what **risk** is caused by the contaminant/s and is that risk acceptable/unacceptable.

4.0 BACKGROUND

- UNDERSTANDING LAND CONTAMINATION

There is thus a need to apply a decision making process to the judgement regarding the degree of risk (whether acceptable/unacceptable) and also to apply this to appraisal with regard to what to do about the contamination – (i.e. is risk management/ remediation required).

4.0 BACKGROUND

- **LAND CONTAMINATION AND RISK ASSESSMENT**

Land Contamination - What is risk?

4.18 The overall approach in dealing with land contamination is one of risk management. It is stated within paragraph 2.2. of PPS 23 Annex 2, 2004 (Purpose and Scope Section) that, "The broad approach, concepts and principles of the Part IIA regime with respect to identifying risks from land contamination and dealing with them should be applied to the plan-making and the determination of planning applications, the aim is to ensure that planners, developers and their advisors address land contamination issues at the appropriate stage and consistently with the arrangements under Part IIA". The impending Part III regime within Northern Ireland will adopt similarly the approach, concepts and principles with respect to identifying risks from land contamination as is evident within the Part IIA regime. Thus there is a need to explain what the term risk means, and the process of risk assessment in the context of land contamination, to ensure equally through this guidance that this approach is applied through the planning process.

What do we mean by Risk?

4.19 Individual risk is the frequency at which an individual may be expected to sustain a given level of harm from the realisation of specified hazards.
In Government publications about the environment, it has been given the following standard definition:

"Risk is a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequences of the occurrence".

(DEFRA/Environment Agency/Institute for Environment and Health, 2000)

The aforementioned definition is that which has been adopted within the

► CLR 11, 2004 - Model Procedures for the Management of Land Contamination document.

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

Box 3 – Risk Based Framework

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CLR 11, 2004 – The model procedures document is intended to be utilised in order to provide a risk-based framework (the use of risk assessment and risk management techniques) to identify and inform decisions when dealing with land affected by contamination. It proposes a structured technical basis for making decisions about and taking actions to deal with land affected by contamination, and encourages the formalisation of outputs from the process in the form of written records that contain details of specific project objectives, including decisions, assumptions and recommendations. The technical process is consistent with UK policy and legislation and may be adapted to apply to a variety of regulatory and management scenarios, which includes the development of land through the planning process.

This document may be accessed from the EA website

www.environment-agency.gov.uk

4.20 In planning and development control, the aim is to ensure that there are no **unacceptable risks** not only to receptors relevant to the impending Part III regime but also to others which may be covered by other regimes, taking into account the use of the land – in this case the proposed new use.

What are the essential elements to be considered in relation to any risk?

4.21 In the context of land contamination there are **three** essential **elements** to any **risk**.

In order for there to be a risk associated with contamination, there requires to be a plausible relationship between the three elements, namely, ► the **contaminant/source**, the **pathway** and the **receptor.** The plausible relationship between the three elements is known as a **pollutant linkage and is essential to any risk**. The pollutant in the pollutant linkage paradigm is the contaminant or source.

4.0 BACKGROUND

- **LAND CONTAMINATION AND RISK ASSESSMENT**

Box 4 – Pollutant Linkage

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Contaminant – The hazardous substance or material, this is a substance which is in, on or under the land and has the potential to cause harm or to cause pollution of water resources or other receptor.

Pathway – This is the means by which the identified hazards are transferred from the source into the environment and from there to any of the defined receptors.

Receptor – This is the entity that could be adversely affected by a contaminant, such as people, property, human activities or the environment.

When is there a potential problem?

4.22 In any situation there may be cases where each of the three elements (source/pathway/receptor) may exist on a site. The elements may exist independently or in any number of combinations of the paradigm, however the only significant relationship to the pollutant linkage paradigm as the term suggests is when there is a link that will connect all three elements together. In other words there is only a problem/risk when a particular contaminant can affect a particular receptor through a particular pathway. It should be noted that on any individual site there may be contaminants present however there may be no linkages between the contaminants and the receptor, there may be a single pollutant linkage or there may be several. For example the same contaminant may affect a particular receptor or a number of receptors by different pathways or different contaminants may affect the same receptor. It is necessary that all pollutant linkages are separately identified, understood/assessed and dealt with if necessary.

How do you decide when risk matters?

4.23 Without a pollutant linkage, there is no risk, even when a contaminant is present on a site. Where a pollutant linkage or several pollutant linkages is/are present and thus there is a potential risk, the question which then needs to be asked is whether the level of risk is acceptable or unacceptable. If unacceptable risk is present (dependent on the context – i.e. what is the intended use of the site), there will be a need to ensure that there is action to deal with it.

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

4.24 The evaluation of risk i.e. the question of whether the risk matters requires both scientific and technical evaluation given the particular circumstances of the site, together with appropriate criteria in order to judge the risk. In the context of the Part IIA regime in England, a UK contaminated land exposure assessment model (CLEA) - ►CLR 10, 2002 has been developed and is therefore a model, which may be applied to fulfil this risk evaluation, as it has been researched and based upon UK policy and practice. The principles, approach and concept of the CLEA model are transferable within the context of the planning system, where land may be affected by contamination.

Box 5 – Contaminated land Exposure Model

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CLR 10, 2002 – The Contaminated Land Exposure Assessment Model: Technical Basis and Algorithms report, describes the conceptual exposure models for each standard land-use (residential with plant uptake; residential without plant uptake and commercial/industrial) that are used to derive the soil guideline values. It sets out the technical basis for modelling exposure and provides a comprehensive reference to all default parameters and algorithms used.

This document may be accessed from the EA website www.environment-agency.gov.uk

4.25 The ► CLR 7 document (which provides an overview with regard to the development of soil guideline values) states in respect of technical material produced under CLEA that they, "can be used in support of the application of the statutory regimes addressing land contamination, particularly Part IIA of the Environmental Protection Act 1990 (the contaminated land regime) and **development control** under the Town and Country Planning Acts. In particular, they are intended to be regarded as "relevant information", and to assist in the assessment of "relevant and available evidence" and "information", for the purposes of paragraphs A.31, B.39 and

B.44 - 49 of the Part IIA statutory guidance contained in DETR Circular 02/2000".

(Department of the Environment, Transport and the Regions, 2000).

4.0 BACKGROUND

- **LAND CONTAMINATION AND RISK ASSESSMENT**

Box 6 – Human Health Risk Assessment – Soil Guideline Values

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CLR 7, 2002 – Assessment of Risks to Human Health from Land Contamination: An Overview of the Development of Soil Guideline Values and Related Research.

This document provides an introduction to the other CLR reports in the series, and sets out the legal framework (Part IIA) and the development and use of soil guideline values. It is stated within paragraph 2.14 of CLR 10 that soil guideline values are, "expected to be useful in the context of the planning regime to inform judgements about the need for action to ensure that a new land-use does not pose any unacceptable risks to the intended end users.

This document may be accessed from the EA website

www.environment-agency.gov.uk

What is a soil guideline value?

4.26 Soil guideline values (SGV) may be used as a screening tool for use in the assessment of land affected by contamination. Soil guideline values may provide **generic assessment criteria** to provide an initial screening of risk from contamination at a site. They can be used to assess the risks posed to human health from exposure to soil contamination in relation to land-use. They represent **"intervention values":** indicators to an

assessor that soil concentrations above this level might present an unacceptable risk to the health of site-users and that further investigation and/or remediation is required. At the time of writing of this guide, SGV reports have been published for the following contaminants –

The SGV Reports may be accessed at -

http://www.environment-agency.gov.uk/subjects/landquality/113813/672771/675330/?lang=_e

SGV Reports

Ethyl benzene
Lead
Arsenic
Cadmium
Chromium
Inorganic Mercury
Nickel
Selenium
Toluene
Phenol

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

Further information on applying soil guideline values in the regulatory context, including Part IIA of EPA 1990, can be found in CLR7 (see Box 6), the same soil guideline values and statistical procedures appropriate to Part IIA can be used to inform an assessment of the need for action to make a site suitable for some future use.

4.27 Soil guideline values have been developed on the basis of many critical assumptions about possible exposure to soil contamination and the development of conceptual exposure models to describe different land-uses.

4.28 The standard land-uses considered are:

Residential with / without plant uptake

Allotments

Commercial / industrial

4.29 It is important that in any scenario, where soil guideline values may be applied that the conceptual model for the site is determined and understood and that there is awareness of the assumptions and limitations **before Soil Guideline Values are applied** to an area of land. The CLR10 *The Contaminated Land Exposure Assessment (CLEA) Model: Technical Basis and Algorithms* document (See Box 5) provides a detailed description of the CLEA model on which these Soil Guideline Values are based (DEFRA and Environment Agency, 2002d). CLR 10 may be utilised where necessary to derive generic and/or site specific assessment criteria to determine whether unacceptable risk/s exist at a site. The reader of this guide is advised to access further background and technical information on this subject area by accessing CLEA documentation.

4.30 If used correctly, an exceedance of a Soil Guideline Value can indicate a potentially significant risk to human health. However, this does not necessarily imply that there is an actual risk to health, and the assessor should take into account **site-specific circumstances (site specific risk assessment – site specific assessment criteria)**. Furthermore, if incorrectly applied to a site where the critical pathway or chemical form of the contaminant is not one that has currently been evaluated, a potentially significant risk might be present even though a Soil Guideline Value is not exceeded.

4.31 It is important that Soil Guideline Values are used as a component of an overall risk assessment and management strategy for a site in accordance with good practice and, in particular, an appropriate sampling and testing strategy.

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

Risk assessment means establishing whether unacceptable risks exist and if so what further action needs to be taken in relation to the site.

4.32 Risk assessment is utilised in order to justify the decision making process and should be undertaken within a tiered framework. The tiered framework should include a preliminary risk assessment, a qualitative and quantitative risk assessment including site investigation. There will be a hierarchy of risk within the quantitative risk characterisation, i.e. in order of hierarchy - carcinogenic effects and non carcinogenic effects.

The UK risk assessment paradigm encompasses four activity stages and includes the following, further detailed information with regard to these activity stages are contained within the CLR 11 document :

- ►Hazard identification
- ►Hazard assessment
- ►Risk estimation
- ►Risk evaluation

In any land contamination risk assessment process it is essential to characterise and encompass all the aforementioned activity stages, these are outlined within Box 7.

Box 7 – Risk Assessment Activity Stages

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Hazard Identification – This is the establishing of contaminant sources.

►

Hazard Assessment – This is the analysis of the potential unacceptable risks (what pathways and receptors could be present, what pollutant linkages could result and what the effects could be).

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Risk Estimation – This is the process of predicting the magnitude and probability of the possible consequences (i.e. what degree of harm or pollution might result to what receptors and how likely it is) that may arise as a result of a hazard.

►

Risk Evaluation – This is the decision as to whether a risk is unacceptable.

4.0 BACKGROUND

- **LAND CONTAMINATION AND RISK ASSESSMENT**

Hazard Identification

4.33 Within this process it is essential not only to identify the obvious hazard which may be inherent with a particular source but also the secondary sources which may give rise to harm. For example carbon dioxide a component of landfill gas is an asphyxiant but can also be toxic.

This stage in the risk assessment process must be adequate because it forms part of the problem formulation stage (i.e. establishing the contaminant sources) and will have an input into the scope of the overall assessment. Therefore if this stage is absent this could have a bearing on the final output and potentially the outcome.

Hazard Estimation

4.34 In order to estimate hazard/s there are a number of fundamental elements to the process each element then requires further assessment. The elements in the process include:

- Estimation of the magnitude of consequences –actual or potential harm
- The spatial scale of the consequences – i.e. geographical scale
- The temporal scale of the consequences – i.e. duration of the harm
- The time to onset of the consequences – i.e. how quickly might the harm be seen
- Estimation of the probability of the consequences

Hazard estimation is undertaken in order to assess the probability of the hazard occurring – i.e. it is a risk screening stage within more quantifiable terms.

Risk Estimation

4.35 Risk estimation is the derivation of information to estimate the probability of the receptor/s being exposed to the hazard. This is a more complex stage and will predominantly involve identifying and assessing each potential exposure pathway i.e. does the contaminant/source hazard have a pathway/connection to the receptor. The assessment will also entail looking at the probability of harm resulting from exposure to the hazard, because even following exposure the likelihood of harm resulting will be probabilistic and will depend on such other factors as the likely susceptibility of an individual receptor to the hazard and the amount and duration of exposure.

This is often simplified in terms of a dose-response relationship, which directly relates exposure to the magnitude of harm for certain receptor types.

4.0 BACKGROUND

- **LAND CONTAMINATION AND RISK ASSESSMENT**

Risk Evaluation

4.36 Having determined the probability and the potential magnitude of the consequences which may arise from the exposure to the contaminant/source hazard, this is the next stage which involves the identification of the significance – in terms of comparison with some referenced standards – including e.g. toxicological data and environmental standards such as SGVs.

The next stage in the process is the options appraisal i.e. what can be done about the hazard/s and the risk/s, which have been identified in terms of risk management/remediation).

* The reader of this guide is advised to access further background and technical information on this subject area by accessing the CLEA documentation.

Why evaluate harm by means of risk assessment?

4.37 In recent years there has been a shift away from the reactive, in other words of remediating environmental damage, and towards a more proactive and preventative means of addressing harm.

In terms of proposed development through the planning system this is particularly pertinent as it has been stated, "This change in emphasis has been reflected in the

use of risk assessment at the outset as part of the package of tools for making decisions about environmental management, particularly in the context of sustainable development". (EA,2003 - Guidelines for Environmental Risk Assessment and Management).

4.38 Along with the risk assessment process key stakeholder (e.g. developer/consultant ,regulatory bodies (Planning Service and Technical Advisors)) dialogue will be required in order to determine the broader significance of the risk posed by the contamination. This is necessary because it enables the risk assessment output/s to be evaluated and then fed into the risk management decision-making process, i.e. the determination of the acceptability of a risk.

4.39 Having evaluated the significance of any risk, a decision must be made as to whether the risk is acceptable as it stands, whether it should be modified, or whether it should be removed altogether.

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

4.40Preliminary Risk Assessment – This stage in the risk assessment process is always necessary to go through, whereas the requirement for detailed risk assessment will be dependent on many factors and the circumstances of the site, for example it may not be necessary to go through to the detailed assessment in every risk assessment process. The outcome of the preliminary risk assessment will decide what if any detailed risk assessment is required. The preliminary risk assessment may be best thought of as the initial screening or evaluation stage, in terms of what potential pollutant linkages may be present on the site and what degree of risk that each pollutant linkage may pose (e.g. risk scoring high, medium, low).

Preliminary Risk Assessment – The Conceptual Site Model

4.41 With regard to preliminary/qualitative risk assessment, the conceptual site model (CSM) – i.e. the **conceptualised exposure model** is a tool which is important in problem formulation, some of the key dynamics required to develop a CSM are those that determine **contaminant behaviour, migration, and fate**.

A ►CSM (see Box 8) may be presented in either visual/diagrammatic/tabular or written format (or a combination of all), and provides a presentation of the **hypothesised** relationships between sources, pathways and receptors **and** whether or not there are any potentially unacceptable risks arising from the contamination on the site.

Figures 1and 2 provide examples of CSM presentation formats.

This stage is an essential part of the process and requires the collection of information sources (► **desk study** and **site walkover survey**) to identify all **plausible pollutant linkages** at a site to enable the outline and preparation of the CSM. It is then required that the CSM is refined if necessary through the next stages of the detailed risk assessment. The conceptual site model is a representation of the understanding of the site and the surrounding environment including the geology, groundwater,

surface water bodies, potential contamination, processes (volatilisation, leaching) acting on substances present and contaminant migration pathways. It should take into account all pollutant linkages in terms of the current and proposed use of the site, and for the purposes of this guidance should include all receptors which require consideration through the planning process.

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

* The reader of this guide is advised to access further background and technical information on this subject area by accessing the information sources included within Box 8.

Box 8 – The Conceptual Site Model

►CSM

Guidance with regard to good practice for the development of the CSM is provided within an Environment Agency document, **NC/99/38/2 (DEFRA/EA, 2002)** – Guide to Good Practice for the development of conceptual models and the selection and application of mathematical models of contaminant transport processes in the subsurface.

This document may be accessed from the EA website

www.environment-agency.gov.uk

►CSM

BS 10175, 2000 – Investigation of potentially contaminated sites, – This is a British Standard document which includes guidance with regard to the development of conceptual models, which should form the basis of risk assessment.

This document may be obtained from the British Standards Institute and through the Barbour Series CD/Online facilities.

►Desk Study

CLR 2, (DOE, 1994) – Guidance on preliminary site inspection of contaminated land – This document provides guidance with regard to preliminary site inspection of land affected by contamination. It provides information with regard to what indicators of potential contamination to

look for when carrying out site reconnaissance. Indicators include abiotic features (debris and topographical anomalies) as well as biotic indicators (e.g. signs of vegetation damage). It also contains a checklist and assessment form which may be used.

►Documentary Research

CLR 3, (DOE, 1994) - This document provides detailed advice with regard to the conducting of a desk-based survey of documentary records, such as maps and directories when assessing the development history of the site. It includes information regarding sources of information and advice on interpretation.

4.0 BACKGROUND

- **LAND CONTAMINATION AND RISK ASSESSMENT**

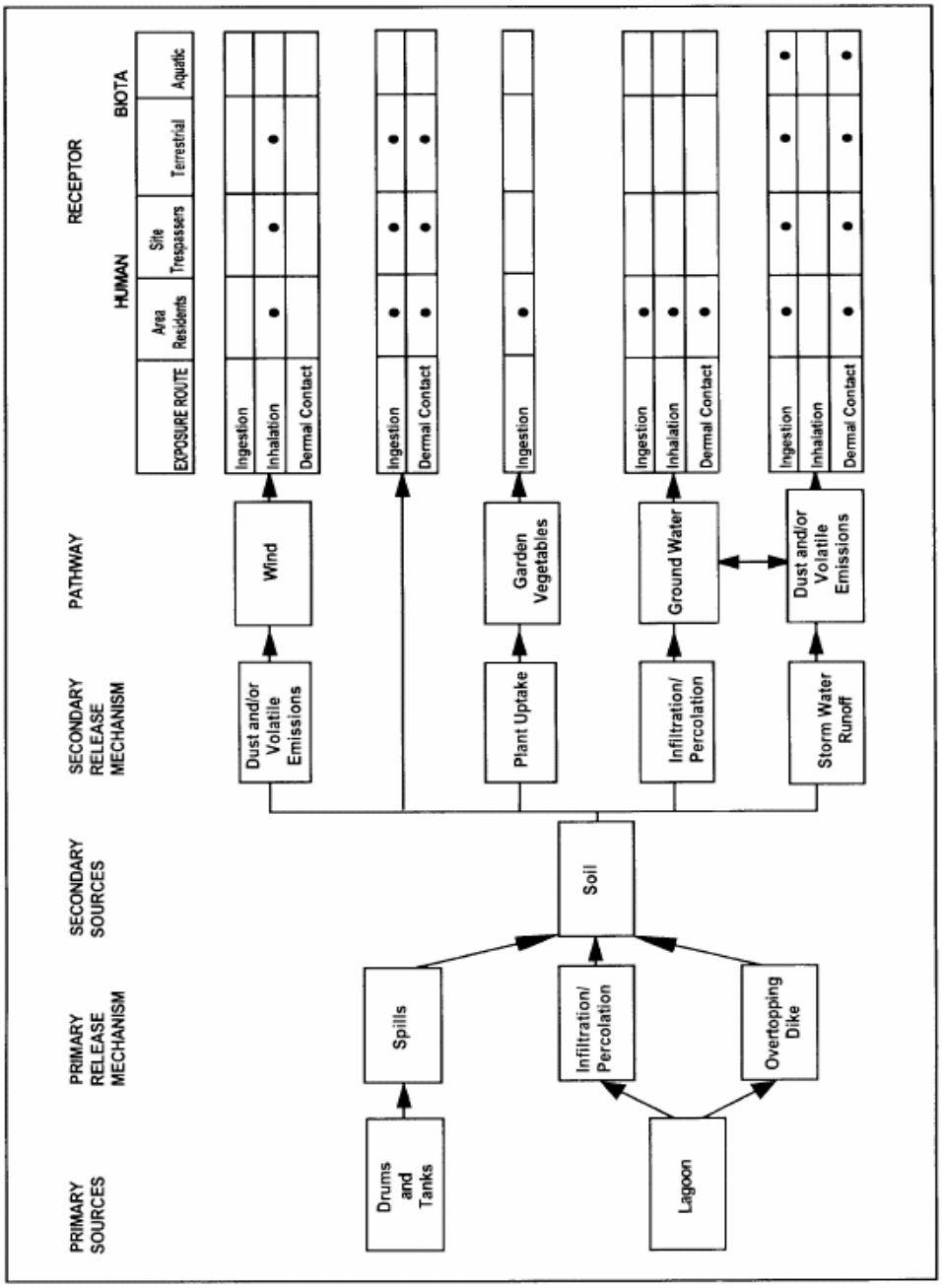

Figure A-2. Example conceptual site model diagram for contaminated soil (adapted from U.S. EPA, 1989).

Figure 1 – Diagrammatic Representation of a Conceptual Site Model

Reference Source – (www.epa.gov/superfund/resources/soil/attacha.pdf)

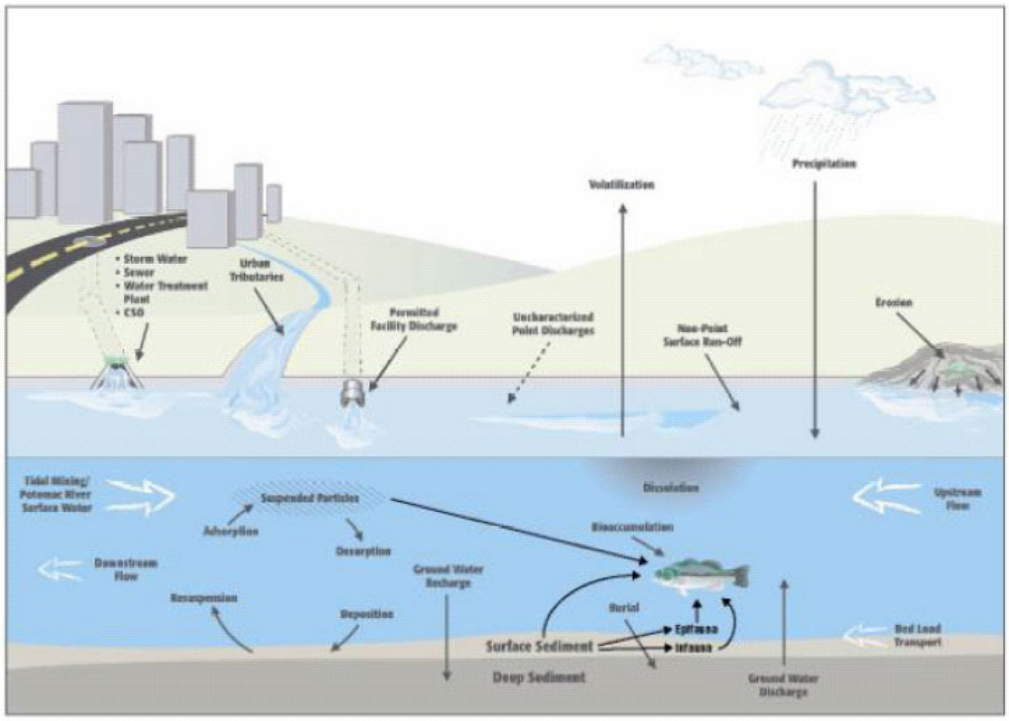

Figure 2 - Schematic Representation of a Conceptual Site Model showing potential routes for contaminant mobility

Reference Source –

http://response.restoration.noaa.gov/book_shelf/1047_Conceptual_Site_Model.pdf

Detailed Quantitative Risk Assessment:

- **Quantitative Risk Assessment using generic assessment criteria and assumptions**
- **Quantitative Risk Assessment using specific assessment criteria and assumptions**

4.42 Detailed risk assessment may include two approaches i.e. two approaches may be utilised independently or one may lead into the use of the other. The two approaches include –

(1) using generic assessment criteria (such as CLEA SGVs)

(2) using site-specific assessment criteria (such as the CLEA model to derive detailed quantitative assessment criteria (DQAC)) to assess whether there may be unacceptable risks present.

4.43 The approach to ►quantitative risk assessment will be dependent on the complexity of the pollutant linkages that are present on the site. In some cases these linkages may be assessed by using generic assessment criteria only (e.g. UK CLEA soil guideline values,

or other criteria derived and published by an authoritative body). Other linkages may require site-specific evaluation of risk by the derivation of site-specific assessment criteria (i.e. through detailed quantitative risk assessment) in order to establish whether there is unacceptable risk.

4.44 With regard to the later stages of risk assessment, the work that is required becomes more technically approached; this is because different contaminants and/or receptors may need very different methods and emphasis. With regard to the detailed risk assessment stage, it is likely that further information collection will be required including; intrusive investigation, supplementary data collection, review and analysis.

4.45 With respect to detailed risk assessment it may be appropriate to illustrate by way of examples.

Example 1 – Site Specific Assessment of Ground Gas Risks - Where the site involves the assessment of risk from **landfill gas**, it is insufficient to merely undertake monitoring in relation to the concentration of gas in the ground, there is also a need to have detailed knowledge and technical consideration of ground gas production rates - (i.e. risk relates not simply the concentration of gas in the ground but also the emission rate/production rate potential of the gas moving from the ground). It is **essential to evaluate** this information as the ground gas emission/production rate potential has a significant influence on the risk potential, i.e. on the potential for the accumulation of hazardous concentrations of e.g. explosive/asphyxiant gases.

Example 2 – Site Specific Assessment of Mercury Contamination - Where the site involves the assessment of risk from **mercury contamination** in soil, there is a need to ensure that there is consideration of the vulnerability of the receptor to this contaminant and also the exposure scenarios/mechanisms (e.g. mercury is volatile, therefore the vapour pathway may be a dominant pathway for this contaminant).

4.46 The risk assessor must have regard to and demonstrate that the most appropriate technical tool to carry out the risk assessment has been utilised for all the pollutant linkages under consideration.

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

Box 9 – Risk Assessment

►

Risk Assessment - CLR 11, 2004 - Model Procedures for the Management of Land Contamination. – This document provides a detailed background to the risk assessment process and includes a key information source section on relevant risk assessment documentation.

- EA Guidelines for Environmental Risk Assessment and Management (2003) - A document which aims to provide a common framework for risk assessment as a key part of the process of appraisal for environmental decision-making. It builds on the UK Department of the Environment's 1995 publication *A Guide to Risk Assessment and Risk Management for Environmental Protection*.

The Environment Agency Environmental Risk Assessment document may be accessed at:

http://www.defra.gov.uk/environment/risk/eramguide/

►

Generic Assessment Criteria - Relevant Information Sources

CLR 9, 2002 (Main Report) – Contaminants in Soils – Collation of Toxicological Data and Intake Values for Humans. This describes the UK approach to assessment of the human toxicology of exposure to hazardous substances in the environment and the derivation of tolerable daily intake values for priority contaminants.

Tox. Series, 2002 (Tox. Reports 1 – 12) - Contaminants in Soils – Collation of Toxicological Data and Intake Values for Humans. These are substance specific reports, which summarise the human toxicology and provide recommended appropriate tolerable daily intake values. These have formed the basis for the derivation of the UK soil guideline values.

Soil Guideline Values Series, 2002 – Substance specific guidance has been produced in individual reports. (See paragraph 4.24 for weblink access to CLEA Tox, CLR and SGV reports)

The CLR, TOX and SGV series may be accessed at:

www.environment-agency.gov.uk

Report P5-062/TR01, 2002 - With regard to Arsenic, a report has been produced by the Environment Agency relating to the measurement of bio-accessibility of arsenic in UK soils.

4.47 If unacceptable risk is found through the risk assessment process not to be present, i.e. no potential health and environmental risks have been identified, the justification may be presented that there is no need for any further action to be taken to mitigate risks at the site. However if the risk assessment process has revealed **unacceptable risks**, this will lead to the **options appraisal stage** in terms of what mitigation measures will be considered necessary for the site.

4.0 BACKGROUND

- LAND CONTAMINATION AND RISK ASSESSMENT

4.48 PPS 23, 2004 Annex 2 advocates that an assessment of risk should be carried out by the applicant for consideration by the local planning authority, before the application is determined (further details regarding the roles and responsibilities of parties involved in the development process are detailed within section 6.0 of this guide).

5.0 SUMMARY OF PLANNING POLICY AND GUIDANCE WITH REGARD TO DEVELOPMENT AND LAND CONTAMINATION

Planning Policy Statement 23 – Planning and Pollution Control

5.1NI has a planning policy gap with regard to planning and pollution control. In the absence of such a planning policy, the content of PPS 23 and Annex

2 to the policy statement is relevant given the "principle of relative applicability".

The document, "Principles of decision making in appeals, inquiries and hearings,"

(NI Planning Appeal Commission, 1999) states, *"English policy is capable of being a material planning consideration here where there is no equivalent NI policy".*

5.2Planning Policy Statement 23 (►PPS 23) Planning and Pollution Control, was recently issued in a revised version in England, i.e. 2004 and replaces the remaining extant parts of PPG 23, 1994.

Of significance to land contamination issues it states that;

"*The need to ensure that land, after development, is not capable of being determined as contaminated land under Part IIA of the EPA 1990 and that all unacceptable risks have been addressed".*

Box 10 Planning Policy Statement 23

►PPS 23, 2004 & Appendix A – This document provides the overarching objectives in terms of pollution control, and states the matters for consideration in preparing local development documents and taking decisions on individual planning applications, in relation to land contamination.

With respect to planning and land contamination issues within NI there is a need to ensure that land after development is not capable of being determined as statutorily defined "contaminated land" under the Part III Waste and Contaminated Land Order (NI) 1997 contaminated land provisions (which although at the time of writing of this guide have not been commenced), nevertheless the issue should be given due consideration with immediate effect in order to obviate any potential for the creation of future Part III contaminated land.

5.3 The statement extracted from PPS 23 Appendix A and provided within paragraph 5.2 is both relevant and pertinent in respect of potential land contamination issues and the development process in the NI

context. It is imperative that unacceptable risks due to contamination are considered at the planning/development control stage.

5.4 ► Annex 2 PPS 23, 2004 – Development on land affected by contamination (see Box 1).

5.0 SUMMARY OF PLANNING POLICY AND GUIDANCE WITH REGARD TO DEVELOPMENT AND LAND CONTAMINATION

What is the Suitable For Use Approach?

5.5 This is a key term, the approach has essentially 3 key elements (a-c) is applicable.

In relation to land contamination and planning, key element (b) is of particular significance.

The suitable for use approach focuses on the risks caused by contamination, and recognises that the risks presented vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology, hydrogeology etc of the site. Any risks therefore need to be assessed on a site-specific basis (as has been discussed within section 4.0 of this guidance within paragraphs 4.18 – 4.47).

The three elements of the "suitable for use" approach are:

(a) **ensuring that land is suitable for its current use** - in other words, identifying any land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise ("remediating" the land); the new contaminated land regime provides general machinery to achieve this;

(b) **ensuring that land is made suitable for any new use, as planning permission is given for that new use** - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before official permission is given for

the development and, where necessary to avoid unacceptable risks to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes; and

(c) **limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought** - in other words, recognising that the risks from contaminated land can be satisfactorily assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby risking distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

5.0 SUMMARY OF PLANNING POLICY AND GUIDANCE WITH REGARD TO DEVELOPMENT AND LAND CONTAMINATION

* The reader may obtain further detail on this approach within Annex 1 (paragraphs 9-12) and Annex 3 Part 3 of DETR Circular 02/2000 – statutory guidance on contaminated land (Part IIA Environmental Protection Act 1990), which may be accessed at –

http://www.defra.gov.uk/environment/land/contaminated/circ2-2000/1.htm#1

Planning and Land Contamination – Guiding principle

5.6 PPS 23 Annex 2 states, "***On a precautionary basis, the possibility of contamination should be assumed when considering both development plans and individual planning applications in relation to all land subject to or adjacent to previous industrial use and also where uses are considered for a sensitive use to***

contamination, such as housing, schools, hospitals and play areas".

Development Plans – Land Contamination

5.7 In terms of local development plans there is an opportunity to ensure that appropriate development is steered onto previously developed land which may be contaminated, within the context of wider planning policies.

It is important that in this situation contamination is identified and properly dealt with and development is carried out in an appropriate manner.

Information with regard to contamination should be considered in the drawing up of development plans because without sufficient information and knowledge on the contamination status of the site, it can add to the difficulty and cost of developing a site and in some instances can even preclude certain uses. The potential risks of contamination on development should therefore be considered in the drawing up of such plans and councils should have a key advisory and consultative role.

►PPS 23 Annex 2, 2004 requires that planning authorities include appropriate information within their local development plans both on the naturally occurring and industrial contaminants within the land condition and quality sections of their local development plans.

5.0 SUMMARY OF PLANNING POLICY AND GUIDANCE WITH REGARD TO DEVELOPMENT AND LAND CONTAMINATION

Box 12 – Land Contamination Information Sources

►**Paragraph 2.41 of Annex 2** provides information with regard to the types of documentation to be considered in terms of sources of pertinent information with regard to contamination.

Table 2.1 of Annex 2 provides a list of previous industrial use types – See Appendix 1 of this guidance (Extract of Table 2.1 previous industrial types).

►

Annex 2 refers to the Department of the Environment (DOE) Industry Profiles (1995) (as extracted).

(See Box 2 and Appendix 2 of this guidance).

Box 13– Land Contamination Information Sources

►

Paragraph 2.41 of Annex 2 – states that, "In identifying where contamination needs to be considered the Planning Authority should examine their own and other local sources of information about the condition and history of land as well as information sources supplied by the applicant". Reference is given to local development plan information, and the survey data upon which they were based and any information collected as part of Part IIA inspection of "contaminated land". In NI this would be the impending Part III provisions.

Referral to other potential relevant datasets include: records (development control, environmental health, building control, land reclamation/regeneration, highways, engineering).

In addition land condition information may be obtainable from the geological survey (e.g. location of made ground, the results of broad scale geochemical surveys and radon maps) and the Environment and Heritage Service Waste and Contaminated Land Unit may hold information on previous site use (i.e. the Land Quality Database).

6.0 ROLES AND RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT CONTROL PROCESS

Development Control - The importance and relevance of the council consultation process.

6.1 One of the planning authority's (the Planning Service) responsibilities is to regulate through the Town and Country Planning legislation, the development control process.

It is essential that the planning authority consult with relevant officers of departments within the council with regard to development/ change of use applications, where the end use proposed may be affected by contamination and where the end use is particularly sensitive (see paragraph 2.4 of this guidance).

Ultimately it is the **planning authority's responsibility** to ensure that it is satisfied that sufficient information has been obtained from the **applicant** about the condition of the land (subject of the planning application), and any potential contaminative sources within the vicinity, which may migrate/move off land not within the development site but may have the potential to adversely affect the development.

The roles and responsibilities of key stakeholders (applicant, developer, planning authority and consultees to the planning authority) are set out in Annex 2 of PPS 23 (paragraphs 2.17 – 2.27), however this guidance provides a NI perspective based on PPS 23 Annex 2.

6.2 Annex 2 of PPS 23 sets out the need to consider potential contamination, at the appropriate stages of the planning process;

- Planning application submission stage i.e. information to be submitted with the application (outline and full)
- Determination of planning applications, i.e. the use of planning conditions and planning obligations and the possible considerations for refusal of such applications.

6.3 In order to facilitate consistent consideration of potential land contamination issues through the development control process the following approach (outlined within Box 14) may be considered for adoption.

6.0 ROLES AND RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT CONTROL PROCESS

Box 14 – Development Control and Land Contamination

- Councils should consider liaison with key parties involved in the development control process (including; the planning authority, environment and heritage service, and building control) with regard to the compilation of an information system, which would consider all relevant and existing data regarding the contaminative status of land within it's area/districts. All identified sites should be notified to the planning authority and other key stakeholders (EHS and Building Control Departments – see also paragraph 5.7 and Boxes 12 and 13 of this guidance);
- Councils should adopt a consistent procedure and practice to consultation and ensure that all staff involved in responding to planning application consultations are made aware of relevant contaminative source information and this guidance.
- Councils should develop and implement procedures to ensure liaison on land contamination issues with other council departments including technical services/building control.
- Councils should ensure that advice is provided to the planning authority in their capacity as consultees with regard to the potential for unacceptable risks due to land contamination and the need for

site-specific evaluation of such risks i.e. (desk study; detailed investigation; risk assessment and risk management – CLR 11 and PPS23 Annex 2 and section 4.0 of this guidance provide further explanation of what these terms constitute). Where necessary, resulting from the risk management stage, the requirement for and assessment of a remediation strategy should be identified and assessed by the council or the planning authority advised to seek external expert advice.

- Where necessary and in circumstances where the council cannot provide the level of expert advice that is required with regard to the assessment of land contamination issues the planning authority should be advised to this effect in order that they may seek/obtain such expert advice as necessary.
- Councils should ensure that procedures are in place to liaise and discuss matters relevant to the consultation with the planning authority, and agree prior to final decision the attachment of any planning conditions on the decision notice.

6.0 ROLES AND RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT CONTROL PROCESS

PPS 23 Annex 2 - An Overview of the Development Control Approach (Planning Authority) – Where Land may be Affected by Contamination

6.4 **Information to be supplied with the planning application** – PPS 23 Annex 2 advises that local planning authorities should require the applicant to provide with the application information as is necessary to determine whether the proposed development can proceed, where contamination is known, suspected or the proposed use is particularly

vulnerable (sensitive uses outlined include; housing, schools and hospitals).

The objective being that sufficient detail is obtained which would enable a conceptual exposure model of the site to be developed identifying plausible pollutant linkages.

Where insufficient information is provided to the local planning authority to enable a decision on the planning application, i.e. that the risks have been adequately identified and a suitable and viable remedial option may be available, the **planning authority is advised to take the approach that further information is necessary to enable the decision to be made i.e. require further investigations prior to determining the application.**

1. **Outline Planning Application –** Local Planning Authorities are advised to take **extreme caution in granting outline permission unless sufficient information is obtained from the applicant with regard to the condition of the land and remediation, to be able to grant the permission in full at a later stage.** A grant of outline permission must be capable of being sustained at the detailed approval stage. The advice states that **permission should not be granted** until the LPA is satisfied that it understands the contaminated condition and the development incorporates appropriate remediation. The advice indicates that sufficient information would mean that;
    - The risks have been properly assessed.
    - Where unacceptable risk is identified that there has been an appraisal of the options to mitigate/remediate such risks and;
    - The remediation scheme proposed will be capable of reducing the

    risks to an acceptable level.
2. **Granting of Planning Permission** – The LPA is advised that **before granting permission** they must be **satisfied** that the development proposed is appropriate, based on the information that is currently available to it regarding contamination and remediation measures. The planning policy advice given in such a situation is that;

- Permission should be granted subject to any conditions requiring;

6.0 ROLES AND RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT CONTROL PROCESS

Further investigation and remediation including verification.

3. **Refusal of Planning Permission –** It is stated within PPS 23 Annex 2 that should the planning authority not be satisfied based on the information provided (including information from those consulted) that the development would be appropriate permission should be refused. Examples of grounds for refusal include:
    - No information has been obtained which excludes the possibility of contamination.
    - It is considered unacceptable risk exists and cannot be dealt with to deliver a development that is suitable for use.
    - The steps needed to deliver a suitable development have not been taken and cannot be secured by suitable planning conditions.

What does UK Planning Policy advocate in terms of the consultation process (Regulatory Authorities – Councils and Environment Agency) - Development Control and Land Contamination

6.5 Within PPS 23 Annex 2 the planning authority is advised to consult the **contaminated land officers** or **department of the relevant authority for any development proposed on land that might be affected by contamination.**

PPS 23 Annex 2 also refers to the requirement for the Environment Agency (which is Environment and Heritage Service within NI) to be consulted if the land is/was regulated under regulatory regimes enforced by the EHS, e.g. the industrial pollution control, pollution prevention and control and the waste regulatory regimes and where there may be potential risks to waterways (e.g. rivers, groundwaters and streams)

6.6 Other relevant local authority departments referred to with regard to consultation include; **building control**, **engineering** and **reclamation**). Reference is made to the carrying out of **development**

safely in terms of risks to on site workers, neighbours and offsite receptors and the requirement for the management of those risks (**Health and Safety Executive – (**which is the Health and Safety Executive NI in NI). Reference however to consultation with the HSE is not referred to specifically within the consultation section (paragraphs 2.56-2.58) of PPS 23 Annex 2. **In terms of this guidance it is strongly advocated that the council in its capacity as consultee to the Planning Service promotes through consultation responses the need to ensure that other relevant stakeholders are consulted.**

6.7 An informative may be included within any consultation response by the council where relevant (e.g. environmental health departments) that the EHS, Building Control and Health and Safety regulators may also require early consultation in respect of their

6.0 ROLES AND RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT PROCESS

respective roles and responsibilities – e.g. (►building regulation including the requirement to ensure that there is protection of buildings from the effects of contamination and ►health and safety risks to on site personnel and public).

Box 15 – Building Regulation and Health and Safety

► Building Regulation

ODPM, 2004 The Building Regulations 2000. Approved Document Part C, 2004: Site Preparation and resistance to contaminants and moisture.

(References included within the aforementioned document are to the Building Research Establishment (BRE) and Construction Industry and Information Association (CIRIA) publications. These are available from the Barbour Series CD/Online facilities).

The revised Building Regulations (England) may be accessed from www.odpm.gov.uk

Building Regulations (NI) Order 1990 – Building Regulations (NI) 2000 - Part C and Technical Booklet C.

► **HSE 1991** Protection of workers and the general public during the development of contaminated land.

►**CIRIA, 1996 Report 132** - A guide to safe working on contaminated sites.

What information is required by the applicant to be submitted as part of the planning application?

6.8 **Sufficient information** must be provided by the applicant to enable the planning authority to make a decision on the application, about the condition of the land, (i.e. **information which sufficiently characterises the site to identify any unacceptable risks**) and what remediation may be required to make the land suitable for use.

Stages in the process will include the necessity to ensure that adequate site specific information is submitted with regard to the nature presence and extent of contamination and that there is a thorough assessment of risk, based on the source pathway receptor concept (see section 4.0 of this guidance).

Box 16 includes key documentation in relation to site investigation. (This is not an exhaustive list and is not in a hierarchal order of importance).

6.0 ROLES AND RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT PROCESS

Box 16 – Site Investigation

► **Key documentation in relation to site investigation**

DETR Circular 02/2000 – Statutory guidance on contaminated land.

DEFRA – Contaminated Land Report – CLR 2, 1994 – provides guidance with regard to preliminary site inspection of contaminated land.

EA, 2000 – P5-065/TR – Technical aspects of site investigation in relation to land contamination (2 volumes).

DOE, 1994 – Sampling strategies for contaminated land.

British Standard BS 5930: 1999, Code of Practice for Site Investigations

British Standard BS 10175: 2001 Investigation of potentially contaminated sites – Code of Practice.

6.9 Appendix 3 of this Guidance contains a document, which provides advice/guidance to assist interested parties (e.g. applicant/developer/consultant) where a proposal for development on land may be affected by contamination entitled, "Council Guidance On Development of Land Affected by Contamination".

The document includes guidance with regard to the types of information that will be required to be submitted (if land is contaminated/suspected of being contaminated or has a sensitive enduse - see paragraph 5.6) through the development control process. Information to be submitted may include reports with regard to site investigation, risk assessment, remediation and validation.

The Appendix 3 council guidance document also contains a checklist section, to provide direction with regard to the content of reports including: desk study, site investigation, remediation and validation.

The council guidance document may if issued to key stakeholders, assist in the processing of planning applications (land affected by contamination) in the most expedient manner.

Risk Management / Remediation Strategy – Development on Land Affected by Contamination

6.10 Where development is proposed it is the <u>developer's responsibility</u> for ensuring that the development is **safe** and **suitable for use**. Therefore the developer is responsible for any remedial action necessary to make the land suitable.

The planning authority must be satisfied by the receipt of a suitable submission from the developer and following consultation (with key stakeholders discussed within paragraphs

6.0 ROLES AND RESPONSIBILITIES OF THE PARTIES IN THE DEVELOPMENT PROCESS

6.5-6.7) that unacceptable risk can be successfully addressed through the development control process.

The council may in their capacity as consultees to the planning authority advise on such a requirement and/or the remedial plan (see reference to expert advice to the planning authority - Box 14).

Where the planning authority is satisfied that the development proposed may be appropriate planning permission may be granted subject to conditions requiring further investigation, remediation and validation as is reasonable and necessary.

Appendix 2B of PPS 23 Annex 2 provides examples of planning conditions used by local authorities

Where there are unacceptable risks and requirements with regard to remedial measures for controlled waters, the council should advise the planning authority to consult with the regulatory body (EHS).

Appendix 4 of this guidance provides generic conditions in relation to land contamination (investigation, remediation, verification and monitoring and maintenance), which the reader may wish to have regard to.

The following includes key documentation in relation to remediation. (This is not an exhaustive list and is not in a hierarchal order of importance).

Box 17 - Remediation

►

DEFRA, 2004 – "CLR 11 Model Procedures for the Management of Land Contamination" – Chapter 3 provides an overview of the main aspects of Options Appraisal – (i.e. Identifying remediation options for each pollutant linkage, structured evaluation of remediation options and producing a remediation strategy to address relevant pollutant linkages. A

comprehensive list and description of key information source material with regard to options appraisal is provided within the information map and information section of the document.

►

Environment Agency (EA), 2005 - "Guidance on Requirements for land Contamination Reports" – This document has been produced by the EA (as regulator in England and Wales) for controlled waters to provide guidance to interested parties (planning process) on what is to be expected in terms of investigation and remediation. The guidance may be obtained by accessing the Environment Agency website.

www.environment-agency.gov.uk