Wandsworth Borough Council

Administration Department
Environmental Services

Environmental Protection Act 1990, Part IIA

CONTAMINATED LAND INSPECTION STRATEGY

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INTRODUCTION

Activities and practises of the past have adversely impacted on the quality of many areas of land and can be seen to affect sustainable development in the present and the future. There is a general desire to reduce environmental and health risks to an acceptable level and to bring polluted land back into beneficial use economically, at costs proportionate to risks and based on the 'polluter pays' principle.

A contaminated land inspection strategy is one step by which land that has been impacted by pollutants may be identified, which guides actions that may be followed to ensure that the land does not present unacceptable risks within an area. Additionally, it also provides an important tool for the ongoing and future management of pollution-affected land.

Part IIA of the Environmental Protection Act 1990 ("the Act") was added by the Environment Act 1995 and was brought into force on 1st April 2000. Together with provisions available through the planning development control process, Part IIA is the principle legislative basis for addressing the issue of contaminated land in England & Wales. One requirement of the Act is that a local authority must "cause its areas to be inspected from time to time for the purpose of identifying contaminated land". Statutory guidance requires that the Council take a "strategic approach" to this inspection process, which must be published in a written strategy (Department of the Environment, Food and Rural Affairs, Contaminated Land Statutory Guidance, April 2012).

The original strategy was published in 2002 and reviewed in 2006 and 2012. This document represents the 2016 revised Contaminated Land Inspection Strategy of Wandsworth Borough Council, and it describes the method that is followed in Wandsworth to meet the requirements of the statutory guidance. The main changes within this document from earlier versions are the result of changes that were made to the Statutory Guidance together with other explanatory guidance published over time since its release. The guidance emphasises that use of Part IIA should be used only as a last measure where no appropriate alternative solution is available. Actions should be precautionary but not disproportionate.

The strategy is an iterative process in which information gained may lead to the further investigation and assessment of the environmental setting in which a parcel of land exists. Following the implementation of the strategy, and depending on the results of the inspection process, there may be a need to follow up with either consensual or legally enforced contaminated land remediation. This is a complicated issue involving the apportioning of liability, ascertaining remedial requirements, legal interpretation and practice, cost recovery, and these matters are discussed only to a limited extent in this document and not in detail, as it is not the primary focus of the inspection strategy.

DEFINITION OF CONTAMINATED LAND

There are commonly held notions of what may be meant by ‘contaminated land’, but the legislative regime prescribes a very specific definition. Section 78A(2) of the Act defines contaminated land 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) significant pollution of controlled waters is being, or there is a significant possibility of such harm being caused."

Interpretation of the definition must be made with reference to statutory guidance given in the Department of the Environment, Food and Rural Affairs (DEFRA): *Environmental Protection Act 1990 Part IIA, Contaminated Land Statutory Guidance, April 2012*

Radioactive contamination has a different definition and its own Statutory Guidance published by the Department for Energy and Climate Change. The Council’s role with respect to this is limited, as described later in this document.

Contamination - key elements

The statutory guidance informs us that the above definition is reliant on two key elements:

(i) the concept of contaminant linkages.;

(ii) the principle of risk assessment to determine the likelihood of significant harm

Contaminant linkages

This concept comprises of the connection between a contaminant, a receptor and the pathway by which the contaminant reaches the receptor. The statutory guidance states that unless all three elements of a pollutant linkage are identified in respect of a piece of land, that land should not be identified as contaminated land. Further, the pollutant linkage must be *significant* for a site to be determined as contaminated land.
A contaminant is any substance which is in or under the land, and which has the potential to cause harm or cause pollution to controlled waters. Pollution of controlled waters is defined in section 78A(9) as:

"the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter"

Contaminants are typically chemical substances residing in the soils beneath a site as a result of the previous use of the site for industrial or waste disposal purposes. They may be present in discreet areas or spread more diffusely over a site. In some areas soils have naturally elevated concentrations of a contaminant as result of the geology of the area, or have been impacted by the long term deposition of diffuse anthropogenic pollutants such as from coal burning or vehicle exhausts.

A pathway is one or more routes or means by which a receptor:

(a) is being exposed to or affected by a contaminant, or

(b) could be so exposed or affected.

It is possible, and typical, for more than one pathway to exist on a contaminated site. Examples of pathways include dermal contact with soil; ingestion of soil; mobility of dissolved contaminants by groundwater (in which case the water may be both a receptor and a pathway); airborne passage of volatile contaminants; contact of building components with contaminated soil and/or water.

A receptor is either:

(i) A human being; or,
(ii) controlled waters which are or could be polluted by a contaminant; or,
(iii) a living organism, or group of organisms, an ecological system, or a piece of property that is specifically listed in the Statutory Guidance, Tables 1 & 2, and is being, or could be, harmed by a contaminant.

In essence, receptors are those defined components of the pollutant linkage that are at risk of harm from the contaminant(s) as a result of exposure to it via a pathway. Of most concern are human receptors whose health may be at risk. Examples of how this may arise are: ingestion of vegetables grown in the soils; ingestion of soils by children; dermal contact with soil; exposure to vapours or dust. Groundwater, rivers and ponds may be receptors for mobile or dissolved phase contaminants. Aquifers and water extractions would be of particular risk.

It is possible for there to be a number of separate pollutant linkages present about a site. As indicated above, for the site to be determined as contaminated land there must be at least one significant pollutant linkage.

Risk assessment

Risk assessment is an approach that considers the probability of harm occurring and the magnitude of the consequences if it occurs. Consideration may only be given to the current use being made of any land, or a reasonably likely future use that does not require a new planning permission, or a likely informal use (such as children playing on it). Risk assessment incorporates a 'suitable for use' approach in considering the condition and impacts of a parcel of land. This means that given degree of contamination will vary in its significance depending upon the use being made of the land and that a change of use of a site may change the outcome of a risk assessment. Risk assessments must be based on good science, authoritative, relevant to soil and follow the statutory guidance. It functions to determine the significance of a contaminant linkage.

For non-human receptors, only those detailed in Tables 1 and 2 of the guidance (copied in Appendix A) are the relevant receptors to be given consideration together with the specified interpretations of harm. These include specified ecosystem receptors (the flora and fauna at sensitive sites such as SSSIs), defined property, including animals, and certain aspects of buildings

Risk assessment is a staged process involving a preliminary risk assessment informed by desk-based study; a site visit and walkover; a generic quantitative risk assessment; and various stages of more detailed quantitative risk assessment, continuing until a decision can be made whether or not the land is contaminated land under the Act.

There are generic assessment criteria available and other tools to assist in the risk assessment process. The generic assessment criteria are derived from models of exposure assessment relating to human health, and to groundwater or surface water parameters with respect to controlled waters. For human health, criteria derived from the model 'CLEA UK' are the preferred resources to be used and have been produced by the CIEH/LQM and by CL:AIRE. These are screening levels against which sampling results may be compared and will be employed for this work by the Council. They are conservative and take into account uncertainties inherent in the modelling and exposure assessment process. They represent minimum or tolerable risk levels for substances within the soil for a range of land uses. They are not indicators of a *significant possibility of significant harm* and will not necessarily trigger detailed risk assessment when they are exceeded. Note that for detailed quantitative risk assessments it may be necessary to utilise specialist consultants that have the necessary experience and skills in this area (involving toxicology, modelling, exposure assessment and more).

The statutory guidance includes a site categorisation tool that will also be followed to assist in deciding whether or not the land may be determined as contaminated land on the basis of a significant risk of significant harm to human health. This incorporates and describes four categories that the site generic or detailed assessments may be judged against. Categories 1 & 2 comprise Part IIA contaminated land, whereas categories 3 & 4 do not. The presence of pollutants in the ground only makes the land *contaminated land* under Part IIA of the Act if it meets the guidance criteria. If land has polluting substances within it but there are no significant contaminant linkages then this is *land affected by contamination* rather than 'contaminated land'. Note that it can be difficult to judge the boundary between categories 2 and 3, in which case the consideration of broader issues around the matter come into play. These will include costs, time to do works, wider environmental impacts, potential health impacts of the probable remediation, possible blight on the area, and social impacts.

In a similar way, controlled waters also have a defined set of 1-4 categories relating to significance of impact and by which the significance of the contamination is assessed.

The Statutory Guidance informs us that the presence of 'normal' levels of contamination in soils shall not be treated in the risk assessment process as representing significant contamination even when they may exceed generic screening levels produced in a scientifically authoritative manner. These normal levels may be the result of naturally elevated concentrations due to the underlying bedrock, or may be the result of diffuse pollution resulting from a common human activity and affecting a wide area (typically urban areas). Examples in the urban environment are elevated lead and benzo (a) pyrene in gardens of houses with no history of industrial use in the area, as a result of years of fall out from vehicle exhausts and coal burning. Reports and maps showing normal, background levels for a number of common substances have been published by the British Geological Survey and will be used by the Council.

All risk assessment incorporates levels of uncertainty in its outputs. This may arise from the derivation of the toxicological inputs into models, sampling variability, bioavailability of the substances under consideration and variability within the many parameters and assumptions that make up the exposure models. There is no single 'answer' to be derived when risk assessment is applied to a situation. The Council will aim to minimise uncertainties as far as possible and will form a reasonable view of potential risks at a site based on all the evidence and circumstances. When a decision cannot be taken clearly from the available information, and further information is not likely to be available or is unlikely to clarify the matter, then on the balance of

probabilities the Council is likely to consider that the land does not come under Part IIA 'contaminated land', but will keep the case under review.

ROLE OF THE ENVIRONMENT AGENCY

Local authorities are the primary regulators of Part IIA, whose duties include preparing and implementing an inspection strategy, the determination of contaminated sites, identification of special sites, ensuring remediation occurs and the maintenance of a public register.

The Environment Agency also has a major role in the application of Part IIA. Their duties are:

- To provide assistance to local authorities in identifying contaminated land, in particular with respect to pollution of controlled water;
- To provide general and site specific guidance;
- To act as the enforcing authority for defined 'Special Sites' (the definition of these is contained in the Glossary in Appendix C, but also includes sites affected by radioactivity). Special sites, other than radioactivity, were defined in the Contaminated Land (England) Regulations 2006, but note that the Council has to identify and designate one before it may be passed to the Environment Agency;
- To prepare a report periodically on the state of contaminated land in England & Wales.

The relationship between local authorities and the Environment Agency has been formally agreed in a protocol produced by the Environment Agency and the Local Government Association. Local arrangements have been implemented for communication and co-operation with the Environment Agency Thames Region.

The Environment Agency is also involved in dealing with contaminated land through the following processes:

- As consultees on Planning Applications;
- Indirectly, through their responsibilities over waste disposal.
- Through the enforcement of Permits made under the Pollution Prevention and Control regime.

The Environment Agency also has produced performance standards for laboratories undertaking chemical testing of soils – largely MCERTs requirements.

OTHER LEGISLATIVE REGIMES

The regime introduced by Part IIA is complementary to other legislation that addresses the issue of contamination in or on land.

Development Control

The provisions of Town and Country Planning legislation will continue to be the major resource to effect the clean up of contaminated sites. The quality of land, and in particular the presence of contamination, is a material consideration in preparing development plans. It is the responsibility of the developer to ensure that a site will be made suitable for its redeveloped use and that there are no unacceptable risks to health. The National Planning Policy Framework reinforces this and includes paragraphs (in particular paragraphs 120 & 121) to see that this is achieved using the planning approval process. It also requires the use of competent persons to carry out site investigations and risk assessments. When considering planning applications/decisions the planning authority should assume a possibility of contamination in land with previous industrial use and take account the potential implication of contamination on a development site, including cases under 'prior approval' provisions. The Environment Agency is a statutory consultee with respect to the protection of controlled waters.

Planning control is principally achieved by the inclusion of conditions in planning approvals requiring a site investigation and assessment and, when necessary, the submission and implementation of a site-specific scheme of remediation and/or mitigation to a standard suitable for the proposed use of the site and/or protective of the wider environment. Following works, a verification report that demonstrates that the developed site is suitable and safe for the developed use is required. Guidance for development control and land contamination has become more aligned with the Part IIA process. In particular, following development, as a minimum the site should not be capable of being determined as contaminated land under Part IIA. The Web-based resource Planning Practice Guidance 2014 expands on the relationship between planning and Part IIA.

Waste Management Permitting and Pollution Controls

All current waste facilities operate under a Permit that will contain conditions designed to prevent future contamination of land or the wider environment, following the requirements of Part II of the Environmental Protection Act 1990, as amended. Similarly sites that come under Pollution Prevention and Control Act 1999 and regulations made thereunder have permits that limit future contamination and powers to deal with contamination if it arises for A1 and A2 installations (generally the larger more complex industrial works). These sites are excluded from the provisions of Part IIA. Uncontrolled tipping of waste is controlled under this regime not under Part IIA.

The EU Landfill Directive required that co-disposal of non-hazardous wastes and hazardous wastes ended from 16 July 2004. Hazardous waste will only be accepted at landfill sites whose operators have appropriate permits. Furthermore, from that date, there is a legal requirement to treat all hazardous waste prior to its disposal to landfill. Soils affected by contaminants are regularly removed from sites as waste and the Environment Agency have released guidance on the classification and disposal

arrangements for such materials, including pre-treatment. On contaminated sites there may be the necessity for an Environmental Permit for the remediation activities.

Building Control

Approved Document Part C of the Building Regulations 2000 (in force 2004) addresses the possible adverse effects of contaminants on buildings undergoing relevant construction works. This addresses a much wider range of buildings than are considered as receptors under Part IIA.

Water Resources Act 1991

Section 161 of this Act empowers the Environment Agency to act when pollution of controlled waters is arising but the source of the contamination has already been removed.

Environmental Damage (Prevention and Remediation) Regulations 2010

This provides powers to the Council to deal with acute pollution incidents, such as a leaking fuel drum, rather than long-term chronic contamination.

Statutory Nuisance

The provisions of part III of the Environmental Protection Act 1990, which relates to statutory nuisances, no longer applies in respect of contaminated land except where there is an impact on the senses, for example where there is an odour problem.

Microorganisms on land are not defined as ‘substances’ and so do not come under Part IIA. It may be possible to deal with an unhealthy presence of these under statutory nuisance powers.

PROFILE OF WANDSWORTH

Wandsworth is an inner London borough of approximately 34 square kilometres bounded by the River Thames to the North, urban Vauxhall to the east, Richmond Park in the west and Wimbledon to the south. Its population is in the region of 307,000 (Census 2011). Although there have been settlements in the area since ancient times, the area became urbanised largely during the 19th century following the course of railways, the Rivers Thames and Wandle, and around historical village centres. Approaching 18% of the land area is laid out as public open space. There are 45 conservation areas in the borough and around 500 listed buildings, including 5 Grade I and 39 Grade II*.

The borough is now predominantly a residential area but historically there was considerably more industry occupying land. This was mostly seen along the River Thames and the River Wandle and associated with railway land, but there were also various works in other areas among residential estates. There were industries operating in the 18th century and earlier, particularly along the River Wandle, using the rivers for power, water supply, and transport, but the larger scale developments arose mainly during the Victorian era and later. Examples of industries known to have operated in Wandsworth include gas works, metal working and engineering, large scale fuel storage, dye works, candle making, lead works, ceramic works, power generation, starch manufacturing and animal feedstuffs. Appendix B lists the types of industrial/commercial uses most likely to be associated with contamination, based on Department of Environment Industry Profiles produced in the mid-1990s.

At the present time there is relatively little manufacturing industry in the borough and this is predominantly small scale. Industrial Employment areas (i.e. the core industrial areas) cover under 4% of the total area. 89% of employers have 10 or fewer employees, while less than 1% employ over 200 people. The amount of industry and its distribution has been diminishing for many years, in particular as ex-industrial or commercial sites become redeveloped for residential uses. The scale of redevelopment in the Nine Elms area illustrates this. There are no current waste disposal sites situated in the borough, nor are we aware of any such sites having operated in the recent past. There are a number of waste transfer sites however.

Geology/Hydrogeology

The solid geology is predominantly London Clay of negligible permeability overlying highly permeable Upper Cretaceous Chalk. In the eastern part of the borough there are bands of Woolwich and Reading beds. These consist of a sequence of clays and silts separated by sandy layers. The drift geology is largely of shallow clayey soils derived from the underlying clay. In the proximity of the Rivers Thames and Wandle are river terrace gravels. Over the river terrace deposits are coarser loams and alluvium. Given the amount of built development over time there is considerable made ground overlying sites.

There is a major aquifer of regional importance within the chalk. Secondary aquifers of variable permeability arise in the more shallow gravels. Low permeability London Clay lies above the chalk over the whole borough providing considerable protection of the aquifer form near surface pollutants. The ground water table is relatively high in the

winter. Major surface water features are the River Thames and the River Wandle. The former is tidal throughout its range in Wandsworth. The River Hogsmill borders the north west of the borough. There are a number of ponds on the commons, and a large lake in Battersea Park that is topped up with groundwater.

Receptors found in the Borough

Receptors representing many of the categories defined in the guidance are present in Wandsworth. These are briefly summarised below and will be identified in detail as part of the working through of the strategy, as discussed later in this document.

(i) Human:
Houses with/without gardens, allotments, parks and open spaces, schools & nurseries, hospitals, commercial land, private water supplies.

(ii) Controlled waters:
The deep chalk major aquifer is a regionally important freshwater resource.
The secondary shallow aquifer(s) in the river terrace gravels. Little use is made of these waters as a resource and parts are of poor quality from diffuse inputs over time. They may provide base flow to the rivers.
The River Thames, River Wandle and River Graveney are all surface water receptors. The water quality of these in the Wandsworth area is poor .The lakes and ponds will also be treated as receptors.

There are two source protection zones within Wandsworth and a small number of abstractions. There are currently two private water supplies on the Council's register.

(iii) Ecological systems:
Wandsworth borders on two sites of special scientific interest (SSSIs) - Wimbledon Common and Richmond Park; 20 sites classified as Metropolitan Open Land; and a Statutory Local Nature Reserve - Battersea Park.

(iv) Buildings:
Wandsworth has 45 conservation areas and over 300 listed buildings. These can be viewed on the Wandsworth Web site. There are no ancient monuments in Wandsworth. Also, note that English Heritage has identified a number of Archaeological Priority Areas in the borough, which are not receptors per se but has relevance for when works may involve ground disturbance.

OFFICERS' ROLES and RESPONSIBILITIES

Primary role

The primary role in carrying the inspection strategy will be fulfilled by the Environmental Protection Team within the Environmental Services Division of Administration Department. This team will also take any actions following inspection that are required to enforce the provisions of the Act.

Environmental Services Division:

Environmental Protection Officer – Contaminated Land
Administration Department
Public Health Division, Environmental Services
Town Hall, Wandsworth High Street
London, SW18 2PU
020 8871 6127
eiteam@wandsworth.gov.uk

Environmental Protection Team Manager
Administration Department
Public Health Division, Environmental Services
Town Hall, Wandsworth High Street
London, SW18 2PU
020 8871 6127
eiteam@wandsworth.gov.uk

Development Control

By placing conditions on planning approvals for the redevelopment of potentially contaminated sites, the planning system is the main route by which the investigation and clean up of land affected by contamination may be remedied.

Head of Development Management
Housing and Community Services Department
Town Hall, Wandsworth High Street
London, SW18 2PU
020 8871 7620
Planning@wandsworth.gov.uk

Building Control

Part C of the Building Regulations 2000, issued in 2004, places responsibilities on the building control service in respect to site preparation and resistance to contaminants for the works and structures under their control.

Head of Building Control
Housing and Community Services Department
Town Hall, Wandsworth High Street
London, SW18 2PU
020 8871 7620
Buildingcontrol@wandsworth.gov.uk

Note that for some developments the building control functions are carried out by Approved Inspectors of the National House Building Council (NHBC), with contaminated land issues coming within their Land Quality Service.

Land Charges

Information that is obtained by implementing the strategy will allow better responses to be made to questions under Law Society Form CON29, Enquiries of Local Authorities.

Local Land Charges Manager
Town Hall, Wandsworth High Street
London, SW18 2PU
020 8871 5660
locallandcharges@wandsworth.gov.uk

Other Council Departments

The various departments of the Council, as important landowners, in particular Housing, will be made aware of the inspection strategy and their responsibilities under the Act.

CURRENT KNOWLEDGE OF CONTAMINATED LAND IN THE BOROUGH OF WANDSWORTH

Nowadays Wandsworth is largely a residential borough with relatively few contaminating activities now in operation. Historically however there was a considerable amount of polluting industry as outlined earlier. The increase in the residential use of land means that potentially there are more receptors that may be exposed to residual pollutants in the land where a pathway exists. It is not known definitively where all the possible areas of polluted soils arise. One output of the strategy is to identify these. The condition of many ex-industrial sites is known as a result of the sampling programmes that have been required when proposals to redevelop them arose in more recent years. It is unfortunate that information on sites redeveloped under the auspices of the former Greater London Council is not currently available to improve our understanding of conditions on those sites.

With respect to the water environment, the solid geology covering most of the borough consists of a thick band of relatively impervious clays. This has provided considerable protection to the major chalk aquifer beneath. It is possible that in areas where or if the clay is thinner it may have been penetrated by deep wells or boreholes. This would lead to a potential pathway for surface contaminants to access the aquifer. In addition, there are minor aquifers also present in the form of river terrace gravels and these can represent a resource, albeit not generally utilised at present. They may contribute to surface waters through hydraulic connectivity. Sampling of the shallow groundwater during redevelopment projects has revealed varying degrees of polluting substances being present. In these circumstances the developer and/or the Council have sought the advice of the Environment Agency. In addition, there are considerable stretches of open water such as the Rivers Wandle and Thames that are at risk from contaminated land in proximity to them. The water quality of these rivers is relatively poor. This is largely as a result of current and historical discharges together with storm water overflows and polluted surface water run-off. It is possible that pollution from adjoining contaminated sites also contributes to the poor chemical quality. The condition of the River Thames will improve considerably when the Thames Tideway Tunnel is eventually completed.

In terms of sensitive ecosystems it is possible that some parkland was formed from earlier industrial land. Sensitive buildings may also be in close proximity to industrial or otherwise potentially contaminated land.

Notwithstanding the above comments, there is no land known to be actually contaminated within the strict definition of the Act. It is unlikely that much, if any, land will be identified due to the absence of a part of the contaminant linkage, such as a pathway, and because of the current use being made of the land does not present sensitive receptors. In instances where land could become contaminated land due to a change of use, the risks will be addressed at the planning and pre-development stage and an appropriate scheme of investigation and remedial works implemented.

THE STRATEGY STRUCTURE, AIMS & OBJECTIVES

Aims and Objectives of the Inspection Strategy

Wandsworth Borough Council has the following overall aims in implementing its contaminated land inspection policy:

- Fulfil the requirements of Part IIA and the statutory guidance;
- To protect human health;
- To contribute to environmental improvement and sustainability in the borough;
- To promote and achieve remedial actions that are reasonable, practicable, effective and durable;
- Encourage the regeneration and facilitate the re-use of brownfield sites;
- Avoid blight associated with contaminated land;
- Quantify the Council's liabilities, if any.

In order to meet these aims the Council will pursue the following objectives:

- To adopt a rational, ordered and efficient approach to inspection that is transparent to observers, following the strategic framework laid out in this document.
- To identify any areas of land within the borough, including land owned by Wandsworth Borough Council, where contamination presents unacceptable risks to health or the environment and ensure that remediation and/or mitigation of these areas is carried out.
- To collect and collate information that will assist in addressing future issues relating to contaminated land.
- Prioritise site inspection on the basis of likely risk, and attend to the most serious problems first. The highest priority shall be to protect human health, followed by protection of controlled water, the wider environment, and then buildings.
- Periodically review the situation with respect to contaminated land.
- Facilitate the remediation of land affected by contamination to allow its redevelopment in accordance with the National Planning Policy Framework and the Council's Local Development Plan.
- Encourage voluntary investigation and remediation by landowners.
- To inspect any site that comes to light as requiring urgent action following the discovery of an imminent risk to health from the land.
- To consult with statutory agencies, including neighbouring boroughs for sites crossing boundaries, and stakeholders to achieve co-operation and co-ordinated actions.
- To refer special sites to the Environment Agency.
- To compile and maintain a statutory public register and produce risk summaries when necessary.
- To prepare a written statement for land that, following a course of action to determine it as contaminated land, is found not to be contaminated.

There may be adjustments made to the aims and objectives following reviews of its performance, or following changes in or additions to government guidance. Note also that they are delivered by various council activities and not by Part IIA alone.

Structure of the Strategy

The identification of contaminated land comprises a staged process that is iterative in nature such that information is obtained over a period of time that feeds back into the earlier stages. In outline, the structure is as follows:

- First stage - identify potential contaminating sources and potential receptors. Rank sources by potential hazard and sensitivity of receptor. From this a broad picture of potential pollutant linkages may be derived and prioritised.
- Second stage - further investigate these potential linkages to determine if actual pollutant linkages are present. In this stage greater details are obtained and earlier findings are substantiated.
- Third stage - establish, using published risk assessment techniques, whether the pollutant linkages identified are significant, in which case the land is determined to be contaminated land.
- Review stages - Regular review of the strategy to assess progress made, achievement of aims and objectives, changes in legislation, and so on.
- In addition to the inspection stages, the strategy considers liaison with stakeholders and the provision of information, communication of risks, acting on complaints, and anticipated time scale to implement the strategy.

The strict definition of contaminated land contained in the Act means that it is unlikely that many sites, if any, will be found in Wandsworth that meet the legislative criteria. However, it is possible that a parcel of land not recorded as *contaminated land* may become so as a result of a change of use of it. The identification strategy has resulted in a considerable amount of information being collected and this is valuable when future developments are proposed or under consideration, as well as for providing information to concerned residents and other stakeholders.

Remediation of contaminated land

The ultimate goal resulting from the strategy is to ensure that all land in the borough is in a condition such that it presents no unacceptable risk to the users of that land, to controlled waters, or to the wider environment. This will be achieved using the development control process, through voluntary negotiation of remediation and through enforcement powers contained in the Act where this is necessary. To bring the land to a satisfactory condition entails its remediation (although it sometimes is possible to reduce risk to an acceptable level by a change in use of the site). To achieve this end a number of actions may follow the identification of an area of land as contaminated land within the meaning of the Act.

Enforcing authorities have a number of main tasks in the event that contaminated land may be determined:

- establish who should bear responsibility for the remediation of the land (the "appropriate person" or persons). Note that the ‘polluter pays’ principle applies here such that the original person/body that caused or allowed the contamination to occur has primary responsibility for the clean up (the ‘Class A’ person), but if this person cannot be identified, then the owner and/or occupier may be held responsible (the ‘Class B’ person). Apply ‘exclusion tests’ as appropriate following the statutory guidance;
- consult with the Environment Agency over the pollution of controlled waters or radioactivity;

- consult with Natural England over eco-system effects;
- decide whether the site is a ‘Special Site;
- produce a ‘Risk Summary’ prior to the formal determination of a site and provide it to all affected parties. This must explain the assessed risks in readily understandable language and must include details of the contaminants and contaminant linkage(s), any uncertainties, possible remediation and its likely effects, costs, timescale and benefits.
- decide, after consultation with and the representation of the appropriate parties, the detailed remediation that is required in any individual case and to ensure that such remediation takes place, either through agreement with the appropriate person, or by serving a remediation notice on the appropriate person if agreement is not possible or, in certain circumstances, through carrying out the work themselves;
- Undertake urgent remediation where there is an imminent danger of serious harm;
- where a remediation notice is served, or the authority itself carries out the work, to determine who should bear what proportion of the liability for meeting the costs of the work; and
- record certain prescribed information about their regulatory actions on a public register.

Note that under the most recent statutory guidance, the Council may reverse the formal determination that land is *contaminated land* under Part IIA. Additionally, if land is inspected under the powers of Part IIA and is then assessed as not amounting to contaminated land, then a statement will be issued to all relevant parties confirming this.

When remediation is through statutory action or through a voluntary process, the degree of clean up that may be required is only up to the boundary of category 2 & 3 of the Statutory Guidance in respect to risks to human health.

THE INSPECTION PROCESS

Collection and Collation of Data

Following the publication of the first contaminated land inspection strategy by the Council in 2002, British Geological Survey (BGS) were contracted to collate appropriate data and to set up a project based on a geographical information system (GIS). The data was sourced initially from a number of different agencies including Wandsworth Borough Council Archive Library, Environmental Services and other departmental records, Wandsworth UDP, BGS records, the Environment Agency, and the London Fire and Emergency Planning Authority and the GOAD land use dataset. Where possible the data is held on a GIS, but as site-specific data became available, such as from investigations or remediation during redevelopment, some is held as paper records and more recent information on CDs or as pdf files.

The first step was to obtain information on the potential sources of contamination (current or historical industrial areas; waste disposal sites; infilled areas; fuel or chemical storage facilities; and so on) and on potential receptors (residential, allotments, schools, playing fields; water bodies, source protection zones, wells; etc). These areas were plotted and recorded as polygons on the GIS software.

Much data relating to potential sources was derived from the interpretation of historical ordnance survey maps from a number of epochs from 1868 to 1994. This was complemented and supplemented by Environmental Services staff by reference to historical 'Kelly's Directories' covering the same epochs as the maps and for periods in between. The information gathered from the directories is stored on a relational database. The data relating to water receptors was obtained from the Environment Agency in the form of the most recent digitised groundwater vulnerability maps and source protection zones. The data on pathways includes information on the underlying geology and the local hydrology.

Table 1 shows the various GIS layers and other sources of data that has been collated to date. This is added to as new sites' investigation records become available.

Table 1: Information collated (GIS and Others).

Layer/Data Source	***Description***
OS layers	
OS Mastermap	OS 1250 scale
OS Address Point	Address Point data
Geology	
All Boreholes	All Boreholes recorded in Wandsworth
Artificial Deposits	Areas of made and worked ground
Solid Geology	The solid geology of Wandsworth
Superficial Deposits	Superficial deposits overlying the solid geology
Hydrogeology	
Water Wells	Water Wells (both used and disused)
Water Abstraction Sites	Locations of EA licenced water abstractions sites for industrial use and public supply
Water Courses	Surface water features (rivers, ponds, etc.)
Source Protection Zones	EA generated 50 day and 400 day buffer zones around public water supplies
Groundwater Vulnerability	EA digital maps of Risk to Groundwater (Major and Minor aquifers)
Private Water Supplies	Register
Landuse	

2007	Cities Revealed Data
Retail Town Centres	GOAD
Adopted Local Plan	2016 LDF
Environmentally sensitive sites	
SSSI	English Nature
Open Space Ownership	2007 Survey
Historical OS Maps	***Survey***
1869-1874	London
1868-1881	Surrey
1896	London
1916-1919	London
1930s	Wandsworth
1947-1952	London
1951-1978	London
1980s	Wandsworth
1994	London
Aerial Photographs	
1940	Low resolution
1971	B&W high resolution
Recent	Various 2003-2013
Sites suspected of Contamination	
Pre 1900 Suspected Sites	Sites suspected of being contaminated (extracted from the Pre 1900 OS mapping)
Pre-1920 Suspected Sites	Sites suspected of being contaminated (extracted from the 1916-1919 OS mapping)
1950's epoch Suspected Sites	Sites suspected of being contaminated (extracted from the 1951 epoch OS Mapping)
Other Layers/Data sources	
Planning Register	GIS and Planning Portal
Waste/Landfill Sites	Registered landfill sites/Transfer stations
Site Investigation Reports	Electronic and paper records
EPA Part B Boundaries	Wandsworth Part B Industrial Processes
Wandsworth Archive library	Battersea library
Petrol Stations	LFEPA including some historic
Premises database - Civica	Record of complaints & actions, etc.
Biodiversity	Greenspace Information for London
World War 2 Bomb Impacts	GIS from Wandsworth Archives
Verified Anecdotal/Volunteered Information	Various sources
Internet searches	Historical societies & archives; company histories

Prioritisation of inspection

Following the completion of the BGS project, the potential areas of contamination were ranked (given a score) based on the potential degree of hazard. This is related to the toxicity of pollutants likely to be present, and on the amount and likelihood of any emissions into the land that may have arisen during the period of contaminative use. Information on the potential for contamination is largely derived from the Department of the Environment Industry Profiles published during the mid-1990s and CLR Report 6. A table showing commercial and industrial uses associated with contamination and their relative hazard ranking is in Appendix B.

The next step was to rank the data according to the sensitivity of the receptors, with human health as the highest priority followed by controlled waters (based on source protection zones and ground water vulnerability), then ecosystems, and then property.

A matrix within the GIS made up of the overlay of the source risk scores and the receptor sensitivity scores enables overall risk scores to be produced across the

geographical area of the borough. The presumption is that the higher the score the higher the likelihood of contamination being present. This was proposed to be the basis for the prioritisation of further inspection, and/or associated activities, targeting the land with the highest risk scores first. Unfortunately, the output from this process was found to be of limited use in practice for a number of reasons: there were too many unknown uses of sites that were ranked too highly (on a precautionary basis); poor or inaccurate site categorisation; there were areas of land missed; too much land was identified that has a very low contamination potential; limited map epochs considered. Nevertheless, the process produced considerable volumes of useful site information for ongoing and future use and did seem to indicate that there was unlikely to be any actual Part IIA 'contaminated land' in the borough.

Consequently, the approach to the inspection of sites of concern for land contamination has been varied. Moreover, circumstances within Wandsworth since the original strategy was produced have changed as a result of the very extensive redevelopment that has been and continues to occur, such that the inspection process has become considerably aligned with the development process.

Further Inspection

Work carried out to date has identified a preliminary distribution of potentially contaminated sites, albeit not comprehensive, which provides a guide for further investigation. The next stage is to examine these sites in greater detail to determine if a pollutant linkage actually exists. Note that the aim of the Act is to address only the worst affected land, not any land that may have contaminants in it. The focus of the Act and its statutory guidance is to achieve resolution of land contamination through voluntary measures, including the town planning process. Given this premise, the strategic approach to be followed to identify and then address land affected by contamination will involve the following actions:

- Desk-top review of sites that come under consideration as a result of:
    - Planning applications for redevelopment or change of use (including those under the 'Prior Approval' process);
    - Voluntary consultation by land owners or managers, for example when carrying out environmental due diligence exercises;
- Site walkover inspections to examine actual uses made, site structures, site conditions, and other signs, to refine likely risk.
- Contact with owners/occupiers for information, including Council departments. This will include historic owners, and/or developers, if they are known.
- Encourage land owners to carry out investigations voluntarily and provide co-operation when this arises.
- Check with the Environment Agency if known pollution associated with a site is occurring or has been recorded.
- Identification of Special Sites for referral to the Environment Agency.
- Inspection of urgent cases if they become apparent. However, this will require the identification of funding.

If it appears from these investigations that there is a realistic likelihood that a pollutant linkage occurs on a parcel of land, it may be necessary to arrange for more detailed, intrusive investigations to be carried out (i.e. sampling and analysis) to determine if it is significant. This is only permissible under the Act when there is a high likelihood for a contaminant linkage to be present. If the Council have to do this it may need to employ outside contractors who have the appropriate equipment and skills. Further, this type of

work is generally costly so in these situations it will be necessary to identify funding. It should be noted that Supplementary Credit Approval, from DEFRA, has been reduced to be available only for absolute emergencies until 2017 at which point it will be ended completely. Where possible the Council will identify the appropriate person to fund the site testing. Investigations will be expected to follow the guidance of BS10175 (2011) and to use MCERTS accredited laboratories.

However, for the majority of sites the intrusive investigation will be achieved through conditions placed on planning approvals. For other sites the Council will endeavour to achieve this by encouraging appropriate actions by the land owner or manager. This meets the Governments stated aim that actions under Part IIA should not present a burden to the public purse. When more detailed inspection has been carried out by a third party, either through the planning process or through voluntary actions, the Council will audit the activities carried out and the associated assessments and further proposals resulting from the inspections.

With respect to radioactive substances in land, the Council's role is limited to a desk top investigation followed if necessary by a limited, non-intrusive radiation survey of surface soils. If elevated concentrations are found, then the site will be passed to the Environment Agency as a 'Special Site' to carry out fuller intrusive investigations and assessment to determine whether there is a 'significant possibility of harm'. This process has its own Statutory Guidance that was published by the Department of Energy and Climate Change and enforced by the Environment Agency.

Site Access

We will seek to gain consent for access from a site owner and/or occupier as appropriate. We will give 21 days written notice of our request for access. This may be followed by a seven-day reminder notification. In the event that access is not granted we will consider the use of our power of entry under section 108 of the Environment Act 1995. This allows for a warrant of entry to be issued by a magistrate. However, it may only be used if there is a reasonable possibility that a pollutant linkage exists. It enables Council officers or third parties authorised by them to inspect sites, take samples, examine records, and so on.

Review of Strategy

Implementation of the strategy is an iterative process. As information becomes available then interpretation and assessment for individual sites is revisited. In this way strategy review is an ongoing process.

However, the progress towards the aims and the practical operation of the strategy will be routinely reviewed on a five yearly basis. Review will also be undertaken following the following circumstances:

- change in legislation;
- receipt of major new data sources;
- changes in statutory guidance;
- relevant changes in Council policy;
- significant case law decisions of relevance;
- reports of local health effects associated with an area of land.

Time scale to Implement Strategy

Progress on identification of sites is dependent on budgetary resources, staffing, service priorities and government input, so an ‘endpoint’ cannot be predicted. Notwithstanding this, in the event that evidence becomes available that actual or possible harm is occurring at a site, then that site shall be brought forward for more immediate investigation and action.

PROVISION OF INFORMATION

The Public Register

It is the duty of the Council to maintain a Public Register of Contaminated Land in connection with Part IIA. This will need to record details regarding the formal regulatory actions on a site determined to be contaminated land. It must be made freely available to the public. Its contents will include the following details:

- Site location including National Grid Reference, address, extent, and plan;
- Grounds for determination as contaminated land, including substances and linkages;
- Migration, if any, of contaminants to adjoining land;
- Current use of the site;
- Reference to investigative reports pertaining to the site;
- The risk summary for the site;
- Name and address of person/company on whom remediation notice served;
- Remediation works required and time scale for actions;
- Apportionment of liability;
- Details of appeals.

In the event that Council owned land is determined to be contaminated land, a notice is not served but a remediation statement is made. An entry to that effect will be made in the register.

No other information produced by the implementation of the strategy will be recorded on the register. The data collected as a result of the inspection process does not have any statutory status except when a particular area of land is determined to be contaminated land. As a result it will not automatically appear on responses to searches of the register of local land charges.

Requests for Information

Information built up during the inspection process will form a body of data that will be useful to the Council and other stakeholders for reference to assist with future assessments of land. This may arise for example where planning applications are received for the redevelopment or change of use of sites.

The Environment Agency and other statutory bodies may have a need to see information collated on sites and will be freely provided with it. The Environment Agency has a duty to produce 'State of the Environment' reports that incorporate information supplied about contaminated land. A form of information exchange has been set up with them for this purpose.

Information will be provided for local land charges purposes, following receipt of Form CON29, Enquiries of Local Authorities.

Information from the database that is not confidential may be made available in response to queries about individual sites, as may be required following the Environmental Information Regulations 2004. A reasonable charge is made for the provision of this information.

Complaints

Environmental Services has a well established protocol for dealing with complaints (of any nature), including their logging, acknowledgement, response times and monitoring. When the complaint appears to be about contaminated land then there are a number of possible actions that may follow. This partly depends upon when the complaint is received and how comprehensive is the contaminated land GIS/database. Information received as a result of a complaint may lead to a reassessment of the risk/ranking for the land and/or adjoining land.

All property being considered will be checked against the GIS/database and other information available. If the information leads to a conclusion that significant harm is unlikely then further inspection will be not be undertaken. The complainant will be informed of this.

If information is received with the complaint suggesting that harm is occurring or is likely then the site will be inspected and actions initiated as a matter of urgency. If the harm is affecting the water environment then we will liase with the Environment Agency and similarly for other environmental receptors overseen by statutory bodies.

Anonymous complaints or anecdotal information will be acted on at the discretion of officers in the Environmental Services.

Communicating Risk

Contaminated land can be an emotive issue and it is important that care is given to the way in which the various stakeholders or the general public are informed of risks associated with it. Wandsworth will apply the principles suggested in the guidance published on communicating risk by the Scotland and Northern Ireland Forum for Environmental Research (SNIFFER).

The approach to communicating contaminated land risks to be followed by Wandsworth Borough Council will be open, truthful, involve all relevant parties, be co-operative and proactive. We will use terminology appropriate for the particular stakeholders.

When contacting stakeholders for the purpose of carrying out further assessment, we will explain the reason why an area of land has been identified as possible contaminated land and the risk based approach underlying our decisions. The outcome of our decision following completed inspection will be communicated to involved parties.

Notwithstanding the above, in order to avoid undue alarm or stress, no proactive communication shall be made with a site owner or occupier, or other stakeholder, unless the desk study shows a strong possibility of a contaminant linkage being present.

To make the strategy more widely available the Council has placed a copy on its Website. This document contains contact information for various council officers. We will consider the use of press releases to inform the public about particular circumstances if the need arises, such as if a large scale problem were discovered. The Website for Wandsworth Borough Council is www.wandsworth.gov.uk.

APPENDIX A – Non-human receptors (from Statutory Guidance)

Table 1: Ecological system effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Any ecological system, or living organism forming part of such a system, within a location which is: • a site of special scientific interest (under section 28 of the Wildlife and Countryside Act 1981) • a national nature reserve (under s.35 of the 1981 Act) • a marine nature reserve (under s.36 of the 1981 Act) • an area of special protection for birds (under s.3 of the 1981 Act) • a "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010 • any habitat or site afforded policy protection under paragraph 6 of Planning Policy Statement (PPS 9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or • any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.	The following types of harm should be considered to be significant harm: • harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or • harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location. In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.	Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that: • significant harm of that description is more likely than not to result from the contaminant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.

Table 2: Property effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Property in the form of: • crops, including timber; • produce grown domestically, or on allotments, for consumption; • livestock; • other owned or domesticated animals; • wild animals which are the subject of shooting or fishing rights.	For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage. The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a contaminant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.
Property in the form of buildings. For this purpose, “building” means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.	Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended. In the case of a scheduled Ancient Monument, substantial damage should also be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question during the expected economic life of the building (or in the case of a scheduled Ancient Monument the foreseeable future), taking into account relevant information for that type of contaminant linkage.

APPENDIX B - Commercial & industrial uses associated with contamination & provisional relative hazard ranking.

Industry	Contamination Score	Ranking
Airports and Airfields	8	Low
Animal and Animal Products Processing Works (includes Tanneries)	12	Medium
Asbestos Manufacturing Works	9	Low
Cement, Ceramics and Asphalt	15	Medium
Manufacturing Works		
Charcoal Works	17	High
Chemical Works: Coatings (paints) and Printing Inks Manufacturing Works	14	Medium
Chemical Works: Cosmetics and Toiletries Manufacturing Works	9	Low
Chemical Works: Disinfectant Manufacturing Works	14	Medium
Chemical Works: Explosives, Propellants and Pyrotechnics Manufacturing Works	18	High
Chemical Works: Fertilizer Works	11	Medium
Chemical Works: Fine Chemicals Works	15	Medium
Chemical Works: Inorganic Chemicals Works	17	High
Chemical Works: Linoleum, vinyl and bitumen-based Floor Covering Works	15	Medium
Chemical Works: Mastics, Sealants, Adhesives & Roofing Felt Works	14	Medium
Chemical Works: Organic Chemicals Works	17	High
Chemical Works: Pesticides Works	16	High
Chemical Works: Pharmaceuticals Works	16	High
Chemical Works: Rubber Processing Works	7	Low
Chemical Works: Soap & Detergents Works	5	Low
Dockyards & Dockland	12	Medium
Dry Cleaners	17	High
Engineering Works: Aircraft Making Works	15	Medium
Engineering Works: Electrical & Electronic Equipment Manufacturing Works	17	High
Engineering Works: Mechanical Engineering and Ordnance Works	20	High
Engineering Works: Railway Engineering Works	15	Medium
Engineering Works: Shipbuilding & Repair and Shipbreaking Yards	13	Medium
Engineering Works: Vehicle Making Works	20	High
Fibreglass and Fibreglass Resin Works	17	High
Gas Works, Coke Works and other Coal Carbonisation Plants	16	High
Glass Manufacturing Works	17	High

Metal Manufacturing, Refining & Finishing Works: Electroplating Works	14	Medium
Metal Manufacturing, Refining & Finishing Works: Iron & Steel Works	16	High
Metal Manufacturing, Refining & Finishing Works: Lead Works	14	Medium
Metal Manufacturing, Refining & Finishing Works: Non-ferrous Metal Works	13	Medium
Metal Manufacturing, refining & Finishing Works: Precious Metal Works	16	High
Oil Refineries & Bulk Storage of Crude Oil and Petroleum Products	11	Medium
Photographic Processing Works	17	High
Power stations (not nuclear)	18	High
Printing & Bookbinding Works	17	High
Pulp & Paper Manufacturing Works	15	Medium
Railway Land	7	Low
Road Vehicle Servicing & Repair Works,	11	Medium
Garages & Filling Stations, Haulage Centres		
Sewage Works and Sewage Farms	19	High
Textile Works & Dye Works	14	Medium
Timber Products Manufacturing Works	10	Low
Timber Treatment Works	13	Medium
Waste Recycling, Treatment & Disposal Sites: Drum/Tank Cleaning & Recycling Plants	5	Low
Waste Recycling, Treatment & Disposal Sites: Hazardous Waste Treatment Sites	20	High
Waste Recycling, Treatment & Disposal Sites: Landfills	21	High
Waste Recycling, Treatment & Disposal Sites: Metal Recycling Sites (incl. Scrap Yards)	18	High
Waste Recycling, Treatment & Disposal Sites: Solvent Recovery Works	11	Medium

Note: The industry categories are from Table 1 of the Draft Final Report, entitled 'Potential Contaminants for the Assessment of Land', prepared by Consultants in Environmental Sciences Limited in October 1995 for the DoE. The scores were made by adding the number of contaminants marked against each industry type in Table 1. Some modifications were necessary e.g. the landfill score would have been 11 (medium) according to Table 1, which is too low. Equal weight was given to inorganic and organic contaminants.

APPENDIX C - GLOSSARY OF TERMS

Appropriate person: defined in section 78A(9) as:
"any person who is an appropriate person, determined in accordance with section 78F..., to bear responsibility for any thing which is to be done by way of remediation in any particular case."
British Geological Survey. The British Geological Survey is funded by the National Environment Research Council to carry out geoscience-related research in both the public and private sectors.
Brownfield sites. Sites that have previously undergone development and which may require a level of remediation prior to redevelopment.
Caused or knowingly permitted: test for establishing responsibility for remediation, under section 78F(2);
CLEA: Contaminated Land Exposure assessment, a risk assessment model for determining the risk to human health for a range of chemicals.
CLR: Contaminated Land Report - A series of guidance documents published by the DETR.
Contaminant: a substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters. *Paragraph* A.12
Contaminant linkage: the relationship between a contaminant, a pathway and a receptor.
Contaminated land*:* defined in section 78A(2) 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."
Controlled waters*:* defined in section 78A(9) by reference to Part III (section 104) of the Water Resources Act 1991; this embraces territorial and coastal waters, inland fresh waters, and ground waters.
Current use: any use which is currently being made, or is likely to be made, of the land and which is consistent with any existing planning permission (or is otherwise lawful under town and country planning legislation). This definition is subject to the following qualifications:
(a) the current use should be taken to include any temporary use, permitted under town and country planning legislation, to which the land is, or is likely to be, put from time to time;
(b) the current use includes future uses or developments, which do not require a new, or amended, grant of planning permission;
(c) the current use should, nevertheless, be taken to include any likely informal recreational use of the land, whether authorised by the owners or occupiers or not. (for example, children playing on the land); However, in assessing the likelihood of any such informal use, the local authority should give due attention to measures taken to prevent or restrict access to the land; and
DEFRA: The Department of Environment, Food, and Rural Affairs.
DoE: Department of the Environment. Now DEFRA.
Drift deposit: An unconsolidated superficial sediment.
Enforcing authority*:* defined in section 78A(9) as:
(a) in relation to a special site, the Environment Agency;
(b) in relation to contaminated land other than a special site, the local authority in whose area the land is situated.

GIS: Graphical Information System. A data-handling and analysis system based on sets, known as layers, of spatially distributed data. The data sets may be map-oriented or image oriented.
Harm: defined in section 78A(4) as:
"harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property." Categories of harm are clarified in the statutory guidance.
Intrusive investigation: an investigation of land (for example by exploratory excavations) which involves actions going beyond simple visual inspection of the land, limited sampling or assessment of documentary information.
PPC: Pollution Prevention and Control regime, the regime introduced to control potentially polluting processes.
National Nature Reserve (NNR). National Nature Reserves protect the most important areas of wildlife habitat and geological formations in Britain, and act as places for scientific research.
ODPM: Office of the Deputy Prime Minister.
Owner*:* defined in section 78A(9) as:
"a person (other than a mortgagee not in possession) who, whether in his own right or as trustee for any other person, is entitled to receive the rack rent of the land, or where the land is not let at a rack rent, would be so entitled if it were so let."
Part IIA: Part IIA of the Environmental Protection Act 1990.
Pathway: one or more routes or means by, or through, which a receptor:
(a) is being exposed to, or affected by, a contaminant, or
(b) could be so exposed or affected.
Possibility of significant harm: a measure of the probability, or frequency, of the occurrence of circumstances which would lead to significant harm being caused.
Ramsar Sites. A "Ramsar site" is land listed as a Wetland of International Importance under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (the Ramsar Convention) 1973.
Receptor: either:
(a) a living organism, a group of living organisms, an ecological system or a piece of property which:
(i) is in a category listed in Table A in Chapter A as a type of receptor, and
(ii) is being, or could be, harmed, by a contaminant; or
(b) controlled waters which are being, or could be, polluted by a contaminant.
Register: the public register maintained by the enforcing authority under section 78R of particulars relating to contaminated land.
Remediation*:* defined in section 78A(7) as
"(a) the doing of anything for the purpose of assessing the condition of -
"(i) the contaminated land in question;
"(ii) any controlled waters affected by that land; or
"(iii) any land adjoining or adjacent to that land;
"(b) the doing of any works, the carrying out of any operations or the taking of any steps in relation to any such land or waters for the purpose -
"(i) of preventing or minimising, or remedying or mitigating the effects of any significant harm, or any pollution of controlled waters, by reason of which the contaminated land is such land; or
"(ii) of restoring the land or waters to their former state; or
"(c) the making of subsequent inspections from time to time for the purpose of keeping under review the condition of the land or waters."
Remediation declaration*:* defined in section 78H(6). It is a document prepared and published by the enforcing authority recording remediation actions which it would have specified in a remediation notice, but which it is precluded from specifying by virtue of

sections 78E(4) or (5), the reasons why it would have specified those actions and the grounds on which it is satisfied that it is precluded from specifying them in a notice.
Remediation notice*:* defined in section 78E(1) as a notice specifying what an appropriate person is to do by way of remediation and the periods within which he is required to do each of the things so specified.
Remediation statement*:* defined in section 78H(7). It is a statement prepared and published by the responsible person detailing the remediation actions which are being, have been, or are expected to be, done as well as the periods within which these things are being done.
Risk: the combination of:
(a) the probability, or frequency, of occurrence of a defined hazard (for example, exposure to a property of a substance with the potential to cause harm); and
(b) the magnitude (including the seriousness) of the consequences.
Significant harm*:* see main text.
Significant contaminant linkage: a pollutant linkage which forms the basis for a determination that a piece of land is contaminated land.
Significant possibility of significant harm: a possibility of significant harm being caused which, by virtue of section 78A(5), is determined to be significant in accordance with the statutory guidance.
SNIFFER: Scottish and Northern Ireland Forum for Environmental Research. A source of guidance.
Special site*:* defined by section 78A(3) as:
"any contaminated land -
"(a) which has been designated as such a site by virtue of section 78C(7) or 78D(6); and
"(b) whose designation as such has not been terminated by the appropriate Agency under section 78Q(4)".
The effect of the designation of any contaminated land as a special site is that the Environment Agency, rather than the local authority, becomes the enforcing authority for the land. The following categories make up special sites:
(a) controlled waters are being affected to the extent they do not achieve the appropriate water quality standards; or
(b) controlled waters are being affected by the land, and:
(i) any of the substances which is causing or is likely to cause the pollution is a member of the following group of substances:
organohalogen compounds; organophosphorous compounds; organotin compounds; substances which possess carcinogenic, mutgenic or teratogenic properties in or via the aquatic environment; mercury and its compounds; cadmium and its compounds; mineral oil and other hydrocarbons; cyanides.
(ii) the waters or any part of the waters are contained within underground strata which are defined major aquifers.
waste acid tars are present in, on or under the land;
the purification or refining of crude petroleum or any other substances with the exception of coal has taken place;
the manufacture of explosives has taken place;
prescribed processes under the Integrated Pollution and Control or Pollution Prevention and Control authorisations take place or have taken place;
the land is owned or occupied by defence organisations or is being used for defence purposes;
the land was used for the manufacture, production or disposal of various kinds of weapons: chemical, biological or nuclear, etc.
Sites which meet the radiological trigger limits contained in the statutory guidance on radiation contaminated land produced by the Department of Energy and Climate Change.

Sites of Special Scientific Interest (SSSI). A Site of Special Scientific Interest (SSSI) is the land notified as an SSSI under the Wildlife and Countryside Act (1981), as amended.

Substance: defined in section 78A(9) as:
"any natural or artificial substance, whether in solid or liquid form or in the form of a gas or vapour."

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