

# **SOUTH HOLLAND DISTRICT COUNCIL**

## **CONTAMINATED LAND STRATEGY**

**As required by Part IIA of the Environmental Protection Act 1990**

**March 2005**

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## SECTION 1

### INTRODUCTION

Under Part IIA of the Environmental Protection Act 1990, Local Authorities in England are given responsibilities for regulating contaminated land. Part IIA came into force in April 2000.

There are two main parts to the local authority's duties under Part IIA – an inspection function and an enforcement function. It is a statutory requirement that each local authority publish a strategy for carrying out inspection of its area to identify land that may be contaminated. This strategy fulfils that requirement. It deals principally with the inspection function, showing how the local authority will inspect its area for contaminated land, identify contaminated land and manage the information that it collects in the process.

The purpose of the new contaminated land legislation is to ensure that historically contaminated land is cleaned up in such a way that it is safe, suitable for a beneficial use, and does not pose a risk to health or the environment.

Prevention of new contamination is dealt with by different legislation, for example the Pollution Prevention and Control regime and the Waste Management Licensing system.

#### 1.1 Corporate Policy of SHDC

In 1996 the Council adopted its "South Holland FIRST" Mission Statement which provides a simple framework within which the Council seeks to perform what might be described as its role of community leadership of the District. Building a sustainable community by effectively managing the environment and resources is a fundamental element of this role.

This has since been reviewed and the vision is now

"To develop and promote South Holland as a thriving, living and working rural community"

#### **Our mission**

To help us develop and promote our vision of South Holland as a thriving, living and working rural community, our mission is:

**Listening....** To listen and involve the community and work with partners.

**Providing...** To provide a safe, secure and healthy place to live.

**Developing.** To develop a thriving rural community.

**Leading.....** To be a leading edge authority providing value for money, quality services.

The Councils overarching corporate strategy is set out in the Corporate Plan 2005-2008. This strategy is directly linked to and forms an integral part of the Best Value Performance Plan (BVPP) which identifies how the corporate objectives are achieved through the delivery of Council services. The Corporate Plan takes the Mission

Statement as its starting point and identifies a series of pledges to which the Council aspires. Each of the themes in the mission have key characteristics to success

- Use our influence to improve quality of life
- Protecting the well-being of our communities
- Improving and protecting the natural and built environment for residents and visitors.

South Holland District Council, with its partners, will both lead and co-ordinate the preparation of community plan for the district, as required under the Local Government Act 2000. This will aim to enhance the quality of life of the local community and contribute to the achievement of sustainable development through action to improve the economic, social, and environmental wellbeing of the district and its inhabitants

To assist us in delivering our environmental pledges we have developed this Contaminated Land Strategy in accordance with the statutory guidance.

## **1.2 Regulatory Context**

This strategy is principally concerned with the inspection of land to determine whether it may be contaminated. This is only one aspect of the responsibilities that local authorities have gained. In this section, an overview of the legislation is given, to place the strategy in context and explain some terminology that will be used later on in the document.

Please note that this section provides a summary and explanation of the main provisions of the contaminated land legislation. It is not a definitive or exhaustive guide, and it has no legal force. Please refer to the Environmental Protection Act 1990, Part IIA [1], the statutory guidance, DETR Circular 02/2000 [2], the Contaminated Land (England) Regulations 2000 [3] and the Environment Act 1996 for a full description.

### ***Regulatory role of the Local Authority***

Local authorities have gained significant new responsibilities for contaminated land. Local authorities must [1]:

- Ensure that their areas are inspected to identify contaminated land
- Determine whether any particular site is contaminated land
- Act as enforcing authority to ensure that contaminated land is remediated appropriately (except where the site is a special site, in which case the Environment Agency acts as enforcing authority)

The enforcement role applies only to sites that are identified as contaminated land. When such a site is identified, the authority will:

- Establish who is responsible for the contamination
- Decide what remedial action is required

- Ensure that the remedial action is carried out – either through agreement with the person responsible for the contamination, or by serving a remediation notice.
- Determine who should bear what proportion of the costs of the remediation
- Record information about the regulatory action on a public register

In carrying out its duties, the authority is required to act in accordance with the statutory guidance [2].

### ***Regulatory role of the Environment Agency***

The Environment Agency has four important functions in regulating contaminated land:

- To assist local authorities in identifying contaminated land, particularly where water pollution is involved
- To provide site specific guidance to local authorities on contaminated land
- To act as enforcing authority when a site is designated as a Special Site
- To publish periodic reports on contaminated land

A Special Site is a site that meets one of the statutory definitions for Special Sites. In general, Special Sites have had uses where the Environment Agency is likely to already have a regulatory responsibility, for example Integrated Pollution Control sites. Special Sites are not necessarily more contaminated than other kinds of site. Examples of Special Sites are nuclear sites, MOD sites, oil refineries, and sites that may be causing pollution of drinking water resources. For a full definition of the term “Special Site” please refer to the Contaminated Land (England) Regulations 2000 [3]

### ***What is contaminated land?***

In general terms, contaminated land usually means land where industrial or other human activities have resulted in the presence of substances in the ground with potential to cause harm to human health, structures, or the environment. However, in English law the term “contaminated land” means something more specific than this. The duties and powers of local authorities extend only to land that falls within the statutory definition of contaminated land – enforcement action cannot be taken where land is not legally “contaminated land”.

The definition of contaminated land from the Environmental Protection Act 1990, Part IIA, Section 78A (2) is:

“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.”

The meanings of the terms within the definitions are important. The statutory guidance gives quite detailed explanations of what each term in the definition means. Below, a brief summary is given to aid understanding of the statutory meaning of contaminated land.

**Significant Harm** includes:

Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions in humans

Irreversible adverse change, or threat to endangered species, affecting an ecosystem in a protected area (e.g. site of special scientific interest)

Death, serious disease or serious physical damage to pets, livestock, game animals or fish

A substantial loss (20%) in yield or value of crops, timber or produce

Structural failure, substantial damage or substantial interference with right of occupation to any building

**Significant Possibility of Significant Harm:**

In determining whether there is a significant possibility of significant harm, the local authority will use a risk assessment approach, considering both the severity and the likelihood of the possible harmful effect. This will involve establishing:

The nature and degree of harm predicted

The susceptibility of the receptors to which harm might be caused

The timescale within which the harm might occur

**Pollution of controlled waters**

“Controlled waters” are all natural inland and near coastal waters, including groundwater and are made up of four sub-categories:

- (a) Relevant territorial waters (i.e. the sea within a line 3 miles out from the baselines from which the territorial sea is measured despite the extension of the territorial limit)
- (b) Coastal waters (i.e. the sea within those baselines up to the line of the highest tide, and tidal waters up to the fresh water limit as defined by the Secretary of State)
- (c) Inland waters (i.e. rivers, streams, lakes and reservoirs including those that are temporarily dry).
- (d) Groundwaters (i.e. any waters contained in underground strata or in wells or boreholes).

Landlocked waters that do not drain into other controlled waters are excluded from this definition under Section 104 of the Water Resources Act 1991

Therefore, all ponds, lakes, rivers, streams, estuaries and coastlines are controlled waters. Pollution of controlled waters means the addition of any “poisonous, noxious or polluting matter or any solid waste matter”.

***Principles of pollutant linkages: Source (contaminant), pathway and receptor***

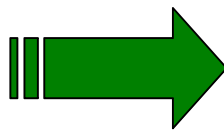
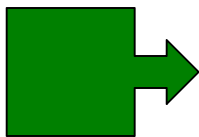
In order to be sure that any harm or pollution is a result of the presence of substances in, on or under the land, the local authority will check to see whether there is a demonstrable or plausible means for the substance (termed the “source” or “contaminant”) to come into contact with something that may be harmed (the “receptor”). This means of contact is termed the “pathway”. Where a source, a receptor and a pathway exist together, we call this a pollutant linkage. If there is no pollutant linkage, the substance cannot cause harm.

For example, consider an industrial site that has become contaminated with lead (a toxic metal). The receptor of concern is the people that work on the site. To be harmed by the lead, the people must be able to come into physical contact with the soil that contains the lead – they must be able to inhale soil dust, or get soil in their mouths. If all the contaminated soil is covered by buildings, concrete and tarmac, the people cannot contact the soil. There is no pollutant linkage, and no risk of harm. In this case, even though a potentially harmful substance was present, the site would not legally be contaminated land.

CONTAMINANT

PATHWAY

RECEPTOR



***Principles of risk assessment***

Risk assessment is the means by which SHDC will determine whether land appears to be contaminated land in accordance with the definitions above, in particular whether there is a significant pollutant linkage.

Risk assessment is a structured method for making decisions in circumstances where there is uncertainty. In risk assessment we distinguish between the concepts of hazard and risk:

*Hazard* is an attribute or situation that in particular circumstances could lead to harm

*Risk* is a combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequences of the occurrence (i.e. how likely is the hazard, and how bad would it be if it happened).

The source-pathway-receptor analysis described above is used to identify the hazard (the pollutant linkage). The risk assessment considers how likely the pollutant linkage is to exist, and how severe the consequences would be if it did exist. This could involve, for example, considering how much contaminant might be able to contact the receptor, over what time period, and how sensitive the receptor might be to the contaminant. At the end of the process, the assessor will be able to determine whether the pollutant linkage is a significant pollutant linkage, and therefore whether the site is contaminated land.

To find out more about risk assessment, we recommend Publications [4] and [5].

### ***Policy on remediation – suitable for use***

It is Government policy that land should be remediated to a standard where it is suitable for its current use, and significant harm or pollution of controlled waters can no longer occur. This is to be achieved by considering the pollutant linkages that have been identified and ensuring that each is treated such that the linkage is broken – for example:

- (i) remove or treat the source (the pollutant)
- (ii) break or remove the pathway
- (iii) protect or remove the receptor

In addition, remedying any effects that had already occurred as a result of the pollutant linkage would be required.

When identifying the best method for remediation, the local authority will use the concept of “best practicable technique”. Such techniques will have proven effectiveness, be practical to achieve in the particular circumstances of the site, and will be durable over a timescale appropriate to the problem. The authority will also consider the cost of the remediation in proportion to the severity of the harm or water pollution.

### ***Requirements for a strategic approach***

The statutory guidance requires local authorities to take a strategic approach to the inspection of land and identification of land that may be contaminated. The statutory guidance states that the approach must:

- (a) be rational, ordered and efficient
- (b) be proportionate to the seriousness of any actual or potential risk
- (c) seek to ensure that the most pressing and serious problems are located first
- (d) ensure that resources are concentrated on investigating in areas where the authority is most likely to identify contaminated land

- (e) ensure that the local authority efficiently identifies requirements for the detailed inspection of particular areas of land

### 1.3 Development of the Strategy

This strategy has been prepared by SHDC with assistance from consultants Symonds Group. In accordance with the principles of Best Value thirteen local authorities in the Lincolnshire and East Midlands area have collaborated in preparation of their strategies, and have shared consultancy costs, experiences and ideas. The authorities that contributed to the group were East Lindsey, West Lindsey, Lincoln City, North Kesteven, South Kesteven, Boston, South Holland, East Northamptonshire, Harborough, Melton , Rutland, North East Lincolnshire and Peterborough City.

The strategy has been prepared by the SHDC Environmental Protection IBU. The strategy is subject to review by SHDC. Details of when and why review of the strategy takes place are detailed in Section 8. Other officers and departments involved in the work were:-

Rachel Krahmer	Environmental Protection
Steve Revell	Information Services
Kim Warren	Property (Housing and Planning )
Phillip Adams	Building Control
David Cowie	Planning Policy
Simon Machen	Development Control
Mark Stinson	Legal Services

Other organisations have also been consulted in the preparation of the strategy. These were:

- Environment Agency
- Lincolnshire County Council
- Neighbouring local authorities
- East Midlands Development Agency
- English Nature
- English Heritage
- Ministry of Agriculture, Fisheries and Food
- Food Standards Agency
- Any other local bodies that might have a particular interest in contaminated land

Contact details for these organisations are detailed in Section 6.

### 1.4 Objectives of the Strategy Document

The main objectives of this strategy document are:

- To meet the statutory requirement to publish a strategy on inspection of SHDC's area for contaminated land
- To explain how SHDC plans to meet the particular statutory objectives for the strategy,

i.e.

1. be rational, ordered and efficient
  2. be proportionate to the seriousness of any actual or potential risk
  3. seek to ensure that the most pressing and serious problems are located first
  4. ensure that resources are concentrated on investigating in areas where the authority is most likely to identify contaminated land
  5. ensure that the local authority efficiently identifies requirements for the detailed inspection of particular areas of land
- To provide a readily available source of reference on SHDC's aims, objectives, procedures and information management systems for all interested parties, including members of the public, local businesses and landowners, environmental organisations and the Council itself.

### 1.5 Overview of the Inspection Process

The basic tasks required to inspect SHDC's area for contaminated land are set out below. SHDC has already completed several of them, and this strategy explains how and when the other tasks will be undertaken. Section numbers are given so that the detailed explanation of each task can be identified in the strategy document.

<b>Task</b>	<b>Section</b>
Establish a team within SHDC and allocate responsibilities for contaminated land	5.1, 6.1
Establish links with statutory bodies and appropriate local organisations	6.2, 6.3
Acquire information required to carry out survey and inspection	5.3
Establish systems to manage the information and keep it updated	9
Carry out initial desk based survey of entire area and prioritise sites that may be contaminated for more detailed assessment (Stage 1)	4.1, 5.4, 5.5
Carry out preliminary risk assessment of sites in priority order and assign priority for detailed inspection (Stage 2)	4.1, 5.4, 5.5
Carry out detailed inspections in priority order	4.1, 7.4
Use risk assessment to determine whether inspected sites are contaminated land	7.4
Place details of contaminated land on a public register and commence appropriate action	4.1, 9.2
Assess new information provided by the planning process, the public, statutory bodies or other organisations using the same procedures as above	5.6
Respond to enquiries, complaints and requests for information	6.4, 9.8, 9.9
Review the strategy and performance against objectives and targets regularly to ensure compliance with the law and to monitor progress	8

## SECTION 2

### CHARACTERISTICS OF THE SOUTH HOLLAND AREA

This section gives the background to South Holland District and an explanation of how this influences the Council's approach to inspection for contaminated land. It will also enable fair comparison with other authorities. (Note: The maps in this section are diagrammatic only).

#### 2.1 Geographical Location

*(See map "South Holland in context")*

South Holland covers the south-eastern corner of Lincolnshire, and comprises almost wholly of fens. The District's north-eastern boundary is The Wash coastline, an area recognised nationally and internationally for its ecological importance. South Holland extends from a boundary with Boston Borough in the north, to borders with North Kesteven District and South Kesteven District on the west, Peterborough City and Fenland District (in Cambridgeshire) to the south and Kings Lynn and West Norfolk Borough (in Norfolk) to the east. The cathedral city of Peterborough and the towns of Boston, Bourne, Market Deeping, Wisbech and Kings Lynn are located fairly close to South Holland.

#### 2.2 Brief Description and History

In South Holland, as in most areas, the environment has been affected by the activities of mankind. In the earliest times people settled on the islands within the fens and salt marshes and lived off the abundant wildlife. The evidence of this past human activity is all around us within the landscape and these remains are an important link between the past and present day inhabitants of the district. Successive drainage schemes have gradually reclaimed the fens and pushed the shoreline ever sea-wards. Today the reclaimed areas form intensively cultivated and highly fertile agricultural land which is an important national resource. The sea is held at bay behind defensive walls along the coast and tidal estuaries with a network of drains, sluices and pumping stations keeping the inland areas free from inundation. So in essence the land is flat and low-lying, served by an extensive system of land drains and the Rivers Welland, Glen (a tributary of the Welland) and Nene.

It is estimated that over 60% of the workforce is employed in the growing, processing and distribution of agricultural produce. The district is a road haulage distribution centre of national significance for food and produce providing daily destinations throughout the UK and Europe, although it is remote from the motorway network. The A16 and A17 principal roads passing through the district form part of the local road hierarchy. The Peterborough-Lincoln-Doncaster branch railway line runs through the western half of the district with a station at Spalding.

#### 2.3 Size

South Holland District covers an area of some 737 square kilometres (280 square miles).

## **2.4 Population Distribution**

***(See map “Population distribution”)***

South Holland’s principal town is Spalding. The district also includes the towns of Crowland, Holbeach, Long Sutton and Sutton Bridge. Nearly 60% of the population live in the towns or their immediate environs. There are numerous villages of varying size and character, plus a sporadic distribution of individual dwellings and small groups of dwellings in the open countryside.

There has been a marked and steady increase in the district’s population from 1971 to the present day (1999 figures). Between 1981 and 1999 the population increased from 61,631 to an estimated 74,095 that is, a numerical increase of 12,464 or 20.22%. Within the same period Spalding’s population registered an increase of 4,097 from 18,340 to 22,437 or 22.3%. The proportion of the district’s population residing in Spalding has remained more or less constant, 29.7% in 1981 compared with 30% in 1999.

The predominant character of the district is rural with a population density of 0.97 persons per hectare.

## **2.5 Principal Land Use Characteristics**

Outside the built up areas of the settlements, the majority of the land is cultivated. However this includes not only open fields but also some sites with large areas of glass-housing and poly-tunnels.

## **2.6 Land Owned by the District Council**

The Council has limited land holdings in the District.

Most of the land owned is parks and open spaces, being the responsibility of either the Housing Services Committee or the Environment & Leisure Services Committee.

The Housing Services Committee also holds land around the garage sites, sewerage treatment works and pumping stations together with other small ancillary areas of land. Policy & Best Value Committee hold areas around the Council’s mini-factories together with a playing field, allotments and other miscellaneous areas.

## **2.7 Ecological Sites- Protected and Other Locations**

***(See map of “Ecological sites with statutory protection”)***

South Holland has areas rich in wildlife some of which are protected species. The most significant sites of ecological importance are statutorily designated. Those relevant to South Holland include:

- *Special Areas of Conservation(including candidate SACs) classified pursuant to Article4 of European Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, and Special Protection Areas(including potential SPAs) classified pursuant to Article4 of European Council Directive on the Conservation of Wild Birds.*

- *Ramsar sites listed under the Convention on Wetlands of International Importance.*
- *Sites of Special Scientific Interest (SSSIs) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)*
- *National Nature Reserves (NNRs) declared under Section 19 of the National Parks and Access to the Countryside Act 1949 or Section 35 of the Wildlife and Countryside Act 1981 (as amended)*
- *Local Nature Reserves (LNRs) declared under Section 21 of the National Parks and Access to the Countryside Act 1949*

The Wash carries the highest levels of designation, being both a Wetland of International Importance (a Ramsar site), and also a Special Protection Area for the conservation of the habitats of certain rare or vulnerable birds (SPA). It has also been identified as a candidate Special Area for Conservation (c.SAC) and a draft management scheme is at an advanced stage of preparation.

There are three Sites of Special Scientific Interest (SSSI's) within South Holland - The Wash, Surfleet Lows and a site at Cowbit Wash. Two areas of the Wash - at Lutton Outmarsh and north east of the River Nene outfall - are also designated as National Nature Reserves (NNRs).

There is one site statutorily designated as a Local Nature Reserve, namely the Vernatts LNR on the northern edge of Spalding.

There are a number of sites which, though not statutorily designated, are of local importance for nature conservation. The Lincolnshire Wildlife Trust maintains a list of such sites. Some sites are managed as nature reserves. In addition to nucleated sites, linear landscape features such as river and other watercourse corridors, the coastal margin, roadside verges and railway lines (both existing and disused) can provide stepping-stones and corridors for wildlife.

The Wash Coastal Conservation Area was designated by Lincolnshire County Council, through the Lincolnshire Structure Plan 1981 and the Development on the Lincolnshire Coast Local Plan 1986. Whilst much of the conservation area is covered by international or national designations which are noted above, it additionally includes land which generally lies between the old and the more recent sea banks. Within the conservation area as a whole, it is essential to safeguard the remaining natural character and interest of the coast.

## **2.8 Key Property Types**

Buildings, property, ancient monuments and important archaeological sites are all considered receptors that should be protected under the contaminated land regime. Most of them pre-date industrial development and are not likely to be actually located on contaminated land. Any instances of significant harm would be more likely to be as a result of migration of contamination – for example migrating landfill gas, or contaminants in groundwater.

There are some 519 Listed Buildings in the District, of which 23 are listed Grade I, 36 as Grade II\* and 460 as Grade II. Many of the listed buildings are to be found within the historic cores of the older settlements (for example 143 in Spalding alone), although there are also a substantial number distributed more sporadically, such as some noteworthy farmhouses.

In addition to statutorily listed buildings, the Council has embarked on a programme of identifying buildings of local heritage interest.

There are some 29 Scheduled Ancient Monuments within the District.

Many historic towns and villages of South Holland are of such unique character that they have areas within them that are designated for special protection and enhancement by the designation of conservation area status. Conservation areas are generally centred on the historic core of the village or town and often contain many fine examples of historic building and townscape design and layout. To date, thirteen conservation areas have been designated in the District. These are:

- Crowland
- Donington
- Gedney Dawsmere
- Fleet
- Fleet Hargate
- Gosberton
- Holbeach
- Long Sutton
- Moulton
- Pinchbeck
- Spalding
- Tydd St Mary
- Tydd Gote

The District Council is committed to the preservation of its historic environment and has embarked on a programme of appraisals of all its conservation areas.

A record of the location of known archaeological remains is kept within the County Sites and Monuments Record held by Lincolnshire County Council in Lincoln. These records are periodically updated as evidence on further sites of archaeological importance are found and it is therefore likely that there are other sites of archaeological importance within the district that are as yet unknown. As part of its conservation area appraisal programme the District Council has commissioned archaeological evaluations of settlements.

Within South Holland there is a single site that is designated within the national register of historic parks and gardens. The site is Ayscoughfee Hall gardens in Spalding, surrounding the grade II\* listed Ayscoughfee Hall which is owned and maintained by the District Council.

## **2.9 Current and Past Industrial History and Some Other Notable Activities**

***(See map “Location of some notable activities”)***

The primary ‘industry’ in South Holland is the agricultural industry (including horticulture) and related food processing and road haulage. There are a number of intensive livestock units in the District, most being engaged in the rearing of poultry.

There are long established major industrial locations at Spalding/Pinchbeck (West Marsh

Road/Wardentree Lane/Enterprise Park areas) and Sutton Bridge (Wingland area). The first of these areas includes a site once occupied by a Sugar Beet Factory, now demolished and the site now awaits redevelopment (a power station is proposed on part of it). The second area, Wingland, used to be a Ministry of Defence airfield many years ago; over more recent years it has become a significant site for industry and there is likely to be further industrial development here following the recent construction of a power station with new access road.

There are also many firms of various sizes, including some major employers, located elsewhere either within built up areas of settlements or more sporadically located across the District, for example based at major farm sites.

Early port activity at Sutton Bridge has in recent years been revived into a thriving business. The site of the original port basin is these days occupied by a golf course, with the new port lying adjacent.

The Ministry of Defence has a bombing range, RAF Holbeach, beyond the sea defences on the Wash coastline.

There are two established airfields in South Holland for light aircraft, namely Fenland Airfield and Crowland Airfield.

Across the District there has over the years been infilling of the many pits and ponds in ad hoc fashion. Where the nature of the fill material and method employed remains unrecorded, there may be questions about the stability of the land and possible contamination issues which can only be confirmed through investigation.

## **2.10 Hydro geological Characteristics**

***(See map “Major water courses in District”)***

The majority of South Holland's area falls within either the catchment of the River Welland or the catchment of the River Nene. Each is covered by a Local Environment Agency Plan (LEAP) prepared by the Environment Agency. The north-western part of the District is drained by the South Forty Foot Drain which outfalls to the River Witham (in Boston Borough). All of these rivers outfall to The Wash Estuary. Local Internal Drainage Boards maintain a network of drains, to control water levels across South Holland, which discharge to the rivers by either pump, or gravity when tidal conditions permit. There are also drains in private ownership which outfall to this system.

Within the Welland catchment the principal sources of surface water and groundwater are the River Welland, Rutland Water Reservoir and the Southern Lincolnshire Limestone aquifer. Some water is also available from the extensive gravel deposits north of Peterborough. Within the Nene catchment the principal sources of raw water are the Nene and its tributaries, a proportion of which is stored for public water supply at Pitsford Reservoir and Rutland Water (in the Welland catchment). There are also a number of minor aquifers in the Nene catchment.

Basically South Holland lies 'downstream' between these sources and the outfalls of the River Welland and River Nene to The Wash coast.

## **2.11 Key Water Resource and Protection Issues**

Anglian Water Services Ltd. supplies drinking water for the District.

The region covered by Anglian Water Services Ltd. receives only half the national average rainfall. Local geology leads too much of this flowing as surface water run-off directly to river systems rather than absorbed into groundwaters. The flat nature of the area means that a lot of pumping is necessary to get clean water to customers and waste water back to sewage works. Given that the rivers flow very slowly, the environmental standards to which the sewage treatment works have to operate are especially stringent.

Throughout the District the watercourses suffer the consequences of low flow and nutrient enrichment, which causes excess algal and weed growth (eutrophication). The low gradient of the watercourses together with the impact of agricultural and food processing activities adversely effect biological water quality, which continues to decline as the water slowly flows downstream.

The management of water resources is particularly difficult during periods of low river flow because demands to meet water, for public water supply and spray irrigation needs, puts extreme pressure on the flora and fauna of watercourses.

The Environment Agency has identified Groundwater Protection Zones in the vicinity of Bourne near the South Forty Foot Drain. These zones extend partly into South Holland District, some distance west of the villages of Gosberton Clough/Risegate, Northgate and West Pinchbeck.

For further information on Groundwater Protection Zones and River Quality, visit [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

## **2.12 Known Information on Contamination**

In the overall context of contaminated land bearing in mind the industrial history of the area any problems are likely to be confined to specific sites. There is no history of what could be classed as major polluting industries within the area albeit there have been a number of sites where a degree of pollution could have occurred.

One of the most significant issues to be considered is that of former landfill sites throughout the whole of the District. Prior to 1974 many former ponds and pits were used for the disposal of household and in some cases agricultural and general commercial waste. Limited information is held about the location and content of these waste filled sites.

Some information is held on specific sites that have previously been identified as being polluted and where ever appropriate what action has been taken to remediate the land.

In recent years the Council has been actively dealing with a number of polluted sites which have been causing nuisance to nearby properties.

## 2.13 Action Already Taken to Deal with Contamination

Previously the Council has dealt with any issues relating to contaminated land on an ad hoc basis either through building control, planning or ultimately environmental health. The majority of sites have been identified and dealt with within the building control regime. A limited number of known sites have been dealt with as a result of planning applications being approved for further development.

Nuisance sites have also had to be dealt with and the Council has in the case of Gedney Road Garage, Long Sutton had to undertake works in default of a nuisance abatement notice.

## 2.14 Geological and Geomorphological Setting

*Knowledge of an area's geology is essential for understanding its nature and history. The underlying rocks determine the physical shape and appearance of the land. The geology also controls the presence, quantity and movement of groundwater – see key water resources section 2.11.*

*This section describes the geomorphology and geology of the district of South Holland. To begin with we need to establish what we mean by geomorphology and geology.*

*The geomorphology of the area means the form of the landscape, as it is today, and the likely processes (for example river, wind and estuary) that have influenced its development over the previous hundreds and thousands of years. In this district Man has also been a significant influence in the development of the landscape, particularly over the past 2000 years.*

*Geology is the study of the materials that go to make up the ground below our feet. That includes the sediment deposited by rivers, by wind, by the sea, as well as the underlying rocks formed many millions of years ago.*

### - Geomorphology

South Holland District lies within the low-lying fens area of central England. Formerly this area was coastal marshes and mudflats. To the east, south and west the fens extend into Norfolk, Cambridgeshire and South Kesteven District of Lincolnshire. To the north the coastline of The Wash defines the district.

Much of the land in South Holland has been reclaimed from the sea over the past 2000 years or so and consequently ground level is generally at or below sea level, except for a few isolated 'islands' of high ground. The area is typified by the presence of raised flood protection embankments, such as along the River Nene in the east and the River Welland in the west and the district is also criss-crossed by numerous drainage ditches to control water in this fertile agricultural area.

### - Geology

The deposits present beneath South Holland are sedimentary in origin. This type of deposit forms both the 'Superficial' deposits and the 'Solid' rocks beneath the district.

The Superficial deposits overlie the solid rock geology, and consist of sediments which have not yet become rock.

In addition to the naturally deposited materials, there are several areas within the district, over which silt waste (Salterns) from the medieval salt industry has been deposited. Such areas include Holbeach Hurn, Holbeach Clough and Surfleet Seas End.

The following is a simplified representation of the order in which the geological layers were deposited, with the youngest at the top and oldest at the bottom:

<b>Superficial Deposits</b>	including:	Terrington Beds Barroway Drove Beds Glacial deposits
<b>Jurassic Rocks</b>	including:	Amphill Clay West Walton Formation Oxford Clay

*Not all the deposits in the above sequence are present beneath the whole of the district. Where the above geological sequence is incomplete it is due to the erosion of the upper and younger deposit, however the order of the remaining deposits remains the same.*

*The solid rocks beneath the district were laid down during the Jurassic period, approximately 135 to 195 million years ago. The overlying superficial deposits however, were only deposited over the last 2 million years. Any rocks or materials deposited between 135 and 2 million years ago have been eroded away, and as a consequence are no longer present beneath the district.*

### Superficial Deposits

The Superficial deposits are the most recent materials to have been deposited; they were laid down between 2 million years ago and the present day, and rest above the solid rock.

The youngest deposits beneath the district are those nearest the ground surface. Within the district these are formed by the Terrington Beds and the Barroway Drove Beds. These consist of a complex sequence of clay, silt, sand and peat derived from marine and freshwater sources, which may extend to depths of up to 25m below ground level in some locations. These materials have been laid down over the past 10,000 years, as a result of a general rise in sea level since the end of the last Ice Age.

Beneath these deposits under the majority of the district lie Glacial deposits. These were deposited during the last Ice Age. The Glacial deposits beneath the district consist mainly of Till which, generally comprises grey sandy clay with pebbles. Glacial Sand and Gravel deposits are also present beneath the district but to a lesser extent than the Till.

### Solid Rock

Beneath the Superficial deposits lies the solid rock geology, which within South Holland is of Jurassic age. The rocks that underlie the majority of the district have been named

the Ampthill Clay, the West Walton Formation and the Oxford Clay. These deposits consist almost entirely of mudstones with occasional limestones.

Context in relation to contaminated land

The geological deposits upon which an area of contaminated land lies, have the potential to affect the impact that such land has on the environment. If the geological deposits beneath a source of contamination (contaminated land) are of low permeability such as clay, they may be able to limit or even prevent the movement of pollution away from the source and hence protect the environment. Conversely, if an area of contaminated land is underlain by water bearing highly permeable deposits such as sand, then it is likely that contamination will be able to escape from the site and possibly pollute the groundwater or local surface water systems.

Glossary

Glacial deposits	Deposits laid down as a result of the movement of ice sheets and melt waters over the land. The movement caused erosion of existing deposits and also resulted in deposition.
Limestone	Limestone is a sedimentary rock consisting essentially of carbonates.
Groundwater	Water which flows through a soil or rock, beneath the water table
Mudstone	A sedimentary rock comprised of very fine grained (clay sized) particles.
Permeable	Deposits that are permeable allow water to flow through them. The higher the permeability the more easily water can flow
Sedimentary Rocks	Rocks formed by the accumulation of material eroded from pre-existing rocks.
Superficial Deposits	Deposits which are present above the solid rock geology which have not yet become solid rock, and are typically less than 2 million years old.
Till	Till deposits are glacial in origin and may consist of a wide range of individual grain sizes from very fine grained particles up to large boulder sized material. Typically Till deposits consist mainly of clay sized particles.

**2.15 Conclusions**

The review of South Holland’s characteristics has identified important potential sources and receptors within the district. At this stage in most cases we do not know whether these sources are actually present, or whether they are connected to the receptors by significant pathways – it is the purpose of the inspection to discover this. Initially we will make the simplest assumption that a pathway is more likely if the source and receptor are close to each other and this will form part of the means by which we decide which sites are more important to us. The mechanism is expanded upon in Sections 4 and 5.

## SECTION 3

### THE LOCAL AUTHORITY STRATEGY: OVERALL AIMS

In this section we set out the specific aims and objectives of this strategy to meet our obligations (see also Section 1).

#### 3.1 Aims of the Strategy

SHDC wishes to identify contaminated land present in its area in the most practical and efficient way and ensure that the most pressing and serious problems are addressed first. With these priorities in mind, SHDC has identified the following overall aims for this strategy:

- To protect human health, important ecological sites, important historic and cultural sites and the water environment
- To have a transparent decision making process wherever possible. To demonstrate SHDC's commitment to this aim, SHDC will assess land where it may be the appropriate person at an early stage within the assessment process. (i.e. land owned by SHDC, formerly owned or leased by SHDC, or where SHDC was responsible for the site condition/activities). Should any land for which SHDC are the appropriate person be found to be statutorily contaminated SHDC will lead by example in ensuring that the land is remediated to a standard suitable for its current use. The duties of SHDC in this strategy will be kept separate from the responsibilities of SHDC as a landowner.
- To have a body of information for contaminated land that is useful and accessible
- To aid communication between bodies and individuals interested in contaminated land.
- To be efficient, consistent and rational in carrying out all inspection work
- To ensure that Part IIA procedures are well integrated with the planning and building control process.
- To show how SHDC will meet its obligations under Part IIA of the Environmental Protection Act 1990.

#### 3.2 Objectives and Milestones

Specific objectives and milestones to help achieve the aims set out above are presented here. To help assess SHDCs performance in achieving these, target dates or other measures are also included where these are relevant.

- Purchase historical maps (Landmark)  
*Target date: **within 1 month of strategy publication (complete)***

- Develop written procedures for the process of identifying contaminated land. Establish and maintain efficient liaison and information exchange within SHDC and with other external organisations.  
*Target date: **ongoing***
- Carry out overall strategic inspection (as detailed in Section 5) to identify significant harm and ensure that the most pressing and serious problems are targeted first. SHDC's specific objectives for this are:
  1. Collate and review all evidence of actual harm or water pollution
  2. Evaluate information SHDC already holds concerning the possible presence of contamination
  3. Identify sites/areas of contaminated land which have already been remediated
  4. Review historical maps to identify areas with potentially contaminative uses
  5. Prepare a prioritised list of sites for detailed inspection  
*Target Date: **within 5 years of publication of strategy***
- Assess all planning applications in respect of contaminated land.  
*Target Date: **ongoing***
- Commence action on sites that are statutorily contaminated land.  
*Target date: **within 2 weeks of the determination***
- Assess land for which SHDC may be the appropriate person (i.e. land owned by SHDC, formerly owned or leased by SHDC, or where SHDC was responsible for the site condition/activities)  
*Target Date: **within 5 years of strategy publication***
- Commence detailed inspections of all priority A1 sites.  
*Target Date: **within 12 months of prioritisation***
- Complete detailed inspections of sites with priorities B1, A2, B2 and C1  
*Target Date: **within 5 years of prioritisation***
- To work with landowners/polluters to encourage voluntary action wherever possible.  
*Target Date: **ongoing***
- Review strategy and inspection procedures at regular intervals (Section 8)  
*Target Date: **annually from date prioritisation complete***
- Effective output of information. SHDC's specific objectives for this are:
  1. Clear and transparent communication of information in accordance with SHDC's liaison and communication strategy (as detailed in Section 6).  
*Target date: **ongoing.***

2. Provide and maintain public register available for access on request (as detailed in Section 9).  
*Target date: **ongoing***
3. Respond to requests for copies of information held on the public register.  
*Target date: **within 1 week of receipt of request***
4. Develop a standard format for responding to requests for information.  
*Target date: **ongoing***
5. Provide a web page of general information relating to strategy and SHDC contact details.  
*Target date: **ongoing***

It is anticipated that the detailed inspection of sites will be an ongoing process, over many years, and we are not able at this stage to predict how long it will take. This will clearly depend on how many potentially contaminated sites are identified, and the kind of issues that need to be resolved. We can also expect that relevant information will be gained over a number of years, since not all possible sources will be investigated during the initial strategic inspection. Other changes, such as changes to land uses or new developments may alter a sites priority classification and trigger a new inspection. In the main we may expect that the majority of the activity required in terms of man-hours will be within the first 5 years of the programme; however the review, information maintenance and response to changes in status will be a continuous process.

## SECTION 4

### LOCAL AUTHORITY PRIORITY ACTIONS AND TIMESCALES

In this section of the strategy we set out what our priorities for action are and why, with reference to:

- The background information presented in Sections 1 and 2
- SHDC's overall aims as presented in Section 3

We also explain how these priorities are incorporated into our procedures for identifying contaminated land. These procedures are detailed in Sections 5 and 7.

#### 4.1 Priorities

1. Planning application appraisal of potentially contaminated land.
2. Residential land: residential land is considered by SHDC to be a priority for contaminated land investigation. If contaminants are present on a site which is occupied for residential purposes, the occupiers are potentially receptors for the contaminants. It is our priority to establish in conjunction with the owners of the site, whether any significant pollutant linkage exists on residential premises. Areas with the highest population density will be considered first.
3. School land and playgrounds: these are considered important as it is likely that children will come into contact with soils in these areas.
4. Drinking water abstraction points: there are currently 4 drinking water abstraction wells within SHDC. Any potential contamination of these abstraction points will be considered due to the potential impact on human health from drinking contaminated water.
5. Allotment gardens: are significant as fruit and vegetables growing in or on contaminated soils may accumulate contamination, creating a pathway from the source to humans when the produce is consumed.
6. Agricultural land: where contamination affects agricultural land it may cause damage to crops and create a pathway from the source to humans when the produce is consumed.
7. Ecological receptors: sites such as nature conservation areas and Sites of Special Scientific Interest will also be considered a priority. The Wash and its associated coastline is particularly vulnerable and will be given priority as ecosystems can be affected by contamination, with detrimental effects evident in both fauna and flora.
8. Historic buildings or sites of archaeological importance require protection particularly in relation to any foundation damage from contaminated groundwater. The historical legacy of industrial sites and structures will require special archaeological consideration.

9. Groundwater associated with the minor aquifer and land next to surface waters: rivers, drains, dykes and ponds are controlled waters. Watercourses provide a freshwater habitat for a range of species. They may be used for the irrigation of crops and can act as a pathway spreading contamination from a source to receptors.
10. Industrial or commercial land: land used for employment purposes that is occupied. Although the risks of contaminated soils etc. causing harm are less at a workplace there is still the potential for them to cause harm.

**Priority Categories for Survey and Inspection**

To ensure that the priorities described above are translated into rational and systematic action, SHDC has developed a two-stage prioritisation procedure, fully described in Section 5. In Stage 1 sites that may be contaminated will be placed in a priority category based on the environmental sensitivity of the site and its surroundings.

**Table 4.1 Stage 1 Survey Priority Categories**

Survey Category A	<ul style="list-style-type: none"> <li>• Residential development, school, playground or allotment within 50m of site boundary</li> <li>• Surface water feature (river, drain, dyke, pond, ) within 50m of site boundary</li> <li>• Site located within Zone 1 or Zone 2 Source Protection Zone</li> <li>• Site located within 50m of a Scheduled Ancient Monument or Protected Ecological site</li> </ul>
Survey Category B	<ul style="list-style-type: none"> <li>• Residential development, school, playground or allotment within 250m of site boundary</li> <li>• Sites in agricultural or amenity use including parks</li> <li>• Industrial or commercial development within 50m of site boundary</li> <li>• Significant surface water feature within 500m of site boundary, to which site run-off is likely to drain</li> <li>• Site located within Zone 3 Source Protection Zone or on a major aquifer</li> </ul>
Survey Category C	All other sites

In Stage 2, sites will be subjected to more detailed assessment in priority category order, ensuring that sites where significant harm or water pollution is most likely to occur are dealt with first. In the Stage 2 assessment, each site will be given a priority category for inspection. The inspection priority categories are detailed in Table 4.2.

**Table 4.2 Stage 2 Inspection Priority Categories**

Inspection Priority 1	• Significant harm or pollution of controlled waters exists or is considered likely (i.e. more likely than not)
Inspection Priority 2	• Significant harm or pollution of controlled waters considered possible (i.e. source-pathway-target connection probably exists) Inspection
Inspection Priority 3	• Significant harm or pollution of controlled waters considered unlikely (i.e. source-pathway-target connection probably does not exist)
Inspection Priority 4	• Significant harm or pollution of controlled waters considered extremely unlikely or impossible (i.e. source-pathway-target connection does not exist or is highly improbable)

After the Stage 2 prioritisation, each site will have a two-part priority category, for example A1, B2, etc. This will be used to determine the order in which sites are subjected to detailed inspection (procedures for detailed inspection are given in Section 7).

The order proposed by SHDC takes into account the probability of there being significant harm or water pollution. For example, survey Category A contains the most sensitive site uses and Inspection Priority1 the most likely occurrence of significant harm or water pollution. SHDC will therefore inspect sites in the A1 category first. The remaining categories are dealt with in descending order of importance/seriousness as determined by SHDC and shown below:

- A1
- B1
- C1
- A2
- B2
- C2
- A3
- B3
- C3
- A4
- B4
- C4

***Priorities for taking action on sites that are Contaminated Land***

The detailed inspection will lead to a determination of whether the site is contaminated land or not. Where sites are found to be contaminated land, an action priority classification will be given, since some contaminated land sites will be more serious than others.

**Table 4.3 Action Priority Categories for Contaminated Land sites**

Action Priority 1	<ul style="list-style-type: none"> <li>• Contaminants certainly present and significant pollutant linkage proven or very likely</li> <li>• Significant harm or significant pollution of controlled waters certainly or probably occurring</li> <li>• Harm or pollution likely to get worse in the short term if no action is taken</li> <li>• Urgent action needed in the short term</li> </ul>
Action Priority 2	<ul style="list-style-type: none"> <li>• Contaminants certainly present and significant pollutant linkage likely</li> <li>• Significant harm or significant pollution of controlled waters likely</li> <li>• Harm or pollution unlikely to get worse in the short term</li> <li>• No receptor in urgent need of protection</li> <li>• Action needed in the medium term</li> </ul>
Action Priority 3	<ul style="list-style-type: none"> <li>• Contaminants certainly present and significant pollutant linkage likely</li> <li>• Site is only capable of causing pollution of controlled waters (i.e. no significant harm)</li> <li>• Known industrial use but no impact on water quality measured</li> <li>• Contaminants are unlikely to be entering controlled water in sufficient quantities to cause impact on water quality</li> <li>• Action may be needed in the long term</li> </ul>

SHDC may already be aware of sites which fulfil the definition of statutorily contaminated land. In these cases, where the sites would be classed as Action Priority 1 sites, the sites will be dealt with as the information arises. SHDC will not await the completion of the inspection of the District prior to commencing action on known statutorily contaminated sites.

#### **4.2 Timescales**

Below are timescales the SHDC aims to complete the priority actions described above:

- Stage 1 Survey Categories complete for initial survey **by 1 April 2005**
- Stage 2 Inspection Priorities complete for initial survey **by 1 April 2005**
- Commence detailed inspections on Category A Inspection Priority 1 sites **within 4 weeks of assigning the inspection priority.**
- Commence action on Action Priority 1 sites **within 4 weeks of assigning the action priority**
- Commence action on Action Priority 2 sites **after commencement of remediation negotiations on all Action Priority 1 sites**

## SECTION 5

### SURVEYING THE AREA AND PRIORITISING SITES FOR DETAILED INSPECTION

In this section we set out our procedures for carrying out the survey of our area to identify contaminated land, and explain how we will prioritise potentially contaminated sites for detailed inspection. The procedures for carrying out detailed inspections are explained in Section 7.

#### 5.1 Internal Management Arrangements

The Environmental Health Department of SHDC is responsible for carrying out the inspection of land within SHDC's area of responsibility.

- The overall responsibility for the management and the production of the register is held by the Head of Environmental Health – Michael Dawson
- Responsibility for assessing the information and classifying the sites is held by the Environmental Health Manager – Nigel Payne
- Responsibility for obtaining and collating information is held by Rachel Krahmer
- The point of contact for external bodies and individuals is the Contaminated Land Officer – Rachel Krahmer, Environmental Protection, Environmental Health Department, Priory Road, Spalding, Lincolnshire PE11 2XE. Tel 01775 761161 extension 4659, Fax 01775 711054, e-mail rkrahmer@sholland.gov.uk

On preliminary identification of an area of potentially contaminated land, the management structure will ensure that the relevant information is reviewed by the Environmental Protection EHO prior to making contact with the landowner and inclusion into the register.

In some cases the detailed inspection process may require SHDC to spend money, for example on having samples analysed. These cases will be reviewed by the Environmental Protection EHO.

#### 5.2 Land Owned and Occupied by SHDC

All sites are inspected and classified in the same manner. This includes all land in current or former ownership or occupation by SHDC, and land where SHDC may be responsible for the site's condition (i.e. where SHDC may be the appropriate person).

SHDC will review its records of land that it owns and/or occupies as part of the initial survey of the whole area. Where the records indicate that such land may have had a potentially contaminative use, the land will be added to the list of potentially contaminated sites (see 5.4 below).

Land in which SHDC has an interest will where appropriate (i.e. where more urgent cases do not take priority) be inspected within the first *12 months* of the inspection process. Where such land is found to be contaminated land, relevant information in

accordance with Section 78R of the Environment Act 1995 will be included in the public register and treated in the same manner as all other contaminated land within the area.

### 5.3 Information collection for survey and inspection

The early stages of surveying SHDC's area for contaminated land make use of information that is available from a wide variety of sources. SHDC will collect the information needed and use it to identify land that may be contaminated.

There are two basic categories of information required. The first is information that SHDC will use to identify sites where contamination may be present (listed in Table 5.1). The second is information about environmental sensitivity (listed in Table 5.2). SHDC will use the environmental sensitivity information to determine whether significant harm or pollution of controlled waters may be occurring.

We explain below in Section 5.4 how we will use the information in Tables 5.1 and 5.2 to identify land that may be contaminated, and prioritise the land for detailed inspection. In Section 9 we explain how we will manage the information and keep it up to date.

**Table 5.1 Indicators of Potentially Contaminated Land**

<b>Type of information</b>	<b>Source of Information</b>
Records of actual harm or pollution of controlled waters	Environment Agency, SHDC Departments
Historical maps (scales 1:10,000 ; 1:2,500) Published 1850's, 1890's/1900's, 1920's, 1930's, 1950's, 1960's/70's, 1980's/90's	Landmark Information Group, Ordnance Survey maps. These will be supplemented as necessary by paper maps held by SHDC, local libraries, and if necessary the Bodleian Library in Oxford
Sites with Integrated Pollution Control authorisations	Environment Agency and SHDC Environmental Health Department
Registers of other potentially contaminative uses e.g. scrapyards, petrol stations, quarries	Environment Agency, SHDC Departments
Sites with waste management licences	Environment Agency
Closed landfill sites	Environment Agency, British Geological Survey, SHDC Departments
Existing lists of potentially contaminated land	SHDC Departments
Current land uses	Ordnance Survey maps, Planning Department (Local Plans/Development)
Records of remediation or clean-up work	SHDC Departments, Environment Agency

**Table 5.2 Indicators of Environmental Sensitivity**

<b>Type of information</b>	<b>Source of Information</b>
<b><i>Water resources</i></b>	
Groundwater source protection zones	Environment Agency
Aquifer classification and vulnerability	BGS Geological Mapping, Groundwater Vulnerability maps
Locations of drinking water abstractions	Environment Agency, SHDC Environmental Health Department
Surface waters (rivers, streams, ponds, lakes etc.)	Ordnance Survey mapping and Environment Agency (appointed contact)
Flood information (floodplain/washland area/other flood risk areas)	Environment Agency, SHDC Planning Department
Environmentally sensitive areas	ADAS
Nitrate vulnerable zones	Ministry of Agriculture Fisheries and Food, Environment Agency
<b><i>Ecology and Wildlife</i></b>	
Sites of Special Scientific Interest (SSSI's), Nature Reserves, Ecological sites	English Nature
<b><i>People and Property</i></b>	
Land uses (e.g. residential areas)	Ordnance Survey (Current mapping) / Planning Department (Local Plans) /Ministry of Agriculture Fisheries and Food
Archaeological sites, Scheduled National Monuments	Heritage Trust of Lincolnshire, English Heritage, SHDC local plan

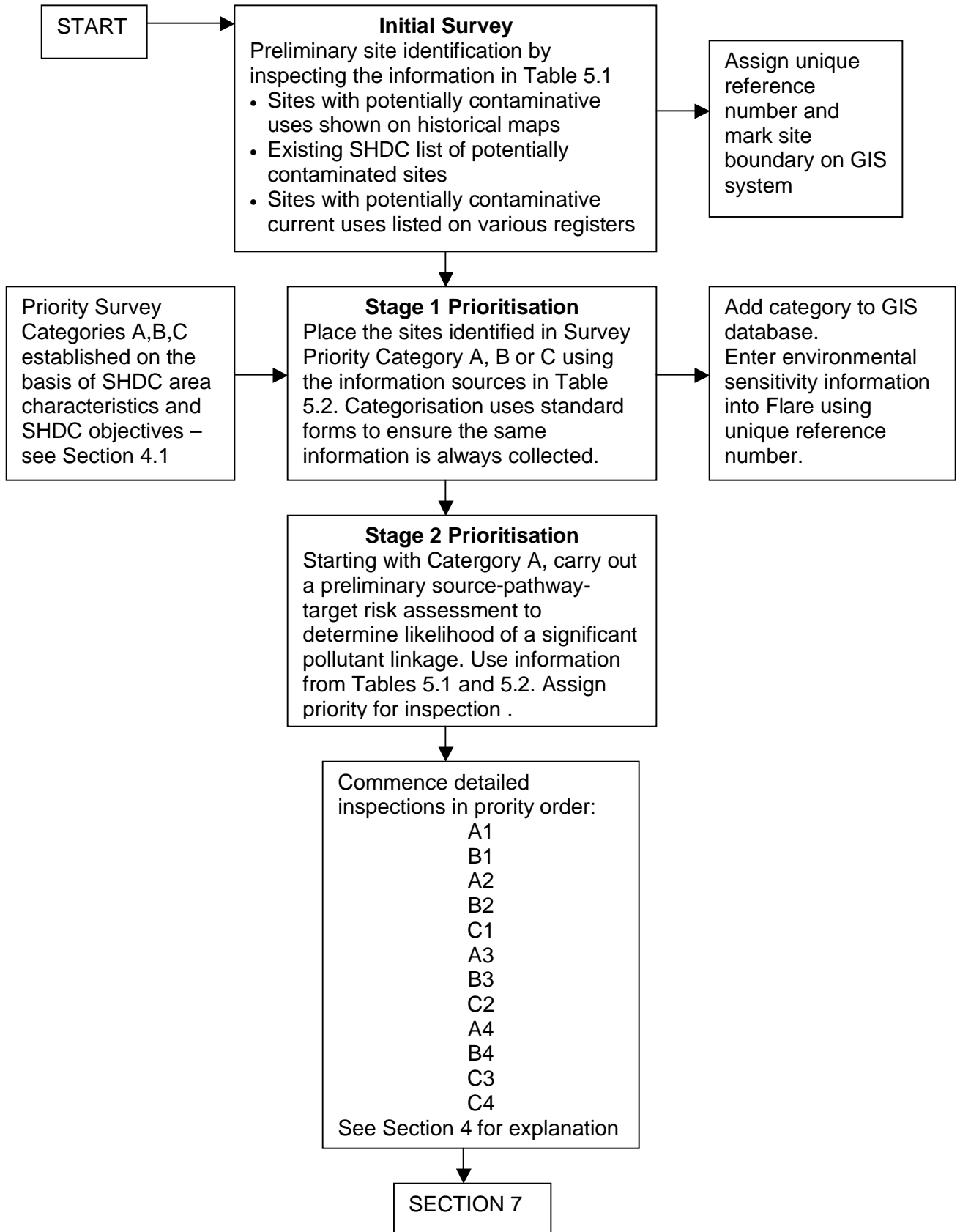
#### **5.4 Methodology for Initial Survey and Prioritisation**

SHDC will develop written procedures that will be followed to ensure that the process for identifying contaminated land is systematic and consistent. The procedures are designed to ensure that the most serious cases are identified and dealt with at an early stage, and that resources are allocated preferentially to investigating where significant harm and pollution of controlled waters is most likely to occur.

The methodology also intrinsically incorporates SHDC's priorities, as set out in Section 4.1, by means of a priority classification system. The priority categories are defined closely (see Section 4.1 for definitions) to ensure that the prioritisation process is clear, transparent and reproducible.

The flow chart below summarises the procedure that will be used to carry out an initial survey of SHDC's entire area and prioritise the sites that are identified for detailed inspection. The detailed inspection process is explained in Section 7. The initial survey and prioritisation outlined here is an entirely desk based procedure, utilising information that the authority will collect from the sources listed in Tables 5.1 and 5.2. Visits to the site and taking samples are part of the detailed inspection process in Section 7, and these would commence soon after the site had been prioritised for detailed inspection. This is considered to be the most rapid and efficient means of ensuring that serious problems are identified quickly.

**Flow chart showing method for initial survey and prioritisation**



To ensure that information collected on a site, and the reasoning for decisions made, is well organised and easily retrieved, it will be entered into a computer database (Access, Flare). Each site will be assigned a unique reference number. This number will also identify the site on SHDC's GIS system. Further details of the information management system are given in Section 9.

## **5.5 Information Evaluation**

In this section the methods for evaluating information are briefly explained. The subheadings refer to the stages shown in the flow chart above in Section 5.4.

### ***Initial Survey of the area***

The purpose of the initial survey is to create a list of potentially contaminated sites within SHDC's area. In general, this will be based on evidence that the site is being, or has been, used for an activity that may have caused contamination (a potentially contaminative use).

SHDC will first collect records of land either known or suspected to be contaminated from within SHDC and from the Environment Agency. In some cases there may already be evidence of actual harm or pollution of controlled waters. If information already exists that is sufficient to determine that the site should be in Category A, Inspection Priority 1 (i.e. likely to be in need of urgent attention), then this priority will be assigned directly, without waiting for the whole initial survey to be completed. Otherwise, these sites will be placed on the list of potentially contaminated sites.

Next, historical maps will be reviewed and areas that may have had potentially contaminative uses identified and added to the list.

SHDC will also review records of land in SHDC's ownership or occupation. Where the records indicate that SHDC land may have had a potentially contaminative use, the land will be added to the list.

Both SHDC and the Environment Agency hold information including registers on sites where potentially contaminative activities are currently carried out. These exist as result of other environmental legislation. SHDC will review these registers and add sites to the list of potentially contaminated sites as appropriate. Examples of registers which may contain details of potentially contaminative uses are Integrated Pollution Control sites, sites with waste management licences, registered scrapyards and registered petrol storage sites. In accordance with the LGA/EA Memorandum of Understanding information will be transferred between the two regulatory bodies.

Some sites may be identified by more than one of the above searches. Site boundaries will be entered onto a GIS system and a unique identification number will be assigned to each site. This will ensure that all information relating to the same site is logged under the same reference number.

### ***Sites where remediation has already been carried out***

SHDC and the Environment Agency hold records of sites that have already been remediated. SHDC will collect and examine these as part of the initial survey. SHDC will place all these sites on the list of potentially contaminated sites for prioritisation. They will be evaluated in the same way as the other sites, and the remedial action taken into account when prioritising the detailed inspection.

### ***Stage 1 Prioritisation***

Stage 1 prioritisation is based on environmental sensitivity. Those sites placed in Category A are therefore those where receptors are considered most sensitive, or where receptors are closest. The definitions of the Stage 1 categories are fully explained in Section 4.1 (see Table 4.1).

Once the list of potentially contaminated sites has been completed by examining the information described above (listed in Table 5.1); each site will be assigned a Stage 1 Survey Priority category. The Stage 1 prioritisation is carried out by recording specific factual information, for example the distance of the nearest housing from the site boundary. As with the initial survey, this process is entirely desk based, and utilises the information in Table 5.2. Each site is categorised by its most sensitive receptor.

SHDC will carry out Stage 1 prioritisation on the entire list of sites before beginning Stage 2.

### ***Stage 2 Prioritisation***

In Stage 2 Prioritisation, all the available information is considered. A preliminary source-pathway-receptor analysis and risk assessment is carried out to determine whether a significant pollutant linkage is likely to be present. The assessor considers the likely severity of contamination, the sensitivity of the receptors and the probability of the existence of a pathway.

The site is placed in one of four inspection priority categories, based on the result of the preliminary risk assessment. The inspection priorities are explained in Section 4 (see Table 4.2), and they determine how quickly the site will be subjected to a detailed inspection. The procedures for detailed inspection are given in Section 7.

## **5.6 Ongoing Identification of Potentially Contaminated Sites**

The work of identifying and prioritising sites that may be contaminated will continue after the initial survey and prioritisation work is complete. New information provided by the statutory bodies involved, the planning process and by the general public, businesses and other organisations may identify new sites or affect the prioritisation of sites that have already been identified.

Section 6 explains how SHDC will obtain and respond to new information and complaints. Section 8 details how new information will trigger reviews of the survey, prioritisation and inspection process.

## SECTION 6

### GENERAL LIAISON AND COMMUNICATION STRATEGIES

In this section we identify the organisations that SHDC has regular contact with in carrying out its contaminated land duties, and detail the arrangements for transfer of information. We also explain how external organisations and the public can contact SHDC to ask for, or offer, information about contaminated land.

#### 6.1 Internal Liaison and Communication

There are links between the regulatory role of SHDC in inspection of contaminated land and other regulatory regimes such as planning and development control. SHDC will in the course of its duties therefore liaise with and communicate information between the inspection team (see Section 5.1) and other departments.

The Planning Department consult the Environmental Protection IBU when a planning application is received for any site where there has been a previous industrial or commercial use. They will provide the CLO with any information regarding contamination that may be submitted by an applicant as part of the planning application. An information sheet giving details of the basic requirements needed for carrying out a contaminated land assessment has been prepared and is available. The GIS system will contain information on previous land uses (see section 9.4).

#### 6.2 Contact Mechanisms for Other Statutory Bodies:

SHDC needs to consult other statutory bodies from time to time during the course of the detailed inspection process for its area of responsibility. These bodies may be able to supply specialist advice and information about sites, or they may have a prior interest. SHDC will contact the following priority list of statutory bodies as appropriate with respect to sites which may be contaminated land. For example, the Environment Agency will be consulted when the site may be causing water pollution, and English Nature will be consulted if harm to designated areas of ecological importance is suspected.

- Environment Agency
- Lincolnshire County Council
- Boston Borough Council
- North Kesteven District Council
- South Kesteven District Council
- Fenland District Council
- Peterborough City Council
- Borough of Kings Lynn and West Norfolk
- English Heritage
- English Nature
- Regional Development Agency
- Department of Food and Rural Affairs (DEFRA)
- The Health and Safety Executive (HSE)
- The Food Standards Agency

Contact details for these organisations are presented overleaf.

## **6.2.1 County Councils**

**Lincolnshire** - Written correspondence addressed to:

For new landfill sites and post 1946 mineral workings:

Head of Planning & Conservation  
Highways & Planning Directorate  
Lincolnshire County Council  
City Hall  
Beaumont Fee  
Lincoln  
LN1 1DN

Tel: 01522 552222  
Fax: 01522 552288

For general County Council sites:

Property Division  
Hyder Business Services  
Block A  
Orchard House  
Orchard Street  
Lincoln  
LN1 1ZA

## **6.2.2 Neighbouring Local Authorities**

Environmental Services Manager  
Boston Borough Council  
Municipal Buildings  
West Street  
Boston PE21 8QR

Tel: 01205 314200

The Directorate of Planning and Environmental Services  
North Kesteven District Council  
PO Box 3  
District Council Offices  
Kesteven Road  
Sleaford  
NG34 7EF

Tel: 01529 414155

South Kesteven District Council  
Council Offices  
St Peters Hill  
Grantham  
NG31 6PZ

Tel: 01476 406300

Head of Environmental Services  
Fenland District Council  
Fenland Hall  
County Road  
March  
PE15 8NQ

Tel: 01354 654321

Peterborough City Council  
Environmental Services  
Bridge House  
Town Bridge  
Peterborough  
PE1 1HU

Tel: 01733 563141

Borough of Kings Lynn and West Norfolk  
Kings Court  
Chapel Street  
Kings Lynn  
Norfolk PE30 1EX

Tel: 01533 692722

### **6.2.3 English Heritage:**

**East Midlands Region** - Written correspondence to be addressed to:

Glyn Coppack  
Ancient Monuments Inspector  
East Midlands Region  
44 Deringate  
Northampton  
NM1 1UH

Tel: 01604 735400

### **6.2.4 English Nature:**

#### **East Midlands Team**

Lincolnshire - written correspondence to be addressed to Rebecca Tibbetts,  
Conservation Officer.

East Midlands Team  
The Maltings  
Wharf Road  
Grantham  
NG31 6BH

Tel: 01476 568431  
Fax: 01476 570927

## 6.2.5 Regional Development Agency

**East Midlands Development Agency** - Written correspondence to be addressed to

Neil Burgin:  
Apex Court  
City Link  
Nottingham  
NG2 4LA

Tel: 0115 988 8300  
Fax: 0115 853 3666

## 6.2.6 Environment Agency

**Anglian Region** - Written correspondence to be addressed to

Area Contaminated Land Officer  
The Environment Agency  
Waterside House  
Waterside North  
Lincoln  
LN2 5HA

Tel: 01522 513100  
Fax: 01522 785989

Contact with the Environment Agency will take place on the following:-

- To seek site specific guidance at the detailed inspection stage
- When a site is, or likely to be a Special Site
- When a site is designated "contaminated land"
- To provide summary information on contaminated land

From time to time the EA has to prepare and publish a report on the state of contaminated land in England. The purpose of this report is to assess the scale and significance of the problem and the effectiveness of the measures put into place to address it. To enable the EA to do this SHDC has to supply data. Details of the information that the EA expects to receive from SHDC are presented in a Procedural Note which is available free of charge from the EA website: [www.environment-agency.gov.uk/gwcl](http://www.environment-agency.gov.uk/gwcl)

The EA has 3 standard forms for submission of information to it from Local Authorities:

- SOCOL/LA/FORM1 –information about a site when the Local Authority determines it as contaminated land (to be submitted with the written notice of determination)
- SOCOL/LA/FORM2 –information about the remediation process, when a remediation notice, statement or declaration notice is published.
- SOCOL/LA/FORM3 -information about the level of regulatory activity, every April/May summarising the previous financial year.

### **6.2.7 Department of the Environment, Food & Rural Affairs**

Written correspondence to be addressed to:

Mr K Johnston  
The Department of the Environment, Food & Rural Affairs  
East Midlands Regional Service Centre  
Government Buildings  
Block 7  
Chalfont Drive  
Nottingham  
NG8 3SN

Tel: 0115 929 1191  
Fax: 0115 929 4886

### **6.2.8 Health & Safety Executive**

**Midlands Region** (Covering Derbyshire, Leicestershire, Lincolnshire, Northamptonshire, Nottinghamshire, Oxfordshire, Warwickshire and West Midlands)

Written correspondence to be addressed to:

1st Floor  
The Pearson Building  
55 Upper Parliament Street  
Nottingham  
NG1 6AU

Tel: 0115 971 2800  
Fax: 0115 971 2802

### **6.2.9 The Food Standards Agency**

#### **Contaminants Division**

Written correspondence to Dr Patrick Miller  
Food Standards Agency  
Room 238 Ergon House  
17 Smith Square  
PO Box 31037  
London  
SW1P 3WG

Tel: 0207 238 5751

## **6.3 Contact Mechanisms for Owners, Occupiers and Other Interested Bodies**

### **Owners/occupiers**

SHDC will normally contact site owners and occupiers when a detailed inspection is required, to make arrangements for a site visit (see Section 7). SHDC will also request site owners and occupiers to provide any information regarding the site that is relevant to contamination.

Landowners and businesses can contact SHDC for information about contaminated land at any time. Contact details are given below in Section 6.4.

## **Other interested bodies**

The following list of local organisations/groups within the community may also need to be contacted for information about sites and/or to be advised on the possible presence of sensitive sites and contaminated land. This is not an exhaustive list and will change having regards to particular sites.

Ward Councillors  
Parish Councils  
Wildlife Trust  
Archaeological/Historical Society  
Geological Society/British Geological Survey  
Developers

Organisations who wish to contact SHDC about contaminated land should use the CLO contact given below.

## **6.4 Contact Mechanisms for the Wider Community**

### **Contacting SHDC about contaminated land**

SHDC's responsibility for contaminated land includes responding to information and complaints from the general public, and providing information in response to enquiries. You may wish to:

- Tell us about contaminated land or water pollution
- Complain about the condition of land
- Find out about contaminated land in your area
- Find out more about contaminated land in general
- Complain about our performance in dealing with contaminated land

General enquiries about contaminated land can be made to the Environmental Protection Team during normal office hours where subject to availability you will be dealt with by the Contaminated Land Officer whose contact details are:-

South Holland District Council  
Contaminated Land Officer  
Environmental Protection  
Environmental Health Department  
Council Offices  
Priory Road  
Spalding  
PE11 2XE

Tel: 01775 761161 Ext 4659  
Fax 01775 711054  
e- mail [rkrahmer@sholland.gov.uk](mailto:rkrahmer@sholland.gov.uk)

All complaints about our performance should be made in writing.

## Accessing the Public Register and other documentary information on contaminated land

Some information about contaminated land is kept in the public register, which is kept within the Environmental Protection IBU. The contents of the register are defined in law. This is explained in Section 9.2. Section 9.8 explains how you can view the public register. SHDC also keeps information about land that is not on the public register – for example the information generated during the survey, prioritisation and inspection functions explained in Section 5 and Section 7. Except where the information is confidential, anyone may apply to view records that they are interested in. Section 9.9 gives the details of how to request information that you are interested in.

Local land search information is available subject to the appropriate fees from the Housing and Planning Department (see section 9.10) during normal office hours:-

South Holland District Council  
Planning Department  
Council Offices  
Priory Road  
Spalding  
PE11 2XE

Tel: 01775 761161  
Fax 01775 710772  
e-mail [rwenman@sholland.gov.uk](mailto:rwenman@sholland.gov.uk)

### 6.5 Risk Communication

The complex nature of contaminated land issues does not lend itself to easy explanation to the layperson. Development of effective methods of risk communication is therefore essential. The Council will treat any concerns raised by anyone seriously and with respect, recognising the importance of the issue to the individual.

However these regulations grant only limited powers to local authorities to deal with materials in or under the ground. Many people do believe that any material that is not naturally present in the ground should be removed, especially if it is within the vicinity of their home. It will be critical to explain this can only be done where there is **a risk of significant harm** and it is to be expected that some members of the public will have difficulty accepting this.

## SECTION 7

### PROGRAMME FOR DETAILED INSPECTION

The survey of SHDC's area will result in a prioritised list of sites that require detailed inspection to determine whether they are contaminated land. Section 5 explains how SHDC will generate the prioritised list of sites in a systematic and efficient manner. This section explains how SHDC will carry out the detailed inspections.

#### 7.1 Ensuring Compliance with Statutory Guidance on Inspection

SHDC is obliged to demonstrate that the arrangements for detailed inspection comply with the statutory guidance relating to inspecting particular areas of land. The guidance is summarised below. The remainder of Section 7 explains in more detail how SHDC will carry out detailed inspections in compliance with the statutory guidance.

- i) The detailed inspection should provide sufficient information or evidence to indicate the actual presence of a pollutant.
- ii) The detailed inspection may include the following actions:
  - a) collation and assessment of documentary information, or other information from other bodies (see Section 5);
  - b) A site visit to carry out a visual inspection and, in some cases, limited surface sampling;
  - c) An intrusive investigation of the land (e.g. trial pits, boreholes).
- iii) SHDC has the statutory power to enter a site/area in order to carry out inspection and take samples.
- iv) Before exercising its powers of entry to a site, SHDC should be satisfied on the basis of information already obtained that:
  - a) There is a reasonable possibility of the presence of a contaminant, a receptor and a linkage;
  - b) Where intrusive investigation is deemed necessary, that it is likely that the contaminant is actually present and given the current use of the land that the receptor is actually or likely to be present.
- v) SHDC should not use its power of entry to carry out any intrusive investigation if:
  - a) Detailed information\* on the condition of the land has been provided by the Environment Agency, or some other person;
  - b) A person offers to provide such information\* within a reasonable and specified time and subsequently provides the information within the agreed time period.

\*provided that the information is reliable and adequate

- vi) SHDC should ensure that any intrusive investigations are carried out in accordance with the appropriate technical standards.
- vii) SHDC should ensure that it takes all reasonable precautions to avoid harm, water pollution or damage to natural resources, or features of historical or archaeological interest, whilst carrying out an intrusive investigation.
- viii) SHDC shall consult English Nature on any action that would require the consent of English Nature, prior to carrying out intrusive investigations on any area notified as a Site of Special Scientific Interest.
- ix) SHDC should not carry out any further detailed inspection if, on the basis of information supplied from an inspection, there is no longer a reasonable possibility of a pollutant linkage.

## **7.2 Criteria for Selecting Areas and Individual Sites**

All sites which SHDC considers may be contaminated land will have a priority category (e.g. A1, B2) assigned to them before detailed inspection commences. The order in which detailed inspection will be carried out is given in Section 5.4 (flow chart), and the reasons for the order given are explained in Section 4.1. There will normally be more than one site in each priority category, and it is therefore necessary to decide which site is the most important. Before beginning detailed inspections on a group of sites in a priority category, SHDC's inspector will review the information available for all the sites in the category and decide upon the order in which these will be inspected. Criteria for this decision will be based on SHDC's priorities as outlined in Section 4 to ensure that the most important/serious sites are inspected first.

There are some other issues that may influence the order in which sites are dealt with:

- SHDC may progress several detailed inspections simultaneously, and the time taken to obtain information may vary between sites
- If information is obtained indicating the possible existence of a site with a higher priority category than those being progressed at the time, SHDC will divert resources to investigating the potentially more serious problem

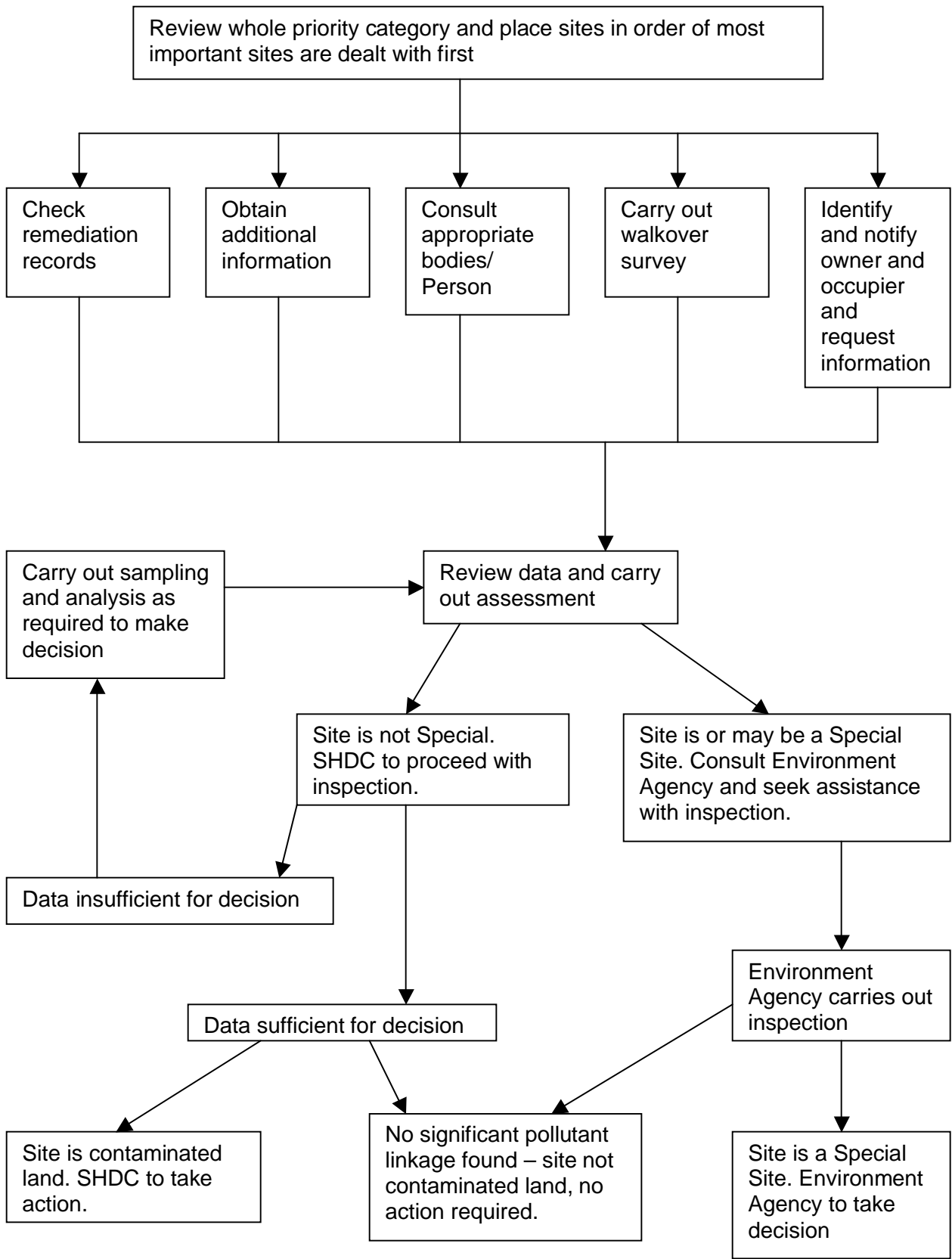
## **7.3 Methodology and Procedures for Detailed Inspection**

The purpose of the detailed inspection is to obtain sufficient information for SHDC to establish

- i) if the land appears to be contaminated land
- ii) if the land is a Special Site

SHDC has established procedures for carrying out detailed inspections to obtain information sufficient to decide whether the site is contaminated land or a Special Site, and to comply with the statutory guidance outlined above. The methodology for detailed inspection is summarised in the flow chart below.

## Flow Chart for Detailed Inspection



### ***Review priority category***

Before commencing detailed inspections on a priority category (e.g. category “A1”, as described in Section 4) the inspector will review the information for each site in the category and decide the relative urgency of each case in terms of the likelihood that significant harm or water pollution is occurring. This will ensure that the potentially most serious sites are dealt with first. This review will take place only at the start of the inspection process on each category. Similar reviews of progress and relative urgency of cases will be undertaken at regular intervals as part of reviewing the strategy. Further details of review procedures are given in Section 8.

### ***Check remediation records***

The first step in the detailed inspection is to check whether the site has recently been remediated. SHDC keeps records of site remediation, which are kept up to date through the planning process. If the site has been remediated, the likelihood of significant harm or water pollution may well have been reduced. If this is the case, SHDC will amend the priority category to reflect the new situation. SHDC will not automatically assume that remediation has been effective in preventing a significant pollutant linkage, and will seek information to demonstrate that this is so.

### ***Obtain additional information***

The initial survey and prioritisation process will have provided information that is adequate to determine the likely presence and significance of contamination in most cases. All sites are different, however, and where appropriate SHDC will carry out further research to clarify the possible sources, pathways and receptors. Examples of further research at this stage would be to request additional large scale historical maps from the Bodleian Library in Oxford; to look at aerial photographs held by the County Library and to make site specific enquiries to relevant statutory bodies and other organisations. SHDC will make reference to published guidance in seeking further documentary information [8].

### ***Consult appropriate bodies***

SHDC will consult both within SHDC and externally to seek further details and advice on a site specific basis. The list of consultees will depend on the nature of the possible significant pollutant linkage. For example, English Nature would be consulted if there was a risk of significant harm to an ecologically important area. English Heritage will be consulted in respect of Scheduled Ancient Monuments and where remediation is deemed appropriate consultation with the County Archaeologist will take place. The Environment Agency will be consulted in most cases. SHDC has already established links with the organisations that may need to be consulted; these are given in Section 6.

### ***Carry out walkover survey***

SHDC will visit sites during detailed inspection to confirm the current site use and condition and to look for any evidence of contamination. A standard proforma will be used to ensure that the same information is sought on each site. Walkover surveys will be carried out in accordance with published guidance on best practice [9].

SHDC has statutory powers to enter sites to inspect them, but will normally inspect sites by agreement with the site owner and/or occupier. Prior to carrying out the walkover survey, SHDC will review the information currently held for the site to ensure that there still appears to be a reasonable possibility of the presence of a contaminant, a pathway and a receptor.

### ***Identify and notify owner and occupier***

SHDC will make contact with site owners and occupiers at the detailed inspection stage. The principal purposes of this first contact will be to inform them that SHDC are inspecting the site for contamination problems, and to request any information (e.g. site investigation data) that already exists.

### ***Review data and carry out risk assessment***

Information from the above activities will be reviewed and used to produce an updated source-pathway-receptor risk assessment. The risk assessment will indicate whether significant harm or water pollution is likely, in a similar manner to the prioritisation procedure in Section 5. Because there is now more information, the results of the risk assessment will be more reliable.

### ***Data sufficient for decision***

It is possible that there will be sufficient information to determine that the site appears to be contaminated land or a Special Site without the need for SHDC to carry out a sampling and analysis. In this case the information must always include evidence that contamination is certainly present on the site.

The risk assessment may show that there is no significant pollutant linkage; for example the landowner may have carried out a site investigation and found no contamination to be present. In these cases, no action will be necessary and SHDC will not pursue the inspection any further. Details of such sites will remain on SHDC's database, since changes such as new development on a site can create new pollutant linkages. Triggers for a site inspection to be reviewed are detailed in Section 8.

### ***Carry out sampling and analysis***

Where the risk assessment shows that there is a reasonable possibility of a significant pollutant linkage, SHDC will seek evidence that contamination is actually present on the site. This generally requires taking samples and analysing them for the contaminants that may be present.

The scope of the sampling and analysis required depends on the site. In all cases SHDC will seek only the information that is required to decide whether the site is contaminated land or a Special Site. In deciding what kind of site investigation is needed, SHDC will make reference to appropriate published guidance [10, 11].

In some cases the landowner or occupier, or other party (e.g. an organisation that is, or expects to be the appropriate person) may offer to carry out a site investigation. In these cases, SHDC will specify minimum requirements for the investigation (for example number of samples, contaminants that must be analysed for, position and depth of

samples) to ensure that adequate information is obtained. SHDC will also agree a timescale within which the information must be provided.

Once adequate site investigation data is obtained, SHDC will repeat the risk assessment as above, and decide whether the site appears to be contaminated land or a Special Site.

#### **7.4 Potential Special Sites**

A Special Site is a site which the Local Authority considers to be contaminated land and which meets one or more of the prescribed descriptions defined in the statutory guidance [2]. Special Sites will be regulated by the Environment Agency. The category of Special Sites includes sites where the Environment Agency already has regulatory responsibility, for example Integrated Pollution Control sites, to prevent duplication of regulatory roles. Special Sites are not necessarily more contaminated or more likely to cause significant harm than contaminated land that is not a Special Site.

Examples of Special Sites are:

- Sites that could be contaminating drinking water resources
- Industrial sites likely to have difficult contamination problems, such as waste acid tar lagoons, oil refining, explosives and sites regulated under Integrated Pollution Control
- Nuclear sites
- MoD land (with some exceptions, like off-base housing)

When SHDC identifies a site that is considered likely to be a Special Site, the Environment Agency will be notified and the information on the site copied to the Agency. SHDC will retain details of the site on its computer database, and the Agency will notify SHDC of significant progress on the site's remediation.

#### **7.5 Health and Safety Procedures**

SHDC will discharge its obligations under the Health & Safety at Work etc Act (1974) and will ensure that neither employees nor other third parties are put at risk from any activities associated with the implementation of the Councils statutory obligations under the contaminated land regime.

#### **7.6 Appointing Consultants**

SHDC may, from time to time, need to appoint external consultants to assist in a number of areas to fulfil its statutory duties, for example:

- Advise on particular technical issues;
- Undertake some or all of the detailed site inspections

- Prepare and undertake detailed technical presentations to the general public or to other bodies.

The appointment of consultants will be in accordance with the delegated functions or otherwise of the Council.

### **7.7 Timetable for Detailed Inspections**

It is the aim of SHDC to complete each detailed inspection as soon as is reasonably possible but clearly this will depend upon the complexity or otherwise of each individual site. Prioritised sites will be determined in accordance with the priority categorisation procedure outlined in section 4.

Planning application sites will be initially assessed as part of the planning process and thereafter prioritised and actioned as appropriate (section 4)  
Detailed inspections of priority A1 sites are scheduled to be commenced within 12 months from the date of the strategy publication (section 3).

The CLO will review any site that is actively being investigated with the Environmental Protection Manager at least every month.

***Target Date:** CLO to review sites being investigated every month*

### **7.8 Frequency of Inspection**

SHDC will undertake a programme of site inspections as detailed on Section 7.2 above and proposes to review inspections of sites on the basis of the trigger mechanisms identified in Section 8 of this strategy document. The most common trigger is likely to be receipt of planning applications by SHDC.

### **7.9 Format of Information Resulting from Inspection**

The information collected during initial survey and prioritisation and during detailed inspection will be recorded on standard forms as far as possible. The data will then be entered onto GIS or stored within a paper filing system held within the Environmental Protection Team (see section 9.4) Other source information may be referenced within these two databases but held in filing systems in other departments of the Council.

## SECTION 8

### REVIEW MECHANISMS

In this section, we tell you how we will review the work we are carrying out for this strategy including the factors that will influence when such review takes place.

#### 8.1 Reviewing Inspections and Responding to New Information

The process for identifying potentially contaminated land is an ongoing activity. Further information may come to light at any stage in the procedure, and SHDC will take into account information obtained from or volunteered by the public, site owners, businesses and voluntary organisations. New and updated information will also often be provided as a result of SHDC's regular exchanges of information between departments (particularly between Environmental Health and Planning) and with the Environment Agency and other statutory bodies (see Section 6 for details).

Sections 5 and 7 explain how SHDC will identify potentially contaminated land and carry out inspections to determine which sites are contaminated land. SHDC makes decisions about contaminated land on the basis of information available at the time. The decision relates to 'current use' [2] which means any use which is currently being made, or is likely to be made and which is consistent with any existing planning permission. 'Current use' includes:

- Temporary uses permitted under planning legislation
- Future uses or developments which do not require a new or amended grant of planning permission
- Likely informal recreational use of land (authorised and unauthorised) e.g. children playing on the land

When considering a future use which qualifies as a 'current use' SHDC assumes that this proceeds in accordance with any existing planning permission, including any conditions relating to cleaning up or preventing contamination.

For agricultural uses, 'current agricultural use' [2] does not extend beyond growing or rearing of crops or animals which are habitually grown or reared on the land.

When further information is obtained for a site, SHDC will check the database to determine whether the site concerned has already been assessed. If so, the site priority will be reviewed in the light of the new information. If the site has not previously been identified, SHDC will follow the procedure outlined in Section 5.4, including the new information, to determine its priority category.

If the site has already been subject to detailed inspection, SHDC will review the inspection and the decisions made in the light of the new information.

Examples of information that will result in SHDC carrying out reviews of site prioritisation and inspection decisions are as follows:

- Proposed changes in the use of surrounding/adjacent land (planning applications, Local and Lincolnshire Structure Plan reviews)
- Planning applications
- Unplanned changes in the land use (persistent unauthorised use of land by children, travellers, fly-tipping)
- Unplanned events where consequences cannot be addressed through other relevant environmental legislation (localised flooding, landslides, accidents, fires, spillages)
- Reports from statutory bodies of localised health effects that appear to relate to a particular area of land
- Reports from statutory bodies of adverse ecological effects that appear to relate to a particular area of land
- Reports from statutory bodies of adverse water quality effects that appear to relate to a particular area of land
- Verifiable reports of unusual or abnormal site conditions received from members of the public, business, voluntary organisations (wildlife trusts, conservation groups, environmental pressure groups, etc)
- Updates of information provided by the Environment Agency e.g. changes to receptors such as Source Protection Zones, abstraction licence applications
- Updates of information provided by English Nature e.g. new SSSI's or other designated protected areas

## **8.2 Review of the Inspection Strategy**

SHDC routinely carries out a review of its inspection strategy to ensure that:

- The inspection strategy is fulfilling SHDC's obligations under [1]
- The inspection strategy is appropriate to the needs of SHDC
- The inspection strategy and its procedures incorporate and develop in line with practical experience and new information gained during its operation.
- Inspection procedures represent efficient use of resources

This review will take place on an annual basis (see section 3.2). This strategy document is reviewed and amended where necessary as part of the above annual review process.

### **8.3 Auditing Procedures**

There is a need for SHDC to demonstrate that it is fulfilling its obligations with respect to contaminated land inspection, maintenance of a register and reporting under [1].

To ensure that the system is operating efficiently and properly, **an auditor** will be appointed by SHDC to audit the data systems.

The initial audit will be undertaken within the second year of implementation.

## SECTION 9

### INFORMATION MANAGEMENT

#### 9.1 General Principles

In the course of preparing this strategy and subsequent work, SHDC expects to obtain large amounts of information from a variety of sources that will need to be managed efficiently. Statutory Guidance states that we must tell you how we will do this. In this section of the strategy we therefore set out how we will manage the information we obtain. This includes arrangements we have made for allowing access to the information we hold.

It is the intention of SHDC to have an inspection strategy that is as transparent as possible so that reasons for the decisions made concerning contaminated land can be readily understood. SHDC will therefore manage information as set out below to achieve this aim and to comply with requirements of the statutory guidance [2].

#### 9.2 The Public Register

SHDC is obliged to maintain a public register of specific information about contaminated land in its area of responsibility. Details of what must be included in the register are set out in the statutory guidance [1] [2]. Briefly, these details are:

##### Remediation Notices

• Details of the remediation notice:

1. Who SHDC has served a notice on
2. Where the contaminated land the notice refers to is
3. Why the land is contaminated land, what the contamination is and where it came from (if not from the land in question)
4. What the contaminated land is currently used for
5. Details of what remediation each appropriate person has to do and when this has to be done by
6. The date of the notice

##### Appeals Against Remediation Notices

- Details of any appeal against a remediation notice served by SHDC and any decision on such an appeal.

##### Remediation Declarations

- Any remediation declaration prepared and published by SHDC and for any such declaration, details of items 2-5 as detailed in 'Remediation Notices' above.

### Remediation Statements

- Any remediation statement prepared and published by the responsible person or by SHDC and for any remediation statement, details of items 2-5 as detailed in 'Remediation Notices' above.

### Appeals Against Charging Notices

- Any appeal against a charging notice served by SHDC and any decision on such an appeal.

### Designation of Special Sites

- Details of any land in SHDCs area of responsibility designated as a special site by SHDC or the Secretary of State and the reasons for this.
- Any notice given by the Environment Agency (EA) of its decision to adopt a remediation notice (The EA being the enforcing authority for special sites).
- Any notice given by or to SHDC/EA terminating the designation of any land as a special site

### Notification of Claimed Remediation

- Any notification given to SHDC of remediation claimed to have taken place  
Convictions for Offences in relation to a Remediation Notice
- Any conviction of a person for any offence in relation to a remediation notice served by SHDC, including the name of the offender, the date of conviction, the penalty imposed and the name of the Court.

### Guidance issued to SHDC by the Appropriate Agency

- Details of any guidance issued to SHDC for a particular site (by the Environment Agency in most cases)

### Other Environmental Controls

- Where SHDC cannot issue a remediation notice because the powers of the appropriate agency (usually the Environment Agency) may be exercised instead:
  1. Details of items 2-5 in 'Remediation Notices' above for the contaminated land
  2. Any steps of which SHDC has knowledge, taken towards remedying any significant harm or pollution of controlled waters that would cause the land to be contaminated land

- Where the powers of the appropriate waste regulation authority or waste collection authority may be exercised instead (in relation to deposition of controlled waste which causes the land to be contaminated land) SHDC may not issue a remediation notice and may record the following details on the register:
  1. Details of items 2-5 in 'Remediation Notices' above for the contaminated land
  2. Any known steps taken to remove the waste, or reduce the consequences of its deposit, including steps taken by the EA or waste collection authority and the name of the authority.
- Where SHDC cannot specify something by way of remediation in a remediation notice because this would impede or prevent a discharge to a water body for which a discharge consent is in force:
  1. Details of the consent
  2. Details of items 2-5 in 'Remediation Notices' above for the contaminated land

### ***Arrangement of Information in the Public Register***

For ease of reference, the above information is organised so that all the entries relating to a particular site can be readily consulted in connection with each other, using SHDC's geographic information system to relate sites to their location.

SHDC adds new information to the register as soon as is reasonably possible after it has been generated. The contents of the register therefore change over time as the information in it is added to or updated.

### ***Other information***

In addition to the public register information, the statutory guidance [2] requires SHDC to prepare a written record of any determination that particular land is contaminated land. This must include information summarised below (by reference to other documentation if necessary):

- A description of the particular significant pollutant linkage, identifying all three components of source, pathway and receptor;
- A summary of the evidence upon which the determination is based;
- A summary of the relevant assessment of this evidence; and
- A summary of the way in which the SHDC considers that the requirements of the Statutory guidance [2] have been satisfied

### **9.3 Information Not on the Public Register**

SHDC will generate a great deal of information during the survey of the area for contaminated land and the detailed inspections of sites. When a site is not considered to be contaminated land, the statutory information will not be on the public register.

Unless any other information about the site is confidential, it will be available from SHDC on request. Arrangements for releasing information are given in Section 9.8 and 9.9.

Information that is not on the public register and that may be available from SHDC comprises:

- Information on particular sites e.g. (not every site will have this information)
  - Historic uses
  - Potential for the site to be contaminated
  - Environmental sensitivity
  - Priority classification
  - Results of walkover survey
  - Advice from the Environment Agency and other statutory bodies
  - Site investigation results
  - Risk assessment results
  
- Information on SHDC's area (this is summarised in Section 2)
  - Geology
  - Hydrogeology
  - Water quality
  - Industrial history
  - Land use
  - Ecology

#### **9.4 Storage Systems.**

Information is to be stored within a Geographic Information System. This system will comprise a digital map of SHDC's area of responsibility, identifying all the information held by SHDC in respect of the details set out in Section 9.2. The site attribute data will either be contained within the GIS or will reside in a separate database. Source documentation such as notices which form part of the register may also be available through other systems, such as word processing or document imaging systems, where data is accessed through or indexed by the GIS.

For particular sites, information from the public register, or an index reference to its source document, will be displayed on this system in response to direct queries by the public. All source documents are stored within a filing system located within the Environmental Health Department (EH) of SHDC. Hard copies of public register information will be printed where required. A reasonable charge is made for this service to cover SHDC costs (see Section 9.8)

In addition to the public register, information about sites not on the public register will be recorded on the GIS together with data as to the status of the entry. This layer of information will not be available to the public directly, but may be available in response to a request for information (see section 9.9) Other relevant information about these sites will be stored within a filing system located within EH or other Departments as applicable.

## **9.5 Administration**

Public Register information will be managed by the EH Department of SHDC as identified in Section 5.1. The EH Department is responsible for collation of data, entering this onto the system and subsequent management. This includes ensuring that all confidential information is identified and managed in an appropriate manner (see also sections 9.6 and 9.7 below).

Information about sites not on the Public Register will be directly inputted onto GIS by all Departments. Hard copies of all relevant data in respect of these sites will be held within the ELS filing system and managed by them.

SHDC is also responsible for ensuring that all information is accurately recorded and up to date. This is achieved in part through links with other regulatory regimes (see section 9.6 below) and through the review process detailed in Section 8.

## **9.6 Use By Other SHDC Departments**

There are links between the regulatory role of SHDC in inspection of contaminated land and other regulatory regimes such as planning and development. Other departments of SHDC will, from time to time, therefore need access to the information obtained in this strategy for internal use. For example, when the planning department receives an application to redevelop a site, it will need to consult any information held by ELS for that site (or adjacent sites) to identify any potential issues to be addressed. These consultations are also used to keep information obtained up to date.

For internal use, other departments of SHDC will have access through the GIS and associated systems to public register information about contaminated land and to other information obtained by SHDC in the course of this work used to compile the public register. This will include access to confidential information (detailed below) as is required by SHDC to carry out its duties. Where access to confidential information takes place, SHDC will record this so that such access can be audited.

## **9.7 Confidentiality of Information**

Under certain circumstances SHDC may not or cannot place information on the public register (or release it in response to other requests). Circumstances where information is withheld are:

- Where this is in the interests of national security
- Where this is commercially confidential

Where information has been excluded from the public register for reasons of commercial confidentiality, SHDC will place a statement on the register to indicate this.

Supply of any other environmental information held by SHDC is also subject to certain exceptions. These are:

- Where this is in the interests of national security

- Where the information is an issue in any legal proceedings or enquiry
- Where the information is still being completed, or is an internal communication of a relevant person
- Where this would affect the confidentiality of the deliberations of a relevant person
- Where this is commercially confidential

The confidentiality of any information supplied to SHDC by third parties is determined when this is received. Where a third party states that information it supplies to SHDC is commercially confidential, or cannot be released for any of the other reasons given above, then SHDC asks for a justification to be provided giving the reasons for this. Information which is confirmed as confidential on the basis of a justification cannot be released to other parties. Where SHDC is unable to supply information it will give the reason for this.

### **9.8 Arrangements for Giving Access to Information**

As part of SHDC's overall IS strategy it is our future intention to provide access to the public register via a computer terminal. During the initial stages of implementation the Public Register (hard copy) is available for inspection, free of charge at the ELS Department between the hours of 9.30am and 4.30pm, Monday to Friday (except Bank Holidays).

### **9.9 Dealing With Requests for Information**

Requests for copies of information from the public register may be made in writing by fax, email or letter to the address given below. A reasonable charge is made for this service to cover SHDC costs

A request may be by means of an additional question on a land charge search, by a letter accompanying or as a follow-up to a land charge search, or as a one-off request. In all cases the same charge will apply (£17.00).

A formal land charge search will also incorporate a request for specified information (see section 9.10 below)

### **9.10 Offering information and making complaints**

Organisations and members of the public may wish to contact SHDC to offer information about contaminated land. For example you may wish to:

- Tell us about contaminated land or water pollution
- Complain about the condition of land.
- Complain about our performance in dealing with contaminated land.

All offers of information and complaints should be sent in writing to the Contaminated Land Officer in 5.1 above.

## 9.11 Guidance for potential Appropriate Persons

The term “Appropriate Person” is used in the legislation to refer to any organisation or individual who will bear responsibility for carrying out any action required by SHDC (or the Environment Agency). The definition is given in 78A (9) as:

“any person who is an appropriate person, determined in accordance with section 78F...., to bear responsibility for any thing which is done by way of remediation in any particular case.”

When contaminated land is identified, it will be determined by means of identifying one or more significant pollutant linkages. SHDC will seek to discover the organisation or individual who caused the contamination. This person is a “Class A Appropriate Person”. There may be more than one Class A Appropriate Person, and in this case they will be held liable for the costs of the remediation in proportion to the amount or severity of contamination that they have caused.

In a circumstance where no Class A Appropriate Person can be identified, liability for remedying a significant pollutant linkage will fall to the landowner or occupier. These people are referred to as “Class B Appropriate Persons”.

SHDC will seek to identify and consult with people who may be Appropriate Persons as soon as possible during the detailed inspection process. It is the intention of the legislation that Appropriate Persons will pay the costs of remediation, either by volunteering to do so or by compulsion following service of a Remediation Notice. There are a number of exemptions where Appropriate Persons may not have to pay for the works.

SHDC recommends that anyone who believes that they may be an Appropriate Person should in the first instance refer to the Environmental Protection Act Part IIA [1] and the statutory guidance DETR Circular 02/2000 [2]

## 9.12 Local Land Charge Searches

All local searches submitted during the conveyancing of property contain a question on contaminated land:

Do any of the following matters apply to the property?

(a) entry relating to the property in the register maintained under s78R (1) of the Environmental Protection Act 1990

(b) notice relating to the property served or resolved to be served under s78B (3)

(c) consultation with the owner or occupier of the property having taken place, or being resolved to take place under s78G(3) in relation to anything to be done on the property as a result of adjoining or adjacent land being contaminated land

(d) entry in the register, or notice served under s78B(3) in relation to any adjoining or adjacent land which has been identified as contaminated land because it is in such a condition that harm or pollution of controlled waters might be caused on the property.

Enquiries will be processed by referring the question to ELS, until such time as all required information is available for internal access within the GIS. Local searches may be submitted in writing or electronically, and are subject to the normal fees for the search. Copies of source documents will be made available on request at normal search-related fees (£10 per document)

Personal searches by visitors do not extend to a reply to this question, although the public register may still be inspected in the normal way.

### **9.13 Provision of Information to the Environment Agency**

SHDC has responsibilities for consulting with the Environment Agency (EA) as part of the inspection strategy. These are:

- Consult the EA on pollution of controlled waters
- Transfer responsibility for special sites to the EA
- Provide summary information on contaminated land (see 6.2.6)

## SECTION 10

### OTHER SUPPORTING INFORMATION

#### 10.1 Glossary

This glossary has been prepared to assist understanding of technical and legal terms used in this contaminated land strategy. Definitions should therefore be taken in the context of contaminated land; they are not necessarily full and all encompassing definitions appropriate to any purpose. Explanations of terms with legal meaning have been simplified and/or further explained for clarity and should not be assumed to comprise full legal definitions. These are given by the statutory guidance [2].

#### ABSTRACTION

The pumping or collection of water for drinking or other use from a well, spring, river or other water source.

#### APPROPRIATE PERSON

Any person who is found to be liable to pay for remediation under the terms of the EPA 1990 Part IIA. This is firstly the polluter. If no polluter can be identified, then the landowner may be the appropriate person.

#### AQUIFER

A body of rock or sediment that is sufficiently permeable to store and transmit water under the ground, in quantities that permit use of the water.

#### CHARGING NOTICE

A notice placing legal charge on land by an enforcing authority enabling the authority to recover reasonable remediation costs from the appropriate person (s).

#### CONTAMINATED LAND

The definition of contaminated land from the Environmental Protection Act 1990, Part IIA, Section 78A (2) is:

“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

“Controlled waters” are all natural inland and near coastal waters, including groundwater.

Therefore, all ponds, lakes, rivers, streams, estuaries and coastlines are controlled waters. Pollution of controlled waters means the addition of any “poisonous, noxious or polluting matter or any solid waste matter”.

#### DISCHARGE CONSENT

A consent, issued by the Environment Agency, allowing the discharge of waste water (e.g. run-off, or treated effluent from a factory) to a controlled water. The consent specifies the quantity and quality of waste water that may be discharged at the consented location.

#### GEOGRAPHICAL INFORMATION SYSTEM (GIS)

A computer program that enables map-related data to be stored, viewed and processed.

#### INTEGRATED POLLUTION CONTROL (IPC)

A system for regulating industrial sites in the UK, made under the Environmental Protection Act 1990. It requires industrial sites operating particular processes to obtain authorisation to operate from the Environment Agency or the Local Authority (depending on the nature and scale of the process). In general, processes regulated under Integrated Pollution Control are likely to be more polluting than those not regulated; however this covers all forms of pollution and does not necessarily mean that Integrated Pollution Control sites are likely to cause contamination of the ground. The IPC regime is currently being replaced by the Pollution Prevention and Control (PPC) regime.

#### MAJOR AQUIFER

An aquifer that provides significant drinking water resource in the UK.

#### PATHWAY

A mechanism for a receptor to be exposed to a contaminant that may harm the receptor.

#### POLLUTANT LINKAGE

A circumstance where it is possible that a contaminant (source) may contact a receptor (via a particular pathway)

#### POTENTIALLY CONTAMINATIVE USE

A development that exists, or has previously existed, on a site where the nature of the development is such that it is possible that contamination of the ground may have occurred. (*you may wish to add the list from EPA 1990 that relates to s143*)

#### PUBLIC REGISTER

The register maintained by the enforcing authority containing details of land that is contaminated land.

## RECEPTOR

- (a) A living organism (including humans) or group of organisms, and ecological system or piece of property that is being, or could be harmed by a contaminant
- (b) controlled waters which are being, or could be, polluted by a contaminant

## REMEDIATION

Remediation is an action carried out to reduce the risk of significant harm or water pollution. It entails breaking or removing significant pollutant linkages, by treating the source (contaminant); blocking the pathway or protecting or removing the receptor.

## REMEDIATION DECLARATION

A document prepared and published by the enforcing authority, detailing remediation actions that it would have specified for a given site, but is prevented from so doing by Section 78E (4) and (5). This says that the authority must only specify remediation that is reasonable, given the seriousness of the harm or water pollution, and the cost of the works that would have to be carried out.

## REMEDIATION NOTICE

A notice specifying what an appropriate person has to do by way of remediation and when he is to do each of the specified actions by. Note that the actions specified do not always consist of "remediation". "Assessment actions" and "monitoring actions" can also be specified in remediation notices.

## REMEDIATION STATEMENT

A statement prepared and published by the responsible person detailing the remediation actions that have been carried out (or are planned).

## RESPONSIBLE PERSON

The person responsible for carrying out the remediation. Not necessarily the same as the appropriate person.

## RUN-OFF

Surface water that flows across an area and into rivers, streams etc. or drains during rainfall (i.e. all the water that does not soak into the ground).

## SIGNIFICANT HARM

Significant harm includes:

Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions in humans

Irreversible adverse change or threat to endangered species, affecting an ecosystem in a protected area (e.g. site of special scientific interest)

Death, serious disease or serious physical damage to pets, livestock, game animals or fish

A substantial loss (20%) in yield or value of crops, timber or produce

Structural failure, substantial damage or substantial interference with right of occupation to any building

Further information on significant harm is given in Chapter A, Table A of Circular 02/2000 DETR (the statutory guidance)

### SIGNIFICANT POLLUTANT LINKAGE

A pollutant linkage where the amount of contaminant (source) that may be able to contact the receptor is likely to be sufficient to result in significant harm or pollution of controlled waters.

### SIGNIFICANT POSSIBILITY OF SIGNIFICANT HARM

In determining whether there is a significant possibility of significant harm, the local authority will use a risk assessment approach, considering both the severity and the likelihood of the possible harmful effect. This will involve establishing:

The nature and degree of harm predicted

The susceptibility of the receptors to which harm might be caused

The timescale within which the harm might occur

### SOURCE

A substance capable of causing harm, that is present in, on, or under the ground.

### SOURCE PROTECTION ZONE

An area around a major groundwater abstraction (drinking water source) where ground contamination may result in the contamination of the water source. Source protection zones are defined by the Environment Agency and there are restrictions on development of some kinds (e.g. landfill sites) within them.

### SPECIAL SITE

A Special Site is a contaminated land site that is regulated by the Environment Agency instead of the Local Authority. The definition of a Special Site is given in Section 78C (7) and 78D (6) of the Environmental Protection Act 1990.

Examples of Special Sites are:

- Sites that could be contaminating drinking water resources
- Industrial sites likely to have difficult contamination problems, such as waste acid tar lagoons, oil refining, explosives and sites regulated under Integrated Pollution Control
- Nuclear sites
- MoD land (with some exceptions, like off-base housing)

## STATUTORY GUIDANCE

Guidance that must be complied with by the enforcing authority. The statutory guidance for English local authorities is given in DETR Circular 02/2000.

## WALKOVER SURVEY

A preliminary survey of a site carried out by visual inspection. Normally the survey is guided by a checklist of areas or features to be inspected.

## WASTE MANAGEMENT LICENCE

Under the Waste Management Licensing Regulations 1994, all businesses involved in waste management must hold a license for each site or premises on which waste management operations are carried out. Licenses are issued and enforced by the Environment Agency.

## 10.2 References

[1] *Environmental Protection Act 1990, Part IIA*: inserted by Environment Act 1995, Section 57. See Environment Act 1995 for text of Part IIA.

[2] *Environmental Protection Act 1990, Part IIA. Contaminated Land*, DETR Circular 02/2000, Department of the Environment, Transport and the Regions, 20th March 2000

[3] *The Contaminated Land (England) Regulations 2000*, SI 2000/No 227

[4] Department of the Environment (1995) *A Guide to Risk Assessment and Risk Management for Environmental Protection*, HMSO, London

[5] Ferguson, C., Darmendrail, D., Freier, K., Jensen, B.K., Jensen, J., Kasamas, H., Urzelai, A. and Vegter, J. (editors) 1998 *Risk Assessment for Contaminated Sites in Europe*. Volume 1 *Scientific Basis*. LQM Press, Nottingham

[6] M.J. Carter Associates (1995) *Prioritisation and Categorisation Procedure for Sites which may be Contaminated* CLR Report No. 6, Department of the Environment

[7] SNIFFER (1999) *Communicating understanding of contaminated land risks* Scotland and Northern Ireland Forum for Environmental Research, SEPA, Stirling

[8] RPS Consultants Ltd (1994) *Documentary Research on Industrial Sites* CLR Report No.3, Department of the Environment

[9] Applied Environmental Research Centre Ltd (1994) *Guidance on preliminary site inspection of contaminated land* CLR Report No. 2 (2 volumes), Department of the Environment

[10] Centre for Research into the Built Environment (1994) *Sampling Strategies for Contaminated Land* CLR Report No. 4, Department of the Environment

[11] CIRIA (1995) *Remedial Treatment for Contaminated Land Volume III: Site investigation and assessment*, Special Publication 103, CIRIA

[12] Environment Agency Procedural Note 6: State of Contaminated Land Report (2000)