

Part IIA
Environmental Protection Act 1990



Contaminated Land Strategy
2007

Version 2.0

Mendip District Council
Environmental Protection June 2007

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1.0 Introduction

1.1 Overview of the strategy

The government has recently introduced legislation aimed at improving processes for the identification and remediation of land that may be contaminated as a result of previous use or naturally occurring conditions. Local authorities are designated as the regulators for this new contaminated land regime and are required to take a strategic approach to the identification and remediation of contaminated land within their district.

This strategy sets out how Mendip District Council aims to exercise this new duty for the identification and management of contaminated land within the district. Specifically it gives details on how the Council intends to inspect the land in the District in order to

- identify potential areas of 'contaminated land'
- assess the risk these may represent to human health or the environment.
- set out how the underlying policy and legal objectives of Part IIA are to be met given specific local conditions and
- how MDC has prepared and plans to implement a strategy for dealing with contaminated land.

Implementation of the strategy will result in a much clearer understanding of the extent of land contamination in Mendip and the identification of particular areas of land where it is possible that contamination is, or could cause harm to human health or the environment. Ultimately it will result in the identification of specific sites of 'contaminated land' in need of remediation.

1.2 National Policy and Regulatory Context

The Government has introduced a range of new regulatory regimes aimed at achieving its overall policy on land contamination. As well as legislation to prevent new contamination from pollution, legislation has been introduced to address the legacy of contaminated land already existing across the Country. This is contained in Part IIA of the Environmental Protection Act 1990 (EPA90) and was brought into force on 1st April 2000 by section 57 of the Environmental Protection Act 1995. ***This new regime is often referred to as Part IIA.***

The main objective of Part IIA is to improve systems for the identification and remediation of contaminated land across the Country. This legislation complements other contaminated land regulation by dealing with sites which would not otherwise come under planning and development, or pollution control legislation. Details of the interaction of Part IIA with other legislation is contained in Annex A.

The Council must act in accordance with statutory guidance issued by the Secretary of State, set out in Chapter B of Annex 3, DETR Circular 02/2000.

The Radioactive Contaminated Land (Modification of Enactments) (England) Regulations 2006 (SI 2006/1376) extend the provisions of Part 2A to include the identification and remediation of radioactive contaminated land. Identified radioactively contaminated sites

are designated as special sites and therefore become the responsibility of the Environment Agency.

1.3 The role of Mendip District Council

Principally local authorities with support of the Environment Agency (EA) will regulate the new regime. Part IIA requires Mendip District Council to:

- cause Mendip District to be inspected to identify any contaminated land
- determine whether any particular site is contaminated land (in accordance with the Part IIA definition)
- Act as the enforcing authority for all contaminated land, unless the site is defined as a 'special sites' in accordance with the legislation. (see section 1.9)

Although MDC is the regulatory authority for contaminated land in its area, the appropriate management of contaminated land will require the involvement of a range of organisations. Other functions of the Council are important for the effective management of contaminated land, in particular Planning, Building Control and Environmental Protection. These relationships are detailed later in the strategy (section 6.1).

Mendip's key role is to take a strategic approach to contaminated land management within the district and ensure appropriate management through close working relationships with other statutory bodies, organisations, individuals and internal departments.

1.4 The role of the Environment Agency

The Environment Agency in particular will play a vital supporting role in the implementation of Part IIA and Mendip's inspection strategy. In particular the Agency will: -

- Assist in the identification of contaminated land particularly where water pollution is involved
- Provide site specific guidance to local authorities on contaminated land issues
- Act as the enforcing authority for any land designated as a special site
- Publish periodic reports on contaminated land

1.4.1 Special sites

In the majority of instances where action is required for inspection and /or remediation the Council will be the regulatory body and will be responsible to ensure investigation is carried out and action taken by the 'appropriate person'. However, in a number of cases a site may be categorised as a 'SPECIAL SITE' and responsibility for enforcement action passed to the Environment Agency.

The definition of a special site is set out within section 78C(8) EPA90. These are contained within regulations 2 & 3, with schedule 1, providing the necessary descriptions. Some examples of special sites could be

- certain cases of water-pollution such as contamination effecting wholesomeness of drinking water,
- some industrial processes such as those regulated under Part I of EPA90.

- some areas of Ministry of Defence land.

Where Mendip District Council identifies a site, which it believes, falls within the definition of a 'special site', it will liaise closely with the Environment Agency and agreement will be reached between the two parties as to the classification of the site.

Where it is agreed that the site falls within the definition of a 'Special site' responsibility will be handed over to the Environment Agency. Close liaison will continue over the management of the site and all site specific information collected to date will be made available to the Environment Agency.

1.5 Defining Contaminated Land

The existence of a pollutant (Contaminant) in the ground alone does not mean that that area of land can be classified as 'Contaminated Land', and therefore fall under Part IIA.

Whether an area is defined as contaminated land will depend on a range of factors such as the types of contaminants, use of the land, and the underlying geology and hydrology. These conditions will vary on a site by site basis and the Council will need to assess the associated risks through thorough scientific and technical assessment of individual site conditions. Contaminated land is strictly defined as :-

' any land which appears 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 SIGNIFICANT POSSIBILITY of such harm being caused: or*
- (b) POLLUTION OF CONTROLLED WATERS is being, or is likely to be caused.'*

By this definition land can only be defined as contaminated, and therefore dealt with by Part IIA, where either of the above conditions (a) or (b) exist. This relies on two factors :-

1.5.1 Pollutant Linkage

In order to define land as contaminated it must, not only have contamination present in, on or under it but there must also be an exposure route for the pollutant to cause significant harm to the receiving body. This will rely on there being a **source** of pollution, a **receptor** that could be harmed by the pollutant and a **pathway** for the pollutant to reach the receptor. Where these three conditions exist this is defined as a **pollutant linkage**. This is depicted in figure 1.1.

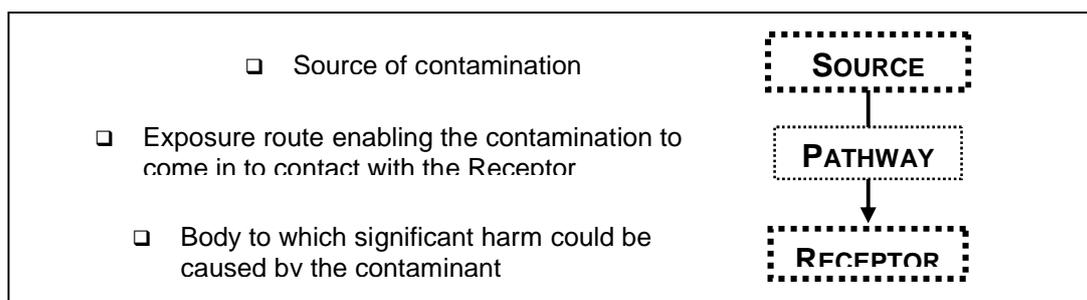


Figure 1.1 Source- Pathway - Receptor model

Without the identification of all three elements of a pollutant linkage, land will not be identified as contaminated land, under Part IIA.

1.5.2 Significant Harm

Although a pollutant linkage may exist land can only be defined as CONTAMINATED where the Council is satisfied that the pollutant linkage is either

- a. resulting in **SIGNIFICANT HARM** to the receptor or presents a **SIGNIFICANT POSSIBILITY OF SIGNIFICANT HARM** being caused to the receptor, or
- b. resulting in the **POLLUTION OF CONTROLLED WATERS** which constitute the receptor, or is likely to result in such pollution.

Statutory Guidance on the definition of contaminated land specifies significant harm, as that which is **both**:

- to a receptor listed in, table A, (Annex B to this strategy), and
- within the description of harm specified in table A, Annex B.

1.5.3 Significant possibility of significant harm

The SIGNIFICANT POSSIBILITY OF SIGNIFICANT HARM being caused is dependent on the probability or frequency of circumstances occurring which would lead to significant harm. These conditions are described in Table B (Annex B to this strategy).

1.5.4 Pollution of controlled waters

POLLUTION TO CONTROLLED WATER is defined as

‘the entry into controlled water of any poisonous, noxious or polluting matter or any solid waste matter’

1.6 Key principles for contaminated land management

Underlying the contaminated land regime are a number of key principles

1.6.1 Polluter pays principle

The apportionment of liability for contaminated land remediation, under Part IIA, is based on the polluter pays principle such that where possible those responsible for the contamination should pay for its remediation. This will require the Council to identify the appropriate person to take liability for remediation, in accordance with Statutory Guidance, Chapter D, Annex 2, DETR Circular 02/2000.

In some cases there may be a number of significant pollutant linkages associated with one site and there may be more than one ‘appropriate person’ identified for remediation.

1.6.2 Suitable for use concept

Where remediation is required under Part IIA then the suitable for use approach will be adopted. Such that land found to be contaminated should be returned to a state which does not pose unacceptable risk under its current or intended use, not for future uses.

This avoids unnecessary remediation to take account of all possible uses and aims to encourage re-development and the design and implementation of appropriate and costs effective remediation schemes. Thus avoiding the burden of unnecessary remediation costs.

1.7 Mendip District Council Policies

Mendip District Council (MDC) is committed to protecting and enhancing the social, economic and environmental well being of the District. In 1999 it defined its vision as

'The Council will take the lead in the development of the economic, social and environmental well being of Mendip. We will help build sustainable communities throughout the Mendip District, using the principles of Local Agenda 21 to do so. This means good quality of life now, but not at the expense of future generations or other communities throughout the world'

The effective management of contaminated land is essential for the development of sustainable communities by reducing the risk posed by pollution in the environment, which may cause harm to people, water resources, biodiversity or buildings. In addition the appropriate management of land contamination encourages the safe re-use of previously developed or derelict land.

In particular, this directly supports a number of the Councils 'Strategic Objectives' namely;

- ❑ To Protect human **health** and amenity through safe clean environments
- ❑ Encouraging the effective use of natural **resources** e.g. Re-using brown field sites
- ❑ Limiting **pollution** to levels at which natural systems can cope
- ❑ To protect and value the diversity of nature - **Biodiversity**
- ❑ Value and protect local **distinctiveness** inc. Built environment

The aim for 'sustainable communities' is also reflected in the Council's local plan by a range of policies. Of particular relevance are specific polices encouraging development of previously developed sites (brown field sites) and provisions for the management of land contamination through the development control process.

1.8 Development of Mendip's Inspection Strategy

Mendip District Council has been taking a proactive action on contaminated land for a number of years and was involved in the Governments contaminated land pilot project with Local Authorities in 1996, prior to the introduction of Part IIA. This aimed to develop guidance and methodologies for Local Authorities across the Country and as a result Mendip developed a preliminary draft to this strategy in March 1999, and began work on inspection of the district.

The Council established a cross-departmental project group and lead officer to ensure a co-ordinated approach across the Council, and the pooling of expertise from all departments. This team co-ordinated the completion of an initial scoping exercise to

establish local characteristics of the area and historic context for contaminated land in Mendip and to give an idea of the possible extent of contaminated land in the District.

The scoping exercise involved ;

- the identification of historic land uses in the district which may have given rise to contamination, such as the types of past industrial activities,
- the identification of current land use patterns and
- locations of sensitive receptors, such as housing, play areas, sensitive water resources, sensitive ecological areas, listed buildings and ancient monuments.

In addition more in depth studies, by local historians, were commissioned in each of the five towns to identify the actual locations of historic industrial activities.

Following completion of the scoping exercise a more detailed desk top study was undertaken to identify the locations of historic industrial activities across the district. This used historic Ordnance Survey maps, County Series (1885 to 1938), together with examination of trade directories such as Slater's, Kelly's and Thompsons Directories for 1852 to present day.

All this data has been collected in accordance with the procedures within this strategy and mapped onto the Councils Geographical Information System (GIS).

This strategy document builds on the initial draft (March 1999) and reflects current Technical Guidance from the Department of Transport and the Regions (DETR) and the current position of the Council.

A consultation draft was produced in June 2001 and sent for consultation with internal staff, Parish Councils, the Environment Agency, adjacent local authorities, County Council Scientific Services and other statutory consultees, such as DEFRA, Food Standards Agency (FSA), English Nature and English heritage. The draft version was amended to reflect the received comments and Version 1.0 of the strategy was published in October 2001.

This latest version, Version 2.0 was published in March 2007.

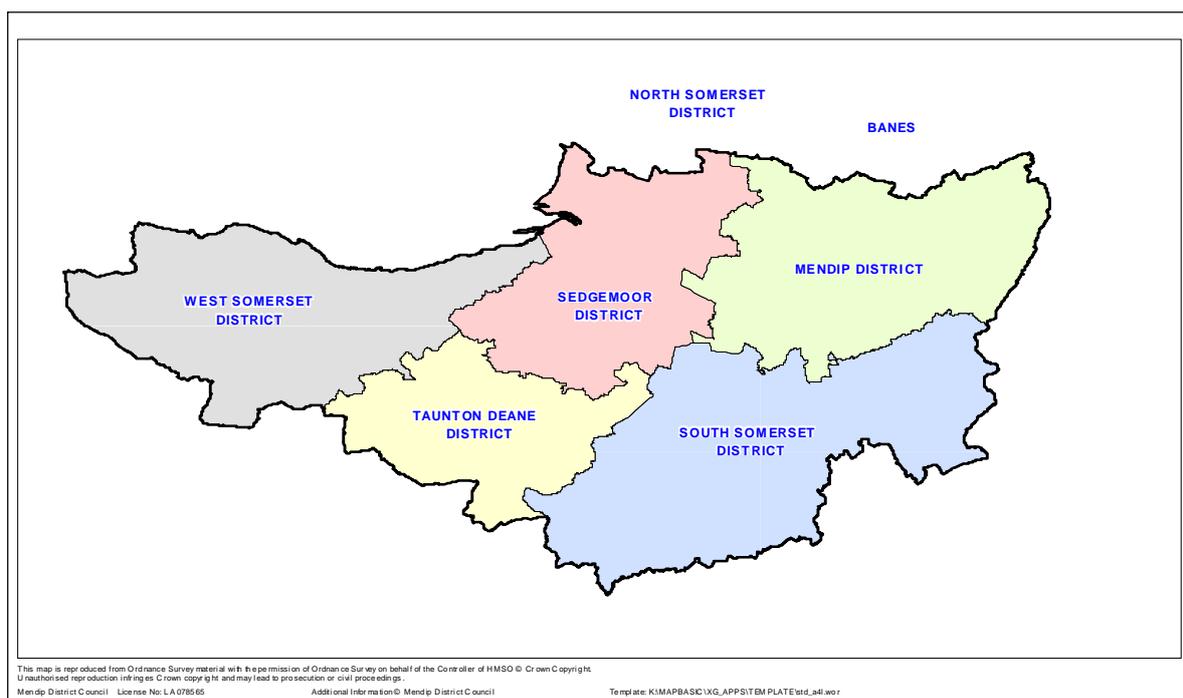
2.0 Local Issues for Land Contamination in Mendip

As noted whether land is classified as 'Contaminated' will depend on historic and current land uses, presence of sensitive receptors and geological and hydrological conditions specific to one site.

In order to identify the types and locations of historic industrial activities and the types and extent to which any receptors are likely to be found in the Mendip area. A scoping exercise was undertaken. The results of which are summarised in this Chapter. These local conditions influence how Mendip District Council intends to undertake its inspection duties.

2.1 About Mendip District

Mendip District is a predominantly rural area covering some 740 square kilometres of Northeast Somerset (See Map 2.1). The population is currently estimated to be around 105,000 with this being divided between the five principal towns of Frome, Wells, Glastonbury, Street and Shepton Mallet and rural areas. Approximately 60% of the population reside in these towns with the remaining 40% being present in rural communities.



MAP 2.1 – Location map of Mendip DC

2.2 Mendips Natural and Historic Environment

2.2.1 Geological history

The rocks of the district range in age from around 440 million years, when volcanoes erupted dust and lava onto the area to less than 3-4,000 years when sands and gravels were deposited after the last Ice Age.

Mendip's geological structure is dominated by the NW/SE trending anticline and periclinal folds of the Mendip Hills. Silurian, Devonian and Carboniferous rocks were folded during a period of major earth movements which culminated during the late Carboniferous period and affected large areas of Europe. Mineralisation of the rocks resulted in the formation of veins of lead, zinc, barytes (a white mineral) and manganese.

During the following Permian and Triassic periods most of England was covered by a hot, arid desert. The folded rock strata were further uplifted and eroded, exposing the rocks seen in the Mendip Hills today.

Seas gradually surrounded the hills which were formed by the folded rocks, creating a chain of low lying islands about 180 million years ago. The silts and sands which were deposited by these seas, now underlie much of southern Mendip. During the following Jurassic period these seas became less muddy, depositing shell rich oolitic limestones, interspersed with silts and clays.

These Jurassic rocks and the subsequent Cretaceous deposits are mainly found in the north east of the district but isolated outliers of Jurassic limestones cap the East Pennard and Ivythorn ridges and form the distinctive feature of Glastonbury Tor. In the extreme north east of the district the Cretaceous greensand escarpment forms a significant topographic feature.

At the end of the last ice age (approximately 10,000 years ago), shallow seas encroached upon the area, depositing marine clays which now underlie the Somerset Levels and Moors. As sea levels fell, the water became brackish, eventually forming swampy, freshwater lagoons. Dead vegetation, followed by sphagnum moss, accumulated in the acid, post-glacial waters forming sedge peat-glacial waters forming sedge peat and raised mires. A large proportion of these peat deposits now occur in Mendip district where they can reach over 4m in thickness.

2.2.2 Topography

The dominant topographic feature of the area is the high steep-sided plateau of the Mendip Hills which extends across the north of the district. The hills average a height of 243m, rising to 305m at Pen Hill and North Hill, with the highest point being 325m at Black Down. To the south of this plateau, between Shepton Mallet and Wells, and to the north around Coleford, the land is broken into a series of small steep ridges and hills.

South of the Mendip Hills and west of Wells lie the upper reaches of the Somerset Levels and Moors which stretch to the coast, west of Bridgwater, and rise to only 3m-6m above sea level. They form predominately flat land, broken by the low limestone ridges of the Polden Hills and Isle of Wedmore.

The third obvious topographic feature affecting the district is the Cranborne Chase escarpment in Wiltshire which rises steeply from low lying land in the extreme north east of the district. The rolling land at its foot rises gradually westwards to form the Jurassic limestone plateau north of Frome.

2.2.3 Soils

There are 16 categories of soil in Mendip which break down into a total of 34 subgroups. Some of the main soil types are podzols, brown earths and alluvial grey-soils.

Deep, stoneless fine silt over clay and fine loamy soils occurs on the Mendip plateau. On the steep slopes they usually become shallow, with exposed rock in places. Reddish loam over clay with clay subsoils or gravel occur in the valley running from Cheddar to Wells.

Soils in the Somerset Levels and Moors grade from mainly peat to stoneless clayey soils over alluvial areas. East of Glastonbury, deep well-drained silty soils occur in the West Pennard and Pylle area and in the upper reaches of the River Brue.

The other main soil type in the district is the dark brown, stoneless and silty soil which is located in the Polden Hills and in pockets of land surrounding Shepton Mallet and west of Frome.

2.2.4 Hydrology

The Carboniferous limestone of the Mendip Hills has a distinct landform, with some 2000 swallet holes and depressions formed by the chemical solution of calcium carbonate in the rocks. Rain falling onto the area sinks directly into fissures in the rocks, enlarging them through solution and collapse resulting in underground caves and water courses.

Water in the Carboniferous limestone aquifer is held in interconnected fissure and cave systems rather than in a porous rock structure. Water flows rapidly through the underground conduits and emerges at springs on the slopes of the plateau where it is collected for water supply.

Other rock strata also form aquifers in Mendip District, the Devonian sandstone of the Mendip Hills and the Jurassic oolitic limestones of the Frome area being the most important.

Groundwater flow in the Jurassic limestones also occurs mainly through fissures and solution conduits although these rocks are more porous than the Carboniferous limestones.

The national groundwater vulnerability classification map prepared by the Environment Agency shows Mendip to contain a large major aquifer area of intermediate groundwater vulnerability. In the Carboniferous limestone area the aquifer is particularly susceptible to pollution introduced directly through percolation into strata, swallet holes or cave systems. This is a Major Aquifer of high vulnerability and Much of Mendips form a major aquifer of high vulnerability and are categorised by the Environment Agency as a source protection zone (spz) zone 1.

Information held by the Environment Agency shows losses of groundwater sources to have occurred as a result of quarrying activities. A number of important springs have also diminished or dried up as a result of quarry dewatering.

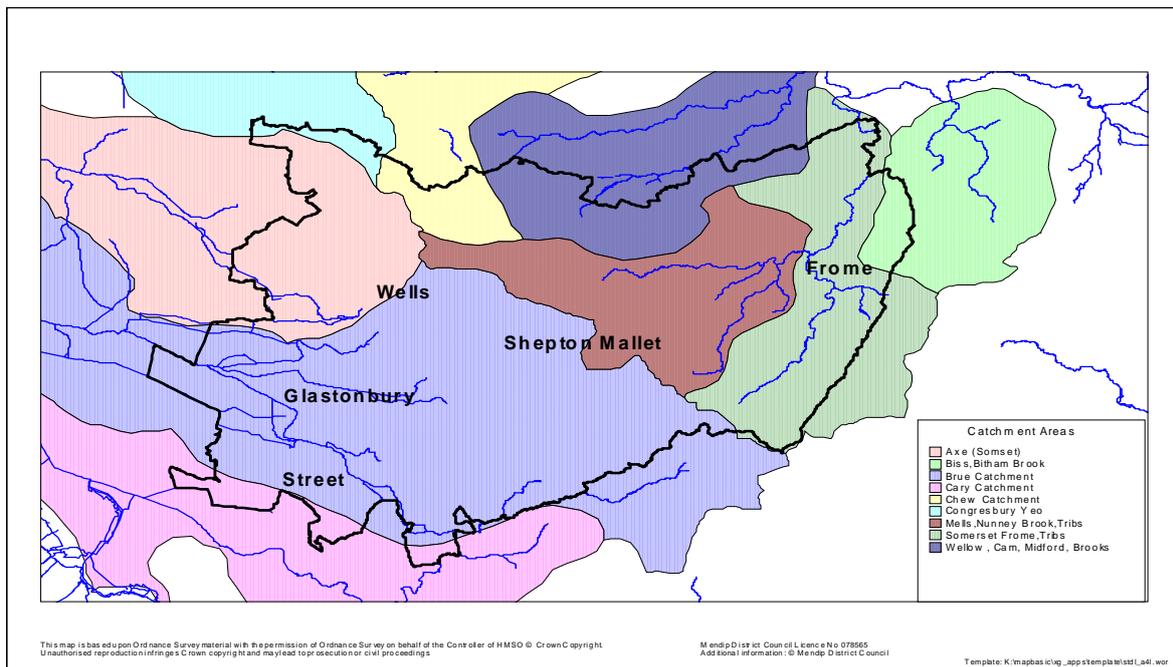
Permanent, prolonged and temporary losses of water sources have also occurred through agricultural pollution or illegal disposal of waste liquids. The Environment Agency in

conjunction with DEFRA has designated an area around Nunney (SW of Frome) as a Nitrate Sensitive Zone.

2.2.5 River Catchments

Mendip is a strategically important watershed for rivers flowing north from the Mendip Hills to Bristol and Bath, and rivers flowing south and west supplying the wetlands of the Somerset Levels and Moors. The river catchment areas are shown on Map 2.2.

Short streams drain areas in the Mendip Hills underlain by Devonian sandstone and lower limestone shale. On reaching the limestones, these systems disappear through underground swallet holes and depressions.



MAP 2.2 – River Catchments in Mendip Area

2.2.6 Presence of Natural Contamination

As a result of past mining activities elevated levels of metals such as lead and copper exist in the Mendip Hills area. In addition it is currently known that there are slightly elevated levels of arsenic within the district.

Further work is required as part of the contaminated land strategy to identify locations and expected levels of natural contamination using the references identified in Chapter 5.0 in order to assess their level of risk.

2.2.7 Ecologically Sensitive Areas

The District is rich in wildlife, supporting a high diversity of habitats and species and many sites of special wildlife value.

The Mendip Biodiversity Action Plan identifies sixteen UK Biodiversity Action Plan Priority Habitats as occurring within the District, ranging from ancient and/or species rich

hedgerows and lowland calcareous grassland to reed beds, mesotrophic standing waters and wet woodland. Over fifty of the UK Biodiversity Action Plan Priority Species have been recorded in the district.

The Mendip Biodiversity Action Plan also highlights Prime Biodiversity Areas (or biodiversity 'hotspots') within the District. These include parts of the Somerset Levels and Moors in the west of the district, the Mendip Hills and Scarp to the north west, the Mells Valley and Asham Wood in the east and the East Poldens to the south. Some of these areas, such as the Somerset Levels and Moors, include sites which are not only of local and national importance, but of international importance.

There are three candidate Special Areas of Conservation (SACs) in the district, known as 'Mells Valley', 'North Somerset and Mendip Bats' and 'Mendip Woodlands'. These, together with the Somerset Levels and Moors Special Protection Area (SPA), make up a network of sites of European importance known as Natura 2000. The Somerset Levels and Moors is also listed as a RAMSAR site for its international importance as a wetland and for birds.

Other designations promote conservation and afford protection of many sites throughout the district. There are five National Nature Reserves, 47 Sites of Special Scientific Interest (SSSI) and over 380 County Wildlife Sites.

2.2.8 Important geology and landscape

The geological importance of Mendip District is reflected in the large number of geological Sites of Special Scientific Interest (SSSIs) and Regionally Important Geological sites (RIGs) situated in the district. There are 16 geological SSSIs and 5 Mixed biological/geological SSSIs and 44 RIGs. These include scientifically important sections exposed in quarries, roads and railway cutting sequences, and geomorphic sites such as swallet holes.

The district is also bounded by two Areas of Outstanding Natural Beauty (AONBs), the Mendip Hills AONB to the North and West and the Cranborne Chase & West Wiltshire AONB to the East and South East of the District.

2.2.9 Historic environment

Mendip has a rich historic environment containing about 220 nationally important scheduled monuments, 2,676 sites on the County register of sites and monuments, and 87 areas of high archaeological potential.

In addition Mendip contains some 2,818 historic buildings which are included on the list of buildings of special architectural or historic interest. There are also 27 conservation areas in Mendip which aim to protect and enhance areas of special architectural interest and 11 Historic parks and gardens registered with English Heritage.

2.3 Past Land Uses

The Minerals/Quarrying industry and the associated operations such as architectural stone and block work production has been a major commercial activity within Mendip. The East Mendips area being one of the primary producers of limestone aggregate within the United Kingdom. Most of the quarrying and associated industries are located in and around the east Mendip Hills area, however the principal towns also serve a wide variety of industries including tanneries, foundries, printing works, chemical works and food and drink manufacturing.

Another important influence on the character of the District is that of tourism, which attracts some 3 - 5 million visitors each year. They are attracted by not only the historical and ecological attractions but also the wide range of events held within the District, such as The Royal Bath and West Show and Glastonbury Festival.

Although Mendip has always been an important agricultural area, small pockets of the district may be classed as industrial areas.

The main industries have been:-

- ❑ mineral extraction and associated operations (foundries, engineering works etc.),
- ❑ textile manufacture
- ❑ paper manufacture and printing
- ❑ sheepskin, leather and hide manufacture and associated works
- ❑ waste disposal

The scoping exercise concentrated on identifying the types and broad locations of significant past land use which may have given rise to pollution. This exercise was not able to identify the possible level of contamination resulting from a particular land use as this will vary, depending on the history of the site and materials used/produced. This will be subject to further investigation through implementation of the inspection strategy.

2.3.1 Mineral Extraction

The areas rich mineral resources have been exploited since prehistoric times. Coal, lead, zinc, manganese, iron, copper, barytes and calamine have all been mined in the past. Today the principal minerals extracted are limestone, basalt and peat.

Mining

The coalfields to the North East of the district were used for domestic supplies, industries and for gas production. Iron, steel and coal were exported using light rail and tramways. Today eight disused railway lines and sidings remain.

The Mendip Hills once contained economically important metal minerals. Lead extraction over two thousand years or more had virtually exhausted local deposits by the 18th Century and was succeeded by an important phase of re-smelting the old lead slag, at its height in the 2nd half of the 19th Century, finally ending in 1908.

Lead smelting centres were located in the North West of the District, for example at Charterhouse, East Harptree, Chewton Mendip and Priddy. In addition to the lead

smelting areas, there are widespread lead extraction remains, all over the Mendip plateau.

Quarrying

Quarrying is a long established industry in the district. There are 58 aggregate quarries of varying sizes, with only six being currently active. The majority of the dormant quarries have been used for waste disposal. The risk of harm or pollution of controlled waters from land contamination will depend on the types and quantities of waste materials disposed and current uses of the sites.

Peat Extraction

Peat extraction on the Somerset Levels and Moors has taken place since medieval times. Large scale commercial extraction first began in 1870, supplying peat for fuel and animal litter markets, and more recently horticulture.

2.3.2 Textile Manufacturing

Textile manufacturing – mainly woollen cloth and later silk was an important local industry in the towns and surrounding villages of Frome and Shepton Mallet. With the decline of the industry some mills were demolished, converted for grist mills or converted into other industrial processes. The last working mill closed in 1965.

2.3.3 Mills & Paper Making

Water mills were built in almost every parish. Water and waterpower were also vital for papermaking and there were several paper mills below the Mendip Hills and close to the town of Wells. Some water mills were used in edge-tool manufacture, notably the Fussels operation in and around Mells, Chantry and Stoke St Michael, Nr Frome.

2.3.4 Tanneries, Leather and Hide Production and Associated Works

The towns of Street and Glastonbury, in the southwest of the district, developed in the late 19th Century as a result of the thriving industries associated with the production and manufacture of leather goods, in particular shoe and footwear manufacturing. Shoe manufacturing has mostly ceased in Street area with the closure of the last large factory in 1993.

Although the main activities of this type were in and around Glastonbury and Street, other towns and some villages and rural sites also had tanneries but on a much smaller scale.

2.3.5 Landfill Sites

There is a substantial amount of former landfill/waste disposal facilities within the area. Environmental monitoring has been carried out at a number of sites, however, the results of the monitoring must be assessed in conjunction with the types of waste deposited and the current land use to determine whether further work will be required.

It should be noted that currently Mendip was not used for the disposal of animal carcasses arising from the 2001 Foot and Mouth outbreak.

2.3.6 Sewage works

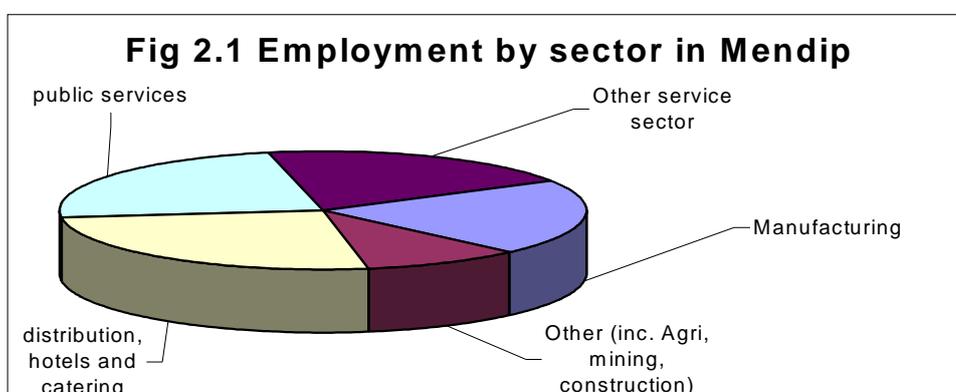
Although there have been a number of sewage works identified within the area, it is thought that further sites existed and these sites need to be identified.

2.3.7 Agriculture

Mendip is a rural area with an important agricultural history. The historic use and disposal of sheep dip is an issue, which should be considered as part of this strategy. Sites of their use and disposal have been identified from MAFF records.

2.4 Current Land Use and Development

The economic profile of Mendip is similar to Somerset as a whole, the split by employment is indicated in Fig 2.1. Mendip contains a strong manufacturing base employing over 20%. Other significant sectors include the tourism-related employment, agriculture, mining, construction, food and drink manufacture and transportation.



There are a number of prescribed industrial processes in Mendip registered under Part I of Environment Act 1990. These include 3 Part A processes (one incinerator and two Chemical manufacture sites) and 60 Part B processes listed in table 2.2. Sites are located across the district and many are on sites with long histories of industrial use.

In addition to prescribed processes there are a number of active landfill sites in the district used for commercial waste, but there are no registered landfill sites for household waste. The risk posed by these sites will depend on a range of factors, particularly types of materials deposited.

Other current industrial activities requiring further consideration include sewage works, petroleum and oil storage areas and sites holding hazardous substance consents.

Process type	Number in district
Waste oil burners	6
Petrol stations	20
Foundry	1
Cement processes	10
Quarries	6
Timber treatment plants	2
Mobile crushers	6

Roadstone coating plant	1
Paint sprayers	4
Electroplater	1

Table 2.2 - Pt B Registered Processes in Mendip

2.4.1 Land Development

Historically, larger scale development, such as housing schemes, has generally taken place around the district's five towns. Where possible, this has been encouraged on areas of land previously developed (brown-field sites). However Mendip has a limited number of brown-field sites for re-development and as a consequence a number of larger developments have taken place on previously undeveloped land (Greenfield Sites).

Where brown-field sites have been re-developed, any contamination present would have been dealt with through the planning and development process and the site returned to a state, which is "suitable for use". In this way, a number of former industrial sites within Mendip's five towns have already been remediated. Notable examples include the former gas works in Glastonbury remediated through a housing development, the Cuprinol site in Frome remediated for housing and the Morlands site in Glastonbury..

2.4.2 Future development

Mendip District's local plan identifies a spatial development strategy. Of relevance to contaminated land management the local plan aims to ensure that:-

- ❑ Most new development takes place in the District's five towns, particularly developments that are likely to generate travel.
- ❑ Employment and residential uses will be located close to each other
- ❑ Development in rural settlements will be on a more limited scale
- ❑ Open countryside and environmentally sensitive areas are to be protected

In addition the plan identifies areas of derelict, vacant, unused and under-utilised land and buildings and encourages re-development of these areas, in order to meet the needs for jobs, homes and facilities in preference to green field sites.

The Council actively encourages the development of brown field sites and planning policies have been developed to support this. More recently re-development of a number of significant brown field sites has been encouraged through the production of site briefs and active engagement with developers. In these cases preliminary site investigations for contamination and remediation actions have been required through the planning process as appropriate.

In addition to sites previously mentioned the scoping exercise and subsequent data collation has identified a small number of sites that may have potential for contamination because of previous and current use. At this stage it is impossible to know whether these sites are contaminated or if full remediation works have already been undertaken as part

of development. These sites will be further investigated as a priority in line with this strategy.

The planning process is a vital part of the management of contaminated land within the district ensuring that appropriate risk assessment and remediation is undertaken as part of planning consents (see Annex A). All applications for planning approval are screened by the Contaminated Land Officer who recommends the inclusion of planning conditions requiring contaminated land risk assessments, intrusive site investigation and remediation as appropriate.

The new contaminated land regime now enables regulators to take action where development has already occurred but remediation has not been undertaken or has been unsuccessful remediated. This places a stronger emphasis on the importance of addressing contaminated land through the planning process. Ensuring that contaminated land is dealt with during development, reducing potential future liabilities and potentially more costly remediation once a site has been redeveloped.

2.5 Current Areas of Sensitive Land and Receptors

The descriptions and extent of any receptors considered under Part IIA, in Mendip District is noted below. This highlights the spread of sensitive receptors across the district. The location of each of these areas has been identified and plotted on the Councils GIS.

2.5.1 Residential and Recreational Use

Human Health is most likely to be at risk from land contamination in areas of residential development. As previously noted approximately 60% of housing is located within the Districts five towns with the remaining 40% located across the district. Areas of recreational use are dotted across the district.

In addition a small number of properties receive water from private supplies and a large proportion of properties have septic tanks and land drains.

The Council is also directly responsible for a small number of properties and areas of land which are used by local residents and staff. For some of these areas the Council may be the appropriate person.

2.5.2 Agricultural use

Agricultural use of land must be an important consideration. Even though areas of land used for food production may be small any contamination within the food chain can potentially affect many people (receptors)

In some ecologically important areas of Mendip the former Ministry of Agriculture, Fisheries and Food (MAFF) pays farmers to manage the land under 'countryside stewardship arrangements'. This needs to be a consideration in the implementation of this strategy.

2.6 Effect of Local Issues on Inspection Methodology

The scoping exercise and subsequent desk top studies have highlighted

- significant past land uses and their likely spread

- ❑ locations and characteristics of human and environmental receptors across the district, such as housing, controlled waters, protected wildlife, landscape and buildings.
- ❑ Locations and limited details of former industrial activities within each of Mendip's towns
- ❑ Locations of historic industrial activities across the whole district

From these findings the following key characteristics can be noted.

- ❑ Industrial activities were spread widely across the district. Over 1500 sites have been identified, of varying size and type.
- ❑ The majority of larger scale industries existed within the five towns.
- ❑ A large number of former industrial sites within the towns have been developed and any contamination removed through the planning and development process.
- ❑ Mendip District is a strategically important water resource area, with a large proportion of the district containing ground water vulnerable to contamination.
- ❑ Mendip District has a rich and varied biodiversity spread across the area and largely existing within less populated areas.
- ❑ Mendip District has an rich historic environment spread across the district

Given these characteristics the Council has decided to adopt a broad approach to land inspection initially considering all areas of historic industry across the District and then to prioritise areas and specific sites for further detailed investigation, based on the perceived risk from contamination. This is reflected in the Council's methodology.

3.0 Mendip District Councils General Approach

Mendip District Council's **overall aim** for contaminated land management is to :-

'Reduce the risk of harm to human health & the environment from contaminated land in the district'

To achieve this it has set the following **overall objectives** were set:

- ❑ Identify all areas of potential contaminated land within the district for further consideration by April 2002
- ❑ Assess the risk associated with areas identified, in order to reduce the risk at four sites per year, in priority order.

In order to achieve these aims and objectives and carry out inspection duties under Part IIA, Mendip District Council established a methodology with the following principles:-

- ❑ To be a structured process to efficiently identify any sites in the district which represent an unacceptable risk from land contamination
- ❑ To ensure resources are targeted at priority areas and those representing the most likely areas of land contamination
- ❑ To ensure areas representing highest risk are located and tackled first
- ❑ To identify areas of contaminated land for which Mendip Council maybe the 'appropriate person' or hold a possible liability.
- ❑ To ensure a response appropriate to the seriousness of the problem
- ❑ To encourage a partnership approach internally within the Council and with external organisations
- ❑ To ensure decisions are based on sound research and best practice guidance
- ❑ To build on work conducted to date

3.1 Outline of Mendips Methodology

The widespread historic activity in both rural and urban areas indicates the need for an assessment and inspection methodology, which initially considers **all** potential contaminated areas across the district which identifies specific sites where a pollutant linkage is likely to exist and prioritises them for further investigation.

To ensure potentially contaminated areas were identified quickly and resources targeted efficiently Mendip adopted a systematic risk-based approach to dealing with potentially contaminated land. This had three main phases:-

- ❑ **Stage 1: Preliminary inspection**
To identify potentially contaminated sites and prioritise sites for further investigation and inspection across the district. This will enable the Council to move from its current position, where it has very broad information on potential sources and receptors but still no indication of pollutant linkages. To a position where it has a broad prioritised list of sites for further investigation based on the possibility of a pollutant linkage existing.

❑ **Stage 2: Detailed Inspection**

A more detailed analysis on a site by site basis to enable the confirmation of the 'presence' or 'absence' of a significant pollutant linkage.

❑ **Stage 3: Declaration and remediation**

Declaration of a site as "contaminated land", and development and implementation of a remediation strategy to return the site to a condition 'suitable for use'.

Over 1500 potentially contaminated sites have been identified. Some of these have subsequently been remediated through the planning process. Assessment of other sites is continuing. To date no sites have been determined as Contaminated Land as defined by Part 2A. Lack of definitive guidance on the significant possibility of significant harm has virtually halted all such determinations. A task force appointed by DEFRA was produced a "Way Forward" document which is currently being debated.

3.2 Council Priorities for Contaminated Land

In order to confirm an area of land as contaminated land the Council must ensure a pollutant linkage exists and significant harm is or could be caused to a receptor. Only receptors listed in Table A (Annex B), and controlled waters, can be considered under Part IIA.

The Councils risk based methodology outlined in chapter 4.0 aims to ensure that the risk of harm from contaminated land is assessed across the district and individual sites prioritised for inspection and or remediation based on the probability of there being a significant pollutant linkage. Within this methodology priority is assigned to sites based on the types of pollutants that may be present and the sensitivity of receptors to which harm may be caused, as detailed in chapter 4.0.

In addition the Council wishes to give priority to different receptor types, to reflect its role as a District Council. These priorities are shown in figure 3.3 below.

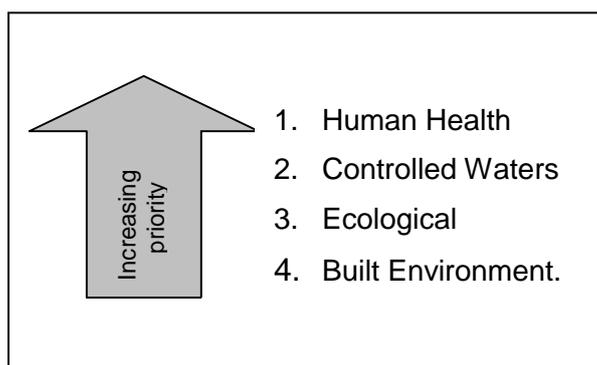


FIGURE 3.3 COUNCIL PRIORITIES FOR RECEPTORS

This level of prioritisation will be undertaken within the broader risk assessment methodology, such that where a number of sites have been identified and considered to represent a similar level of risk. Further action on these sites may be undertaken in order of the Council priorities. For example; an area where there is risk of harm to human health, this will have priority over a similar area effecting controlled waters. This prioritisation is reflected in the Methodology Section 4.0.

The Council shall also ensure that priority action is taken to :

- a) Identifying sites for which the Council may be the appropriate person and therefore likely to hold liability.
- b) Undertake risk assessments on sites, which have been highlighted as having a possible pollutant linkage through the steps already undertaken by the Council.

3.3 Objectives and Priority Actions of the Inspection Strategy

MDC has identified the following key objectives and milestones necessary to implement the inspection strategy and fulfil its duties under Part IIA. (refer to section 4.0 for stages of the Inspection Methodology).

Objective 1: Complete identification and assessment of land for which Mendip District Council may be 'the appropriate person' by March 2002. (*Preliminary inspection (stage 1) and initial steps of detailed inspection (stage 2)*)

Objective 2: Complete inspection for sites already highlighted as possibly having a significant pollutant linkage, by the end of February 2002. (*Preliminary & detailed inspections (stages 1 & 2)*)

Objective 3: Complete the identification and prioritisation of all potential contaminated areas across the district by end of January 2002. (*Preliminary Inspection, Stage 1*).

Objective 4: Complete desk top study and detailed assessment for priority areas considered to have a pollutant linkage from objective 3, by April 2002. (*Initial steps in detailed inspection Stage 2*).

Objective 5: Complete detailed inspections of at least four sites by April 2003 (*Detailed inspection Stage 2*)

Objective 6: Finalise effective internal liaison arrangements for contaminated land management by end December 2001.

A detailed action programme has been developed to show actions required to meet these objectives, (Annex F). The action plan will be used as a working document for monitoring and managing the implementation of the strategy.

4.0 Detailed Risk Management Methodology

The overall aim of the inspection methodology is to identify particular areas of land where it is possible a **pollutant linkage** exists. And to be able, through inspection, to confirm that a **significant pollutant linkage** exists and hence the area of land can be determined as contaminated land and remediation action taken.

A staged approach will be taken in three main stages as shown in Figure 4.1. Stages 1&2 (Inspection) are detailed below, Stage 3 (determination and remediation) is not covered in any detail within this strategy.

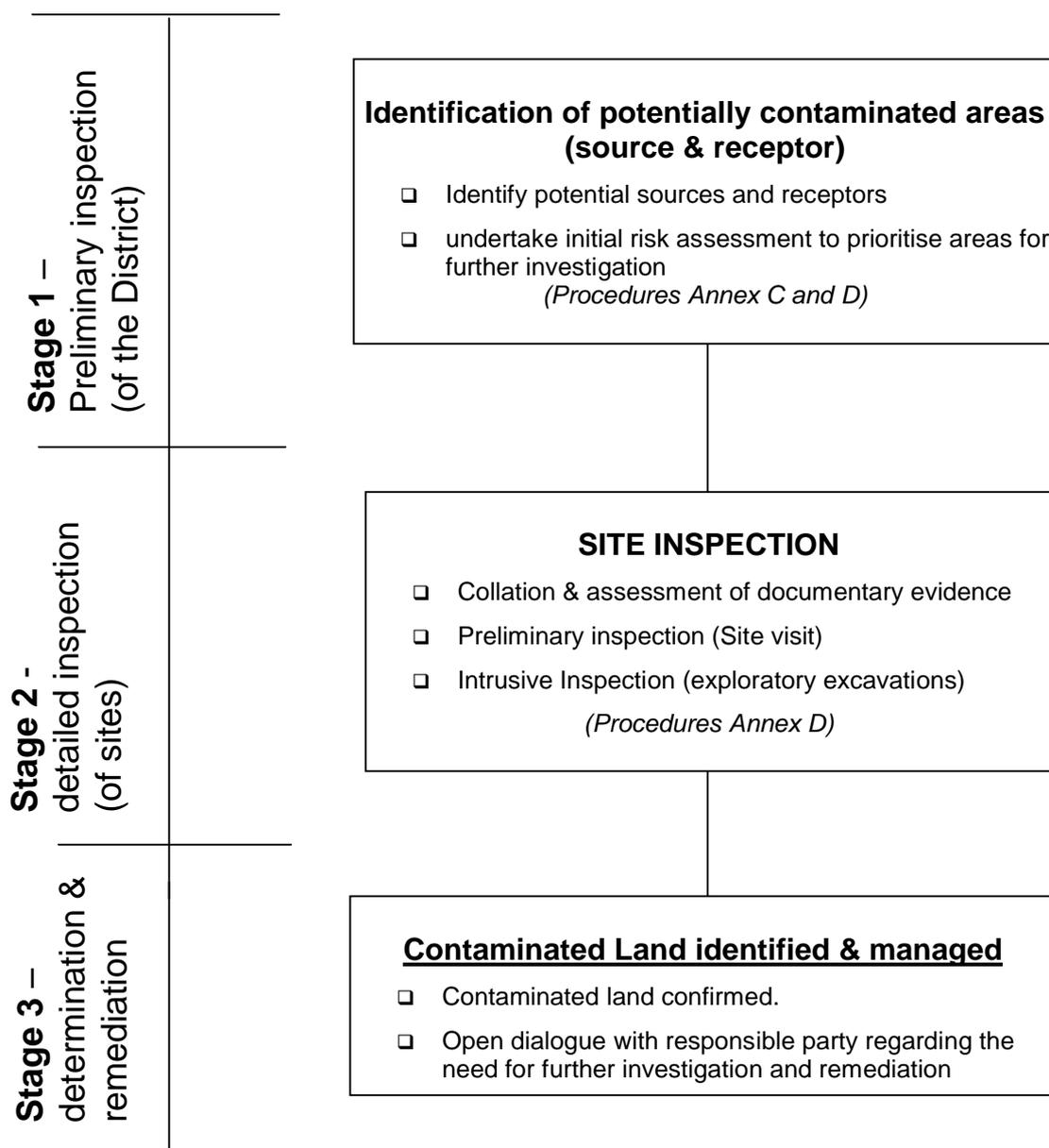


FIGURE 4.1: Procedure for development of a site inspection strategy

4.1 STAGE 1: PRELIMINARY INSPECTION (OF THE DISTRICT)

The preliminary inspection stage aims to

- ❑ consider land across the whole District in order to identify the most likely areas for finding contaminated land, and
- ❑ assess the level of risk associated with each area in order to prioritise them for further detailed investigation in Stage 2.

Through the work undertaken by the Council to date a large number of historic industrial activities have been identified across the district. These represent potential sources of contamination but many may pose no risk to a receptor because of the type of operation undertaken on the site, the current use of the land, its proximity to receptors and the underlying physical characteristics of the area.

This phase adopts a risk-based process to rapidly prioritise sites for consideration at the next stage ensuring that resources are targeted at the most urgent problems.

Any specific sites already identified in the initial data collection stages, where a significant pollutant linkage is likely to exist will be fast tracked to stage 2.

4.1.1 Identification of potentially contaminated areas

The first stage will identify where a possible pollutant linkage **may exist** by considering the locations of potential sources in relation to receptors that could be harmed. The locations and characteristics of potential sources and receptors will be identified using the reference materials detailed in section 5.0. For each area four aspects are considered. Box 4.1 highlights the typical information to be gathered for each aspect.

BOX 4.1 : INFORMATION REQUIRED FOR INITIAL ASSESSMENT	
<u>ASPECT OF THE AREA</u>	
SOURCES OF LAND CONTAMINATION	<ul style="list-style-type: none"> ❑ Locations and type of historic industrial use ❑ Levels and type of natural contamination
CURRENT LAND USE (HUMAN, ECOLOGICAL)	<ul style="list-style-type: none"> ❑ Locations of residential housing, schools, hospital, community buildings, play grounds, allotments, commercial and industrial developments, amenity land ❑ Locations and classifications of protected or recognised ecological and historic sites
SURFACE WATER	<ul style="list-style-type: none"> ❑ Locations of streams, ponds, canals, lakes and rivers ❑ Locations of surface water catchment areas
GROUND WATER	<ul style="list-style-type: none"> ❑ Licensed and private ground water abstractions their use and the strata from which the water is abstracted. ❑ Ground water vulnerability areas ❑ Major and minor Aquifers ❑ Source protection zones

To gain an overall assessment of risk, each source and receptor is assigned a 'sensitivity rating'. This indicates the potential for a source to pollute and cause harm or the sensitivity of a receptor to harm from pollution.

4.1.1.1 Location and sensitivity of sources

As noted studies undertaken by MDC have highlighted the locations of a number of potential sources. The following actions will now be taken:-

- ❑ Each will be plotted on GIS together with the boundary of the former industrial activity where this is known.
- ❑ Each potential source will be assigned a sensitivity rating between **A** to **D** using table C.1, (Annex C).

The sensitivity Table C.1 (Annex C), has been designed to give a rating to industrial activities dependant on the pollution potential of the type of industrial activity identified and the scale of that industry in Mendip. Such that a former Tannery would receive a high sensitivity rating (A), where as a former carpenters workshop a lower rating (D).

4.1.1.2 Location and sensitivity of receptors

The locations of potential receptors will also be located on the GIS and data collated for the characteristics of each. (In many cases this information is already available on the Councils GIS system).

Flow charts using Figures 4.2-4.4, (Annex D) will be used to assign a sensitivity rating to each receptor. This will involve :-

- ❑ Identifying the locations of human habitation and use, areas of ecological importance and areas of important built & historic environment; assigning sensitivity scores using, Figure 4.2, Annex D.
- ❑ Identifying the locations of surface water features; assigning boundaries and associated sensitivity scores as dictated by Figure 4.3, Annex D.
- ❑ Identifying ground water characteristics; assigning associated sensitivity groupings using Fig 4.4, Annex D.

4.1.1.3 Initial assessment of risk

The GIS will be used to model the proximity of each potential source to each receptor type. Where a source is found to be within the area of a sensitive receptor an overall sensitivity score is assigned area using the Matrix in Figure 4.5. This will give an overall rating for each area between A to F. (A being the most sensitive and most at risk).

		Receptor sensitivity (One or more)		
		A	B	C
Source Sensitivity	A	A	B	C
	B	B	C	D
	C	C	D	E
	D	D	E	F

Figure 4.5: Stage 1 sensitivity grouping matrix

For example, a former tannery site within 50 metres of a river will receive:-

Source sensitivity – **A** - (Table C.1, Annex C)

Receptor sensitivity – **B** – (Table 4.3, Annex D)

Using the matrix Figure 4.5, this will give an overall sensitivity rating of **B**

Where one source is located within the buffer areas of a number of receptors the most sensitive receptor will be used in the matrix to give the overall sensitivity rating.

This method will quickly enable areas to be categorised into broad risk groupings at an early stage. Each grouping can then be considered in more detail in order of sensitivity (Group A first etc.)

Due to the simplistic nature of this method and the large number of initial areas to consider, each grouping may initially be large, but each group can be further prioritised to reflect;

- ❑ the Councils priorities (see section 3.2),
- ❑ the number of receptors effected and
- ❑ a feel for the general scale of the potential problem based on information currently available (e.g. scale of the former industrial process, proximity to receptors and general geography of the area.)

The outcome from stage 1 will be a list of potential sites within each sensitivity grouping, providing a broad ranking of sites in order of their potential to contain a significant pollutant linkage.

4.2 STAGE 2: DETAILED INSPECTION

This stage aims to confirm that a significant pollutant linkage does or does not exist. This will be undertaken as a staged process requiring one or more of the following stages.

- ❑ Collation & assessment of documentary information or information from other bodies
- ❑ Site visit to the area to undertake visual inspection and where possible some limited samples (e.g. soil)
- ❑ Intrusive Inspection (exploratory excavations)

4.2.1 Assessment of Harm

An assessment of the risk of harm from any contamination in or under the soil will be undertaken through the various levels of inspection. Confirmation of contaminated land will be based on an assessment of actual or possible harm on a site by site basis, in line with Annex B.

This will need to assess the levels of contaminants in or under the soil and the set and the risk from exposure for the receptors based on defined exposure levels. Guidance is available to assist in this assessment and the consideration of exposure levels for a range of contaminants and receptors. The document ICRCL 59/83 (*Guidance on the assessment*

and redevelopment of contaminated land, 2nd Edition, December 1990.), was withdrawn in 2002 and replaced by a series of Contaminated Land Reports, CLRs, CLR7 – 10 together with the CLEA software package to generate Soil Guideline Values, SGVs.

- ❑ Documentary research on industrial Sites DoE, 1994, (CLR3)
- ❑ Prioritisation and categorisation procedure for sites which may be contaminated, DoE, 1995, (CLR 6)
- ❑ EH40/2000 Occupational exposure limits, HSE annual publication
- ❑ A frame work for assessing the impact of contaminated land on groundwater and surface water, (CRL1), DoE 1994
- ❑ Methodology for the derivation of remedial targets for soils and groundwater to protect water resources', Environment Agency (R&D publication 20), 1999.
- ❑ Contaminated Land Reports CLR 7 – CLR10
- ❑ A series of Soil Guideline Value, SGV, reports
- ❑ A series of toxicological reports for various soil contaminants known as TOX reports.

In general the Council will aim to follow best practice guidance through all stages of the inspection processes. In particular general good practice to be followed will include:

- ❑ Model Procedures for the Management of Contaminated Land (CLR11), DETR.
- ❑ Contaminated Land risk assessment. A good practice Guide – CIRIA, 2001
- ❑ BSI DD175:2001 Investigation of potentially contaminated sites, code of practice, BSI2001.
- ❑ Special publication 103: Remedial Treatment for contaminated, Volume III: Site investigation and Assessment, CIRIA 1995

4.2.2 Collection & Assessment of Information

The Flow Charts contained in Annex E will be used at this stage to undertake a further, more detailed, risk assessment in order to prioritise sites for visual or intrusive investigation.

A desk top study will be undertaken to gather evidence and information to allow an assessment of risk using the flow charts in Annex E. Information will be gathered from a range of sources detailed in chapter 5.0. To include Council records, information from the public, voluntary organisations, businesses and other regulatory bodies.

The site owner or other appropriate person can also be contacted at this stage to determine whether there is any further information available which could be helpful in defining the site as contaminated land or not.

Box 4.2 gives an indication of the types of information required to complete the risk assessment flow charts, Annex E.

Box 4.2 FURTHER INFORMATION REQUIRED FOR STAGE 2 ASSESSMENT (SEE CHAPTER 5.0 FOR SOURCES)
Contamination <ul style="list-style-type: none"><input type="checkbox"/> Details of past industrial operation on the site e.g. scale, type of operation(s), expected pollutants<input type="checkbox"/> Evidence of contamination or remediation
Human & biological <ul style="list-style-type: none"><input type="checkbox"/> Any other details on the built environment and use<input type="checkbox"/> In order to be site specific, information will be obtained to identify the protected habitats of the types listed in Appendix 2.1.<input type="checkbox"/> Types of agricultural use and areas which are afforded of shooting and fishing rights or are used for recreational use such as motorcycling.<input type="checkbox"/> Conditions of build environment e.g. are buildings in use, derelict, in dangerous state or due for re-development
Water <ul style="list-style-type: none"><input type="checkbox"/> Type and depth of superficial deposits @ Major and Minor aquifers<input type="checkbox"/> Physical and chemical nature of aquifers effecting migration of contaminants<input type="checkbox"/> Direction of ground water flow and potential sensitive area (e.g. abstraction points) in the direction of flow.

Evidence of Assessment and Remediation

Enquiries will be made both internally (e.g. Planning, Building Control, Estates Records) and externally e.g. other regulatory organisations such as the Environment Agency to establish whether there is any documentary evidence such as detailed site investigation data or monitoring data of individual sites, either:

- a) Confirming the presence of contaminants at a site, or
- b) Confirming successful remediation resulting in the site being defined as 'fit for use'

A site will be eliminated from further investigation where it has been defined as 'fit for use' following site investigation. The reasons for the exclusion of such sites from the inspection process will be documented and a time period set for the review of the activity at the sites.

Completion of procedures at Annex E will give a reassessment of sensitivity for each receptor on a site by site basis. As with stage 1 an overall sensitivity grouping will be collated for the area using a sensitivity matrix (this time using figure 4.6). to give an overall groupings **A - G**. This will enable further prioritisation of sites for more detailed inspection.

It may not be possible to answer all the steps within the procedures at Annex E, without some visual inspection of the site. Some assessments will therefore, need to be re-assessed following visual inspection. Those areas requiring further investigation will be selected based on the sensitivity scores assigned at this stage, (Group A first).

		Receptor sensitivity (One or more)			
		A	B	C	D
Source Sensitivity	A	A	B	C	D
	B	B	C	D	E
	C	C	D	E	F
	D	D	E	F	G

Figure 4.6: Stage 3 sensitivity grouping matrix

4.2.3 Visual Inspection

The aims of this stage will be to examine each site to:

- ❑ identify whether there is evidence of a significant pollutant linkage and hence define the land as contaminated or
- ❑ identify the need for more detailed intrusive site investigation, or
- ❑ confirm that no pollutant linkage exists, or
- ❑ Provide additional information to re-assess the risk associated with the site

The visual inspection will involve a reconnaissance to check the conditions at each site and details which formed the basis of risk assessment e.g. confirmation of current land use and locations of source & receptors, and possibly the collection of some soil/water samples.

If further information is provided, the Annex E assessments should be repeated to confirm or amend the sensitivity grouping for the site. If a site investigation is in progress or is planned shortly it may be appropriate to delay further assessment of the site until further information becomes available from the site investigation.

The procedures to be followed by the Council for preliminary site inspection will be in line with the following guidance:-

- ❑ Guidance on preliminary site inspection of contaminated land (CLR2), Volumes 1&2, DoE 1994

4.2.4 Intrusive investigation

Intrusive investigation will be undertaken where there is insufficient evidence to confirm a significant pollutant linkage but assessment and inspection stages indicate a strong probability that a significant pollutant linkage exists on a given site.

Intrusive investigation will take the form of sampling and monitoring of site soils/water to determine the presence and levels of contaminants and pollutant linkages, and potential risk from exposure. This will require detailed scientific exposure assessment.

It is expected that the Council will employ external contractors to undertake intrusive investigation on the Councils behalf. Any works carried out will be undertaken in accordance with the principle guidance below:-

- ❑ Sampling strategies for contaminated land (CLR4), DoE 1994
- ❑ BSI DD175:2001 Investigation of potentially contaminated sites, code of practice, BSI 2001
- ❑ Development of appropriate soil sampling strategies for contaminated land, Environment Agency, R&D report HOCO352 (in preparation)
- ❑ ICRCL 59/83 Guidance on the assessment and re-development of contaminated land, (Inter-departmental Committee on the Re-development of Contaminated Land) 1987
- ❑ ICRCL 64/85 Asbestos on contaminated sites, 1987
- ❑ EH40/2000 Occupational exposure limits, HSE Annual publication
- ❑ A frame work for assessing the impact of contaminated Land on groundwater and surface water, (CRL1), DoE 1994

The Inter-departmental committee on the re-development of contaminated land (ICRCL) publish a range of other technical guidance documents which will also be utilised as appropriate, to include, ICRCL 17/78 (1990), ICRCL 18/79 (1986) ICRCL 23/79 (1983), ICRCL 42/80 (1983), ICRCL 61/84 (1986), ICRCL 64/85 (1990).

The Council will ensure that precautions are taken to avoid harm, water pollution, or damage to natural resources or features of historical or archaeological interest when which might be caused as a result of investigations. The Council will therefore consult the appropriate statutory bodies to identify appropriate action and or other legislative requirements. For example before carrying out investigation work within a SSSI the Council will consult English Nature and identify any required consents under Section 28 of the Wildlife and Countryside Act 1981.

4.2.5 Powers of entry

Where entry is required onto a property for the purposes of inspection the Council will notify the occupier seven days in advance of the proposed entry. If the occupier gives no consent within seven days the Council may exercise its powers of entry under Section 108 (6) of the Environmental Protection Act 1995.

Where another party is carrying out inspection on behalf of the Council, such as the Environment Agency, the authority can authorise a nominated representative to exercise powers of entry under section 108.

In the case of an emergency or the need for similar urgent inspection due to the risk at a given site, then the seven day notice period may be waived.

4.3 STAGE 3: DETERMINATION AND REMEDIATION

Where it can be confirmed through inspection that a significant pollutant linkage exists then that site may be officially designated as contaminated land.

Where this is the case the Council will:-

- ❑ Write to the owner and/or occupier and any appropriate person(s) to inform them the land has been officially designated as 'Contaminated Land' and the basis for the designation.
- ❑ Inform the Environment Agency Liaison Officer of the designation
- ❑ Dispatch any additional information to interested parties within 5 days of a request for information.
- ❑ Write to the owners and occupiers of neighbouring properties
- ❑ Enter the property details on the Council Contaminated Land Register

Where no action has been taken by the appropriate person(s) within three months of receiving a notification letter, the Council will issue a remediation notice.

5.0 Collection & Management of Information

A range of information will be used in order to identify the locations of potential sources of contamination, possible receptors and the location and characteristics of pathways between them.

This section outlines available sources of information and its uses;

5.1 Sources of Information

There are many potential sources of information available, which may be at each stage of the risk assessment methodology. Listed below are the key sources of information to be used by MDC. It should be noted that this is not an exhaustive list and other sources will be used as appropriate.

The Council Geographical Information System (GIS) will be used extensively in the assessment processes and records are already held on this system, which are pertinent to the implementation of the strategy.

These include:

- ❑ Ordnance Survey map base giving building location
- ❑ Digitised historic maps for Edition 1,2 and 4 County series covering 1880- 1939.
- ❑ Locations of Council property and managed land
- ❑ Range of environmental data e.g. Controlled water, abstraction points, sensitive areas
- ❑ Locations of PtA and PtB registered processes
- ❑ Locations of current and former waste sites
- ❑ Locations of private water supplies
- ❑ Locations of important biological, geological, archaeological areas and protected buildings
- ❑ Land use areas
- ❑ Identified areas of contaminated land

5.1.1 Information on sources of anthropogenic contamination

The types and extent of historical industrial activities within the district will be identified using a range of sources outlined below.

Past industrial activity

- ❑ Existing Council records,
- ❑ OS County Series 25 inch maps for 1885/1886, 1903/1904, 1930 and 1938
- ❑ Slater's Directory of 1852/1853 and Kelly's Directories of 1875, 1902, 1927 and 1939.
- ❑ (Post 1939), Thomson's directories and Yellow Pages.
- ❑ Department of the Environment Industry Profiles
- ❑ National Land Use Database,
- ❑ Department of the Environment Survey of Derelict Land in England 1988

- ❑ Mendip District Council's Land Reclamation Programme - Position Statement November 1996
- ❑ Various published texts relating to the area e.g. local history books

It is unclear at this time what records, if any, have been kept during the First and Second World Wars. Should it become apparent that information is lacking then Local Historians will be contacted.

Current and former waste disposal sites including the types of wastes disposed of has been supplied by the Environment Agency & Somerset County Council (Former Waste Disposal Authority). This will include details of on going monitoring of closed sites.

Should it prove necessary, the major industries, e.g. British Coal Board, Mendip Quarry Producers Group, will be contacted for information.

An indication of possible pollutant linkage on agricultural land may be provided by the Agricultural Land Classification (ALC) system administered by DEFRA. This may hold details of areas where soil and crop samples have been taken. This may be able to indicate a possible problem for further investigation.

5.1.2 Information on sources of natural contamination

The identification of contaminated land will include an assessment of the presence of elevated levels of naturally occurring chemical elements. For this assessment the following information sources will be used:

- ❑ British Geological Survey (BGS), Series of Geochemical Atlases,
- ❑ BGS Technical Report WP/95/3, Potentially harmful elements from natural sources and mining areas, BGS Technical Report WP/95/1, methane, carbon dioxide and oil seeps from natural sources and mining areas and
- ❑ BGS Research report SD/89/3 Hydrology Series, 1989. Trace element occurrence in British Groundwater's.

5.1.3 Receptors

The Council already holds a wide range of information and specialist knowledge and key officers will be consulted as required on issues such as historic environment and buildings or ecology and biodiversity. These officers also provide key contact points to other bodies who will hold a range of records relevant to contaminated land assessments and enquiries, in particular the identification of receptors and their characteristics. Key statutory bodies will be consulted where information or specialist advice is required. (see table 5.1)

ORGANISATION	TYPICAL INFORMATION/KNOWLEDGE
The Environment Agency	All water related issues, Waste/landfill, land contamination and Part IIA implementation
County Archaeologist	Sites and monuments records
English Heritage	Scheduled monuments and historic environment
English Nature & others	Ecological issues
Food Standards Agency	Advise on food safety , domestic and commercial food production and agriculture. Including – game
Department of Food and Rural Affairs (DEFRA)	Range of issues – Including Agriculture, land use.
Regional Development Agency (RDA)	Land use and specific site advice/interest

TABLE 5.1 EXAMPLES OF TYPICAL INFORMATION AVAILABLE FROM OTHER STATUTORY BODIES

The locations of many receptors will already be identified on the Councils GIS. However further information is required from the following sources to assess their sensitivity and potential risk from contamination.

5.1.3.1 Water receptors/pathways

A range of information will be consulted .The Environment Agency holds and publishes the majority of data concerning controlled waters. Much of this is available in digital form and has been linked to the Councils GIS. Of particular relevance will be the following EA data:-

- ❑ geological formations categories according to their hydrological properties; in particular their relative abilities to transport and yield groundwater.
- ❑ surface water systems by water classification scheme.
- ❑ licensed abstractions from groundwater and surface waters and
- ❑ consents to discharge to controlled waters
- ❑ Ground Water Vulnerability areas and classifications
- ❑ Source Protection Zone areas and classification

Other information

- ❑ Local authority information on private water supplies

In some cases ground or surface waters may act as pathways by allowing the movement of contaminants to other receptors (e.g. Human Beings). Details of these together with sub-surface geological and hydrological conditions at sites will need to be assessed.

5.1.4 Information on pathways

As previously noted, for land to be defined as ‘contaminated’ under Part IIA not only must there be a source of pollution present and a receptor to which it could cause harm but there must be a pathway connecting the source to the receptor.

5.1.4.1 Man made pathways

Man-made pathways will be identified by examining information available from service companies (gas, electricity, water etc) for routes such as drains, culverts, pipelines etc. Should it be necessary, the Coal Board will be contacted for information on underground tunnels.

When considering pathways it will also be important to consider the characteristics of contaminants and ways in which they can cause harm, for example inhalation, ingestion or contact, this may require liaison with others and consideration of sites specific conditions identified through site inspection, (Tables A & B, Annex B give further details for assessment of actual or possible harm)

5.1.5 Additional information

It may be appropriate at various stages of assessment and inspection to make enquiries of the public. In particular former employees or local residents may be contacted and interviewed to identify further information regarding the location or nature of operations undertaken at a specific site. This information will be dealt with as defined in Section 6.4.

In addition local historians may be contacted to assist with investigations of historic use, this has already been the case in early stages of the Councils work on contaminated land.

5.2 Information and Record Management

Detailed records will be kept for all stages of the contaminated land inspection process to ensure full traceability of decisions on Contaminated Land. Data will be collected from a range of information sources as noted above. This information will be stored within the Environmental Protection team library. Wherever possible computer based systems will be used to store and manage information. In particular the Council Geographical information system (GIS) will be used in conjunction with specially developed databases. Where paper information exists this will be referenced within the computer based systems. Information on the networked GIS will only consist of the factual data relating to historic land use.

In addition a Public Register of Contaminated Land and Special Sites will be kept. (See below).

5.2.1 Contaminated Land Register

The Council will hold a register of contaminated land sites in accordance with section 78(R) EPA 90.

The register will hold details of regulatory activities under Part IIA. This will mean that once a site has been confirmed as contaminated and the Council, as the regulatory body, serves a notice of remediation then this site will be entered on a public register. Information to be held in the register is prescribed within EPA 90. This will include the following headings:-

Information about remediation

- *Remediation notices giving*

- details on the site (location, size, details of harm, contaminants present, current use)
- details of person receiving notice,
- remediation required by appropriate person(s) and time scales for action
- *Remediation declaration* - reason why a particular remediation method is precluded
- *Remediation statements* - details of remediation action, time scales for its undertaking and by whom.
- *Notification of claimed remediation* – details of action that has been taken, and by whom.
- *Other environmental controls* – details of action taken under legislation other than Part IIA.

Other Information

- Notices designating special sites
- Site specific information issued by the EA
- Appeals against a remediation notice or charging notice
- Convictions.

The register will not include:-

- Confidential information effecting National Security or commercial confidentiality
- *Potential* contamination
- Research information used to investigate *potentially* contaminated land.

Where possible it will be held in electronic format. A paper based register for public viewing will be available from the Councils principal office at Cannards Grave Road. Other methods for communicating the register will be investigated.

5.3 Access to Information

In carrying out its duties under Part IIA the Council will collect considerable information from a wide range of sources.

The Council will aim to provide transparency of information and ensure that appropriate information is available to interested parties. In particular during its inspection duties the Council will ensure that parties with particular interests, such as other statutory bodies or landowners are kept informed (Liaison arrangements are discussed in section 7.0).

Under European legislation (the Environmental Information Regulation (1992)) the Council will ensure that the public have access to factual information relating to contaminated land management. The Council will be in a position to release '*complete*' and '*factual*' information to the public. It will not be in a position to release '*incomplete*' or speculative information over which it is still deliberating as part of its investigations. This will ensure the public has accurate information about the state of the land in Mendip, and not unsubstantiated or incomplete and potentially inaccurate information, which could cause unnecessary alarm to local citizens and landowners.

5.3.1 Confidentiality of information

The public have the right to access information held by the Council on contaminated land unless the information is of a confidential nature. A range of other legislation will therefore also need to be considered to assess confidentiality of information and disclosure, to include the Data Protection Act 1998, Human Rights Act 1998, The Police and Criminal Evidence Act 1984, Local Government Act.

Confidentiality of information will be maintained throughout the process and systems put in place to ensure confidential information is stored and managed in an appropriate manner. Confidential information will include:-

- ❑ Information which could effect National Security
- ❑ Commercially confidential information
- ❑ Information provided to the Council voluntarily where there was/or will be no legal obligation to provide such information and permission has not been given for its release.
- ❑ Information which may affect any pending legal proceedings

5.4 Requests for Information

As noted some information held by the council will be public information and members of the public will be able to contact the Council to enquire about the state of a particular area of land, in relation to potential contamination.

The Council currently operates this service and has a procedure to deal with contaminated land enquiries. An appropriate charge is made to cover the cost of administration. This is currently £50, but is subject to change. The lead officer for contaminated land will be responsible for providing this information.

At present information held by the Council on contaminated land is limited. The Council will endeavour to provide as much relevant information as possible for each enquiry, but in the majority of cases may not be able to draw firm conclusions on whether an area of land is contaminated or otherwise.

As the inspection strategy is implemented and more detailed assessment and inspection is undertaken the certainty of information will improve.

5.5 National State of Contaminated Land Report

The Secretary of State requires the Environment Agency to prepare an '*Annual report on contaminated land in England and Wales*'. This report will include: -

- ❑ Summaries of local authority inspection strategies, progress and effectiveness
- ❑ Amount and nature of contaminated land in England and Wales
- ❑ Remediation measures taken

Each local authority is required to provide information and a standard format has been agreed for provision of information.

6.0 Management Arrangements

6.1 Internal Arrangements for Inspection & Identification

A member of the Council's Environmental Protection team, the Contaminated Land Officer, has been assigned responsibility for the implementation of the contaminated land inspection strategy. The successful implementation of the strategy, however, will rely on collaboration with staff from a range of Council service areas.

The current Council structure aims to support cross service working. There are informal working arrangements and internal communication systems in place for cross service working on contaminated land issues within the Council. The effectiveness of these arrangements in relation to Part IIA will be considered further as the strategy is implemented.

Key teams will be consulted for specialist advice at various stages of contaminated land inspection process. These are: -

- ❑ Development Services (Development Control, Conservation and Building Control)
- ❑ Policy and Partners (Planning Policy)
- ❑ Health and Facilities (Environmental Protection, Leisure & Facilities),
- ❑ Corporate Support (GIS and Legal Services and IT).

Where specific roles have been defined for internal staff to assist in implementing the strategy these are identified within the action plan (Annex F). It will be the job of the lead officer to ensure that adequate progress is being made within the agreed timescales.

6.1.1 Links to the planning process

The planning process will be central to the management of contaminated land where planning applications are made for the change of use of, or other development of, such land. The register of contaminated land will also be taken into account in formulation of policies and proposals in local plans.

The development control process will be able to use data collected through the contaminated land strategy in considering planning applications and assigning conditions. In particular the collection of data on historic land uses and findings from investigations held in the GIS will provide a valuable tool to planning encouraging remediation through development. Provisions for assessment, inspection and remediation in these cases will be regulated through the planning process, not Part IIA

The Contaminated Land Officer reviews all planning applications and makes comments where appropriate. For applications relating to potentially contaminated sites planning conditions relating to the assessment, investigation and remediation of the sites are recommended.

6.2 Considering Mendip District Council Interest in Land

Ownership of property or land by the Council has significantly reduced since the Council housing stock was transferred to the ownership of a management company. However there are still a number of buildings and areas of public and private land which are the responsibility of the Council. These are located across the district and include areas of land with sensitive uses such as allotments, recreation grounds, or public open space. All buildings and land for which the Council is responsible is listed on the Councils Terrier and locations and boundaries plotted on the internal GIS.

There maybe areas of land within the district that the Council previously owned or managed and for which the Council is the appropriate person in relation to land contamination. As part of the transfer of Council housing an assessment of land contamination was undertaken, and an environmental warranty drawn up with the new owners.

As previously noted in section 3.0 the Council wishes to act as a responsible landlord and will ensure that priority is given to the assessment and inspection of Council owned land in line with the methodology set out in this strategy.

In some instances there may be areas of land in the district, which are the responsibility of other authorities e.g. County Council, Parish Council etc. Close liaison will be established for these as discussed in section 7.1.

6.3 Appointment of External Contractors and Consultants

Where it is necessary to undertake works using contractors or consultants these services will be acquired in line with the Councils procurement policy.

This will mainly be the case for site investigations and work will be carried out in accordance with the latest best practice guidance. This is discussed in more detail in Section 4.0.

6.4 Managing Voluntary Information & Complaints

Information will be required from a wide range of individuals and organisation during the implementation of the strategy.

On occasion additional information may be provided voluntarily about a particular piece of land or the Council may receive complaints or concern regarding contaminated land. This information may be pertinent and provide supplementary information to the Councils investigations. In some cases information may act as a trigger for re-assessment of decisions on contaminated land (see section 6.7).

In line with statutory guidance, final decisions on land contamination must be based on robust scientific evidence, but voluntary or complaint information may be used as supplementary information to support contaminated land investigations.

6.4.1 Voluntary information

Should any member of the public, business community or other organisation come forward with information voluntarily, this will be recorded and where appropriate used as supplementary information to the assessment process.

6.4.2 Complaints

Complaints may be received by the Council which provide relevant information for contaminated land management, such as private water supply quality, appearance of contaminants and health issues. All complaints received will be recorded and dealt with in line with the Council's complaint procedures. Namely;

- Details of the complaint/concern, complainants and time/date of communication will be recorded on the Council Complaints database
- A Council officer will respond to the complaint within 2 working days and decide what further action is required.

In line with the contaminated land regime the Council will need to undertake sufficient investigations to confirm a significant pollutant linkage and appropriate action to be taken, in line with this strategy.

6.4.3 Anecdotal evidence

Anecdotal evidence will be noted and may provide relevant information to the investigation process.

The Council will consider anecdotal evidence and decide how to proceed.

6.5 Review Mechanisms

Part IIA of the EPA1990, requires local authorities to review their land for time to time for the purpose of identifying land which falls within the statutory definition of contaminated land. The Council will therefore need to reconsider its assumptions and assessments of particular sites over time. There is insufficient information available at the current time to identify time periods for systematic reviews of assumptions but there are a number of circumstances which would trigger a reassessment of assumptions and conclusions.

6.5.1 Triggers for reviewing inspection decisions

A range of circumstances will trigger the Council to reconsider its assessment and inspection conclusions. In some cases this may lead to re-prioritisation of a site causing it to be inspected as a priority, or in some case as an emergency.

Key triggers causing re-assessment will be:-

- Proposed or actual changes to land use around a site¹
- Unplanned events e.g. localised flooding/landslide; accidents, fires, spills – where not covered already by other environmental protection legislation
- Reports of localised health effects appearing to relate to an area of land

¹ Changes of use to the site itself will be dealt with through the planning process

- Verifiable reports of unusual or abnormal site conditions received from external sources
- Responding to information from statutory bodies
- Responding to information from owners or occupiers of land

6.5.2 Review of the strategy

This strategy will be reviewed whenever there is significant change to guidance and or regulations and at least every three years. Best Value Performance Indicators, BVPIs have been introduced by DEFRA to monitor progress in the assessment of potentially contaminated sites. Targets are set annually as part of the business planning process.

7.0 Arrangements for Liaison and Communication

A wide range of individuals and organisations such as, other statutory bodies, Non-Governmental Organisations (NGOs), Landowners, Occupiers, local industry, commerce and the general public, will have an interest in contaminated land and the outcome of this strategy. In addition the successful implementation of the strategy relies on co-operation with this wide range of people.

It is vital that the Council clearly communicates its actions and findings to all interested parties and that clear mechanisms for liaison are established, particularly with key players such as the Environment Agency.

The collection and analysis of information at all stages of the contaminated land inspection process will rely on good communication with a range of organisations and individuals. This section sets out the mechanisms for liaison with all stakeholders relating to contaminated land issues and explains how the Council intends to communicate its findings.

7.1 Liaison Arrangements

7.1.1 Internal Liaison

This is covered in section 6.1. The Contaminated Land Officer is the key point of contact within the Council for contaminated land issues.

7.1.2 Neighbouring Authorities

The following scenarios have been identified

- ❑ As Parish and District boundaries have altered with time, there is a possibility that sites may be identified which contain contaminants but, at the time of the historic use, the site was outside Mendip District Council's boundaries and hence records may be kept by a neighbouring authority.
- ❑ it is possible that a source of contamination may be identified within an Authority's boundary, however, the pathway and receptor may lie within the neighbouring Authority and vice versa.

To facilitate effective management in these circumstances close liaison must be established with relevant local authorities. A contaminated land officers group has been established for the North Wessex Region and will be a key forum for discussion on these issues.

Once the strategy has been published, copies will be sent to the neighbouring authorities.

7.1.3 Other statutory bodies

A working dialogue has been established with Officers from the Environment Agency and Somerset County Council. Points of contact have been established with other regulatory bodies. These will be contacted as necessary for exchange of information and specialist advice.

7.1.4 Environment Agency

As previously discussed close liaison with the Environment Agency will be essential to the effective management of contaminated land. The key contact point within the EA is the Area Contaminated Land officer. A Memorandum of Understanding (MoU) is being defined between the Agency and the Local Government Association to clearly define liaison roles. Points of contact have also been established with the Environment Agency for liaison on PART IIA related issues.

Key points for exchange of information and liaison are

- ❑ Requesting information held on sites from the Agency
- ❑ Discussing whether there are any other powers the Agency could use to remediate the site
- ❑ Notification of contaminated land/Special Sites
- ❑ Request site specific advice from the EA on pollution of controlled waters
- ❑ Provision of information for the state of contaminated land report using standard forms.

7.1.5 Public, Businesses and Voluntary Organisations

Information will be sought from the local community once the Strategy has been adopted and published. A summary of the strategy will be sent to all Parish and Town Councils giving community representatives the opportunity to come forward with information that they feel may be of benefit.

7.2 Communication

It is vital that the Council ensures traceability of information and decision making and ensure accessibility to public information. In particular the Council will seek to keep all interested parties informed of progress on contaminated land issues.

A public summary of the contaminated land strategy will be produced and made available through local libraries, Customer Information Points and the Councils web site. This will include contact names and telephone numbers of the appropriate officers. The summary document will be produced within two months of this document.

7.2.1 Risk communication

The issue of land contamination is complex and of concern to a wide range of stakeholders to include not just the land-owners but the wider community. The communication of risk associated with sites and the findings and decisions made by the Council will need to be considered carefully.

A wide range of communication mechanisms will need to be employed by the Council to ensure:-

- ❑ Openness with all stakeholders,
- ❑ Encourage two-way communication enabling the council to gauge local concerns and act appropriately and,
- ❑ Ensure transparency of information.

The Council will refer to guidance provided by the Scottish Environmental Protection Agency (SEPA) 1999, 'Communicating Understanding of Contaminated Land Risks' and in addition to providing general information on land contamination in the district (above) will develop communications methods appropriate to local circumstances on a site-specific basis.

KEY REFERENCES

- ❑ DETR Circular 02/2000 , Contaminated Land: Implementation of Part IIA of the Environmental Protection Act 1990., ISBN 0-11-753544-3, DEFRA
- ❑ Guidance for the safe development of housing on land effected by contamination, R&D publication 66 – Environment Agency, 2001
- ❑ Planning Policy Guidance : planning and pollution control (PPG23) – DETR 1994
- ❑ Environment Agency Policy and Guidance on the use of anti- pollution works notices, Environment Agency
- ❑ A framework for assessing the impact of contaminated land on groundwater and surface water. CRL Report No 1 Volumes 1 & 2, DoE 1994
- ❑ Guidance on preliminary site inspection of contaminated land. CRL Report No 2 Volume 1 & 2, DoE 1994
- ❑ Documentary Research on Industrial Sites. CRL Report No 3, DoE 1994
- ❑ Sampling Strategies for Contaminated Land. CRL Report No 4, DoE 1994
- ❑ Information systems for land contamination, CLR 5 Report No 5, DoE 1994
- ❑ An Overview of the Development of Soil Guideline Values and Related Research, CLR Report No. 7, Environment Agency 2002
- ❑ Contaminants in Soil: Collation of Toxicological Data and Intake Values for Humans, CLR 9, Environment Agency 2002
- ❑ The Contaminated Land Exposure Assessment (CLEA) Model: Technical Basis and Algorithms, CLR 10, Environment Agency 2002
- ❑ Model Procedures for the Management of Land Contamination, CLR11, Environment Agency 2004
- ❑ Prioritisation & Categorisation procedure for sites which may be contaminated, CLR Report No 6, DoE 1995
- ❑ DoE Industry Profiles
- ❑ The re-use of contaminated land: A Handbook of Risk Assessments. Tom Cairney.
- ❑ Code of practice for the investigation of possible petroleum-based land contamination, Institute of Petroleum.
- ❑ Pilot survey of potentially contaminated land in Cheshire – A Methodology for Identifying Potentially Contaminated Sites. DOE
- ❑ Development of contaminated land – Professional Guidance. Institute of Environmental Health Officers.
- ❑ Code of practice for the identification of potentially contaminated land and its investigation. BSI DD 175 : 1988 – (superseded 2001)
- ❑ Contaminated Land: Assessment and Redevelopment. Richard Failey & Amanda Scrivens
- ❑ Soil Code, Code of good agricultural practice, revised 1998, MAFF 1998
- ❑ Contaminated Land risk assessment. A good practice Guide – CIRIA, 2001

- Special publication 103: Remedial Treatment for contaminated, Volume III: Site investigation and Assessment, CIRIA 1995
- Guidance on the assessment and re-development of contaminated land, ICRCCL Guidance Note 59/83, ICRCCL 1987

Interaction of Part IIA with other legislation

There are a number of existing statutory instruments, which currently allow for the prevention of future land contamination or deal with the legacy of past contamination. A majority of these measures will remain in parallel with the new Part IIA regime and it is likely that a majority of contaminated land sites will continue to be dealt with through the planning process.

A.1 Planning and Development Control

Town and Country Planning Act 1990 and Building Act 1984, Building Regulations 1991

Land Contamination, or the possibility of it, is a material consideration in the planning process. Local authorities therefore have to consider the implications of contamination during determination of a planning application and where necessary impose conditions requiring site investigation and the specification of suitable remedial measures, to ensure the site is suitable for use.

Guidance for planning authorities on contaminated land was set out in *Planning Policy Guidance : planning and pollution control (PPG23)* , published 1994, and DoE circular 11/95 The use of conditions in planning permissions. This was updated by Planning Policy Statement 23: Planning and Pollution Control in November 2004. Further guidance on the development of housing on land effected by contamination, was published by the Environment Agency and the National House Building Council (NHBC), *Guidance for the safe development of housing on land affected by contamination, R&D publication 66 – Environment Agency, 2001.*

In addition to planning requirements Building regulations require precautionary measures to be taken to protect the fabric of the new building and the health of its future occupants, from the risk of contamination. Approved document C, reissued in 2004, gives practical guidance on how to meet these requirements.

Where new development is taking place it will be the responsibility of the developer to carry out the necessary remediation. The planning process will therefore remain the primary tool for remediation of contaminated land.

A.2 Integrated Pollution and Prevention Control

Environmental Protection Act 1990, Part I, Pollution, Prevention & Control Act 1999, and EC Directive (96/61/EC)

Certain prescribed industrial processes must have permits issued by the Environment Agency or Local Authorities for environmental discharges through Integrated Pollution Control (IPC) and Local Air Pollution Control (LAPC) regimes under Part 1, EPA 90. Section 27 of the Act gives the regulator the power to remedy harm caused by a breach of the Pollution Control authorisation. The Government has stated that this could apply to cases of land contamination arising from such an offence.

A new regime of Integrated Pollution and Prevention Control (IPPC) has recently been introduced under the Pollution, Prevention and Control Act 1999, implementing the EC

Directive (96/91). This new regime, will be phased in between now and 2007 and introduce a more integrated permitting regime, considering emissions to air, land and water. The Environment Agency and Local Authorities will regulate the new regime. IPPC will supersede IPC and LAPC authorisations taking in other processes previously outside these regulations and is expected to have implications for industrial operators in relation to the management of contaminated land.

This regime includes a new system of enforcement notices, which will enable the Environment Agency to require the operator of permitted plants or installations to remedy the effects of any break of their permits. The IPPC regime will have the same relation to Part IIA as has the IPC regime.

A.3 Waste Management Licensing

Environmental Protection Act 1990, Part II

Land contamination can result from badly managed or unregulated waste management activities. The handling, treatment and disposal of waste are controlled through a licensing regime under Part II of the EPA 1990. Where a site has a current Waste Management Licence, the new contaminated land regime will not normally apply and any breaches of the license causing pollution this can be enforced through license conditions. If harm or pollution is caused by activity other than a breach of the license, or the carrying on of activity authorised by the license, then the Part IIA does apply.

In addition remediation activities on contaminated land may themselves come under the waste management regime for disposal or recovery operations and would need to be licensed. Guidance on this is provided in DOE circular 11/94.

A.4 Statutory Nuisance

Environmental Protection Act 1990, Part III

Prior to the introduction of the Part IIA regime the statutory nuisance provisions under Part III of the EPA 1990 was the main regulatory mechanism for enforcing remediation of contaminated land. Since the implementation of the Part IIA regime, the statutory nuisance system no longer applies to land defined as being 'contaminated land' under Part IIA definition.

The statutory nuisance regime will continue to apply for land contamination where an abatement notice or court order has already been issued and is still in force. It will also still apply to effects for deposits of substances giving rise to offence to human senses (e.g. smell) constituting a nuisance.

A.5 Water Resources Act 1991 and Control of Pollution Act 1974 (COPA)

Contaminated land can result in pollution of surface waters or ground waters and the Water Resources Act made it a criminal offence to cause, or knowingly permit water pollution. Under section 161 of the Water Resources Act and section 46 of the Control of Pollution Act, the EA also have powers to require action to be taken to prevent water pollution. This is usually done by serving a 'works notice', which specifies the work to be

undertaken, and a deadline for completion. Where contaminated land is concerned, there is potential for overlap between these powers and the Part IIA regime.

The EA has published a policy statement [4], which sets out how the Agency intends to use the works powers in relation to Part IIA. The effect of this policy is that: -

- The Local Authority should consult with the EA regarding potential land contamination affecting controlled waters, before any determination of contaminated land under Part IIA.
- The EA will notify the local authority of any actual or potential pollution of controlled waters cases resulting from contaminated land, enabling the identification of contaminated land and management through Part IIA
- Whenever land is identified as contaminated land under Part IIA regime, the Part IIA mechanisms would normally be used rather than works notice system.

A.6 Other regimes relating to Part IIA

Food safety

Under Part I of the Food and Environment Protection Act 1985 ministers have emergency powers to protect consumers from exposure to contaminated food and enable ministers to designate authorities for emergency control orders. These powers now rest with the Minister of Health, with advice from the Food Standards Agency (FSA) who may designate the Department of Environment and Rural Affairs (DEFRA) as the enforcing authority.

In relation to contaminated land and Part IIA, Mendip District Council will need to liaise with the Food Standards Agency about any possible use of powers under Part I of the 1985 Act.

Health & Safety

The Health and Safety at Work Act 1974 and the Construction (Design & Management) Regulations 1994 are concerned with risks to the public or employees, some of which could result from contaminated land. Mendip District Council will have to liaise with the Health & Safety Executive to ensure unnecessary duplication of controls and the use of the most appropriate regime to deal with problems. [now updated]

Landfill tax

Tax is payable on the disposal of waste, including those arising from remediation and reclamation of land. However, an exemption from the tax can be applied for where material is removed to landfill to prevent harm or to facilitate the development of the land for particular purposes. An exemption certificate must be applied for to the HM Customs and Excise but will only be issued if the work is not being undertaken to satisfy a remediation notice. This is aimed at encouraging remediation under part IIA by agreement rather than serving of a notice.

Major Accident Hazards

The Control of Major Accidents Hazards regulations 1999 (SI 1999/743) (COMAH) requires operators of establishments handling prescribed dangerous substances to prepare on-site emergency plans, and the local authority to prepare off-site emergency plans. The objectives of these include providing for the restoration and clean up of the environment following major accident. The Health & Safety Executive are responsible for overseeing the COMAH regulations.

TABLE A - CATEGORIES OF SIGNIFICANT HARM

	Type of Receptor	Description of harm to that type of receptor that is to be regarded as significant harm
1	Human beings	<p>Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.</p> <p>For these purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned. In this Chapter, this description of significant harm is referred to as a "human health effect".</p>
2	<p>Any ecological system, or living organism forming part of such a system, within a location which is:</p> <ul style="list-style-type: none"> • an area notified as an area of special scientific interest under section 28 of the Wildlife and Countryside Act 1981; • any land declared a national nature reserve under section 35 of that Act; • any area designated as a marine nature reserve under section 36 of that Act; • an area of special protection for birds, established under section 3 of that Act; • any European Site within the meaning of regulation 10 of the Conservation (Natural Habitats etc) Regulations 1994 (i.e. Special Areas of Conservation and Special Protection Areas); • any candidate Special Areas of Conservation or potential Special Protection Areas given equivalent protection; • any habitat or site afforded policy protection under paragraph 13 of Planning Policy Guidance Note 9 (PPG9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas and listed Ramsar sites); or • any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949. 	<p>For any protected location: Harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or harm which affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location.</p> <p>In addition, in the case of a protected location which is a European Site (or a candidate Special Area of Conservation or a potential Special Protection Area), harm which is incompatible with the favourable conservation status of natural habitats at that location or species typically found there.</p> <p>In determining what constitutes such harm, the local authority should have regard to the advice of English Nature and to the requirements of the Conservation (Natural Habitats etc) Regulations 1994.</p> <p>In this Chapter, this description of significant harm is referred to as an "ecological system effect".</p>

3	<p>Property in the form of: crops, including timber; produce grown domestically, or on allotments, for consumption; livestock; other owned or domesticated animals; wild animals which are the subject of shooting or fishing rights.</p>	<p>For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage.</p> <p>The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a pollutant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.</p> <p>In this Chapter, this description of significant harm is referred to as an "animal or crop effect".</p>
4	<p>Property in the form of buildings. For this purpose, "building" means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building.</p>	<p>Structural failure, substantial damage or substantial interference with any right of occupation.</p> <p>For this purpose, the local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended. Additionally, in the case of a scheduled Ancient Monument, substantial damage should be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.</p> <p>In this Chapter, this description of significant harm is referred to as a "building effect".</p>

TABLE B - SIGNIFICANT POSSIBILITY OF SIGNIFICANT HARM

	Descriptions Of Significant Harm (As Defined In Table A)	<i>Conditions For There Being A Significant Possibility Of Significant Harm</i>
1	Human health effects arising from <ul style="list-style-type: none"> • the intake of a contaminant, or • other direct bodily contact with a contaminant. 	<p>If the amount of the pollutant in the pollutant linkage in question:</p> <ul style="list-style-type: none"> • which a human receptor in that linkage might take in, or • to which such a human might otherwise be exposed, as a result of the pathway in that linkage, would represent an unacceptable intake or direct bodily contact, assessed on the basis of relevant information on the toxicological properties of that pollutant. <p>Such an assessment should take into account:</p> <ul style="list-style-type: none"> • the likely total intake of, or exposure to, the substance or substances which form the pollutant, from all sources including that from the pollutant linkage in question; • the relative contribution of the pollutant linkage in question to the likely aggregate intake of, or exposure to, the relevant substance or substances; and • the duration of intake or exposure resulting from the pollutant linkage in question. <p>The question of whether an intake or exposure is unacceptable is independent of the number of people who might experience or be affected by that intake or exposure. Toxicological properties should be taken to include carcinogenic, mutagenic, teratogenic, pathogenic, endocrine-disrupting and other similar properties.</p>
2	All other human health effects (particularly by way of explosion or fire).	<p>If the probability, or frequency, of occurrence of significant harm of that description is unacceptable, assessed on the basis of relevant information concerning:</p> <ul style="list-style-type: none"> • that type of pollutant linkage, or • that type of significant harm arising from other causes. <p>In making such an assessment, the local authority should take into account the levels of risk which have been judged unacceptable in other similar contexts and should give particular weight to cases where the pollutant linkage might cause significant harm which:</p> <ul style="list-style-type: none"> • would be irreversible or incapable of being treated; • would affect a substantial number of people; • would result from a single incident such as a fire or an explosion; or • would be likely to result from a short-term (that is, less than 24-hour) exposure to the pollutant.
3	All ecological system effects.	<p>If either:</p> <ul style="list-style-type: none"> • significant harm of that description is more likely than not to result from the pollutant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. <p>Any assessment made for these purposes should take into account relevant information for that type of pollutant linkage, particularly in relation to the ecotoxicological effects of the pollutant.</p>
4	All animal and crop effects.	<p>If significant harm of that description is more likely than not to result from the pollutant linkage in question, taking into account relevant information for that type of pollutant linkage, particularly in relation to the ecotoxicological effects of the pollutant.</p>
5	All building effects	<p>If significant harm of that description is more likely than not to result from the pollutant linkage in question during the expected economic life of the building (or, in the case of a scheduled Ancient Monument, the foreseeable future), taking into account relevant information for that type of pollutant linkage.</p>

**Table C.1: Land Use and Sensitivity Classification
For Mendip District Council**

Sensitivity Classifications for use in Stage 1 risk assessments in conjunction with tables 4.2-4.4, Annex D. Revised to Mendip land uses March 2007

Sensitivity Group A – Extensive industry	Sensitivity Group B – considerable industry	Sensitivity Group C – marginal industry	Sensitivity Group D – minimum industry
Coke Oven Colliery Shaft Dye Works Engineering Works Iron Works Former Waste disposal site Foundry Garage Gas Works Gas, Light & Coke Gasometer Landfill Site Lead mines / Works Leather Factory Magazine - related to Quarry Mill Indian Rubber Works Motor repair shop Printing Works Sandpit Waste disposal site Settlement Tanks Lead Mines Spoil Heap Tannery Tar Works	Brick & Tile Maker/Kiln Brick & Tile Works Brick Kiln Brick Tile & Pottery Works Brick Works Coal Depot Coal Pit Coal Shaft Colliery & Railway Sidings Colliery & Sidings Colliery/Sidings/Shaft Crape Factory Engine Shed Filter Bed & Tank Goods Shed Goods Shed & Sidings Goods Yard Paper Mill Pit & Sidings Quarry/Colliery Quarry/Limekiln/ Tanks Scrap Metal Yard Sidings Station Steel & Iron Works Tank	Blacksmiths Brick Field Chimney Colliery, Railway Sidings Concrete Works Engine Houses Engine Shed (Railway) Engine Shed/Railway Sidings Filter Beds Filter Beds/Sewage Works Former industrial site Former railway land Goods Depot Goods Shed (Railway) Goods Shed/Sidings Goods Station Goods Yard/Station/Sidings Gravel Pit Gravel Pit/Quarry Iron Pit Iron Works Kiln Leather Board Factory Pottery Quarries/Station Works/Stone Yard/Goods Shed Quarry/Limekiln Railway & Tramway Uses Sewage Works Silk & Crape Factory Sludge Bed Station & Sidings Granite Works Stone Works Wagon Works	Bacon Factory Boot & Shoe Factory Brewery Brush Factory Carriage Works Cattle Market Cattle Pen / Yard Chalk Pit Cheese Factory Cider Mills Clay Pit Cooperage Factory Corn Mill Saw Mill Creamery, Cattle Pens and Station Drainage Works Fire Engine Station Flour Mill Hospital Hydraulic Ram & Saw Laundry Lime & Cement Works Limekiln Malt house Marl Pits Metallic Art Works Mill Mine Shaft Mineral wash pits Peat Works Pit Prison Pump House Quarry Reservoir Sand Pit Saw Mill Sewage Tank Shaft Sheepskin Rug Manufactory Shoe Factory Silk Factory Silk Mill Smithy Station/Cattle Pens Steam Mills Timber Yard Tool Works Tramway/Railway Sidings Trial Mineshaft Vinegar Works Water Works/Reservoir Wind Pump Wind Pump/ Reservoir Wood Turning Mill Woollen Manufacturer Mill/Creamery

Figure 4.2
Stage 1 Assessment – Land Use

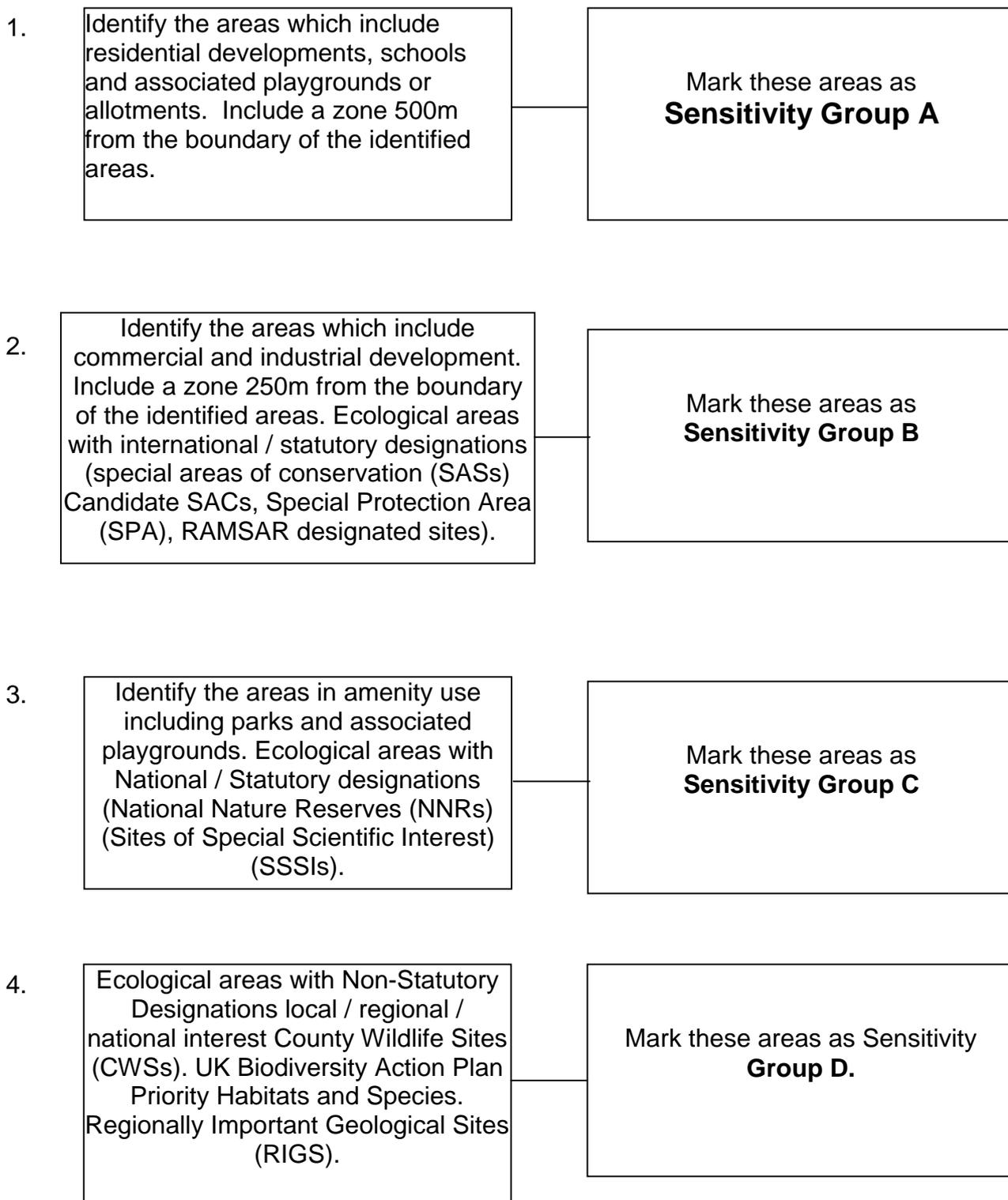


Figure 4.3
Stage 1 Assessment – Surface Water

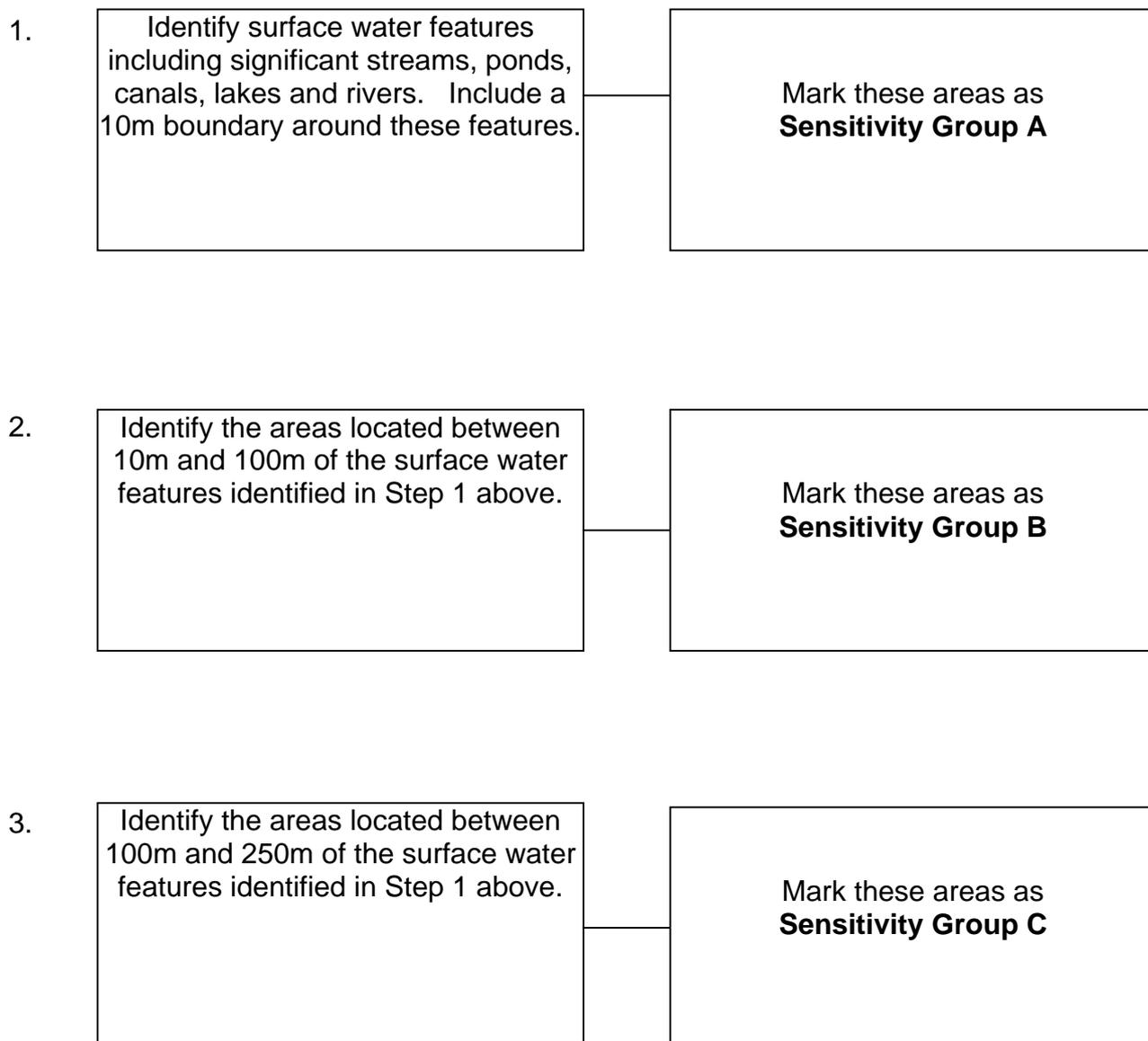
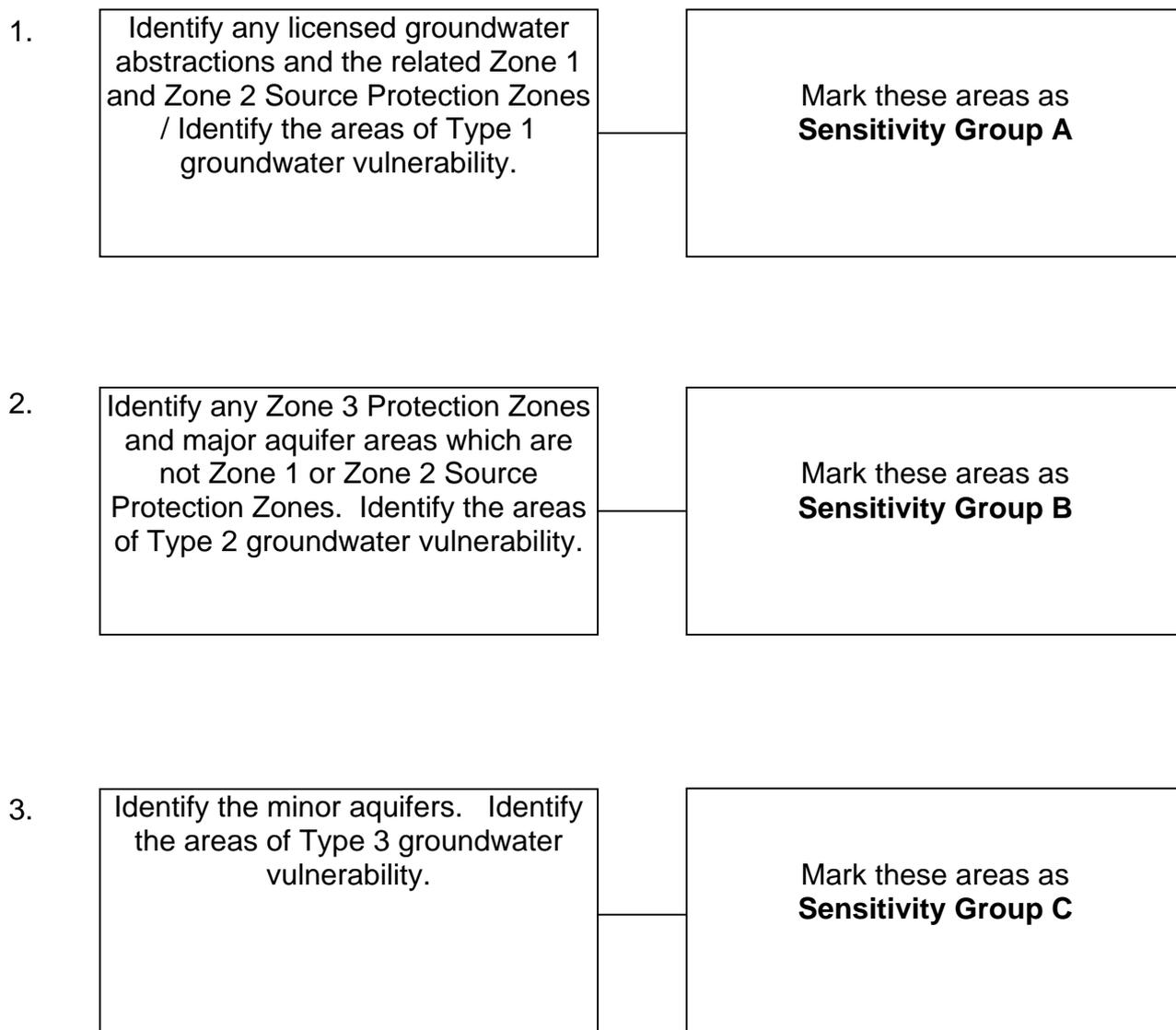
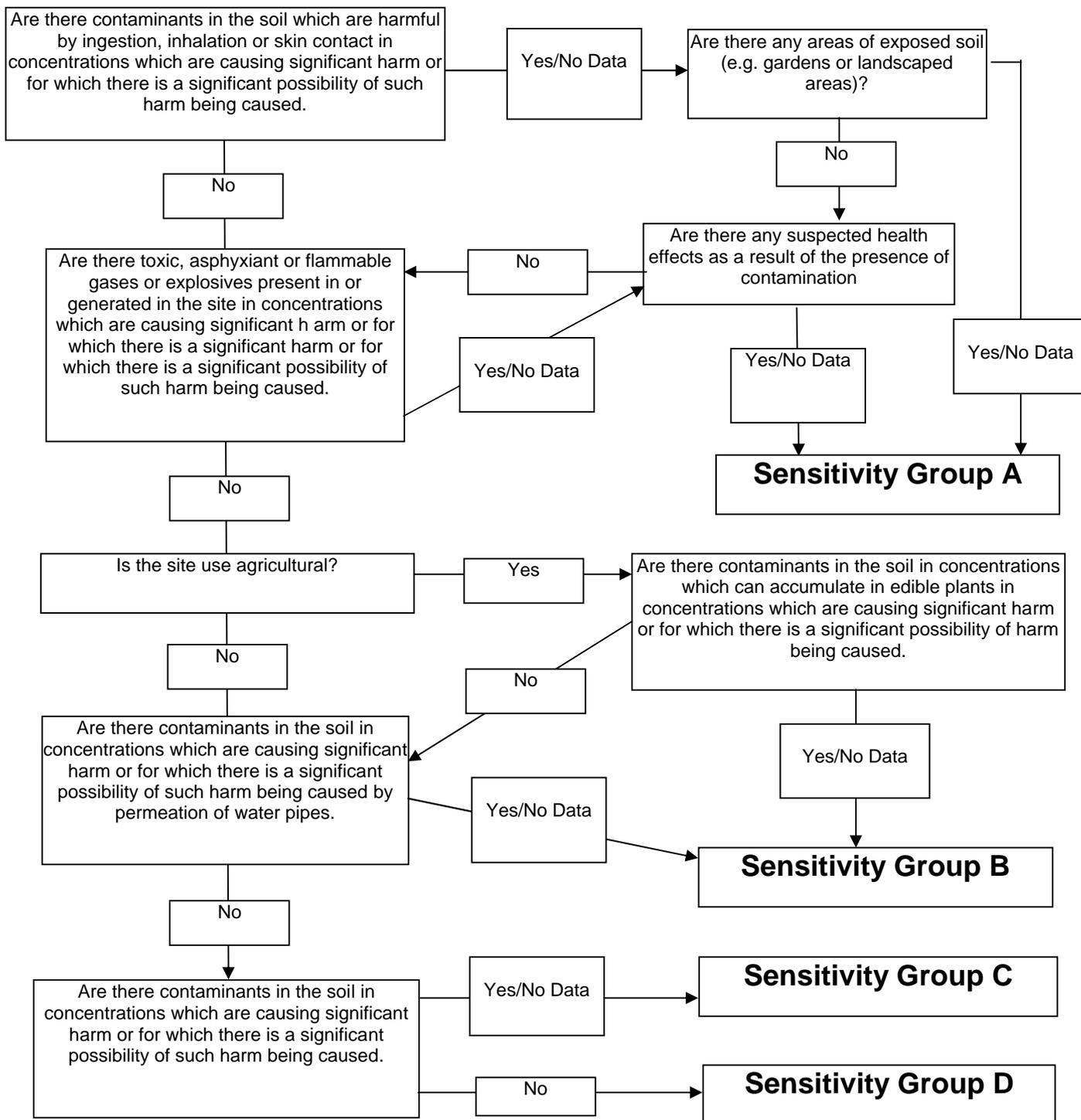


Figure 4.4
Stage 1 Assessment – Groundwater



Stage 2 – Assessment – Developed Land Residential, Allotments, Agricultural Land, Commercial or Industrial Use, Public Open Space or Amenity

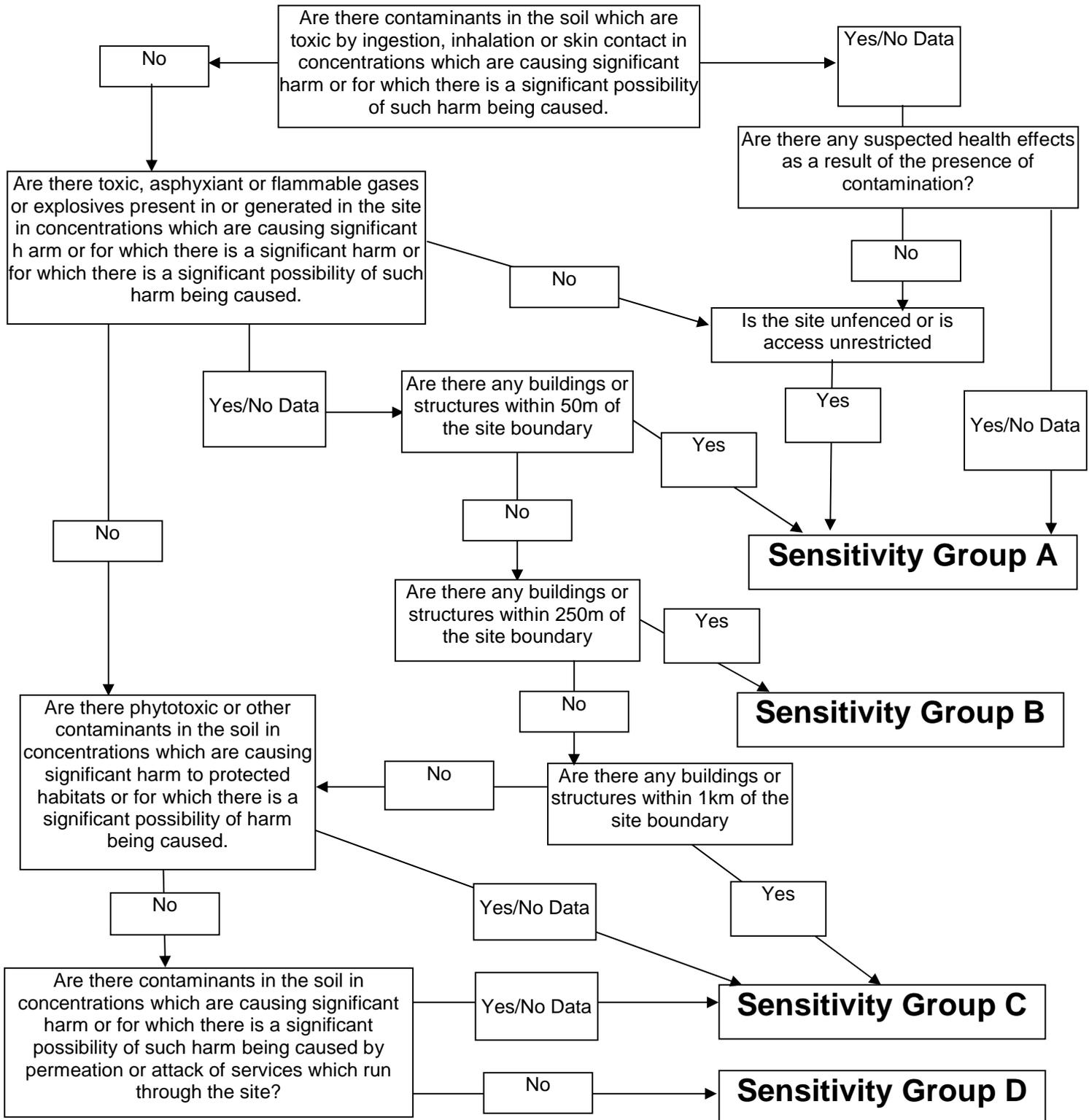


Note: The answer 'No' only applies where the data on contamination have been compared with a checklist for the contaminants expected on the site relevant to the particular target and have been evaluated to determine the statistical validity. For example, if a contaminant is expected to be present but has not been included in the testing programme or otherwise discounted the answer must be 'NO DATA'.

* For the purpose of this assessment material is defined as permeable if it has a vertical coefficient of permeability equal to or greater than 5mm/day.

** Other sensitive uses of groundwater include use in food manufacture, mineral water bottling and brewing.

Stage 2 – Assessment - Unoccupied Land And Protected Habitats

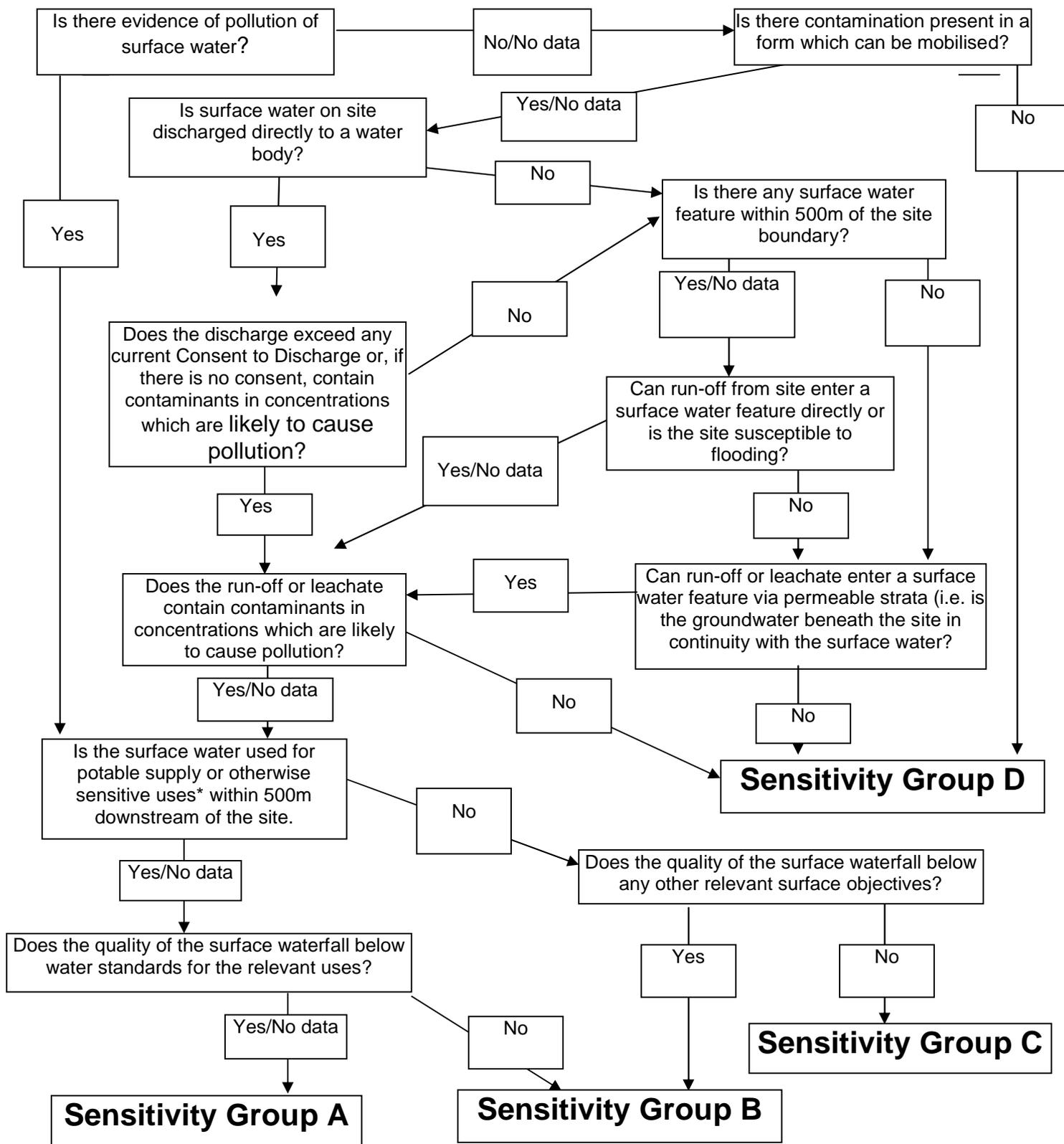


Note: The answer 'No' only applies where the data on contamination have been compared with a checklist for the contaminants expected on the site relevant to the particular target and have been evaluated to determine the statistical validity. For example, if a contaminant is expected to be present but has not been included in the testing programme or otherwise discounted the answer must be 'NO DATA'.

* For the purpose of this assessment material is defined as permeable if it has a vertical coefficient of permeability equal to or greater than 5mm/day.

** Other sensitive uses of groundwater include use in food manufacture, mineral water bottling and brewing.

Stage 2 - Assessment - Surface Water

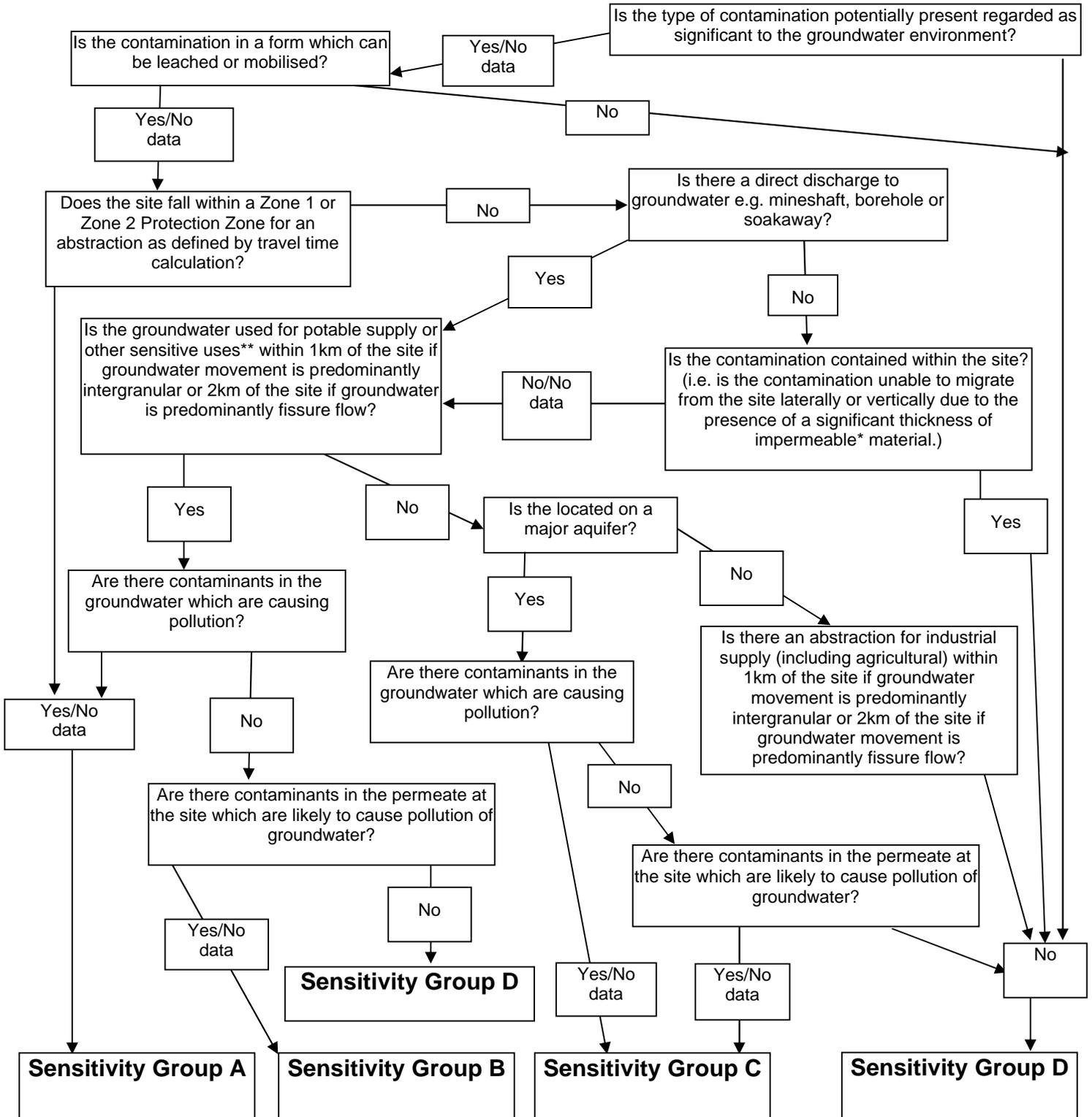


Note: The answer 'No' only applies where the data on contamination have been compared with a checklist for the contaminants expected on the site relevant to the particular target and have been evaluated to determine the statistical validity. For example, if a contaminant is expected to be present but has not been included in the testing programme or otherwise discounted the answer must be 'NO DATA'.

* For the purpose of this assessment material is defined as permeable if it has a vertical coefficient of permeability equal to or greater than 5mm/day.

** Other sensitive uses of groundwater include use in food manufacture, mineral water bottling and brewing.

Stage 2 - Assessment – Groundwater



Note: The answer 'No' only applies where the data on contamination have been compared with a checklist for the contaminants expected on the site relevant to the particular target and have been evaluated to determine the statistical validity. For example, if a contaminant is expected to be present but has not been included in the testing programme or otherwise discounted the answer must be 'NO DATA'.

* For the purpose of this assessment material is defined as permeable if it has a vertical coefficient of permeability equal to or greater than 5mm/day.

** Other sensitive uses of groundwater include use in food manufacture, mineral water bottling and brewing.

Previous Versions of the Strategy:

Version 1.0 October 2001