

Contaminated Land Inspection Strategy



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Overview

Contaminated land is a symptom of societies past failings to deal with land use in a sustainable manner. Prior to the days of environmental regulation and awareness, many industries would leave their calling card as large areas of land that would be blighted by the presence of contaminants.

The presence of contamination in, on or under the ground in such areas could therefore pose a risk to the health of either humans, or the wider environment. The newly enacted contaminated land powers aim at specifically dealing with these contaminated legacies of the past.

The regime is intended to minimize the risk posed by such historic sources of contamination, whilst bringing the cost of clean-up on those that caused or knowingly permitted the contamination to occur. The land can then be remediated to a standard that is 'suitable for use'.

This Contaminated Land Inspection Strategy is a statutory requirement of Part IIA of the Environmental Protection Act 1990. Part IIA was enacted by the Welsh Assembly Government on the 1st of July 2001 and places a duty on Local Authorities to inspect their areas for the purpose of identifying contaminated land.

This Inspection Strategy outlines the policy and procedure that will be undertaken by Newport City Council to fulfill its role as the primary regulator of the new regime. Essentially, the process will be one of risk assessment, where each potential site is dealt with on a risk basis with those sites that pose an immediate threat to the health of either human or the wider environment being dealt with on a priority basis. The key to this risk assessment is the concept of a pollutant linkage, which provides the cornerstone for the regime and in essence provides the understanding for what 'contaminated land' is.

For contaminated land to exist (in the statutory sense) all the elements of the pollutant linkage must exist. Firstly there must be a source of contamination; and secondly, a receptor that could be harmed as a result of the presence of contamination. In order for that contaminant to pose a risk to the receptor, the third essential element of the pollutant linkage is the pathway between the contamination and the receptor. This concept aims at only dealing with those cases of contamination where a risk is established. Where contamination exists, but has no pathway by which it can pose a threat to a receptor, there is no pollutant linkage and clean-up cannot be addressed under the contaminated land powers.

The adoption of the policies and procedures outlined in the strategy could affect many different service areas of the City Council, and it is therefore imperative that there is a broad understanding of the obligations that the new regime may pose. It must also be appreciated that the regime is still in its infancy, and many of the stake-holders, both on the enforcement side (the Council and the Environment Agency), and on the regulated side, are still in the process of adapting to the requirements of this new regime. The City Council will need to continue liaison and consultation with internal and external partners and contacts both during and after this initial period.

Contents

1	Strategy Introduction	5
1.1	General policy of Newport City Council.....	5
1.2	Regulatory context.....	6
1.3	Definition of contaminated land under Part IIA.....	9
1.4	Risk Assessment.....	12
2	Characteristics of the Newport City Council Area	14
2.1	Geographical Location.....	14
2.2	Size and Population.....	15
2.3	Brief description/history	16
2.4	Current land use characteristics	16
2.5	Local authority owned land	16
2.6	Current and past industrial history	17
2.7	Protected locations	18
2.8	Key property types.....	19
2.9	Key water resource/protection issues	19
2.10	Broad Geological and Hydrogeological Characteristics.....	20
2.11	Known information on contamination.....	21
2.12	Contaminated Land that has been remediated	22
3.	The Local Authority Strategy: Overall aims.....	23
3.1	Aims of the strategy	23
3.2	Authority priorities relating to the potential problem	23
3.3	Authority priorities relating to work the authority has already done	24
3.4	Authority targets	24
3.5	Work programme.....	24
3.6	Objectives and milestones.....	28
4.	General liaison and communication	29
4.1	Key contaminated land contact within the Council	29
4.2	Planning issues	29
4.3	Other statutory bodies/consultees	29
4.4	Non-statutory consultees/the wider community.....	29
5	Procedures.....	31
5.1	Internal management arrangements for inspection and identification.....	31
5.2	Considering authority interests in land.....	31
5.3	Information collection/management	31
5.4	Data confidentiality	33
5.5	Information and Complaints.....	34
5.6	Risk assessment	36
5.7	Interaction with other regulatory regimes	37
5.8	Risk communication	39
6	Programme for inspection	39
6.1	Criteria for selecting areas and individual sites	39
6.2	Site investigation procedure	40
6.3	Procedure for communication once contaminated land is identified.....	40
6.4	Liability and 'Appropriate Persons'.....	41

6.5	Serving a remediation notice	42
6.6	Where contaminated land is identified in NCC ownership.....	42
6.7	Powers of entry	43
6.8	The public register	43
6.9	Provision of information to the Environment Agency Wales	44
7	Review Mechanisms.....	45
	References – Further reading.....	46
	Appendix.....	47
	List of Statutory Receptors	47
	Categories of ‘significant possibility of harm’.....	48
	Glossary	50

1 Strategy Introduction

This strategy has been produced as directed by statutory guidance issued by the Wales Assembly Government (WAG) in accordance with Part IIA of the Environmental Protection Act 1990 (EPA). Part IIA and the accompanying guidance sets out the legislation for effectively dealing with the legacy of contaminated land within the UK, and was enacted in Wales on 1st July 2001. This inspection strategy will identify the process and procedure that will be undertaken for the purpose of identifying and remediating contaminated land within the Newport City Council area.

The regime is aimed at directing the cost of contaminated land remediation to those that caused or knowingly permitted contamination to be on, in, or under the land. If those liable for clean-up would suffer hardship as a result of the imposed costs, then this burden is passed to the regulatory body.

Because of Newport's industrial history, it is likely that large areas of the City will be affected by contamination. However, the new contaminated land powers can only address contamination that falls within the strict definition found in the legislation and statutory guidance. This will only address sites where the contamination poses, or will pose, a risk to human health or the wider environment, and not a site where there is the presence of contaminants above background levels that do not pose a risk.

1.1 General policy of Newport City Council

The contaminated land legislation is an extremely useful tool in applying sustainable practices in land-use planning and the effective minimisation of pollution effects through risk assessment. Significant environmental controls are now in place to prevent pollution occurring at source, and the contaminated land regime aims to effectively deal with pollution that has arisen from unregulated industrial activities of the past.

The identification and remediation of contaminated land compliments several of Newport City Council's (NCC) corporate objectives:

- to promote sustainable development and the re-use of 'brownfield' sites
- to provide a clean and safe environment
- to improve the health of local people
- to promote the economic, social and environmental well-being of Newport

Sustainable development underlies much of the rationale behind the contaminated land regime. Effectively dealing with contaminated land is an inherent part of sustainable practices and the existence of contaminated sites highlights our past failure to deal with land-use in a sustainable way. The council's urban regeneration policy is founded on sustainable principles and aims to ease the developmental pressure on greenfield sites. This acknowledges that greenfield sites are a finite and an extremely important resource. By actively encouraging brownfield redevelopment and urban regeneration, contaminated sites will be redeveloped and contamination remediated to a standard that is suitable for its end use.

The WAG has not adopted the same strategy as central government, which has for example, stipulated that 60% of new housing development should be on brownfield sites. The WAG's Planning Guidance does however, exhort local authorities to re-use previously developed land for development in preference to greenfield sites, since in most cases this will be the more sustainable option. The majority of contaminated land sites will be dealt with through the development control process.

NCC's (Deposit) Unitary Development Plan 1996-2011(UDP) outlines those sites that have the potential for urban regeneration. Specific UDP policies relate directly to the re-use of brownfield sites. For example:

- SP15 iii) Proposals will be favoured which assist the regeneration of the urban area, and in particular their potential contribution to the reuse of vacant, underused or derelict land.
- CE30. Urban regeneration schemes will be encouraged, particularly those which result in the protection and enhancement of the built and natural environment, townscape qualities and the condition and appearance of buildings, especially in the Usk Riverfront Corridor, Pillgwenlly, other older inner areas, the City Centre, District Centres and Major Route Corridors.

Newport City Council presently incorporates a number of policies that recognise the interrelation of the economy, the community and the environment. These are combined in the Local Agenda 21 Strategy "Towards a Sustainable Newport". This broad agenda recognises the central idea of managing resources in such a way that in meeting our own needs we do not compromise the ability of future generations to meet their needs.

1.1.2 Policy of Public Protection and Environmental Services

This strategy will also compliment the principles that guide the direction and work of Public Protection and Environmental Services, namely:

- Quality of the local environment
- Sustainable development
- Protection of the public, employees and animals
- Meeting statutory obligations

1.2 Regulatory context

Confidence that contaminated land is 'safe' after it has been remediated is important. Hitherto there had been no requirement for the promotion of public information on contaminated sites or remediation measures. This led to uncertainty and doubts about living and working on previously contaminated sites and also the reluctance of developers to take on such sites.

There has been therefore an urgent need for a new, improved system of regulation of contaminated land to give firmer, well-defined guidance. The new regulatory system is

consequently founded on sound science and firm principles such as 'suitable for use' standards of remediation, the 'polluter pays' principle, and best practice.

The central theme of the new regime places great emphasis upon a system of risk assessment subject to open scrutiny. It is supported by a growing volume of sound technical guidance on assessment and remediation from government agency sponsored research. This should lead to greater consistency and the promotion of best practice giving a greater level of overall confidence.

Part IIA of the EPA creates a complex scheme of strict and retrospective liability for remediation of land identified as contaminated. This is considerably more powerful than the previous legislation that placed contaminated land issues under the statutory nuisance powers. Regulatory control is essential as the existing legacy of contamination is a major externality that we have inherited from inappropriate investment decisions of the past, and represents a general threat to sustainable development. The presence of contamination impedes social progress and improvement in quality of life by the generation of derelict land and by posing health risks to those living nearby. Contamination also threatens wider damage to the environment and can migrate onto other sites.

Part IIA of the EPA has been under development since the early 1990's. In 1993 the Government announced a review of policy on contaminated land and liabilities. This was mainly in response to the adverse response to the proposals for local authorities to keep a public register of land subject to previous potentially contaminative uses (s143 of the Environmental Protection Act 1990). The outcome was the Government's "Framework for Contaminated Land (1994)", which identified the need for a modern, specific contaminated land regime to replace the historical statutory nuisance provisions and to improve clarity and consistency in dealing with the legacy of contaminated land.

The Environment Act 1995 inserted Part IIA into the EPA. However, it is the accompanying statutory guidance and regulations that provide the majority of the material needed for implementing the regime. The guidance was delayed by some 18 months in Wales due to devolution.

1.2.1 Regulatory role of local authorities under part IIA

Local authorities are the lead regulators of the new regime as they have proven experience dealing with issues pertaining to contaminated land under the previous statutory nuisance provisions.

The main responsibilities that now rest specifically with local authorities are:

- to cause their areas to be inspected to identify contaminated land;
- to determine whether any particular site is contaminated land;
- to act as enforcing authority for all contaminated land which is not designated as a "special site" (the Environment Agency will be the enforcing authority for special sites).

Regulation will entail numerous responsibilities for the Council. If the inspection procedure identifies a site as contaminated land then the regulatory authority will then set

the agenda for the remediation of the contaminated land, bringing such land to a condition that is then suitable for use.

1.2.2 Regulatory role of the Environment Agency

The Environment Agency is the lead regulator in contaminated land sites that are designated as “special sites” (see section 1.2.3). This involves the effective remediation of special sites and maintaining a register of all the sites in their control. The Environment Agency must provide advice to local authorities on identifying and dealing with pollution of controlled waters. They must also provide general advice on the remediation of contaminated land, as they possess specialist knowledge that can be of assistance to the local authority. The Environment Agency is also required to prepare a National Report on the state of contaminated land in England and Wales.

NCC will endeavor to build a strong working relationship with the Environment Agency for all matters pertaining to contaminated land. By involving both parties from the outset of site determination, information and resources can be maximized, and decisions can be made that will be fully supported by both regulatory bodies.

1.2.3 What is a Special Site?

Special Sites come under the regulatory control of the Environment Agency. In general terms a site is classed as a special site because the contamination is of a nature that is best addressed through the EAW expertise and experience in dealing and regulating such sites.

It will still remain the responsibility of the Local Authority to identify contaminated land where the land appears to be a special site. Once the land is formally identified as contaminated land, and both the Local Authority and the Environment Agency Wales agree that the site should be classed as a Special Site, then all responsibility in relation to the remediation and regulation of the site will then rest with the EAW.

Special Sites can be designated as such based on three grounds:

Water Pollution Cases

Where pollution arising from contaminated land is having a deleterious effect on controlled waters. For example where contaminants are entering, or where controlled waters are being affected that results in those waters needing remedial treatment before they meet wholesomeness requirements set out in other legislation.

Industrial cases

Where the contaminated land was used for an industrial activity that was regulated by the Environment Agency. For example, Integrated Pollution Control (IPC) sites. Other industrial sites that will be designated as Special Sites are those

that involve either waste acid tar lagoons, oil refining, explosives, or nuclear operations.

Defense Sites

Where contaminated land arises on land that involves the Ministry of Defence (MoD). For example operational land or bases, land formerly used for the manufacture, production or disposal of chemical and biological weapons and related materials regardless of current ownership.

1.3 Definition of contaminated land under Part IIA

Contaminated land is defined (in the EPA) as:

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

- (a) significant harm is being caused or there is a significant possibility of such harm being caused; or
- (b) pollution of controlled waters is being, or is likely to be caused.

In order to fully understand this definition, particular reference needs to be made to the guidance 'The Remediation of Contaminated Land, Wales, November 2001'.

1.3.1 The pollutant linkage

The above definition is based on risks of significant harm to human health and the environment. Land can only be defined as contaminated if there is a "significant pollutant linkage". This requires evidence of the presence of a contaminant, a receptor, which could be harmed as a result, and a linkage or 'pathway' between the two. The harm that the receptor may experience must be "significant" as defined in the legislation and statutory guidance. Receptors include humans, wildlife sites, livestock and crops, and buildings. (For the statutory list of receptors, refer to the appendix)

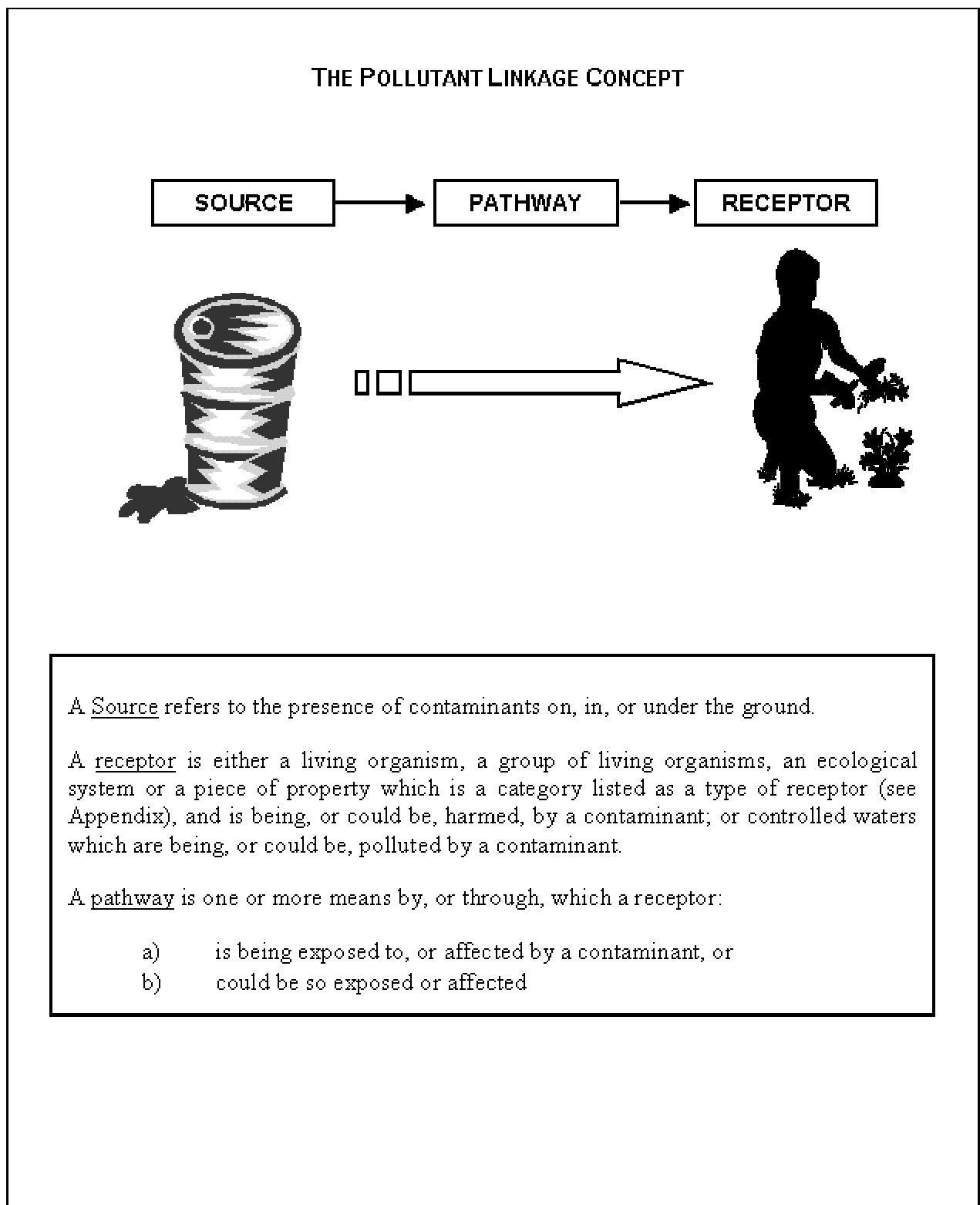
The guidance details how the definition of contaminated land is based around the principles of risk assessment. In order to carry out a risk assessment for contaminated land, the pollutant linkages must be identified for each given site.

Land can only meet the definition of 'contaminated land' if all three elements of the pollutant linkage can be identified. A pathway can only be established if it is capable of exposing an identified receptor to an identified contaminant and the contaminant identified is capable of harming or, in the case of controlled waters, be capable of polluting, that particular receptor.

It is important to appreciate that this inspection strategy, and the legislation that supports it, is built upon this definition. The distinction between 'contaminated land' and "land that is contaminated" needs to be fully established and understood. Contaminants can be known to be in, on, or under the ground, but the land in question will only meet the

statutory definition of contaminated land and the subsequent remediation requirements, if those contaminants have a pathway by which they can cause, or have the potential to cause, harm to a receptor.

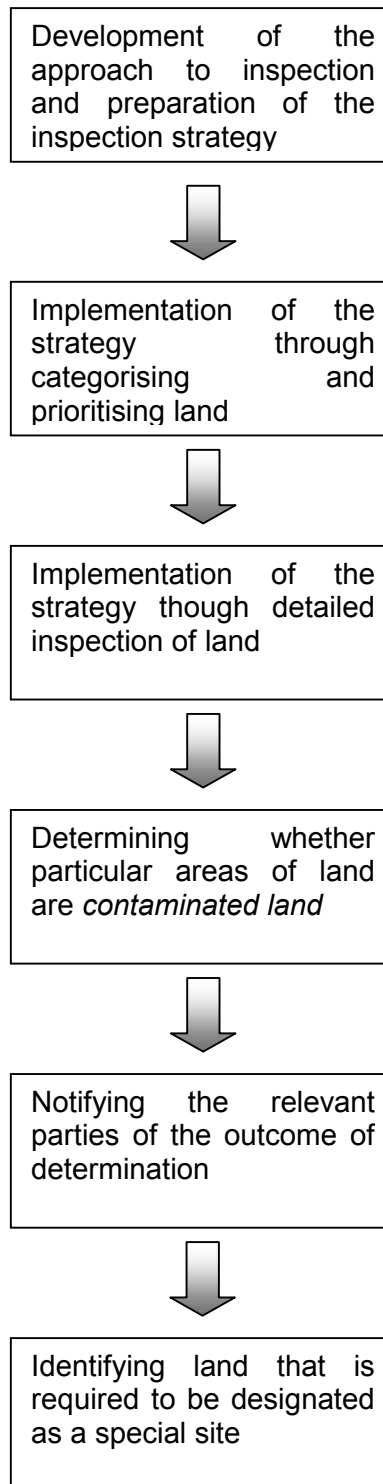
This inspection strategy sets out the approach for identifying receptors, assessing sources of contamination and analysing possible linkages. Local authorities have sole responsibility for the identification and determination of land that meets the statutory definition. This responsibility cannot be delegated to any other person or body.

Figure 1. The pollutant linkage

1.4 Risk Assessment

Should all the elements of the pollutant linkage be identified, a risk assessment needs to be undertaken to establish the likelihood of harm being caused or, if harm is already being caused, the extent and nature of that harm. It will be necessary to carry out site-specific risk assessments, as there will inevitably be variation between sites.

Each risk assessment will make use of the conceptual model of the site. This will illustrate the expected contaminants, pathways and receptors, that in their interaction cause a risk. The identification of unacceptable risk will then lead to the pollutant linkage being defined as a "significant pollutant linkage". It will then be necessary to produce an effective remediation scheme for the site including procedures for on going risk management that will endeavour to manage the risk so that the hazards posed by any contamination still present are acceptable.

Figure 2 Flow chart to show NCC's approach to inspection

2 Characteristics of the Newport City Council Area

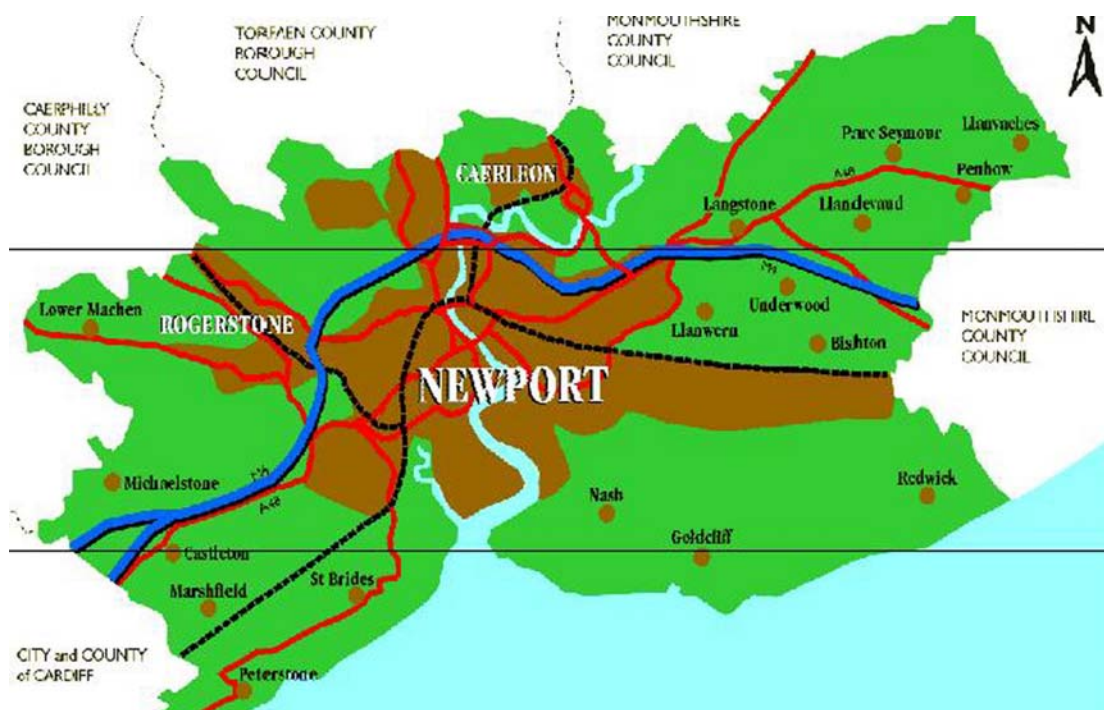
This section describes the background to the City of Newport and an explanation of how the characteristics of the City influences the Council's approach to inspection for contaminated land. By understanding the broad characteristics of the area, a fair comparison can be made with other local authorities of similar characteristics.

2.1 Geographical Location

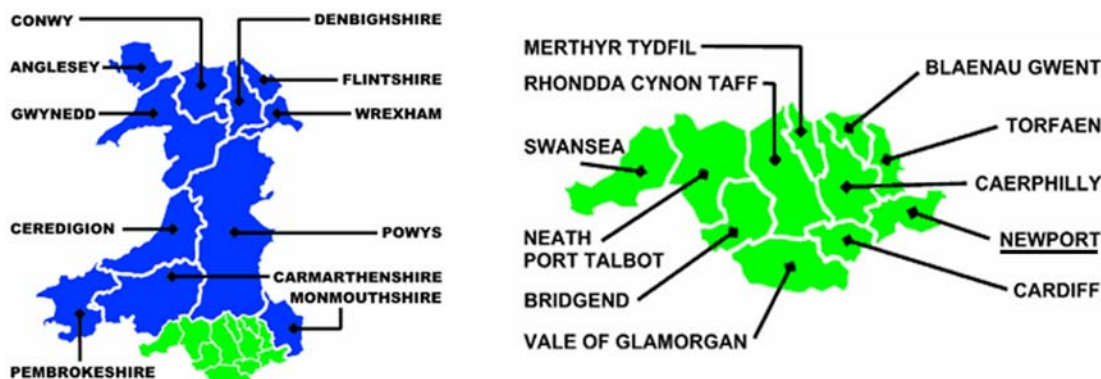
Newport is often described as the gateway that links England and Wales. The County Borough of Newport was established in 1996 following local government reorganisation and is the 8th largest unitary authority in Wales. The area is flanked to the east by Monmouthshire County Council, to the north by Torfaen County Borough Council, to the northeast by Caerphilly County Borough Council, to the west by the City of Cardiff and to the south by the Bristol Channel (see figure 3).

Newport has recently been awarded the honour of City Status. This newfound status could signal an increase in inward investment, thus putting further developmental pressure on many of Newport's brownfield sites. This may mean that more sites with known areas of contamination will be addressed through development control processes.

Figure 3 Newport and the surrounding environs



Unitary Authority Boundaries in Wales



2.2 Size and Population

NCC covers an area of 84 square miles (218 square kilometres), with a population of around 139,000, and is divided into 20 Wards, the largest (by population) being Liswerry which contains 7.4% of the total population. The rural area of Langstone is the smallest of the Wards with just 2% of the total population. Caerleon, the largest outlying “village” has over 8000 inhabitants, just over 6% of the total population. The average household size in the County Borough is 2.31.

2.3 Brief description/history

Newport's history stretches back 2,000 years to a Celtic settlement. The Romans built a large settlement to the north east of Newport. This includes one of the largest known Roman fortresses and an amphitheatre, both of which provide a popular tourist attraction. Newport was transformed during the onset of the Industrial Revolution, with the River Usk providing an essential avenue for exporting coal from the Welsh valleys, and the iron and steel industries developing along the flanks of Europe's deepest navigable river.

The low-lying coastal plain in the South of Newport has been partly reclaimed for industrial developments, including the Llanwern steelworks, and other smaller forges and foundries. The banks of the Usk were mainly developed during the 19th century into a series of quays, coal-loading staithes, chemical works, iron and brass foundries, shipyards and engineering works.

A significant proportion of the County Boroughs area is designated as a Site of Special Scientific Interest and a Historic Landscape. Unusually for an industrial town in lowland Britain there are also significant areas of natural woodland.

2.4 Current land use characteristics

The urban area of Newport dominates the central area of the County Borough. Newport is almost evenly distributed to the east and west of the River Usk, the southern area being dominated by industrial land uses. The docks to the south west have historically been an industrial area, and continues to be so despite the downturn in dock trade. The south eastern area is characterised by heavy industry and several industrial estates have been established, such as Reevesland, and Queensway Meadows. To the east of these are Corus Steel Works, which dominate the eastern fringes of the town. Other notable industrial areas are the Star Trading Estate north of Caerleon, and Tregwilym Industrial Estate in Rogerstone where Alcan Rolled Products is based.

2.5 Local authority owned land

NCC's portfolio of land is typical of any local authority, with various sites held by a number of Service Areas within the Council. Sites range from land appointed for Council Housing, land used for leisure activities such as playing fields and allotments, education sites, to large brownfield sites designated for economic development. Many such brownfield sites are known to be 'contaminated' to various degrees, although due to the current use of the sites, action under Contaminated Land powers is unlikely.

The size of each site is as diverse as its nature. Sites of particular interest with regard to potential land contamination are primarily those with former industrial uses.

2.6 Current and past industrial history

Since the Industrial Revolution, Newport has been a typical industrial town with a strong dependence on heavy manufacturing industries, particularly sectors such as iron and steel. However, during the last twenty years, the town has had to re-assess its position as an industrial town as the country's manufacturing base has slowly been eroded. This has led to Newport establishing itself as a modern town with strong links in the electronics sector. An understanding of the industrial history of the County Borough is essential in order to assess the past uses of land and their contamination history, as areas of past heavy industry are most likely to have contaminants in, on, or under the ground.

Newport has had a settlement history since at least Celtic times. It has had a strong Roman influence with the fortress of Isca at Caerleon being established circa AD 74. The Normans had a strong influence in the development of Newport itself with the town of Novus Burgus ('new borough' or 'port') being a regionally important town. The earliest record of a permanent bridge crossing the River Usk was in 1072. The potential for industrial development of the town was realised by Archdeacon Coxe in his 'Historical Tour Through Monmouthshire' 1798, when he commented that 'hence a district, which contains such extensive mines of ore and coal, prodigious quantities of limestone, and numerous streams of water, could not fail to become a seat of many flourishing establishments'.

The construction of the Monmouthshire/Brecon canal between 1792-1799 can be seen as the catalyst for the development of Newport as an industrial town. The need for coal to fuel the Industrial Revolution provided Newport with an ideal opportunity to serve Britain and the rest of Europe, with the 'world's best coal' being barged down from the Welsh Valleys. In order to provide such a service, considerable development of the port was needed.

Construction of Town Dock took place between 1835 and 1842 on land between what is now Lower Dock Street and the River Usk. As the demand for coal grew, further dock construction was needed with Alexandra Dock opening in 1875 after seven years of construction. In 1893 Alexandra (South) Dock was opened, with a later extension claiming the lives of 39 men. By 1914 Newport could boast that it had the largest dock in the world with a total floating surface area of 145 acres, and was the third largest coal shipping port in the UK, exporting more than 5 million tonnes in 1912. Many of the dock areas have now been in-filled at various stages in the town's development.

Newport as an export dependant town was transformed when steel began to replace iron after the invention of the Bessemer process in 1856. Local ores were of inferior quality as their phosphorous content was too high for the steel making process. This led to the dependence on imported ores, mainly from Spain, and gave Newport further impetus for growth with coastal towns reaping the benefit as ironmasters concentrated their works close to the coasts to minimise haulage costs. Several steel works and associated industries established in the area, including Britain's first 'Frigidaire' dealership.

Steel has since been of fundamental importance to the town's development. In 1958 Harold Macmillan announced the Spencer Steel works were to be built at Llanwern in response to the growing demand for steel based consumerables such as cars and washing machines. However, the schedule was delayed for four years and further concern came when the government announced the building of the Ravenscraig plant in

Scotland, therefore splitting the intended output for Llanwern. After opening in 1962, it was already apparent that the market was close to saturation.

Severe cutbacks in the early eighties led to the loss of over 4,000 jobs at Llanwern. This was a depressing time for manufacturing in Wales, with unemployment levels up to 15.9% by 1982 (compared to only 2.5% in 1970). The slim-down of Llanwern did enable it to be more competitive and by 1983/84 it had become the leader in the BSC efficiency race. It had gone from making losses of £30m to making a profit of £5m. However, recent market pressures have resulted in the closure of the heavy end of the plant.

Other historically important players in Newport's industrial past include Monsanto, now Solutia, which has operated in Newport since 1949. The plant produces a wide variety of specialty chemicals, although none of their products are sold directly to the public. There are currently over 300 people working on site, both for Solutia and for outside contractors.

In the last two decades Newport has seen a steady transformation in its employment characteristics. There is still a strong reliance on heavy manufacturing, but significant increases in the numbers employed in the electronics sector highlights the changing face of employment in South Wales. Manufacturing is still prevalent in the employment profile of Newport, with 25.5% of the workforce, compared to a Great Britain average of 17.5%. Metal manufacturing remains dominant within this sector, with 7.9% of the employed total, which compares with just 0.6% for Great Britain.

2.7 Protected locations

NCC's biodiversity includes a wide range of habitats and species, many of which are protected. The following summary gives a brief overview of the range of site designations and also identifies specific sites within the NCC area.

2.7.1 Internationally designated sites

NCC has one candidate Special Area of Conservation (cSAC) under the EC Habitats Directive - the River Usk, which supports many threatened and declining species including the otter, kingfisher, sand martin, river and brook lampreys, twaite and allis shad.

The Severn Estuary is designated as a Ramsar site, as a Special Protection Area (SPA) and as a possible Special Area of Conservation (pSAC). The Estuary lies at the mouth of four major lowland rivers and innumerable lesser rivers and streams, and has the second largest tidal range in the world. It is internationally important for its wintering wildfowl and waders, lies on a major migratory bird route and also supports nationally important populations of migratory fish, including twaite and allis shad and river and sea lampreys. Otters also occupy many parts of the Estuary.

2.7.2 Nationally designated sites

The City contains 11 Sites of Special Scientific Interest (SSSIs), which include:

- the River Usk (Lower Usk)
- the Severn Estuary
- the Gwent Levels (comprised of 6 separate, contiguous SSSIs), of which a total of 4,500ha lie within the County Borough
- Penhow Woods
- Parc Seymour Woods
- Langstone-Llanmartin Wood
- Plas Machen Wood

Penhow Woods is also designated as a National Nature Reserve (NNR).

2.7.3 Locally designated sites

One Local Nature Reserve (LNR) at Allt-yr-yn has been declared in the City, and managed by NCC in conjunction with the Wildlife in Newport Group (WING), who also manage a number of other sites.

In addition to the above there are several Gwent Wildlife Trust reserves and a major new wetland reserve on the Gwent Levels managed by the Countryside Council for Wales (CCW) and the Royal Society for the Protection of Birds (RSPB).

2.8 Key property types

Not only must the natural environment be protected, but so must Newport's important historic built environment. Newport has over 250 listed buildings on the statutory list, and many more that have been locally listed. These are dispersed throughout the City and range from an early 19th Century Lighthouse on the mouth of the Usk, to the famous Grade I Newport Transporter Bridge. This is one of only two transporter bridges in the UK. The Bridge was opened in 1906 and provides a pertinent reminder of Newport's industrial history. Tredegar House is one of Newport's most recognised Grade I listed buildings, dating from the 17th century, and is regarded as one of the finest examples of Restoration period houses in Britain.

2.9 Key water resource/protection issues

The water and utility company Hyder provide the majority of the City's domestic drinking water. NCC is also responsible for the monitoring and inspection of 28 private domestic water supplies. The majority of these are located in the northeast. NCC is also

responsible for monitoring 2 commercial private water supplies, both located in the Marshfield area.

The Environment Agency has identified groundwater Source Protection Zones (SPZ) in the City. The SPZ provides an indication of the risk to groundwater supplies, for which SPZ have been defined, that may result from potentially polluting activities and accidental releases of pollutants. The total SPZ area for Newport lies to the north of the City, just to the east of Malpas. Where a contaminative use is operational in this area, special consideration will be given for the protection of the groundwater.

2.10 Broad Geological and Hydrogeological Characteristics

The City is characterised by a variety of landscapes, which are greatly influenced by their underlying geology. The landscape ranges from the high moor-lands to the north west, comprising mainly of Devonian Old Red Sandstone, to the lower, gently undulating landscape of the south, which is typified by much younger fluvial deposits, underlain by Triassic mudstones.

The most extensive formation is the Devonian St. Maughans Group. This is made up of marls, sandstones, limestones and conglomerates and forms the majority of the Old Red Sandstone found in the Borough. This provides the main source of the regions aquifers. These sediments were derived under warm humid conditions. It was after this period that the Carboniferous Coal Measures that are found to the northwest were deposited. These have since played a fundamental part in South Wales' economic development.

Industry has predominantly been situated along the banks of the river Usk. The geological succession along the lower Usk is fairly uniform. The upper layers are predominantly made up of made ground to varying degrees of thickness. This tends to be thicker on the Western Banks where industry has been located for longer. Underlying the heterogeneous made ground are the soft alluvial and estuarine clays and silts. These vary in thickness and often contain layers of peat. Such layers can generate natural gas. Beneath the alluvium one can find sands and gravels, which can locally act as an aquifer. These tend to be thinner, and sometimes absent to the east of the Usk. Below, one encounters the bedrock, which is primarily Triassic/Devonian mudstones and sandstones. The Old red sandstone is considered a minor aquifer. In parts it can be fractured or potentially fractured with low permeability. Although these aquifers will seldom produce large quantities of water for abstraction, they are important both for local supplies and for base flow of the regions rivers

Figure 4 Geological succession in the Newport area

Geological Succession in the Newport area				
Age	Formation		Thickness (metres)	Lithology
Quaternary	Superficial	Marine or Estuarine Alluvium	Up to 16	Clay and peat bands overlying sands and gravels
Jurassic	Lower Lias	Lower Lias Clay Blue Lias	45 – 60	Blue grey argillaceous, shelly limestone with thin mudstone
Triassic	Rhaetic and Keuper	Cotham and Westbury Beds	5 – 7	Black shales and mudstones with thin beds of limestone and sandstone
		Mercia Mudstone Group	110 – 116	Mudstone and siltstones with thin beds of limestone
Major unconformity				
Devonian	Old Red Sandstones	Brownstones	125 – 190	Red grey sandstones and red green mudstones
		St Maughans Group	470 – 625	Marls, sandstones and limestones with thick beds of conglomerate
		Raglan Marl Group	345 – 625	Red mudstone and silty mudstone with some limestone bands

2.11 Known information on contamination

Data relating to contamination within the City has been documented through the development control process. Site Investigations are often required as a planning condition in areas where there is knowledge of potential contamination. In cases where the proposed development was undertaken, then remedial measures may have been incorporated into the development process to improve ground conditions. Therefore careful attention needs to be given to planning records during the investigation process.

Several key site investigations are on-going for areas of concern due to their industrial history. Site investigations have highlighted elevated levels of contaminants, yet due to the lack of mobility, it is not expected that such sites will meet the definition of

contaminated land. Such sites will however, have their contamination addressed should they become part of the development process.

As described in section 2.6, the banks of the River Usk have a long history of industrial development. The presence of heavy industries, particularly during years of little environmental concern, has led to large areas of made-ground containing a variety of elevated concentrations of metals and hydrocarbons. Site investigations for locations allocated for development have indicated this contamination, yet despite concentrations being elevated, current information does not suggest that they warrant remedial action under Part IIA of the EPA. However this contamination will be addressed through any proposed development of the site.

2.12 Contaminated Land that has been remediated

There are several sites within the City that have been contaminated in the past, but have since had the contamination addressed and are now remediated to a standard that is suitable for use.

Of particular note is the housing and education land at the former Rogerstone Power Station site. Prior to development, this land was unsuitable for use due to the presence of asbestos within the pulverised fuel ash (PFA), which covered much of the site.

Through close liaison with the developers, and consultants acting on their behalf, a remediation scheme was agreed upon that would minimise the risk, not only to site users during development, but also to those who would eventually inhabit the 72 acre site. Potential buyers into the area are now informed of the previous contaminative use and are invited to view any of the records which outline the remediation scheme employed. Such an open approach has ensured that the area has not been blighted by the previous presence of contamination, and house owners can now be confident that all risks have been minimised through responsible and accountable development.

3. The Local Authority Strategy: Overall aims

This section shall outline the aims of the Strategy and the work programme that shall be implemented in order to meet those aims.

3.1 Aims of the strategy

This overall aim of this strategy is to minimise the risk posed by contaminated land through effectively identifying and remediating sites where the presence of a pollutant linkage is causing an unacceptable amount of harm to either human health or the environment.

A strategic approach will endeavour to systematically identify sites within the County Borough where a pollutant linkage is present. The strategy guidance states that the strategic approach will:

- be rational, ordered and efficient;
- be proportionate to the seriousness of any actual or potential risk;
- seek to ensure that the most pressing and serious problems are located first;
- ensure that resources are concentrated on investigating in areas where the authority is most likely to identify contaminated land; and
- ensure that the local authority efficiently identifies requirements for the detailed inspection of particular areas of land.

3.2 Authority priorities relating to the potential problem

In order to deal with contaminated sites in an ordered and rational manner, there must be a balance between the importance of each receptor. In doing so, this Authority's priorities will be as follows:

- 1) To protect human health
- 2) To protect controlled waters
- 3) To protect designated ecosystems
- 4) To protect the built environment

Contaminated land sites will be prioritised based on the principles of risk assessment. Risk can be defined as the combination of:

- (a) the probability, or frequency, of occurrence or a defined hazard (for example, exposure to a property of a substance with the potential to cause harm); and
- (b) the magnitude (including the seriousness) of the consequences.

Each area studied will be assessed using this risk-based approach. This will enable the Council to identify those areas where an unacceptable risk is imposed on the receptor. In establishing such a link, specialist assistance will be required from the Environment Agency, especially in relation to the pollution of controlled waters.

3.3 Authority priorities relating to work the authority has already done

In the course of the Council's development programme and brownfield initiative, considerable ground investigation has been undertaken at sites where there was a known presence of contaminants due to the historical nature of the sites. Such sites may be in line for future development, or in the course of development, in which case they will be remediated through the planning process. Each site will still be subject to the same investigation as outlined in section 6.2. Information on the site investigations will be held by Public Protection and Environmental Services, and the areas covered will be indicated on the Geographical Information System (GIS) (See section. 5.3).

3.4 Authority targets

The process of site inspection will be an iterative process that begins with the desk-study and can eventually lead to remediation. The process of identifying potential sources of contamination will have to be managed effectively in a risk basis in order to identify areas that will be of major concern. It is therefore expected that the majority of the desk-based work, including site prioritisation will be completed by September 2003.

3.5 Work programme

The inspection programme will be effected in a phased manner. It will be the intention of the council to follow this intended programme, but deviations may occur where unforeseen circumstances are considered to take priority.

3.5.1 Stage 1

Preparation and development of the Geographical Information System (GIS)

Spring 2002 – Autumn 2002 (Some ongoing tasks, as well as information that continuously needs to be entered onto the system)

The Council has an operational GIS that has been developed by Planning and Economic Regeneration for some years. This system will be developed to incorporate contaminated land issues through highlighting potential sources, pathways and receptors.

Time will be needed to identify potential sources of contamination and the main method of such data capture will be the digitising of information from historical maps and historical trade directories. Sets of digitised historic maps have been obtained by Public Protection and Environmental Services, and Planning and Economic Regeneration. Where a contaminative land-use is identified by analysis of the historical maps, trade directories (past and present), or through general interpretation, 'layers' can be added to the GIS to indicate the potential source (see figure 5). This will be done following the information provided by the DoE industry profiles and contaminated land research reports. This

information will then be used for prioritising areas that require further investigation. In the figure illustrated below, it can be seen that a residential area has been developed on what was an Iron Foundry. By analysing the relationship between the two, it will be possible to determine which areas of land require further investigation.

Figure 5 – Current and past land-uses



The main information source for the analysis of potential pathways is likely to be geological and hydrogeological maps.

Information on receptors will be available from the records already developed for the GIS, and through information on controlled waters provided by the Environment Agency. Receptors can then be prioritised depending on their perceived vulnerability.

It is likely that the majority of potentially contaminated sites will be situated in areas where industry has been heavily concentrated in the past. As discussed in section 2.6, the banks of the River Usk have historically been focal points for industry in the area. Such areas will require detailed investigation in order to characterize their past uses and potential sources of contamination. This is particularly important when it is considered that a considerable amount of land in this area is outlined for development, much of which has been designated as housing land. One must also take into account the proximity of such sites the River Usk, which as a receptor is particularly vulnerable to the leaching of pollutants from such sites.

Whilst the analysis of historical information may indicate areas that require further investigation, it is unlikely that it will actually identify many sites that meet the statutory contaminated land definition. Sites may be identified where there is a presence of contamination in, on, or under the ground that may have the potential to cause harm. However, the guidance states that the contamination must have both a pathway by which harm can be transmitted and a receptor upon which that harm can be inflicted. It will only require the change of circumstances on the site to cause the pollutant linkage to be modified, either through introducing a receptor or exposing a pathway.

This highlights how the contaminated land regime can play an important role in aiding the development control process by addressing the potentiality of harm being caused by contamination. This will provide an extremely useful tool in advising the development control process where sites are outlined for development, thus potentially altering or introducing pathways through changes in land-use that could have the potential to bring any contaminants closer to any given receptor.

The development control regime can only deal with the problem of land that has been contaminated if it has both the information concerning the potential contamination of the land and the expertise to know what needs to be done. Once it has been established that there is a risk that land may be contaminated, national planning policy guidance advises that it is for developers to provide the planning authority with the information.

3.5.2 Stage 2

Draft consultation strategy
March 2002 – August 2002

This strategy will be developed in-line with guidance issued by the WAG/DEFRA. This strategy will be circulated for internal review and announced on the intranet. Specific feedback will be required from those service areas within the Council that have a vested interest in matters pertaining to contaminated land. The Contaminated Land Working-Group shall convene during this period to discuss the issues raised during internal consultation.

3.5.3 Stage 3

Consultation period
Summer 2002

It is anticipated that considerable interest will be shown by external consultees and members of the public. Local knowledge will play a major role in the identification of areas that warrant specific investigation. Where interest is shown by specific communities, it may be appropriate to discuss the concerns during the relevant Neighbourhood Committees. This can play an important part in demonstrating the open and responsive manner through which the Council wishes to implement the regime.

The consultation draft of the strategy will also be available over the council's web site. This will allow the public to have direct access and it will also be useful in providing links to feedback forms to gain an understanding of the public response.

3.5.4 Stage 4

Publication of final inspection strategy
August – September 2002

The date for final publication will be dependant on the amount of feedback received from consultees. When the final document is agreed upon it will be formally adopted by the Council and submitted to the WAG and the EAW. Copies of the finalised strategy will be available for viewing either from the departmental offices or from the councils website. When the strategy is finalised, it will still come under periodic review to address any shortcomings that become apparent.

The WAG have instructed for all strategies to be completed by the end of September 2002.

3.5.5 Stage 5

Dealing with urgent sites

Ongoing

At present, no urgent sites have been identified, however during consultation it may come to light that certain sites may require immediate attention and/or investigation. Where sites appear to pose an immediate risk of harm they must take precedence over the publication and development of the strategy, as the priority of the council is to protect human health and the environment.

3.5.6 Stage 6

General approach to inspection

2002/2003

After all the information is collated, it will be necessary to fulfil the statutory requirement on the Council of 'causing its area to be inspected from time to time for the purpose of identifying contaminated land and of enabling the authority to decide whether any such land is land which is required to be designated as a special site' (Sec 78B 1&2, EA1995). The information collated at previous stages will now be a vital tool in identifying areas that warrant immediate inspection.

In order to prioritise areas that contain the most possible significant pollutant linkages, it will be necessary to target the wards where there is the greatest presence of receptors. As stated in section 3.2, the Council's priority is to protect the health of its citizens, and so the most densely populated areas will be given the priority due to receptive potential.

Within each ward/area, the aim will be to prioritise areas of greatest risk on a case by case assessment. The key driver for the regime is the protection of human health, therefore we must allow cases that warrant immediate investigations to be dealt with outside of the suggested timescales.

3.6 Objectives and milestones

The overall objective, and the purpose of the new regime, as emphasized throughout the Strategy, is to minimise the risk posed by contaminated land. Within this objective goals must be set to monitor the Council's progress during the iterative process of the prioritisation of potentially contaminative sites.

The objectives are as follows:

Figure 6 Objectives for Newport

Objective	Details	Date to be completed by
Complete data capture exercise	Assimilate all information gathered through analysis of historic maps, trade directories, departmental files, to the Council's GIS	Autumn-Winter 2002, and updated as and when new information is purchased or made available digitally
Use data capture information to run site prioritisation model	The information gathered at the previous stage will be essential in order to accurately run the site prioritisation model	Winter 2002/2003
Investigate areas that warrant further investigation	Where the site prioritisation model indicated the presence of a potential pollutant linkage, further investigation will be needed in order to delineate and characterise the contamination. This could involve the appointment of outside specialist contractors, and so may have budgetary requirements.	Winter 2003
Carry out any remediation requirements as is necessary	Where the investigation indicates the presence of a significant pollutant linkage, a remediation scheme will need to be agreed upon and carried out, either on a forced, or voluntary basis	As and when required

4. General liaison and communication

As matters pertaining to contaminated land can involve many different parties, it is essential that effective communication be maintained both within and between parties.

4.1 Key contaminated land contact within the Council

The majority of the work relating to Part IIA of the EPA shall be carried out by staff within Public Protection and Environmental Services. The first point of contact should be with the Scientific Officer within this service area, however other members of staff will be kept fully informed with any developments pertaining to contaminated land. (Contact details are given on the inside cover of this strategy)

4.2 Planning issues

Where land has been allocated for development through the Unitary Development Plan, contact should be made with the relevant planning officer within Planning and Economic Regeneration, as they will hold the most up to date information. The planning officer will then liaise with the relevant contacts within Public Protection and Environmental Services.

4.3 Other statutory bodies/consultees

For the identification, investigation and remediation of contaminated land, contact with other statutory bodies will provide highly relevant and important information. It is essential that regular contact is maintained with such bodies, and they are kept up to date with all relevant developments.

Statutory consultees for the contaminated land inspection strategy will include:

- Environment Agency Wales
- Welsh Development Agency
- Countryside Council for Wales
- Cadw: Heritage of Wales
- Food Standards Agency Wales

4.4 Non-statutory consultees/the wider community

Members of the public, businesses and voluntary organisations can play an important role in effectively dealing with contaminated land issues. It will be important to keep such

groups informed through the Council operating in an open, accessible and responsive manner. The perception of risk needs to be managed so as not to over-alarm the public in their understanding of contaminated land issues. Information can/will be made available to the public through:

- Regular press releases
- Updates in the Council's own 'Newport Matters' newspaper, published quarterly and delivered to every household in the City
- Updates on the Council's web site. An easy and interactive means of providing information, and inviting queries and suggestions
- Liaison through Neighbourhood Committees. These are held every three months in each of Newport's 20 wards.

5 Procedures

A framework for effectively dealing with issues pertaining to contaminated land is necessary to allow consistency within the Authority. The following section will outline the processes and procedures that will be undertaken, and those that will undertake them.

5.1 Internal management arrangements for inspection and identification

Administration of Part IIA of the EPA and its associated inspection duties is to be undertaken by officers of Public Protection and Environmental Services within the Environment and Economy Service Group.

5.2 Considering authority interests in land

The Council owns a considerable amount of land within its district, and through the active purchase of 'brownfield' sites has acquired many sites that will merit detailed inspection. Council owned land shall be investigated in much the same way as any other area of land. Investigation must concentrate on risk minimization, and not protection of Council interests. It will be important in such cases where the Council's own land is being investigated, to maintain openness and accountability.

Due to the Council's past ownership of land, it may be the case that the Council could be regarded as the 'appropriate person' as they may have caused or knowingly permitted such polluting substances to be on, in, or under the land. Where the Council has purchased land that may be determined as contaminated land, it could be also regarded as the residual 'appropriate person' through being the owner/occupier of such land. If such a situation were to arise and the Council is determined to be the 'appropriate person' due to the risk of harm imposed by the condition of such land, then special procedures are laid down in the legislation to deal with such instances. The main difference in the procedure is that the Council will issue a remediation statement, a practical and important alternative to a remediation notice. Such a statement shall include:

- a) the things which are being, have been, or expected to be done by way of remediation;
- b) the name and address of the person who is doing, or has done, or is expected to do the things in question;
- c) the period or periods within which these things are being expected to be done.

5.3 Information collection/management

Due to the diverse range of information that can contribute to the understanding and identification of potentially contaminated land sites, an effective and systematic procedure

needs to be in place to manage such data. The volume of material involved will increase with time as more information is collated.

The nature and type of information collected/generated whilst undertaking the inspection procedure will vary greatly. Information could be in the form of bound documents found on departmental files, reports, letters, maps and an increasing amount of electronic records. It will be imperative to manage and document all information in order to account for all stages when determining a site for designation.

It is believed that the most effective system for the storage of the majority of data will be through the use of a GIS. A GIS is a digital system for the storage, manipulation, analysis and visualisation of spatial data. GIS allows this spatial data to be linked to attribute data about any given point/location. This allows both maps and databases to be integrated to produce a powerful tool for analysing the environment.

NCC has already established a well-developed GIS that has proved to be of vital importance for Planning, Economic Development and Building Control purposes. This corporate system allows multi-user access to various information sources. Security procedures are also being developed to control access to sensitive information. The database for identification of potentially contaminated land will run along side and compliment modules that have already been developed by other departments. The use of a corporate GIS allows both effective information exchange and efficient resource use.

Some of the information sources to be incorporated into the GIS are listed below.

Figure 7 Information sources for data management

Resource	Details	Use
Historic maps	Digital historic maps purchased from Ordnance Survey (through Landmark)	To identify potential sources
Geological Maps	Local solid and drift geological maps	To characterise sources and pathways
Hydrogeological maps	Groundwater vulnerability maps produced by the Environment Agency	To identify receptors/pathways (controlled waters)
Source Protection Zones	SPZ's characterised by the Environment Agency	To identify areas where polluting activities could affect the water quality from abstraction boreholes
Discharge consents	Discharge consent information to be provided by the Environment Agency	To identify potential sources of contamination
Integrated Pollution Control Register	IPC site locations and background information provided by both the Authority and the Environment Agency	To identify potential sources of contamination
Information on location of closed landfill sites and waste management licences	Information provided by the Environment Agency, through the Welsh GIS landfill contract	To identify potential sources of contamination
Sites of Special Scientific Interest	Maps and details of Sites of Special Scientific Interest	To identify sensitive receptors

Areas of Special Protection for Birds	Maps and details of Areas of Special Protection for Birds	To identify sensitive receptors
Nature reserves/marine nature reserves	Maps and details of nature reserves/marine nature reserves	To identify sensitive receptors
Pollution Incidents	The authority holds information relating to pollution incidents within the Borough	To identify potential sources of contamination
Trade Directories	Information from historic (Kelly's 18?? – 197?) and contemporary trade directories	To identify potential sources of contamination
Site Investigations	Site Investigations held by the Public Protection and Environmental Services or Planning and Economic Regeneration.	To assess the level of contamination and known site information
Planning records	Much information has already been entered onto the GIS and will be a valuable asset, for example planning conditions where there is a concern over contamination	To identify land-uses (receptors), and to gain an understanding of the recent histories of sites

Data capture of the above information, and its subsequent assessment will be a time and resource intensive task. The end result will be a GIS that can indicate areas at risk from contaminated land based on the interaction and geographical coincidence of the source, pathway and receptor components of the pollutant linkage. This will allow prioritisation of site investigations where the objective analysis of the pollutant linkage indicates that further inquiry is needed. The information collated by such a procedure will also be a valuable asset to planning enquiries.

The analysis of this data will indicate the areas that require the most immediate attention, and may further lead to the review of the inspection procedure to address problem areas specifically. Prioritisation will always be given to those areas where the risk of harm is the greatest.

5.4 Data confidentiality

It will be important to consider the sensitivity of the data collated. Information concerning contamination can alarm the public and lay person, therefore it will be important to have the necessary security procedures in place to allow controlled access to the information held by the service area. This will lead to information being sub-divided into "public register information" and "Inspection Information".

This has to be done whilst maintaining transparency, one of the underlying principles of the regulatory regime. A fine balance has to be struck between being transparent, whilst not over-alarming the public or disclosing confidential information. Requests for information relating to contaminated land, such as reports and site investigations will come under the scope of the Environmental Information Regulations 1992. These regulations dictate what information can be disclosed to the public, and what should

remain confidential. The status of such information is particularly important when dealing with contaminated land as it is the intention of the regime to avoid the blighting of land.

The Environmental Information Regulations 1992 sets out what types of information should not be published by a public body, these are:

- Information which is or has been the subject of actual or prospective legal or disciplinary proceedings, or the proceedings of a local or public inquiry;
- Information relating to the confidential deliberations, or internal communications of the authority;
- Information contained in a document which is still in the course of completion;
- Information to which commercial or industrial confidentiality applies, or which affects intellectual property;
- Disclosure which would contravene any other law, or involve the breach of an agreement;
- Personal information (unless the person consents);
- Information supplied by a person who was not required to supply it and who has not consented to its disclosure;
- Disclosure which would increase the likelihood of damage to the environment.

5.5 Information and Complaints

It is the intention of the Council to make the public more aware of contaminated land issues. This could be done through press releases indicating the publication and availability of this strategy, and thus increasing public understanding and involvement in the identification of contaminated land sites. The public may hold a wealth of information through past knowledge of industrial sites and personal experiences. Such information can provide first hand experience and help in the inspection and identification of potentially contaminated sites.

Where information (or complaints) are volunteered from members of the public, businesses or other outside organisations, enquiries should be directed to Public Protection and Environmental Services. The nature of the information provided will determine how the information is dealt with. Each complaint will be assessed to see if there is an imminent risk to public health, and if this is the case a detailed inspection will be made within 3 working days, and where necessary the Environment Agency will be contacted.

Any complaint regarding contaminated land will be processed following the procedure that has proved effective in the Public Protection and Environmental Services to deal with statutory nuisance complaints

All complaints relating to contaminated land will be:

- logged and recorded on a computer system
- the complainant will be contacted by a relevant officer within three working days of receipt
- the complainant will be kept informed of any progress towards the resolution of the problem

Every effort will be made to resolve complaints quickly and efficiently. However, the legislative framework does introduce several impediments that could delay the speedy resolution of certain problems:

- i. the existence of a viable pollutant linkage needs to be proven in order for formal designation of contaminated land. This may require a detailed investigation
- ii. prior consultation with any interested parties before designation as contaminated land
- iii. a minimum of a three month period between designation and serving of a remediation notice
- iv. the requirement for the enforcing authority to make every effort to identify the original polluter of the land (or "Class A" person)

The regulations allow conditions (ii) and (iii) to be waived in extreme cases where immediate action is essential, but not conditions (i) and (iv).

The general public must be made aware of the above limitations to resolutions of contaminated land problems. Effective and regular communication between the Council as regulators and the public should minimise any concerns raised regarding a lack of action on behalf of the regulators. It must be stressed that with the exception of extreme cases, the new regime will not offer a 'quick fix' solution to contaminated land.

5.5.1 Confidentiality

All complainants will be asked to provide their name and addresses and, if appropriate, the address giving rise to the complaint. The identity of the complainant will remain confidential unless the remediation notice is appealed in a court of law. If this is the case, the complainants' details could be made public if the determination of the land as statutory contaminated land was subject to the adverse effect on the health of the complainant.

5.5.2 Voluntary provision of information

Where information is provided to the authority in relation to contaminated land that is not directly affecting their own health, the health of their families or their property, this will not be treated as a complaint. The information will still be recorded, investigated and acted upon. There will, however be no obligation for the Council to keep the complainant informed of progress towards resolution, although it may choose to do so as general good practice.

5.5.3 Anonymously supplied information

Should information be provided anonymously, the complaint shall still be investigated as a standard complaint.

5.6 Risk assessment

In order to determine the degree of risk imposed by the presence of contaminants, it will be necessary to consult published material on what levels of contamination pose a significant risk. The current set of guidelines most widely used is the Interdepartmental Committee on Redevelopment of Contaminated Land (ICRCL) 59/83 (2nd Edition, July 1987). However these guidelines are due to be superseded by the Contaminated Land Exposure Assessment (CLEA) model, which was published in the Spring 2002. The use of the CLEA guidelines will eventually become commonplace for both regulators and developers, and where possible, those undertaking ground investigations will be advised to carry their analyses using the CLEA model. However, at the time of publication, the CLEA model and its associated toxicological reports has only been formulated for 9 contaminants, with a further 55 due to be published.

The CLEA model estimates the chemical exposure rates for up to 10 different environmental pathways based on the concentration of chemicals in the soil. These different exposure pathways vary from the ingestion of contaminated soil, to the inhalation of vapours arising from contaminated soil. The model will only estimate exposure to humans and not to other receptors. It will therefore be necessary to consult other guidelines where receptors such as controlled waters are being affected by the presence of contaminants.

The ICRCL guidelines define Threshold and Action levels for a limited range of soil and water pollutants. At concentrations below the Threshold Level the soil can be regarded as being unpolluted whilst at concentrations above the Action Level remedial measures are likely to be required to ensure the safe redevelopment of the site. At concentrations above the Threshold Value but below the Action Level the need and extent of remediation should be assessed taking into account the sensitivity of the proposed development and surrounding environment.

The range of contaminants covered by the ICRCL guidelines is not exhaustive, so in some cases it may be necessary to consult alternative sources of contamination information. The Dutch Standard, which defines 'Target Values' and 'Intervention Values' for soils, is commonly used as an alternative to ICRCL values, and for a comparative analysis. It may also be appropriate to consult occupational exposure levels issued by the Health and Safety Executive.

However, each site will be subject to a site-specific risk assessment. Whilst generic guidelines, such as those outlined above, may be consulted for each site, it will be necessary to make an informed judgment of the likelihood of risk through careful and rational analysis of the information gathered for each site.

This may well involve consultation of those with specialist knowledge of contamination. For example the Council is a member of the Chemical Incident Management Support Unit (CIMSU). CIMSU advise Health Authorities and Local Authorities on the management of chemical releases to the environment. Their advice can be a vital resource as they have access to a wide range of toxicological data that can be hard to obtain for contaminated land sources. Their position provides an objective health-focused viewpoint of the likely harm that will be posed by a contamination incident.

It must be stressed that there is still much ambiguity over human health effects posed by contaminants. Such ambiguity can make defence of a contaminated land designation complicated business. It is therefore essential that any consultation with third parties be fully documented.

5.6.1 Risk assessment for controlled waters

Where controlled waters are the receptor in a pollutant linkage, advice will be sought from the Environment Agency. They will have particular expertise in this area, and if such assessment leads to a contaminated land designation then they will become the enforcing authority. It is anticipated that risk assessment and remediation will be carried out in accordance with the Environment Agency publication "Methodology for the Derivation of Remedial Targets for Soil and Groundwater to Protect Water Resources" (EA R&D Publication 20, 1999).

However, where groundwater has previously been contaminated, the new regime will not apply. Part IIA will only apply where contaminants are likely to continue to enter the groundwater. In the case where the original source of contamination is no longer present or cannot be identified, any necessary regulatory action is likely to be the responsibility of the EA. In such cases, it may be appropriate for the EA to use the Water Resources Act 1991 as the regulatory regime to enforce remedial action through the use of Works Notices.

5.7 Interaction with other regulatory regimes

Part IIA of the EPA is one of many regulatory regimes designed for the protection and enhancement of the quality of the environment. Many of these regimes address issues that specifically deal with land contamination such as water pollution, statutory nuisance, and land use planning.

Part IIA is not intended to be used for sites subject to existing controls under other regimes such as IPC/IPPC and Waste Management Licenses. It therefore addresses land contamination as a result of historic activities. Remedial activities may, however, require planning permission, and/or a license under Waste Management Licensing Regulations 1994, or other environmental protection permits such as discharge consents or groundwater regulation authorisations.

5.7.1 Planning

It is anticipated that the vast majority of contaminated land sites will be dealt with through the planning procedure. This procedure has more potential for setting standards for the remediation of land that is contaminated, as it is not bound by such a stringent definition of contaminated land. Land contamination, or the possibility of it, is a material consideration for the purposes of town and country planning and so must be addressed by the Council when developing Structure and Unitary Development Plans, and when

considering individual applications for planning permission. This is an effective procedure for remediating sites where the presence of contaminants is known, as remedial measures can be included in planning conditions or as section 106 agreements. Sites can then be remediated that don't meet the pollutant linkage criteria set out by the EPA but still can be regarded as contaminated sites. (Planning Guidance (Wales), Policy Guidance, Section 15)

Public Protection and Environmental Services currently has a close working relationship with Planning and Economic Regeneration. This has been strengthened through both departments now operating on the same GIS. This will increase inter-departmental understanding and allow for more efficient information exchange.

The planning consultation process that is operated within NCC provides for consultation at all stages and the availability of comprehensive information for interested parties to inspect will afford a high degree of transparency in procedures. It is anticipated that the application of basic principles of risk assessment in an open way to planning procedures will encourage contamination issues to be dealt with more effectively.

It is anticipated that higher standards of remediation will give developers, end users and local residents increased confidence and as a consequence, previous problems of blight, suspicion and stigma may be eliminated.

5.7.2 Water pollution

Contaminated land has the potential to be a source of pollution to both surface water and groundwater. This raises the question of whether the pollution should be addressed through the Water Resources Act 1991, or through the Contaminated Land regime. The DETR have indicated that the most effective mode of clean up will be through remediation notices, as the alternative works notice of the Water Resources Act is only discretionary. Each action will be site specific and any decision will only be made after liaison with the Environment Agency.

5.7.3 Integrated Pollution Prevention and Control (IPPC)

The IPPC regime is to replace the existing pollution control regime in a phased manner by 2006 for existing installations, and immediately for new installations. This will have important consequences for contaminated land, as it will require those applying for an IPPC permit to undertake a site condition survey before they are issued with a permit. The information provided in such a survey could then trigger Part IIA action if the survey indicates that the site meets the contaminated land definition. The site could then be remediated to a state that is suitable for the proposed end use.

IPPC regulations also require the site to be remediated once the authorisation permit ceases. The site must be left in the same, or improved condition that the initial site survey reported. This process will endeavour to prevent future industrial sites from being mothballed into contaminated legacies.

5.8 Risk communication

The Council will operate in an open and accountable manner when dealing with contaminated land issues. This will lead to information on contamination reaching the public domain and it is important therefore to maintain effective communication procedures. Contaminative issues can often provoke considerable emotion and it is important to deal with concerns raised by the public in a serious and understanding manner.

The less familiar that people are with risks and the less control they feel over their exposure, the greater will be their perceived risk. When matters relating to contaminated land issues are raised, it is likely to provoke considerable concern due to its lack of familiarity. Where the issue is beyond the individual's control they will often perceive a high "dread" or "fear" factor. It is therefore imperative to instigate an early dialogue with the public so that the process and technical aspects of risk assessment and management can be fully explained.

The overall objectives of risk communication should be to establish the Council as being:

- Open
- Accessible
- Responsive

Where a contaminated land site is identified it may be necessary to relay all relevant information through community liaison groups, or if these are not operational in the area, through some form of correspondence.

It is important to communicate the limitations of the new regime. Members of the public may expect that the contaminated land regime will lead to the removal of all contaminative substances that are on, in, or under the land. Their expectations will often not be met by the strict definition of contaminated land, and it will be important to communicate that the regime seeks to remove any harm posed by contamination as opposed to the removal of the contamination itself.

6 Programme for inspection

6.1 Criteria for selecting areas and individual sites

As discussed in section 3.2, the prime priority of the Council is to protect the health of those that live within the City. If investigation of an area reveals that more than one contaminated land site has been identified, the site that poses the most risk to the identified receptors will take priority. This will be established through careful analysis of the data collated during the investigation. However, it is likely that any sites that are posing an immediate threat to the health of a listed receptor will have already been identified through the complaints procedure.

6.2 Site investigation procedure

Where information collated at the desk study stage suggests that a site may potentially be a Part IIA site due to the presence of a pollutant linkage, the Council will carry out an initial site investigation. The initial site investigation will aim to test the conceptual model produced at the desk-study stage. This will be carried out following best practice guidelines and British Standard 10175/2001 – ‘Investigation of potentially contaminated sites – Code of practice’.

The initial investigation will be carried out initially on a basic but thorough level and such preliminary investigation will highlight where/if further investigations should take place. If preliminary investigation reveals that the contamination problem is serious or requires specialist attention it will be necessary to engage external consultants. The cost of such investigation can then be reclaimed from the appropriate person or company, following the remediation process.

All investigations shall be carried out adhering to strict health and safety guidelines. Where outside consultants are used, method statements shall be required in order to ensure safety on site. Where investigations are ongoing, it will be essential to secure the site in order to protect the public, whilst at the same ensuring that risk communication techniques are employed in order to avoid alarming those who are proximal to the site.

All information gathered at the site investigation stage will be fully documented, and where appropriate entered onto the GIS. All records will be stored in order for each step of the investigation to be fully accountable. These records will then be available to substantiate any designation as contaminated land.

6.3 Procedure for communication once contaminated land is identified

The determination that land is statutory contaminated land will only occur after considerable scrutiny of the evidence pertaining to the individual site. When a risk assessment has been completed and the conclusion reached is that the land satisfies the contaminated land definition with the presence of a significant pollutant linkage, a number of steps must be undertaken by the Authority. Firstly the Council must determine whether the contaminated land comes under the regulatory control of the Council, or whether the site is a special site and therefore regulatory control rests with the Environment Agency Wales. At this stage it is also important to identify the physical extent of the contaminated land. This needs to be undertaken with considerable pragmatism, as it will have lasting implications for later procedures.

The Council must give notice of the fact that contaminated land has been identified in its area. This must be sent to:

- The Environment Agency
- The owner of the land
- Any person who appears to the Council to be in occupation of the whole or any part of the land
- Each person who appears to the Council to be an appropriate person.

The Council must also produce a written record of any determination that particular land is contaminated land. This record will include (if necessary by reference to other documents):

- (a) A description of the particular significant pollutant linkage, identifying each of the three components of pollutant, pathway and receptor;
- (b) A summary of the evidence on which the determination is based;
- (c) A summary of the relevant assessment of this evidence; and
- (d) A summary of the way in which the authority considers that the relevant requirements of Chapters 1 and 2 of the Guidance have been satisfied.

The process of determining whether the site meets the contaminated land definition will also be used to determine who are the appropriate persons. This is an important consideration and will require careful consideration of the statutory provisions as well as considerable liaison with the Legal and Standards service area.

At this stage it will be essential for an effective stakeholder dialogue procedure to be established. By bringing all the relevant parties together, then the most suitable solution can be agreed upon with minimal disagreement. It will also provide a better forum to negotiate voluntary action to remediate the land, so avoiding the lengthy process of serving a remediation notice. By engaging in such a procedure, one can avoid the 'decide announce and defend' approach.

6.4 Liability and 'Appropriate Persons'

Liability for remediation is allocated to one or more "appropriate" persons. A person is defined by application of the "polluter pays" principle as one who "caused or knowingly permitted the contaminating substance to be on, in or under the land". If such a person cannot be identified, the liability transfers to a Class B person, who is the owner or occupier of the land. There is a complex system of exclusions and apportionment that takes into account the possibility of different persons being responsible to various degrees. Where no person can be found after a reasonable enquiry, then the costs of remediation will fall to the regulator.

The identification of the "appropriate person" is a key aspect of the new regime. Unfortunately in some circumstances the Class A person originally responsible for the contamination may not be found and the Class B person, that is the current owner or occupier may be innocent or unaware of the level of remediation for which they are liable. There will be exemptions, which will include insolvency practitioners, and Class B persons where contamination emanates from other land. The determination of responsibilities could potentially involve complex legal procedures.

Following the appropriate persons being identified and given notice that they are in possession/responsible for contaminated land, a period of three months commences after which a remediation notice can be served. The three month period will be used for communication between the Council, the Agency, the appropriate persons and the owners (if they are not the appropriate persons). It is the intention of the Council to use this time to try and secure remediation through voluntary action as opposed to the serving of a remediation notice. Voluntary remediation will need to be to a standard that employs

the best practicable techniques for each significant pollutant linkage. This will ensure that such voluntary remediation will endeavour to produce similar results to that of enforced remediation.

The drafting and serving of a remediation notice will be a lengthy and complex procedure. Effective communication prior to the serving of a notice will ensure that those responsible are aware of the severity of the situation, and understand the advantages of voluntary remediation in comparison to enforced remediation. The main advantage of voluntary remediation is that contaminated material from the site can be removed without the burden of paying landfill tax, and will provide an encouraging message for brownfield regeneration. If a remediation notice is served then no such landfill tax exemptions will apply.

The three month consultation period may also be used by the appropriate persons to try and avoid liability. This can be done by producing evidence that the land in question is not statutory contaminated land, or by providing evidence that they are not the appropriate persons.

6.5 Serving a remediation notice

If voluntary action cannot be secured to remediate the land, a remediation notice will be served three months after the land is formally designated as contaminated land. Consultation and the three-month moratorium may be dispensed with if there is an imminent danger of serious harm or pollution. The remediation notice will specify what the nature of remediation and the periods within which any specified actions must be carried out. The aim of the remediation will be:

- To ensure that the linkage is no longer a significant pollutant linkage, by removing or treating the source, breaking or removing the pathway, or protecting or removing the receptor; and
- To remedy the effect of any significant harm or pollution of controlled waters, which is resulting, or has already resulted from, the pollutant linkage.

After the serving of the notice, monitoring will be undertaken to assess whether the remedial works have been successful in respect of removing the significant pollutant linkage and therefore remedying the significant harm. Monitoring may highlight that continued remedial treatment may be required, and possibly the necessity to serve a further remediation notice.

6.6 Where contaminated land is identified in NCC ownership

If through the inspection procedure, land is identified as being contaminated land and the investigations reveal that Newport City Council is the /one of the appropriate persons, the procedure differs slightly as the Council cannot serve a remediation notice on itself. In such circumstances the Council should issue a remediation statement, an important alternative to a remediation notice. This will include:

- a) the things which are being, have been, or expected to be carried out by way of remediation;
- b) the name and address of the person who is doing, or has done, or is expected to do the things in question;
- c) the period or periods within which these things are being expected to be carried out.

6.7 Powers of entry

The Environment Act 1995 provides the Council with powers of entry for investigations into contaminated land. This enables the Council to authorise any person who appears suitable, to exercise the powers conferred by section 108 of the Act. These powers include:

- entry of premises;
- examination and investigations;
- taking measurements, photographs and recordings;
- taking samples of air, water and land; testing substances or articles to polluting tests;
- taking possession of and detaining such articles;
- requiring persons to answer questions;
- requiring the production of records.

However, such powers are only legitimate where there is reasonable possibility that a pollutant linkage may exist. If any appropriate persons provide such information to the Council, then such powers of entry are waived. Where there appears to be no immediate risk, seven days notice will be given to the owner of the premises before entry.

6.8 The public register

The enforcing authorities are required to maintain a public register containing specific information outlined by the regulations. The register will be held by Public Protection and Environmental Services and will be available for viewing during normal office hours, Monday to Friday.

The regulations state that the following information should be included in the register:

- Remediation notices
- Appeals against remediation notices
- Remediation statements or declarations
- Notices designating sites as special sites
- Notification of what has been done by way of remediation.
- Convictions for offences

Before including any information on the register, the Council should consider whether the information should be excluded on the basis that:

- Its inclusion could contravene the interests of national security; or
- The information is commercially confidential.

The register is therefore not a register of sites that are, or may be, contaminated, but more an enforcement history of the site after a remediation notice has been served. Sites that have been investigated but have not been the subject of a remediation notice will not be included in the register and information pertaining to the site will not be deemed to be publicly available documents. Availability of all information relating to contaminated land investigations would increase the likelihood of land being blighted and so sterilized from development.

6.9 Provision of information to the Environment Agency Wales

The guidance states that the Agency is to produce an annual report on the state of contaminated land in England and Wales. This report will provide, for the first time, an authoritative source of information on the state of contaminated land at a national level and is therefore expected to be of considerable national and international importance. To produce the report the Council will have to provide them with the appropriate information. As the new regime will require considerable liaison between the Agency and the Council, the Agency will be in receipt of much of the information pertaining to contaminated sites within the NCC area.

7 Review Mechanisms

It is anticipated that the target dates set for the inspection procedures within this strategy will be achieved. However, these may require amendment once the inspection procedure is in progress and better knowledge of the process is gained. The timescales set, together with the Strategy in its entirety will be reviewed every 6 months.

Should the review highlight any major shortcomings, then the statutory consultees will be re-engaged in the process. As a matter of course, all changes will be verified with the designated officer of the Environment Agency Wales.

The predicted timescales are likely to be affected should the inspection procedure identify many sites that warrant designation as contaminated land. The procedure for formal designation will demand a considerable amount of resources, particularly if the service of a remediation notice is required. Enforcement of such sites could therefore delay the investigation of other areas of the City. However, the principal aim of protecting human health and the wider environment shall be the prime concern.

The following events/circumstances could also trigger a review of the inspection procedure, thus modifying the timescales for inspection:

- Proposed changes in the use of surrounding land
- Unplanned changes in the use of land, e.g. persistent, unauthorised use of land by children
- Unplanned events, such as localized flooding/landslides, accidents/fires/spillages
- Reports of localized health effects which appear to relate to a particular area of land
- Verifiable reports of unusual or abnormal site conditions
- Responding to information from other statutory bodies
- Responding to information from owners or occupiers of land, and other relevant interested parties.

References – Further reading

Internal Documents

- Newport City Council, Unitary Development Plan 1996-2011
- Towards a Sustainable Newport, Local Agenda 21 Strategy, December 2000

Legislation and Guidance

- Part IIA, Environmental Protection Act 1990, HMSO 1990
- Contaminated Land Inspection Strategies, Technical Advice For Local Authorities, May 2001, Department of the Environment, Transport and the Regions and The Environment Agency
- Remediation of Contaminated Land, National Assembly of Wales, November 2001
- The Contaminated Land (Wales) Regulations 2000, National Assembly of Wales
- Planning Guidance (Wales) Planning Policy, Welsh Office 1999
- Local Authority Guide to the Application of Part IIA of the Environmental Protection Act 1990, Local Government Association, Chartered Institute of Environmental Health, Department for Environment, Food & Rural Affairs and The Environment Agency, July 2001

References

- Guidance for the Safe Development of Housing on Land Affected by Contamination, The Environment Agency and The National House Building Council, 2001
- Communicating Understanding of Contaminated land Risks, Scotland & Northern Ireland Forum for Environmental Research, 1999
- Investigation of Potentially Contaminated Sites – Codes of Practice, British Standard 10175:20001
- Contaminated Land Reports 7, 8, 9 & 10. Department for Environment, Food & Rural Affairs, 2002
- Local Environment Agency Plan (LEAP), Eastern Valleys,
- The Welsh Development Agency Manual on the Remediation of Contaminated Land, WDA, 1993

Appendix

List of Statutory Receptors

Potentially sensitive receptors	
RECEPTOR	LAND USE TYPES
Human beings	Allotments Residential with gardens Residential without gardens Schools or nurseries Recreational/Parks,Playing Fields,Open Space Commercial/industrial
Ecological systems or living organisms forming part of a system within protected locations	SSSIs, National nature reserves, Marine nature reserves, Areas of special protection for birds European sites SAC, SPAs Candidate SACs and SPAs Ramsar sites Nature reserves
Property in the form of buildings	Ancient Monuments Buildings
Property in other forms (crops, livestock, home-grown produce, owned or domesticated animals, wild animals subject to shooting or fishing rights)	Agricultural land Allotments and gardens Forestry areas Other open spaces, rivers, lakes etc
Controlled Waters	Surface waters Drinking Water Abstractions Source Protection Zones Groundwaters – Private Abstractions Groundwaters – Major Aquifers

Categories of 'significant possibility of harm'

	Descriptions Of Significant Harm (As Defined In Table A)	Conditions For There Being A Significant Possibility Of Significant Harm
1	<p>Human health effects arising from</p> <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 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.</p> <p>Toxicological properties should be taken to include carcinogenic, mutagenic, teratogenic, pathogenic, endocrine-disrupting and other similar properties.</p>

	Descriptions Of Significant Harm (As Defined In Table A)	Conditions For There Being A Significant Possibility Of Significant Harm
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>

Glossary

The statutory guidance uses a number of terms which are defined in Part IIA of the EPA. The meanings of the most important of these terms are set out below, along with a reference to the section in the Act or the paragraph in which the relevant term is defined. Terms which are defined in statutes (mostly in section 78A of the EPA) are shown underlined

Animal or crop effect : significant harm of a type listed in box 3 of Table A of Chapter A.

Apportionment: any determination by the enforcing authority under section 78F(7) (that is, a division of the costs of carrying out any remediation action between two or more appropriate persons). *Paragraph D.5(e)*

Appropriate person: defined in section 78A(9) as:
“any person who is an appropriate person, determined in accordance with section 78F..., to bear responsibility for any thing which is to be done by way of remediation in any particular case.”

Assessment action: a remediation action falling within the definition of remediation in section 78A(7)(a), that is the doing of anything for the purpose of assessing the condition of the contaminated land in question, or any controlled waters affected by that land or any land adjoining or adjacent to that land. *Paragraph C.8(e)*

Attribution: the process of apportionment between liability groups. *Paragraph D.5(e)*

Building effect: significant harm of a type listed in box 4 of Table A of Chapter A.

Caused or knowingly permitted : test for establishing responsibility for remediation, under section 78F(2); see paragraphs 9.8 to 9.14 of Annex 2 for a discussion of the interpretation of this term.

Changes to Substances : an exclusion test for Class A persons set out in Part 5 of Chapter D. *Paragraphs D.62 to D.64.*

Charging notice: a notice placing a legal charge on land served under section 78P(3)(b) by an enforcing authority to enable the authority to recover from the appropriate person any reasonable cost incurred by the authority in carrying out remediation.

Class A liability group : a liability group consisting of one or more Class A persons. *Paragraph D.5(c)*

Class A person: a person who is an appropriate person by virtue of section 78F(2) (that is, because he has caused or knowingly permitted a pollutant to be in, on or under the land). *Paragraph D.5(a)*

Class B liability group : a liability group consisting of one or more Class B persons. *Paragraph D.5(c) Draft Circular on Contaminated Land, September 1999 162*

Class B person: a person who is an appropriate person by virtue of section 78F(4) or (5) (that is, because he is the owner or occupier of the land in circumstances where no Class A person can be found with respect to a particular remediation action). *Paragraph D.5(b)*

Collective action: a remediation action which addresses together all of the significant pollution linkages to which it is referable, but which would not have been part of the remediation package for every one of those linkages if each of them had been addressed separately. *Paragraph D.22(b)*

Common action: a remediation action which addresses together all of the significant pollution linkages to which it is referable, and which would have been part of the remediation package for each of those linkages if each of them had been addressed separately. *Paragraph D.22(a)*

Contaminant: a substance which is in, on or under the land and which has the potential to cause harm or to cause pollution of controlled waters. *Paragraph A.12*

Contaminated land: defined in section 78A(2) as “any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that - “(a) significant harm is being caused or there is a significant possibility of such harm being caused, or; “(b) pollution of controlled waters is being, or is likely to be, caused.”

Contaminated Land (England) Regulations 1999 : regulations (SI 1999/[n]) made under Part IIA – described in Annex 4.

Controlled waters: defined in section 78A(9) by reference to Part III (section 104) of the Water Resources Act 1991; this embraces territorial and coastal waters, inland fresh waters, and ground waters.

Cost recovery decision : any decision by the enforcing authority whether:
a) to recover from the appropriate person all the reasonable costs incurred by the authority in carrying out remediation, or
b) not to recover those costs or to recover only part of those costs. *Paragraph E.8*

Current use: any use of the land which is currently being made, or is likely to be made, of the land. This definition is subject to the certain qualifications. *Paragraph A.26*

Ecological system effect : significant harm of a type listed in box 2 of Table A of Chapter A.

Enforcing authority : defined in section 78A(9) as:
(a) in relation to a special site, the Environment Agency;
(b) in relation to contaminated land other than a special site, the local authority in whose area the land is situated.

Draft Circular on Contaminated Land, September 1999 163

Escaped Substances : an exclusion test for Class A persons set out in Part 5 of Chapter D. *Paragraphs D.65 to D.67*

Excluded Activities : an exclusion test for Class A persons set out in Part 5 of Chapter D. *Paragraphs D.47 to D.50*

Exclusion: any determination by the enforcing authority under section 78F(6) (that is, that a person is to be treated as not being an appropriate person). *Paragraph D.5(d)*

Hardship: a factor underlying any cost recovery decision made by an enforcing authority under section 78P(2). See paragraphs 10.8 to 10.10 of Annex 2 for a discussion of the interpretation of this term.

Harm: defined in section 78A(4) as: “harm to the health of living organisms or other interference with the ecological systems of which they form part and, in the case of man, includes harm to his property.”

Human health effect : significant harm of a type listed in box 1 of Table A of Chapter A.

Industrial, trade or business premises : defined in section 78M(6), for the purpose of determining the penalty for failure to comply with a remediation notice, as: “premises used for any industrial, trade or business purposes or premises not so used on which matter is burnt in connection with any industrial, trade or business process, and premises are used for industrial purposes where they are used for the purposes of any treatment or process as well as where they are used for the purpose of manufacturing.”

Inspection using statutory powers of entry : any detailed inspection of land carried out through use of powers of entry given to an enforcing authority by section 108 of the Environment Act 1995. *Paragraph B.21*

Introduction of Pathways or Receptors : an exclusion test for Class A persons set out in Part 5 of Chapter D. *Paragraphs D.68 to D.72.*

Intrusive investigation : an investigation of land (for example by exploratory excavations) which involves actions going beyond simple visual inspection of the land, limited sampling or assessment of documentary information. *Paragraph B.20(c)*

Liability group: the persons who are appropriate persons with respect to a particular significant pollutant linkage. *Paragraph D.5(c)*

Local authority: defined in section 78A(9) as meaning any unitary authority, district council, the Common Council of the City of London, the Sub-Treasurer of the Inner Temple and the Under-Treasurer of the Middle Temple.

Monitoring action: a remediation action falling within the definition in section 78A(7)(c), that is “making of subsequent inspections from time to time for the purpose of keeping under review the condition of the land or waters”. *Paragraph C.8(g)*

Orphan linkage: a significant pollutant linkage for which no appropriate person can be found, or where those who would otherwise be liable are exempted by one of the relevant statutory provisions. *Paragraphs D.12, D.14 and D.17*
Draft Circular on Contaminated Land, September 1999 164

Owner: defined in section 78A(9) as: “a person (other than a mortgagee not in possession) who, whether in his own right or as trustee for any other person, is entitled to receive the rack rent of the land, or where the land is not let at a rack rent, would be so entitled if it were so let.”

Part IIA: Part IIA of the Environmental Protection Act 1990.

Pathway: one or more routes or means by, or through, which a receptor:

- (a) is being exposed to, or affected by, a contaminant, or
- (b) could be so exposed or affected. *Paragraph A.14*

Payments Made for Remediation : an exclusion test for Class A persons set out in Part 5 of Chapter D. *Paragraphs D.51 to D.56*

Person acting in a relevant capacity : defined in section 78X(4), for the purposes of limiting personal liability, as any of the following:

- “(a) a person acting as an insolvency practitioner, within the meaning of section 388 of the Insolvency Act 1986 (including that section as it applies in relation to an insolvent partnership by virtue of any order made under section 421 of that Act;
- “(b) the official receiver acting in a capacity in which he would be regarded as acting as an insolvency practitioner within the meaning of section 388 of the Insolvency Act 1986 if subsection (5) of that section were disregarded;
- “(c) the official receiver acting as a receiver or manager;
- “(d) a person acting as a special manager under section 177 or 370 of the Insolvency Act 1986;...
- “(f) a person acting as a receiver or receiver and manager under or by virtue of any enactment, or by virtue of his appointment as such by an order of a court or by any other instrument.”

Pollutant: a contaminant which forms part of a pollutant linkage. *Paragraph A.17*

Pollutant linkage: the relationship between a contaminant, a pathway and a receptor. *Paragraph A.17*

Pollution of controlled waters: defined in section 78A(9) as :“the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter.”

Possibility of significant harm : a measure of the probability, or frequency, of the occurrence of circumstances which would lead to significant harm being caused. *Paragraph A.27*

Receptor: either:

- (a) a living organism, a group of living organisms, an ecological system or a piece of property which:

Draft Circular on Contaminated Land, September 1999 165

- (i) is in a category listed in Table A in Chapter A as a type of receptor, and
- (ii) is being, or could be, harmed, by a contaminant; or
- (b) controlled waters which are being, or could be, polluted by a contaminant. *Paragraph A.13*

Register: the public register maintained by the enforcing authority under section 78R of particulars relating to contaminated land.

Related companies: those which are members of a group of companies consisting of a “holding company” and its “subsidiaries”, where these terms have the same meaning as in section 736 of the Companies Act 1985. *Paragraph D.46(b)*

Relevant date: the date on which the enforcing authority first served on anyone a notice under section 78B(3) identifying the land as contaminated land (used in assessing whether appropriate persons are “related companies”). *Paragraph D.46(a)*

Relevant information: information relating to the assessment of whether there is a significant possibility of significant harm being caused, which is:

- (a) scientifically-based;
- (b) authoritative;
- (c) relevant to the assessment of risks arising from the presence of contaminants in soil; and
- (d) appropriate to the determination of whether any land is contaminated land for the purposes of Part IIA, in that the use of the information is consistent with providing a level of protection of risk in line with the qualitative criteria set out in Tables A and B of Chapter A. *Paragraph A.31*

Relevant land or waters : the contaminated land in question, any controlled waters affected by that land and any land adjoining or adjacent to the contaminated land on which remediation might be required as a consequence of the contaminated land being such land. *Paragraph C.8(d)*

Remedial treatment action : a remediation action falling within the definition in section 78A

(7)(b), that is the doing of any works, the carrying out of any operations or the taking of any steps in relation to any such land or waters for the purpose:

- (a) of preventing or minimising, or remedying or mitigating the effects of any significant harm, or any pollution of controlled waters, by reason of which the contaminated land is such land, or
- (b) of restoring the land or waters to their former state. *Paragraph C.8(f)*

Remediation: defined in section 78A(7) as

“(a) the doing of anything for the purpose of assessing the condition of -

“(i) the contaminated land in question;

“(ii) any controlled waters affected by that land; or *Draft Circular on Contaminated Land, September 1999 166*

“(iii) any land adjoining or adjacent to that land;

“(b) the doing of any works, the carrying out of any operations or the taking of any steps in relation to any such land or waters for the purpose -

“(i) of preventing or minimising, or remedying or mitigating the effects of any significant harm, or any pollution of controlled waters, by reason of which the contaminated land is such land; or

“(ii) of restoring the land or waters to their former state; or

“(c) the making of subsequent inspections from time to time for the purpose of keeping under review the condition of the land or waters.”

Remediation action : any individual thing which is being, or is to be, done by way of remediation. *Paragraph C.8(a)*

Remediation declaration : defined in section 78H(6). It is a document prepared and published by the enforcing authority recording remediation actions which it would have specified in a remediation notice, but which it is precluded from specifying by virtue of sections 78E(4) or (5), the reasons why it would have specified those actions and the grounds on which it is satisfied that it is precluded from specifying them in a notice.

Remediation notice : defined in section 78E(1) as a notice specifying what an appropriate person is to do by way of remediation and the periods within which he is required to do each of the things so specified.

Remediation package : the full set or sequence of remediation actions, within a remediation scheme, which are referable to a particular significant pollutant linkage. *Paragraph C.8(b)*

Remediation scheme : the complete set or sequence of remediation actions (referable to one or more significant pollutant linkages) to be carried out with respect to the relevant land or waters. *Paragraph C.8(c)*

Remediation statement : defined in section 78H(7). It is a statement prepared and published by the responsible person detailing the remediation actions which are being, have been, or are expected to be, done as well as the periods within which these things are being done.

Risk: the combination of:

- (a) the probability, or frequency, of occurrence of a defined hazard (for example, exposure to a property of a substance with the potential to cause harm); and
- (b) the magnitude (including the seriousness) of the consequences. *Paragraph A.9*

Shared action: a remediation action which is referable to the significant pollutant in more than one significant pollutant linkage. *Paragraph D.21(b)*

Single-linkage action : a remediation action which is referable solely to the significant pollutant in a single significant pollutant linkage. *Paragraph D.21(a)*

Significant harm: defined in section 78A(5). It means any harm which is determined to be significant in accordance with the statutory guidance in Chapter A (that is, it meets one of the descriptions of types of harm in the second column of Table A of that Chapter).

Significant pollutant : a pollutant which forms part of a significant pollutant linkage. *Paragraph A.20*

Significant pollutant linkage : a pollutant linkage which forms the basis for a determination that a piece of land is contaminated land. *Paragraph A.20*

Significant possibility of significant harm : a possibility of significant harm being caused which, by virtue of section 78A(5), is determined to be significant in accordance with the statutory guidance in Chapter A.

Sold with Information : an exclusion test for Class A persons set out in Part 5 of Chapter D. *Paragraph D.57 to D.61*

Special site: defined by section 78A(3) as: “any contaminated land -
“(a) which has been designated as such a site by virtue of section 78C(7) or 78D(6)...;and
“(b) whose designation as such has not been terminated by the appropriate Agency under section 78Q(4)...”. The effect of the designation of any contaminated land as a special site is that the Environment Agency, rather than the local authority, becomes the enforcing authority for the land.

Substance: defined in section 78A(9) as:

“any natural or artificial substance, whether in solid or liquid form or in the form of a gas or vapour.”