

South Holland District Council Contaminated Land Strategy

Draft for consultation
June 2019

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1.0 Introduction

This document sets out how South Holland District Council (SHDC) will approach the inspection of its district with respect to its statutory requirements under Part 2A of the Environmental Protection Act 1990 (Part 2A) as inserted by Section 57 of the Environment Act 1995. This meets the requirements of section 2.6 of Contaminated Land Statutory Guidance dated April 2012.

This document replaces the original 2001 document and all subsequent revisions, and sets out the priorities for 2019-2024.

2.0 Background to the Contaminated Land Regime

Under Part 2A of the Environmental Protection Act 1990, Local Authorities in England are given responsibilities for regulating contaminated land. There are two main parts to the local authority's duties under Part 2A – an inspection function and an enforcement function.

Statutory Guidance for regulators (2012) requires publication of a strategy setting out how the local authority will inspect its area for contaminated land, identify contaminated land and manage the information that it collects in the process.

2.1 What is Contaminated Land?

In general terms, contaminated land usually means land where industrial or other human activities have resulted in the presence of substances in the ground with the potential to cause harm to human health, structures, or the environment. However, in English law the term “contaminated land” means something more specific than this.

The definition of non-radioactive contaminated land from the Environmental Protection Act 1990, Part 2A is:

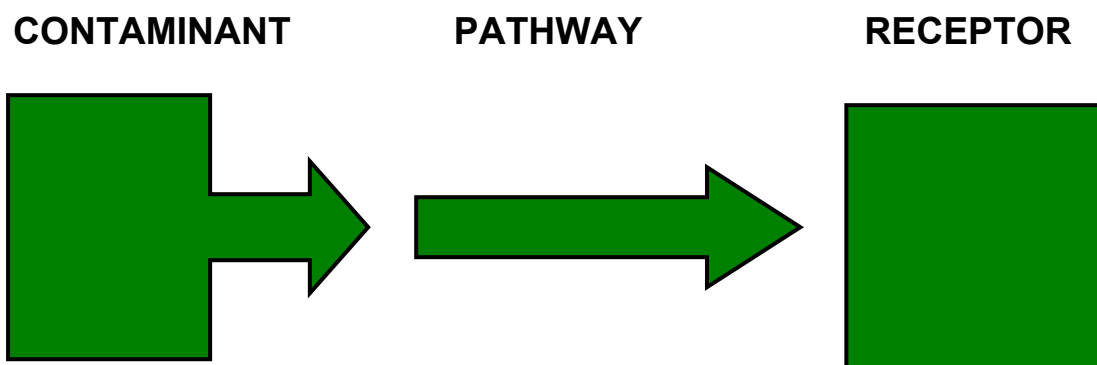
‘any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that –

(a) significant harm is being caused or there is a significant possibility of such harm being caused; or

(b) significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused.’

For a relevant risk to exist there needs to be one or more contaminant-receptor linkages – “contaminant linkage”. The statutory guidance defines:

- A **contaminant** is a substance which is in, on or under the land and which has the potential to cause significant harm to a relevant receptor, or to cause significant pollution of controlled waters.
- A **receptor** is something that could be adversely affected by a contaminant, for example a person, an organism, an ecosystem, property, or controlled waters.
- A **pathway** is a route by which a receptor is or might be affected by a contaminant.
- A **contaminant linkage** is the relationship between the contaminant (or ‘source’), the pathway and the receptor.



All three parts of the contaminant linkage must be in place for a risk to exist.

For example, consider an industrial site that has become contaminated with lead (a toxic metal). The receptor of concern is the people that work on the site. To be harmed by the lead, the people must be able to come into physical contact with the soil that contains the lead – they must be able to inhale soil dust, or get soil in their mouths.

If all the contaminated soil is covered by buildings, concrete and tarmac, the people cannot contact the soil. There is no contaminant linkage, and no risk of harm. In this case, even though a potentially harmful substance was present, the site would not legally be contaminated land.

2.2 What is Radioactive Contaminated Land?

Part 2A also applies to radioactive contaminated land and this is covered by the Radioactive Contaminated Land (RCL) Statutory Guidance June 2018.

Radioactive Contaminated Land is defined 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) harm is being caused; or**
- (b) there is a significant possibility of such harm being caused.**

The trigger for Local Authority inspections relating to radioactivity requires 'reasonable grounds' for believing that land may be radioactively contaminated, and is a more limited inspection duty than for the non-radioactive contaminated land regime. If inspections identify that the land meets the statutory definition for radioactive contaminated land, it becomes a 'Special Site' and the Environment Agency becomes the enforcing authority.

At the time of writing SHDC has no reason to believe that there is any radioactive contaminated land in the district, however should information come to light which suggests otherwise, the processes given in this document and in the RCL Statutory Guidance 2018, will apply. The remainder of this document refers to non-radioactive contaminated land.

3.0 Aims & Objectives

3.1 Government Aims

The main objectives of the Government's policy on contaminated land and the Part 2A regime are:

- **To identify and remove unacceptable risks to human health and the environment**
- **To seek to ensure that contaminated land is made suitable for its current use**
- **To ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.**

Part 2A takes a risk based approach to defining contaminated land where risk in the statutory guidance is defined as the combination of:

- a) The likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land; and
- b) The scale and seriousness of such harm or pollution if it did occur.

In conducting assessments under the Part 2A regime the local authority should aim to focus on land which might pose an unacceptable risk.

Risks should only be considered for the current use of the land. The local authority should assume that any future use or development would be carried out in accordance with the National Planning Policy Framework at the time.

Under Part 2A the starting point should be that land is **not** contaminated land unless there is a reason to consider otherwise and that **'enforcing authorities should seek to use Part 2A only where no appropriate alternative solution exists'**.

3.2 South Holland District Council Approach

3.2.1 Aims

South Holland's Corporate Plan 2019-23 sets out the strategic ambition:

'South Holland: A Place of Prosperity, Wellbeing and Opportunity for All'

This will be achieved through five themes, and the table below sets out where this strategy will help to achieve these priorities.

Priority	Critical Activity to which this strategy contributes
Your Home	<i>Enable the effective planning and delivery of housing solutions to meet local needs and aspirations to ensure that our residents have access to a range of housing options in the district</i>

Your Place	
Your Health & Wellbeing	<i>Ensure that our public protection services continues to enable our communities to remain healthy and safe through our regulatory activities including food safety, environmental protection and licensing</i>
Your Opportunity	
Our Council	<i>Continue to ensure that our regulatory services remain fully compliant with all current and emerging legislation</i>

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

- To meet our statutory obligations under Part 2A of the Environmental Protection Act 1990
- To protect human health, important ecological sites, important historic and cultural sites and the water environment
- To ensure that Part 2A procedures are well integrated with the planning and building control process
- To be rational, ordered and efficient in carrying out all inspection work
- To have a body of information for contaminated land that is useful and accessible
- To aid communication between bodies and individuals interested in contaminated land
- To have a transparent decision making process wherever possible

3.2.2 Objectives

In order to achieve our aims, our main objectives are to:

- Ensure that this Contaminated Land Strategy and its implementation meet the requirements of Part 2A
- Respond proactively to enquiries regarding voluntary remediation, or that required through other regimes, in particular the planning regime.
- Provide readily available information for all interested parties, including members of the public, local businesses and landowners, environmental organisations and also the Council itself.
- Identify sites where contaminated land has already been remediated
- If an unacceptable environmental risk is identified, ensure that remediation takes place, including on Council owned land
- Provide and maintain a public register available for access on request

3.2.3 Internal Management Arrangements

The approval of the contaminated land strategy is an executive function.

The Environmental Protection Team of the Public Protection Service of SHDC is responsible for carrying out the inspection of land under Part 2A within SHDC's area of responsibility.

The Environmental Protection Manager is responsible for the management and production of the Contaminated Land Register and has overall responsibility for assessing information and classifying the sites.

The Environmental Protection Team Leader has responsibility for obtaining and collating information.

Contact details for the Environmental Protection Team can be found at the end of this document.

3.2.4 Broader Approach to Land Contamination

As well as through Part 2A, land affected by contamination can be addressed through the planning regime, building regulations and Environmental Permitting Regulations, or voluntarily.

Several sites in South Holland have been remediated voluntarily either due to the owner having a Company Environmental Policy or in order to make the land a more attractive prospect for redevelopment.

National Planning Policy Framework (NPPF 2019) paragraphs 170 (f), 178 & 179 apply. Specifically, it states:

- after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990
- Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner

During 2018 for example, planners referred over 200 individual sites for consultation relating to land contamination. Addressing land contamination through the planning and building control process is currently the primary mechanism for ensuring remediation of contaminated sites within SHDC.

3.2.5 Minimising unnecessary burdens

The cost of detailed investigation including sampling, analysis and interpretation can be significant. Local Authority funding is provided through the Revenue Support Grant from Department for Housing Communities and Local Government (DHCLG) such that the statutory obligation under Part 2A of the Environmental Protection Act can be met, however this is unlikely to cover the cost of intrusive investigations or costly remedial work where there is no appropriate person and the Local Authority is then responsible.

Funding from DEFRA through the Contaminated Land Capital Grant scheme ceased in 2017 and there are currently no plans to replace this.

SHDC will seek to minimise the financial burden to taxpayers, businesses and individuals by making the planning regime the primary mechanism for ensuring remediation of contaminated sites within the SHDC area, and in all other cases, encouraging voluntary action as a first step.

3.2.6 Council Owned Land

All sites in the district will be prioritised for detailed inspection on the environmental risk posed, with risk to human health coming first. Therefore the council will not prioritise its own landholdings above others for Detailed Inspection.

Should any land for which SHDC are the appropriate person be found to be statutorily contaminated SHDC will lead by example in ensuring that the land is remediated to a standard suitable for its current use.

The duties of SHDC in this strategy will be kept separate from the responsibilities of SHDC as a landowner.

4.0 Relevant Aspects of the SHDC Area

South Holland is located in the south of Lincolnshire and covers an area of 737 square kilometres (280 square miles). It has boundaries with Cambridgeshire, Norfolk and other Lincolnshire authority areas. The north eastern boundary of the district is the unspoilt coastline of the Wash. The District is sparsely populated with roughly one third of its population of 88 300 living in the principal market town of Spalding with the remainder living in five small towns and many rural villages.

Further information on the general characteristics of the area (eg geology and hydrology) is given in Appendix A.

4.1 Potentially contaminative land uses

The primary 'industries' in South Holland are the agricultural industry (including horticulture); the related food processing plants and road haulage distribution.

There is no history of what could be classed as widespread major polluting industries within the area. However there are many sites where a degree of pollution could have occurred. The small towns and large villages have a number of sites with historic potentially contaminative land uses, such as former petrol filling stations, gas works, and railway land.

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

Despite being principally in a rural area, there is still a need and a legal requirement for the Council to implement the Contaminated Land Regime. The current and historic uses of parts of the district require the Council to assess whether there are contamination issues that need to be addressed.

4.2 Background concentrations

The Guidance states that the Part 2A regime was not intended to apply to land with levels of contaminants in soil that are commonplace ('background') and widespread where in most cases there is no reason to consider that there is an unacceptable risk.

Normal levels of contaminants in soil may result from:

- a) The natural presence of contaminants at levels that might be considered typical in certain areas and do not pose an unacceptable risk (for example due to the underlying geology).
- b) The presence of contaminants caused by low level diffuse pollution and common human activity other than specific industrial processes.

Data from the British Geological Survey indicates that within the South Holland district levels of commonly found contaminants (such as arsenic and benzo(a)pyrene) are typically below Category 4 Screening Levels and as such do not require further consideration.

4.3 Potential receptors

SHDC will prioritise human receptors above all others. This includes people living, working and playing on land within our area.

Appendix A gives further characteristics of other vulnerable receptors, for example The Wash being a 'Ramsar Convention' site (a wetland site of international importance), however it should be noted that overall the area has low sensitivity to controlled waters. Only a small proportion of the district is underlain by a secondary aquifer and only a limited number of private water abstractions are present.

5.0 South Holland District Council Approach to Inspection

The Guidance identifies two types of inspection – strategic and detailed.

Strategic inspection involves looking at the district as a whole, to identify those sites which may require further consideration.

Detailed inspection is undertaken on a particular piece of land to obtain specific information on the ground conditions and carrying out of risk assessments to support decisions made under Part 2A.

5.1 Strategic Inspection

5.1.1 Prioritisation of potential sites

In order to identify potential contaminated land in the District, SHDC commissioned Capita Symonds Ltd in 2004 to compile and prioritise a list of sites. In total 1027 potentially contaminated land sites were identified in the South Holland area for further investigation based on their land use at the time.

5.1.2 Desk Study Review

The statutory guidance states that priority will be given to areas that pose the greatest risk to human health or the environment.

As necessary, sites will be subject to a preliminary desk study to establish the potential risk. This is a commonly used method of collating as much information about a site as possible without using intrusive investigation work and will be undertaken in accordance with best practice at the time. In assessing the risk, the likelihood of the potential hazard needs to be established using, for example, the following sources of information:

- Historic mapping
- Planning History of the site and surrounding area.
- Aerial photographs
- Assessment of geological and hydrogeological maps.
- Environmental databases
- Environment Agency Information
- County Council Information
- Discreet site walkover to establish current use and conduct a visual inspection.

At this point, if a potentially significant contaminant linkage is identified it will move to detailed inspection.

5.1.3 Ongoing Identification of Potentially Contaminated Sites

The work of identifying and prioritising sites that may be contaminated will continue as new information comes to light. Information provided by statutory bodies, the planning process and by the general public, businesses and other organisations may identify new sites or affect the prioritisation of sites that have already been identified.

The Environmental Protection Team will not investigate anonymously supplied information unless there are clear signs that there has been a significant pollution incident which may fall under regulations relevant to contaminated land and under the jurisdiction of The Council.

Anecdotal evidence can be a vital source of information when dealing with the contaminated land regime. It should be noted, however, that determinations cannot be made without robust scientific evidence as advocated in the available guidance. Officer judgement will be used to decide what, if any, investigation is required following receipt of information.

It may become apparent during the course of the detailed inspection of land that the assumptions leading to the original prioritisation of the land prove to be incorrect, and the risks posed by the land are lower than first thought. This again will alter the prioritisation.

5.2 Detailed Inspection

Sites which are still considered to pose an unacceptable risk after the strategic inspection stage will then be subject to further assessment in the form of a detailed inspection.

The purpose of a detailed inspection is to establish enough information:

- About the three elements (contaminant, pathway, receptor) to determine whether the site appears to be contaminated land, and
- To decide whether the site falls into the definition of a Special Site

In order to do this we must decide whether the land is contaminated on grounds of:

- Significant Possibility of Significant Harm to Human Health (SPOSH)
- Significant harm and significant possibility of such harm (non-human receptors)
- Significant pollution of controlled waters and significant possibility of such pollution

Part 2A states the starting point should be that land is not contaminated land. The detailed inspection should provide sufficient information such that a risk summary can be produced. The assessor will consider the likely severity of the contamination, the sensitivity of the receptors and the probability of an existence of a pathway.

All assessments will be clearly documented by the Environmental Protection Team and the circumstances of each location will be considered on a site by site basis.

The detailed inspection may include the following actions:

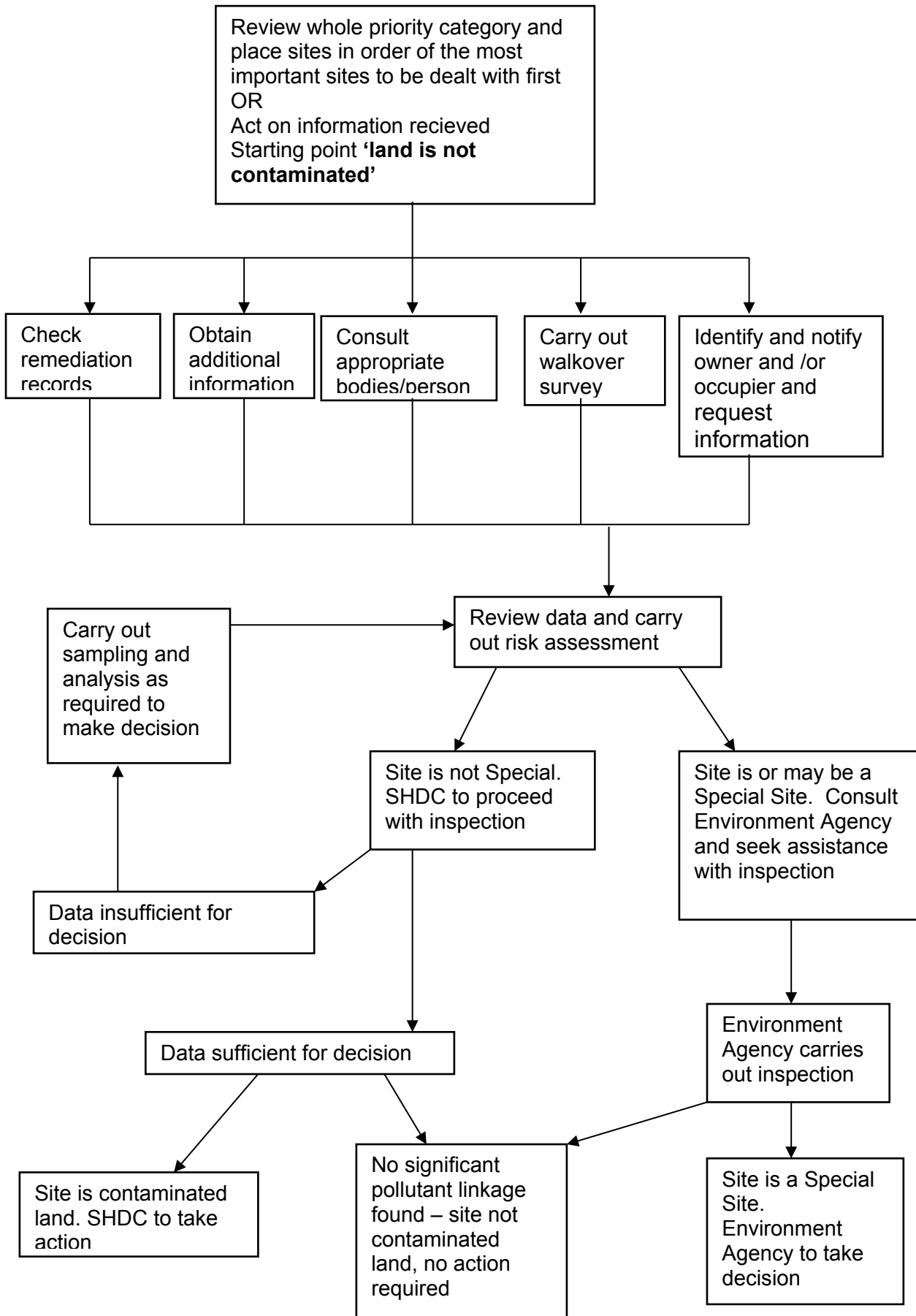
- A collation and assessment of documentary information and evidence (**detailed desk study**)
- A **site visit** to carry out a visual inspection and, in some cases, limited surface sampling
- An **intrusive site investigation** involving the sampling and analysis of site soils and groundwater and/or gas and vapour monitoring.

SHDC will ensure that any intrusive investigations are carried out in accordance with the appropriate technical standards.

SHDC will ensure that it takes all reasonable precautions to avoid harm, water pollution or damage to natural resources, or features of historical or archaeological interest, whilst carrying out an intrusive investigation.

SHDC has established procedures for carrying out detailed inspections and the methodology is summarised in the following flow chart with further detail given in appendix B

FLOWCHART FOR DETAILED INSPECTION



5.3 Identification of Special Sites

The Environmental Protection Act 1990 identifies a limited number of scenarios where the enforcing authority is the Environment Agency rather than the local authority.

If SHDC identifies a site that is likely to be a Special Site, the Environment Agency will be notified and the information on the site forwarded to the Agency. SHDC will retain details of the site and the Environment Agency will notify SHDC of significant progress on the site's remediation.

5.4 Health and Safety Procedures

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

5.5 Appointing Consultants

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

- Advise on particular technical issues;
- Undertake some or all of the detailed site inspections
- Prepare and undertake detailed technical presentations to the general public or to other bodies.

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

5.6 Timetable for Detailed Inspections

There are no plans to undertake detailed inspections at the current time.

A case specific approach will be employed should it become apparent that detailed inspection is required, and a business case put forward for consideration in accordance with SHDC procedures.

6.0 Remediation

Remediation is defined in the Statutory Guidance as:

- (a) The doing of anything for the purpose of assessing the condition of –
 - (i) the contaminated land in question; or
 - (ii) any controlled waters affected by that land; or
 - (iii) any land adjoining or adjacent to that land;
- (b) The doing of any works, the carrying out of any operations or the taking of any steps in relation to any such land for the purpose –
 - (i) of preventing or minimising, or remedying or mitigating the effects of, 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.’

6.1 Remediation Process

SHDC will follow the process as set out within the statutory guidance when serving remediation notices, and at all times will pursue a voluntary approach where a favourable outcome is likely.

The compliance time will be site and situation specific, however in all instances SHDC will work with the appropriate persons identified to ensure that the timescales are reasonable and achievable.

Details of the information to be recorded on the public register are given in Appendix C.

6.2 Cost Recovery

Where voluntary remediation is not achieved, SHDC will seek to recover all costs by identifying the appropriate Class A or Class B persons as set out in the statutory guidance.

However when these persons cannot be found, where they are exempt from liability, or where an orphan linkage is identified, then the enforcing authority (eg SHDC or the Environment Agency) shall bear the cost of remediation.

SHDC will, in all cases, follow the statutory guidance and ensure that any actions required are reasonable.

7.0 Priorities & Conclusion

This strategy has set out the aims, objectives and background the land contamination within the South Holland District Council Area, and has identified processes for both strategic and detailed inspection. The following priorities have been identified in order to guide the future work flow whilst minimising the cost burden to tax payers.

Our identified priorities are therefore:

1. Contaminated Land will be addressed under the planning regime as far as possible. The National Planning Policy Framework requires the local planning authority to take account of land contamination when making planning decisions. If required remedial works must be undertaken to ensure that the site is 'suitable for use' and as a minimum cannot be classed as Contaminated Land under Part 2A.
2. Where possible SHDC will promote a proactive approach to the investigation of a site and encourage remediation of a site to take place voluntarily. SHDC will consider legal enforcement under Part 2A as a last resort.
3. Information on land contamination already collected both through the planning process and Part 2A work will be collated and stored so that it is easily accessible when required. This will aid information requests, consultation processes and transparency in all that we do.
4. Part 2A sites will be investigated so that the most pressing and serious problems are located first. Risks to human health will be considered above all other risks so therefore residential land, school and playgrounds, allotments and drinking water abstraction points will be our priority. The investigations will:
 - i. be rational, ordered and efficient
 - ii. be proportionate to the seriousness of any actual or potential risk
 - iii. seek to ensure that the most pressing and serious problems are located first
 - iv. ensure that resources are concentrated on investigating in areas where the authority is most likely to identify contaminated land and not where risks are already being addressed through planning etc. (development land).

The document has set out the approach that SHDC will take towards dealing with contaminated land in its area, and identified key priorities to guide our implementation of the regime.

By carrying out our investigations in this way SHDC will therefore minimise the necessary burden on the taxpayer, businesses and individuals whilst still maintaining our statutory requirements.

APPENDIX A CHARACTERISTICS OF THE SOUTH HOLLAND AREA

This section gives the background to South Holland District and an explanation of how this influences the Council's approach to inspection for contaminated land. It will also enable comparison with other authorities.

A.1 Geographical Location

South Holland covers the south-eastern corner of Lincolnshire, and comprises low lying marsh land reclaimed from the sea, known locally as 'fens'. The District's north-eastern boundary is The Wash coastline, an area recognised nationally and internationally for its ecological importance. South Holland extends from a boundary with Boston Borough in the north, to borders with North Kesteven District and South Kesteven District on the west, Peterborough City and Fenland District (in Cambridgeshire) to the south and Kings Lynn and West Norfolk Borough (in Norfolk) to the east.

A.2 Brief Description and History

In South Holland, as in most areas, the environment has been significantly affected by the activities of mankind. In the earliest times people settled on the islands within the fens and salt marshes and lived off the abundant wildlife. The evidence of this past human activity is all around us within the landscape and these remains are an important link between the past and present day inhabitants of the district.

Successive drainage schemes have gradually reclaimed the fens and pushed the shoreline north. Today the reclaimed areas form intensively cultivated and highly fertile agricultural land which is an important national resource. The sea is held at bay behind defensive walls along the coast and tidal estuaries with a network of drains, sluices and pumping stations keeping the inland areas free from inundation. So in essence the land is flat and low-lying, served by an extensive system of land drains and the Rivers Welland, Glen (a tributary of the Welland) and Nene.

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

A.3 Size

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

A.4 Population Distribution

The predominant character of the district is rural with a low population density of 1.2 persons per hectare (compared to the national average of 3.7). There has been a marked and steady increase in the district's population from 61 631 in 1971 to 88 300 in 2011.

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

A.5 Principal Land Use Characteristics

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

A.6 Geomorphological Setting

South Holland District lies within the low-lying fens area of Central/ Eastern England. Much of the district has been reclaimed from the sea over the past 2000 years or so and consequently ground level is generally at or below sea level, except for a few isolated 'islands' of high ground at 5-7maOD. The area is typified by the presence of raised flood protection embankments, such as along the River Nene in the east and the River Welland in the west, and the district is also criss-crossed by numerous drainage ditches.

The north-eastern boundary is formed by the coastal wash boundary, where a 4-6m high sea bank separates the agricultural land from the salt marsh.

A.7 Geology

The district is underlain by a sequence of recent normally consolidated sedimentary superficial soils at the surface overlying Jurassic mudstones at depth.

A7.1 Superficial deposits

The majority of the district is underlain by Holocene marine alluvium of the Terrington Beds, with the slightly older Barrowway Drove beds found underlying these, and present at the surface in the south east of the district.

The Terrington beds are not usually more than 3m thick and comprise soft to firm consolidated compressible silty clay but can contain layers of silt, sand, peat and basal gravel. Where they rest on the Barrowway Drive beds, they are unconformable, and the boundary undefined, often filling old river channels.

In isolated areas to the south west of the district the Nordelph Peat is present at the surface. It is generally <1m thick due to shrinkage, and contains wet dark brown partially decomposed vegetation, often with organic rich clay.

The Barroway Drove Beds are also marine alluvium, described as soft silty clay with root traces and can be up to 12m thick, but rarely achieve the full thickness.

The relationship between the three units is complex, and varies locally.

Limited to the area around Crowland the Abbey Sand & Gravel are present at the surface, at thickness' up to 5m. These Quaternary Deposits include clayey sand and gravel and marine shells.

Glacial Till / Diamicton is present as a basal soil layer across much of the district and comprises grey sandy calcareous clay with chalk, flint and other pebbles.

The totally thickness of superficial deposits can vary between 5m and 40m.

A7.3 Solid Geology

The district is underlain by Jurassic mudstones, laid down in shallow seas between 151 & 165 million years ago.

The Oxford Clay is encountered in the west of the district and underlies Spalding. It comprises pale grey blocky mudstone. With increasing depth more fossils and bands of calcareous mudstone are encountered.

The West Walton Formation runs in a band north - south though Whaplode and comprises dark grey very silty carbonaceous fossiliferous mudstones and calcareous mudstones

The Ampthill Clay underlies the east of the district and comprises dark grey mudstone and pale grey calcareous mudstone with lenses of muddy limestones.

A8 Hydrology & Hydrogeology

A8.1 Hydrology

South Holland is characterised by its network of drainage ditches and wide, slow flowing rivers which feed into the sea through The Wash.

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

A8.2 Hydrogeology

Given the presence of low permeability soils and rocks, the majority of the district is classified by the Environment Agency as Unproductive Strata: These are geological strata with low permeability that have negligible significance for water supply or river

base flow. However in the southern part of the district there are relatively small areas of superficial deposits classed as Secondary Aquifers A (Defined as permeable strata capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers). These are deposits such as the Abbey Sand and Gravel. There are also areas classed as Secondary Undifferentiated, possibly associated with buried river channels.

These secondary aquifers may support local drinking water supplies.

In addition, in the area immediately west of Gosberton Clough and Pinchbeck West, there is a small area of groundwater Source Protection Zones both Zone I (Inner protection zone) and Zone II (outer protection zone) relating to deep groundwater abstractions.

A.9 Key Water Resource and Protection Issues

Anglian Water Services Ltd. supplies drinking water for the District. Water for public supply is taken from deep boreholes as well as the Rivers Welland and Nene.

The low gradient of the watercourses together with the impact of agricultural and food processing activities adversely effect biological water quality, which continues to decline as the water slowly flows downstream.

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

Surface water is therefore identified as a potentially vulnerable receptor in the area.

A.10 Ecological Sites- Protected and Other Locations

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

- *Special Areas of Conservation(including candidate SACs) classified pursuant to Article4 of European Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, and Special Protection Areas(including potential SPAs) classified pursuant to Article4 of European Council Directive on the Conservation of Wild Birds.*
- *Ramsar sites listed under the Convention on Wetlands of International Importance.*
- *Sites of Special Scientific Interest (SSSIs) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)*
- *National Nature Reserves (NNRs) declared under Section 19 of the National Parks and Access to the Countryside Act 1949 or Section 35 of the Wildlife and Countryside Act 1981 (as amended)*

• *Local Nature Reserves (LNRs) declared under Section 21 of the National Parks and Access to the Countryside Act 1949*

The Wash carries the highest levels of designation, being a Wetland of International Importance (a Ramsar site), a Special Protection Area for the conservation of the habitats of certain rare or vulnerable birds (SPA) and a Special Area for Conservation (c.SAC).

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

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

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

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

A.11 Key Property Types

Buildings, property, ancient monuments and important archaeological sites are all considered receptors that should be protected under the contaminated land regime.

Most of them pre-date industrial development and are not likely to be actually located on contaminated land. Any instances of significant harm would be more likely to be as a result of migration of contamination – for example migrating landfill gas, or contaminants in groundwater.

There are over 550 Listed Building entries for the District. Many of the listed buildings are to be found within the historic cores of the older settlements, although there are also a substantial number distributed sporadically, such as noteworthy farmhouses.

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

There are some 20 Scheduled Ancient Monuments within the District.

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

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

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

A record of the location of known archaeological remains is kept within the County Sites and Monuments Record held by Lincolnshire County Council in Lincoln. These records are periodically updated as evidence on further sites of archaeological importance is found and it is therefore likely that there are other sites of archaeological importance within the district that are as yet unknown.

A.12 Current and Past Industrial History and Some Other Notable Activities

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

There are long established major industrial locations at Spalding/Pinchbeck (West Marsh Road/Wardentree Lane/Enterprise Park areas) and Sutton Bridge (Wingland area). The first of these areas includes a site once occupied by a Sugar Beet Factory which has now been demolished and is now partly occupied by Spalding Power Station.

The second area, Wingland, previously a Ministry of Defence airfield (RAF Sutton Bridge); is now a significant site for industry and including a Power Station.

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

The Ministry of Defence has a bombing range, RAF Holbeach, beyond the sea defences on the Wash coastline. There are two established airfields in South Holland for light aircraft, namely Fenland Airfield and Crowland Airfield.

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

A.13 Known Information on Contamination

Information on past industrial use of land is held in our GIS system, and was obtained from a number of sources such as historical mapping, the Environment Agency and the planning department.

There is no history of what could be classed as major, widespread polluting industries within the area, however the towns and large villages were generally self-supporting with smaller scale industrial premises located across the district.

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

Information on sites which have been remediated is held within both the Environmental Protection Team records and on the planning file, as appropriate.

A.14 Action Already Taken to Deal with Contamination

Prior to 2001 the Council dealt with any issues relating to contaminated land on an ad-hoc basis either through building control, planning or ultimately environmental health. The majority of sites were identified and dealt with through the building control regime.

Since 2001 many sites within South Holland have been investigated and remediated prior to development/redevelopment through the Planning Regime with Developers having to ensure that the site was suitable for use through a planning condition. Information submitted is held on the planning file for public inspection.

Several sites in the District have also been remediated voluntarily either due to the owner having a Company Environmental Policy or in order to make the land a more attractive prospect for redevelopment. An example of this is the former Gas Works Site in Spalding.

APPENDIX B Explanation of Flowchart for Detailed Inspection

a) Review priority category

Before commencing detailed inspections on a priority category the assessor will review the information for each site in the category and decide the relative urgency of each case in terms of the likelihood that significant harm or water pollution is occurring. This will ensure that the potentially most serious sites are dealt with first. This review will take place only at the start of the inspection process on each category. Similar reviews of progress and relative urgency of cases will be undertaken at regular intervals as part of reviewing the strategy.

b) Check remediation records

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

c) Obtain additional information

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

d) Consult appropriate bodies

SHDC will consult both within SHDC and externally to seek further details and advice on a site specific basis. The list of consultees will depend on the nature of the possible significant pollutant linkage. For example, English Heritage will be consulted in respect of Scheduled Ancient Monuments and where remediation is deemed appropriate consultation with the County Archaeologist will take place. The Environment Agency will be consulted in most cases. SHDC has already established links with the organisations that may need to be consulted.

e) Carry out walkover survey

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

SHDC has statutory powers to enter sites to inspect them, but will normally inspect sites by agreement with the site owner and/or occupier. Prior to carrying out the walkover survey, SHDC will review the information currently held for the site to ensure

that there still appears to be a reasonable possibility of the presence of a contaminant, a pathway and a receptor.

f) Identify and notify owner and occupier

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

g) Review data and carry out risk assessment

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

h) Data sufficient for decision

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

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

i) Carry out sampling and analysis

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

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

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

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

APPENDIX C What shall be contained in the Public Register?

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

Remediation Notices

Details of the remediation notice:

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

Appeals Against Remediation Notices

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

Remediation Declarations

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

Remediation Statements

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

Appeals Against Charging Notices

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

Designation of Special Sites

Details of any land in SHDCs area of responsibility designated as a Special Site by SHDC or the Secretary of State and the reasons for this.

Any notice given by the Environment Agency (EA) of its decision to adopt a remediation notice (The EA being the enforcing authority for Special Sites).

Any notice given by or to SHDC/EA terminating the designation of any land as a Special Site

Notification of Claimed Remediation

Any notification given to SHDC of remediation claimed to have taken place

Convictions for Offences in relation to a Remediation Notice

Any conviction of a person for any offence in relation to a remediation notice served by SHDC, including the name of the offender, the date of conviction, the penalty imposed and the name of the Court.

Guidance issued to SHDC by the Appropriate Agency

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

Other Environmental Controls

Where SHDC cannot issue a remediation notice because the powers of the appropriate agency (usually the Environment Agency) may be exercised instead:

1. Details of items 2-5 in 'Remediation Notices' above for the contaminated land
2. Any steps of which SHDC has knowledge, taken towards remedying any significant harm or pollution of controlled waters that would cause the land to be contaminated land

Where the powers of the appropriate waste regulation authority or waste collection authority may be exercised instead (in relation to deposition of controlled waste which causes the land to be contaminated land) SHDC may not issue a remediation notice and may record the following details on the register:

1. Details of items 2-5 in 'Remediation Notices' above for the contaminated land
2. Any known steps taken to remove the waste, or reduce the consequences of its deposit, including steps taken by the EA or waste collection authority and the name of the authority.

Where SHDC cannot specify something by way of remediation in a remediation notice because this would impede or prevent a discharge to a water body for which a discharge consent is in force:

1. Details of the consent
2. Details of items 2-5 in 'Remediation Notices' above for the contaminated land

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