WORTHING BOROUGH
COUNCIL

Revised Contaminated Land Inspection Strategy

Environmental Protection Act 1990
Part 2A

January 2024

Throughout the Borough of Worthing there are a significant number of sites that may have been contaminated by their previous use. This is often associated with industrial processes or activities that have now ceased, but where waste products or remaining residues could cause land contamination.

A regime for Local Authorities to deal with contaminated land within their areas was brought in by Part 2A of the Environmental Protection Act (EPA) 1990; this regime was introduced by section 57 of the Environment Act 1995 and came into force in the UK on the 1st April 2000.

These provisions require Local Authorities to develop and publish a strategy document detailing the manner in which they will inspect their area for contaminated land.

Worthing Borough Council's first Contaminated Land Strategy was formally adopted by the Environmental Services Committee in May 2001. That strategy document detailed the general background to the contaminated land regime and indicated, in light of the particular characteristics of Worthing and the Councils priorities, how the regime would be implemented. This document was revised in 2009.

The 2009 strategy has been reviewed and revised and takes account of Statutory Guidance from DEFRA (April 2012). This revised strategy explains how the Council will implement the contaminated land regime, taking account of the latest guidance, experience gained over previous years and the resources available to the Council. The revised strategy will be made available on the Council's website.

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1. Introduction

Contaminated land is defined in Part 2A of the Environmental Protection Act 1990 as any land to be in such condition, by reason of substances in, on or under the land that:

(a) Significant harm is being caused or there is significant possibility of such harm being caused; or
(b) Significant pollution of controlled waters is being caused, or there is significant possibility of such pollution being caused."

What constitutes significant harm, a significant possibility of such harm or pollution to controlled waters being caused is set out in the Statutory Guidance 2012 and included in Appendix A. This is a very important definition and places the concept of the 'pollutant linkage' at the centre. For land to be determined as contaminated land there must be a significant 'pollutant linkage' present. A pollutant linkage is where a source of pollution is connected to a receptor by a pathway so as to give rise to harm. There may be multiple pollutant linkages on a site.

If significant pollutant linkages exist and are not dealt with adequately, they can pose a serious threat to the people and the environment. The contaminated land regime in Part 2A of the Environmental Protection Act 1990 came into force in April 2000 and is intended to complement existing controls under the planning and development process by causing the Borough to be inspected by the Council to identify contaminated land sites. Under this regime local authorities in England are required to prepare, implement and keep under periodic review, a Contaminated Land Inspection Strategy.

Paragraph 119 of the NPPF refers to making as much use as possible of previously developed or brownfield land and paragraph 120 c) gives substantial weight to the value of using suitable brownfield land and supports opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land.

2. Aims and Objectives

2.1 Aims of the Strategy

This strategy outlines how Worthing Borough Council (the council), will meet its statutory duties to inspect its area for contaminated land as laid out in the Contaminated Land Statutory Guidance April 2012 (DEFRA) referred to as the statutory guidance. This strategy should be read in conjunction with the statutory guidance, as it contains the legal and scientific detail behind the Worthing Borough Council strategy. This strategy reflects the financial constraints that the council is now facing and will continue to face over the coming years.

The regulations require the council to:

- Inspect its area to identify contaminated land.
- Determine whether a specific site meets the legal definition of contaminated land on the basis of a risk assessment.
- Notify any affected person and the Environment Agency if contaminated land is identified.
- Decide whether any particular site is a 'Special Site' in consultation with the Environment Agency.

- Decide what remediation should take place on that land either through voluntary agreement or by formal notice.
- Establish and formally require the appropriate person to bear responsibility for the remediation, after consulting them.
- Take enforcement action against any person who fails to comply with a formal notice.
- Exercise its power to carry out remediation and recover the costs of doing so.
- Keep a public register relating to information about land which meets the legal definition of contaminated land.

In doing so, it has to act in accordance with the Act, secondary regulations (e.g. the Contaminated Land Regulations 2012), statutory guidance issued by the Secretary of State and other best practice guidance.

The Council Aims to:

- Identify potential and actual contaminated sites within the Borough by rational, ordered and efficient investigation, to remove unacceptable risks to human health and the environment.
- To seek land remediation through the development control system.
- Seek to ensure that contaminated land is made suitable for its current use.
- To carry out detailed inspection of urgent sites where there is, or there is likely to be, significant possibility of significant harm occurring.
- To ensure that the burdens faced by individuals, companies and the community as a whole are proportionate, manageable and compatible with the principles of sustainable development.

2.2 Objective of the Strategy

In order to ensure the aims of this strategy are met, the following objectives have been identified.

- Consider that land is not contaminated land unless there is reason to consider otherwise.
- Consider the development control system as the predominant way in which land affected by contamination will be remediated.
- Encourage voluntary remediation of sites where appropriate.
- Only use Part 2A where no appropriate alternative solution exists.
- Will not undertake a detailed inspection of any site where a planning permission exists or is understood to be imminent unless there is significant evidence that the land is contaminated land.
- Continue the process of strategic inspection across the borough,
- Continue to risk prioritise sites for detailed inspection using the GeoEnviron prioritisation software.
- Consult landowners before carrying out detailed inspection of their land.
- Refer any issues or allegations relating to radioactivity on land to DECC.
- Only use its powers of entry under Section 108 of the Environment Act 1995 when it is satisfied that there is a reasonable possibility that a significant pollutant linkage exists.

- When remediation is carried out by the council then, where liable parties are identified, the council will pursue the appropriate persons for the apportioned share of the liability in accordance with the statutory guidance.
- Seek to communicate in language that is appropriate for the persons with whom we are communicating and where appropriate in non-technical language.
- Seek to communicate in language sensitive to the fact that land contamination issues have potential to cause property blight and psychological stress.
- Will request in writing that, on behalf of the council, the EA carries out the detailed inspection of any Special Site of which the council becomes aware.
- Make information on all regulatory action taken by the Council with regard to contaminated land available to the public by way of public register.

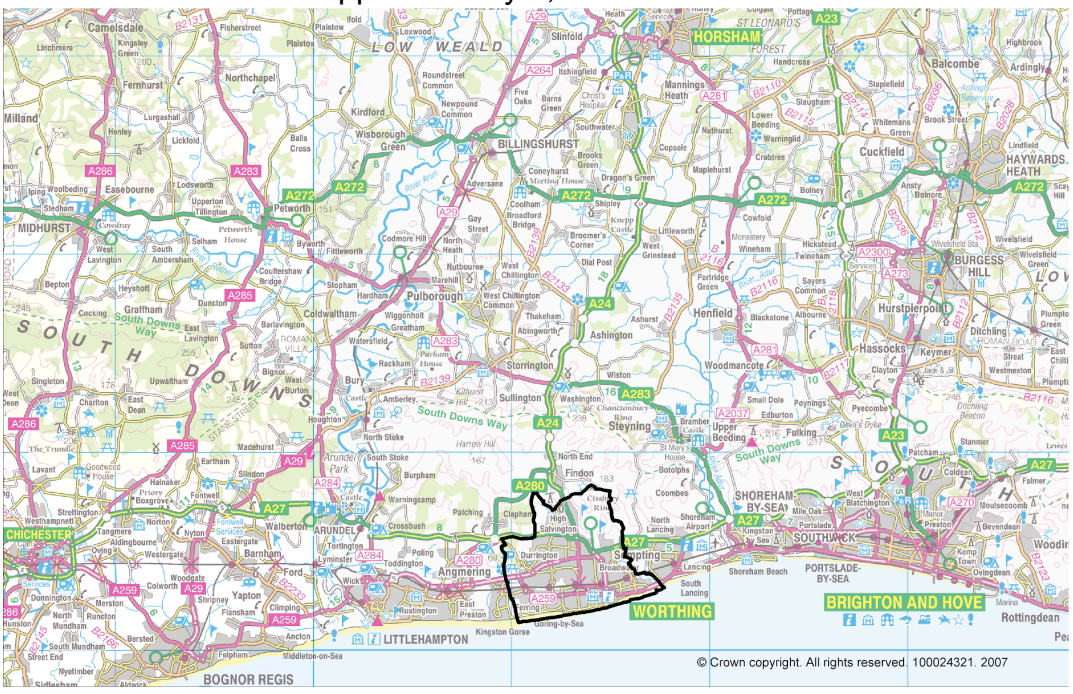
The implementation of this Strategy feeds into the commitments within a number of the council's overarching strategies and priorities. It will work alongside existing Council policies to aid the efficient and effective delivery of these commitments by supporting the regeneration of brownfield land and encouraging development.

3. Area Overview

Across the United Kingdom there are marked differences in geography, industrial activity and the prevalence of vulnerable 'receptors' such as protected wildlife and water resources. The manner in which contaminants have been deposited, have moved and have affected (or threatened) vulnerable receptors can vary even between localities a few miles apart. The Council has considered the character of the Borough when developing priorities and objectives for inspecting land that may be contaminated.

3.1 Location

Worthing Borough is located on the coastal plain between the South Downs National Park, an Area of Outstanding Natural Beauty, and the English Channel. Worthing is approximately 60 miles from London to the North and 15 miles from Brighton in the East. The Borough borders only two other authorities, Adur to the East and Arun to the West, and covers an area of approximately 3,300 Hectares.



Map One: Worthing's Location

3.2 The History of Worthing

The earliest known settlement in the Borough of Worthing is the Iron-Age hill fort at Cissbury Ring, carbon dated to 4000- 3000 BC, which is believed to have been used as a mine to extract flints from the underlying chalk. To date, over 100 mine shafts have been recorded at the site which can claim to be the oldest industrial scale production centre in England (White, 2000). These early communities replaced the nomadic hunter gatherers and started stable settlement in the area based on agriculture.

Being located close to the major Roman settlement at Chichester, the Worthing area underwent rapid development during the period of Roman occupation. The Roman economy was based on the ability of their agricultural systems to produce a surplus that could then be used for trade. Roman field patterns have been discovered under much of the modern town (Kerridge and Standing, 2000).

Evidence of Roman development has been found in many areas of the town including under the site currently occupied by the Museum on Chapel Road. Prior to the outbreak of the Second World War an excavation was undertaken on the remains of a Roman Bath House at Highdown, unfortunately the outbreak of War ended the investigation which has never been resumed (White, 2000).

Worthing itself first appears on a map by Robert Morden dated 1695 (White, 2000). The settlement, comprising a tiny village, continued to survive with its economy based on fishing and agriculture experiencing only modest growth until the fashion for sea bathing increased the profile and popularity of the town in the late 18th Century.

Worthing's development began in earnest when in 1798 Princess Amelia visited the town to take advantage of the climate and sea bathing during a period of convalescence (White, 2000). Worthing received another boost with the arrival of the railway in 1845 which served to greatly improve access to the town from London. From the mid 19th Century Worthing took further advantage of its moderate climate and a booming market gardening economy made the town famous for its tomatoes, cucumbers and grapes. In 1905 the industry was so important to the town that a goods yard was constructed at West Worthing Station to handle the produce grown in the glass houses in the area (White, 2000).

Worthing was granted its Royal Charter in 1890 and at the time the Borough covered an area of less than 1,000 Hectares and had a population of just 16,000. The modern town of Worthing has evolved from in-filling between the surrounding established settlements such as Tarring, Broadwater and Goring by sea, which in the past were more significant settlements than Worthing itself.

After the First World War the Borough Council announced their intention to double the size of the town by providing social housing and encouraging investment in private housing. There followed a period of extremely rapid expansion of the town with the associated displacement of the market gardening industries. In 1929 the incorporation of the parishes of Goring and Durrington into the Borough increased the amount of land available for development and by the Second World War the aim of doubling the size of the town had been achieved.

Worthing has historically had little heavy industry and production industries such as agriculture have declined in significance as Worthing has grown to cover the majority of the land area of the Borough. Today Worthing is the largest town in West Sussex with a population of 100,000. The economy of the town is now based mainly on service industries such as tourism, retailing and Insurance and Finance.

3.3 The Distribution of Population in Worthing

Worthing, being a largely urban Borough without any large industrial or agricultural areas has, in comparison to many other areas, a relatively uniform population distribution. The protection of human health is the main priority of this strategy and therefore Worthing Borough Council will prioritise and inspect the borough giving equal priority to all areas.

Map two illustrates how the Borough is divided into wards and table one provides the total ward populations taken from the 2021 Census.

Map Two: Worthing's Electoral Wards and their Boundaries

Table One: Total Ward Population in 2021 (https://www.ons.gov.uk/census)

Ward	Population
Broadwater	9,312
Castle	9,433
Central	10,557
Durrington	5,840
Gaisford	9,370
Goring	8,404
Heene	8,746
Marine	8,244
Northbrook	4,484
Offington	7,977
Salvington	9,088
Selden	8,419
Tarring	8,466
Total	108,340

3.4 Current Land Use Characteristics

Worthing's current land use is predominantly residential; the town of Worthing itself covers the majority of the Borough, with only small areas adjacent to the western boundary still being used for agriculture. Several small commercial trading areas are located throughout the borough, the locations of which are indicated on Map Three. The largest of these estates is located in East Worthing and includes a large Pharmaceuticals manufacturing facility.

3.5 Industrial History

In the past there has been only limited heavy industry in Worthing and therefore only a limited number of larger sites exist which may have been contaminated by a previous industrial usage. The following industries, among many others, have been identified as potentially contaminative land uses that at some time have taken place in Worthing. A description of the processes and potential contaminants are detailed below. This list does not attempt to provide an exhaustive reference, it is provided for context only. Full reference should be made to relevant guidance documents for specific details.

Gas Works
A very large number of sites throughout the country have been used to produce town gas. Production usually began in the middle of the 19th Century and continued until the introduction of natural gas in the 1970's. Producing town gas involves heating coal in the absence of air to separate the volatile and liquid components from the coal. Before being distributed to customers, the gas needed to have the tar, ammonia, cyanides and various other impurities removed. The liquid component comprised tars and ammoniacal liquors. It is these liquid by-products and substances removed from cleaning the gas that are the source of contamination at many gas works sites.

Railway Land
Railway land includes historic track routes, sidings and goods yards etc. Contamination may have occurred due either to material being spilled whilst being transported by train or from locomotive fuel spills and other petroleum oils used for hydraulics or lubrication. Due to the wide variety of material with potential to cause contamination that are

transported by railway it is not possible to be more specific about likely sources of contamination.

Sewage Treatment Works
Sewage treatment works produce a solid waste termed ‘cake’ in addition to the liquid discharges. In the past the solid waste which was produced at many sites was disposed of by spreading the sewage cake or liquid slurry on land surrounding the works. The sludge ‘cake’ or slurry is often rich in contaminants such as heavy metals and concentrated disposal over many years on the same piece of land can result in elevated levels of contaminants in the soil.

Brickfields
A large part of the geology under Worthing comprises a layer of Brickearth overlying chalk. Brickearth as the name implies is highly suitable for making bricks and the rapid expansion of the town and others in the area created a large brick making industry. A number of different methods have been used in the past to manufacture and fire bricks. Some sites are referred to as brickworks or brickyards, these sites were in longer term operation and had kilns. The term brickfield implies a more temporary site where clamp burning was used to fire the bricks. The importance of brick manufacture to contaminated land is not the processes that were undertaken in the manufacturing process of bricks, but the holes left following the extraction of clay which are likely to have been filled with waste material and may represent historic landfill sites.

Landfill Sites
Landfills are sites where waste materials are deposited for the purposes of final disposal. In the past these sites were essentially holes in the ground; recent legislation has now imposed tight controls on the development and operation of landfill sites. This disposal option is still the most popular disposal route for waste in the UK. Landfill sites are significant because of the production of landfill gas and leachate by the decomposing waste. Landfill gas is usually composed, in varying ratios, of Methane and Carbon dioxide. Leachate is the liquid portion of the products of decomposition of the waste, and its composition will change according to the material deposited in the site. Landfill gas in the right concentrations and under the right circumstances presents an explosive risk whilst the leachate often contains toxic substances which can affect ground and surface water. Both landfill gas and leachate have the ability, given the right geological site conditions, to migrate off site.

Currently there are 17 Part B industrial installations permitted by Worthing Borough Council under the Environmental Permitting (England and Wales) Regulations 2016.

3.6 Protected Locations

● *3.6.1 Sites of Special Scientific Interest (SSSI)*

Cissbury Ring in the north of the Borough and some of the surrounding area is classified as a Site of Special Scientific Interest (SSSI) under Section 28 of the Wildlife and Countryside Act 1981. The site, covering over 80 hectares, has been designated as a SSSI because it is an area of unimproved grassland that provides valuable habitats for migrant birds and butterflies in addition to harbouring many indigenous herbaceous species. Cissbury Ring SSSI is indicated on Map Three.

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- ***3.6.2 South Downs National Park (SDNP)***

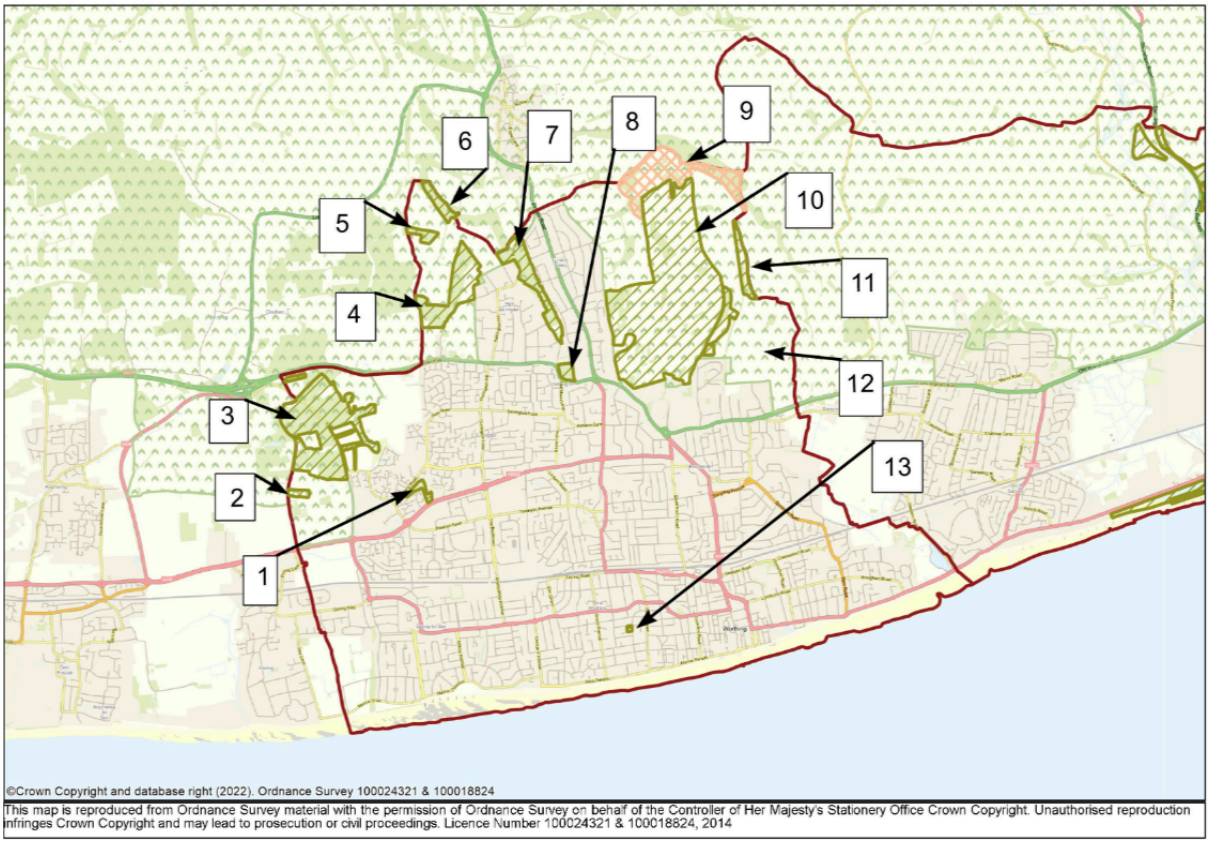
Worthing being a largely urban borough has a limited amount of rural land, however the countryside that is within the Borough is of particular importance and quality. Most of the countryside to the north of the A27 lies within the South Downs National Park, see Map Three.

3.6.3 Local Wildlife Sites (LWS)

There are 11 Local Wildlife Sites (LWS) in Worthing, see Map Three. These sites have been identified on account of the special interest of their flora and/or fauna; they are sites with very considerable wildlife value. They have been designated to protect them from harmful land uses primarily through use of the development control regime (Planning). See Appendix C for full descriptions for each site.

Table Two: SSSI's, LWS's and the Sussex Downs National Park

Site ID	Site Location	Designation	Habitat
1	Han Farm Wood, Goring	LWS	Semi-natural woodland
2	Highdown Hill and The Millers Tomb, Goring	LWS	Chalk Grassland and scrubf
3	Titnore and Goring Woods	LWS	Semi-natural woodland, much of ancient origin
4	The Sanctuary, High Salvington	LWS	Chalk grassland, scrub and semi-natural woodland
5	Clapham Wood	LWS	Semi-natural woodland
6	Long Furlong and Church Hill	LWS	Chalk grassland, scrub and semi-natural woodland
7	The Gallops and No Mans Land	LWS	Chalk grassland, scrub and semi-natural woodland
8	Offington Cemetery	LWS	Chalk grassland and scrub
9	Cissbury Ring	SSSI	Unimproved chalk grassland
10	Worthing and Hill Barn Golf Courses	LWS	Chalk grassland, scrub and woodland
11	Tenants Hill and Reservoirs	LWS	Chalk grassland, scrub and dewpond
12	South Downs	National Park	South Downs National Park
13	St. Michael's Graveyard	LWS	Neutral grassland and scrub



Map Three: SSSI's, LWS's and the Sussex Downs National Park

3.7 Heritage Assets

There are approximately 400 listed buildings in Worthing and 26 conservation areas which serve to greatly enhance the character of the Borough. Worthing also has Cissbury Ring (described in section 2.2) and the Bowl Barrow, which are scheduled ancient monuments under the Ancient Monuments and Archaeological Areas Act 1979. Following Worthing's long and varied history there are 40-50 archaeologically sensitive areas in Worthing designated by West Sussex County Council.

In certain circumstances the historic use of a site, for example, underground fuel storage, may have caused extensive ground disturbance which is likely to be incompatible with the survival of any but the most deeply buried archaeological features. In highly contaminated sites, the levels of toxicity within the ground may preclude archaeological investigation due to health and safety considerations.

3.8 Water Resources

There are two main water courses within Worthing Borough, the Ferring Rife which runs west from its source into Arun District Council's area to the South of Littlehampton Road, and the Teville Stream which runs from its source south of Westlake Gardens towards Chesswood allotments where it joins with the River Ditch. From this confluence the stream flows through a culvert towards East Worthing Sewage Works and emerges in the north end of Valley Gardens at Brooklands. Brooklands is a small balancing lake situated on the south-eastern boundary of the Borough. In addition to its primary flood defence function the lake is also used for recreation and amenity uses. The marine bathing waters along Worthing's coastline are indicated on Map Four below.

Up to 80% of the public water supply in many parts of the South of England is extracted from underground aquifers, Worthing is located over a major aquifer and the protection of this resource is highly important.

The importance of protecting water resources is reflected in the priority afforded to controlled waters in the aims of the strategy, being second only to direct threats to human health. There are four public water supply abstraction points in Worthing and the Environment Agency have defined source protection zones around each abstraction point. Worthing Borough Council is not aware of any private water supplies within the Borough currently being used for human consumption.

3.9 Worthing's Geology

Cretaceous chalk underlies most of the Borough and is bisected by a Northwest – Southeast orientated formation of Tertiary clays. The solid Geology is overlain in most of the Borough by Quaternary deposits of variable composition.

3.10 Worthing's Hydro-Geology

Aquifers
The published Environment Agency Policy and Practice for the protection of groundwater classify the underlying strata of England and Wales into aquifers of varying sensitivity.

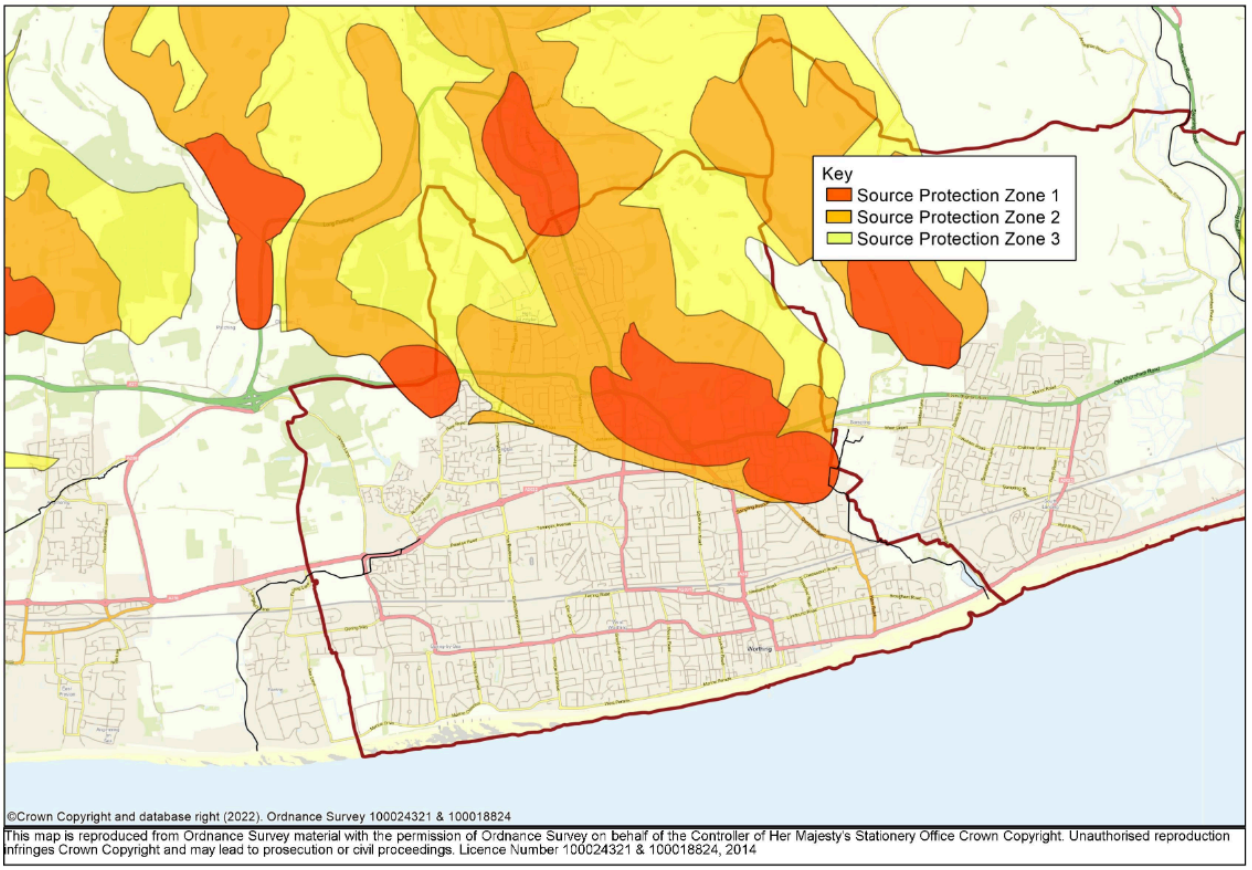
Aquifers are defined in the Environment Agency Guidance document Protect Groundwater and Prevent Groundwater Pollution 2017 as: 'A subsurface layer or layers of rock or other geological strata of sufficient porosity and permeability to allow either a significant flow of groundwater or the abstraction of significant quantities of groundwater.'

The underlying strata of England and Wales is divided into principal aquifers, secondary aquifers, secondary undifferentiated and unproductive strata depending upon their potential for uses as portable water supplies. Appendix D provides further details about these types of aquifers. The majority of the Worthing Borough is classed as being a Principal aquifer by the Environment Agency with an area classed as a Secondary A aquifer bisecting the Borough in a Northwest – Southeast orientation.

Source Protection Zones
The Environment Agency has defined Source Protection Zones as: *"The parts of the aquifers which, according to current techniques and methodologies, are considered to form the catchments to public water supplies and certain other private supplies have been defined as Source Protection Zones. They relate purely to groundwater flow below the water table and do not take account of the nature and thickness of the overlying unsaturated zone and cover which may have an important influence on groundwater vulnerability".*

Source protection zone maps show the position of the sources and all subdivisions of their protection zones (Inner, Outer and Total Catchment) as referred to in the statements and matrices in the PPG document. These are shown in a form which represents a precautionary approach to the protection of groundwaters. They incorporate practical consideration of uncertainty in the underlying data and manual adjustments to take account of local circumstances."

The permeable chalk geology under Worthing holds large volumes of water that is abstracted by Southern Water and used to supply drinking water to the locality. Four public water supply abstraction points are located in the Borough. The Environment Agency has designated Source Protection Zones around all these points which collectively cover about 30% of the area of the Borough, mainly in the north, see Map four.



Map Four: The Location of Source Protection Zones in Worthing

3.11 Council Owned Land

Worthing Borough Council currently owns something in excess of 500 sites and buildings throughout the Borough. Land holdings include a total of 160 hectares of agricultural land, approximately twenty industrial sites, a large number of parks, open spaces and recreation areas, eight allotment sites and two cemeteries. Worthing Borough Council also owns some land outside the Borough, including Worthing crematorium to the north of the Borough in Arun District council's area.

In 1999 the Council completed a Large Scale Voluntary Transfer (LSVT) of its housing stock to a newly formed registered social landlord, Worthing Homes Limited.

3.12 Known Information on Contamination in the Borough

The Council holds some information concerning land contamination within its area. This has primarily originated from reports undertaken by third parties, which were submitted as part of the development control process. From these records and a number of other sources of information, the Council has built a substantial GIS based database that holds information regarding the possible presence of land contamination within its

Boundary and is using this information to assist with amongst other things, decision making regarding the prioritisation and inspection of potentially contaminated sites in the Borough. Details of how these actions are being undertaken are provided in the following sections of this strategy.

A contaminated land register has been held since April 2000, however there are currently no entries in the register.

4. What works have been undertaken

There are currently approximately 671 potentially contaminated sites in our database within the Worthing Borough. Approximately 68% of these are low to medium risk sites which are currently occupied by commercial/industrial areas. These sites will not be investigated further unless developed or new information is found.

The information in the database is regularly updated as new information becomes available or sites are redeveloped and remediated for example through the planning system. The statutory guidance encourages private land owners to carry out their own assessment. The council, if satisfied with the work undertaken, will accept their conclusions and enter them into the database.

Approximately 17% of these sites have been investigated and remediated where necessary to ensure they are suitable for their current use.

Three large Council owned sites which were former landfill sites are currently in the process of being investigated and remediated as part of regeneration works.

5. Ongoing works

The Statutory Guidance requires the council to continue to identify and prioritise sites that may be potentially contaminated by their historic or current use, followed by detailed inspections/investigations of sites where a need for further investigation has been identified.

5.1. Identification of potential sites and prioritisation

Information on current and historical potentially contaminative land uses has been collated, initially the major source of information was a university project entitled ‘A Preliminary investigation into potentially contaminated Sites within the Borough of Worthing’ which was undertaken during 1997. This information was ratified and expanded upon through examining other sources of relevant information such as historic Ordnance Survey maps, trade directories and Council held records. Approximately 450 potential sites had been identified by January 2003. This number increased to in excess of 640 in July 2009 and is now approximately 671. The main reason for this significant increase being the purchase of post war mapping at a scale of 1:1250 in 2006, which highlighted a large number of previously unknown sites.

The Council has recently purchased the Geoenviron Site Prioritisation Sub-module software package. The information already collated has been inputted into this prioritisation software which ranks the sites according to priority for inspection based on presence of receptors (for example; land use, geology, water supplies, rivers, property)

and sources (potential or confirmed contaminants present). This database is regularly updated as new information becomes available. The software enables us to produce a list of sites for detailed inspection according to the highest potential risk (priority). This list is in a constant state of change as more information is found about different sites, and the risk rating changes or new sites are added. The list of potential sites is therefore not a public document. Any land that is formally determined as contaminated will be put on the register which is a public document.

5.2 Site Inspections

Part 2A requires that local authorities to inspect their area to identify contaminated land and to do this in accordance with the statutory guidance. Two types of inspection are intended, they are:

- Strategic inspection; collecting information to make a broad assessment of land within an authority's area and then identifying priority land for more detailed consideration; and
- Detailed inspection; taking soil samples to obtain information on ground conditions and carrying out risk assessments which support decisions under the Part 2A regime relevant to that land.

Detailed inspection of a site will establish whether pathways are present between the source and the receptors. This is known as a pollutant linkage. For a site to meet the statutory definition of contaminated land there needs to be a significant possibility of significant harm to an identified receptor, this is a stringent test. Details of what constitutes significant harm or a significant possibility of such harm is set out in the statutory guidance and included in Appendix A.

The detailed inspection of a site will start with a site walkover and desktop study. The council may progress these first elements of detailed inspection. The data gathered will be used to update the council's database of potentially contaminated sites. At this point the council will consider whether a detailed inspection of the site through intrusive investigation, analysis of samples (soil, water and gas) and risk assessment is necessary. Where required, such work would be contracted out to consultants. Currently, due to funding, detailed inspection and risk assessment are only being undertaken on urgent sites.

It is expected that the majority of the investigation and remediation of the sites identified will happen during the development or redevelopment of those sites. Where a 'brownfield' site is developed particularly for a more sensitive 'end use' the planning system is designed to ensure that it is suitable for its use after the development.

5.3***. Possible outcomes of a detailed inspection***

The statutory guidance describes in detail the possible outcomes of detailed inspection for all receptors. Sites will be assigned categories (1-4). Generally, sites in category 1 will require immediate action (designation as contaminated land); sites in category 2 may require immediate action. Sites in category three may not meet the stringent definition of contaminated land but may require observation or monitoring and sites in category four are unlikely to meet the definition of contaminated land. For controlled water receptors the council will consult the Environment Agency.

Currently, due to funding, detailed inspection and risk assessment are only being undertaken on urgent sites. If the detailed inspection is undertaken and show that an unacceptable risk is being caused the council will have to determine the site and place the records on a public register. Based upon all of the available information and the statutory guidance the council will then decide if remediation of the site should be carried out. If remediation is carried out this will only be done where necessary and the council will work with residents to inform them and minimise disruption as much as possible.

5.4 *Risk ratings and outcomes*

The table below shows the categories that sites may be allocated and the action likely to be taken by the council. Sites will be put into these categories based upon the information known about it. This will begin at the initial prioritisation and if necessary continue through to the remediation of the site. A site could move between categories as more information is found about it and risk assessments revised.

Category	Description
1	Probable Contaminated Land- Intrusive Investigation necessary. Full review of existing site data required to develop detailed investigation strategy and conceptual model. The council will seek funding to do the investigation, from an original polluter or developer if possible or from council funds if an urgent site.
2	Medium Risk - Intrusive investigation required to resolve potential risks. Clean up considered likely under part 2A and priority action recommended. The council will seek funding to do the investigation, from an original polluter or developer if possible or from council funds if an urgent site
3	Low to Medium Risk- Intrusive investigation recommended to resolve potential risks. Clean up cannot be excluded under part 2A. Initial site investigation will not be funded by the council as this will divert available funds from high risk sites. Residents will be assisted to undertake their own investigations and risk assessments. Should these assessments indicate that the site should be reassessed as category 1 or 2 the council will re-evaluate its position
4	Low risk- Likelihood of contamination is considered low and if present the impact is such that clean up could not be reasonably justified. It is highly unlikely that further work will be required on these sites. Should residents wish to do so the same approach to category 3 sites will be followed

5.5*. Payment for investigations and remedial works*

DEFRA Grants
Until 2012 Central Government offered financial support to local authorities in regard of their duties under Part 2A. However the grant was effectively stopped other than for ‘absolute emergency cases’ by Lord De Mauley’s letter (DEFRA December 2013) and ceased to exist in any form after 2017. Local authorities’ statutory duties remain but central government financial support has been removed.

Given the withdrawal of funding and Defra’s advice to minimise unnecessary burdens on the taxpayer, the Council is not currently undertaking further detailed site inspections beyond the Desktop (Phase 1) Stage. Intrusive sampling (soil, water or gas), risk assessments or remediation exercises will not be undertaken unless the need for

inspection is considered to be urgent. Worthing Borough Council is also not publishing any timescales for detailed site inspection at this time. The exception to this is if an urgent site inspection was to arise which follows as below.

5.6 ***Urgent site inspections***

The need for urgent detailed inspection may arise in a situation where Worthing Borough Council becomes aware that contamination is causing significant harm. Incidents such as fires or fuel or chemical releases also have potential to cause significant harm. Such circumstances are extremely rare, nevertheless Worthing Borough Council has a duty under the legislation to inspect any such site.

As such under those circumstances Worthing Borough Council would:

- seek to establish who the liable persons for the site are and whether they still exist,
- apply the six sequential tests from the Statutory Guidance to establish which liable parties might drop-out of the liability group,
- apportion the liability between the remaining liability groups,
- establish whether any linkage is an orphan linkage,
- seek voluntary inspection by the site owner and/or occupier,
- enter into discussions with DEFRA about the availability of any available grants or funds,
- seek to finance any essential related work through monies held in reserves expressly for this purpose or, where these monies are insufficient, from reserves mandated by Cabinet and
- seek to recover any costs from liable persons.

6 Enabling residents

Where any resident lives on or near a potentially contaminated land former land use, they may wish to engage the services of a professional consultant to investigate their property. This circumstance may occur if the site is not scheduled for further inspection in the near future, but a mortgage lender will not lend without clearing any uncertainty.

In these cases the council will provide as much assistance as it can to the resident in the form of liaising with any consultants on the scope of proposed investigations, and reviewing any results and reports. Where no contamination is found the council will provide confirmation of this in writing for the use of the resident. If unacceptable levels of contamination are found, the council will revise the priority rating for the site.

6.1 Voluntary Remediation

Worthing Borough Council's approach to its regulatory duties is to encourage voluntary action before considering the need for enforcement. In dealing with issues of land contamination, this approach will be no different. This approach is supported by the regulations, which provide an incentive to undertake voluntary action in that any materials that require disposal as a result of voluntary remediation will be exempt from landfill taxes.

In adopting this approach, effective communication with the owners, occupiers and other interested parties will be required. The Officer dealing with contaminated land will

be the central point for the authority on contaminated land issues and will ensure that all parties are kept informed at each stage of investigations, regardless of whether or not there is a formal designation of contaminated land.

In designating an area of contaminated land it will be necessary to undertake the following actions:

- Inform the owner and/or occupier of the land in writing at least five working days prior to designating the land, summarising the reason for designation.
- Write to the owner and/or occupier of the land explaining the land has been designated as contaminated land and seeking voluntary remediation is undertaken.
- Provide copies of the written risk assessments for the site within five working days of receipt of a request from an interested party.
- Write to the owner and/or occupier of neighbouring land or any other interested parties to inform them of the designation within five days of the land being designated.

Where voluntary remediation action is not forthcoming it will be necessary to:

- Provide a written remediation notice to the owner/occupier specifying the actions required to remediate the site.
- Write to the owner and/or occupier of neighbouring land or any other interested parties within five days to inform them that a remediation notice has been served.

Upon completion of remediation, the Authority will enter details of the remediation into the public register.

7. The Public Register

Worthing Borough Council is obliged by section 78R of the Environmental Protection Act 1990 to hold and maintain a public register of all regulatory action taken under Part 2A. This is not a register of all contaminated land in the Borough; it is a register covering sites where formal determination of land as contaminated land has occurred. The information required to be held on the register is prescribed in section 78R of the Environmental Protection Act 1990, further information is presented in Annex 4 of Defra Circular 01/2006, paragraphs 71-92. The register is held by the by the Public Health and Regulation Section and is available for public inspection by contacting the Environmental Protection Team at the following address:

Public Health and Regulation
Worthing Town Hall, Chapel Road
Worthing, West Sussex, BN11 1HA

At present, no sites within the Borough of Worthing have been determined as ‘contaminated land’ or as ‘special sites’, and as such, there are currently no entries in the register.

8. Special Sites

There is a category of contaminated site that is termed a special site. These are sites that meet a specific set of circumstances, generally where the main receptor is some form of controlled water such as a river or an aquifer. The detailed definition is found in Appendix B.

In general, Special Sites have had uses where the Environment Agency is likely to already have a regulatory responsibility, for example Integrated Pollution Control sites. Special Sites are not necessarily more contaminated than other kinds of site. Examples of Special Sites are nuclear sites, MOD sites, oil refineries, and sites that may be causing pollution of drinking water resources.

Where the council thinks that a site might be a special site it will request that the Environment Agency take over as the lead authority for it. The mechanism for this is detailed within the statutory guidance. The council will then work with the Environment Agency as the site is investigated and remediated if necessary.

9. Investigating reports of possible land contamination

If there are reports that a piece of land is or has been contaminated either historically or recently this will be investigated according to standard complaints investigation procedures. If the problem can be resolved directly as a result of the investigation either by giving advice or taking enforcement action this will be done. If not then the results of the investigation will be used to inform the council's overall prioritisation of potentially contaminated sites data base.

10. Wider benefits of this strategy

As a result of the data collated during the initial prioritisation the council has a searchable layer for specialist officers which is accessible to the Planning and Building Control departments. This ensures that the appropriate officers of the council are consulted on any planning application that may be at risk from land contamination. The council can provide more detailed and useful replies to environmental information requests (from solicitors when people are moving house). It has also enabled the council to focus its attention on the highest risk sites that have been identified. The work on enabling residents to access professional services to do their own site investigations and risk assessments will benefit all residents on sites which are not scheduled for further investigation by the council but which due to the historic use of the site may face difficulties when selling.

11. Measuring our progress of implementing this strategy

We aim to add more detailed knowledge about sites each year using existing resources. This increased knowledge will enable the council to refine the prioritisation further, reduce the number of sites that need more detailed investigation and identify those that need detailed investigation most urgently.

12. Interaction with the planning system

The statutory guidance and the National Planning Policy framework (NPPF) both have the concept that potentially contaminated land must be shown to be suitable for its current use. As an absolute minimum this means that, where necessary, the site should be remediated to a standard where significant harm or pollution of controlled waters can no longer occur. The site must be incapable of being designated as contaminated land as defined under Part2A of the Environmental Protection Act 1990.

As a general rule the council will expect any planning application for land which may be affected by contamination to be accompanied by the report of a desktop study and site walkover as defined in British Standard BS10175: 2011 'Investigation of potentially contaminated site – Code of Practice'.

This report should identify that the site has been assessed and is considered suitable for use or in the event that further works are needed, to detail them and discuss how the site can reasonably be made suitable for the proposed use. All reports should be completed by a suitably qualified 'competent' person as defined in the NPPF.

Further guidance on Land Contamination Investigations has been published by the Environment Agency, Land Contamination Risk Management (LCRM), and can be found online: https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

13. Summary section

- The council has identified and prioritised numerous potential sites.
- Most of them are low/low to medium risk and will not be investigated further.
- First phases of investigation will be done using existing resources
- At the current time only urgent site will be investigated further by the Council.
- Where residents need contaminated land investigations done, and the site is not considered to be an urgent site, it will provide advice and assistance to the appointed contractor.
- Investigations might show that unacceptable risk is being caused. The council will ensure that only land that poses a genuinely unacceptable risk is formally determined. It will then be remediated if that is the most appropriate thing to do.
- The council will work with residents to ensure that they are involved in and informed of any site investigation and remediation that affects them. Officers will work to avoid any unnecessary disruption or distress.
- The council will try to make previous polluters or developers pay for remediation. Where this is not possible, residents will be required to contribute and we will work with them and apply a hardship policy to make sure that this as fair as possible.
- The council will investigate reports about potentially contaminated land and either give advice or take action accordingly.

14. Liaison and Communication Procedures

14.1 Strategy Consultation

Worthing Borough Council is directed by statutory guidance to consult specific organisations to obtain their views on its draft contaminated land strategy prior to the revised strategy being formally adopted.

The public authorities consulted for this strategy are:

- Environment Agency – Solent and South Downs
- Natural England
- English Heritage
- West Sussex County Council
- Food Standards Agency
- South Downs National Park
- UKHSA
- Neighbouring Local Authorities - Arun DC, Horsham DC

Further contact details can be found below.

14.2 Contact points for consultation

Worthing Borough Council
Public Health and Regulation
Worthing Town Hall
Chapel Road
Worthing
West Sussex
BN11 1HA
Tel: 01903 221064
E-mail: publichealth.regulation@adur-worthing.gov.uk

Environment Agency – Solent and South Downs Area
Guildbourne House
Chatsworth Road
Worthing
West Sussex
BN11 1LD
Tel: 03708 506 506

West Sussex County Council
County Hall
West Street
Chichester
West Sussex
PO19 1RG
Tel: 01243 777100

Natural England
Guildbourne House
Chatsworth Road
Worthing
West Sussex
BN11 1LD
Telephone: 0300 060 3900

English Heritage - South East Region
The Engine House
Fire Fly Avenue
Swindon
SN2 2EH
Tel: 0870 333 1181

Food Standards Agency
Contaminants division
Floors 6 and 7, Clive House
70 Petty France
London SW1H 9EX
Tel: 0330 332 7149

South Downs National Park Authority
South Downs Centre
North Street
Midhurst
West Sussex
GU29 9DH
Tel: 01730 814810

APPENDIX A

TABLE A - CATEGORIES OF SIGNIFICANT HARM

Type of Receptor	Description of harm to that type of receptor that is to be regarded as significant harm
1 Human beings	Death, disease, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. For these purposes, disease is to be taken to mean an unhealthy condition of the body or a part of it and can include, for example, cancer, liver dysfunction or extensive skin ailments. Mental dysfunction is included only insofar as it is attributable to the effects of a pollutant on the body of the person concerned. In this Chapter, this description of significant harm is referred to as a "human health effect".
2 Any ecological system, or living organism forming part of such a system, within a location which is: ● an area notified as an area of special scientific interest under section 28 of the Wildlife and Countryside Act 1981*; ● any land declared a national nature reserve under section 35 of that Act; ● any area designated as a marine nature reserve under section 36 of that Act; ● an area of special protection for birds, established under section 3 of that Act; ● any European Site within the meaning of regulation 10 of the Conservation (Natural Habitats etc) Regulations 1994 (i.e. candidate Special Areas of Conservation and potential Special Protection Areas**); ● any candidate Special Areas of Conservation or potential Special Protection Areas given equivalent protection;	For any protected location: ● harm which results in an irreversible adverse change, or in some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or ● **harm which affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location.** In addition, in the case of a protected location which is a European Site (or a candidate Special Area of Conservation or a potential Special Protection Area**), harm which is incompatible with the favourable conservation status of natural habitats at that location or species typically found there.

● any habitat or site afforded policy protection under paragraph 6 of Planning Policy Statement (PPS 9) on nature conservation (i.e. candidate Special Areas of Conservation, potential Special Protection Areas** and listed Ramsar sites); or ● any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.	In determining what constitutes such harm, the local authority should have regard to the advice of English Nature and to the requirements of the Conservation (Natural Habitats etc) Regulations 1994. In this Chapter, this description of significant harm is referred to as an "ecological system effect".
3 Property in the form of: ● crops, including timber; ● produce grown domestically, or on allotments, for consumption; ● livestock; ● other owned or domesticated animals; ● wild animals which are the subject of shooting or fishing rights.	For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage. The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a pollutant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss. In this Chapter, this description of significant harm is referred to as an "animal or crop effect".
4 Property in the form of buildings. For this purpose, "building" means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building.	Structural failure, substantial damage or substantial interference with any right of occupation. For this purpose, the local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended.

	Additionally, in the case of a scheduled Ancient Monument, substantial damage should be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled. In this Chapter, this description of significant harm is referred to as a "building effect".

Source: Defra Circular 01/2006 Annex A Part 3, Table A

* Amendments to the Wildlife and Countryside Act 1981 have occurred, the most recent being the Wildlife and Countryside Act (as amended by CRoW) Act 2000

** All Special Areas of Conservation and Special Protection Areas have full designation and are not candidate protection areas.

TABLE B - SIGNIFICANT POSSIBILITY OF SIGNIFICANT HARM

Descriptions Of Significant Harm (As Defined In Table A)	**Conditions For There Being A Significant Possibility Of Significant Harm**
1 Human health effects arising from ● the intake of a contaminant, or ● other direct bodily contact with a contaminant	If the amount of the pollutant in the pollutant linkage in question: ● 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. Such an assessment should take into account: ● 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. The question of whether an intake or exposure is unacceptable is independent of the number of people who might experience or be affected by that intake or exposure. Toxicological properties should be taken to include carcinogenic, mutagenic, teratogenic, pathogenic, endocrine-disrupting and other similar properties.
2 All other human health effects (particularly by way of explosion or fire)	If the probability, or frequency, of occurrence of significant harm of that description is unacceptable, assessed on the basis of relevant information concerning: ● that type of pollutant linkage, or ● that type of significant harm arising from other causes. **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:**

	● 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	If either: ● 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. 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.
4 All animal and crop effects	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.
5 All building effects	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.

Source: Defra Circular 01/2006 Annex A Part 3, Table B

Appendix B

Special Sites

Land required to be designated as a special site

The rules on what land is to be regarded as special sites are set out in the Contaminated Land (England) Regulations 2006.

2.—(1) Contaminated land of the following descriptions is prescribed for the purposes of section 78C(8) as land required to be designated as a special site—
(a)land affecting controlled waters in the circumstances specified in regulation 3;
(b)land which is contaminated land by reason of waste acid tars in, on or under the land;
(c)land on which any of the following activities have been carried on at any time—
(i)the purification (including refining) of crude petroleum or of oil extracted from petroleum, shale or any other bituminous substance except coal; or
(ii)the manufacture or processing of explosives;
(d)land on which a prescribed process designated for central control has been or is being carried on under an authorisation, where the process does not solely consist of things being done which are required by way of remediation;
(e)land on which an activity has been or is being carried on in a Part A(1) installation or by means of Part A(1) mobile plant under a permit, where the activity does not solely consist of things being done which are required by way of remediation;
(f)land within a nuclear site;
(g)land owned or occupied by or on behalf of—
(i)the Secretary of State for Defence;
(ii)the Defence Council,
(iii)an international headquarters or defence organisation, or
(iv)the service authority of a visiting force, being land used for naval, military or air force purposes;
(h)land on which the manufacture, production or disposal of—
(i)chemical weapons,
(ii)any biological agent or toxin which falls within section 1(1)(a) of the Biological Weapons Act 1974(**1**) (restriction on development of biological agents and toxins), or
(iii)any weapon, equipment or means of delivery which falls within section 1(1)(b) of that Act (restriction on development of biological weapons),has been carried on at any time;
(i)land comprising premises which are or were designated by the Secretary of State by an order made under section 1(1) of the Atomic Weapons Establishment Act 1991(**2**) (arrangements for development etc of nuclear devices);
(j)land to which section 30 of the Armed Forces Act 1996(**3**) (land held for the benefit of Greenwich Hospital) applies;
(k)land which is contaminated land wholly or partly by virtue of any radioactivity possessed by any substance in, on or under that land; and
(l)land which—
(i)is adjoining or adjacent to land of a description specified in any of sub–paragraphs (b) to (k); and
(ii)is contaminated land by virtue of substances which appear to have escaped from land of such a description.
(2) For the purposes of paragraph (1)(b), "waste acid tars" are tars which—
(a)contain sulphuric acid;
(b)were produced as a result of the refining of benzole, used lubricants or petroleum; and
(c)are or were stored on land used as a retention basin for the disposal of such tars.
(3) In paragraph (1)(d), "authorisation" and "prescribed process" have the same meanings as in Part 1 of the 1990 Act (integrated pollution control and air pollution control by local authorities) and the reference to designation for central control is a reference to designation under section 2(4) (which provides for processes to be designated for central or local control).
(4) In paragraph (1)(e), "Part A(1) installation", "Part A(1) mobile plant" and "permit" have the same meanings as in the Pollution Prevention and Control (England and Wales) Regulations 2000(**4**).
(5) In paragraph (1)(f), "nuclear site" means—
(a)any site in respect of which, or part of which, a nuclear site licence is for the time being in force; or
(b)any site in respect of which, or part of which, after the revocation or surrender of a nuclear site licence, the period of responsibility of the licensee has not come to an end.
(6) In paragraph (5), "nuclear site licence", "licensee" and "period of responsibility" have the meanings given by the Nuclear Installations Act 1965(**5**).
(7) For the purposes of paragraph (1)(g), land used for residential purposes or by the Navy, Army and Air Force Institutes must be treated as land used for naval, military or air force purposes only if the land forms part of a base occupied for naval, military or air force purposes.
(8) In paragraph (1)(g)—

- "international headquarters" and "defence organisation" mean, respectively, any international headquarters, and any defence organisation, designated for the purposes of the International Headquarters and Defence Organisations Act 1964(**6**);
- "service authority" and "visiting force" have the same meanings as in Part 1 of the Visiting Forces Act 1952(**7**).

(9) In paragraph (1)(h), “chemical weapon” has the same meaning as in subsection (1) of section 1 of the Chemical Weapons Act 1996(**8**), disregarding subsection (2) of that section.

3. Pollution of controlled waters

The circumstances to which regulation 2(1)(a) refers are where—

(a)controlled waters which are, or are intended to be, used for the supply of drinking water for human consumption are being affected by the land and, as a result, require a treatment process or a change in such a process to be applied to those waters before use, so as to be regarded as wholesome within the meaning of Part 3 of the Water Industry Act 1991(**1**) (water supply);

(b)controlled waters are being affected by the land and, as a result, those waters do not meet or are not likely to meet the criterion for classification applying to the relevant description of waters specified in regulations made under section 82 of the Water Resources Act 1991(**2**) (classification of quality of waters); or

(c)controlled waters are being affected by the land and—

(i)any of the substances by reason of which the pollution of the waters is being or is likely to be caused falls within any of the families or groups of substances listed in paragraph 1 of Schedule 1 to these Regulations; and

(ii)the waters, or any part of the waters, are contained within underground strata which comprise wholly or partly any of the formations of rocks listed in paragraph 2 of Schedule 1 to these Regulations.

APPENDIX C

Sites of Nature Conservation Importance (LWS) – Site Descriptions

The Gallops and No Man's Land, Worthing

This site is 19.8 hectares in area (National Grid Ref: TQ 124 069) and consists of areas of Calcareous grassland set within a mosaic of ranker grassland, scrub and secondary woodland. The species-rich chalk grassland forms valuable wildlife habitat as well as being a fragment of a much threatened habitat. The poorer habitats also present add to the diversity and thus the general wildlife interest of the site.

North of Bost Hill Lane, the grassland contains species associated with high quality calcareous grassland. These include Upright Brome, Red Fescue, Crested Dog's-tail, Yellow Oat-grass, Sweet Vernal grass, Rough Hawkbit, Salad Burnet, Lady's Bedstraw and Common Knapweed.

South of Bost Hill Lane and bordering it, is a bank of taller grassland which merges into closely mown grassland. Here are found much the same species as above, plus Fairy Flax, Mouse-ear Hawkweed, Bulbous Buttercup and Sheep's-fescue.

Further south are two small areas of very high quality grassland isolated within much poorer quality rank grassland. They contain Wild Common Knapweed, Field Scabious, Eyebright, Kidney Vetch, Squinancywort, Harebell, Small Scabious as well as many species listed above.

Amongst these grassy areas, scrub occurs both as scattered bushes and in clumps. Species include Dogwood, Elder, Hawthorn and Blackthorn. This scrub has developed into secondary woodland in places. Oak is abundant with frequent Ash, Bird Cherry, Crab-apply, Field Maple and Elms occur occasionally.

The Miller's Tomb

The Miller's Tomb LWS comprises a small area of species-rich chalk grassland, it is 22.9 hectares in area (National grid ref: TQ 095 042). The site comprises relatively unimproved chalk grassland and scrub on the south facing scarp of a small outlier of the South Downs near Worthing. Although heavily used for informal recreation, the site supports several uncommon plants and animals.

The grassland has received fertiliser in the past when a hay crop was taken and is now mostly grass dominated with species such as Upright Brome, Red Fescue and Tall Fescue prominent. Despite this some typical chalk grassland herbs are present including Hairy Violet, Fairy Flax, Glaucous Sedge, the rare Round-headed Rampion and large quantities of Sainfoin especially on the reservoir. On the areas of deeper soil Bulbous Buttercup Salad Burnet Ribwort Plantain and Rough Hawk's-beard occur.

Chalk scrub is found around the old chalk pits and site boundaries, typically comprising Hawthorn, Ash, Dogwood, Elder, Privet, Buckthorn and Traveller's Joy. Associated with the scrub are patches of taller grassland containing False Oat-grass, Hoary Ragwort, Wild Parsnip, Common Knapweed and Hemp Agrimony. A clump of trees including Beech, Holm Oak, Ash and Scots Pine is present on the hill fort.

The mosaic of short turf, taller herbs and scrub makes the site a valuable habitat for birds and invertebrates. Fauna recorded here include Carthusian snail, a Red Data Book species, Long-winged Cone-head, Common Lizard, Glow-worm, the scarce

Chalkhill Blue and 17 commoner butterfly species and a range of birds including Long-tailed Tit, Whitethroat, Chiffchaff, Linnet, Bullfinch and occasional Nightingales.

The Sanctuary, High Salvington

This site is 19.5 hectares in area (National grid ref: TQ 117 067), it consists of a south-facing coombe and slope, located on the edge of High Salvington. The north and west part of the site is a mosaic of species-rich scrub, secondary woodland and chalk grassland, which is managed as a bird sanctuary. The rest is open, herb-rich grassland.

The site represents a scarce habitat in the Borough. Meadow Clary, a Red data Book species, occurs here in one of only two sites in West Sussex.

The bird sanctuary consists of woodland, scrub and grassland. Older woodland is dominated by Oak over Hazel coppice, with a fern-rich ground flora. More recent woodland has Oak and Ash, with a shrub layer of Hawthorn, Blackthorn, Elder and Holly and a sparse ground flora, due to dense shade. The scrub has similar species with Dogwood, Willow, Old Man's Beard and Dog Rose, and tall herbs on the margins. Species-rich chalk grassland occurs in rabbit-grazed clearings, supporting such typical species as Wild Basil, Harebell and Small Scabious.

The open grassland is divided into two fields by a hedge. It appears to be an old meadow with rye Grass seeded in, but supports a wide variety of species. The main grasses include Cock's-foot, Sweet Vernal grass, Crested Dog's-tail and Meadow Fescue. Typical herbs include Wild Carrot, Yarrow and Common Knapweed, with clumps of Bramble and Dog Rose. Coarser grassland occurs in areas of enrichment and disturbance.

The combination of grassland and scrub is important for birds and invertebrates.

Titnore and Goring Woods complex, Goring-by-Sea

This woodland complex is the largest in Worthing Borough. Much of it is ancient in origin, although its structure and species composition vary considerably, due to management. The site is of outstanding importance as a large area of semi-natural habitat close to a heavily built-up area.

The majority of the woodland is dominated by Oak with Ash, Elm, Birch and Beech. The shrub layer is very variable, with area of Hazel or Sweet Chestnut coppice or a mixture of Holly, Hawthorn, Blackthorn, Willow and Elder. The ground flora is predominantly Bramble, Bluebell and Bracken, with Wood Sage, Male Fern and Honeysuckle also typical. It tends to be sparse in dense shade. Ash occurs where the ground is damp and base-enriched, with Hazel and some Field Maple and Wild Privet under, and a ground flora of sedges, ferns, Yellow Flag and Dog's Mercury.

Old boundary banks support a rich flora, including ancient woodland indicators such as Primrose and Hart's-tongue Fern. Parts of the woodland have been thinned to occasional Oak standards over sown Rye-grass. Scots Pine is very occasional in parts of the wood.

Ham Farm Wood, Goring-by-Sea

The site represents the only area of ancient woodland within the built-up area of Worthing. Despite its proximity to housing it is remarkably undisturbed and is a valuable urban wildlife site.

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The wood is surrounded by recently-built housing with an open area of parkland on its eastern boundary. The canopy is dominated by Oak, with Ash, Field Maple and English Elm. The shrub layer is mainly Hazel and Sweet Chestnut coppice, with some multi-stemmed Ash and Sycamore. Holly and Hawthorn are also present, and there are some very large old Field Maple coppice stools scattered. The ground flora is dominated by Bramble, Bluebell and Bracken, with Wood Sage, Honeysuckle and Male Fern. A small, dry pond in the north-east part of the wood supports Tufted Hair-grass, Yorkshire Fog and thistles. The ponds in the southern part of the wood are surrounded by Crack Willow, Grey Willow, Goat Willow and Hazel coppice over lush grasses and Yellow Flag.

The wood provides nesting sites and cover for a variety of birds.

Offington Cemetery, Worthing

This is the largest area of unimproved herb-rich calcareous grassland in urban Worthing. It is of great wildlife value to the Borough with cover for birds provided by scrub and large numbers of ant-hills scattered throughout it. It is also a fair-sized remnant of a nationally threatened habitat type.

This site comprises the south-western quarter of Offington Cemetery. It is bordered by the Cemetery on the north and east sides and by the A27 on the other sides. Although there are areas of grassland of equal value within the rest of the Cemetery, they are found on the banks of the main drive and they are too small and too difficult to delineate to be included in the LWS.

The south-western quarter is a heavily horse grazed pasture with patches of Bramble, Dog Rose and Hawthorn scrub and scattered ant-hills. The ant-hills and many of the plants found are indicative of unimproved grassland. These include Common Bent, Crested Dog's-tail, Sweet Vernal grass, amongst the grasses. The herbs found include Yarrow, Mouse-ear, Hawkweed, Bulbous Buttercup, Meadow Buttercup, Common Sorrel, Common Knapweed and Oxeye Daisy.

The high grazing pressure means that much of this site is a tight, densely packed, short-leaved sward. The intimate mixture of herbs and grasses, the species present and the anti-hills reveal the unimproved nature of this site.

Worthing and Hill Barn Golf Courses, Worthing

Worthing and Hill Barn golf courses encompass significant areas (205.2 hectares) of unimproved chalk grassland, neutral grassland, mixed chalk scrub and woodland. Many of the fairways and areas of rough are of botanical interest with chalk flora including Round-headed Rampion and Juniper. Invertebrates and birds of interest recorded on Worthing golf course including the Dark Green Fritillary, Green Hairstreak, Chalkhill Blue, Grey Partridge, Skylark, Stonechat and Corn Bunting.

Hill Barn golf course is a fairly small site, contiguous with the much larger Worthing golf course. It has woodland and scrub boundaries to the east and west comprising rich secondary woodland and scrub with a variety of trees and shrubs. These include Ash, Holm Oak, Hawthorn, Beech, Wild Privet, Elm, Holly, Wayfaring Tree and a locally rich ground flora that includes Spurge-laurel, Ivy, Traveller's Joy, Sweet Violet and Stinking Iris.

Unmown "wildflower" areas support a good range of plant species including Wild Carrot, Greater Knapweed, Harebell, Kidney Vetch, Field Scabious, Sainfoin and Yellow Rattle. The southern part of this course has distinctly neutral grassland, parts of which have been improved, though common herbs such as Common Bird's-foot-trefoil, Common Sorrel, Yarrow and Red Clover occur in places.

An unusually high proportion of Worthing golf course is not part of the playing area and is of potentially greater wildlife value. An area of scrub on the eastern side of the course supports a small number of Juniper bushes. Measures are underway to conserve and propagate this species under the guidance of Plantlife. It also occurs in Beech woodland in the north of the course.

Mount Carvey is an extremely valuable area of east facing unimproved chalk grassland that is managed by light sheep grazing. The turf is typically species rich and contains a good range of calcicoles including Harebell, Greater Knapweed, Squinancywort, Pyramidal Orchid, Eyebright, Field Scabious, Cowslip, Small Scabious, Wild Thyme and Round-headed Rampion.

Cissbury plantation contains numerous old Beech trees and a dense, regenerating shrub layer with herb rich, rabbit grazed glades. This woodland is valuable for invertebrates, including Silver-washed Fritillary, and birds such as woodpeckers.

St. Michaels Graveyard, Worthing

This is a small but vital oasis for wildlife in built-up Worthing. It supports a wide range of flowering plants, grasses, trees and shrubs. Despite the obvious disturbance it contains fragments of a much threatened habitat – the 'old meadow' community. Only 3% of such unimproved grasslands present in the 1940s still retain significant ecological interest.

This is a small (0.4 hectare) walled and fenced graveyard situated well within the built-up centre of Worthing Borough (National grid ref: TQ 136 026). The graveyard is no longer used and has been closed up for a number of years.

The graveyard supports a neglected grassy and herb-rich community. Away from the graves themselves the grassland contains plant species which are associated with unimproved herb-rich 'old meadows'. These include Oxeye Daisy, Common Knapweed, Greater Bird's-foot-trefoil and Upright Brome.

Neglect has led to coarser grasses and herbs taking over in much of the site as well as allowing the development of patches of scrub. Trees and shrubs present include Yew, Holly, Sycamore, English Elm, Goat Willow, Grey Willow, Hazel, Hawthorn and Buddleia.

The scrub supports large numbers of birds including Wrens, Chaffinches, Blackbird, Great Tits, Blue Tits, House Sparrows and Robins. Full bird surveys would reveal more of this site's vital role as a wildlife habitat.

Tenants Hill and Reservoirs, Broadwater

Tenants Hill has a steep east-facing slope of species-rich unimproved chalk grassland. The site is 16.8 hectares in area, National grid ref: TQ 150 070 & TQ 148 063. The two covered reservoirs have developed surprisingly rich chalk grassland floras. Small areas of species-rich grassland occur adjacent to both reservoirs. The flora immediately east of the southern reservoir is of exceptional interest. There are small herb-rich glades within the belt of scrub linking the two reservoirs.

The herb-rich flora of Tenants Hill includes Horseshoe Vetch, Round-headed Rampion, Yellow-wort, Kidney Vetch, Sweet Violet, Bladder Campion, Greater Knapweed, Common Milkwort, Yellow Rattle, Autumn Gentian and Carline Thistle. Upright Brome and Sheep's-fescue are the dominant grasses, with frequent Quaking Grass. The lower part of the slope has dense Hawthorn scrub, where Whitethroat, Lesser Whitethroat, Willow Warbler and Yellowhammer may all breed. There is a dewpond, which has recently been restored.

The flora of both reservoirs includes Salad Burnet, Wild Carrot, Oxeye Daisy, Wild Mignonette, Greater Knapweed and Quaking Grass. The southern reservoir has a particularly interest flora, including notable plants such as Autumn Lady's-tresses, Pyramidal Orchid, Squinancywort, Dwarf Thistle, Marjoram, Kidney Vetch and Common Milkwort.

Noteworthy plants found in the species-rich grassland just east of the southern reservoir include Common Restharrow, Horseshoe Vetch, Pyramidal Orchid, Bladder Campion, Common Broomrape, Slender Sandwort and Crested Hair-grass.

Clapham Wood, Clapham

Clapham Wood is an extensive, ancient semi-natural woodland on the undulating dip slope of the South Downs. The site is 155.8 hectares in area, National grid ref: TQ 105 070. The ground flora is rich and includes a number of interesting species. The wood was moderately affected by the storm of October 1987 and unfortunately several large blocks of woodland were subsequently cleared for pasture. Much of the wood is not managed but some areas are still coppiced.

Clapham Wood occupies a variety of soil types. On the hill top soils are mostly heavy clays with a fairly low lime content. This supports a woodland community consisting mostly of Oak standards over Hazel or Sweet Chestnut coppice. The ground flora is characterised by a carpet of Bluebells, with patches of Wood Anemone. Bramble and Bracken are also present.

The chalky soils of the hill slopes carry a very different flora. Oak, Ash, Field Maple and Hazel are most frequent, with patches of Dogwood, Spindle, Wild Privet and Wayfaring Tree. The ground flora is particularly rich. Bluebell and Wood Anemone are still common but with swathes of Dog's Mercury and patches of Sanicle, Primrose, Common Dog-violet, Lesser Celandine, Wild Strawberry, Pignut, Stinking Iris, Nettle-leaved Bellflower and Early-purple Orchid.

The wood has many tracks and paths, some of which support interesting floras. Tuberous Comfrey, a very rare plant in West Sussex occurs along a track.

Clapham Wood has a moderately diverse range of breeding birds, including Goldcrest, Chiffchaff, Blackcap, Treecreeper, Marsh Tit, Nuthatch, Cuckoo, Great Spotted Woodpecker and Green Woodpecker.

Long Furlong and Church Hill, Findon

Long Furlong is a steep north and west-facing slope between the A280 and Clapham Woods, supporting rich chalk grassland and scrub. Church Hill is a complex mosaic of chalk grassland, species-rich scrub and woodland. The site is 68.6 hectares in area, National grid ref: TQ 109 081.

Long Furlong and Church Hill form a large piece of contiguous habitat so have been included as one site. Clapham Woods is an ancient woodland of County-wide importance.

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The upper slopes of Long Furlong have modified chalk grassland, with grasses and herbs normally associated with enriched soils. The lower slopes are extremely diverse, with typical species such as Quaking Grass, Cowslip, Stemless Thistle, Round-headed Rampion, Salad Burnet, Devil's-bit Scabious and Wild Thyme well represented. Ant-hills are scattered. Clumps of Burnet Rose and areas of scrub occur, and a small area of Oak and Ash woodland over dense shrubs borders Clapham Wood.

Church Hill's chalk grassland varies more in terms of species and structure. Short, species-rich turf occurs on steep slopes and banks; longer more grass-dominated sward is generally associated with enriched or ungrazed areas. The presence of ant-hills indicates a lack of recent disturbance. There are large areas of scrub with a good diversity of shrubs present, and secondary woodland, which is mostly Ash with Beech and Oak locally dominant, and Sycamore frequent, especially in areas of storm damage. Chalk grassland occurs in clearings and along tracks.

The diversity of habitats and vegetation structure makes the site important for a variety of birds and invertebrates.

APPENDIX D

Significant Changes since the publication of Worthing Borough Council's Contaminated Land Strategy 2009

Part 2A New Statutory Guidance
In April 2012 revised Statutory Guidance on the contaminated land regime under Part 2A of the Environmental Protection Act 1990 was published by the Department for Environment, Food and Rural Affairs (Defra). The new Guidance came into force on 6th April 2012 and supersedes previous statutory guidance, which was published as Annex 3 of Defra Circular 01/2006. The aim of the new guidance is to simplify the contaminated land regime and provide greater clarity to regulators in deciding whether land is or is not 'contaminated land'.

The most significant change in the statutory guidance is a new four category system to help local authorities determine whether land is or is not contaminated on the basis of a significant possibility of significant harm to human health. The new guidance sets out a legal framework for taking decisions in the form of a category based test, whereby Category 1 sites are clearly contaminated and represent a high risk and Category 4 sites are evidently low risk and clearly do not qualify as 'contaminated land' under Part 2A of the EPA 1990. Category 2 and 3 sites are less straightforward and require more detailed consideration before deciding whether a site meets the legal definition of contaminated land. Category 2 sites require further risk assessment under the remit of the Part 2A regime, whereas Category 3 will only be subject to further assessment via the planning system as a result of a proposed development or change of use, for example.

The Category 4 Screening Levels (C4SLs) research project (Phase 1) provided technical guidance to support Defra's revised Statutory Guidance. This provides a test for deciding whether land is suitable for use and definitely not contaminated land in the legal sense. It is intended that the C4SLs represents a new set of generic screening levels that are precautionary but more pragmatic than existing GACs, soil guideline values (SGVs) and other screening criteria. A similar system can be used for determining whether or not a significant possibility of significant pollution of controlled waters exists. This is described in detail in the statutory guidance.

The revised Statutory Guidance does not apply to radioactive contamination of land, which is now covered by separate statutory guidance published by the Department of Energy and Climate Change (DECC) in April 2012. Both sets of statutory guidance will apply in the event that land is affected by radioactive and non-radioactive contaminants. The enforcing authority should decide on the appropriate course of action having due regard to the relevant primary legislation and advice from the Environment Agency.

National Planning Policy Framework
On 27th March 2012, the former Planning Policy Guidance (PPG) Notes and Planning Policy Statements (PPS) were replaced by the National Planning Policy Framework (NPPF), reducing thousands of pages of technical guidance into around 59 pages. This included the withdrawal of PPS23: Planning and Pollution Control that gave legislative and technical guidance in relation to development on land affected by contamination. The National Planning Policy Framework was revised on 20 July 2021 and sets out the government's planning policies for England and how these are expected to be applied.

The underlying principle in the new NPPF is a presumption in favour of sustainable development. With regard to land contamination, the NPPF states that planning policies and decisions should ensure that new development is appropriate for its location and that developers and/or landowners are responsible for securing the safe development of land. The NPPF encourages the re-use of previously developed (brownfield) land, provided it is not of high environmental value. As a minimum, land should not be capable of being determined as contaminated land under Part 2A after it has been remediated via the planning process.

Part 2A Amendment: Radon
The regime for radioactive sites has changed, with an amendment that redefines the term "substance" for radioactive contaminated land, removing the exclusion for radon and it's decay products. This came into force on 30 September 2010. The change allows the regulator to take action where land is contaminated by radon or its decay products as a result of the after-effects of a radiological emergency or a past activity e.g. radium luminised paint remnants. Naturally occurring radon gas continues to remain outside the scope of the regime.

Best Value Performance Indicators
Two Best Value Performance Indicators relating to contaminated land (BV216a “Identifying Contaminated Land” and BV216b “Information on Contaminated Land”), which came into effect in 2005, were withdrawn at the end of March 2008.

South Downs National Park
On 31 March 2010, the South Downs became the 10th National Park to be designated in England. The South Downs National Park is over 1,600 square kilometres and stretches 100 miles from the edge of Winchester to Beachy Head, including the northern area of the Worthing Borough.

Aquifer designations
From 1 April 2010 the EA Groundwater Protection Policy has been using aquifer designations that are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems. The aquifer designation data is based on geological mapping provided by the British Geological Survey. The new aquifer designations are as follows:

- Principal Aquifers: (highly permeable) - previously designated as major aquifers.
- Secondary Aquifers: (variably permeable) - subdivided into two types: o Secondary A - These are generally aquifers formerly classified as minor aquifers. Secondary B - These are generally the water-bearing parts of the former non-aquifers.
- Secondary Undifferentiated - In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type. Unproductive Strata: (negligibly permeable).

APPENDIX E

GLOSSARY OF TERMS

The following is a non-technical explanation of terms and acronyms used in the strategy, for a precise definition of terms; reference should be made to Statutory Guidance.

Appropriate Person	A person who is determined to have responsibility for conducting remediation works and bearing the costs of these works
Brownfield Land	Previously developed land or Site
C4SL's	Category 4 Screening Levels. These are levels of contamination below which DEFRA considers land is not capable of being determined as contaminated land.
Class A Person	A person who is the appropriate person by virtue of section 78F (2), that is because he has knowingly permitted a pollutant to be in, on or under the land.
Class B Person	A person who is an appropriate person by virtue of section 78F (2), 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.
CLEA	**'**Contaminated Land Exposure Assessment'; an assessment tool for considering risks to human health.
CLR	Contaminated Land report, a series of key reports from Defra and the EA assessing the risk to human health from land contamination.
Contaminant	A substance which is in, on or under the land and which has the potential to cause harm or to cause the pollution of controlled waters.
Contaminated Land	Any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land that; (a) significant harm is being caused, or there is a significant possibility of such harm being caused; or (b) pollution of controlled waters is being, or is likely to be, caused.
Controlled Waters	These include (a) inland waters (rivers, streams, underground streams, canals, lakes and reservoirs) (b) groundwater (any water in underground strata, wells or boreholes) (c) territorial waters (seawater within the three-mile limit) (d) coastal waters (the sea up to the line of highest tide; tidal waters within the freshwater limit).

DEFRA **DETR**	Department for Environment, Food and Rural Affairs Department of the Environment, Transport and the Regions
EA	The Environment Agency (Solent and South Downs Office).
Eco-system	A biological system of interacting organisms and their physical environment
FSA	The Food Standards Agency
GIS	Geographical Information System - a storage and retrieval database capable of being interrogated on any level of pre-determined parameters.
Greenfield Site	An area which has not been previously developed
Groundwater	Any water contained in underground strata, wells or boreholes.
NPPF	National Planning Policy Framework.
Orphan Linkage	A significant pollutant linkage fro which no appropriate person can be found, or where those who would otherwise be liable are exempted by one of the relevant statutory provisions.
Part 2A	Part 2A of The Environmental Protection Act 1990, inserted by section 57 of the Environment Act 1995.
Pathway	One or more routes by which a receptor can become exposed to a contaminant.
Pollutant linkage	The relationship between a contaminant, a pathway and a receptor.
Receptor	or ‘target’ – something that could be affected by contamination, such as waters, a person’s health, ecosystem or property type.
Regulations	Statutory Instrument (2000/227) The Contaminated Land (England) Regulations 2000.
Remediation	The carrying out of works to prevent or minimise the effects of contamination. In Part 2A this encompasses an assessment as to the condition of the land and monitoring subsequently.
Risk assessment	The study of the probability of a hazard occurring and the magnitude of the consequences.
SDNP	South Downs National Park
Source	A substance in, on or under the ground with the ability to cause harm.
Source Protection	Zones around groundwater abstraction points used for public

Zone	water supply within which certain activities and processes are either restricted or prohibited.
Special Sites	Any contaminated land designated as special according to the criteria specified in Appendix B.
SSSI	Site of special scientific interest
Statutory Guidance	Environmental Protection Act 1990 Part 2A, Contaminated Land Statutory Guidance, DEFRA, April 2012.