



# **Contaminated Land Inspection Report**

Former Landfill,  
Hockwold-Cum-Wilton  
King's Lynn

January 2019

Reference no. S103100035586

Written by

Alex Grimmer  
Senior Environmental Quality Officer

Reviewed by

Fabia Pollard  
Scientific Officer

Approved by

Dave Robson  
Environmental Health Manager

Please Note:

This report is the property of and confidential to Borough Council of King's Lynn and West Norfolk and its use by and disclosure to any other person without the expressed prior consent of the council is strictly prohibited.

Borough Council of King's Lynn and West Norfolk  
King's Court  
Chapel Street  
King's Lynn  
Norfolk  
NR30 1EX

**Tel: 01553 616200**

**Email: [environmentalquality@west-norfolk.gov.uk](mailto:environmentalquality@west-norfolk.gov.uk)**

## Contents

Executive Summary .....	1
1. Introduction .....	2
2. Desk Study Information.....	2
Location .....	2
Initial Prioritisation Score .....	2
Previous Site Usage .....	2
Present Site Usage.....	2
Environmental Setting.....	2
Geology .....	2
Hydrogeology .....	3
Hydrology .....	3
Local Authority Pollution Prevention and Control Regulations .....	3
The Environment Agency Web site records .....	3
MAGIC website records .....	3
Historic Maps .....	4
E-map Explorer .....	4
Historic Maps on file at the Borough Council of King's Lynn and West Norfolk.....	4
Aerial Photographs .....	5
Planning History.....	5
Environment Agency Records .....	5
Norfolk County Council Records.....	5
3. Site Walkover.....	5
4. Assessment of Site Use .....	6
Location of Receptors .....	6
Humans and Property .....	6
Environment.....	6
Assessment of probability of a contamination event.....	6
Assessment of Hazard.....	7
Human Health .....	7
Property.....	7
Environment .....	7
Controlled Water .....	7
Groundwater .....	7
Surface waters .....	7
Conceptual site model .....	8
Outcome of Preliminary Risk Assessment .....	8
Conclusion .....	9
Human Health .....	9
Controlled Waters.....	9
Part 2A status of the site.....	9
Appendices .....	10
Appendix A Site Photographs .....	11
Appendix B Drawings .....	16

Appendix C. King's Lynn Borough Council Planning Records, Norfolk County Council Planning Records and SSSI Records .....	21
Appendix D. Risk Assessment Methodology .....	30
Appendix E. Determination of contaminated land – Contaminated Land Statutory Guidance, April 2012.....	32

## **Executive Summary**

The Borough Council of King's Lynn and West Norfolk (BCKLWN) has a statutory duty to inspect its district for potentially contaminated land under Part 2A of the Environmental Protection Act 1990 (EPA1990). The contaminated land inspection strategy has identified the potential landfill at Hockwold-cum-Wilton as a site which requires detailed inspection.

This site is a potential landfill which forms part of a fishing lake and fly fishing training centre, within the district of King's Lynn. An initial assessment of the site was undertaken to assess the potential for harm to human health, controlled waters and property under Part 2A.

To gather information of the site's history a desk study and preliminary risk assessment were carried out by the Environmental Quality Team. From the evidence gathered during the desk study of the site history and a site walkover, the following can be stated:

- The site was a former quarry.
- The site was licensed to Essex Rivers Authority as an inert landfill to deposit materials (virgin clay) excavated from a pipeline.
- The site acquired planning permission to convert a pit into a reservoir and commercial fishing lake.
- As part of the development of the fishing lake the clay from the Essex river Authority excavation was used to line the quarry.

Following the initial assessment it was concluded that no additional information was required to characterise and categorise the site. Evidence has been found that the site has been used for waste disposal. The waste deposited was an 'as raised' virgin clay material which is considered to inert in nature and not to represent a contamination risk. This indicated that the site in its current use is unlikely to pose a significant risk to human health or property. There is not a strong case for taking action under Part 2A EPA 1990 and the therefore the site has been classified into category 4 regarding the risk to human health. No evidence was found of significant pollution or significant possibility of such pollution of controlled waters.

Therefore the site is not considered to be contaminated land under Part 2A of the Environmental Protection Act 1990.

## **1. Introduction**

This report details a review of information and written statement about a landfill at Hockwold-cum-Wilton, King's Lynn and provides a conclusion on the risk to human health, property, groundwater and the wider environment.

The Contaminated Land Statutory Guidance (DEFRA, 2012) suggests that where the authority has ceased its inspection and assessment of land as there is little or no evidence to suggest that it is contaminated land the authority should issue a written statement to that effect. This document provides that written statement.

## **2. Desk Study Information**

### **Location**

The site's location is shown in Appendix B. The grid reference for the centre of the site is 568996, 288624 and the nearest postcode is IP26 4JW.

### **Initial Prioritisation Score**

The site was initially assessed as having a 'Very High' Potential Hazard Rating due to the risk to groundwater.

### **Previous Site Usage**

The site (drawing S103100035586) was a chalk pit, which has been used as a landfill.

### **Present Site Usage**

Its present use comprises a fishing lake which is accessed by a road from the east. Black Dyke Farm exists to the south. The Cut-off Channel is approximately 100m to the west and south.

### **Ownership**

Enquiries have been made to establish land ownership. This report will be made available to the site owners.

### **Environmental Setting**

#### ***Geology***

The Solid and Drift Geology Sheet 160, 1:50,000, 1999 and Regional Hydrological Characteristics Sheet 1 1:125 000 shows the site surface is approximately to vary between 5 and 8 meters above ordnance datum (maOD).

The bedrock geology is the West Melbury Marly Chalk Formation.

No surface deposits are recorded.<sup>1</sup>

---

<sup>1</sup> BGS website: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

### ***Hydrogeology***

The site is on land classified as a principle aquifer but not within a Source Protection Zone (SPZ) (Environment Agency Website).

The Principle Aquifer comprises the West Melbury Marly Chalk Formation, which has a very high permeability allowing it transmit pollutant very easily.

### ***Hydrology***

Fishing lakes are on site and the Cut-off Channel is approximately 100 west of the site.

No private exists on site or within 500m. There are three surface water abstraction points within 1000m.

1. E W Porter and Son, Spray Irrigation.
2. E W Porter and Son, Spray Irrigation.
3. Environment Agency, Transfer between sources.

### ***Local Authority Pollution Prevention and Control Regulations***

No LAPPC processes are on site or within 500m of the site.

### ***The Environment Agency Web site records***

The Environment Agency Web site records the following:

- The site is within a Priority Waters Area and is vulnerable to Nitrate (surface and Groundwater).
- The site is covered by the Proposed 2017 Nitrate Vulnerable Zone (NVZ) for Groundwater and Surface water, with a NVZ number G71 S390.
- The site is covered by an area designated as Rivers at Risk from Agricultural Phosphates.
- The superficial deposits beneath the site are not classified as being a Aquifer.
- The bedrock beneath the site is a Principal Aquifer.
- The groundwater has a high vulnerability at this location.
- The site is recorded as being a landfill.
  - Named Hockwold-Cum-Wilton, Operated by the Essex River Authority for the deposition of Inert Waste. No start or finish dates are available and no licence number is given.
- No pollution incidents are recorded on site or within 1km of the site.

### ***MAGIC website records***

MAGIC website records the following

- The site is part of an area which is a covered by a Site of Special Scientific Interest.
- The site is part of an area which is a Special Protection Area.

- Part of the site is covered by a Countryside Stewardship Water Quality Priority Area. (England).
- The site is covered by the Phosphates Issues Priority Area. (Medium Priority).
- The site is covered by Woodland – Water Quality (England) of the Lower Spatial Priority.
- The site is part of an Environmentally Sensitive area. (England)
- The site is part of a Site of Special Scientific Interest Unit (England). In favourable condition.
- The site is designated as a Nitrate Vulnerable Zone for Surface and Groundwater.
- The site is part of a Special Protection Area. (England)
- The site is part of a Special Protection Area under the Water Framework Directive. (England)

## **Historic Maps**

### ***E-map Explorer***

Enclosure Map 1800 - 1850 – The site is not depicted, but some buildings named Black Dyke are visible to the south of the site.

Tithe map circa 1840– The site has a small feature on it, which is assumed to be the beginning of the quarry. The buildings to the south have been expanded and are now named Black Dyke Farm.

Ordnance Survey 1st Ed. 1879-1886 – The site is described as ‘Chalk Pit’, although it is smaller in scale than the present day. Black Dyke Farm to the south is still present although in a different form than above. A Marl Pit is noted to the southeast of the site.

### ***Historic Maps on file at the Borough Council of King's Lynn and West Norfolk***

1843 – 1893: The site and surrounding area have not changed from the Ordnance Survey 1<sup>st</sup> edition map, with the exception that the chalk pit has expanded slightly.

1891 – 1912: The site and surrounding area are unchanged, with the exception of that the Marl Pit has disappeared.

1904 – 1939: Not available.

1919 – 1943: Not available.

1945 – 1970: The site is now described as a Pit (Disused), the pit has expanded in size to the north and east.

1970 – 1996: Not available.



### **Aerial Photographs**

1945 – 1946 MOD Aerial Photograph - The quarry is evident on site, approximately the same size as present day. There is no evidence of land filling. There are no other changes from the historic maps.

1988 Aerial Photograph - The site has expanded slightly from the previous aerial photograph and is covered with vegetation. A track exists leading into the base of the pit to a patch of ground bare of vegetation.

1999 Aerial Photograph – The site was generally as described above.

2006-09 Aerial Photograph – The site is now shown as being a lake bounded to the north and west by agricultural fields, to the south is Black Dyke Barns and Black Dyke Farm, to the east is a road beyond which was an agricultural field.

### **Planning History**

Six planning applications exist in the Borough Council records on or adjacent to the site. These relate to a change of use of the site from a pit to an irrigation reservoir and fishing facility, a car park, offices a pump and lodges.

No Norfolk County Council planning applications exist for the site on the County Council's website.

### **Environment Agency Records**

The Environment Agency were consulted but did not have any further information then was on their historic landfill layer on their website.<sup>2</sup>

### **Norfolk County Council Records**

No records are on the Norfolk County Council website; however a search of their paper records indicated two planning applications. One relates to the extraction of chalk and the other for filling the excavation with soils arising from the excavation of shafts and tunnels by Essex River Authority.

### **3. Site Walkover**

A site visit was carried out by an Environmental Quality Officer of the Borough Council of King's Lynn and West Norfolk in the presence of the landowner on 11/07/2018 and the following was noted. Photographs are presented in the Appendix A.

The site was accessed from Black Dyke Road onto a large gravel car park which led up to three timber clad buildings. One building was the residence of the 'water bailiff', the next was the fishing lake club house and the other was what appeared to be an open building for shelter for the fishermen. The area around the lake was grassed and bordered by trees. The edge of the lake had patches of rushes with gaps for fishing stations. A green shipping container was along the eastern boundary adjacent to Black Dyke Road and it was understood that this was used to

---

<sup>2</sup> <http://apps.environment-agency.gov.uk/wiyby/37829.aspx>

house pumping gear to water the adjacent fields with water from the lake. The lake was then evidently replenished from the adjacent Cut Off Channel.

Discussion with the landowner indicated that the waste material which Essex River Authority placed in the quarry was clay and that he has used this to line the quarry along with some additional clay which he obtained from the other end of the Essex River Authority pipeline. The landowner said that when he came to clear the site it was significantly overgrown with vegetation and that there had been some levels of waste deposited in the quarry, which mostly comprised scrap metal from agricultural sources. The scrap metal was recycled and the remaining waste was disposed of off-site.

Flora and fauna were noted to be numerous and varied and did not display any signs of stress or physiological signs of illness.

#### **4. Assessment of Site Use**

From the assessment of the site using County Council data, historic maps, aerial photography and a site walk over it has been possible to conclude that the site has been used for mineral extraction. The site is being used as a reservoir and a fishing lake.

#### ***Location of Receptors***

##### ***Humans and Property***

There is a domestic residence on site with further residential and industrial properties Black Dyke Barns and Black Dyke farm 20m and 90m respectively to the south. With the next nearest residence 340m to the southeast

##### ***Environment***

The site is located within an area designated as a Site of Special Scientific Interest (SSSI) which is a relevant receptor as set out in Table 1 of the statutory guidance within 1km of the site.

#### ***Assessment of probability of a contamination event***

The site was a quarry which has ceased being used for mineral extraction. The site was then used as a landfill. The extraction area is now filled with water under planning permission from the Borough Council and the site is being used as a commercial fishing lake.

The site is covered by a SSSI relating to Stone Curlews. Given the site is grassed and is occupied by humans on a semi-permanent basis. This would not constitute a suitable nesting site for the Stone Curlew and as such it is considered that the probability for Stone Curlews being present on site is unlikely and therefore the probability of a contamination event affecting them is also UNLIKELY.

As the site has undergone landfilling process, but the waste was inert as raised material from the construction of a pipeline it is considered that the probability of a contamination event affecting human health (via direct contact or inhalation), or groundwater is considered UNLIKELY.

## **Assessment of Hazard**

The risks posed by the site have been assessed under the statutory guidance, the Contaminated Land Statutory Guidance. This is discussed further below:

### ***Human Health***

The site has been used to landfill as raised virgin soils from the excavation of a pipeline. As such no source exists on site. Therefore it is considered that the hazard to human health (via direct contact or inhalation) is considered LOW.

### ***Property***

The site is a commercial fishing lake. The fishing lake has been lined with the virgin clay material originally used place in the quarry. As this material is considered to be 'as raised' natural material no contamination is considered to be present and the site is not considered to pose a hazard to the fish is LOW.

### ***Environment***

The site is covered by a SSSI relating to Stone Curlews. The material which was landfilled and then used to line the fishing lake is considered to have been inert due to its 'as raised' nature. Therefore the hazard the site represents to Stone Curlews is considered to be LOW.

### ***Controlled Water***

#### ***Groundwater***

The site is a former quarry which was used as a landfill to deposit 'as raised' natural soils, which is now being used as reservoir and commercial fishing lakes. As the soils placed in the quarry were natural soils from the region no leachable contaminants are considered to be present which would be able to leach into the underlying principal Aquifer. Therefore the hazard is considered to be LOW.

#### ***Surface waters***

The landfilled material is considered to be inert 'as raised' natural clay soils, as such there is considered to be no hazard to the fishing lake or the Cut-off Channel. Therefore the hazard to surface water is considered to be LOW.

### Conceptual site model

The conceptual site model (Table 1) shows the sources, pathways and receptors identified and the subsequent risk classification.

Table 1: Preliminary conceptual site model

Source	Pathway	Receptor	Probability	Hazard	Risk
Metals, metalloids and hydrocarbons within waste material	Direct contact	Humans	Unlikely	Low	Very Low
	Inhalation				
Metals, metalloids and hydrocarbons within waste material	Direct Contact	Property	Unlikely	Low	Very Low
	Inhalation				
Metals, metalloids and hydrocarbons within waste material	Direct contact	Environment	Unlikely	Low	Very Low
Metals, metalloids and hydrocarbons within waste material	Direct contact	Controlled water	Unlikely	Low	Very Low

### Outcome of Preliminary Risk Assessment

No plausible source pathway receptor linkage was identified as no source of contamination has been identified. Therefore further investigation is not considered necessary.

## **Conclusion**

From the information gathered and the site walkover it is apparent that the site was excavated for chalk but the excavations were then partially backfilled with waste material, comprising natural clay soils from a pipeline excavation. Planning permission was then granted which enabled the pit to be converted into a reservoir and fishing lake.

No evidence was noted of significant harm and there is not a strong case to consider that the risks from the land are of sufficient concern that the land poses a significant possibility of significant harm to Humans (via direct contact, ingestion and inhalation), Property, Environmental Receptors or Controlled Water as defined in the statutory guidance. CIRIA C552 states that on a site with a very low risk classification 'There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.'<sup>3</sup>

## **Human Health**

Following the above assessment the site is assessed as Category 4: Human Health<sup>4</sup> as set out in the Statutory Guidance, as such no further assessment is considered necessary with regards to the risk to human health.

## **Controlled Waters**

No further inspection is considered to be required with regards to controlled waters as it is considered that there is no reasonable possibility that a significant contaminant linkage exists as set out in the Statutory Guidance<sup>5</sup>. This assessment applies to the site's current use.

No further assessment of the site is considered necessary unless additional information is discovered or if the site is considered for redevelopment.

## **Part 2A status of the site**

The site is not considered to be contaminated land under Part 2A of the Environmental Protection Act 1990.

---

<sup>3</sup> Contaminated land risk assessment. A guide to good practice. CIRIA C552, ISBN 0860175529.

<sup>4</sup> Appendix E sets out the categories of land in the Contaminated Land Statutory Guidance.

<sup>5</sup> (Contaminated Land Statutory Guidance April 2016)

2.13. If at any stage the local authority considers, on the basis of information obtained from inspection activities, that there is no longer a reasonable possibility that a significant contaminant linkage exists on the land, the authority should not carry out any further inspection in relation to that linkage.

## Appendices

***Appendix A Site Photographs***



Photograph 1.



Photograph 2.





Photograph 3



Photograph 4





Photograph 5.



Photograph 6.



Photograph 7.



Photograph 8.



Photograph 9.



Photograph 10.

## ***Appendix B Drawings***





Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax 01553 691663

Title  
**Site Plan**

Project / Details  
**Hockwold Cum Wilton**

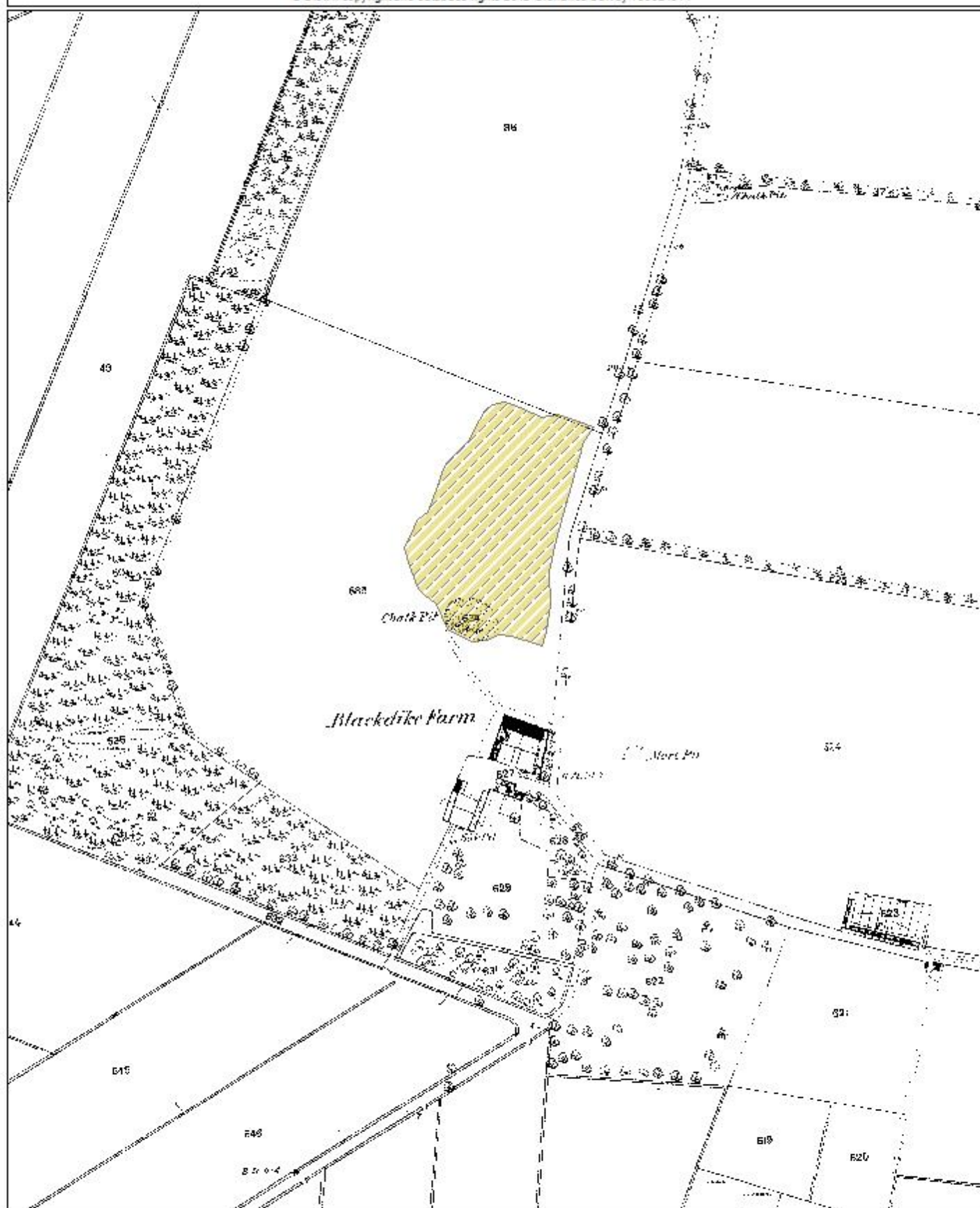


Scale  
**1:5,000**

Date  
**July 2015**

Drawn by  
**EH&H**

Drawing / Reference Number  
**S103100035586/101**



Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Historic Map 1843 - 1893**

Project / Details  
**Hockwold Cum Wilton**



Scale  
**1:5,000**

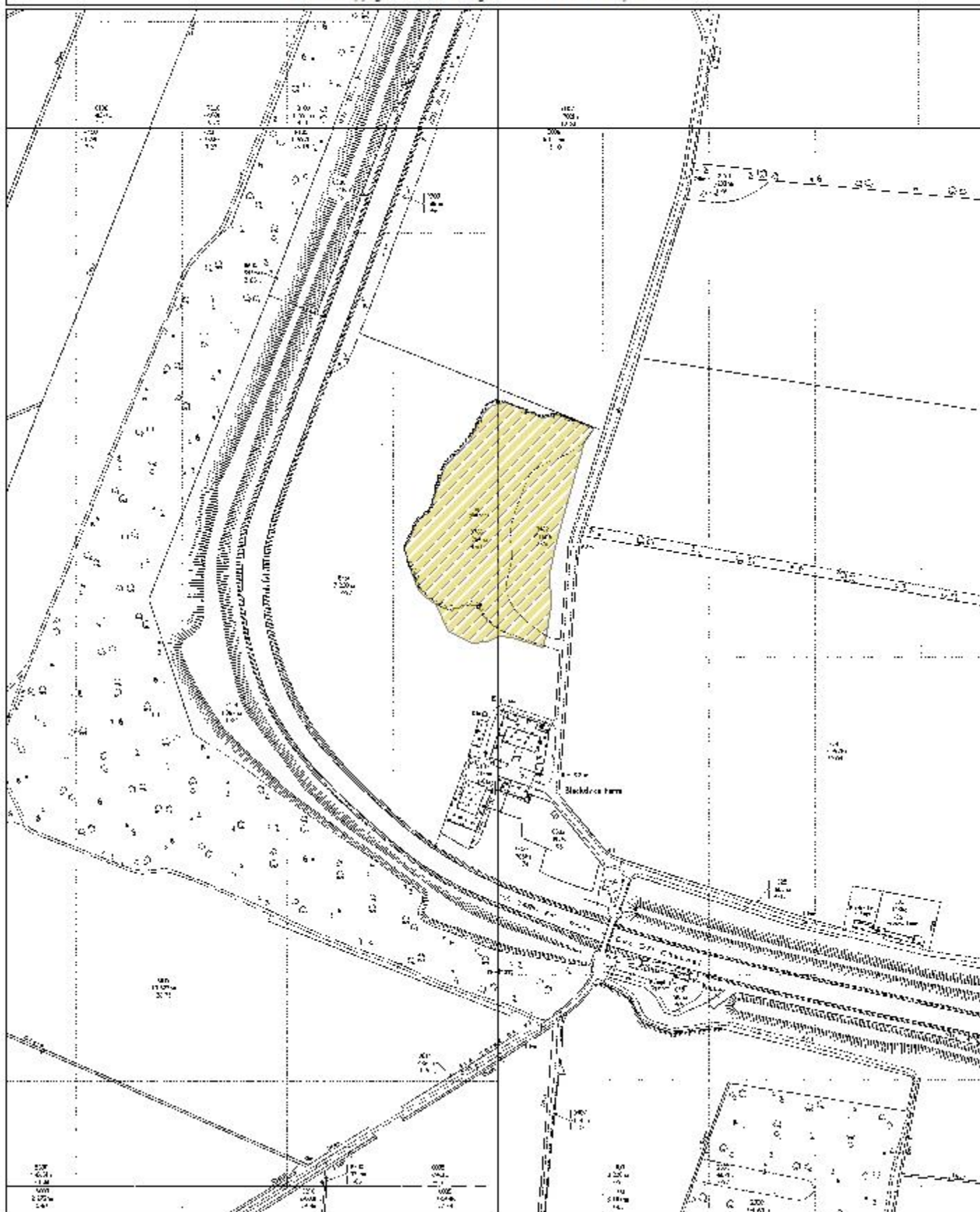
Date  
**July 2015**

Drawn by  
**EH&H**

Drawing / Reference Number  
**S103100035586/102**







Borough Council of  
**King's Lynn &  
West Norfolk**



Tel. 01553 616200 - Fax. 01553 691663

Title  
**Historic Map 1945 - 1970**

Project / Details  
**Hockwold Cum Wilton**



Scale  
**1:5,000**

Date  
**July 2015**

Drawn by  
**EH&H**

Drawing / Reference Number  
**S103100035586/104**



***Appendix C. King's Lynn Borough Council Planning Records, Norfolk  
County Council Planning Records and SSSI Records***

- 04/02723/CU - Change of use and alterations to existing pit to create irrigation reservoir and fishing facility. Permitted
  - 05/01719/F - Erection of pump house and jetty to service the irrigation reservoir and fishing facility. Permitted
  - 05/01764/F - Construction of car park to serve fishing facility. Permitted
  - 07/01910/F - Erection of dwelling for occupation by a water bailiff.  
Development of fishing club facilities. Change of use of the land surrounding the proposed dwelling and fishing club facilities for amenity purposes.  
Withdrawn
  - 08/00413/F - Erection of dwelling for occupation by a water bailiff.  
Development of fishing club facilities. Change of use of the land surrounding the proposed dwelling and fishing club facilities for amenity purposes.  
Permitted
  - 10/00170/PREAPP - INFORMAL REQUEST: Development of 3 fishing lodges.
- 
- DM128 – Extraction of Chalk
  - DM4415

County Ref: No.

DM.128

MW9

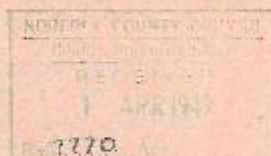
District Ref: No.

125/11.

## NORFOLK COUNTY COUNCIL

**Town and Country Planning Act, 1947**  
**Town and Country Planning (General Development) Order, 1948**

To Mr. A. W. Spencer,  
Black Dike Farm,  
Hockwold.



## PARTICULARS OF PROPOSED DEVELOPMENT:

Parish: Hockwold-gun-Wilton. Location: Black Dike Farm.  
 Name of Applicant: Mr. A. W. Spencer. Name of Owner: Applicant.  
 Name of Agent: — Applicant's interest in property: Owner.  
 Proposal: Erection of chalk.

In pursuance of their powers under the above-mentioned Act and Order, the Norfolk County Council hereby permit the development as shown on the plan(s) and/or particulars deposited with the Downham R.D. Council on the 28th day of December, 19 48.

subject to compliance with the conditions specified hereunder:

- (1) This permission applies to the existing access to the Chalk Pit, no further access is to be made from the Highway without planning permission.  
 (2) This permission relates only to the area coloured pink on the deposited plan, being Parcel No. 634 and part of Parcel No. 635 on 25" Ord. Sheet No. 91/12. Before any extension of such area is undertaken planning permission must first be obtained.  
 (3) The land shall be restored to the satisfaction of the local Planning Authority in accordance with the following provisions:-  
 (conditions continued on attached).

The reasons for the Council's decision to grant permission for the development, subject to compliance with the conditions hereinbefore specified are:-

the neighbourhood. To preserve the amenities of

The permission is granted subject to due compliance with the byelaws (local Acts, Orders, Regulations) and general statutory provisions in force.

Dated this 11th day of March, 19 49.

(Sgd.) A. B. Harrison.

Clerk to the Downham R.D. Council.



Continuation:  
Conditions (Continued.)

(3) (Cont.)

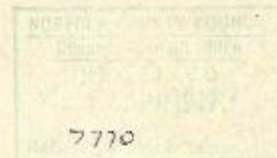
(a) The sides of the excavation shall be finished to such slope, and the bed of the excavation shall be formed to such even levels, at such times and in such stages as the local authority considers suitable and practicable, having regard to the possible future use of the land:

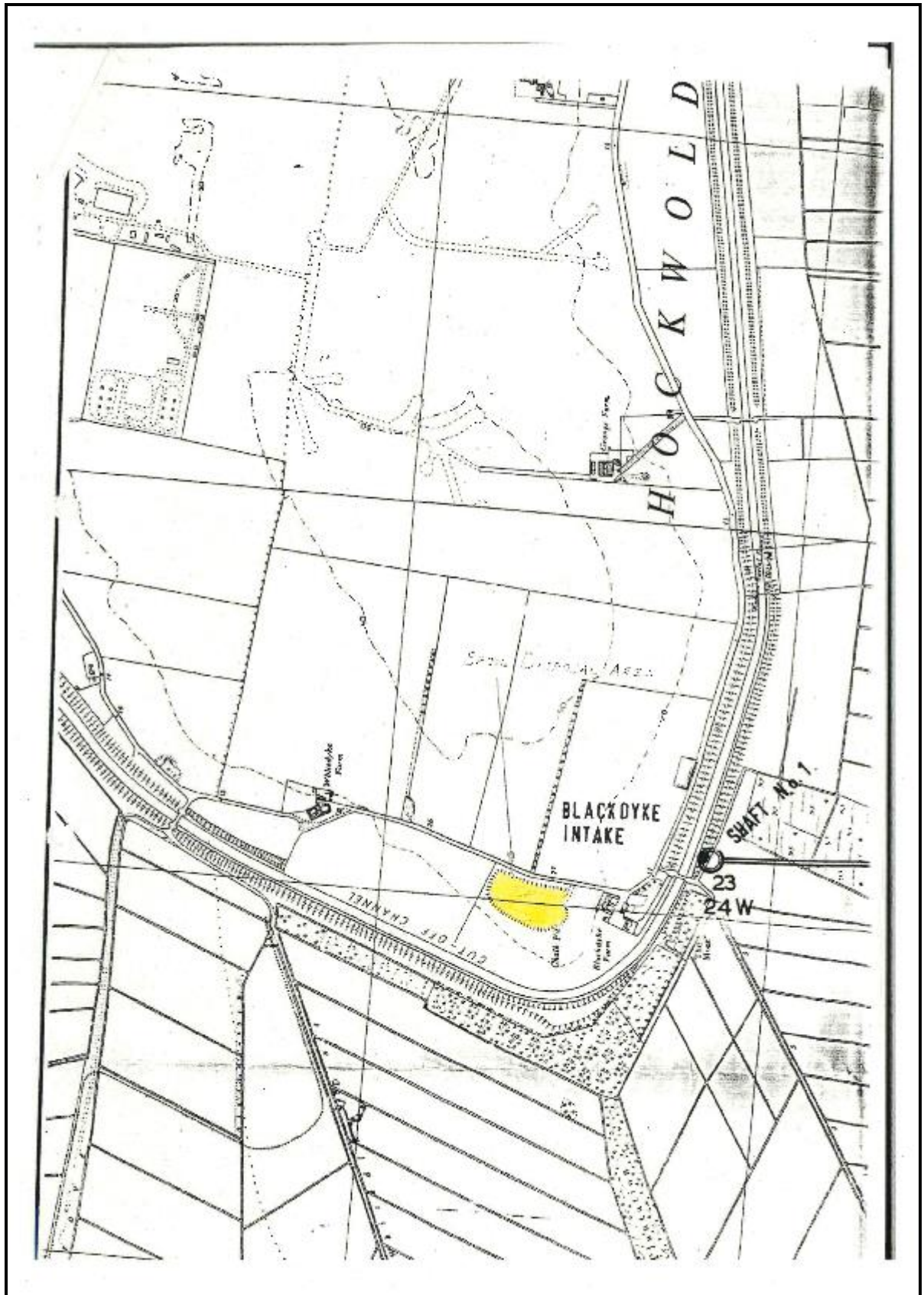
(b) The overburden shall be replaced on the surface of the bed and slopes to promote plant growth, either for agricultural purposes or tree planting whichever the local authority considers suitable and practicable;

(c) At such times or time as the local authority considers that any building, plant or machinery is no longer required in connection with the extraction of chalk or the reinstatement of the land, that building, plant or machinery shall be removed; and

(d) In order that the local authority may be kept informed for the purpose of their decision hereunder the undertaker agrees to allow access to the works to Officers authorized in that behalf by the local authority.

These conditions are issued by the Council as its formal decision and do not purport to convey approval or consent which may be required under Bye-Laws or under Acts other than the Town & Country Planning Act, 1947.







**NORFOLK COUNTY COUNCIL  
DEPARTMENT OF PLANNING AND TRANSPORTATION  
WASTE REGULATION SECTION**

SITE: HOCKING - CUM - WITTON, Wash Dyke Road

PREVIOUS USE: old CHALK PIT

SITE OWNER:

SITE OPERATOR: ESSEX RIVER AUTHORITY

PLANNING DEPARTMENT NO.: 1080

PLANNING PERMISSION REFERENCE: DA.4415

OPERATIONAL FROM: 1969 (APPROX)

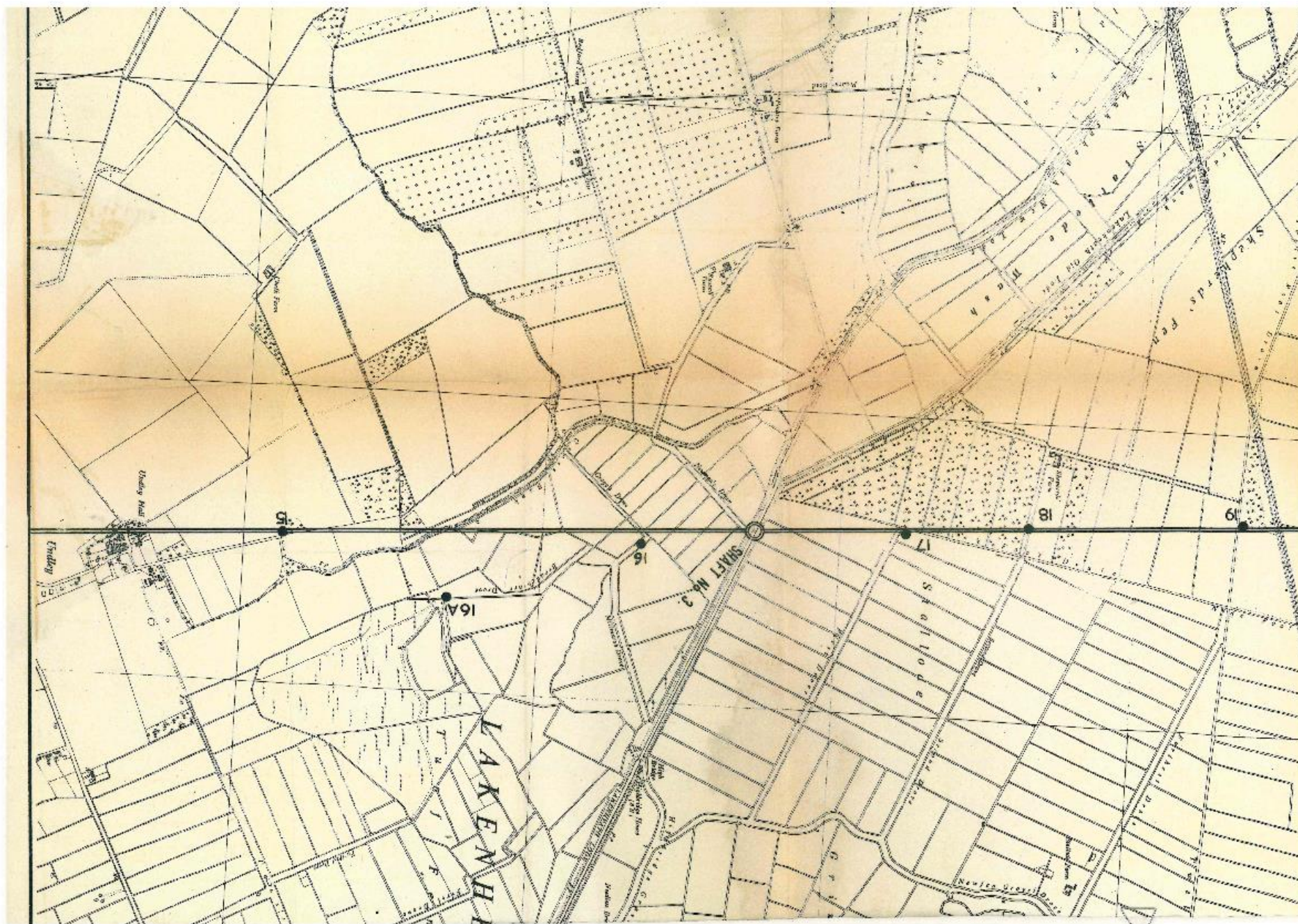
WASTE CATEGORIES: SHAFT AND TUNNEL SOIL (FROM EXCAVATIONS)

DRAWING - WND GET











Form G.D.2.B.

65

County Ref. No:	District Ref. No:
1011215	

NORFOLK COUNTY COUNCIL  
Town and Country Planning Act, 1962  
Town and Country Planning General Development Order, 1963

To: ~~THE LOCAL AUTHORITY~~  
~~Planning Officer,~~  
~~11, Colchester Road, Colchester, Essex.~~

**PARTICULARS OF PROPOSED DEVELOPMENT:**

Parish: Haverhill Location: \_\_\_\_\_  
Name of \_\_\_\_\_  
Applicant: MISS EX-GRANDIS ANTHESTY  
Name of \_\_\_\_\_  
Agent: \_\_\_\_\_

Proposal: DISPOSAL OF WASTE WATER IN A SEWER

In pursuance of their powers under the above mentioned Acts and Order the Norfolk County Council HEREBY PERMIT the development as shown on the plan(s), and/or particulars deposited with the Council on the \_\_\_\_\_ day of \_\_\_\_\_ 1963, subject to compliance with the conditions specified hereunder:-

1. The discharge shall be confined to the east side of the sewer, north of the existing bridge.
2. The total discharge shall not exceed 50,000 cubic yards, unless otherwise stated.
3. The discharge shall be confined to the east side of the sewer, north of the existing bridge.
4. The discharge shall be confined to the east side of the sewer, north of the existing bridge.

The reasons for the Council's decision to grant permission for the development, subject to compliance with the conditions herein before specified are:-

The permission is granted subject to due compliance with the by-laws (Local Acts, Orders, Regulations) and general statutory provisions in force.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 19

\_\_\_\_\_ to the \_\_\_\_\_ Council.

(Address of Council officers) \_\_\_\_\_

SEE NOTES ON REVERSE SIDE.

CC1-P-35-67



**COUNTY:** NORFOLK AND SUFFOLK      **SITE NAME:** BRECKLAND FARMLAND

**DISTRICT:** FOREST HEATH, ST EDMUNDSBURY, BRECKLAND, KINGS LYNN AND WEST NORFOLK

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended.

**Local Planning Authority:** Suffolk County Council, Norfolk County Council, Forest Heath District Council, St Edmundsbury Borough Council, Breckland District Council, Kings Lynn and West Norfolk Borough Council

**National Grid Reference:** TL 762783      **Area:** 13,335.70 (ha.)

**Ordnance Survey Sheet 1:50,000:** 156, 169    **1:10,000:** TF 70 NE, TF 70 SE, TF 80 SW, TL 68 NE, TL 76 NE, TL 76 NW, TL 77 NE, TL 77 NW, TL 77 SE, TL 77 SW, TL 78 NE, TL 78 NW, TL 78 SE, TL 78 SW, TL 79 NE, TL 79 SE, TL 79 SW, TL 87 NE, TL 87 NW, TL 88 NE, TL 88 SE, TL 89 NE, TL 89 NW, TL 89 SE, TL 98 NW, TL 98 SW, TL 99 NW, TL 99 SW

**Date Notified (Under 1949 Act):** –

**Date Notified (Under 1981 Act):** 15 November 2000

**Other Information:**

Stone curlew is specially protected by being listed on Schedule 1 of the Wildlife and Countryside Act 1981 as amended.

Stone curlew is listed on Annex 1 of the European Communities Directive 79/409/EEC on the Conservation of Wild Birds.

Stone curlew is a priority species of the UK Biodiversity Action Plan.

**Reasons for Notification:**

This site is notified for its internationally important population of stone curlew *Burhinus oedicnemus*.

**Description:**

Breckland Farmland SSSI lies between Bury St Edmunds in Suffolk and Swaffham in Norfolk. Breckland is characterised by its climate and soils. Breckland's climate is semi-continental, being the driest region of the British Isles and subject to great extremes of temperature. The soils are complex, but typically are very sandy free-draining mixes of chalk, sand, silt, clay and flints.

The predominant land use within the SSSI is arable. This is characterised by field scale vegetables and root crops, generally in rotation with cereals and outdoor pig units. Management for gamebirds is also a characteristic feature. Stone curlews nest from March each year in cultivated land which has plenty of bare ground and very short vegetation. Late sown spring crops such as sugar beet and vegetables are favoured. They also occupy set-aside where this has been rotated. Stone curlews are very sensitive to recreational disturbance and benefit from lack of recreational access on agricultural land; they are not usually affected by mechanised agricultural operations. Other habitats such as grassland are used for foraging. A restored mineral working also supports breeding stone curlews. Breckland Farmland SSSI is adjoined by a number of heathland SSSIs which also provide breeding and foraging habitat for stone curlew.

## ***Appendix D. Risk Assessment Methodology***

The Model Procedures for the Management of Land Contamination (CLR11<sup>6</sup>) provide the technical framework for applying a risk management process when dealing with contaminated land.

The Borough Council's Contaminated Land Strategy has identified priority sites based on mapping and documentary information. The Contaminated Land Inspection Report collates all the existing information on the site and develops a conceptual site model to identify and assess potential pollutant linkages and to estimate risk.

The risk assessment process focuses on whether there is an unacceptable risk, which will depend on the circumstances of the site and the context of the decision. The Council has used a process adapted from CIRIA C552, Contaminated Land Risk Assessment, a guide to good practice<sup>7</sup> to produce the conceptual site model and estimate the risk of harm to defined receptors. This involves the consideration of the probability, nature and extent of exposure and the severity and extent of the effects of the contamination hazard should exposure occur.

The probability of an event can be classified as follows:

- Highly likely: The event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- Likely: It is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- Low likelihood: Circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term;
- Unlikely: Circumstances are such that it is improbable the event would occur even in the long term.

The severity of the hazard can be classified as follows:

- High: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Contaminated Land Statutory Guidance, April 2012');
- Medium: Chronic damage to human health ('significant harm' as defined in 'Contaminated Land Statutory Guidance, April 2012'), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Contaminated Land Statutory Guidance, April 2012');

---

<sup>6</sup> <https://www.gov.uk/guidance/land-contamination-risk-management>

<sup>7</sup> <https://www.brebookshop.com/samples/142102.pdf>

- Low: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Contaminated Land Statutory Guidance, April 2012'). Damage to sensitive buildings, structures or the environment.

Once the probability of an event occurring and hazard severity has been classified, a risk category can be assigned from the table below:

		Hazard		
		High	Medium	Low
Probability	High Probability	Very High Risk	High Risk	Moderate Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk
	Low Probability	Moderate risk	Moderate/Low Risk	Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk
Very High Risk	<p>There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening</p> <p>This risk, if realised, is likely to result in a substantial liability.</p> <p>Urgent investigation (if not undertaken already) and remediation are likely to be required.</p>			
High Risk	<p>Harm is likely to arise to a designated receptor from an identified hazard.</p> <p>Realisation of the risk is likely to present a substantial liability.</p> <p>Urgent investigation (if not undertaken already) if required to clarify the risk and to determine the potential liability. Some remedial work may be required in the longer term.</p>			
Moderate risk	<p>It's possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that harm would be relatively mild.</p>			
Moderate/Low risk	<p>It is possible that harm could arise to a designated receptor from an identified hazard. However, if any harm were to occur it is more likely that harm would be relatively mild.</p>			
Low Risk	<p>It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.</p>			
Very Low Risk	<p>There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is unlikely to be severe.</p>			

## **Appendix E. Determination of contaminated land – Contaminated Land Statutory Guidance, April 2012**

### **Human Health**

<b>Category</b>	
<b>1</b>	<p>The local authority should assume that a significant possibility of significant harm exists in any case where it considers there is an unacceptably high probability, supported by robust science-based evidence that significant harm would occur if no action is taken to stop it. For the purposes of this Guidance, these are referred to as “Category 1: Human Health” cases.</p> <p>Land should be deemed to be a Category 1: Human Health case where:</p> <ul style="list-style-type: none"> <li>(a) The authority is aware that similar land or situations are known, or are strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere; or</li> <li>(b) The authority is aware that similar degrees of exposure (via any medium) to the contaminant(s) in question are known, or strongly suspected on the basis of robust evidence, to have caused such harm before in the United Kingdom or elsewhere;</li> <li>(c) The authority considers that significant harm may already have been caused by contaminants in, on or under the land, and that there is an unacceptable risk that it might continue or occur again if no action is taken. Among other things, the authority may decide to determine the land on these grounds if it considers that it is likely that significant harm is being caused, but it considers either: (i) that there is insufficient evidence to be sure of meeting the “balance of probability” test for demonstrating that significant harm is being caused; or (ii) that the time needed to demonstrate such a level of probability would cause unreasonable delay, cost, or disruption and stress to affected people particularly in cases involving residential properties.</li> </ul>
<b>2</b>	<p>Land should be placed into Category 2 if the authority concludes, on the basis that there is a strong case for considering that the risks from the land are of sufficient concern, that the land poses a significant possibility of significant harm, with all that this might involve and having regard to Section 1. Category 2 may include land where there is little or no direct evidence that similar land, situations or levels of exposure have caused harm before, but nonetheless the authority considers on the basis of the available evidence, including expert opinion, that there is a strong case for taking action under Part 2A on a precautionary basis.</p>
<b>3</b>	<p>Land should be placed into Category 3 if the authority concludes that the strong case described in 4.25(a) does not exist, and therefore the legal test for significant possibility of significant harm is not met. Category 3 may include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted. This recognises that placing land in Category 3 would not stop others, such as the owner or occupier of the land, from taking action to reduce risks outside of the Part 2A regime if they choose. The authority should consider making available the results of its inspection and risk assessment to the owners/occupiers of Category 3 land.</p>

## Category

- 4** The local authority should consider that the following types of land should be placed into Category 4: Human Health:
- (a) Land where no relevant contaminant linkage has been established.
  - (b) Land where there are only normal levels of contaminants in soil, as explained in Section 3 of this Guidance.
  - (c) Land that has been excluded from the need for further inspection and assessment because contaminant levels do not exceed relevant generic assessment criteria in accordance with Section 3 of this Guidance, or relevant technical tools or advice that may be developed in accordance with paragraph 3.30 of this Guidance.
  - (d) Land where estimated levels of exposure to contaminants in soil are likely to form only a small proportion of what a receptor might be exposed to anyway through other sources of environmental exposure (e.g. in relation to average estimated national levels of exposure to substances commonly found in the environment, to which receptors are likely to be exposed in the normal course of their lives).

## Ecological system effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
<p>Any ecological system, or living organism forming part of such a system, within a location which is:</p> <ul style="list-style-type: none"> <li>• A site of special scientific interest (under section 28 of the Wildlife and Countryside Act 1981)</li> <li>• A national nature reserve (under s.35 of the 1981 Act)</li> <li>• A marine nature reserve (under s.36 of the 1981 Act)</li> <li>• An area of special protection for birds (under s.3 of the 1981 Act)</li> <li>• A "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010</li> <li>• 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</li> <li>• Any nature reserve established under section 21 of the National Parks and Access to the Countryside Act 1949.</li> </ul>	<p>The following types of harm should be considered to be significant harm:</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Harm which significantly 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.</li> </ul> <p>In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010.</p>	<p>Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological receptor where the local authority considers that:</p> <ul style="list-style-type: none"> <li>• Significant harm of that description is more likely than not to result from the contaminant linkage in question; or</li> <li>• 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.</li> </ul> <p>Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.</p>

## Property effects

Relevant types of receptor	Significant harm	Significant possibility of significant harm
<p>Property in the form of:</p> <ul style="list-style-type: none"> <li>• Crops, including timber;</li> <li>• Produce grown domestically, or on allotments, for consumption;</li> <li>• Livestock;</li> <li>• Other owned or domesticated animals;</li> <li>• Wild animals which are the subject of shooting or fishing rights.</li> </ul>	<p>For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage.</p> <p>The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a contaminant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss.</p> <p>In this section, this description of significant harm is referred to as an “animal or crop effect”.</p>	<p>Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.</p>
<p>Property in the form of buildings. For this purpose, “building” means any structure or erection, and any part of a building including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.</p>	<p>Structural failure, substantial damage or substantial interference with any right of occupation. 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.</p> <p>In the case of a scheduled Ancient Monument, substantial damage should also be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled.</p> <p>In this Section, this description of significant harm is referred to as a “building effect”.</p>	<p>Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant 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 contaminant linkage.</p>



## Controlled waters

### Significant pollution of controlled waters

The following types of pollution should be considered to constitute significant pollution of controlled waters:

- (a) Pollution equivalent to “environmental damage” to surface water or groundwater as defined by The Environmental Damage (Prevention and Remediation) Regulations 2009, but which cannot be dealt with under those Regulations.
- (b) Inputs resulting in deterioration of the quality of water abstracted, or intended to be used in the future, for human consumption such that additional treatment would be required to enable that use.
- (c) A breach of a statutory surface water Environment Quality Standard, either directly or via a groundwater pathway.
- (d) Input of a substance into groundwater resulting in a significant and sustained upward trend in concentration of contaminants (as defined in Article 2(3) of the Groundwater Daughter Directive (2006/118/EC)5 ).

### Significant possibility of significant pollution of controlled waters

#### Category

<b>1</b>	This covers land where the authority considers that there is a strong and compelling case for considering that a significant possibility of significant pollution of controlled waters exists. In particular this would include cases where there is robust science-based evidence for considering that it is likely that high impact pollution (such as the pollution described in paragraph 4.38) would occur if nothing were done to stop it.
<b>2</b>	This covers land where: (i) the authority considers that the strength of evidence to put the land into Category 1 does not exist; but (ii) nonetheless, on the basis of the available scientific evidence and expert opinion, the authority considers that the risks posed by the land are of sufficient concern that the land should be considered to pose a significant possibility of significant pollution of controlled waters on a precautionary basis, with all that this might involve (e.g. likely remediation requirements, and the benefits, costs and other impacts of regulatory intervention). Among other things, this category might include land where there is a relatively low likelihood that the most serious types of significant pollution might occur
<b>3</b>	This covers land where the authority concludes that the risks are such that (whilst the authority and others might prefer they did not exist) the tests set out in Categories 1 and 2 above are not met, and therefore regulatory intervention under Part 2A is not warranted. This category should include land where the authority considers that it is very unlikely that serious pollution would occur; or where there is a low likelihood that less serious types of significant pollution might occur.
<b>4</b>	This covers land where the authority concludes that there is no risk, or that the level of risk posed is low. In particular, the authority should consider that this is the case where: <ul style="list-style-type: none"> <li>(a) No contaminant linkage has been established in which controlled waters are the receptor in the linkage; or</li> <li>(b) The possibility only relates to types of pollution described in paragraph 4.40 above (i.e. types of pollution that should not be considered to be significant pollution); or</li> <li>(c) The possibility of water pollution similar to that which might be caused by “background” contamination as explained in Section 3.</li> </ul>