

**Oak Haven Avenue,
Great Houghton**

Desk Study Report

Morgan Ashurst

Solmek Report Number S80819

September 2008

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Oak Haven Avenue, Great Houghton

Desk Study Report

Contract Number: S80819
Date: September 2008

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Oak Haven Avenue, Great Houghton

Desk Study Report

1 INTRODUCTION AND SCOPE OF WORKS

- 1.1 Solmek were instructed by Morgan Ashurst to undertake a desk study on land off Oak Haven Avenue.
- 1.2 The following steps may be required in the investigation and remediation of potentially contaminated land:
- Phase 1: Desk Study
 - Phase 2: Intrusive Investigation
 - Phase 3: Remediation Statement
 - Phase 4: Validation Reports
- 1.3 Phases 1 and 2 are generally required in the redevelopment of most sites. Phases 3 and 4 are subject to the findings of the initial stages. This report represents Phase 1 of the site investigation.
- 1.4 The purpose of this desk study is to evaluate the ground conditions of the site based on existing information and to plan the scope of the subsequent investigation. The objectives and planned outcomes of the desk study are:
- to assess the impact of local authority guidance on the investigation
 - to identify existing features on and near the site
 - to evaluate the historical and environmental setting of the site
 - to assess the likelihood of finding contamination, its nature and extent
 - to identify associated key contaminants
 - to identify sensitive receptors and define source – pathway – receptor relationships (conceptual model)
 - to identify relevant geotechnical parameters
 - to assess the risk from potential shallow mineworkings
 - to assess any potential sources of ground gas
 - to refine the design and scope of the proposed intrusive investigation (if necessary)
 - to identify constraints to the investigation, i.e. site access and health and safety considerations
- 1.5 This assessment has been undertaken with due regard to contaminated land guidance, issued by the Royal Institution of Chartered Surveyors (RICS) and BS 10175: 2001, "Code of Practice for the Investigation of Potentially Contaminated Land". Selected elements of BS 5930: 1999, "Code of Practice for Site Investigations" has also been included.

2 REGULATORY AND PLANNING CONTEXT

- 2.1 The Town and Country Planning Regime is the principal means by which contamination is dealt with by the Local Authority. Contaminated land is a material planning consideration and contamination assessments are required on land that may be potentially contaminated.
- 2.2 The Buildings Regulations (2000) also state that "precautions shall be taken to avoid danger to health and safety caused by substances found on or in the ground covered by the building". A site investigation is frequently required to satisfy the requirements of building control.

3 SITE DESCRIPTION

- 3.1 The site walkover, as recommended in BS 5930 and BS 10175, was undertaken on Tuesday 2nd September 2008. The surveyed area is located to the east of Oak Haven Avenue, within the centre of Great Houghton Village, South Yorkshire. The site is centred upon OS Coordinates 443180E, 406420N and covers an area of approximately 0.11ha. Selected plates are included as Figure 3 in Appendix 1.
- 3.2 At the time of the walkover the site comprised an active clinic consisting of wooden clad single storey unit (Plate 1). The building is located in the western half of the site with a small tarmac parking area and public access to the front (west) and a grassed area to the rear (east).
- 3.3 A metal paling fence surrounds the clinic and leads to a concrete wall which forms the northern boundary. Oak Haven Avenue lies to the west with bungalows beyond. The southern boundary is a back alleyway from terraced housing along Cross Street located further to the south. An area of rough grass and a number of immature trees (assumed to be ash) lie to the south of the metal paling fence. A hedgerow lies beyond the metal fence in the east of the site, an area of undeveloped open grassed public space lies to the east of the site. The land to the north of the site is a Texaco fuel filling station (Plate 2). The ground level of the filling station appears to be 0.5 to 1.0m below that of the clinic. The fuel tanks appear to be located near to the northern boundary and vapour vents are located along the northern boundary wall. Other land use to the north of the site consists of a pharmacy and an electrical outlet located along High Street.
- 3.4 Access to the site is from Oak Haven Avenue.
- 3.5 No obvious signs of contamination were recorded during the investigation.

4 SITE HISTORY

- 4.1 In order to determine the history of the site, previous editions of Historical Maps and Ordnance Survey Plans were inspected. Selected map extracts are presented in Appendix 2.
- 4.2 Table 1 presents a summary of the history of the site from 1854 to 2008. The summary focuses on the historical land uses and changes relevant to the site and the proposed end use. Measurements are taken from the centre of the site and all distances quoted are approximate.

OS MAP	SCALE	ON SITE FEATURES	OFF SITE FEATURES
1854	1:10,560	The site is an undeveloped piece of land.	To the north lies Great Houghton. The site is surrounded by undeveloped agricultural land. A spring is shown 250m to the west.
1892	1:2,500	No changes.	Sand Hill can be seen 200m to the south.
1906	1:2,500	No change.	Sand Hill to the south has seen further residential development. A railway line is now shown approximately 300m south of site and runs east-west.
1930	1:2,500	No changes.	The immediate surrounding land has seen some residential development. Cross Street is a row of terraced housing shown immediately south of site. An area of semi detached housing is shown 100m to the north of site.
1938-1948	1:10,560	No apparent changes.	The site is now surrounded by

			residential housing to the northwest and southwest. To the immediate east is an area of undeveloped land with residential housing beyond. A sewage works is shown approximately 900m southeast of the site.
1955	1:10,560	No apparent changes.	No significant changes.
1962	1:2,500	No apparent changes.	A police station can be seen to the immediate east of site.
1967	1:10,560	No apparent changes.	No significant changes.
1977-1979	1:2,500	A clinic is now shown on site.	A small structure appears centrally on the plot of land immediately to the north.
1983	1:10,000	No apparent changes.	The railway line to the south is now shown as dismantled.
1985	1:2,500	No changes.	No significant changes.
1989	1:10,000	No apparent changes.	No significant changes.
1993	1:2,500	No changes.	No significant changes.
2000	1:10,000	No apparent changes.	A golf course is shown 250m southwest of site.
2008	1:10,000	No apparent changes.	No significant changes.

TABLE 1: SUMMARY OF THE SITE HISTORY

- 4.3 The site has seen little changes over the extent of the historical maps. A structure was first seen on site on the 1977-1979 map edition. This structure remained through the subsequent coverage of the historical maps.
- 4.4 The surrounding land has seen some development. Initially consisting mostly of open agricultural land the surrounding land has seen some residential development within Great Houghton and Sandhill to the south. The fuel filling station to the north appears to have been constructed in the late 1970's/early 1980's. There was a railway line present in the area approximately 300m to the south from the 1906-1907 OS map until the 1983 map edition. A sewage works was also seen approximately 900m to the east of site that remained through the coverage of the historical maps.

5 ENVIRONMENTAL CONTEXT

- 5.1 The services of Envirocheck were used to establish the pertinent environmental records relating to the site. This information, which is presented in Appendix 3, replaces much of the information traditionally provided by the Environment Agency. Selected relevant information is summarised as follows. Measurements are taken from the centre of the site and all distances quoted are approximate.

Landfill and Waste

- 5.2 There are no entries dealing with waste listed within the Envirocheck Report.

Regulated Industries

- 5.3 No entries are listed in the Envirocheck Report for Control of Major Accident Hazards Sites (COMAH), Notification of Installations Handling Hazardous Substances (NIHHS), Planning Hazardous Substance Consent, Integrated Pollution Control, Prosecutions Relating to Authorised Processes, Registered Radioactive Substance, or Local Authority Integrated Pollution Prevention and Control.
- 5.4 A Local Authority Pollution Prevention and Control listing is shown 17m northeast. The listing is for a petrol filling station named Great Houghton Service Station.

Air

- 5.5 There are no listings under Local Authority Prevention and Controls specifically for Air Pollution Control.
Industrial Land Use
- 5.6 The Envirocheck Report identifies current industrial land use named as contemporary trade directory entries. The closest active listing is located 80m east of site and is a petrol filling station under the name Great Houghton Service station. For full listing see the Envirocheck Report presented in Appendix 3.
- 5.7 One entry is shown under the heading of fuel stations within the Envirocheck Report. This located 661m south and is named as Great Houghton Service Station. (This distance and direction does not refer to the filling station just to the north).
Environmentally Sensitive Areas
- 5.8 An Area of Adopted Greenbelt is shown 64m southwest of site under the authority of Bradford Metropolitan Borough Council.
- 5.9 The site lies within a Nitrate Vulnerable Zone for surface water.
- 5.10 No sites are listed under the headings Sites of Special Scientific Interest (S.S.S.I), Local Nature Reserves or Ramsar Sites or any other Environmentally Sensitive areas other than those listed above.

6 GEOLOGY, GROUNDWATER & SURFACE WATER

Geology

- 6.1 Inspection of British Geological Survey Sheet 87 (1:50,000 Series: Solid and Drift Edition) was undertaken. No drift is shown in this area on the geological sheet. The solid geology is shown as the Dalton or Brierley Rock within the Middle Coal Measures of Upper Carboniferous Age. Two inferred faults are shown to the north of site both running parallel in a northwest-southeast orientation. Both show their downthrow on the northern side.

Geological Hazards

- 6.2 The Envirocheck Report states that no risks are posed by ground dissolution ground stability, collapsible, compressible, running sand or shrinking/swelling ground stability hazards. Very low risk is listed for landslide ground stability hazards. For full details see the Envirocheck Report (Appendix 3).
- 6.3 The Envirocheck Report states that a low-moderate risk is posed due to shallow mining hazards.

Radon Risk

- 6.4 The Envirocheck Report states that the site is not within a Radon affected area as less than 1% of homes are above the action level. Therefore no radon protective measures are necessary in the construction of new dwellings or extensions.

Mining Situation

- 6.5 The Envirocheck Report states that the site is in an area that may be affected by coal mining. A Mining Report was sourced and is presented in Appendix 4. The Report, dated 29 August 2008, states that there are eight known worked coal seams beneath the site. The shallowest of these was at a depth of 139m and has a section of 213cm. The last date of working is shown as 1918. The report states that there are no shafts or adits within 20m of

the property and no tips or lagoons within the vicinity. The investigation has shown no evidence of coal mining related subsidence claims in relation to the property in the past 10 years. The report states that old workings are present but all settlement is likely to have completed long ago.

Ground and Surface Water

- 6.6 The Environment Agency classifies the underlying solid geology beneath the site as a Minor Aquifer. These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers.
- 6.7 The Envirocheck Report classifies the soils in the area as having a High Leaching Potential (H3). These are coarse textured or moderately shallow soils that readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large organic matter contents.
- 6.8 The site is not located with a Source Protection Zone.
- 6.9 The nearest surface water feature is shown 235m southwest of site.
- 6.10 A number of Discharge Consents are listed in the Envirocheck Report. The nearest active consent is located 944m east. The operator is Yorkshire Water Services Ltd for sewage discharges into Thurnscoe Dyke.
- 6.11 The nearest water abstraction licence is shown 1411m west of site. The operator is British Coal and the licence has been revoked.
- 6.12 A Pollution Incident to Controlled Waters is shown 295m east. The incident occurred in 1997, and caused a Category 3-Minor Incident. The pollutant is shown as surcharged sewage.
- 6.13 One entry is included under the Substantiated Pollution Incident Register. This is located 385m east of site. This incident occurred in April 2002 and resulted in a Category 4 (No Impact) incident with respect to Air, a Category 3 (Minor Incident) impact with respect to Land and a Category 2 (Significant Incident) with regards Water impact. The pollutant is shown as crude sewage.

Flooding

- 6.14 There are no records of flooding or extreme flooding events from rivers or seas without defences shown on or near to site.
- 6.15 There are no flood water storage areas or flood defences present in the area nor is the site within an area benefiting from flood defences.

7 PRELIMINARY GEOTECHNICAL ASSESSMENT

Relict Foundations and Made Ground

- 7.1 Given the site history, shallow made ground is expected. The site currently houses a single structure named as a clinic. From the Historical Maps, Envirocheck Report and Mining Report, it is known this is the only development to have existed on site. Therefore, made ground is likely to comprise demolition/construction waste from the structure on site and from the developments in the surrounding areas. Foundations and active service are expected to be present on site. If the Police station to the immediate east of site has a basement or cellar present there may also be reworked natural soils and sub-soils within the made ground

from the excavation. A Phase 2 investigation would determine the type and extent of made ground.

Excavations and Groundwater

- 7.2 The site is underlain by the Dalton or Brierley Rock within the Middle Coal Measures of Upper Carboniferous Age. Drift deposits are not depicted on the relevant geological sheet. It is considered likely that excavations above rock head should be easily achievable by means of a normal excavator.
- 7.3 There is no evidence that ground-water will be encountered at shallow depths; however ground water levels vary with season and rainfall influences.

Mining

- 7.4 The Mining Report states that there are eight known worked coal seams beneath the site. The shallowest of these was at a depth of 139m and has a section of 213cm. The last date of working is shown as 1918. The report states that there are no shafts or adits within 20m of the property and no tips or lagoons within the vicinity. The investigation has shown no evidence of coal mining related subsidence claims in relation to the property in the past 10 years. The report states that old workings are present but all settlement is likely to have completed long ago.

8 PRELIMINARY CONTAMINATION ASSESSMENT

- 8.1 The desk study has revealed that the site has **potentially** been exposed to contamination given the sites history. There is a possibility of contamination from construction wastes from the development on site and those in the surrounding areas. Due to the age of some of the development asbestos may have been used in their construction.
- 8.2 The proposed development of the site is expected to comprise the construction of a Primary Health Care Centre with related access roads, car parking and minimal ornamental soft landscaping.
- 8.3 It is recommended that a general screen of contaminants should be tested for during a site investigation along with asbestos to confirm whether there is any contamination that may affect human health. The testing should be based on guidance in CLR Report 8 "*Potential Contaminants for the assessment of Land*". This includes:
- **a range of metals** - produced by a variety of industrial processes, and typically found in made ground
 - **acidity/alkalinity** – acid or alkaline wastes are produced by quarries as well as other industries
 - **Arsenic and sulphates** – elevated levels typically from made ground sources, however also can be naturally occurring.
 - **Organics** – TPH and PAH found typically from previous roads, but also from railway lines, sidings and spillages from goods sheds.
 - **Asbestos** – frequently found in demolition rubble, older buildings and sheet roofing

Potential Hazards from Ground Gases

- 8.4 Ground gases such as carbon dioxide and methane can be classed as a form of contamination. There is a fuel filling station directly north of the site. Potential sources of ground gases include:
- Made Ground
 - Infilled Ponds

- Underlying Natural Strata (alluvium, peat and chalk)
- Petrol re-fuelling sites (which also includes Volatile Organic Compounds)
- Landfill (on and off-site)
- Coal measures

8.5 Based on historical map evidence and consideration of the sites environmental setting, a preliminary comparison of *consequence* against *probability* has been made where ground gas is considered a potential threat to human health.

PRELIMINARY GROUND GAS ASSESSMENT		
Potential Sources	Potential Pathway	Receptor
Coal Measures (CO ₂ , CO and CH ₄)	Ingress and Accumulation into buildings from vertical and horizontal migration	Future end users – infant, children, adults and the elderly are all potential receptors some of whom may be in ill health or a fragile state and so more susceptible to harm.
Alluvium deposits (CH ₄ and CO ₂)		
Landfill Site (CO ₂ and CH ₄)	Ingress and Accumulation into buildings from vertical and horizontal migration	Construction Workers (in particular utility workers).
Made Ground (CO ₂ and CH ₄)	Ingress and Accumulation into buildings from vertical and horizontal migration	
Petrol Refilling Station (CH ₄ and VOC)	Inhalation of vapours	
Preliminary Comparison of Consequence versus Probability		
	Classification	Justification
Probability <i>(Based on Table 8.1, CIRIA C665, 2007)</i>	LOW LIKELIHOOD	No facilities dealing with waste within 1km of site. The mining report states that there are eight known worked seam beneath the site. Fuel filling station to the site immediately to the north.
Consequence <i>(Based on Table 8.2, CIRIA C665, 2007)</i>	MEDIUM	The site is to be used for the development of a Primary Health Care Centre.
	Risk	Details
Consequence vs. Probability <i>(Based on Table 8.3, CIRIA C665, 2007)</i>	MODERATE RISK	Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term. <i>(Based on Table 8.4, CIRIA C665, 2007)</i>
TABLE 2: POLLUTION LINKAGES - GROUND GAS		

8.6 Given the pollution linkages outlined above, it would be prudent to carry out full intrusive works to justify the above risk assumption; this would give the site a risk classification based on the recommendations given in CIRIA Report C665. See Section 9 (below) for recommendations on intrusive works.

9 PHASE TWO – INTRUSIVE INVESTIGATION WORK

9.1 Based on the information collated in this desk study a Phase Two intrusive investigation is recommended. The investigation should comprise a series of boreholes in the footprint of proposed structures. Boreholes may need to be extended if poor ground conditions are encountered. Trial pits may be prudent to provide design information for proposed areas of hardstanding such as access roads and car parking.

- 9.2 Due to the possible presence of fill materials beneath the site and the presence of the fuel filling station to the north, gas/groundwater monitoring pipes should be installed in selected boreholes (in accordance with C665) to access the shallow ground gas and water levels beneath the site. At least three gas monitoring visits should be made initially; if high or variable concentrations of ground gases are recorded, an extended period of monitoring may be necessary-in accordance with CIRIA C665.
- 9.3 The Mining Report states that there are eight known worked coal seams beneath the site. The shallowest of these was at a depth of 139m and has a section of 213cm. The last date of working is shown as 1918. The report states that there are no shafts or adits within 20m of the property and no tips or lagoons within the vicinity. The investigation has shown no evidence of coal mining related subsidence claims in relation to the property in the past 10 years. The report states that old workings are present but all settlement is likely to have completed long ago.
- 9.4 Samples from the boreholes should be subject to a series of both geotechnical and chemical contamination analysis. Testing requirements may vary depending on the thickness of the made ground encountered, the nature of the natural soils and the depth to rock head if encountered.
- 9.5 Site investigations are designed according to the type of development, the requirements of the client, and recommendations in BS 5930 and BS 10175.

10 PRELIMINARY CONCEPTUAL MODEL AND RISK ASSESSMENT

- 10.1 The conceptual model (Table 3) collates the salient aspects of the site to form a model which should enable comparison after fieldwork and testing. This model identifies the **potential** pollution linkages that may influence the proposed development and geotechnical considerations. The risk ratings are based on the current potential liabilities and likely potential future liabilities. This should not be used as a guide to the cost of addressing site specific ground issues. The risks posed by the geotechnical and contamination aspects of the site will be revised following site works, and any mitigating action required added.

PRELIMINARY CONTAMINATION ASSESSMENT					
SOURCES	DETAILS	RECEPTORS	PATHWAYS	DETAILS	RISK RATING
Potential contamination in the made ground	Possible sources include: Construction waste from the structures on site and nearby. Asbestos from the current structures on and near to site.	Users of site (once development is complete)	Dermal absorption	The proposed development is expected to include soft landscaping.	LOW-MOD
			Inhalation of soil/volatilised compounds		
			Ingestion of soil		
			Contact with contaminated groundwater		
	Ground gases (from made ground, fuel filling station and coal mining)	Construction workers and users of site during construction	Ground gas from vertical and horizontal migration	Ingress and Accumulation into structure.	MOD (C665)
			Dermal absorption	Contact with made ground and groundwater during ground works	LOW-MOD
			Inhalation of soil/volatilised compounds		
	Users of surrounding sites	Users of surrounding sites	Ingestion of soil	Contact with dust during construction	LOW-MOD
			Contact with contaminated groundwater		
				Dermal absorption	Contact with wind blown dust during construction
Inhalation of soil/volatilised compounds					

		Ingestion of soil		
	Vegetation	Uptake via roots and leaf surfaces	The proposed development is expected to include some soft landscaping.	LOW-MOD
	Groundwater	Slow seepage or leaching of contaminants	Minor Aquifer	MOD
	Surface Water	Slow seepage or leaching of contaminants	The nearest surface water feature is located 235m southwest of site.	LOW
		Accumulation of contaminated sediments		
	Construction Materials	Direct contact	Foundations and structures possible along with active services. Possible construction waste from structures on site.	LOW-MOD

PRELIMINARY GEOTECHNICAL ASSESSMENT

FACTOR	ON SITE DESCRIPTION	RISK RATING
MADE GROUND	Made ground is expected including possible construction wastes, asbestos and excavated/reworked material from the surrounding developments.	LOW
NATURAL SOILS	None depicted on the relevant geological sheet.	LOW
SOLID GEOLOGY	Dalton or Brierley Rock within the Middle Coal Measure of Upper Carboniferous Age.	LOW
MINING	Eight known worked seams beneath the site the shallowest of which is at a depth of 139m and has a section of 213cm.	LOW
GROUND GAS	No radon protection measures required. Ground gas assessment is recommended.	LOW-MOD
SUBSIDENCE /GROUND STABILITY	There is a low-moderate risk of shallow mining hazards.	LOW-MOD

TABLE 3: PRELIMINARY CONCEPTUAL MODEL AND RISK ASSESSMENT**11 CONCLUSIONS & RECOMMENDATIONS**

- 11.1 The results of the desk study are presented in this report and Solmek can comment as follows:

Existing Features on and Near the Site

- 11.2 At the time of the walkover the site comprised an active clinic consisting of wooden clad single storey unit (Plate 1). The building is located in the western half of the site with a small tarmac parking area and public access to the front (west) and a grassed area to the rear (east).
- 11.3 A metal paling fence surrounds the clinic and leads to a concrete wall which forms the northern boundary. Oak Haven Avenue lies to the west with bungalows beyond. The southern boundary is a back alleyway from terraced housing along Cross Street located further to the south. An area of rough grass and a number of immature trees (assumed to be ash) lie to the south of the metal paling fence. A hedgerow lies beyond the metal fence in the east of the site, an area of undeveloped open grassed public space lies to the east of the site. The land to the north of the site is a Texaco fuel filling station (Plate 2). The ground level of the filling station appears to be 0.5 to 1.0m below that of the clinic. The fuel tanks appear to be located near to the northern boundary and vapour vents are located along the northern boundary wall. Other land use to the north of the site consists of a pharmacy and an electrical outlet located along High Street.
- 11.4 Access to the site is from Oak Haven Avenue.

- 11.5 No obvious signs of contamination were recorded during the investigation.

Historical and Environmental Setting

- 11.6 The site has seen little changes over the extent of the historical maps. A structure was first seen on site on the 1977-1979 map edition. This structure remained through the subsequent coverage of the historical maps.
- 11.7 The surrounding land has seen some development. Initially consisting mostly of open agricultural land the surrounding land has seen some residential development within Great Houghton and Sandhill to the south. A fuel filling station first appeared on the 1977-1979 map to the plot of land to the north. There was a railway line present in the area approximately 300m to the south from the 1906-1907 OS map until the 1983 map edition. A sewage works was also seen approximately 900m to the east of site that remained through the coverage of the historical maps.
- 11.8 The solid geology beneath the site should comprise the Dalton or Brierley Rock within the Middle Coal Measure of Upper Carboniferous Age. Drift deposits are not depicted on the relevant geological sheet.
- 11.9 The solid geology beneath the site is designated as a Minor Aquifer with soils of a high leaching potential.
- 11.10 No radon protection measures are required for any new dwellings or extensions.

Flooding

- 11.11 There are no records of flooding or extreme flooding events from rivers or seas without defences shown on or near to site.
- 11.12 There are no flood water storage areas or flood defences present in the area nor is the site within an area benefiting from flood defences.

Impact of Local Authority Guidance

- 11.13 Although the site is unlikely to be considered contaminated with regards to Part IIA of the Environmental Protection Act (1990) and the local authorities contaminated land strategy, the contamination status of the site will be considered as part of the planning process to ensure the site is suitable for use.

Likelihood of Finding Contamination, its Nature and Extent and Key Contaminants

- 11.14 Based on the site walkover, and evidence compiled from the historic maps and Envirocheck Report, potential contamination onsite is expected to consist of construction wastes and possible asbestos from the development on and near to site.

Source – Pathway – Receptor Relationships

- 11.15 Pathways (as detailed in the conceptual model) may exist between the potential contamination in the made ground and human health, vegetation, construction materials and water. The site investigation will provide information to assess these pathways and the risks posed.

Geotechnical Considerations

- 11.16 The proposed development of the site is expected to comprise the construction of a Primary Health Care Centre with related access roads, car parking and minimal ornamental soft landscaping.

Intrusive Investigation

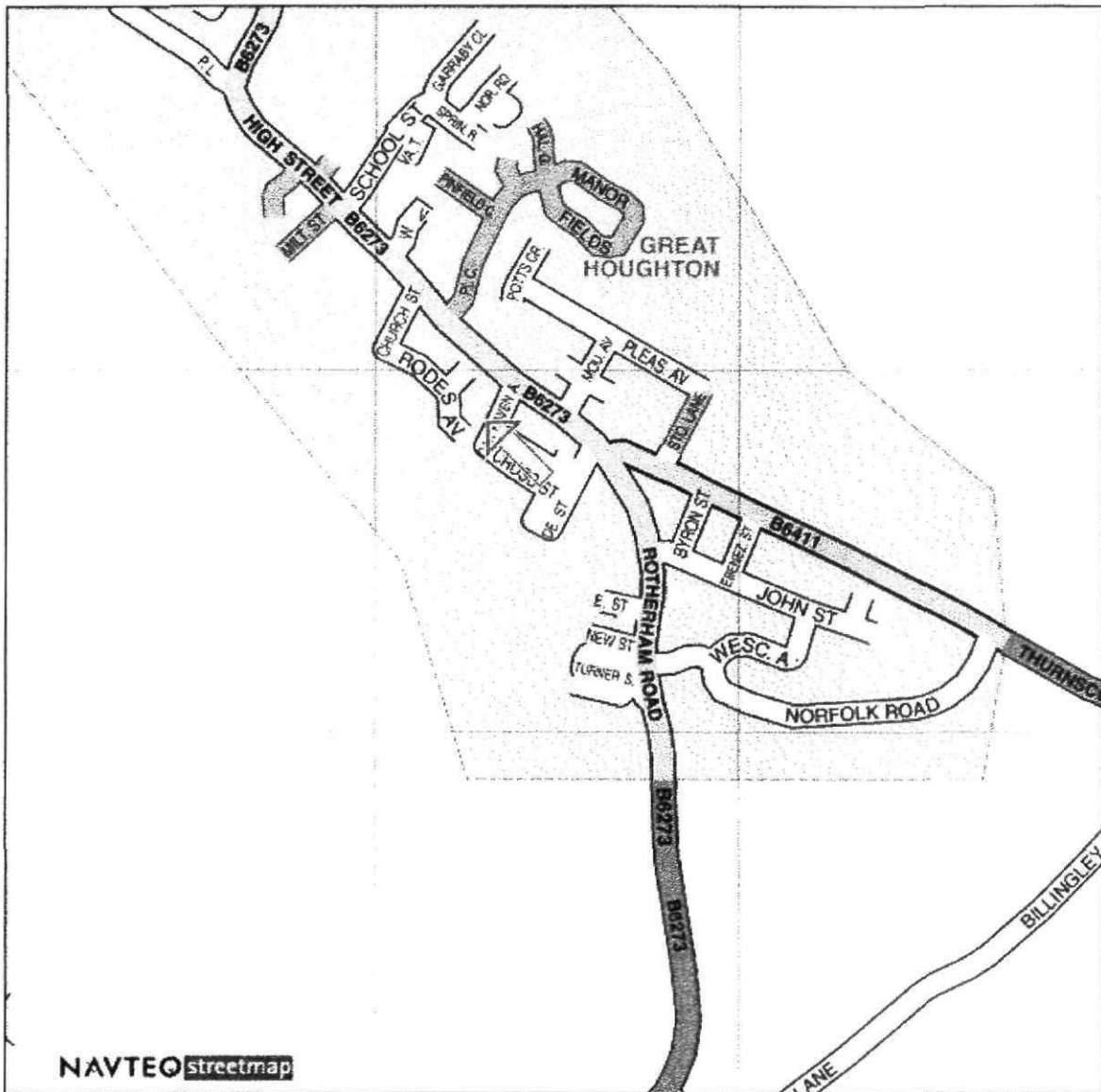
- 11.17 Based on the information collated in this desk study a Phase Two intrusive investigation is recommended. The investigation should comprise a series of boreholes in the footprint of proposed structures. Boreholes may need to be extended if poor ground conditions are encountered. Trial pits may be prudent to provide design information for proposed areas of hardstanding such as access roads and car parking.
- 11.18 Due to the possible presence of fill materials beneath the site and inferred fuel tanks beyond the northern site boundary at the fuel filling station, gas/groundwater monitoring pipes should be installed in minimum of three selected boreholes (in accordance with C665) to access the shallow ground gas and water levels beneath the site. A minimum of three visits should be made initially. However, if high or variable concentrations of ground gases are recorded, an extended period of monitoring maybe necessary.

Mining

- 11.19 The Mining Report states that there are eight known worked coal seams beneath the site. The shallowest of these was at a depth of 139m and has a section of 213cm. The last date of working is shown as 1918. The report states that there are no shafts or adits within 20m of the property and no tips or lagoons within the vicinity. The investigation has shown no evidence of coal mining related subsidence claims in relation to the property in the past 10 years. The report states in section 8 Conclusion that old workings are present but all settlement is likely to have completed long ago.

SOLMEK

**APPENDIX 1:
Figures and Plates**

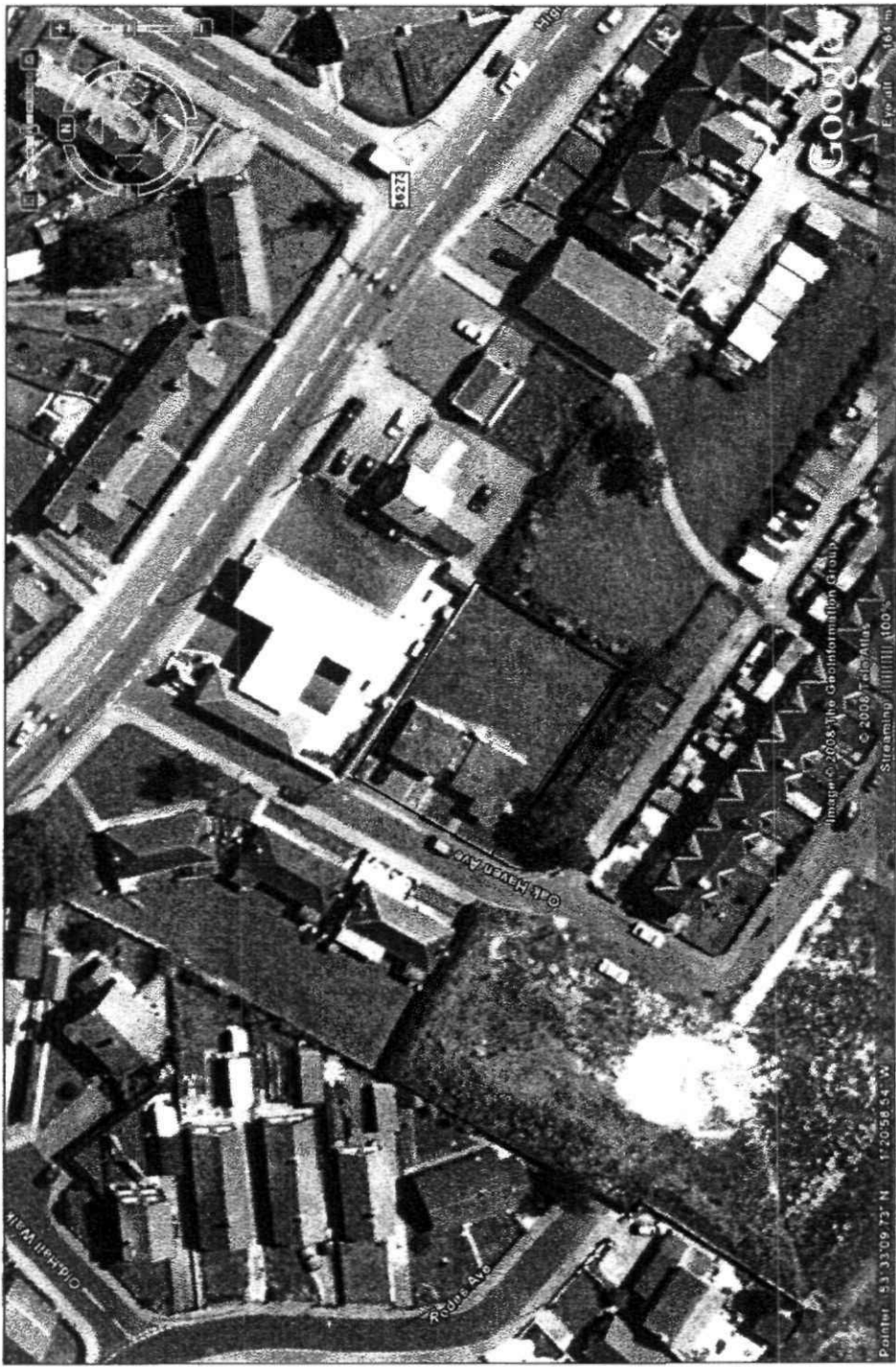


Client:	Morgan Ashurst	
Project:	Oak Haven Avenue	
Title:	Site Location Map	
DRG No:	Figure 1	Scale: NTS
Date	September 2008	



Title	Site Location Plan
Project	Oak Haven Avenue
Client	Morgan Ashurst
Date	September 2008
Fig No	Figure 2
Scale	NTS

Solmek
 12 Yarm Road
 Stockton on Tees
 Cleveland
 TS18 3NA
 Tel: +44 (0) 1642 607 083
 Fax: +44 (0) 1642 612 355
 Email: south@solmek.com
www.solmek.com



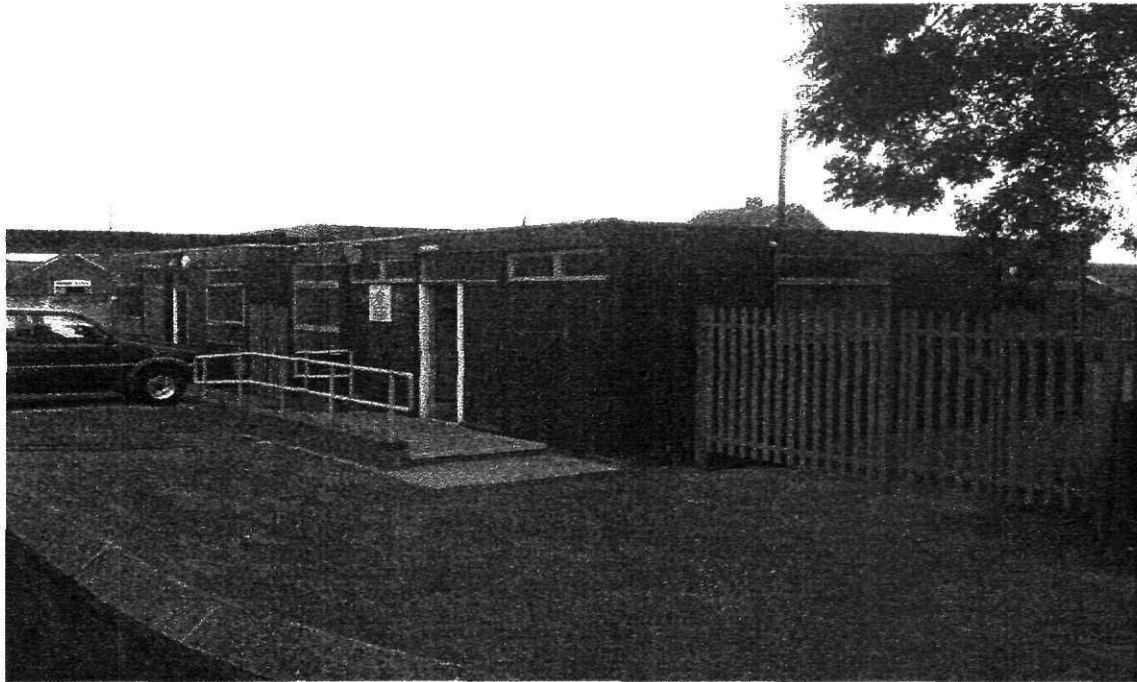


Plate 1: Looking north east across the site

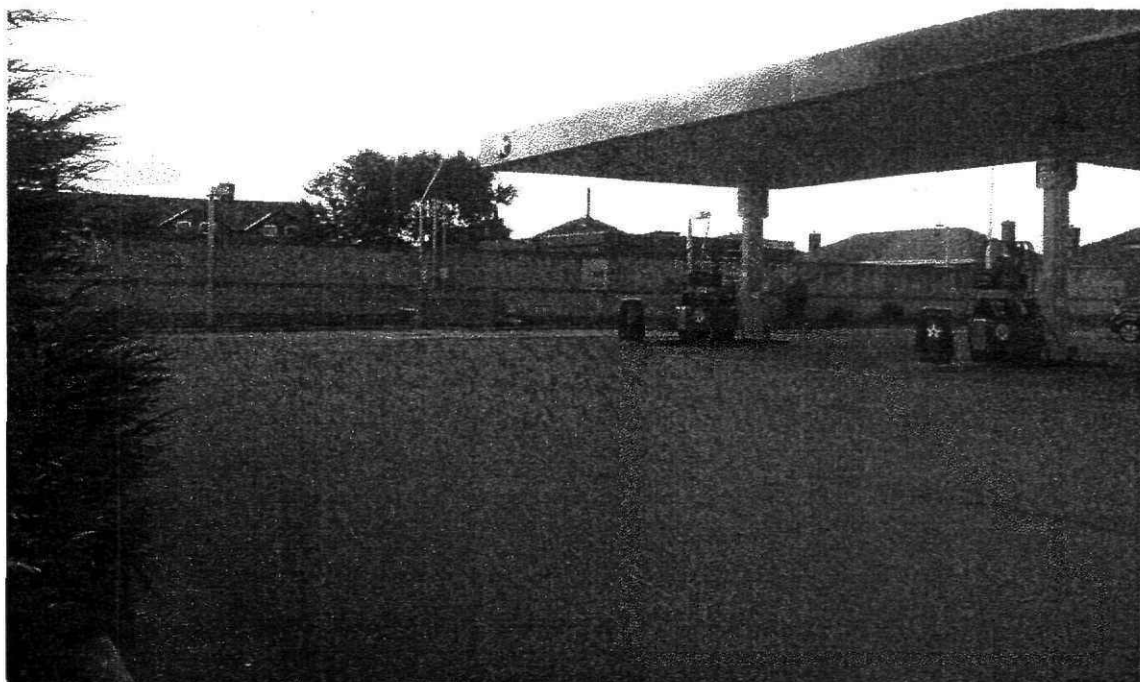


Plate 2: Fuel filling station to the north of the site, showing vapour venting along the far wall

Client:	Morgan Ashurst PLC
Project:	Oak Haven Avenue, Great Houghton, Barnsley
Title:	Plates 1 & 2
DRG No:	Figure 3
Date	September 2008



**APPENDIX 2:
Historical Map Extracts**



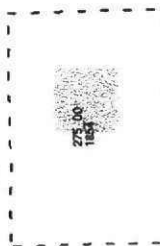
Yorkshire

Published 1854

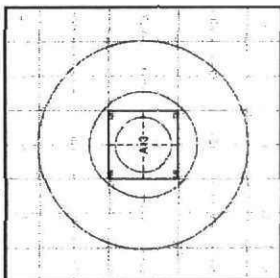
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1930, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties. In 1947, a Provisional Edition was produced, which included a site mapping from a number of sources. The maps appear unaltered - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 26133999_1_1

Customer Ref: S80818

National Grid Reference: 443180, 406420

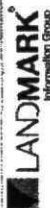
Slice: A

Site Area (Ha): 0.11

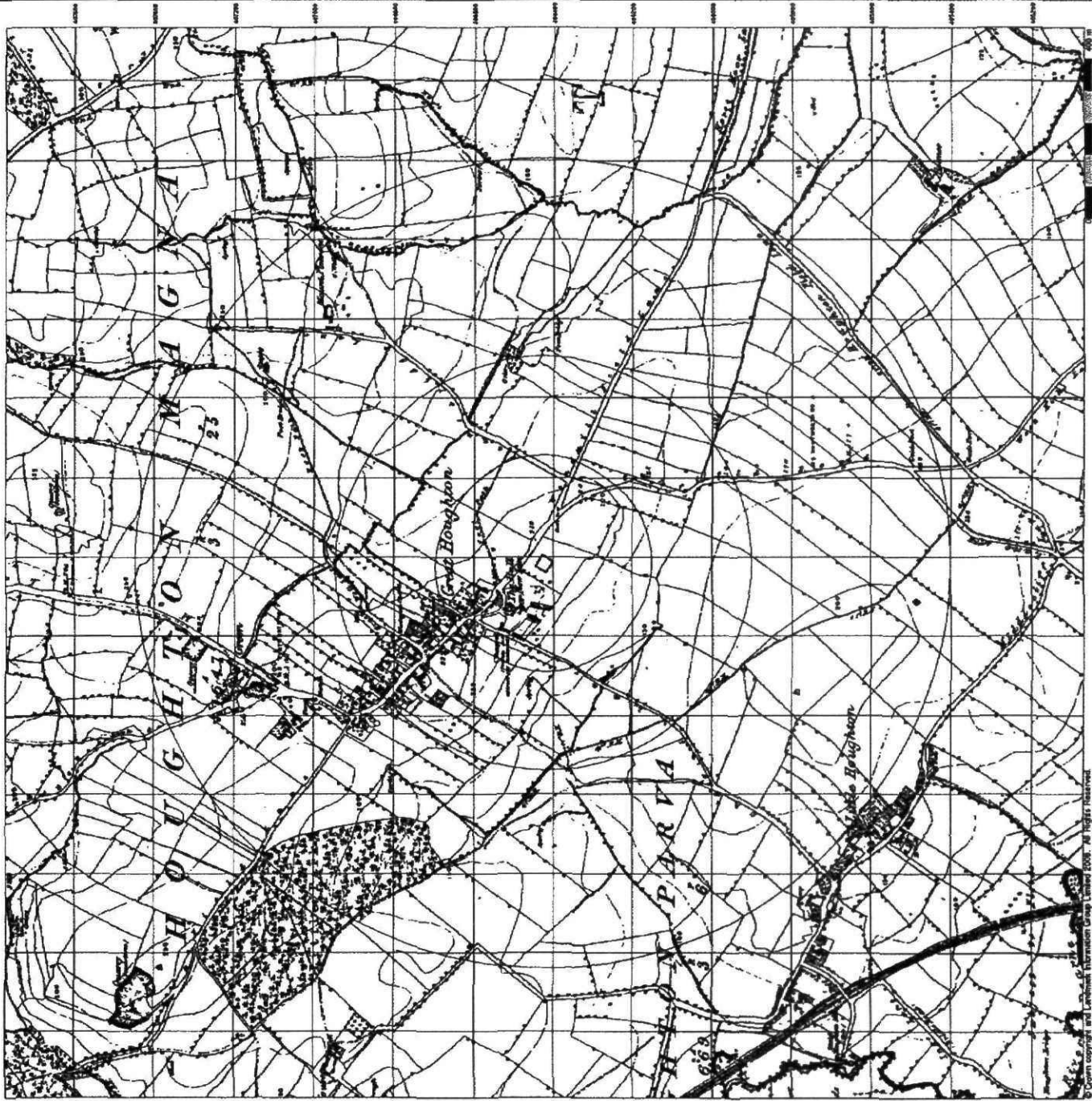
Search Buffer (m): 1000

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton, BARNESLEY, South Yorkshire, S72 0EJ



Tel: 0844 844 9832
0844 844 9831
Web: www.landmark.co.uk





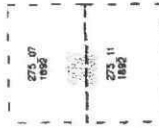
Yorkshire

Published 1892

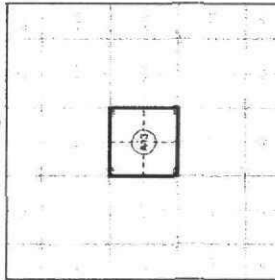
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1898 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 28133899_1.1

Customer Ref: S80818

National Grid Reference: 443180, 406420

Site: A

Site Area (Ha): 0.11

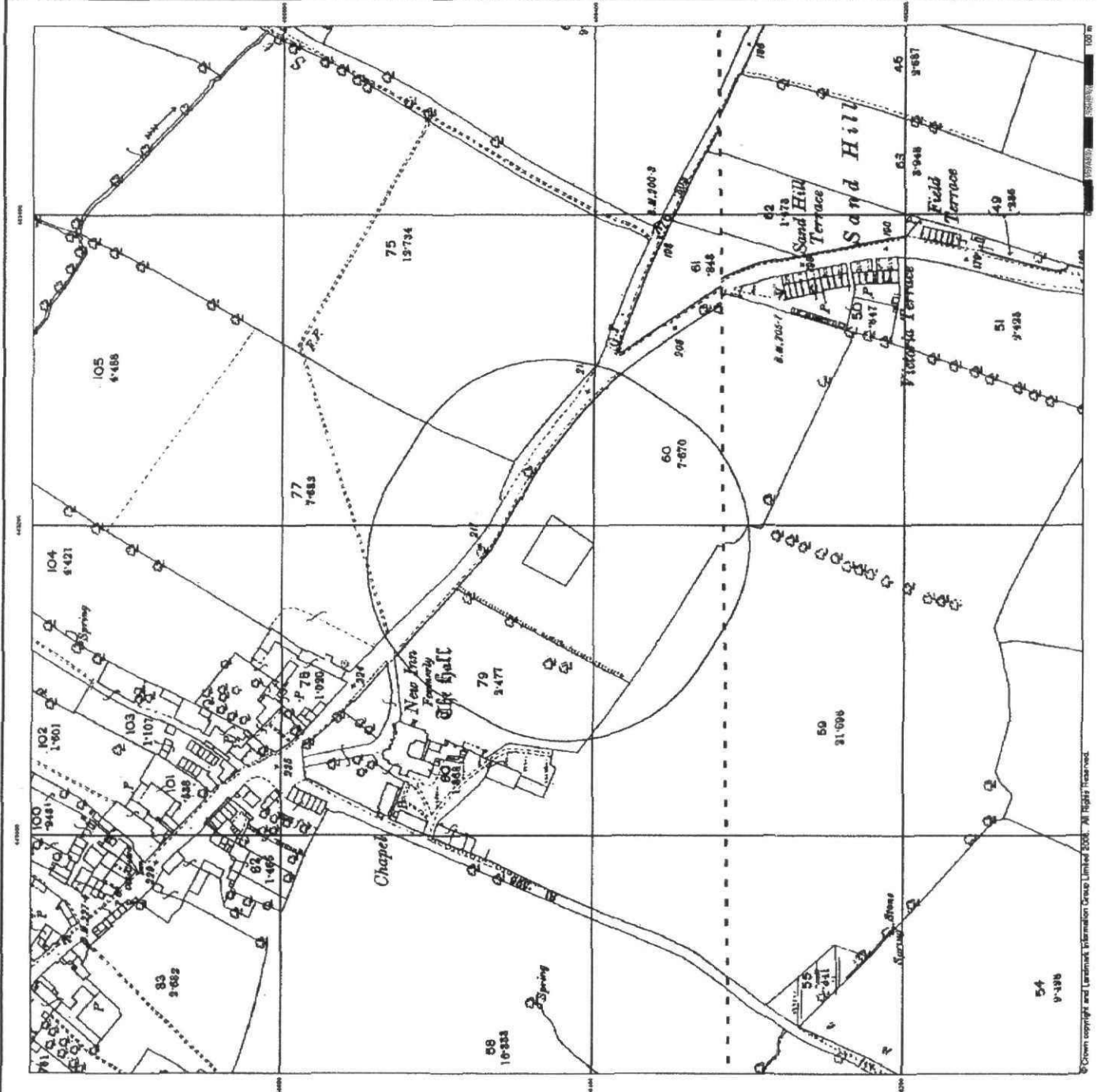
Search Buffer (m): 100

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton, BARNESLEY, South Yorkshire, S72 0EJ



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Fax 0844 844 3951
Web www.landmark.co.uk

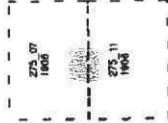




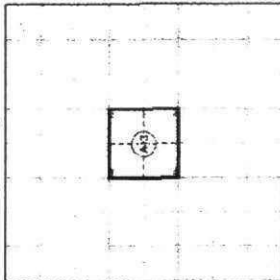
**Yorkshire
Published 1906
Source map scale - 1:2,500**

The historical maps shown were reproduced from maps predominantly held at the Ordnance Survey, Warley and Essex in the 1890s. In 1906 the Ordnance Survey was transferred to the Warley and Essex office. The words of what were considered to be the published parts of Great Britain. The published data given below is often some years later than the surveyed date. Before 1936, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13

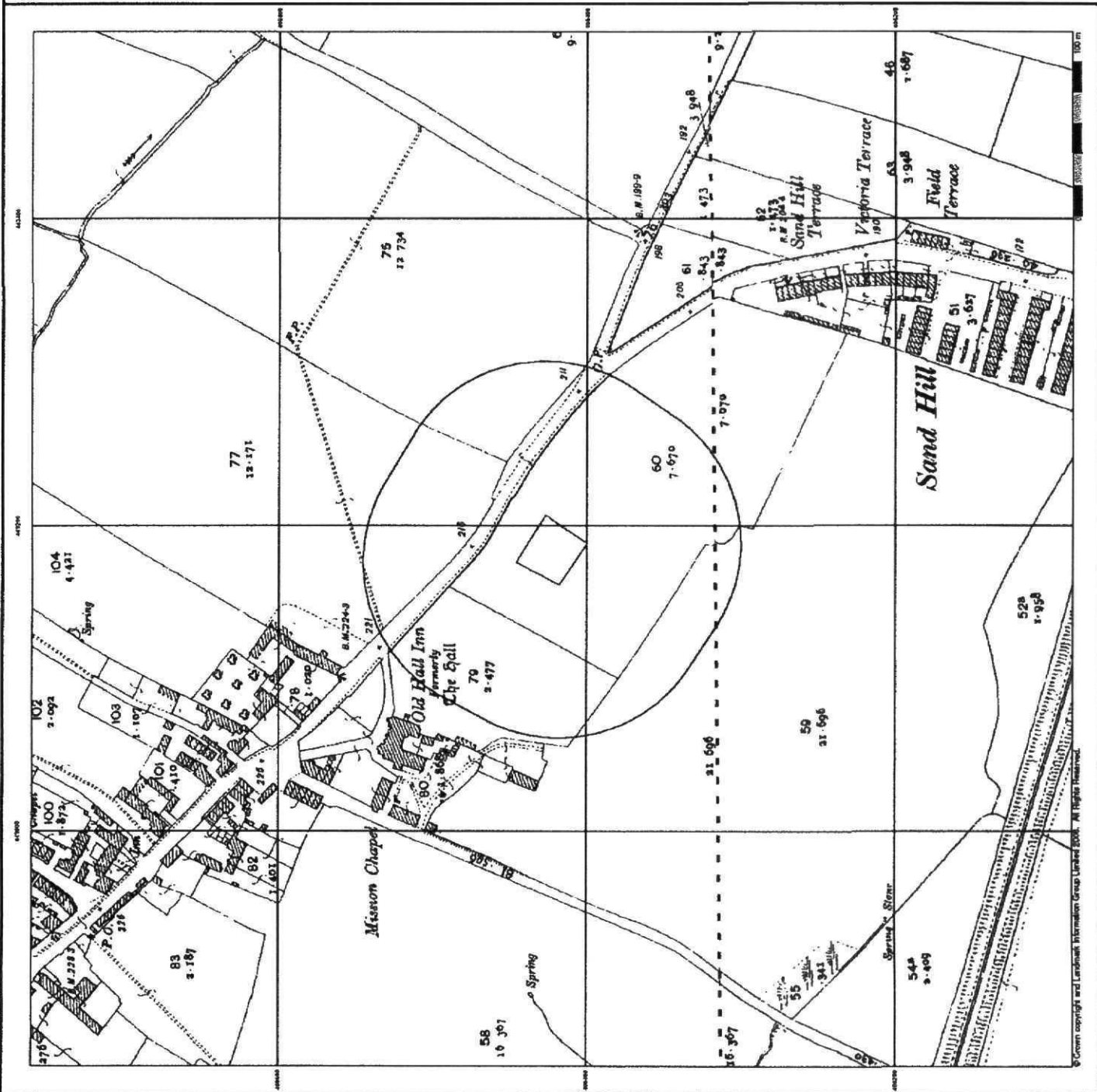


Order Details
 Order Number: 26133988_1_1
 Customer Ref: S90818
 National Grid Reference: 443180, 406420
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 100

Site Details
 Great Houghton Clinic, Oak Haven Avenue, Great Houghton,
 BARNESLEY, South Yorkshire, S72 0EJ



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 Fax: 0844 844 9881
 Web: www.landmark.co.uk





**Yorkshire
Published 1930**

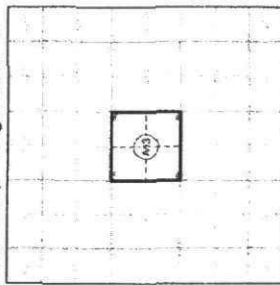
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1888 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

275.07	1880
275.11	1930

Historical Map - Segment A13



Order Details

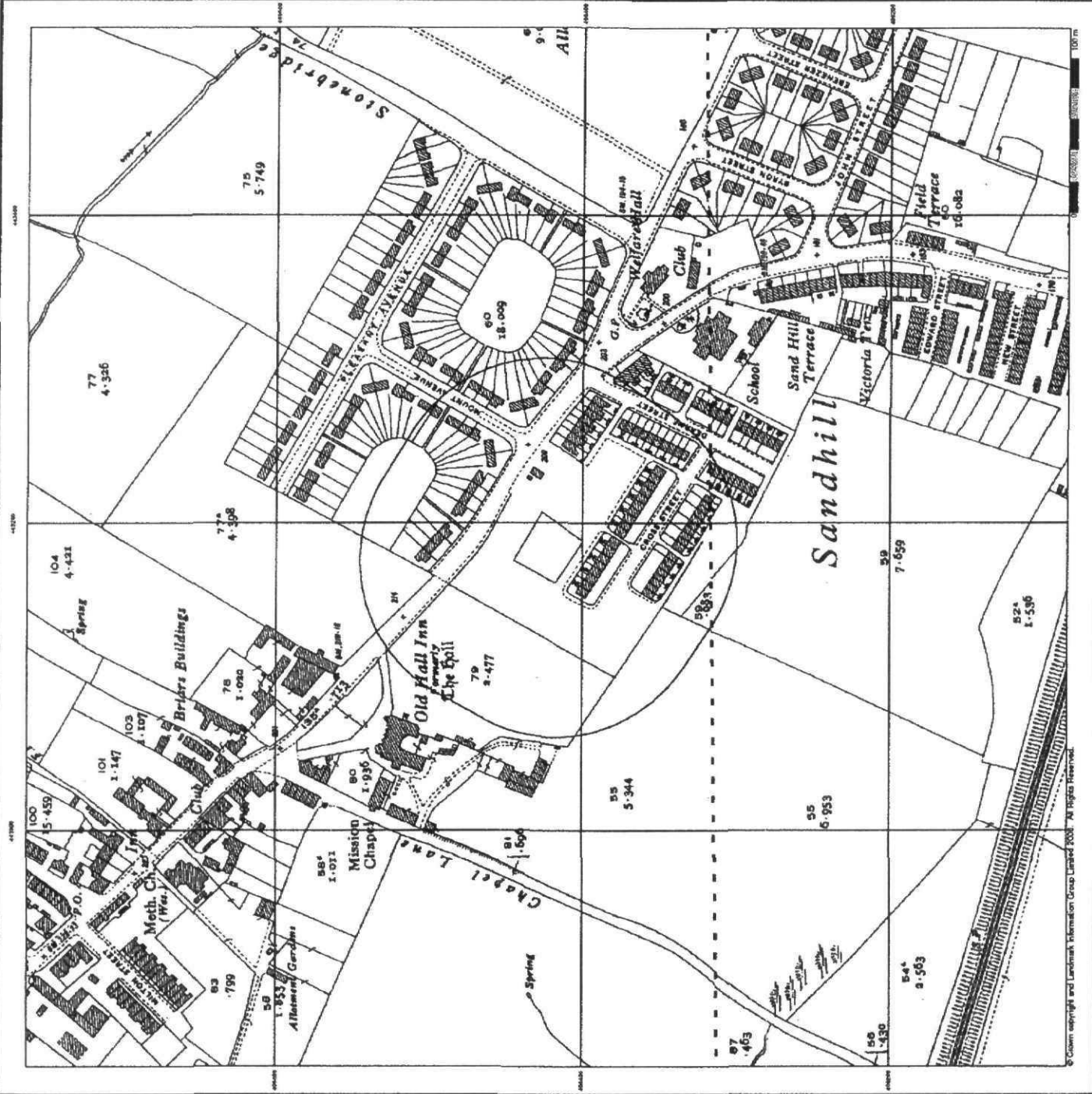
Order Number: 26133989_1_1
 Customer Ref: S80818
 National Grid Reference: 443180, 406420
 Site Area (Ha): A
 Search Buffer (m): 100

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton, BARNESLEY, South Yorkshire, S72 0EJ



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Yorkshire

Published 1938 - 1948

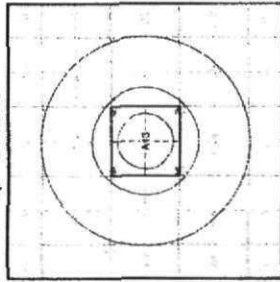
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1954 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published data given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties. From the late 1930s to significant inaccuracies in existing maps. In 1940, a new series of maps was produced, with the Transverse Mercator projection. This series included a number of strategic areas removed. These maps were initially overlaid with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

275 NW 1938	275 NE 1948
275 SW 1938	275 SE 1938

Historical Map - Slice A



Order Details

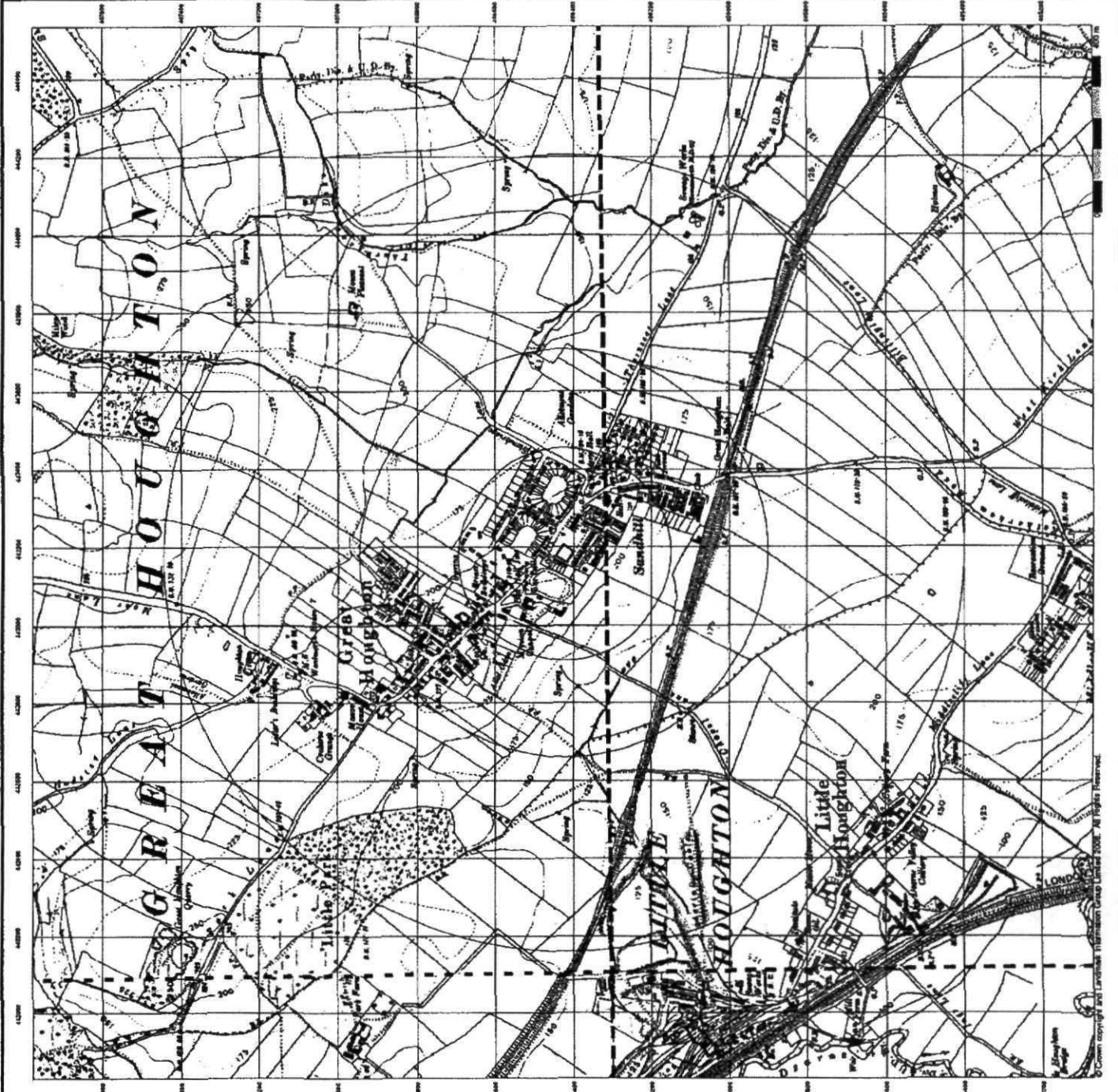
Order Number: 26133999_1_1
 Customer Ref: 580818
 National Grid Reference: 443180, 406420
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton,
 BARNESLEY, South Yorkshire, S72 0EJ



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 Fax: 0844 844 3881
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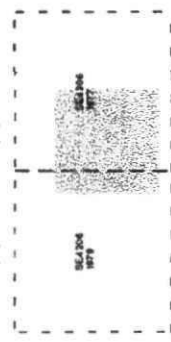
Additional SIMS

Published 1977 - 1979

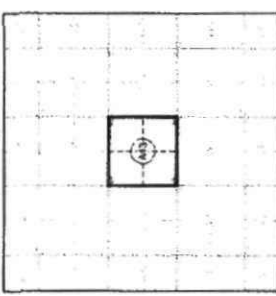
Source map scale - 1:2,500

The SIM cards (Ordinance Survey's 'Survey of Information on Microfilm') are the latest records of buildings, roads and land-uses in Great Britain. They are produced between the main editions of an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-uses. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 26133989_L1
Customer Ref: S80818
National Grid Reference: 443180, 4106420
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton,
BARNESLEY, South Yorkshire, S72 0EJ



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FAX 0844 844 8801
WEB www.embtech.co.uk





Ordnance Survey Plan Published 1983

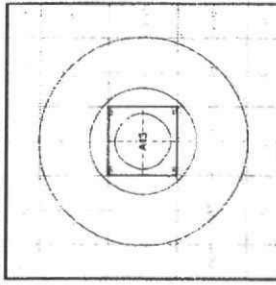
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the Ordnance Survey, Warley and Scotland in the 1940's. In 1964 the Ordnance Survey produced a series of maps showing urban areas. These maps were used to update the 1:10,000 maps. The maps are in colour and are in the Ordnance Survey's Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 maps from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

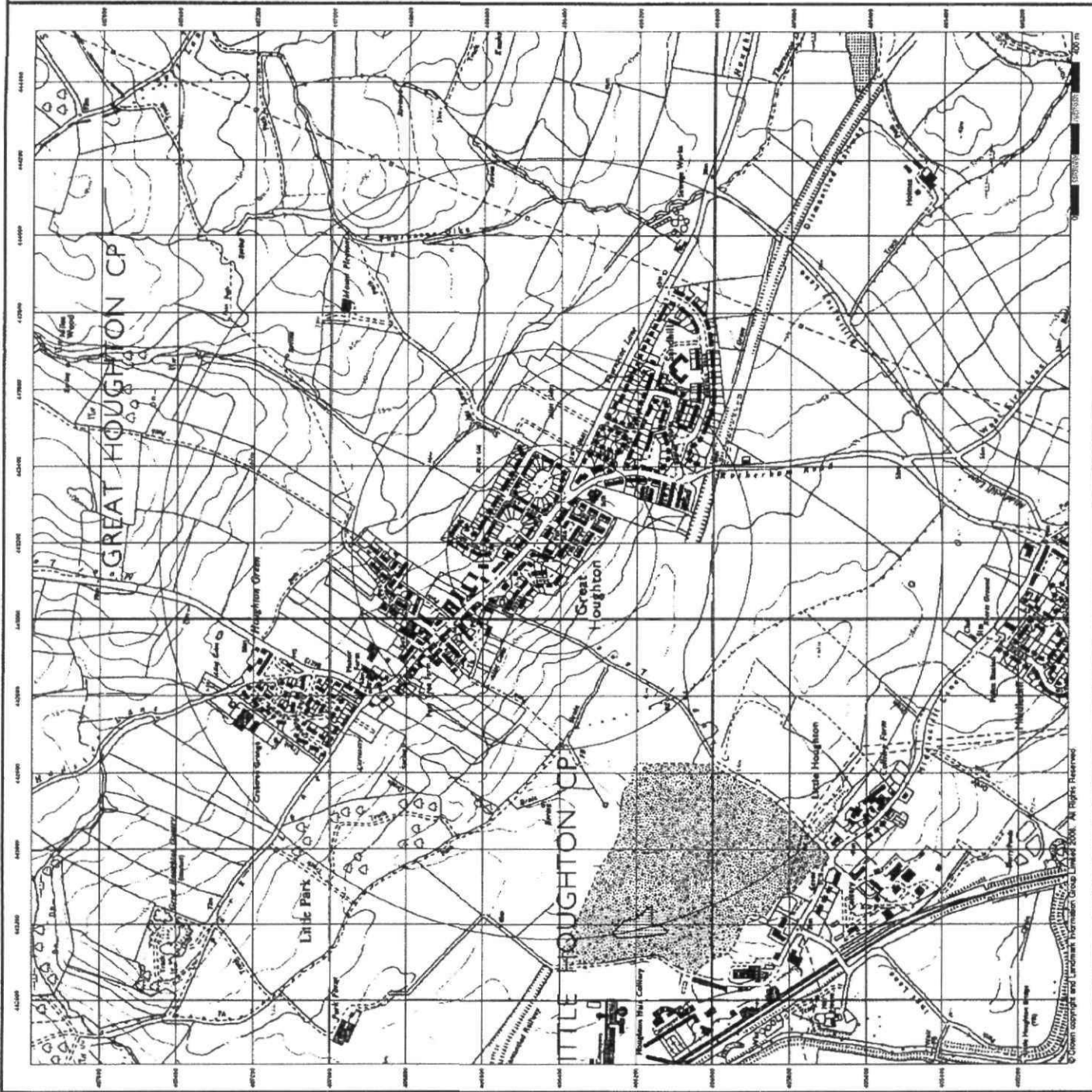
Order Number: 28133999_1_1
Customer Ref: S90818
National Grid Reference: 443160, 406420
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton,
BARNSLLEY, South Yorkshire, S72 0EJ



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Fax: 0844 844 8807
Web: www.amswork.co.uk



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Ordnance Survey Plan Published 1985

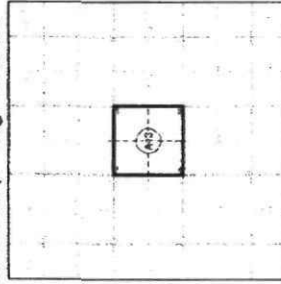
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly based at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1890 it covered the whole of what was considered to be the cultivated parts of Great Britain. The published data shown below is often some years later than the surveyed data, and are based on the latest 'revisions', with independent surveys of areas where a group of countries, giving rise to significant inaccuracies in adjoining areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 28133099_1_1
Customer Ref: S90818
National Grid Reference: 443180, 406420
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 100

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton,
BARNSBLEY, South Yorkshire, S72 0EJ



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Fax: 0844 844 9951
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Ordnance Survey Plan Published 1989

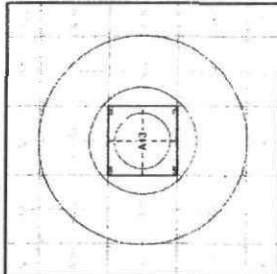
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the Ordnance Survey offices in Scotland in the 1840's. In 1854 the 1:10,000 scale was adopted for most of the maps and they were used to update the 1:10,000 maps. The published maps were based on the 1:10,000 maps, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,000 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overlaid with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

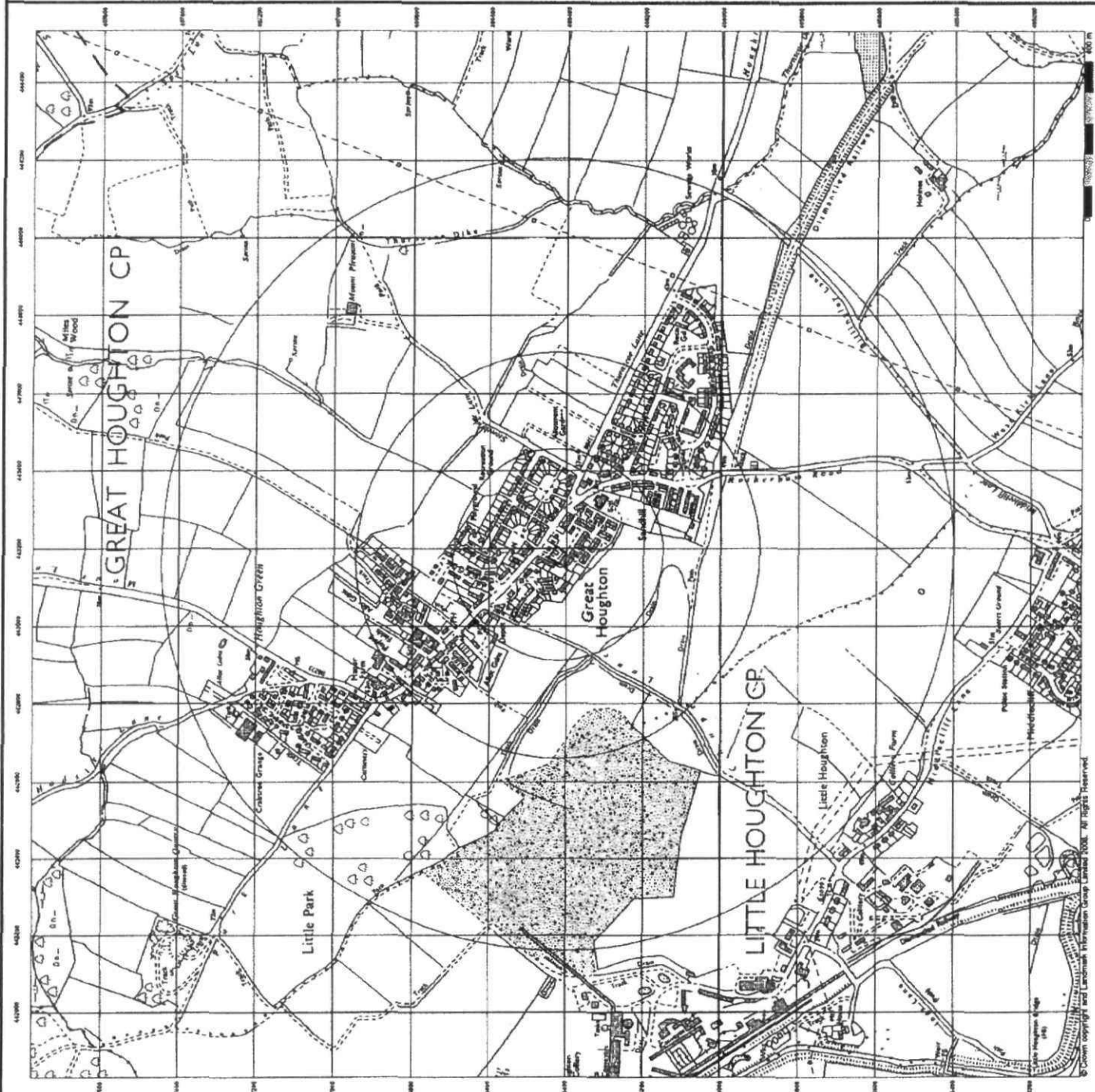
Order Number: 26133999_1
Customer Ref: S80818
National Grid Reference: 443180, 406420
Slice: A
Site Area (Ha): 0.11
Search Buffer (m): 1000

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton,
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0844 844 8901
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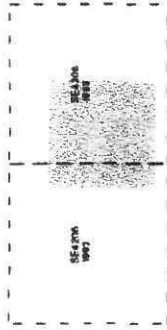


Large-Scale National Grid Data Published 1993

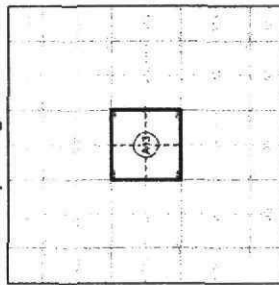
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1993. These maps were the first-issues of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 26133899_1_1
Customer Ref: 580818
National Grid Reference: 443180, 406420
Site: A
Site Area (Ha): 0.11
Search Buffer (m): 100

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton,
BARNESLEY, South Yorkshire, S72 0EJ



Tel: 0844 844 9932
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Web: www.entrack.co.uk



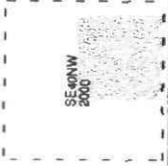


10K Raster Mapping Published 2000

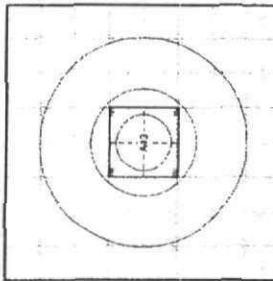
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 contour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly accurate and is suitable for planning, design and field boundaries as well as all roads, tracks and parking. Boundaries are also included together with the relevant road number and classification. Boundaries are also included together with the relevant road number and classification. Boundaries are also included together with the relevant road number and classification. Boundaries are also included together with the relevant road number and classification.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

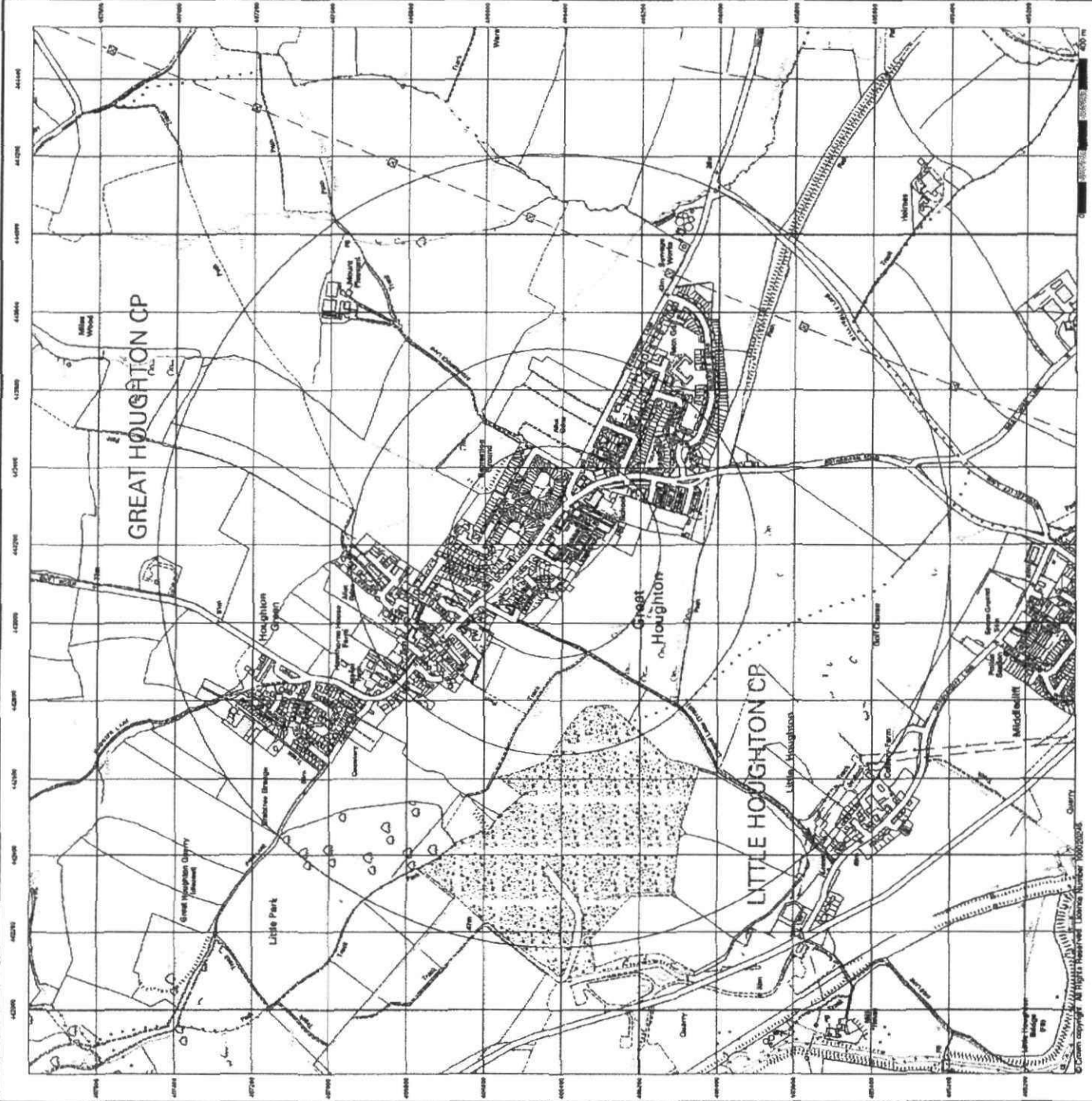
Order Number: 26133999_1_1
Customer Ref: S80918
National Grid Reference: 443160, 406420
Slice: A
Site Area (ha): 0.11
Search Buffer (m): 1000

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton, BARNSELEY, South Yorkshire, S72 0EJ



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Fax: 01454 344301
Web: www.landmark.co.uk



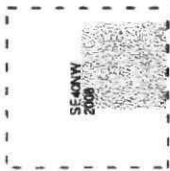


**10K Raster Mapping
Published 2008**

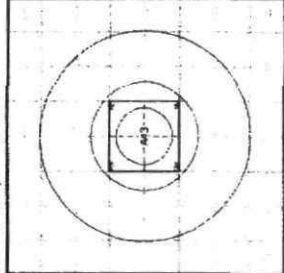
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey's 1:10,000 scale mapping. These maps are derived from Landplan which was first published in 1970. The data is highly detailed showing buildings, fences and fields, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

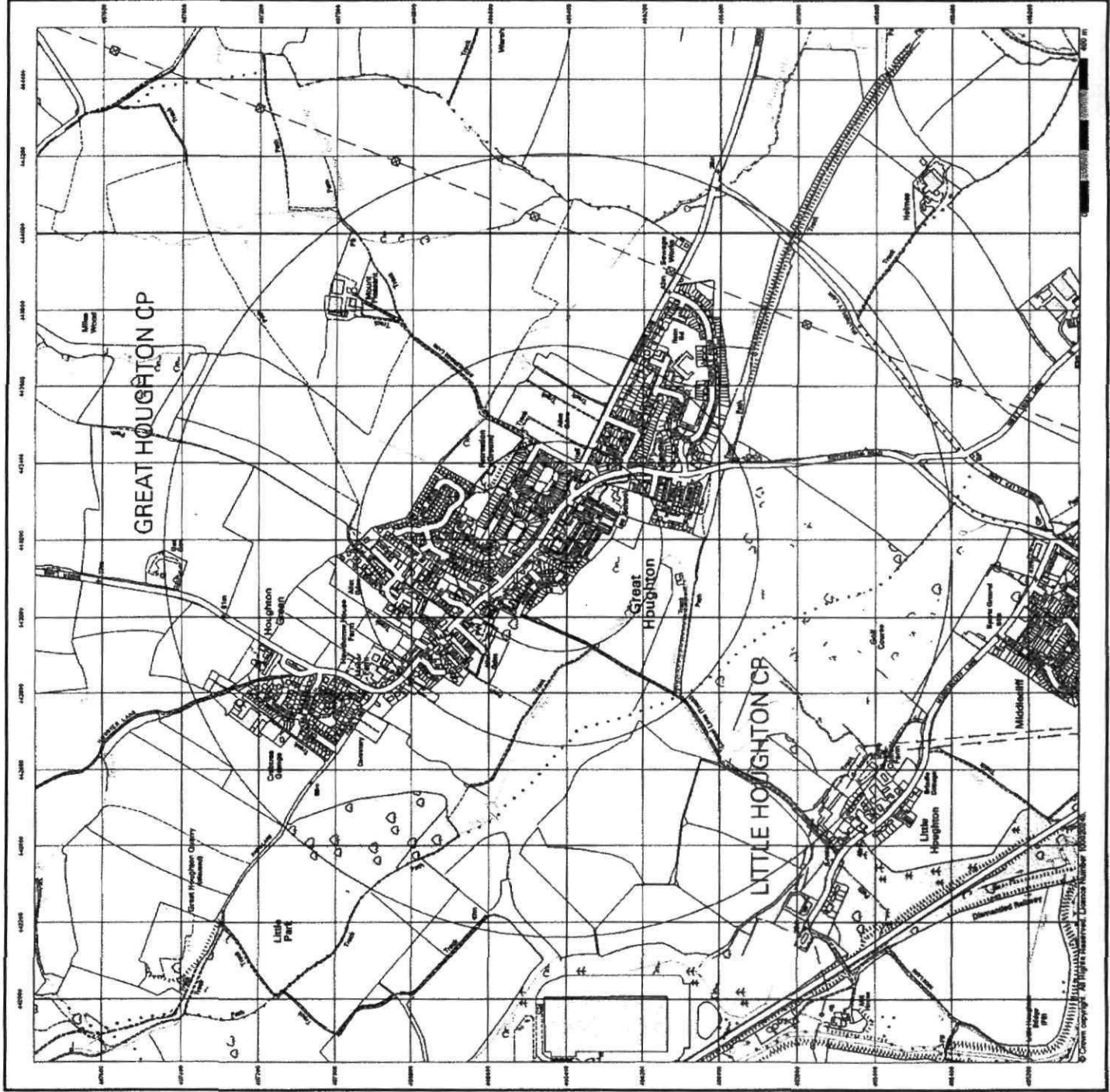
Order Number: 26133696_L1
 Customer Ref: S80818
 National Grid Reference: 443180, 406420
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details

Great Houghton Clinic, Oak Haven Avenue, Great Houghton, BARNESLEY, South Yorkshire, S72 0EJ



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 Fax: 0844 844 8621
 Web: www.landmark.co.uk



**APPENDIX 3:
Envirocheck Report**



Envirocheck[®] Report: Datasheet

Order Details:

Order Number:

26133999_1_1

Customer Reference:

S80818

National Grid Reference:

443180, 406420

Slice:

A

Site Area (Ha):

0.11

Search Buffer (m):

1000

Site Details:

Great Houghton Clinic

Oak Haven Avenue

Great Houghton

BARNSELY

South Yorkshire

S72 0EJ

Client Details:

Mr D Simpson

Solmek Ltd

12 Yarn Road

Stockton on Tees

Cleveland

TS18 3NA





Contents

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	6
Hazardous Substances	-
Geological	7
Industrial Land Use	8
Sensitive Land Use	9
Data Currency	10
Data Suppliers	14
Useful Contacts	15

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.

For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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The cavity data presented has been extracted from the PBA enhanced version of the original DEFRA national cavity databases. PBA/DEFRA retain the copyright & intellectual property rights in the data. Whilst all reasonable efforts are made to check that the information contained in the cavity databases is accurate we do not warrant that the data is complete or error free. The information is based upon our own researches and those collated from a number of external sources and is continually being augmented and updated by PBA. In no event shall PBA/DEFRA or Landmark be liable for any loss or damage including, without limitation, indirect or consequential loss or damage arising from the use of this data.

Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and the Health Protection Agency.

Report Version v36.0



Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1				10
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 3		1		
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 3		Yes		
Pollution Incidents to Controlled Waters	pg 3			1	
Prosecutions Relating to Authorised Processes					
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances					
River Quality	pg 3				1
River Quality Biology Sampling Points	pg 4				1
River Quality Chemistry Sampling Points	pg 4				1
Substantiated Pollution Incident Register	pg 4			1	
Water Abstractions	pg 5				(*2)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 5	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					



Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS Recorded Mineral Sites					
BGS 1:625,000 Solid Geology	pg 7	Yes	n/a	n/a	n/a
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas	pg 7	Yes	n/a	n/a	n/a
Mining Instability	pg 7	Yes	n/a	n/a	n/a
Natural and Mining Cavities					
Potential for Collapsible Ground Stability Hazards				n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 7	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 7		Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Shallow Mining Hazards	pg 7	Yes		n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 8		1	3	2
Fuel Station Entries	pg 8				1



Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Areas of Adopted Green Belt	pg 9		1		
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 9	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					



Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Undefined Or Other Location: Great Houghton Sewage Pumping Stn Thumscoe Lane, Great Houghton, South Yorkshire, Uk Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: Wra7840 Permit Version: 1 Effective Date: 15th April 2002 Issued Date: 15th April 2002 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Thumscoe Dyke Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A9NE (E)	944	1	444080 406070
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Undefined Or Other Location: Great Houghton Sewage Pumping Stn Thumscoe Lane, Great Houghton, South Yorkshire, Uk Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: Wra7840 Permit Version: 1 Effective Date: 15th April 2002 Issued Date: 15th April 2002 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Thumscoe Dyke Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995) Positional Accuracy: Located by supplier to within 10m</p>	A9NE (E)	944	1	444080 406070
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Sewage Disposal Works - Water Company Location: Great Houghton Stw Thumscoe Lane, Great Houghton, Barnsley, South Yorkshire Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 3 Effective Date: 18th February 1986 Issued Date: 18th February 1986 Revocation Date: 4th February 2003 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Dyke Status: Transferred from COPA 1974 Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Sewage Disposal Works - Water Company Location: Great Houghton Stw Thumscoe Lane, Great Houghton, Barnsley, South Yorkshire Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 3 Effective Date: 18th February 1986 Issued Date: 18th February 1986 Revocation Date: 4th February 2003 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Dyke Status: Transferred from COPA 1974 Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100



Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Undefined Or Other Location: Great Houghton Wpc Works Storm Tank, S Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 1 Effective Date: 1st January 1982 Issued Date: 1st January 1982 Revocation Date: 17th February 1982 Discharge Type: Sewage Discharges - Unspecified - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Beck Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Undefined Or Other Location: Great Houghton Wpc Works Storm Tank, S Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 1 Effective Date: 1st January 1982 Issued Date: 1st January 1982 Revocation Date: 17th February 1982 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Beck Status: Post National Rivers Authority Legislation where issue date > 31/08/1989 Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Sewage Disposal Works - Water Company Location: Great Houghton Stw Thurnscoe Lane, Great Houghton, Barnsley, South Yorkshire Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 2 Effective Date: 1st June 1981 Issued Date: 1st June 1981 Revocation Date: 17th February 1986 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Dyke Status: Transferred from 1978 Order Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100
1	<p>Discharge Consents</p> <p>Operator: Yorkshire Water Services Ltd Property Type: Sewage Disposal Works - Water Company Location: Great Houghton Stw Thurnscoe Lane, Great Houghton, Barnsley, South Yorkshire Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 2 Effective Date: 1st June 1981 Issued Date: 1st June 1981 Revocation Date: 17th February 1986 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Dyke Status: Transferred from 1978 Order Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100



Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
1	<p>Discharge Consents</p> <p>Operator: Hemsworth Rural District Council Property Type: Sewage Disposal Works - Water Company Location: Great Houghton Stw Thurnscoe Lane, Great Houghton, Bamsley, South Yorkshire Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 4 Effective Date: 8th November 1973 Issued Date: 8th November 1973 Revocation Date: 31st May 1981 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Dyke Status: Transferred from Rivers (Prevention of Pollution) Act 1951-1961 Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100
1	<p>Discharge Consents</p> <p>Operator: Hemsworth Rural District Council Property Type: Sewage Disposal Works - Water Company Location: Great Houghton Stw Thurnscoe Lane, Great Houghton, Bamsley, South Yorkshire Authority: Environment Agency, North East Region Catchment Area: Don Tributaries Reference: E282 Permit Version: 4 Effective Date: 8th November 1973 Issued Date: 8th November 1973 Revocation Date: 31st May 1981 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge: Freshwater Stream/River Environment: Receiving Water: Houghton Dyke Status: Transferred from Rivers (Prevention of Pollution) Act 1951-1961 Positional Accuracy: Located by supplier to within 100m</p>	A14SE (E)	952	1	444100 406100
2	<p>Local Authority Pollution Prevention and Controls</p> <p>Name: Great Houghton Service Station Location: Rotherham Road, Great Houghton, Bamsley, S72 0db Authority: Bamsley Metropolitan Borough Council, Environmental Health and Trading Standards Permit Reference: Ppc/B/49 Dated: 26th May 2005 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station Status: Permitted Positional Accuracy: Manually positioned to the road within the address or location</p>	A13NE (NE)	17	2	443197 406452
	<p>Nearest Surface Water Feature</p>	A13SW (SW)	235	-	442967 406286
3	<p>Pollution Incidents to Controlled Waters</p> <p>Property Type: Water Company Sewage: Foul Sewer Location: Great Houghton Near, BARNESLEY Authority: Environment Agency, North East Region Pollutant: Surcharged Sewage Note: Fish Killed: No Information Incident Date: 13th May 1997 Incident Reference: SH970249 Catchment Area: Deame Tributaries Receiving Water: Freshwater Stream/River Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Unknown</p>	A13NE (E)	295	1	443500 406450
	<p>River Quality</p> <p>Name: Houghton_Beck GQA Grade: River Quality E Reach: Great_Houghton_Sewag_Carr_Dik Estimated Distance (km): 2.2 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000</p>	A14SE (E)	924	1	444086 406144



Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
4	<p>River Quality Biology Sampling Points</p> <p>Name: Houghton Beck Reach: Great Houghton Sewage To Carr Dike Estimated Distance: 2.20 Positional Accuracy: Located by supplier to within 10m Year: 1990 GQA Grade: Not Supplied Year: 1995 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2000 GQA Grade: River Quality Biology GQA Grade D - Fair Year: 2002 GQA Grade: River Quality Biology GQA Grade D - Fair Year: 2003 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2004 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2005 GQA Grade: River Quality Biology GQA Grade C - Fairly Good Year: 2006 GQA Grade: River Quality Biology GQA Grade D - Fair</p>	A14SE (E)	924	1	444086 406144
5	<p>River Quality Chemistry Sampling Points</p> <p>Name: Houghton Beck Reach: Great Houghton Sewag To Carr Dike Estimated Distance: 2.20 Objective: River Ecosystem Class 4: Fair Quality Positional Accuracy: Located by supplier to within 100m Year: 1990 GQA Grade: Not Supplied Compliance: Not Supplied Year: 1993 GQA Grade: Not Supplied Compliance: Not Supplied Year: 1994 GQA Grade: Not Supplied Compliance: Not Supplied Year: 1995 GQA Grade: River Quality Chemistry GQA Grade F - Bad Compliance: Significant Failure Year: 1996 GQA Grade: River Quality Chemistry GQA Grade F - Bad Compliance: Significant Failure Year: 1997 GQA Grade: River Quality Chemistry GQA Grade F - Bad Compliance: Significant Failure Year: 1998 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Significant Failure Year: 1999 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Significant Failure Year: 2000 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Significant Failure Year: 2001 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Significant Failure Year: 2002 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Significant Failure Year: 2003 GQA Grade: River Quality Chemistry GQA Grade E - Poor Compliance: Significant Failure Year: 2004 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Compliant Year: 2005 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Compliant Year: 2006 GQA Grade: River Quality Chemistry GQA Grade D - Fair Compliance: Compliant</p>	A9NE (SE)	991	1	444100 406000
6	<p>Substantiated Pollution Incident Register</p> <p>Authority: Environment Agency - North East Region, Ridings Area Incident Date: 23rd April 2002 Incident Reference: 73888 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Crude Sewage</p>	A14NW (E)	385	1	443587 406559



Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
	<p>Water Abstractions</p> <p>Operator: British Coal Licence Number: 2/27/08/013 Permit Version: Not Supplied Location: Location Description Not Available Authority: Environment Agency, North East Region Abstraction: General Industrial Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 1360 Yearly Rate (m3): 454000 Details: Licence Revoked Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	A6NW (W)	1411	1	441830 405950
	<p>Water Abstractions</p> <p>Operator: Earl Fitzwilliam'S Wentworth Estates Co Licence Number: 2/27/08/037 Permit Version: 100 Location: Borehole - Coal Measures - Great Houghton Barnsley Authority: Environment Agency, North East Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 5 Yearly Rate (m3): 1364 Details: Houghton Lodge Farm, Great Houghton, Nr. Barnsley Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 15th December 1971 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m</p>	(N)	1959	1	443300 408400
	<p>Groundwater Vulnerability</p> <p>Geological Classification: Minor Aquifer (Variably permeable) - These can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability including unconsolidated deposits. Although not producing large quantities of water for abstraction, they are important for local supplies and in supplying base flow to rivers</p> <p>Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents</p> <p>Map Sheet: Sheet 12 Vale of York Scale: 1:100,000</p>	A13NE (NE)	0	1	443365 406629
	Drift Deposits None				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				



Waste

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: Bamsley Metropolitan Borough Council - Has supplied landfill data		0	2	444427 407424



Geological

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Upper Westphalian (including Pennant Measures)	(SW)	0	3	441487 402887
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	(SW)	0	4	426000 396000
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	(SW)	0	-	441000 404500
	Potential for Collapsible Ground Stability Hazards No Hazard				
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A9NE (SE)	0	3	444000 405800
	Potential for Ground Dissolution Stability Hazards No Hazard				
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A12NW (W)	0	3	442500 406423
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A9NE (SE)	0	3	444000 405800
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	0	3	443150 406325
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	84	3	443150 406325
	Radon Potential - Radon Affected Areas Affected Area: The property is not in a radon affected area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A12SW (W)	0	3	442450 406200
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A12SW (W)	0	3	442450 406200
	Shallow Mining Hazards Risk: Low-Moderate Source: British Geological Survey, National Geoscience Information Service	A17NE (NW)	0	3	442734 407251



Industrial Land Use

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
7	Contemporary Trade Directory Entries Name: Great Houghton Service Station Location: Rotherham Rd, Great Houghton, Bamsley, South Yorkshire, S72 0DB Classification: Petrol Filling Stations Status: Active Positional Accuracy: Manually positioned to the road within the address or location	A13SE (E)	80	-	443284 406411
8	Contemporary Trade Directory Entries Name: D Harrison & Son Location: 29, Milton Street, Great Houghton, Bamsley, South Yorkshire, S72 0AD Classification: Road Haulage Services Status: Active Positional Accuracy: Automatically positioned to the address	A13NW (NW)	346	-	442894 406645
9	Contemporary Trade Directory Entries Name: Sandhill Motors Location: 23, Turner Street, Great Houghton, Bamsley, South Yorkshire, S72 0DL Classification: Garage Services Status: Active Positional Accuracy: Automatically positioned to the address	A8NE (S)	346	-	443288 406069
10	Contemporary Trade Directory Entries Name: Ahak Industrial Services Ltd Location: Springvale Road, Grimethorpe, Bamsley, South Yorkshire, S72 7BU Classification: Oil & Gas Exploration Supplies & Services Status: Inactive Positional Accuracy: Manually positioned to the road within the address or location	A18SW (N)	407	-	443096 406844
11	Contemporary Trade Directory Entries Name: Browns Cleaning Services Location: 17, Norfolk Road, Great Houghton, Bamsley, South Yorkshire, S72 0DT Classification: Commercial Cleaning Services Status: Active Positional Accuracy: Automatically positioned to the address	A9NW (SE)	540	-	443586 406035
12	Contemporary Trade Directory Entries Name: Paul Robson Location: 10, Park Lane, Great Houghton, Bamsley, South Yorkshire, S72 0AX Classification: Pest & Vermin Control Status: Inactive Positional Accuracy: Automatically positioned to the address	A17SE (NW)	667	-	442745 406954
13	Fuel Station Entries Name: Great Houghton Service Station Location: Rotherham Road, Great Houghton, BARNSELEY, South Yorkshire, S72 0DB Brand: Texaco Premises Type: Petrol Station Status: Open Positional Accuracy: Manually positioned to the road within the address or location	A8NE (S)	661	-	443407 405776



Sensitive Land Use

Map ID	Details	Quadrant Reference (Compass)	Estimated Distance From Site	Contact	NGR
14	Areas of Adopted Green Belt Authority: Bamsley Metropolitan Borough Council, Planning Department Plan Name: Bamsley Unitary Development Plan Status: Adopted Plan Date: 31st December 2000	A13SW (SW)	64	5	443137 406357
15	Nitrate Vulnerable Zones Name: Not Supplied Description: Surface Water Source: Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	(S)	0	8	443183 400000



Data Currency

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices Wakefield City Metropolitan District Council - Environmental Health Barnsley Metropolitan Borough Council - Environmental Health and Trading Standards Doncaster Metropolitan Borough Council - Environmental Services Rotherham Metropolitan Borough Council - Environmental Health Department	July 2008 May 2007 November 2007 September 2007	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Discharge Consents Environment Agency - North East Region	July 2008	Quarterly
Enforcement and Prohibition Notices Environment Agency - North East Region	August 2008	As notified
Integrated Pollution Controls Environment Agency - North East Region	July 2008	Quarterly
Integrated Pollution Prevention And Control Environment Agency - North East Region	July 2008	Quarterly
Local Authority Integrated Pollution Prevention And Control Doncaster Metropolitan Borough Council - Environmental Services Barnsley Metropolitan Borough Council - Environmental Health and Trading Standards Wakefield City Metropolitan District Council - Environmental Health Rotherham Metropolitan Borough Council - Planning Department	December 2007 February 2008 July 2008 September 2007	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Controls Doncaster Metropolitan Borough Council - Environmental Services Barnsley Metropolitan Borough Council - Environmental Health and Trading Standards Wakefield City Metropolitan District Council - Environmental Health Rotherham Metropolitan Borough Council - Planning Department	December 2007 February 2008 July 2008 September 2007	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements Doncaster Metropolitan Borough Council - Environmental Services Barnsley Metropolitan Borough Council - Environmental Health and Trading Standards Wakefield City Metropolitan District Council - Environmental Health Rotherham Metropolitan Borough Council - Planning Department	December 2007 February 2008 July 2008 September 2007	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Nearest Surface Water Feature Ordnance Survey	April 2008	Quarterly
Pollution Incidents to Controlled Waters Environment Agency - North East Region	December 1998	Not Applicable
Prosecutions Relating to Authorised Processes Environment Agency - North East Region	August 2008	As notified
Prosecutions Relating to Controlled Waters Environment Agency - North East Region	August 2008	As notified
Registered Radioactive Substances Environment Agency - North East Region	July 2008	Quarterly
River Quality Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points Environment Agency - Head Office	September 2007	Annually
River Quality Chemistry Sampling Points Environment Agency - Head Office	August 2007	Annually
Substantiated Pollution Incident Register Environment Agency - North East Region - Ridings Area	July 2008	Quarterly
Water Abstractions Environment Agency - North East Region	July 2008	Quarterly
Water Industry Act Referrals Environment Agency - North East Region	July 2008	Quarterly
Groundwater Vulnerability Environment Agency - Head Office	January 1999	Not Applicable



Data Currency

Agency & Hydrological	Version	Update Cycle
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Source Protection Zones Environment Agency - Head Office	April 2008	Variable
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	April 2008	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	April 2008	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	April 2008	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	April 2008	Quarterly
Flood Defences Environment Agency - Head Office	April 2008	Quarterly
Waste	Version	Update Cycle
BGS Recorded Landfill Sites British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites Environment Agency - North East Region - Ridings Area	May 2008	As notified
Integrated Pollution Control Registered Waste Sites Environment Agency - North East Region	July 2008	Quarterly
Licensed Waste Management Facilities (Landfill Boundaries) Environment Agency - North East Region - Ridings Area	May 2008	Quarterly
Licensed Waste Management Facilities (Locations) Environment Agency - North East Region - Ridings Area	May 2008	Quarterly
Local Authority Landfill Coverage Barnsley Metropolitan Borough Council - Environmental Health and Trading Standards Doncaster Metropolitan Borough Council - Environmental Services Rotherham Metropolitan Borough Council - Environmental Health Department Wakefield City Metropolitan District Council - Environmental Health	May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
Local Authority Recorded Landfill Sites Barnsley Metropolitan Borough Council - Environmental Health and Trading Standards Doncaster Metropolitan Borough Council - Environmental Services Rotherham Metropolitan Borough Council - Environmental Health Department Wakefield City Metropolitan District Council - Environmental Health	May 2000 May 2000 May 2000 May 2000	Not Applicable Not Applicable Not Applicable Not Applicable
Registered Landfill Sites Environment Agency - North East Region - Ridings Area	March 2003	Not Applicable
Registered Waste Transfer Sites Environment Agency - North East Region - Ridings Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites Environment Agency - North East Region - Ridings Area	March 2003	Not Applicable



Data Currency

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH) Health and Safety Executive	April 2008	Bi-Annually
Explosive Sites Health and Safety Executive	July 2008	Bi-Annually
Notification of Installations Handling Hazardous Substances (NIHHS) Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements Rotherham Metropolitan Borough Council Barnsley Metropolitan Borough Council - Planning Department Doncaster Metropolitan Borough Council Wakefield City Metropolitan District Council	August 2007 July 2008 July 2008 May 2008	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Planning Hazardous Substance Consents Rotherham Metropolitan Borough Council Barnsley Metropolitan Borough Council - Planning Department Doncaster Metropolitan Borough Council Wakefield City Metropolitan District Council	August 2007 July 2008 July 2008 May 2008	Annual Rolling Update Annual Rolling Update Annual Rolling Update Annual Rolling Update
Geological	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	April 2008	Bi-Annually
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	August 1996	Not Applicable
Brine Compensation Area Cheshire Brine Subsidence Compensation Board	November 2002	As notified
Coal Mining Affected Areas The Coal Authority - Mining Report Service	January 2006	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural and Mining Cavities Peter Brett Associates	December 2005	Variable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2008	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2008	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2008	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2008	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2008	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2008	Annually
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	May 2007	Annually
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	May 2007	Annually
Shallow Mining Hazards British Geological Survey - National Geoscience Information Service	August 2002	Not Applicable



Data Currency

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	May 2008	Quarterly
Fuel Station Entries Catalist Ltd - (Fuel Station Data)	June 2008	Quarterly
Sensitive Land Use	Version	Update Cycle
Areas of Adopted Green Belt Barnsley Metropolitan Borough Council - Planning Department Wakefield City Metropolitan District Council Doncaster Metropolitan Borough Council Rotherham Metropolitan Borough Council	December 2000 January 2003 July 1998 June 1999	As notified As notified As notified As notified
Areas of Unadopted Green Belt Barnsley Metropolitan Borough Council - Planning Department Wakefield City Metropolitan District Council Doncaster Metropolitan Borough Council Rotherham Metropolitan Borough Council	December 2000 January 2003 July 1998 June 1999	As notified As notified As notified As notified
Areas of Outstanding Natural Beauty Natural England	January 2008	Annually
Environmentally Sensitive Areas Natural England	January 2008	Annually
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	June 2008	Bi-Annually
Marine Nature Reserves Natural England	June 2008	Bi-Annually
National Nature Reserves Natural England	June 2008	Bi-Annually
National Parks Natural England	January 2008	Annually
Nitrate Sensitive Areas Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2003	Not Applicable
Nitrate Vulnerable Zones Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	May 2007	Annually
Ramsar Sites Natural England	June 2008	Bi-Annually
Sites of Special Scientific Interest Natural England	June 2008	Bi-Annually
Special Areas of Conservation Natural England	June 2008	Bi-Annually
Special Protection Areas Natural England	June 2008	Bi-Annually

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Countryside Council for Wales	
Scottish Natural Heritage	
Natural England	
Health Protection Agency	
Ove Arup	
Peter Brett Associates	



Useful Contacts

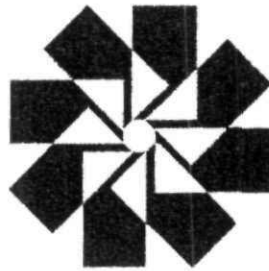
Contact	Name and Address	Contact Details
1	Environment Agency - National Customer Contact Centre (NCCC) PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	Barnsley Metropolitan Borough Council - Environmental Health and Trading Standards Central Offices, Kendray Street, Barnsley, South Yorkshire, S70 2TN	Telephone: 01226 770770 Fax: 01226 772599 Website: www.barnsley.gov.uk
3	British Geological Survey - Enquiry Service British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
4	The Coal Authority - Mining Report Service 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0845 7626848 Email: thecoalauthority@coal.gov.uk
5	Barnsley Metropolitan Borough Council - Planning Department Central Offices, Kendray Street, Barnsley, South Yorkshire, S70 2TN	Telephone: 01226 770770 Fax: 01226 772599 Website: www.barnsley.gov.uk
6	Doncaster Metropolitan Borough Council Danum House, St Sepulchre Gate, Doncaster, South Yorkshire, DN1 1UB	Telephone: 01302 734854 Fax: 01302 734949 Website: www.doncaster.gov.uk
7	Natural England Northminster House, Northminster Road, Peterborough, Cambridgeshire, PE1 1UA	Telephone: 0845 600 3078 Fax: 01733 455103 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
8	Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA) Government Buildings, Otley Road, Lawnswood, Leeds, West Yorkshire, LS16 5QT	Telephone: 0113 2613333 Fax: 0113 230 0879
-	Health Protection Agency - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@hpa.org.uk Website: www.hpa.org.uk
-	Landmark Information Group Limited The Smith Centre, Henley On Thames, Oxfordshire, RG9 6AB	Telephone: 0870 850 6670 Fax: 0870 850 6671 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.

**APPENDIX 4:
Mining Report**

CoalSearchPlus+
8, Mornington Terrace
Harrogate
North Yorkshire
HG1 5DH

Tel : 01423 529911
Fax : 01423 529922
DX 720352 Harrogate



COAL SEARCH PLUS +
Protecting your investment

By

David Bellis
CONSULTING SURVEYORS

Coal Mining Search Report

Incorporating Cheshire Brine Enquiries

COPSO
COUNCIL OF PROPERTY SEARCH ORGANISATIONS
AFFILIATE MEMBER

WWW.COALSEARCH.PLUS.COM

Serial Number 226449

Client detail :

Solmek
(Site Investigations) Ltd
12 Yarm Road
Stockton on Tees
Cleveland
TS18 3NA

CoalSearchPlus+ by David Bellis Consulting
Surveyors
8 Morningson Terrace
Harrogate
North Yorkshire
HG1 5DH
(DX 720352 Harrogate)

Tel 01423 529911
Fax 01423 529922

Practice Principal M J Peace BSc PgDip FGS

Property details:

Oak Haven Avenue
Great Houghton
S72 0EJ

Your ref : STEPHEN FISK
Purchaser :
Vendor :

In accordance with your instructions received 21 Aug 2008 we have inspected plans and records of coal mine workings and have made enquiries with respect to Cheshire brine extraction in relation to the above property and can report as follows :

1. **SEAM DETAILS FOR PAST UNDERGROUND COAL MINING** : In relation to the property the undermentioned seam(s) have been worked within the likely zone of physical influence on the surface.

Seam	Depth (m)	Sect (cm)	Date	Remarks
Shafton	139	213	1918	Subjacent
Newhill	385	144	1976	Subjacent
Meltonfield	400	127	1967	Subjacent
Top Beamshaw	441	50	1976	Subjacent
Low Beamshaw	453	91	1977	Subjacent
Dunsil	571	150	1988	Adjacent
Fenton	756	140	1988	Subjacent
Parkgate	780	140	1978	Subjacent

2. **SEAM DETAILS FOR CURRENT AND FUTURE UNDERGROUND COAL MINING** : The undermentioned seam(s) are currently being worked, or licenses to work are being determined, or have been granted to work, within the likely zone of physical influence on the surface in relation to the property.

Seam	Depth (m)	Sect (cm)	Date	Remarks
				Coal in reserve - no workings currently planned.

Serial Number 226449

3. UNDERLYING GEOLOGY :

The property is situated in an area of Dalton Rock over Middle Coal Measures, shales and mudstones.

There are no faults or abnormal features relevant to the property.

4. OPENCAST COAL MINING :

Past Opencast Workings : The property is not situated within the boundary of a former opencast coal mining site.

Present Opencast Workings : The property is not situated within 200m of the boundary of a currently operating opencast coal mining site.

Future Opencast Workings : The property is not situated within 800m of the boundary of an opencast site for which a license to extract coal by opencast methods has been granted or a license to do so is currently being determined.

5. SHAFTS, ADITS (MINE ENTRIES) AND ADDITIONAL INFORMATION :

We have no knowledge of any shafts or adits within 20 metres of the property or the boundary of the property.

There are no tips or lagoons in the vicinity of the property.

6. NOTICES IN RELATION TO FUTURE COAL MINING ACTIVITY :

We have no knowledge of any intention to work coal by underground methods , within influencing distance on the surface in the vicinity of the property, for which notices have been issued under the Coal Mining Subsidence Act 1991.

7. PAST COAL MINING RELATED SUBSIDENCE :

Our investigations have shown no evidence of coal mining related subsidence claims in relation to the property in the past 10 years.

8. CONCLUSION (COAL MINING) : In the light of the above facts we conclude that in relation to coal mining :

Old workings are present but all settlement is likely to have completed long ago. In our opinion it is unlikely that coal will be worked in the foreseeable future.

COAL MINING RISK LEVEL : We recommend that the transaction is treated as :

If development of the site is intended then it would be wise in our opinion to undertake all necessary enquiries and investigations prior to the commencement of works.

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Please note that the overall coal mining risk level above is based upon an assessment of the detailed information contained in the body of the report. The risk assessment must be used in conjunction with the detailed report.

CHESHIRE BRINE EXTRACTION INFORMATION :

The property lies outside the Cheshire Brine Compensation District as prescribed by the Cheshire Brine Pumping (Compensation for Subsidence) Act 1952.

With respect to coal mining there is nothing to prevent a claim being made under the provisions of the Coal Mining Subsidence Act 1991 and subsequent legislation, but it must not be inferred that the Coal Authority or their licensees will necessarily accept that any damage has been caused as a result of mining subsidence.

If you require any further information or amplification please contact CoalSearchPlus+ on 01423 529911 or via our website www.coalsearch.plus.com.

Note:

This search report is based upon plans and records currently available from third party organisations and the CoalSearchPlus+ mining record database. Third party organisations reserve the right to vary their proposals and intentions as to their future mining operations without prior notice save as provided in the Coal Mining (subsidence) Act 1991 and the Coal Industry Act 1994.

This is a Coal Mining Search Report and is not to be interpreted as being part of an Environmental Assessment of the property.

We cannot be held responsible for the accuracy of the information provided to us by third party organisations.

The information and/or material supplied is composed from data based in many cases on measurements and records of various standards of reliability and age. We cannot be held responsible for the accuracy of such information.

This report is prepared in accordance with the CoalSearchPlus+ terms and conditions as published on the CoalSearchPlus+ website (www.coalsearch.plus.com) on the date of issue of this report.

Date : 29 Aug 2008

Signed : *M. J. Peace*

**Appendix 5:
Notes on Limitations**

▲Solmek conditions of offer, notes on limitations & basis for contract (ref: version1/2008)

These conditions accompany our tender and supercede any previous conditions issued. Solmek will prepare a report solely for the use of the Client (the party invoiced) and its agent(s). No reliance should be placed on the contents of this report, in whole or in part by 3rd parties. The report, its content and format and associated data are copyright, and the property of Solmek. Photocopying of part or all of the contents, transfer or reproduction of any kind is forbidden without written permission from Solmek. A charge may be levied against such approval, the same to be made at the discretion of Solmek. Solmek is a trading name of Hymas Geoenvironmental Ltd.

Solmek cannot be held liable and do not warrant, or otherwise guarantee the validity of information provided by third parties and subsequently used in our reports. Solmek are not responsible for the action negligent of otherwise of subcontractors or third parties.

Site investigation is a process of sampling. The scope and size of an investigation may be considered proportional to levels of confidence regarding the ground and groundwater conditions. The exploratory holes undertaken investigate only a small volume of the ground in relation to the overall size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions as encountered within each of the exploratory holes. There may be different ground conditions elsewhere on the site which have not been identified by this investigation and which therefore have not been taken into account in this report. Reports are generally subject to the comments of the local authority and Environment Agency. The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that mobile contamination, ground gas levels and groundwater levels may vary owing to seasonal, tidal and/or weather related effects. Solmek cannot be held liable for any unrecorded or unforeseen obstructions between exploratory boreholes and trial pits. This includes instances where previous structures on the site (buried man made structures) or the presence of boulder clay (cobbles and/or boulder obstructions) have been anticipated. All types of piling operations should make allowance for obstructions within the construction budget to accommodate this. Unrecorded ancient mining may occur anywhere where seams that have been worked and influence the rock and soil above. Dissolution cavities can occur where gypsum or chalk is present. Rotary drilling is the recommended technique to prove the integrity of the rock.

Where the scope of the investigation is limited via access to information, time constraints, equipment limitations, testing, interpretation or by the client or his agents budgetary constraints, elements not set out in the proposal and excluded from the report are deemed to be omitted from the scope of the investigation.

Desk studies are generally prepared in accordance with RICS guidelines. Environmental site investigations are generally undertaken as 'exploratory investigations' in accordance with the definitions provided in paragraph 5.4 of BS 10175:2001 in order to confirm the conceptual assumptions. You are advised to familiarize yourself with the typical scope of such an investigation. No pumping of water will be undertaken unless a licence or facilities/equipment have been arranged by others.

Where the type, number or/and depth of exploratory hole is specified by others, Solmek cannot and will not be responsible for any subsequent shortfall or inadequacy in data, and any consequent shortfall in interpretation of environmental and geotechnical aspects which may be required at a later date in order to facilitate the design of permanent or temporary works.

All information acquired by Solmek in the course of investigation is the property of Solmek, and, only also becomes the joint property of the Client only on the complete settlement of all invoices relating to the project. Solmek reserve the right to use the information in commercial tendering and marketing, unless the Client expressly wishes otherwise in writing. The quoted rates do not include VAT, and payment terms are 30 days from dispatch of invoice from our offices. Quotes are subject to a site visit.

We have allowed for 1 mobilisation and normal working hours unless otherwise stated. The scope of the investigation may be reviewed following the desk study and/or fieldwork. The presence or otherwise of Japanese Knotweed or other invasive plants can be difficult to identify especially during winter months. If Japanese Knotweed or other invasive species are suspect, it should be confirmed by an ecologist. We have not allowed for acquiring services information, and cannot be responsible for damage to underground services or pipes not shown to us or not clearly shown on plans. Costs incurred will be passed on to you, and in commissioning Solmek you understand and accept that you/your agent have a contractual relationship with Solmek & you accept this. Our rates assume unobstructed, reasonably level and firm access to the exploratory positions and adequate clear working areas and headroom. We have priced on the basis that you or your client have the necessary permissions, wayleaves and approvals to access land. All boreholes and pits are backfilled with arisings except where gas monitoring pipes are installed with stopcock covers. Solmek are not responsible for any uneven surfaces as a result of siteworks and rutting and backfilled excavations may require re-levelling and/or making good by others after fieldwork is complete, and Solmek has not allowed for this. No price has been provided or requested for a return visit to remove pipework and covers. Hourly rates apply to consultancy only and do not include expenses unless otherwise shown. If warranties are required, legal costs incurred will be passed on to you assuming Solmek agree to complete such warranties, modified or otherwise and you understand and agree to pay all costs.

We advise you/your client that we may elect to pursue our statutory rights under late payment legislation, and will apply 8% to the base rate for unreasonably late payments. Solmek are exempt from the CIS Scheme. Solmek offer to undertake work only in strict accordance with conditions covered by our current insurances, which are available for inspection. Solmek are not responsible for acts, negligent or otherwise of subcontractors and as a matter of policy cannot indemnify any other parties. Professional indemnity insurance is limited to ten times the invoice net total except where stated otherwise by Solmek. Solmek give notice that consequential loss as a direct or indirect result of Solmek's activities or omission of the same are excluded.