LAND OFF HINCKLEY ROAD, STOKE GOLDING

PHASE I & II
GEO-ENVIRONMENTAL INVESTIGATION
FOR
MAR CITY DEVELOPMENTS LTD

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LAND OFF HINCKLEY ROAD, STOKE GOLDING

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Executive Summary

This presents the salient points of the report and should not be referred to in isolation. The conclusions and recommendations presented below are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and therefore copies of this report should be sent to the appropriate Regulatory Authorities and / or other organisations (as appropriate) by the client for their comments and approval prior to undertaking any irrecoverable works associated with the subject site.

Enabling / Earthworks	Structures (including existing development platforms) and associated hardstanding are present across the site. It should be possible to utilise some of the rubble produced through these demolition works beneath areas of hardstanding, however this depends on the finished levels of the site. Existing underground utilities (if present) may require removal, protection or diversion during redevelopment works. A suitable asbestos survey is recommended prior to demolition. Should asbestos be confirmed within the existing buildings, it may have a significant impact on the cost of demolition and/or the removal of materials off site. The site occupies ground which exhibits a variable topography, with a general negative southern topographical gradient and an existing development platform observed. If earthworks are required to create other suitable development platforms across the site, an appropriate Earthworks Specification and Engineer supervision of all such works may be required should this prove necessary. A full Engineering assessment of the condition and suitability of the existing retaining walls, slopes etc. may also be required should they remain in situ (in whole or in part). Should site levels be re-graded, slopes etc. all such works should be also accompanied by an appropriate Earthworks Specification and completed under Engineer's supervision.
Foundations	Traditional foundations should be suitable for the proposed low-rise residential end use. A nett allowable bearing pressure of 75kN/m^2 may be generally assumed in the underlying natural strata for design purposes, increasing with depth. All foundations should be deepened through the made ground and any soft spots within the natural strata to bear on the underlying undisturbed natural soils at a minimum depth of 0.90m bgl outside the influencing distance of trees. Should foundations straddle cohesive / non-cohesive strata, then it is recommended that light mesh reinforcement is provided within foundations to prevent the potential for differential settlement. Foundations will need to be deepened within the influencing distance of trees due to the recorded volume change potential of natural soils beneath the site (see Section 12.5).
Floor slabs	Ground bearing floor slabs are considered appropriate for the site. However, if any topsoil / made ground is encountered that extends beyond 0.60m depth, suspended floor slabs will be required. Suspended floors with a clear void and heave precautions will be required when deepening due to trees in excess of 1.50m depth.
Groundwater	During the recent site works very slight inconsistent seepages of water were only encountered within three of the eleven exploratory holes completed. These were recorded from depths ranging between 0.7m and 3.6m as bands of damp granular soils within cohesive strata or as perched pockets overlying cohesive soils.
Building Near Trees	Cohesive natural soils were encountered across most parts of the site. Foundation designs may therefore need to be adjusted locally with regard to building near trees in accordance with NHBC Standards (Chapter 4.2). Soils of **medium** volume change potential should be assumed when calculating foundation depths. It is recommended that any proposed planting is chosen so as to have no detrimental impact on the proposed development foundations.
Road Construction	Values of less than 2% and greater than 5% can be anticipated in the made ground and natural strata respectively, subject to in situ testing.
Drainage	Based on the relatively impermeable nature of the underlying natural cohesive strata which was encountered across most parts of the site, the site is not considered to be suitable for the use of soakaways. If soakaways are to be proposed then in situ testing in accordance to BRE Digest 365 will need to be undertaken. All drainage proposals should be agreed with the Local Authority prior to finalising designs.
Mining	**No** precautions necessary.

Excavations	Excavations should be readily achievable using conventional plant and should not encounter hard dig at shallow depths. All excavations should be assumed to be unstable as a precautionary measure. No man entry into unsupported excavations should therefore be allowed without an appropriate risk assessment by the client and / or their appointed site contractors. Reference to CIRIA report 97 (1983) should be made to establish a suitable means of support or battering of excavation sides.
Ground Gas and Radon	Based on the measurements taken to date and in accordance with CIRIA C665 (2007), the site would be indicatively recorded as 'Characteristic Situation 1A' or NHBC Traffic Light System 'Green'. All recommendations are subject to the approval of the Local Authority. The site does **not** lie in an area requiring radon precautions in accordance with the Site Specific Environmental Data Report (Appendix V).
Sulphate Classification	Water soluble sulphate analysis of the soils recovered from the site returned results of less than 0.01g/l indicating that overall, DS-1/AC-1 conditions prevail at the site in accordance with BRE Special Digest 1 'Concrete in Aggressive Ground 2005'. Minimum concrete specification should be in accordance with NHBC Standards, Section 2.1, Table 1.
Contamination	Chemical analysis results have been compared with current relevant guidance which indicates that there is a single highly localised and shallow elevated concentration of TPH (around HD2, associated with the adjacent above ground fuel storage tank) at the site which could present risks to future end users. On this basis, potential localised risks have been identified at the site in relation to a future residential end use with private gardens.
Remediation	Localised remediation works to protect human health are considered necessary at this stage. Subject to the approval of the Local Authority it is considered that the removal of the identified TPH hotspot when decommissioning the tank would be the most suitable and cost effective approach to break the identified pollutant linkages and protect future residential end users. All recommendations associated with remedial works at the subject site are subject to the approval of the local authority.
Topsoil	Topsoil was encountered across some open areas of the site during recent site works and is considered suitable for use in private gardens and soft landscaped areas, subject to the approval of the Local Authority. However, if these quantities prove insufficient and soils are imported there will be the necessity to ensure compliance with all necessary regulatory licensing procedures and also to validate the soils prior to importation, subject to the approval of the Local Authority.
Further Works	Following removal of the above ground storage tank in the north-west of the site and the associated excavation of underlying shallow soils, confirmation should be obtained that the locally contaminated soils have been removed and disposed of appropriately. The retrieval and appropriate analysis of validation samples from the resultant excavation by an Engineer from Sirius Midlands Ltd should be undertaken in order to prove to the Local Authority that these works have been successfully completed. Inspection of soils beneath the two other fuel storage tanks may also be required subject to the approval of the Local Authority. An appropriate asbestos survey will need to be completed at the site prior to completion of demolition works. Semi-mature and mature trees/bushes are present around the site. Therefore as the site is underlain by natural cohesive soils which have been recorded to have a medium volume change potential, an arboricultural survey of the site and surrounding influencing area may be required in order to prepare a foundation schedule. This foundation schedule should be prepared once the development layout has been finalised in order to mitigate the effects of existing / proposed trees and landscaping.

1.0 INTRODUCTION

1.1 Preamble

Sirius Midlands Ltd have been appointed by Mar City Developments Ltd to undertake a combined Phase I & II Geo-Environmental Investigation at land off Hinckley Road, Stoke Golding, Leicestershire.

1.2 Report Status

This report provides factual and interpretive geotechnical and environmental information, alongside associated construction proposals and recommendations, in relation to a proposed redevelopment of the site for a low-rise residential end-use with private gardens. It has been prepared for the sole use and reliance of Mar City Developments Ltd and their appointed agents (e.g. Sirius Midlands Ltd). No other third party may rely or reproduce the content of this report without the written approval of Sirius Midlands Ltd. If any unauthorised third party comes into possession of this report, they rely upon it entirely at their own risk and the authors do not owe them any warranty, duty of care or skill.

1.3 Sources and Conditions

The findings and recommendations made in this report are based on published information, and site investigation works undertaken on 7th April 2011. Sirius Midlands Ltd cannot accept responsibility for the reliability and authenticity of published information or reports prepared by third parties.

The possibility of significant variation in ground conditions existing between sampling locations cannot be discounted. Groundwater conditions are based on observations made at the time of the investigation and may be subject to significant variation due to seasonal or other effects.

An arboriculturalist/invasive plant species survey has not been undertaken by Sirius Midlands Ltd although potential areas of concern have been highlighted where observed. Invasive plant species may not have been observed due to seasonal variations and/or access restrictions.

1.4 Previous Reports

Sirius Midlands Ltd have not been made aware of any previous reports relating to the site by our client.

1.5 Proposed Development

This report has been prepared on the understanding that the site is to be redeveloped for a low-rise residential end-use with private gardens. Should the development proposals alter, then the recommendations in this report may be subject to change. A site development layout plan was supplied to Sirius Midlands Ltd by the client for reference purposes. Appropriate extracts showing the site are included in Appendix I (Drawing 001).

2.0 SITE LOCATION AND DESCRIPTION

2.1 Location

The site is located off Hinckley Road, Stoke Golding as shown on the Site Location Plan presented in Appendix II (Drawing 002). The site is located at Ordnance Survey National Grid Reference 440854,297294 (SP 408 972).

2.2 Description

The walkover survey was undertaken on the 7th April 2011 prior to the commencement of site works. The following key observations were made:

2.2.1 Site:

- The site is roughly rectangular in shape, and extends to approximately 1.4 hectares;
- The site currently supports a recently disused convent, comprising a series of one and two storey brick-built buildings across the north site with a large chapel building in the centre of the site;
- An overall general negative southern topographical gradient was observed across the site (i.e. the site slopes downwards approximately 5m from north to south), although a development platform approximately 3m in height is present across the central area;
- Gated access to the site is from two points off a farm track from Hinckley Road at the site's northwestern corner;
- The site is bound to the north by a farm track, to the east by allotment gardens, woodland to the southeast and playing fields associated with the adjacent school to the south and west;
- Potential asbestos containing materials were not observed on any of the main buildings, however, potential asbestos sheeting was noted on the two small buildings (shed/storage area) on the eastern boundary of the site;
- A basement is recorded within the footprint of the large building in the central/eastern area of the site;
- Two fuel storage tanks were observed at the time of the walkover, comprising a tank on the western boundary of the site understood to supply heating oil to the school and the convent and a second unbunded heating oil tank adjacent to the building in the north of the site. Anecdotal evidence at the time of the intrusive investigation suggested there may be a further fuel tank located in the basement of the building in the central/eastern area of the site;
- A number of semi-mature and mature trees and bushes were noted along the northeastern, northern, and western site boundaries;

- A number of open grassed areas are present at the site, including two lawns in the north of the site, an area for hanging out washing and a large open area in the south of the site.

A Site Features Plan (Drawing 003) showing the general aspects of the site is included in Appendix III and General Site Photographs (Drawing 004) are included in Appendix IV.

2.2.2 Surrounding Area:

- The site is immediately surrounded by farmland to the north, allotment gardens and woods to the east and playing fields to the south and west.
- Land in the wider vicinity supports predominately agricultural land uses with residential houses also present.

3.0 GEO-ENVIRONMENTAL SETTING

3.1 Geology, Hydrogeology and Mining

A review of the following information has been undertaken:

- British Geological Survey 1:50,000 scale Series, Sheet 155, Coalville, Solid & Drift Edition.
- Coal Mining Searches, The Law Society Guidance Notes and Directory 1998 Edition.
- Environment Agency Online Aquifer Designation Database (accessed 26th April 2011).
- Building Research Establishment (BRE), Radon: Guidance on Protective Measures for New Buildings (BR211, 2007 Edition).
- Site Specific Environmental Data Report: Ref. EMS_124563 (April 2011).

Table 3.1: Geological Information

Drift Deposits	The site is recorded to be underlain by drift deposits of the Oadby Member (Till). These are generally recorded to comprise grey, weathered brown boulder clay, characterised by subordinate lenses of sand and gravel, clay and silt, with chalk and flint fragments.
Solid Geology	The site is recorded to be underlain by The Mercia Mudstone formation, recorded generally to comprise red mudstone, with subordinate siltstone and sandstone.
Discontinuities	No faults are recorded within influencing distance of the site.
Hydrogeology	The bedrock geology across the site is designated as a Secondary 'B' aquifer. Secondary aquifers include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. 'Secondary B' aquifers are predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers. The site is **not** located within an Environment Agency designated Source Protection Zone.
Hydrology	The nearest surface water feature has been identified as an unnamed brook which is situated approximately 250m northeast of the site at its nearest point.
Mining	The site does **not** lie within an area at risk from coal mining. Historic ground workings have been identified across a narrow strip across the centre of the site from 1927 to 1950, recorded as unspecified ground workings.
Radon	The site is **not** recorded to lie in a radon affected area in accordance with the Site Specific Environmental Data Report (Appendix V).

3.2 Environmental Data Search

The principal considerations of immediate relevance are given below in Table 3.2. For a comprehensive list of environmental data, please refer to the Environmental Data Report presented in the Appendix V.

Table 3.2: Environmental Data

Authorisations, Incidents and Registers	**No** authorisations, incidents or registers have been identified within a 250m radius of the site.
Landfills and Other Waste Sites	**No** landfill or other waste sites have been identified within a 250m radius of the site.
Current Land Uses	Three current industrial land uses have been identified within a 250m radius of the site. The nearest is recorded 86m southwest of the site relating to an electrical substation.
Hydrogeology and Hydrology	**No** significant hydrogeology / hydrology issues have been noted within a 250m radius of the site. **No** potable water abstraction licenses have been identified within a 2000m radius of the site.
Flooding	An Environment Agency Zone 2 and 3 Indicative Floodplain is recorded 176m east of the site. No areas benefiting from flood defences are recorded with a 250m radius of the site. The site is not recorded to be within a Groundwater Flooding Susceptibility area.
Designated Environmentally Sensitive Sites	The site is recorded to be within a nitrate vulnerable zone.
Natural Hazards	The site has been classified as having a 'Negligible' risk rating for ground dissolution subsidence hazards, compressible ground subsidence hazards, and collapsible deposit hazards. The site has been classified as having a 'Very Low' risk rating for landslide ground subsidence hazards and running sand ground subsidence hazards. The site has been classified as having a 'Low' risk rating for shrink-swell clay subsidence hazards.

4.0 HISTORY OF LAND USE

A study of historical Ordnance Survey maps has been undertaken to identify any potentially contaminative former land-uses. The main historical features of the site and surrounding area (within a 250m radius) are summarised in Table 4.1 (below) and Table 4.2 (overleaf) and are shown on the historical maps presented in Appendix VI. It should be noted, however that considerable periods of time may have elapsed between successive Ordnance Survey map editions and it is possible that further land uses have occurred in the intervening years which were not recorded. In these circumstances, whilst we have tried to ascertain the complete record of the site history, the possibility that other significant land uses may have taken place cannot be discounted.

Table 4.1: Principal Historical On-Site Features

OS map date(s)	Source scale	Principal On-Site Features
1886-1887	1:10,560	The site is recorded to comprise a number of buildings known as Stoke Lodge in the north of the site and part of two large open fields to the south. An embankment is recorded across the central and western areas of the site.
1888	1:2,500	A pump is recorded adjacent to the north of the Stoke Lodge building.
1901	1:10,560	The long building in the north of the site no longer recorded.
1903	1:2,500	No significant changes identified.
1923-1927*	1:10,560	No significant changes identified.
1928-1929	1:2,500	Two small buildings now recorded in the northeast of the site.
1938*	1:10,560	No significant changes identified.
1950	1:10,560	Site area now recorded as a school.
1962-1963	1:2,500	No significant changes identified.
1967-1968	1:10,560	No significant changes identified.
1974	1:2,500	The site recorded to have undergone substantial redevelopment across central and southern areas, including a development platform (with associated southerly slope) recorded to the south of the convent building. The site is now recorded as St Martin's Convent and corresponds to the present day layout.
1978*	1:10,000	No significant changes identified.
1992-1993	1:2,500	No significant changes identified.
2002	1:10,000	No significant changes identified.
2011	1:2,500	No significant changes identified.
2011	1:10,000	No significant changes identified.

* - Full extent of site/area not recorded.

Table 4.2 Principal Historical Off-Site Features

OS map date(s)~	Source Scale	Principal off-site features	Direction
1886-1887	1:10,560	Farms/agriculture	All
1888	1:2,500	No significant changes identified.	-
1901	1:10,560	Farm/residential development.	N
1903	1:2,500	No significant changes identified.	-
1923-1927*	1:10,560	No significant changes identified.	-
1928-1929	1:2,500	No significant changes identified.	-
1938*	1:10,560	No significant changes identified.	-
1950	1:10,560	Residential development.	W
1962-1963	1:2,500	School. Tennis courts/playing field.	SW S
1967-1968	1:10,560	Residential development.	W
1974	1:2,500	Residential/farm development.	N
1978*	1:10,000	No significant changes identified.	-
1992-1993	1:2,500	No significant changes identified.	-
2002	1:10,000	No significant changes identified.	-
2011	1:2,500	No significant changes identified.	-
2011	1:10,000	No significant changes identified.	-

* - Full extent of site/area not recorded.

5.0 PHASE I GEOTECHNICAL ASSESSMENT

5.1 Anticipated Ground Conditions

Soils – Made Ground / Topsoil

Topsoil is anticipated in open areas of the site (e.g. the southern portion, and the two lawns in the north of the site).

Made ground is also anticipated across the site, associated with the disused convent, associated buildings at the site and evidence of workings/topographical modification (i.e. development platform).

Drift and Solid – Natural Strata

Superficial drift deposits of the Oadby Member (Till) are recorded across the site.

The site is recorded to be underlain by The Mercia Mudstone Formation, recorded generally to comprise red mudstone, with subordinate siltstone and sandstone.

Groundwater

Bedrock geology across the site is designated as a Secondary 'B' aquifer. On this basis, groundwater strikes may be encountered during forthcoming intrusive works, depending on the prevailing ground conditions.

Stability Issues (e.g. mining / slopes)

The site has been classified as having a 'Negligible' risk rating for ground dissolution subsidence hazards, compressible ground subsidence hazards, and collapsible deposit hazards. The site has been classified as having a 'Very Low' risk rating for landslide ground subsidence hazards and running sand ground subsidence hazards. The site has been classified as having a 'Low' risk rating for shrink-swell clay subsidence hazards.

No coal mining issues have been identified at the site.

Contamination and Performance of Building Materials

Potentially contaminative land uses have been identified at the site comprising three fuel tanks (in the north and west of the site, and in the basement of the central building) and potential deep made ground/fill materials in the south of the site relating to recorded historic ground workings. Potential impacts to building materials are therefore subject to intrusive works, ground gas monitoring and laboratory analysis.

6.0 PHASE I ENVIRONMENTAL ASSESSMENT

6.1 Phase I Conceptual Model

The following is based on the desk study information listed above and the site walkover assessment undertaken by Sirius Midlands Ltd on the 7th April 2011.

6.1.1 Site Summary:

A review of all available desk study information indicates that the site supported residential land uses since the earliest mapping reviewed (1886-1887) until 1950 when the site became a school. The site was recorded to have been redeveloped in 1974 to support St Martin's convent.

6.1.2 S-P-R Characterisation:

The statutory guidance describes contaminated land in terms of 'significant pollutants' and 'pollutant linkages', using SOURCE-PATHWAY-RECEPTOR' scenarios for the site. For a pollutant linkage to exist all three of these elements must be present. These have been clearly defined in the guidance as follows:

…..potential source as 'a contaminant which is in, or under the land and which has the potential to cause significant harm or to cause pollution of controlled waters'.

…..potential pathway as 'one or more routes or means by, or through, which a receptor is being exposed to, or affected by a contaminant, or could be so exposed or affected'.

…..potential receptor as 'a living organism, a group of living organisms, an ecological system or a piece of property which is being or could be, harmed by a contaminant or controlled waters which are being, or could be, polluted by a contaminant'.

Examination of the desk study information and features noted in the site walkover has identified the following (see below):

Potential Sources:

The review of the available desk study information has revealed the following potential sources of contamination identified resulting from former and/or existing land uses that must be considered in a SOURCE-PATHWAY-RECEPTOR scenario. Regardless of the following it should always be considered that naturally occurring levels of some contaminants may exceed the relevant guidance values.

Table 6.1: Potential Sources of Contamination

Potential Onsite Sources	**Associated Potential Contaminants***		
	Metals and inorganics	*Organics*	*Other*
Made Ground/ Development Platform	General Suite	General Suite	Asbestos/ Ground Gas
Fuel Storage Tanks	-	-	TPH
Potential Offsite Sources			
None Identified	-	-	-

* Professional experience alongside CLR8: Potential Contaminants for the Assessment of Land (used for guidance purposes).

Potential Pathways:

- Direct ingestion of soil and dust,
- Dermal contact with soil and dust,
- Inhalation of vapour and dust,
- Made ground,
- Vadose zone.

Potential Receptors:

- Ground workers employed in the redevelopment of the site,
- Future end users of the site (including properties),
- Controlled waters,
- Neighbouring land users.

6.1.3 Potential Pollutant Linkages:

A potential pollutant linkage is defined as 'the relationship between a contaminant, a pathway and a receptor' where the pollutant is the contaminant in the pollutant linkage. For land to be identified as contaminated under the current UK guidance all three elements of the pollutant linkage must be present. In many cases there may be more than one pollutant linkage on any given site.

A review of the desk study information, the features noted in the site walkover and the potential sources, pathways and receptors listed above has led to the potential significant pollutant linkages (SPL) being considered (Table 6.2 overleaf).

Table 6.2: Potential Pollutant Linkages

Potential Source	Pathway	Receptors					SPL*
		Controlled Waters	Ground workers	End-users	Flora	Building materials	
Metal/metalloids and inorganics in **SOIL**	Direct Ingestion		✓	✓			✓
	Dermal Contact		✓	✓			✓
	Inhalation		✓	✓			✓
	Leaching/direct movement	✓			✓	✓	✓
Asbestos containing materials in **SOIL**	Inhalation		✓	✓			✓
Organics in **SOIL** (hydrocarbons)	Direct Ingestion		✓	✓			✓
	Dermal Contact		✓	✓			✓
	Inhalation		✓	✓			✓
	Leaching/direct movement	✓			✓	✓	✓
Metal/metalloids and inorganics in **GROUNDWATER**	Direct Ingestion		✓				✓
	Dermal Contact		✓				✓
	Inhalation						
	Leaching/direct movement				✓	✓	✓
Organics in **GROUNDWATER** (hydrocarbons including PAH)	Direct Ingestion		✓				✓
	Dermal Contact		✓				✓
	Inhalation						
	Leaching/direct movement				✓	✓	✓
GROUND GAS (Carbon Dioxide and Methane)	Direct Ingestion						
	Dermal Contact						
	Inhalation			✓			✓
	Leaching/direct movement			✓		✓	✓

* Potential SPL identified pending Local Authority comments and confirmation of ground conditions

6.1.4 Model Status and Uncertainty:

The potential significant linkages listed above are based on the available data listed in the sections above and the features noted during the site walkover. Therefore, the linkages identified are tentative and subject to the following uncertainty:

- Actual presence of significant contamination in soils,
- Actual presence of ground gas,
- Depth to controlled waters.

7.0 RATIONALE FOR PHASE II INVESTIGATION

7.1 Scope of Ground Investigation

The Phase II Environmental Investigation will comprise the recovery of samples from all exploratory holes positioned to provide optimum coverage across accessible areas of the site as identified in Table 7.1 below, in accordance to Eurocode 7. Samples will be selected for analysis on the basis of their onsite visual descriptions with particular attention given to samples displaying any olfactory evidence of contamination. All samples will be taken in snap top plastic containers and 250ml amber glass jars or vials. All samples will be placed in cooled containers and transported to Sirius Midlands Ltd's storage facility in Nottingham before awaiting transfer to a UKAS / MCERTS accredited laboratory.

Table 7.1: Exploratory Hole Layout Rationale

Potential Source / Issue	Exploratory Holes
General Site Coverage	All Exploratory Holes
Fuel Tank (North)	HD1 – HD3
Fuel Tank (West)	WS3
Fuel Tank (Basement)	WS4 & WS6
Potential Historic Ground Workings / Deep Made Ground	WS3, WS5 & WS6
Potential Ground Gas	WS2, WS5, WS6, WS7

The locations of the exploratory holes listed in Table 7.1 above are shown on the Site Investigation Plan (Drawing 005) presented in Appendix VII.

The samples taken during the intrusive investigation will be analysed for a range of contaminants in accordance with NHBC Standards Chapter 4.1 'Land Quality – managing ground conditions' and CLR 8 'Potential Contaminants for the Assessment of Land' (withdrawn but used for reference purposes where applicable). The soil samples will be analysed for the following parameters: arsenic, cadmium, chromium, copper, nickel, zinc, lead, mercury, selenium, chromium, sulphate, speciated PAH's and phenols. Selected samples shall also be scheduled for testing to determine the presence of free asbestos fibres and hydrocarbons. If samples are observed to display further visual of olfactory evidence of contamination (e.g. evidence of asbestos or hydrocarbon staining), they shall be scheduled for appropriate analysis.

In order to assess risks to controlled waters, leachate analysis for metals (listed above), PAHs and pH will be undertaken on two representative soil samples

collected during intrusive works to provide information on the solubility of contaminants.

7.2 Scope of Geotechnical Investigation

The geotechnical investigation will comprise the advancement of exploratory locations across accessible areas of the site to determine the site's geo-morphological characteristics. The visual description of the soils will be used as the basis of determining the basic engineering properties of the soils encountered and all soils logging will be in accordance to Eurocode 7 where applicable.

During site works, samples will be collected to allow for classification testing and chemical analysis to be undertaken to determine the potential effects of soil upon the performance of building materials.

Equivalent *in situ* standard penetration testing (SPT) will be undertaken within window sampler boreholes across the site to determine the strength profile of the underlying strata.

8.0 SITE WORKS

All fieldwork and soil descriptions were carried out in general accordance with BS EN 14688 'Geotechnical Investigation and Testing – Identification and Classification of Soil'. Each of the exploratory locations was positioned on site by Sirius Midlands Ltd. Following preliminary discussions with the client the locations of these exploratory holes are shown on the Site Investigation Plan (Drawing 005) presented in Appendix VII. Prior to any excavation, the locations were checked for the presence of underground services by a cable avoidance tool (CAT) and signal generator, with reference to service plans where supplied.

All exploratory locations were backfilled with the arisings once representative sampling / *in situ* testing had been completed with the exception of locations WS2 and WS7, which were completed as bespoke gas and groundwater monitoring installations.

8.1 Scope of Investigation

A summary of the ground investigation is outlined in the table below:

Table 8.1: Method of Investigation

Method of Investigation	No.	Max Depth (m)	Sampling Regime
Window Sampler	8	5.45	1, 2
Hand dug pit	3	0.8	1, 2

[1] – 500ml plastic tubs, 250ml amber jars and 40ml glass vials.
[2] – Bulk bags

The investigation was carried out under the supervision of an Engineer from Sirius Midlands Ltd.

Disturbed and undisturbed samples were collected from each discrete horizon where applicable within the exploratory holes to provide soils for laboratory testing.

Full Intrusive Investigation Logs are presented in Appendix VIII.

8.2 Limitations to the Investigation

Intrusive investigation within the footprints of existing structures was not possible due to constraints associated with access and health and safety. Window sampler access close to the heating oil tank in the north of the site was not possible due to the close proximity of trees/dense undergrowth, therefore three hand dug trial pits were advanced in this area. However, these limitations did not present significant constraints to the site investigation at this stage.

9.0 ANALYSIS, RESULTS AND INTERPRETATION

9.1 Chemical Analyses of Soils

Representative soil samples from the exploratory locations were analysed for the range of contaminants outlined in Section 7.1. Representative samples of the near surface and underlying natural strata were analysed. The environmental analysis was scheduled by Sirius Midlands Ltd and carried out by a UKAS/MCERTS accredited laboratory. The full details of the test results are presented in Appendix IX, and are summarised in Table 9.1 below.

Table 9.1: Laboratory Analysis of Soil Samples

Determinand	No. of Samples Analysed	Concentration Range (mg/kg)	Tier 1 Screening Values (mg/kg)	No. Exceeding Threshold
Metals				
Arsenic	8	5.1 – 28.0	32[a]	0
Cadmium	8	0.14 – 0.39	10[a]	0
Chromium (total)	8	17.0 – 58.0	3000[b]	0
Lead	8	29.0 – 120.0	450[c]	0
Mercury	8	<0.10	170[a]	0
Selenium	8	<0.20	350[a]	0
Nickel	8	11.0 – 39.0	130[a]	0
Copper	8	5.4 – 26.0	2330[b]	0
Zinc	8	21.0 – 160.0	3750[b]	0
Organics / Inorganics / Other				
Benzo(a)pyrene	8	<0.1*	0.94[b]	0
PAH	8	<2.0*	N/A	N/A
Phenols	8	<0.3*	290[a]	0
pH	8	6.1 – 8.3	N/A	N/A
Asbestos	4	NFD	N/A	N/A
TPH >C6-C10	2	<1 – 160	46	**1**
TPH >C10-C21	2	<1 – 1100	160	**1**
TPH >C21-C40	2	<1*	1100	0

[a] Revised Environment Agency Soil Guideline Values (SGVs) 2009 at 2.5% SOM (residential end use with plant uptake)
[b] Generic screening values including 'old' SGVs and LQM/CIEH at 2.5% SOM (residential end use with plant uptake)
[c] CLEA SGV 2002 for lead used in lieu of alternative /replacement values
* Contaminants recorded below laboratory limits of detection
N/A = Not Applicable
NFD = No free fibres detected
Notes: Mercury T1SV is based on inorganic mercury

Metals

The results were compared with tier 1 screening values (T1SVs) including the Contaminated Land Exposure Assessment Model (CLEA) soil guideline values (SGV) which are considered most appropriate to the proposed end-use (residential development with private gardens). Where relevant SGVs are not

available the results have been assessed through available alternative T1SVs including the LQM / CIEH Generic Assessment Criteria (2nd Edition).

Zootoxic Metals

None of the samples analysed for zootoxic metals recorded concentrations that were deemed excessive. On this basis, no risks have been identified from these determinands at the subject site based on the proposed residential end use with private gardens.

Phytotoxic Metals

None of the samples analysed for phytotoxic metals recorded concentrations that were deemed excessive. On this basis, no risks have been identified from these determinands at the subject site based on the proposed residential end use with private gardens.

Inorganics and Organics

In lieu of published CLEA soil guidance values for inorganics and organics, the results have been assessed by comparison to available alternative T1SVs including the LQM / CIEH Generic Assessment Criteria (2nd Edition).

Inorganics

The pH values recorded from the soil samples averaged 7.3, indicating near neutral soil conditions prevail within soils at the site.

Organics

The significance of the PAH laboratory results have been assessed using the T1SV for benzo(a)pyrene (0.94mg/kg). This is considered, in terms of toxicity, to present the greatest hazard to human health. None of the samples analysed for benzo(a)pyrene recorded concentrations in excess of the T1SV. On this basis, no risks have been identified from these determinands at the subject site based on the proposed residential end use with private gardens.

TPH

Two soil samples from the site were analysed for speciated total petroleum hydrocarbons (TPH) to the criteria working group (CWG) methodology. Exceedances of fraction-specific T1SVs were recorded within samples retrieved from exploratory holes HD2 (0.6m begl) with an overall TPH sum of 1300mg/kg within the TPH C_6-C_{10} and C_{10}-C_{21} ranges.

On this basis, potential localised shallow risks have been identified from TPH at the subject site around HD2 based on the proposed residential end use with private gardens.

Asbestos

Four soil samples of made ground were scheduled for analysis for asbestos containing materials. No free asbestos fibres were detected in any of the samples analysed. On this basis, no risks have been identified from asbestos containing materials at the subject site within the samples tested, based on the proposed residential end use with private gardens.

General Contaminants

Visual, Olfactory and Field Measurements

During the ground investigation works visual and olfactory evidence of potential hydrocarbon staining was only noted around the above ground storage tank in the north of the site. A representative sample from this location has been taken and scheduled for TPH analysis (as reported above). No other visual or olfactory evidence of potential hydrocarbon contamination was noted at the time of intrusive investigation.

9.2 CLEA Statistical Analysis

In August 2008 the Environment Agency (EA) withdrew the core regulatory guidance documents for the assessment of human health risks from contaminated land (CLR7 to CLR10), including the soil guideline value (SGV) documents. The newly published EA guidance documents (SC050021.TR1, SC050021.SR2 and SC050021.SR3) have been consulted; alongside the CL:AIRE / CIEH guidance note on statistical interpretation of contaminated land data; and the risk assessment for the subject site has been undertaken in broad accordance with these documents.

With reference to the documents listed above, statistical analysis on sample data is **not** required for determinands where no exceedances above the relevant T1SV were recorded. Based on Table 9.1, exceedances were only recorded for TPH. As TPH testing was targeted to areas of visual and olfactory evidence of hydrocarbon contamination it is not considered representative of the site as a whole. Therefore, further statistical analysis is not considered to be warranted at this stage.

9.3 Chemical Analyses of Soil Leachates

In order to provide an assessment of risks to controlled waters receptors from potential contaminants within soils, representative samples from two exploratory holes were scheduled for leachate testing. The environmental analysis was scheduled by Sirius Midlands Ltd and carried out by a UKAS/MCERTS accredited laboratory. The full details of the test results are presented in Appendix IX, and are summarised in Table 9.2 below.

The leachate results have been compared against the UK Environmental Quality Standards, which have been used for guidance purposes. These are considered the most suitable screening criteria for the subject site in the absence of significant controlled waters receptors in close vicinity (e.g. nearby surface water body).

However, other criteria which have been used to benchmark the site where applicable and these data include:

- UK Drinking Water Standards (DWS);
- WHO (Health) for Drinking Water Quality.

The recent environmental leachate analysis was scheduled by Sirius Midlands Ltd and carried out by a UKAS / MCERTS accredited laboratory. Full details of the test results are presented in Appendix IX and are summarised in Table 9.2 below.

Table 9.2 Laboratory Leachate Analysis on Soil Samples

Determinand	No. of samples analysed	Concentration range (µg/l#)	Environmental Quality Standards (µg/l)	No. exceeding threshold
Arsenic	2	<1.0*	50.0	0
Cadmium	2	<0.08*	5.0	0
Chromium	2	2.6 – 3.1	5.0	0
Lead	2	<1.0 – 1.2	4.0	0
Mercury	2	<0.5*	1.0	0
Selenium	2	<1.0*	(10.0)	0
Nickel	2	1.5 – 1.9	50.0	0
Copper	2	<1.0*	1.0	0
Zinc	2	<1.0 – 1.1	8.0	0
Phenols	2	<0.03*	30.0	0
Benzo(a)pyrene	2	<0.01*	(0.7)	0
Naphthalene	2	<0.01*	(0.1)	0

(*x*) Numbers in brackets indicate UK DWS or WHO Health Standards
* - Recorded below laboratory limits of detection

Assessment of the results of the leachability analysis indicates that none of the determinands analysed were recorded in excess of their respective screening values.

On this basis, no significant risks to identified controlled waters receptors have been identified at this stage.

9.4 Geotechnical Testing

The geotechnical laboratory testing was carried out in accordance with BS EN 14688 'Geotechnical Investigation and Testing – Identification and Classification of Soil'. Full details of the test results are presented in Appendix IX.

The pH values recorded from the soil samples averaged 7.3 indicating near neutral soil conditions prevail at the site.

Water soluble sulphate analysis of the soils recovered from the site returned results of <0.01g/l in all of the samples analysed.

Classification testing comprising plasticity index (PI) analysis was undertaken on three representative cohesive soil samples. The results show soils to have modified plasticity indices of 13.3 and 21.4 indicating soils to have an overall **medium** volume change potential as a maximum classification. Therefore in accordance with NHBC Standards, soils should be classified as displaying a medium volume change potential when calculating foundation depths.

Equivalent *in situ* standard penetration tests (SPT's) were undertaken in the natural strata within all boreholes across the site. SPT 'N' value results of between 7 and 28 were recorded within the natural strata beneath the site.

9.5 Ground Gas and Radon

9.5.1 Gas Classification Assessment

As part of the Phase I and II Geo-Environmental Investigation works, a ground gas assessment exercise has been undertaken. Gas Monitoring Record Sheets are included in Appendix X.

Interpretation of gas monitoring data is specified in CIRIA 665 (2007) '*Assessing risks posed by hazardous ground gases to buildings*'. This guidance includes the calculation of volumetric flow rates of ground based on maximum recorded gas concentrations and maximum recorded gas flow rates. Limiting factors are applied to the gas monitoring results and a characteristic situation is then applied to the site. This provides a worst-case scenario in relation to the ingress of gas to future structures. Summary gas data and volumetric flow rate calculations are shown in Table 9.3 below.

Table 9.3: Calculation of Volumetric Flow Rates

Monitoring Point	Maximum CH_4 %v/v	Maximum CO_2 %v/v	Maximum Flow Rate (l/hr)	Conversion*	Max. Volumetric Flow Rate (l/hr)
WS2	N/A	1.4	0.1	0.1 x 0.014	0.0014 **CO_2**
WS7	0.0	N/A	0.1	0.1 x 0.000	0.0000 **CH_4**

Maximum ground gas concentration multiplied by maximum flow rate to provide a worst-case & conservative risk assessment
~ Maximum flow taken as 0.1l/hr to account for acceptable error range of equipment
+ Methane not detected in any of the boreholes monitored

Limiting Factors

The gas monitoring results recorded methane at concentrations all at 0.0% v/v. The maximum volumetric flow rate across the site for methane was therefore calculated at 0.000 l/hr.

The gas monitoring results recorded carbon dioxide at concentrations below 5% v/v (maximum 1.4%). The maximum volumetric flow rate recorded across the site for carbon dioxide was therefore calculated at 0.0014 l/hr.

Classification of Site

With reference to the above data, the site would be classified as:

- Modified Wilson & Card Classification – **Characteristic Situation 1**; or
- NHBC Traffic Light System – **Green**.

Based on the above classification, the site would indicatively require the ground gas protection measures shown overleaf as a minimum for all residential structures (subject to the approval of the Local Authority):

Characteristic Situation 1A

- No special precautions required.

NHBC Traffic Light System - Green

- Negligible gas regime identified and gas protection measures are not considered necessary (assuming that a sufficiently ventilated 150mm sub-floor void is present).

9.5.2 Radon

The site is **not** recorded to lie in a radon affected area in accordance with the Site Specific Environmental Data Report (Appendix V).

10.0 PHASE II GEOTECHNICAL ASSESSMENT

10.1 Ground Conditions

The geotechnical element of the works was undertaken concurrently with the environmental investigation. The ground conditions encountered within the exploratory locations are summarised in the table below with the logs presented in Appendix VIII.

Table 10.1: Summary of Ground Conditions at the Site

General Description	Maximum Thickness (m)
Grass over a brown silty slightly gravelly TOPSOIL (WS3, WS5, WS7 & WS8).	0.25
MADE GROUND comprising a silty slightly gravelly reworked topsoil with ash and clinker fragments (All locations except WS3, WS5, WS7 & WS8).	0.80
MADE GROUND comprising reworked sand/gravel clay with localised pockets of ash and clinker. Gravel is fine to coarse subangular to subrounded of mixed lithology (WS6 only).	3.00
Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology (All WS locations).	2.85*
Medium dense orange brown very silty slightly gravelly SAND. Gravel is fine to coarse and subrounded of mixed lithology (WS7 & WS8).	1.00
Stiff grey occasionally gravelly CLAY. Gravel is fine and angular to subangular of mixed lithology (WS1, WS2 & WS8).	2.2*

* Not fully penetrated

10.1.1 Soils – Made Ground / Topsoil

Grass over a brown slightly gravelly silty topsoil was encountered in WS3, WS5, WS7 and WS8 to a maximum thickness of 0.25m (WS3).

Made ground of variable composition (as summarised in Table 10.1 above) was encountered across the site at an average thickness of 0.45m. Locally deeper thicknesses of made ground were recorded in central areas (to a maximum proven depth of 3.0m begl (WS6)) associated with the existing development platform.

The made ground and topsoil encountered are **not** considered to be suitable bearing strata for the proposed development due to their variability in both strength and composition.

10.1.2 Soils – Natural Strata

Made ground and topsoil was recorded to be predominantly underlain by firm to stiff orange brown slightly gravelly very silty clay at all window sampler locations to a maximum unproven depth of 5.45m begl (WS5)

Medium dense orange brown slightly gravelly very silty sand was generally encountered in the south of the site from a depth of 0.70m begl (WS7) to a maximum proven thickness of 1.00m (WS8).

A stiff grey occasionally gravelly clay was generally found to underlie all of the above strata to a maximum unproven depth of 4.00m begl (WS2).

A nett allowable bearing pressure of 75kN/m^2 may be generally assumed in the underlying natural strata for design purposes.

10.1.3 Groundwater and Excavations

During the recent site works very slight inconsistent seepages of water were only encountered within three of the eleven exploratory holes completed. These were recorded from depths ranging between 0.7m and 3.6m as bands of damp granular soils within cohesive strata or as perched pockets overlying cohesive soils.

10.1.4 Stability Issues (e.g. mining / slopes)

The site has been classified as having a 'Negligible' risk rating for ground dissolution subsidence hazards, compressible ground subsidence hazards, and collapsible deposit hazards. The site has been classified as having a 'Very Low' risk rating for landslide ground subsidence hazards and running sand ground subsidence hazards. The site has been classified as having a 'Low' risk rating for shrink-swell clay subsidence hazards.

No coal mining issues have been identified at the site.

10.2 Contamination and Performance of Building Materials

10.2.1 Sulphates

Water soluble sulphate analysis of the soils recovered from the site returned results of <0.01g/l in all of the samples analysed. indicating that overall, DS-1/AC-1 conditions prevail at the site in accordance with BRE Special Digest 1 'Concrete in Aggressive Ground 2005'.

10.2.2 Other Contaminants

A single highly localised hotspot of TPH has been recorded at the site (HD2 at 0.2m depth). This is considered to be associated with the adjacent fuel tank. Based on the results of the laboratory analysis, no further contaminants have been identified which are likely to be detrimental to the performance of building materials. The client should confirm with utility providers the type and nature of utility supply materials for the site as part of redevelopment works (e.g. water supply pipes).

10.3 Geotechnical Hazards for the Proposed Development

It is understood that the proposed development of the site is to comprise a residential end-use including private gardens. It is understood that the Client provisionally intends to undertake earthworks at the site to create a fresh single development platform.

Table 10.2 below outlines some of the geotechnical hazards that may need to be considered in relation to the proposed redevelopment of the site.

Table 10.2: Summary of Geotechnical Hazards

Hazard	Comment
Natural Soil Classification	**Medium** volume change potential soils are recorded across the site. Foundations will therefore require additional deepening depending on the proposed layout and proximity to trees at/around the site.
Topographical Gradient/ Slopes	An overall southerly topographical gradient is present across the site and a development platform is present in the centre of the site. The redeveloper has confirmed that topographical regrading of the site is likely and if this is the case there should be no remaining issue associated with man-made development platforms. However, if these features are to remain *in situ* as part of any proposed redevelopment layout, a suitable slope stability assessment will be required by an Engineer to determine stability risks. If significant earthworks are envisaged as part of site redevelopment works (as outlined above) then an engineering specification will be required to accompany all such activities.
Existing Services	Existing services may require protecting or diverting during any future site redevelopment works should they be present.
Basement	Anecdotal evidence from site maintenance staff suggests that a basement is present beneath part of the Convent (as approximately shown on the Site Features Plan (Drawing 003) presented as Appendix III). Deep excavations associated with this feature would need to be appropriately backfilled and therefore localised deepening of foundations may be required across this area.

Traditional foundations should be suitable for the proposed residential end use. A nett allowable bearing pressure of 75kN/m^2 may be generally assumed in the natural soils for design purposes subject to final site levels/earthworks.

11.0 PHASE II ENVIRONMENTAL ASSESSMENT

11.1 Phase II Conceptual Model

11.1.1 Site Summary

The results of the scheduled chemical analysis were compared with the Contaminated Land Exposure Assessment Model (CLEA) soil guideline values (SGV) considered most appropriate to the proposed development. In lieu of published CLEA soil guidance values for inorganics and organics, the results have been assessed by comparison to available alternative T1SV, including the LQM / CIEH Generic Assessment Criteria (2nd Edition).

In light of the chemical analysis results the SOURCE-PATHWAY-RECEPTOR characteristics have been re-assessed as outlined below.

11.1.2 Source-Pathway-Receptor Characterisation and Risk Assessment

The results of the chemical testing indicate that a highly localised and shallow hotspot of TPH has been detected at the site based on the proposed residential end use with private gardens.

The potential pathways and receptors have therefore been revised from those listed in Section 6.1.3 above.

11.1.3 Identified Pollutant Linkages

In view of the above; the pollutant linkages have been reassessed as listed in Table 11.1 overleaf.

Table 11.1: Identified Pollutant Linkages

Potential Source	Pathway	Receptors					SPL*
		Controlled Waters	Ground workers	End-users	Flora	Building materials	
Metal/metalloids and inorganics in **SOIL**	Direct Ingestion						
	Dermal Contact						
	Inhalation						
	Leaching/direct movement						
Organics in **SOIL** (hydrocarbons and PAHs)	Direct Ingestion			✓			✓
	Dermal Contact			✓			✓
	Inhalation			✓			✓
	Leaching/direct movement			✓			✓
Metal/metalloids and inorganics in **GROUNDWATER**	Direct Ingestion						
	Dermal Contact						
	Inhalation						
	Leaching/direct movement						
Organics in **GROUNDWATER** (hydrocarbons including PAH)	Direct Ingestion						
	Dermal Contact						
	Inhalation						
	Leaching/direct movement						
GROUND GAS (Carbon Dioxide and Methane)	Direct Ingestion						
	Dermal Contact						
	Inhalation						
	Leaching/direct movement						

* Subject to Local Authority approval.

11.1.4 Model Status, Uncertainty and Justification

The above conceptual model is considered to represent the current site conditions based on the information derived from the site investigation.

11.2 Risk Assessment

11.2.1 Qualitative Risk Assessment

Current UK legislation on contaminated land is principally contained in Sections 78 (A) to (YC) in Part IIA of the Environmental Protection Act 1990, which was retrospectively inserted by Section 57 of the Environment Act 1995. This legislation came into effect in April 2000 and is enacted by the Contaminated Land (England) Regulations 2000.

The legislation adopts the principle of a 'suitable for use' approach for the assessment of contaminated land, the rationale reflected in the site-specific risk assessment and determination of remedial strategy. Action is only required if unacceptable risks are posed to human health or to the environment, taking into account the current land-use and geo-environmental settings.

The legislation places a responsibility on the Local Authority to determine whether the land under its jurisdiction is contaminated by consideration of whether: -

- ***Significant harm is being caused***
- ***There is a significant possibility of significant harm being caused, or***
- ***Pollution of controlled waters is being caused or is likely to be caused***

The statutory guidance describes a risk assessment methodology in terms of 'significant pollutants' and 'pollutant linkages', using SOURCE-PATHWAY-RECEPTOR' scenarios for the site.

On the basis of available data, the geo-environmental setting and proposed end-use, a qualitative Source-Pathway-Receptor risk assessment table is presented overleaf.

Table 11.2: Qualitative Risk Assessment Summary Table

Source	Pathway	Target (Receptor)	Comments	Risk Level	Action*
Metals/ Metalloids in soils and dust	Direct ingestion (active) Inhalation (passive) Dermal contact.	Ground workers, End users	Significant contamination was not encountered	**LOW**	NO FURTHER ACTION REQUIRED
Metals/ Metalloids in soils and dust	Near surface soils	Plants within the proposed landscaped areas and gardens.	Significant contamination was not encountered	**LOW**	NO FURTHER ACTION REQUIRED
Metal / Metalloids compounds in waters	As above (plus skin contact)	Ground workers, Site users	Significant groundwater was not encountered	**LOW**	NO FURTHER ACTION REQUIRED
Inorganics in soils and dust	Direct ingestion (active) Inhalation (passive)	Ground workers, End users and the Property	Significant contamination was not encountered	**LOW**	NO FURTHER ACTION REQUIRED
Organic compounds in soils and dust	As above (plus skin contact)	Ground workers, End users and the Property	Highly Localised TPH Hotspot Encountered	**LOW/ MOD**	LOCALISED TREATMENT / REMOVAL
Organic compounds in waters	As above (plus skin contact)	Ground workers, Site users	Significant groundwater was not encountered	**LOW**	NO FURTHER ACTION REQUIRED
Ground Gas	Inhalation (passive), Ingress	End users and Property	No potential sources identified	**LOW**	NO FURTHER ACTION REQUIRED

Notes: LOW / MODERATE / HIGH - Risk level is assigned a low/moderate/high qualitative value, based on assessed requirement for action in context of Part II EPA 90.
* Subject to Local Authority Approval.

11.3 Site Status

The Phase II conceptual model and the qualitative risk assessment outlined above have recorded a highly localised potentially feasible pollutant linkage in relation to the proposed residential end use with private gardens. This relates to a single highly localised and shallow hotspot of TPH at the subject site (associated with the above ground fuel storage tank in the north of the site).

12.0 RECOMMENDATIONS

The conclusions and recommendations presented below are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and therefore copies of this report should be sent to the appropriate Regulatory Authorities and / or other organisations (as appropriate) by the client for their comments and approval prior to undertaking any irrecoverable works associated with the subject site.

12.1 Enabling / Earthworks: Structures (including existing development platforms) and associated hardstanding are present across the site. It should be possible to utilise some of the rubble produced through these demolition works beneath areas of hardstanding, however this depends on the finished levels of the site. Existing underground utilities (if present) may require removal, protection or diversion during redevelopment works.

A suitable asbestos survey is recommended prior to demolition. Should asbestos be confirmed within the existing buildings, it may have a significant impact on the cost of demolition and/or the removal of materials off site.

The site occupies ground which exhibits a variable topography, with a general negative southern topographical gradient and an existing development platform observed. If earthworks are required to create other suitable development platforms across the site, an appropriate Earthworks Specification and Engineer supervision of all such works may be required should this prove necessary. A full Engineering assessment of the condition and suitability of the existing retaining walls, slopes etc. may also be required should they remain *in situ* (in whole or in part). Should site levels be re-graded, slopes etc. all such works should be also accompanied by an appropriate Earthworks Specification and completed under Engineer's supervision.

12.2 Foundations: Traditional foundations should be suitable for the proposed low-rise residential end use. A nett allowable bearing pressure of 75kN/m^2 may be generally assumed in the underlying natural strata for design purposes, increasing with depth.

All foundations should be deepened through the made ground and any soft spots within the natural strata to bear on the underlying undisturbed natural soils at a minimum depth of 0.90m bgl outside the influencing distance of trees. Should

foundations straddle cohesive / non-cohesive strata, then it is recommended that light mesh reinforcement is provided within foundations to prevent the potential for differential settlement.

Foundations will need to be deepened within the influencing distance of trees due to the recorded volume change potential of natural soils beneath the site (see Section 12.5).

12.3 Floor Slabs: Ground bearing floor slabs are considered appropriate for the site. However, if any topsoil / made ground is encountered that extends beyond 0.60m depth, suspended floor slabs will be required. Suspended floors with a clear void and heave precautions will be required when deepening due to trees in excess of 1.50m depth.

12.4 Groundwater: During the recent site works very slight inconsistent seepages of water were only encountered within three of the eleven exploratory holes completed. These were recorded from depths ranging between 0.7m and 3.6m as bands of damp granular soils within cohesive strata or as perched pockets overlying cohesive soils.

12.5 Building Near Trees: Cohesive natural soils were encountered across most parts of the site. Foundation designs may therefore need to be adjusted locally with regard to building near trees in accordance with NHBC Standards (Chapter 4.2). Soils of **medium** volume change potential should be assumed when calculating foundation depths. It is recommended that any proposed planting is chosen so as to have no detrimental impact on the proposed development foundations.

12.6 Road Construction: Values of less than 2% and greater than 5% can be anticipated in the made ground and natural strata respectively, subject to *in situ* testing.

12.7 Drainage: Based on the relatively impermeable nature of the underlying natural cohesive strata which was encountered across most parts of the site, the site is **not** considered to be suitable for the use of soakaways. If soakaways are to be proposed then *in situ* testing in accordance to BRE Digest 365 will need to be undertaken. All drainage proposals should be agreed with the Local Authority prior to finalising designs.

12.8 Mining: No precautions necessary.

12.9 Ground Gas and Radon: Based on the measurements taken to date and in accordance with CIRIA C665 (2007), the site would be indicatively recorded as 'Characteristic Situation 1A' or NHBC Traffic Light System 'Green'. All recommendations are subject to the approval of the Local Authority.

The site does **not** lie in an area requiring radon precautions in accordance with the Site Specific Environmental Data Report (Appendix V).

12.10 Excavations: Excavations should be readily achievable using conventional plant and should not encounter hard dig at shallow depths. All excavations should be assumed to be unstable as a precautionary measure. No man entry into unsupported excavations should therefore be allowed without an appropriate risk assessment by the client and / or their appointed site contractors. Reference to CIRIA report 97 (1983) should be made to establish a suitable means of support or battering of excavation sides.

12.11 Sulphate Classification: Water soluble sulphate analysis of the soils recovered from the site returned results of less than 0.01g/l indicating that overall, DS-1/AC-1 conditions prevail at the site in accordance with BRE Special Digest 1 'Concrete in Aggressive Ground 2005'. Minimum concrete specification should be in accordance with NHBC Standards, Section 2.1, Table 1.

12.12 Contamination: Chemical analysis results have been compared with current relevant guidance which indicates that there is a single highly localised and shallow elevated concentration of TPH (around HD2, associated with the adjacent above ground fuel storage tank) at the site which could present risks to future end users. On this basis, potential localised risks have been identified at the site in relation to a future residential end use with private gardens.

12.13 Remediation: Localised remediation works to protect human health are considered necessary at this stage. Subject to the approval of the Local Authority it is considered that the removal of the identified TPH hotspot when decommissioning the tank would be the most suitable and cost effective approach to break the identified pollutant linkages and protect future residential end users.

All recommendations associated with remedial works at the subject site are subject to the approval of the local authority.

12.14 Topsoil: Topsoil was encountered across some open areas of the site during recent site works and is considered suitable for use in private gardens and soft landscaped areas, subject to the approval of the Local Authority. However, if these quantities prove insufficient and soils are imported there will be the necessity to ensure compliance with all necessary regulatory licensing procedures and also to validate the soils prior to importation, subject to the approval of the Local Authority.

12.15 Further Works: Following removal of the above ground storage tank in the north-west of the site and the associated excavation of underlying shallow soils, confirmation should be obtained that the locally contaminated soils have been removed and disposed of appropriately. The retrieval and appropriate analysis of validation samples from the resultant excavation by an Engineer from Sirius Midlands Ltd should be undertaken in order to prove to the Local Authority that these works have been successfully completed. Inspection of soils beneath the two other fuel storage tanks may also be required subject to the approval of the Local Authority.

An appropriate asbestos survey will need to be completed at the site prior to completion of demolition works.

Semi-mature and mature trees/bushes are present around the site. Therefore as the site is underlain by natural cohesive soils which have been recorded to have a medium volume change potential, an arboricultural survey of the site and surrounding influencing area may be required in order to prepare a foundation schedule. This foundation schedule should be prepared once the development layout has been finalised in order to mitigate the effects of existing / proposed trees and landscaping.

INFORMATION SOURCES

Geological data	British Geological Survey 1:50,000 scale Series, Sheet 155, Coalville, Solid & Drift Edition. Environment Agency Online Aquifer Designation Database (accessed 6th April 2011). Coal Mining Searches, The Law Society Guidance Notes and Directory 1998 edition. BR 211 Radon: guidance on protective measures for new dwellings, 1999 edition. Site Specific Geological Data Report: Ref. EMS_124563 (April 2011).
Environmental	Site Specific Environmental Data Report: Ref. EMS_124563 (April 2011). BRE Report BR211 "Radon: Guidance on protective measures for new dwellings" (1999 Edition). Environment Agency (EA) & DEFRA: Model Procedures for the Management of Land Contamination – Contaminated Land Report 11 (CLR11) (2004) EA TOX & Soil Guideline Values Reports: Arsenic (2009) EA TOX & Soil Guideline Values: Cadmium (2009) EA TOX & Soil Guideline Values: Mercury (2009) EA TOX & Soil Guideline Values: Nickel (2009) EA TOX & Soil Guideline Values: Phenol (2009) EA TOX & Soil Guideline Values: Selenium (2009) EA TOX & Soil Guideline Values: Benzene (2009) EA TOX & Soil Guideline Values: Toluene (2009) EA TOX & Soil Guideline Values: Ethylbenzene (2009) EA TOX & Soil Guideline Values: Xylenes (2009) EA TOX & Soil Guideline Values: Dioxins, Furans and Dioxin-like PCBs (2009) EA: Human Health Toxicology Assessment of Contaminants in Soil (SC0021/SR2) (2009) EA: Updated Technical Background to the CLEA Model (SC050021/SR3) (2009) EA: Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values (SC050021/SR7) (2008) Chartered Institute of Environmental Health (CIEH): Professional Practice Note: Reviewing human health risk assessment reports invoking contaminant oral bioavailability measurements or estimates (2009) Land Quality Management (LQM) /CIEH: The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment (2nd edition) (2009) CL:AIRE in association with EIC and AGS: Soil Generic Assessment Criteria for Human Health Risk Assessment (January 2010)
Historical	As presented Appendix VI.

APPENDIX I

Site Development Layout Plan



Site Development Layout Plan based on an extract taken from 'Planning Layout' drawing supplied by the Client on 17th February 2011 (Ref. STK001)

DO NOT SCALE

NOTES:

N

Approximate Site Boundary

Sirius Midlands Ltd
Strelley Hall
Nottingham
NG8 6PE
Tel: 0115 9061 245 Fax: 0115 9061 251
info@thesiriusgroup.com www.thesiriusgroup.com

CLIENT: MarCity DEVELOPMENTS

PROJECT: Hinckley Road, Stoke Golding

TITLE: Site Development Layout Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
AC	May. 2011
PROJECT No:	DRAWING No:
N11117	001

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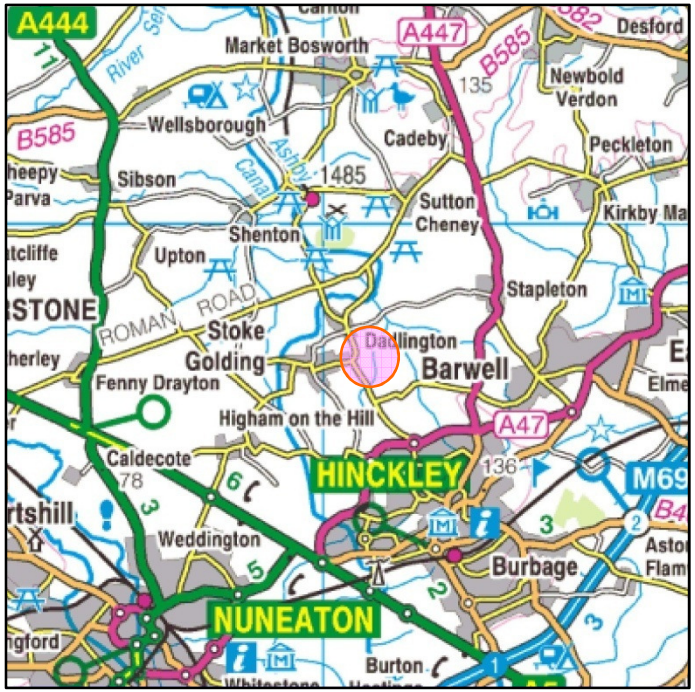
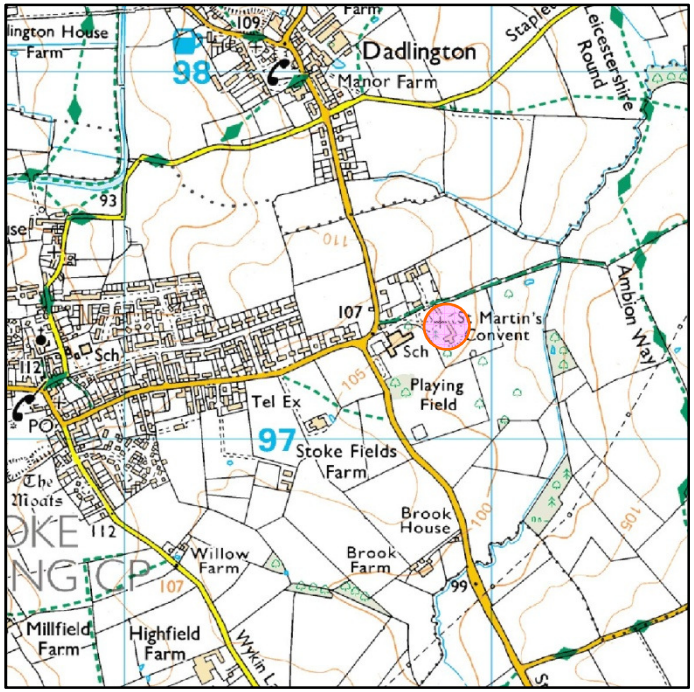
APPENDIX II

Site Location Plan







DO NOT SCALE

NOTES:

N

Approximate Site Location

Approximate Location of Site Boundary

Sirius Midlands Ltd
Strelley Hall
Nottingham
NG8 6PE
Tel: 0115 9061 245 Fax: 0115 9061 251
info@thesiriusgroup.com www.thesiriusgroup.com

CLIENT: MarCity DEVELOPMENTS

PROJECT: Hinckley Road, Stoke Golding

TITLE: Site Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
AC	May. 2011
PROJECT No:	DRAWING No:
N11117	002

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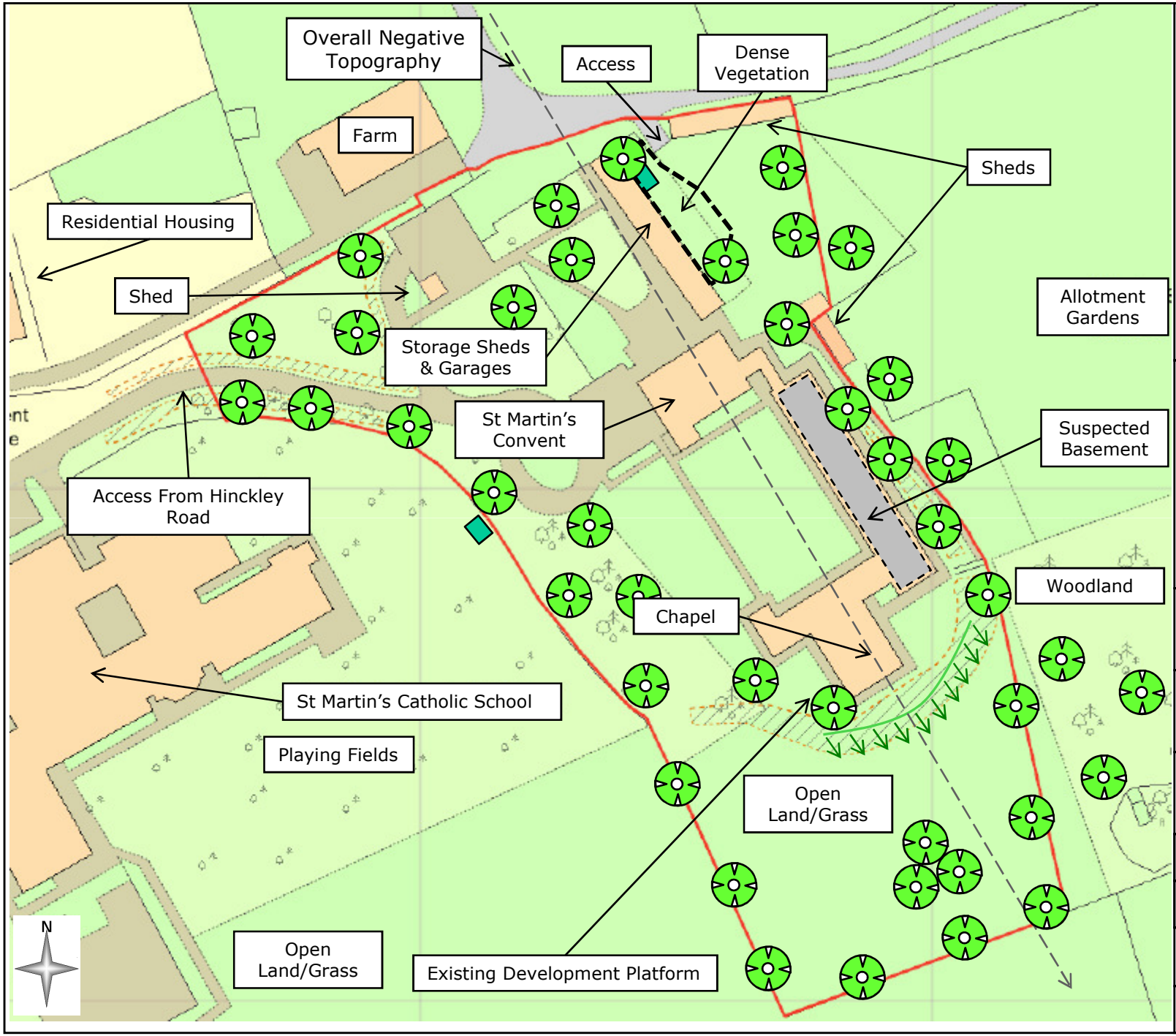
APPENDIX III

Site Features Plan



DO NOT SCALE

NOTES:

- Approximate Location of Site Boundary
- Approximate Location of Fuel Storage Tanks
- Approximate Direction of Embankment
- Approximate Location of Trees / Shrubs
- Approximate Location of Basement (Suspected)

Sirius Midlands Ltd
Strelley Hall
Nottingham
NG8 6PE
Tel: 0115 9061 245 Fax: 0115 9061 251
info@thesiriusgroup.com www.thesiriusgroup.com

CLIENT: MarCity Developments

PROJECT: Hinckley Road, Stoke Golding

TITLE: Site Features Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
AC	May. 2011
PROJECT No:	DRAWING No:
N11117	003

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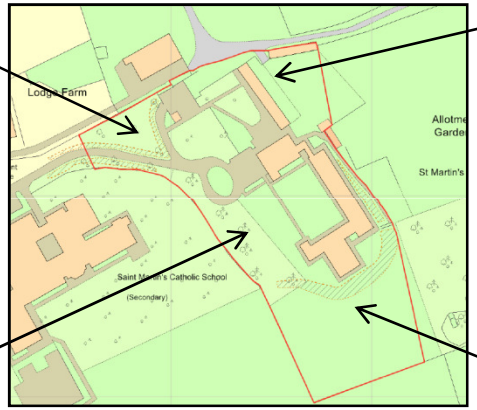
APPENDIX IV

General Site Photographs











DO NOT SCALE

NOTES:

N

Approximate Location of Site Boundary

Sirius Midlands Ltd
Strelley Hall
Nottingham
NG8 6PE
Tel: 0115 9061 245 Fax: 0115 9061 251
info@thesiriusgroup.com www.thesiriusgroup.com

CLIENT: MarCity DEVELOPMENTS

PROJECT: Hinckley Road, Stoke Golding

TITLE: General Site Photographs

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
AC	May. 2011
PROJECT No:	DRAWING No:
N11117	004

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APPENDIX V

Environmental Data Report

GroundSure GeoInsight

Address: St. Martin's Convent,Stoke Golding

Date: Apr 1, 2011

GroundSure Reference: S EMS-124563_169562

Your Reference: EMS_124563_169562



Brought to you by GroundSure

Aerial Photograph of Study Site

NW N NE



W E

SW S SE

Aerial photography supplied by Getmapping PLC.
© Copyright Getmapping PLC 2003. All Rights Reserved.

Site Name: St. Martin's Convent,Stoke Golding
Grid Reference: 440854,297294
Size of Site: 1.41 ha

Overview of Findings

The GroundSure GeoInsight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Shallow Mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and GroundSure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Report Section	Number of records found within (X) m of the study site boundary
1. Geology	**Description**
1.1 Artificial Ground,	
1.1.1 Is there any Artificial Ground /Made Ground present beneath the study site?*	No
1.1.2 Are there any records relating to permeability of artificial ground within the study site* boundary?	No
1.2 Superficial Geology & Landslips	
1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
1.2.2 Are there any records relating to permeability of superficial geology within the study site* boundary?	Yes
1.2.3 Are there any records of landslip within 500m of the study site boundary?	No
1.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No
1.3 Bedrock, Solid Geology & Faults	
1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
1.3.2 Are there any records relating to permeability of bedrock within the study site* boundary?	Yes
1.3.3 Are there any records of faults within 500m of the study site boundary?	No
1.3.4 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
1.3.5 Is the property in an area where Radon Protection Measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

* This includes an automatically generated 50m buffer zone around the site

Source:Scale 1:50,000 BGS Sheet No:155

2. Ground Workings	on-site	0-50	51-250	251-500	501-1000
2.1 Historical Surface Ground Working Features from Small Scale Mapping	3	0	6	-	-
2.2 Historical Underground Workings Features from Small Scale Mapping	0	0	0	0	0
2.3 Current Ground Workings	0	0	0	0	0

3. Mining, Extraction & Natural Cavities	on-site	0-50	51-250	251-500	501-1000
3.1 Historical Mining	0	0	0	0	0
3.2 Coal Mining	0	0	0	0	0
3.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	2
3.4 Non-Coal Mining*	0	0	0	0	0
3.5 Non–Coal Mining Cavities	0	0	0	0	0
3.6 Natural Cavities	0	0	0	0	0
3.7 Brine Extraction	0	0	0	0	0
3.8 Gypsum Extraction	0	0	0	0	0
3.9 Tin Mining	0	0	0	0	0
3.10 Clay Mining	0	0	0	0	0

*This includes an automatically generated 50m buffer zone around the site

4. Natural Ground Subsidence	on-site*	0-50	51-250	251-500	501-1000
4.1 Shrink-Swell Clay	Low	-	-	-	-
4.2 Landslides	Very Low	-	-	-	-
4.3 Ground Dissolution of Soluble Rocks	Negligible	-	-	-	-
4.4 Compressible Deposits	Negligible	-	-	-	-
4.5 Collapsible Deposits	Negligible	-	-	-	-
4.6 Running Sand	Very Low	-	-	-	-

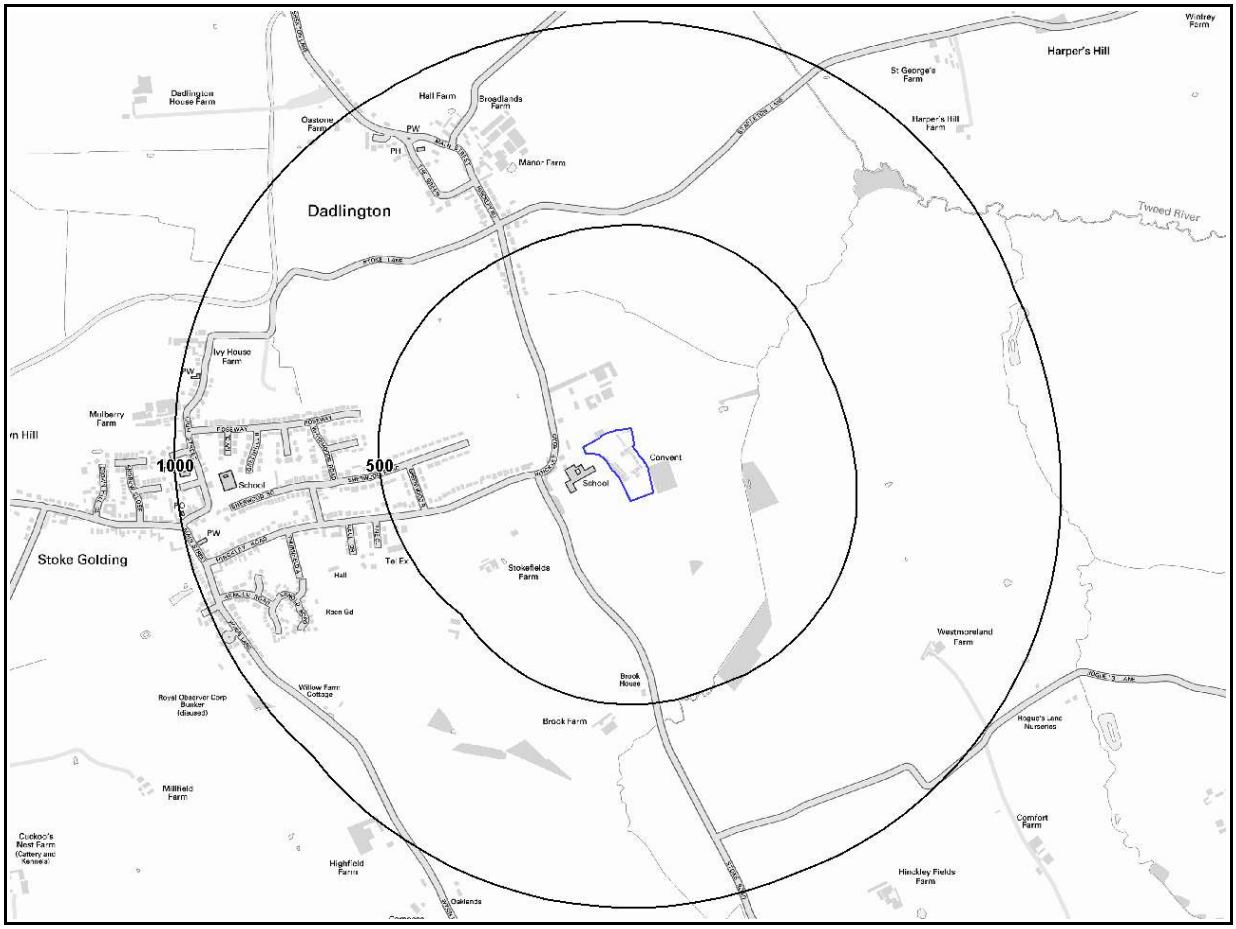
* This includes an automatically generated 50m buffer zone around the site

5. Borehole Records	on-site	0-50	51-250	251-500	501-1000
5.1 BGS Recorded Boreholes	0	0	0	-	-

6. Estimated Background Soil Chemistry	on-site	0-50	51-250	251-500	501-1000
6.1 Records of Background Soil Chemistry	3	0	0	-	-

1.1 Artificial Ground Map

NW N NE



W E

SW S SE

Artificial Ground Legend

Enabled by Ordnance Survey

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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

Geological information represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:155

1.1.1 Artificial/Made Ground

Are there any records of Artificial/Made Ground within 500m of the study site boundary? **No**

Database searched and no data found.

1.1.2 Permeability of Artificial Ground

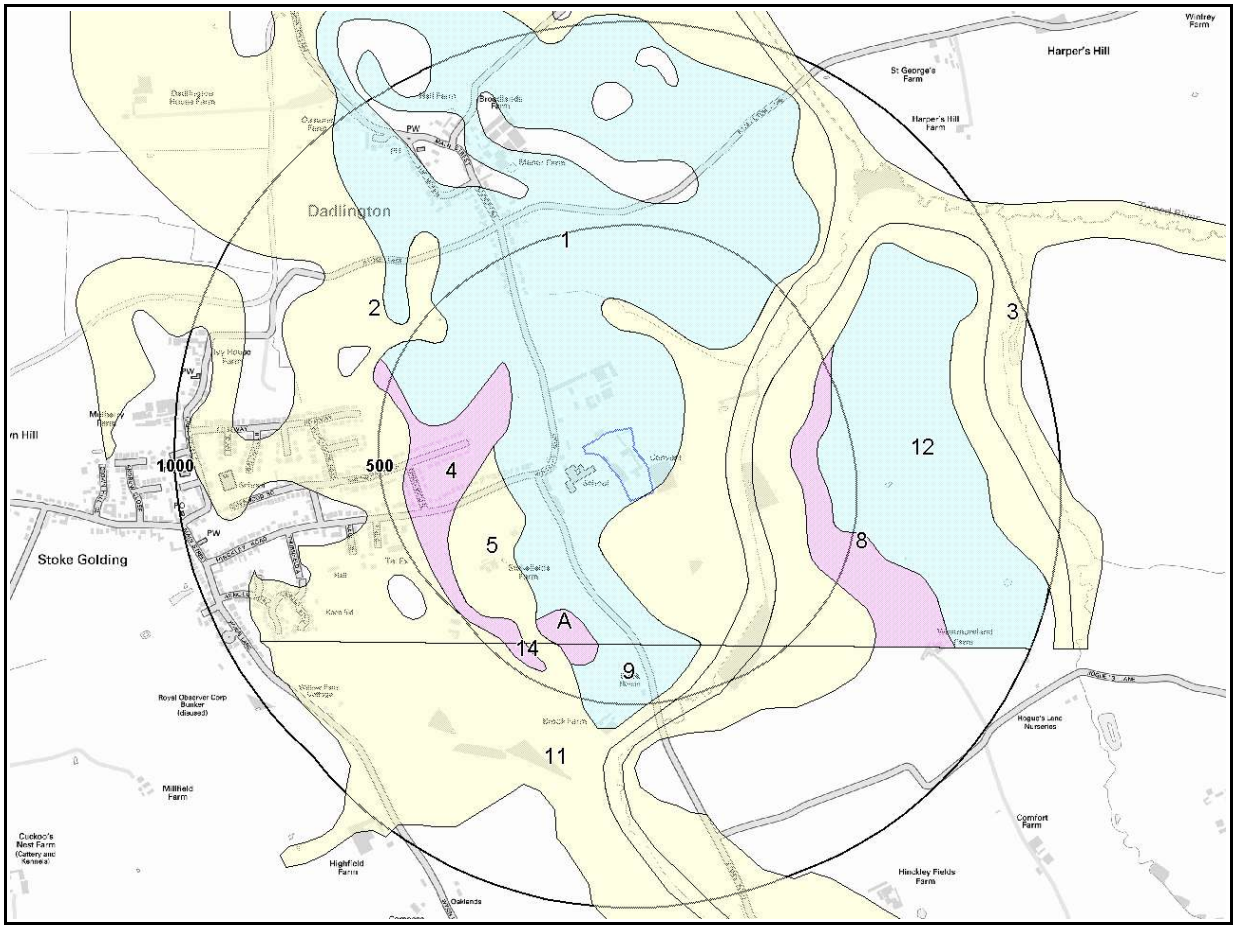
Are there any records relating to permeability of artificial ground within the study site* boundary? **No**

Database searched and no data found.

* This includes an automatically generated 50m buffer zone around the site.

1.2 Superficial Deposits and Landslips Map

NW N NE



W E

SW S SE

Superficial and Landslips Legend

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Site Outline

500
1000
Search Buffers (m)

Geological information represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

1.2Superficial Deposits and Landslips

1.2.1 Superficial Deposits/Drift Geology

Are there any records of Superficial Deposits/Drift Geology within 500m of the study site boundary? Yes

ID	Distance (m)	Direction	Lex Code	Description	Rock Description
1	0.0	On Site	ODT-DMTN	OADBY MEMBER	DIAMICTON
2	0.0	On Site	WOC-CLSS	WOLSTON CLAY	CLAY, SILT AND SAND
3	183.0	E	ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
4	190.0	W	WOSG-SAGR	WOLSTON SAND AND GRAVEL	SAND AND GRAVEL
5	207.0	SW	WOC-CLSS	WOLSTON CLAY	CLAY, SILT AND SAND
6	245.0	E	WOC-CLSS	WOLSTON CLAY	CLAY, SILT AND SAND
7A	310.0	SW	WOSG-SAGR	WOLSTON SAND AND GRAVEL	SAND AND GRAVEL
8	346.0	E	WOSG-SAGR	WOLSTON SAND AND GRAVEL	SAND AND GRAVEL
9	352.0	S	ODT-DMTN	OADBY MEMBER	DIAMICTON
10 A	360.0	S	WOSG-SAGR	WOLSTON SAND AND GRAVEL	SAND AND GRAVEL
11	391.0	S	WOC-CLSI	WOLSTON CLAY	CLAY AND SILT
12	410.0	E	ODT-DMTN	OADBY MEMBER	DIAMICTON
13	410.0	SE	ALV-CSSG	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
14	434.0	SW	WOSG-SAGR	WOLSTON SAND AND GRAVEL	SAND AND GRAVEL

1.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site* boundary? Yes

Distance (m)	Direction	Flow type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Moderate	Low
0.0	On Site	Mixed	Moderate	Very Low

1.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.2.4 Landslip Permeability

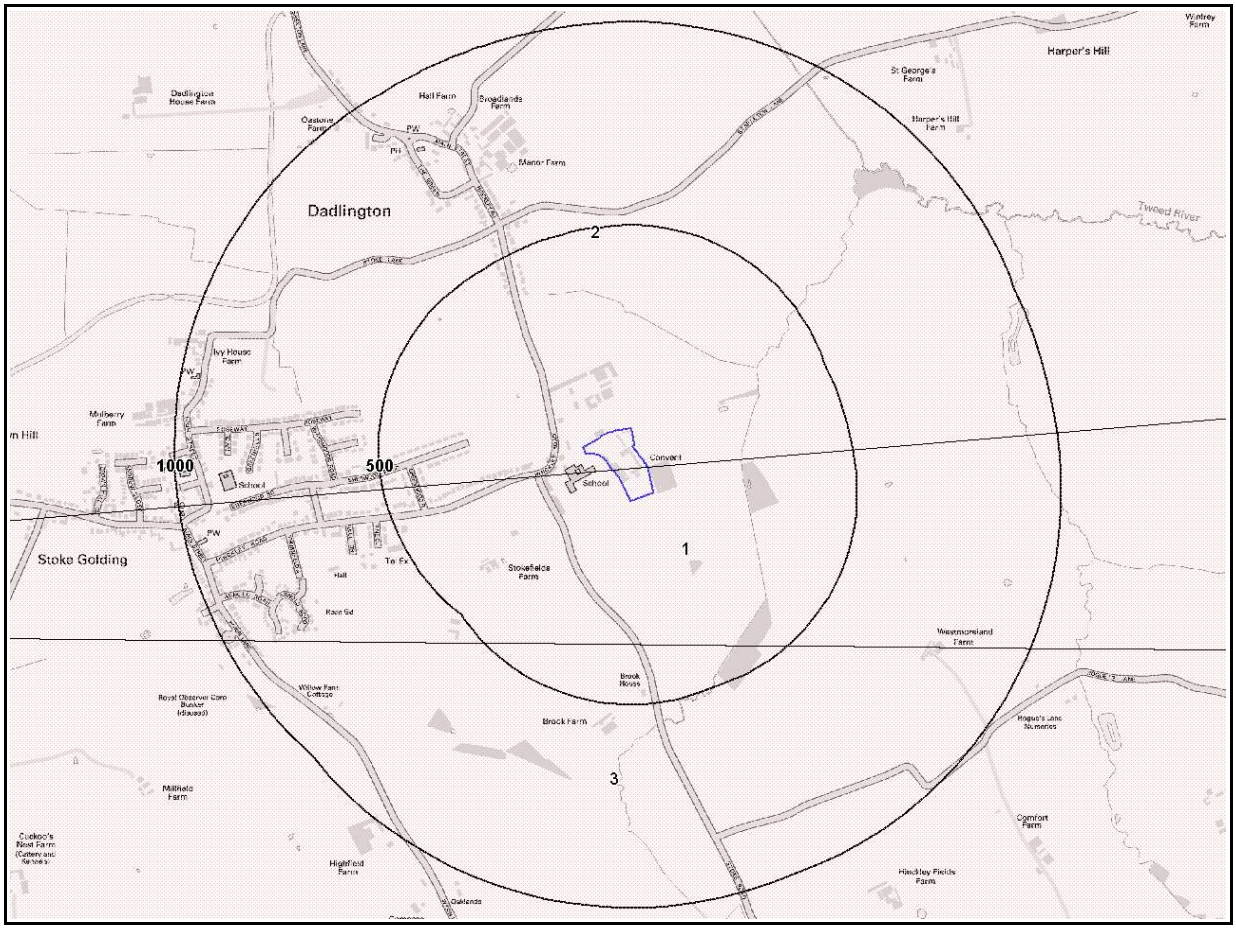
Are there any records relating to permeability of landslips within the study site* boundary? No

Database searched and no data found.

*This includes an automatically generated 50m buffer zone around the site.

1.3 Bedrock and Faults Map

NW N NE



W E

SW S SE

Bedrock & Faults Deposits Legend

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Site Outline

500
1000

Search Buffers (m)

Geological information represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

1.3Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No:155

1.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance (m)	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian / Scythian
2	0.0	On Site	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian / Scythian
3	352.0	S	MMG-MDST	Mercia Mudstone Group - Mudstone	Rhaetian / Scythian

1.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site* boundary? Yes

Distance (m)	Direction	Flow type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Low	Low

1.3.3 Faults

Are there any records of Faults within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3.4 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level

1.3.5 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?

No radon protective measures are necessary

* This includes an automatically generated 50m buffer zone around the site.

2. Ground Workings Map



Ground Workings Legend

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Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

2. Ground Workings

2.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on GroundSure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping.

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

The following Historical Surface Ground Working Features are provided by GroundSure:

ID	Distance (m)	Direction	NGR	Use	Date
1A	0.0	On Site	440864,297270	Unspecified Ground Workings	1927
2A	0.0	On Site	440864,297270	Unspecified Ground Workings	1938
3	0.0	On Site	440852,297272	Unspecified Heap	1950
4	84.0	W	440668,297299	Pond	1938
5	216.0	E	441093,297428	Pond	1938
6B	220.0	E	441129,297447	Unspecified Heap	1950
7B	223.0	E	441136,297447	Unspecified Heap	1901
8C	247.0	E	441140,297451	Unspecified Heap	1927
9C	247.0	E	441140,297451	Unspecified Heap	1938

2.2 Historical Underground Workings Features derived from Historical Mapping

This data is derived from the GroundSure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

2.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? No

Database searched and no data found.

3. Mining, Extraction & Natural Cavities Map

NW N NE

W E

SW S SE



Mining, Extraction & Natural Cavities Legend

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Site Outline

250
500
Search Buffers (m)

Historical Mining

Non-Coal Mining Cavities

Natural Cavities

Non-Coal Mining

Highly likely

Likely

Unlikely

Highly unlikely

Rare

3.Mining, Extraction & Natural Cavities

3.1 Historical Mining

This dataset is derived from GroundSure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? **No**

Database searched and no data found.

3.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? **No**

Database searched and no data found.

3.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? **Yes**

The following information provided by JPB is not represented on Mapping:

Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

3.4 Non – Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? **No**

Database searched and no data found.

3.5 Non – Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great

Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? **No**

Database searched and no data found.

3.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary? **No**

Database searched and no data found.

3.7 Brine Extraction

This dataset provides information from the Brine Compensation Board which has been discontinued and is now covered by the Coal Authority.

Are there any Brine Extraction areas within 1000m of the study site boundary? **No**

Database searched and no data found.

3.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? **No**

Database searched and no data found.

3.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level. More detailed information on potential Tin Mining may be found in Section 3.3 – Non-Coal Mining Hazards.

Are there any Tin Mining areas within 1000m of the study site boundary? **No**

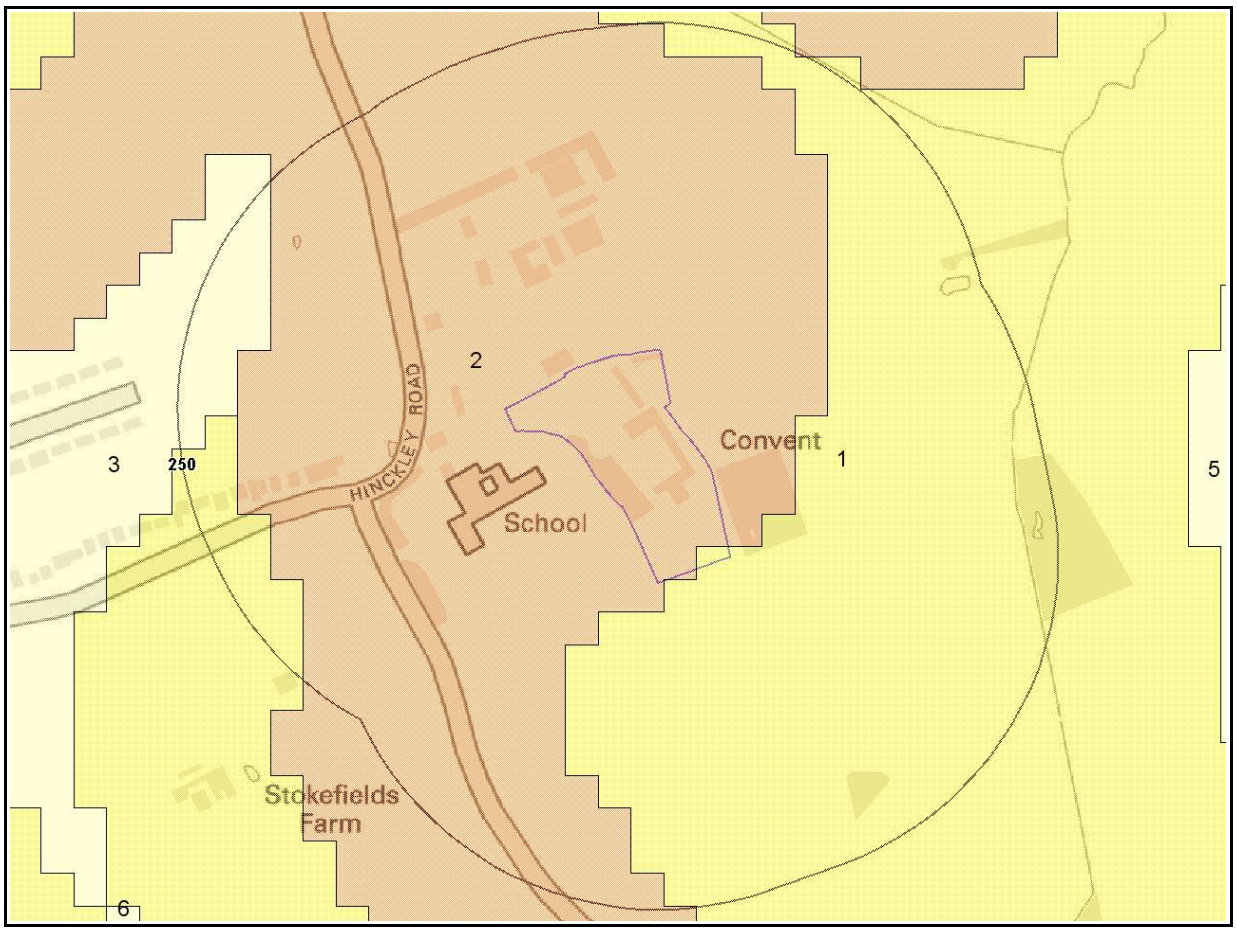
Database searched and no data found.

3.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? **No**

4. Natural Ground Subsidence
4.1 Shrink-Swell Clay Map



Shrink-Swell Clay Legend

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Site Outline

125
250
Search Buffers (m)

No Data / Null
Negligible
Very Low

Low
Moderate
High

4.2 Landslides Map



Landslides Legend

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Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

Very Low

Low

Moderate

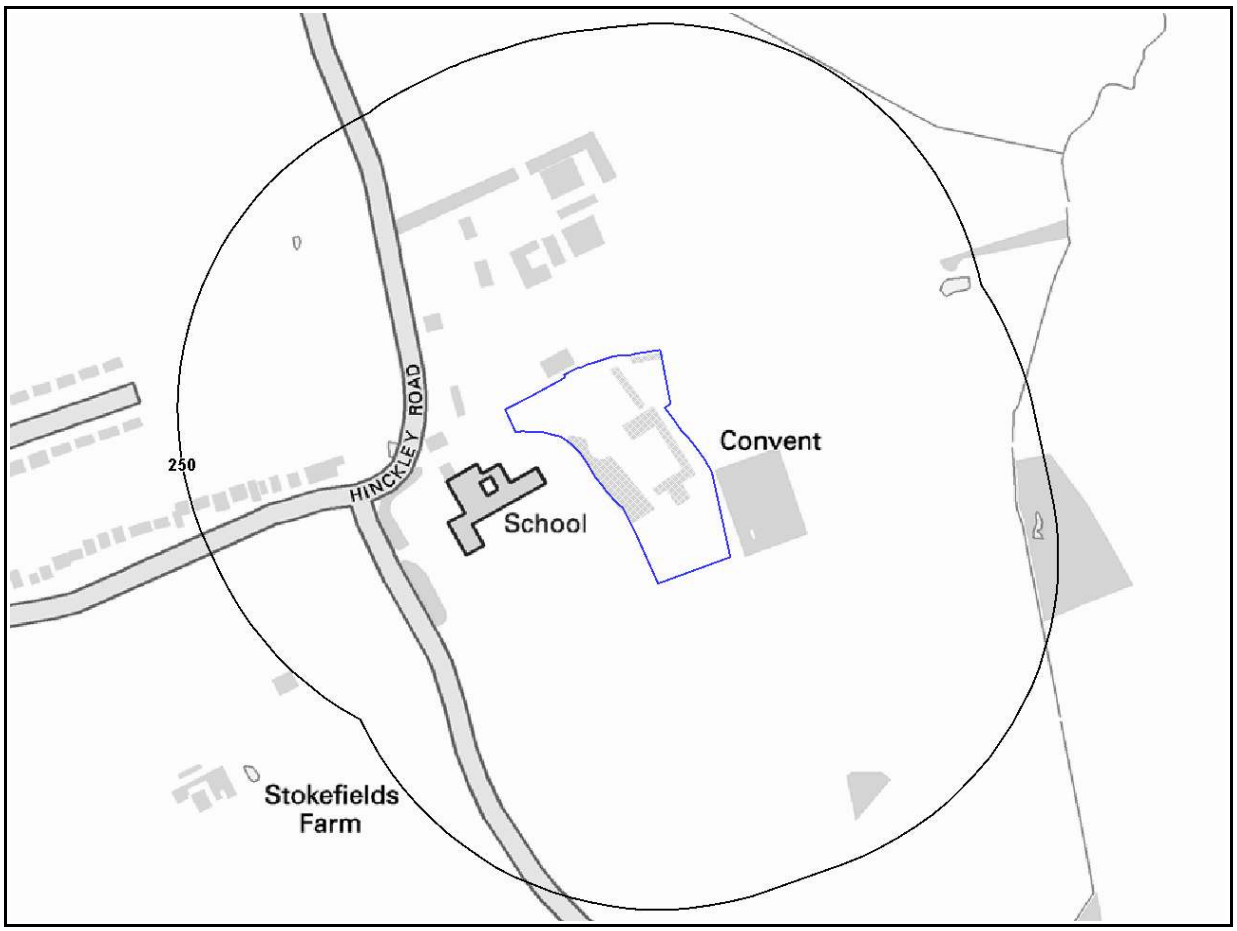
High

4.3 Ground Dissolution Soluble Rocks Map

NW N NE

W E

SW S SE



Ground Dissolution Soluble Rocks
Legend

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Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

Very Low

Low

Moderate

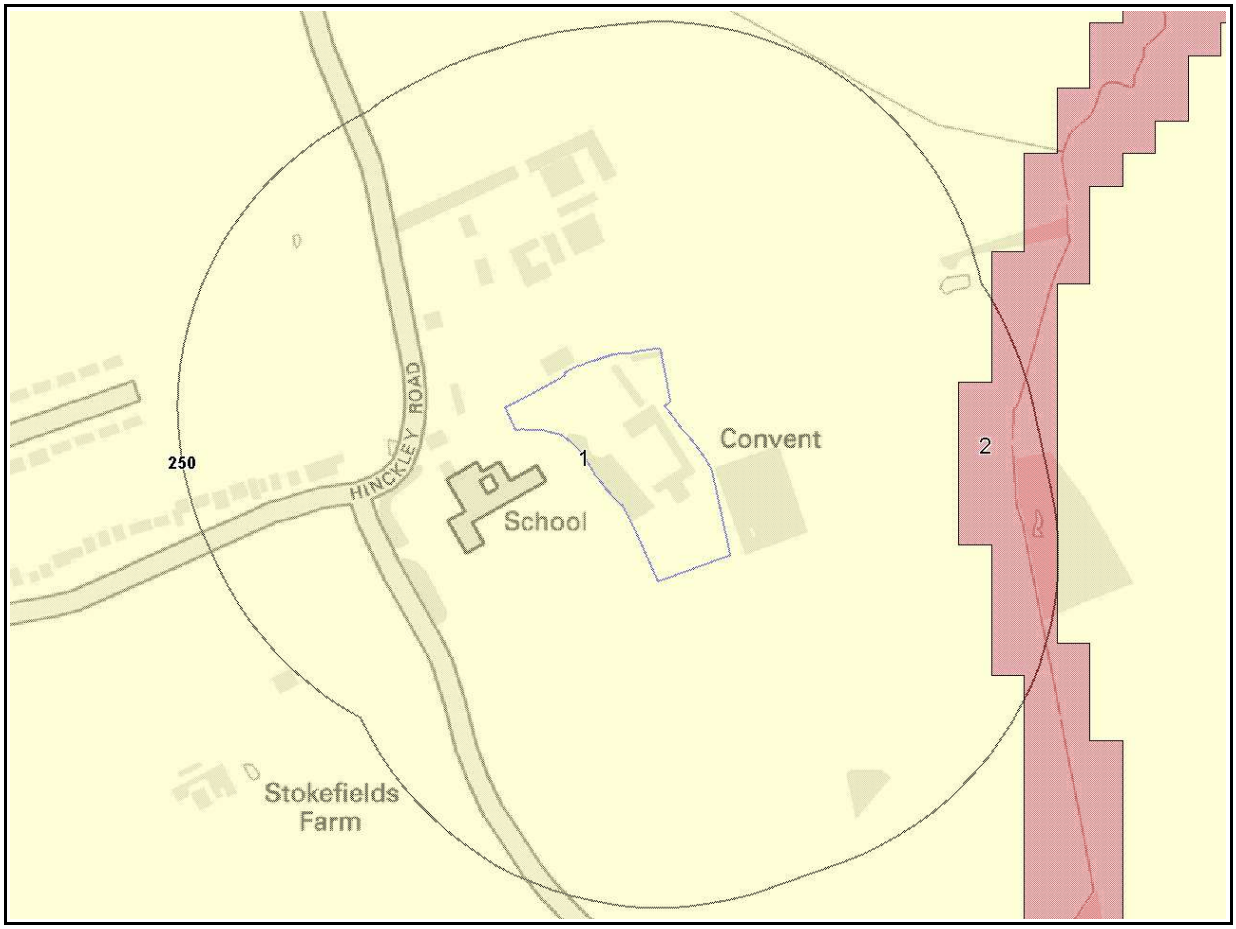
High

4.4 Compressible Deposits Map

NW N NE

W E

SW S SE



Compressible Deposits Legend

Enabled by Ordnance Survey

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Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

Very Low

Low

Moderate

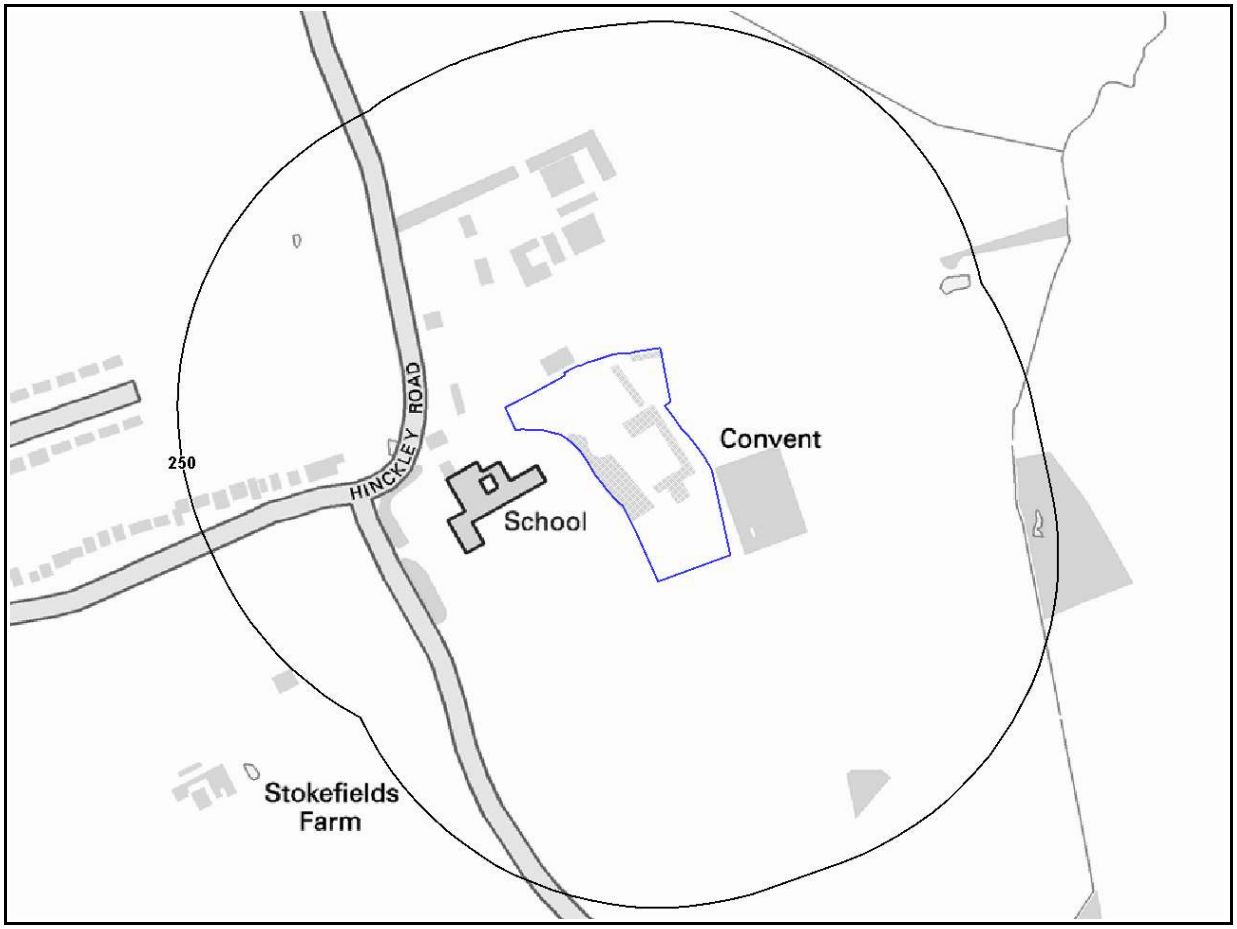
High

4.5 Collapsible Deposits Map

NW N NE

W E

SW S SE



Collapsible Deposits Legend

Enabled by Ordnance Survey

Crown Copyright. All Rights Reserved
Licence Number: 100035207

Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

Very Low

Low

Moderate

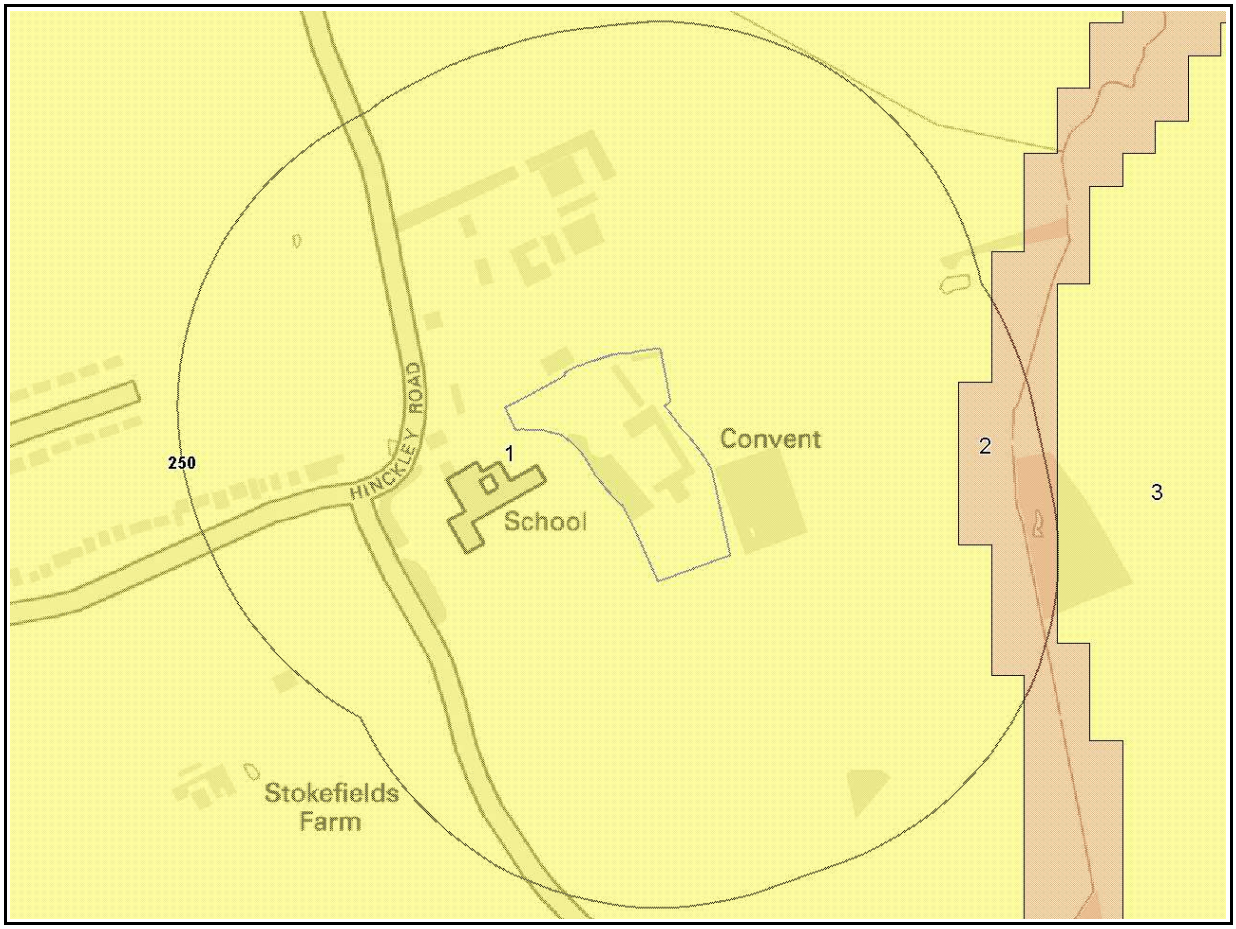
High

4.6 Running Sand Map

NW N NE

W E

SW S SE



Running Sand Legend

Enabled by Ordnance Survey

Crown Copyright. All Rights Reserved
Licence Number: 100035207

Site Outline

125
250
Search Buffers (m)

No Data / Null

Negligible

Very Low

Low

Moderate

High

4.Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? Low

4.1 Shrink – Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
2	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

4.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

4.3 Ground Dissolution of Soluble Rocks

The following Soluble Rocks information provided by the British Geological Survey:

Distance (m)*	Direction	Hazard Rating	Details
0.0	On site	Null-Negligible	Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

*This includes an automatically generated 50m buffer zone around the study site boundary.

4.4 Compressible Deposits

The following Compressible Ground information provided by the British Geological Survey:

ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

4.5 Collapsible Deposits

The following Collapsible Rocks information is provided by the British Geological Survey:

Distance (m)*	Direction	Hazard Rating	Details
0.0	On site	Null-Negligible	No Indicators for collapsible deposits identified. No Special actions required to avoid problems due to collapsible deposit.

4.6 Running Sands

The following Running Sands information is provided by the British Geological Survey:

ID	Distance (m)*	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

5. Borehole Records Map

NW N NE

W E

SW S SE



Borehole Records Legend

Enabled by Ordnance Survey

Crown Copyright. All Rights Reserved
Licence Number: 100035207

Site Outline

Borehole Locations

125
250
Search Buffers (m)

5.Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: **0**

Database searched and no data found.

6.Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary: 3

For further information on how this data is calculated and limitations upon its use, please see the GroundSure GeoInsight User Guide, available on request.

			Estimated Geometric Mean Soil Concentrations (mg/kg)				
Distance (m)*	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg	<150 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg	<150 mg/kg
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<150 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

7. Contacts

GroundSure Helpline
Telephone: 08444 159 000
info @ groundsure.com

British Geological Survey Enquiries
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143. Fax: 0115 936 3276.
Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk
BGS Geological Hazards Reports and general geological enquiries

British Gypsum
British Gypsum Ltd, East Leake, Loughborough, Leicestershire, LE12 6HX
Tel: www.british-gypsum.com

The Coal Authority
200 Lichfield Lane, Mansfield, Notts NG18 4RG
Tel: 0845 762 6848
DX 716176 Mansfield 5 www.coal.gov.uk

Johnson Poole & Bloomer Limited
Harris and Pearson Building, Brettel Lane, Brierley Hill, West Midlands DY5 3LH
Tel: +44 (0) 1384 262 000
Email: enquiries.gs@jpb.co.uk
Website: www.jpb.co.uk

Ordnance Survey
Romsey Road, Southampton SO16 4GU
Tel: 08456 050505

Getmapping PLC
Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444

Peter Brett Associates
Caversham Bridge House, Waterman Place, Reading
Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail: reading@pba.co.uk

Acknowledgements

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This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

Standard Terms and Conditions

1 Definitions

In these conditions unless the context otherwise requires:

"Beneficiary"means the Client or the customer of the Client for whom the Client has procured the Services.

"Commercial"means any building which is not Residential.

"Commission"means an order for Consultancy Services submitted by a Client.

"Consultancy Services" mean consultancy services provided by GroundSure including, without limitation, carrying out interpretation of third party and in-house environmental data, provision of environmental consultancy advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Content" means any data, database or other information contained in a Report or Mapping which is provided to GroundSure by a Data Provider.

"Contract" means the contract between GroundSure and the Client for the performance of the Services which arises upon GroundSure's acceptance of an Order or Commission and which shall incorporate these conditions, the relevant GroundSure User Guide, proposal by GroundSure and the content of any subsequent report, and any agreed amendments in accordance with clause 11.

"Client" means the party that submits an Orderor Commission.

"Data Provider" means any third party providing Content to GroundSure.

"Data Report" means reports comprising factual data with no professional interpretation in respect ofthe level of likely risk and/or liability available from GroundSure.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028 and whose registered office is at Greater London House, Hampstead Road, London NW1 7EJ.

"Intellectual Property" means any patent, copyright, design rights, service marks, moral rights, data protection rights, know-how, trademark or any other intellectual property rights.

"Mapping" an historical map or a combination of historical maps of various ages, time periods and scales available from GroundSure.

"Order" means an order form submitted by the Client requiring Services from GroundSure in respect of a specified Site.

"Order Website" means online platform via which Orders may be placed.

"Report" means a Risk Screening Report or Data Report for commercial or residential property available from GroundSure relating to the Site prepared in accordance with the specifications set out in the relevant User Guide.

"Residential" means any building used as or suitable for use as an individual dwelling.

"Risk Screening Report" means one of GroundSure's risk screening reports, comprising factual data with interpretation in respect ofthe level of likely risk and/or liability, excluding **"Consultancy Services"**.

"Services" means the provision of any Report, Mapping or Consultancy Services which GroundSure has agreed to carry out for the Client/Beneficiary on these terms and conditions in respect of the Site.

"Site"means the landsite in respect of which GroundSure provides the Services.

"User Guide" means the relevant current version of the user guide, available upon request from GroundSure.

2 Scope of Services

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.3 The Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in the Contract.

2.4 Terms and conditions appearing on a Client's order form, printed stationery or other communication, including invoices, to GroundSure, its employees, servants, agents or other representatives or any terms implied by custom, practice or course of dealing shall be of no effect and these terms and conditions shall prevail over all others.

2.5 In the event that a Client/Beneficiary opts to take out insurance in conjunction with or as a result of the Services, such insurance shall be subject solely to the terms of any policy issued to it in that respect and GroundSure will have no liability therefore.

2.6 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or Commission. GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

3 The Client's obligations

3.1 The Client shall ensure the Beneficiary complies with and is bound by the terms and conditions set out in the Contract and shall provide that Groundsure may in its own right enforce such terms and conditions against the Beneficiary pursuant to the Contracts (Rights of Third parties) Act 1999. The Client shall be liable for all breaches of the Contract by the Beneficiary as if they were breaches by the Client. The Client shall be solely responsible for ensuring that the Report/Mapping ordered is appropriate and suitable for the Beneficiary's needs.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary which may pertain to the Services and shall give such assistance as GroundSure shall reasonably require in the performance of the Services (including, without limitation, access to a Site, facilities and equipment as agreed in the Contract).

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

4 Reliance

4.1 Upon full payment of all relevant fees and subject to the provisions of these terms and conditions, the Client and Beneficiary are granted an irrevocable royalty-free licence to access the information contained in a Report, Mapping or in a report prepared by GroundSure in respect of or arising out of Consultancy Services. The Services may only be used for the benefit of the Client and those persons listed in clauses 4.2 and 4.3.

4.2 In relation to Data Reports, Mapping and Risk Screening Reports, the Client shall be entitled to make Reports available to (i) the Beneficiary, (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate), (iv) the first purchaser or first tenant of the Site (v) the professional advisers and lenders of the first purchaser or tenant of the Site. Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client and those persons shall have the benefit of any of the Client's rights under the Contract as if those persons were parties to the Contract. For the avoidance of doubt, the limitations of GroundSure's liability as set out in clauses 7 and 11.6 shall apply.

4.3 In relation to Consultancy Services, reliance shall be limited to the Client, Beneficiary and named parties on the Report.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise agreed in writing with GroundSure, any other party considering the information supplied by GroundSure as part of the Services, including (but not limited to) insurance underwriters, does so at their own risk and GroundSure has no legal obligations to such party unless otherwise agreed in writing.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report, (except as permitted herein or by separate agreement with GroundSure) to,: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking from the Report or Mapping; (b) create any product which is derived directly or indirectly from the data contained in the Report or Mapping; (c) combine the Report or Mapping with, or incorporate the Report or Mapping into any other information data or service; or (d) re-format or otherwise change (whether by modification, addition or enhancement) data or images contained in the Report or Mapping.

4.6 Notwithstanding clause 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise Beneficiaries. However, GroundSure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or a third party.

5 Fees and Disbursements

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract together, in the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client (**"Payment Date"**). GroundSure reserves the right to charge interest which shall accrue on a daily basis from 30 days after the date of Payment Date until the date of payment (whether before or after judgment) at the rate of five per cent per annum above the Bank of England base rate from time to time.

5.3 In the event that the Client disputes the amount payable in respect of GroundSure's invoice it shall notify GroundSure no later than 28 days after the date thereof that it is in dispute. In default of such notification the Client shall be deemed to have agreed the amount thereof. As soon as reasonably practicable following receipt of a notification in respect of any disputed invoice, a member of the management team at GroundSure shall contact the Client and the parties shall use all reasonable endeavours to resolve the dispute.

6 Intellectual Property

6.1 Subject to the provisions of clause 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services and Content are and shall remain owned by either GroundSure or the Data Providers and nothing in these terms purports to transfer or assign any rights to the Client or the Beneficiary in respect of the Intellectual Property.

6.2 The Client shall acknowledge the ownership of the Content where such Content is incorporated or used in the Client's own documents, reports, systems or services whether or not these are supplied to a third party.

6.3 Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report are and shall remain (subject to clause 11.1) the property of GroundSure and/or any third party that has supplied data or information used to create a Report, and that these conditions do not purport to grant, assign or transfer any such rights in respect thereof to a Client and/or a Beneficiary.

6.5 The Client and each of the parties set out in clause 4.2 are permitted to make up to 8 (commercial) or 2 (residential) printed copies of the Report only. Further copies of the Report may not be made in whole or in part without the prior written permission of GroundSure who shall be entitled to make a charge for each additional copy.

6.6 The Client shall (and shall procure that any recipients of the Report as permitted under clause 4.2 shall):

(i) not remove, suppress or modify any trademark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the data contained in the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
(iv) not combine the Services with or incorporate such Services into any other information data or service; and
(v) not reformat or otherwise change (whether by modification, addition or enhancement), data contained in the Services (save that those acting in a professional capacity to the Beneficiary shall not be in breach of this clause 6.6(v) where such reformatting is in the normal course of providing advice based upon the Services),
in each case of parts (iii) to (v) inclusive, whether or not such product or report is produced for commercial profit or not.
6.7 The Client and/or Beneficiary shall and shall procure that any party to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability

7.1 Nothing in these terms and conditions shall limit GroundSure's liability for causing death or personal injury through negligence or willful default.
7.2 Save as otherwise set out in these conditions, any information provided by one party ("**Disclosing Party**") to the other party ("**Receiving Party**") shall be treated as confidential except so far as authorised by the Disclosing Party to provide such information in whole or in part to a third party.
7.3 Nothing in these conditions shall affect the statutory rights of a consumer under the applicable consumer protection legislation from time to time.
7.4 In relation to Data Reports, Mapping and Risk Screening Reports, GroundSure's liability under the Contract shall cease upon the expiry of six years from the date when the Beneficiary became aware that it may have a claim against GroundSure in respect of the Services provided always that there shall be no liability at the expiration of twelve years from the completion of the Contract. For the avoidance of doubt, any claims in respect of which proceedings are notified to GroundSure in writing prior to the expiry of the time periods referred to in this clause shall survive the expiry of those time periods provided any such claim is actually commenced within six months of notification.
7.5 In relation to Consultancy Services GroundSure's liability under the Contract shall cease upon the expiry of six years from the date the Services were completed.
7.6 GroundSure shall not be liable to the Client or any person to whom the Client provides a copy of a Data Report, Mapping or Risk Screening Report in any circumstances whatsoever unless arising out of a breach on its part of the obligations set out in the Contract.
7.7 GroundSure shall not be liable if the Data Reports, Mapping or Risk Screening Report are used otherwise than as provided or referred to in these conditions and the relevant User Guide.
7.8 Subject to the provisions of clause 7.3, GroundSure makes no representation, warranties, express or implied, as to the accuracy, reliability, completeness, validity or fitness for purpose of any Content and shall not be liable for any omission, error or inaccuracy in relation thereto unless GroundSure should reasonably have been alerted to any omission, error or inaccuracy in the Content.
7.9 Subject to the provisions of clause 7.1 and irrespective of whether multiple parties make use of the same Services the total liability of GroundSure under or in connection with the Contract, whether in contract in tort for breach of statutory duty or otherwise shall not exceed £10 million per claim or series of connected claims,
7.10 Whilst GroundSure will use all reasonable endeavours to maintain operability of its internet ordering service it will not be liable for any loss or damages caused by a delay or loss of use of such service. The Client shall use GroundSure's internet ordering service at its own risk. GroundSure shall not be responsible for any damage to a Client or permitted assignee's computer, software, modem, telephone or other property resulting from the use of GroundSure's internet ordering service.
7.11 The Client accepts, and shall use all reasonable endeavours to procure that anyone who is provided with a copy of the Report accepts, that it has no claim or recourse to any Data Provider or to GroundSure in respect of the acts or omissions of such Data Providers including Content supplied by them.
7.12 GroundSure shall provide the Services using reasonable skill and care, however, GroundSure shall not be liable for any inaccurate statement or risk rating in a Report which resulted from a reasonable interpretation of the Content.
7.13 Subject to clause 7.1, GroundSure shall not be liable to the Client, the Beneficiary or any third party in contract, tort (including, without limitation, negligence) or for misrepresentation or breach of statutory duty or otherwise in respect of any loss of profits, goodwill, revenue or opportunity, or any indirect or consequential loss (even if such loss was reasonably foreseeable).
7.14 GroundSure undertakes for the duration of the liability periods referred to in clauses 7.4 and 7.5 to maintain professional indemnity insurance in respect of its liabilities under this Contract. GroundSure shall produce evidence of such insurance if requested by the Client. A greater level of cover may be available upon request and agreement with the Client.

8 GroundSure right to suspend or terminate

8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper performance of the Services, GroundSure shall be entitled on fourteen days written notice to suspend all further performance of the Services until such time as any such deficiency has been made good.
8.2 GroundSure may additionally terminate the Contract immediately on written notice in the event that:
(i) the Client shall fail to pay any sum due to GroundSure within 28 days of the Payment Date; or
(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an Administration Order made against it or if a Receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
(iv) the Client or the Beneficiary breaches any material term of the Contract (including, but not limited to, the obligations in clause 4) incapable of remedy or if remediable, is not remedied within 14 days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately performance of all or any of the Services.
9.2 The Client waives all and any right of cancellation it may have under the Consumer Protection (Distance Selling) Regulations 2000 (as amended) in respect of the Order of a Report/Mapping. This does not affect the Beneficiary's statutory rights.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination or any suspension of the Services, GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client/Beneficiary any property of the Client/ Beneficiary in GroundSure's possession or control.
10.2 In the event of termination/suspension of the Contract under clauses 8 or 9, the Client shall pay to GroundSure all and any fees payable in respect of the performance of the Services up to the date of termination/suspension. In respect of any Consultancy Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination/suspension of the Contract.

11 General

11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in these terms.
11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.
11.3 No failure on the part of GroundSure to exercise and no delay in exercising, any right, power or provision under these terms and conditions shall operate as a waiver thereof.
11.4 Save as expressly provided in clauses 4.2, 4.3, 6.3 and 11.5, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.
11.5 The Secretary of State for Communities and Local Government acting through Ordnance Survey may enforce breach of clause 6.1 of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.
11.6 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:
(i) the Client or Beneficiary's failure to provide facilities, access or information;
(ii) fire, storm, flood, tempest or epidemic;
(iii) Acts of God or the public enemy;
(iv) riot, civil commotion or war;
(v) strikes, labour disputes or industrial action;
(vi) acts or regulations of any governmental or other agency;
(vii) suspension or delay of services at public registries by Data Providers; or
(viii) changes in law.
11.7 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.
11.8 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email and on the second working day after the day of posting if sent by first class post.
11.9 The Contract constitutes the entire contract between the parties and shall supersede all previous arrangements between the parties.
11.10 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisionsshall not in any way be tainted or impaired.
11.11 These terms and conditions shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with these terms and conditions shall be subject to the exclusive jurisdiction of the English courts.
11.12 If the Client or Beneficiary has a complaint about the Services, notice can be given in any format eg writing, phone, email to the Compliance Officer at GroundSure who will respond in a timely manner.

©GroundSure Limited – January 2011

GroundSure EnviroInsight

Address: St. Martin's Convent,Stoke Golding

Date: Apr 1, 2011

GroundSure Reference: S EMS-124563_169563

Your Reference: EMS_124563_169563

Client: EmapSite



Brought to you by GroundSure

Aerial Photograph of Study Site

NW ▲ N NE



◄W E►

SW ▼ S SE

Aerial photography supplied by Getmapping PLC.
© Copyright Getmapping PLC 2003. All Rights Reserved.

Site Name: St. Martin's Convent,Stoke Golding
Grid Reference: 440854,297294
Size of Site: 1.41 ha

Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Report Section	Number of records found within (X) m of the study site boundary					
1. Environmental Permits, Incidents and Registers	on-site	0-50	51-250	251-500	501-1000	1000-1500
1.1 Industrial Sites Holding Environmental Permits and/or Authorisations						
Records of historic IPC Authorisations	0	0	0	0	-	-
Records of Part A(1) and IPPC Authorised Activities	0	0	0	0	-	-
Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0	-	-
Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0	-	-
Records of List 1 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of List 2 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of Part A(2) and Part B Activities and Enforcements	0	0	0	0	-	-
Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0	-	-
Records of Licensed Discharge Consents	0	0	0	0	-	-
Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	0		
1.2 Records of COMAH and NIHHS sites	0	0	0	0	-	-
1.3 Environment Agency Recorded Pollution Incidents						
National Incidents Recording System, List 2	0	0	0	-	-	-
National Incidents Recording System, List 1	0	0	0	-	-	-
1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990	0	0	0	0	-	-
2. Landfill and Other Waste Sites	on-site	0-50	51-250	251-500	501-1000	1000-1500
2.1 Landfill Sites						
Environment Agency Registered Landfill Sites	0	0	0	0	0	-
Landfill Data – Operational Landfill Sites	0	0	0	0	0	-
Environment Agency Historic Landfill Sites	0	0	0	0	2	0
Landfill Data – Non-Operational Landfill Sites	0	0	0	0	0	-
BGS/DoE Landfill Site Survey	0	0	0	0	0	0
GroundSure Local Authority Landfill Sites Data	0	0	0	0	0	0
2.2 Landfill and Other Waste Sites Findings						
Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	-	-
Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	-	-
Environment Agency Licensed Waste Sites	0	0	0	0	0	0

3. Current Land Uses	on-site	0-50	51-250	251-500	501-1000	1000-1500
3.1 Current Industrial Sites Data	0	0	3	-	-	-
3.2 Records of Petrol and Fuel Sites	0	0	0	0	-	-
3.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0	-	-

4. Geology	Description
4.1 Are there any records of Artificial Ground and Made Ground present beneath the study site? *	No
4.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site? *	Yes
4.3 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
Source: Scale: 1:50,000 BGS Sheet 155	

* This includes an automatically generated 50m buffer zone around the site.

5. Hydrogeology and Hydrology	on-site	0-50	51-250	251-500	501-1000	1001-2000
5.1 Are there any records of Productive Strata in the Superficial Geology within 500m of the study site?				Yes		
5.2 Are there any records of Productive Strata in the Bedrock Geology within 500m of the study site?				Yes		
5.3 Groundwater Abstraction Licences (within 1000m of the study site).	0	0	0	0	0	-
5.4 Surface Water Abstraction Licences (within 1000m of the study site).	0	0	0	0	0	-
5.5 Potable Water Abstraction Licences (within 2000m of the study site).	0	0	0	0	0	0
5.6 Are there any Source Protection Zones within 500m of the study site?					No	

5.7 River Quality	on-site	0-50	51-250	251-500	501-1000	1001-1500
Is there any Environment Agency information on river quality within 1500m of the study site?	No	No	No	No	No	No
5.8 Detailed River Network entries within 500m of the site	0	0	1	3	-	-
5.9 Surface water features within 250m of the study site	No	No	Yes	-	-	-

6. Flooding	
6.1 Are there any Environment Agency indicative Zone 2 floodplains within 250m of the study site?	Yes
6.2 Are there any Environment Agency indicative Zone 3 floodplains within 250m of the study site?	Yes
6.3 Are there any Flood Defences within 250m of the study site?	No
6.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
6.5 Are there any areas used for Flood Storage within 250m of the study site?	No
6.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Negligible
6.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderately High

7. Designated Environmentally Sensitive Sites	on-site	0-50	51-250	251-500	501-1000	1001-1500
7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	-	-
7.2 Records of National Nature Reserves (NNR)	0	0	0	0	-	-

7.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	-	-
7.3 Records of Local Nature Reserves (LNR)	0	0	0	0	-	-
7.4 Records of Special Areas of Conservation (SAC)	0	0	0	0	-	-
7.5 Records of Special Protection Areas (SPA)	0	0	0	0	-	-
7.6 Records of Ramsar sites	0	0	0	0	-	-
7.7 Records of World Heritage Sites	0	0	0	0	-	-
7.8 Records of Environmentally Sensitive Areas	0	0	0	0	-	-
7.9 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	-	-
7.10 Records of National Parks	0	0	0	0	-	-
7.11 Records of Nitrate Sensitive Areas	0	0	0	0	-	-
7.12 Records of Nitrate Vulnerable Zones	1	0	0	0	-	-

8. Natural Hazards

8.1 What is the maximum risk of natural ground subsidence?	Low

9. Mining

9.1 Are there any coal mining areas within 75m of the study site?	No
9.2 What is the risk of subsidence relating to shallow mining within 150m of the study site?	Negligible
9.3 Are there any brine affected areas within 75m of the study site?	No

Using this Report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client. The document contains the following sections:

1. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

2. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

3. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure underground oil and gas pipelines.

4. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

5. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licenses, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

6. Flooding

Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

7. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites. These searches are conducted using radii of up to 500m.

8. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence.

9. Mining

Provides information on areas of coal and shallow mining.

10. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, GroundSure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Environmental Permits, Incidents and Registers Map



Authorisations,Incidents and Registers Legend

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- Site Outline
- Search Buffers (m) 250 / 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

1.Environmental Permits, Incidents and Registers

1.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

Records of historic IPC Authorisations within 500m of the study site: **0**

Database searched and no data found.

Records of Part A(1) and IPPC Authorised Activities within 500m of the study site: **0**

Database searched and no data found.

Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site: **0**

Database searched and no data found.

Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site: **0**

Database searched and no data found.

Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site: **0**

Database searched and no data found.

Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site: **0**

Database searched and no data found.

Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site: **0**

Database searched and no data found.

Records of Category 3 or 4 Radioactive Substance Licences within 500m of the study site: **0**

Database searched and no data found.

Records of Licensed Discharge Consents within 500m of the study site: **0**

Database searched and no data found.

Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: **0**

Database searched and no data found.

1.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: **0**

Database searched and no data found.

1.3 Environment Agency Recorded Pollution Incidents

Records of National Incidents Recording System, List 2 within 250m of the study site: **0**

Database searched and no data found.

Records of National Incidents Recording System, List 1 within 250m of the study site: **0**

Database searched and no data found.

1.4 Sites Determined as Contaminated Land under Part IIA EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? **0**

Database searched and no data found.

2. Landfill and Other Waste Sites Map



Landfill & Other Waste Sites Legend

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- Site Outline
- 250 / 500 — Search Buffers (m)
- E.A. Active Landfill
- E.A. Historic Landfill (Area Data)
- E.A. Historic Landfill (Point Data)
- BGS / DoE Survey Landfill
- Local Authority Landfill (Area Data)
- Local Authority Landfill (Point Data)
- Operational Waste Treatment Licence
- Closed Waste Treatment Licence
- REGIS Waste Licence
- Operational Landfill
- Closed Landfill

2. Landfill and Other Waste Sites

2.1 Landfill Sites

Records from Environment Agency landfill data within 1000m of the study site: **0**

Database searched and no data found.

Records of operational landfill sites sourced from Landmark within 1000m of the study site: **0**

Database searched and no data found.

Records of Environment Agency historic landfill sites within 1500m of the study site: **2**

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance	Direction	NGR	Details	
Not shown	721.0	NW	440400, 298000	Site Address: The Green Landfill Site, The Green, Dadlington, Hinckley and Bosworth Waste Licence: - Site Reference: GDO 219 Waste Type: , Industrial, Commercial, Household Regis Reference: -	Licence Issue: - Licence Surrendered: - Licence Hold Address: - Operator: -
Not shown	865.0	NW	440200, 298100	Site Address: Hall Farm, Shenton Lane, Dadlington, Nuneaton, Warwickshire Waste Licence: - Site Reference: - Waste Type: - Regis Reference: -	Licence Issue: - Licence Surrendered: - Licence Hold Address: - Operator: -

Records of non-operational landfill sites sourced from Landmark within 1000m of the study site: **0**

Database searched and no data found.

Records of BGS/DoE non-operational landfill sites within 1500m of the study site: **0**

Database searched and no data found.

Records of Local Authority landfill sites within 1500m of the study site: **0**

Database searched and no data found.

2.2 Other Waste Sites

Records of operational waste treatment, transfer or disposal sites within 500m of the study site: **0**

Database searched and no data found.

Records of non-operational waste treatment, transfer or disposal sites within 500m of the study site: 0

Database searched and no data found.

Records of Environment Agency licensed waste sites within 1500m of the study site: 0

Database searched and no data found.

---

3. Current Land Use Map

NW N NE

◄W E►

SW S SE



Current Land Use Legend

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Site Outline

250
500
Search Buffers (m)

Current Industrial Sites

Petrol & Fuel Sites

Underground High Pressure Oil & Fuel Pipelines

3. Current Land Uses

3.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: **3**

The following records are represented as points on the Current Land Uses map.

ID	Distance	Direction	Company	Address	Activity	Category
1	86.0	SW	Electricity Sub Station	CV13	Electrical Features	Infrastructure and Facilities
2	109.0	W	Pumping Station	CV13	Water Pumping Stations	Industrial Features
3	202.0	W	Bjn Associates Ltd	125, Hinckley Road, Stoke Golding, Nuneaton, CV13 6ED	Civil Engineers	Engineering Services

3.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: **0**

Database searched and no data found.

3.3 Underground High Pressure Oil and Gas Pipelines

Records of high pressure underground pipelines within 500m of the study site: **0**

Database searched and no data found.

4. Geology

4.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

4.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
ODT-DMTN	OADBY MEMBER	DIAMICTON
WOC-CLSS	WOLSTON CLAY	CLAY, SILT AND SAND

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

4.3 Bedrock and Solid Geology

The database has been searched on site, including a 50m buffer.

LEX Code	Description	Rock Type
MMG-MDST	MERCIA MUDSTONE GROUP	MUDSTONE
MMG-MDST	MERCIA MUDSTONE GROUP	MUDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

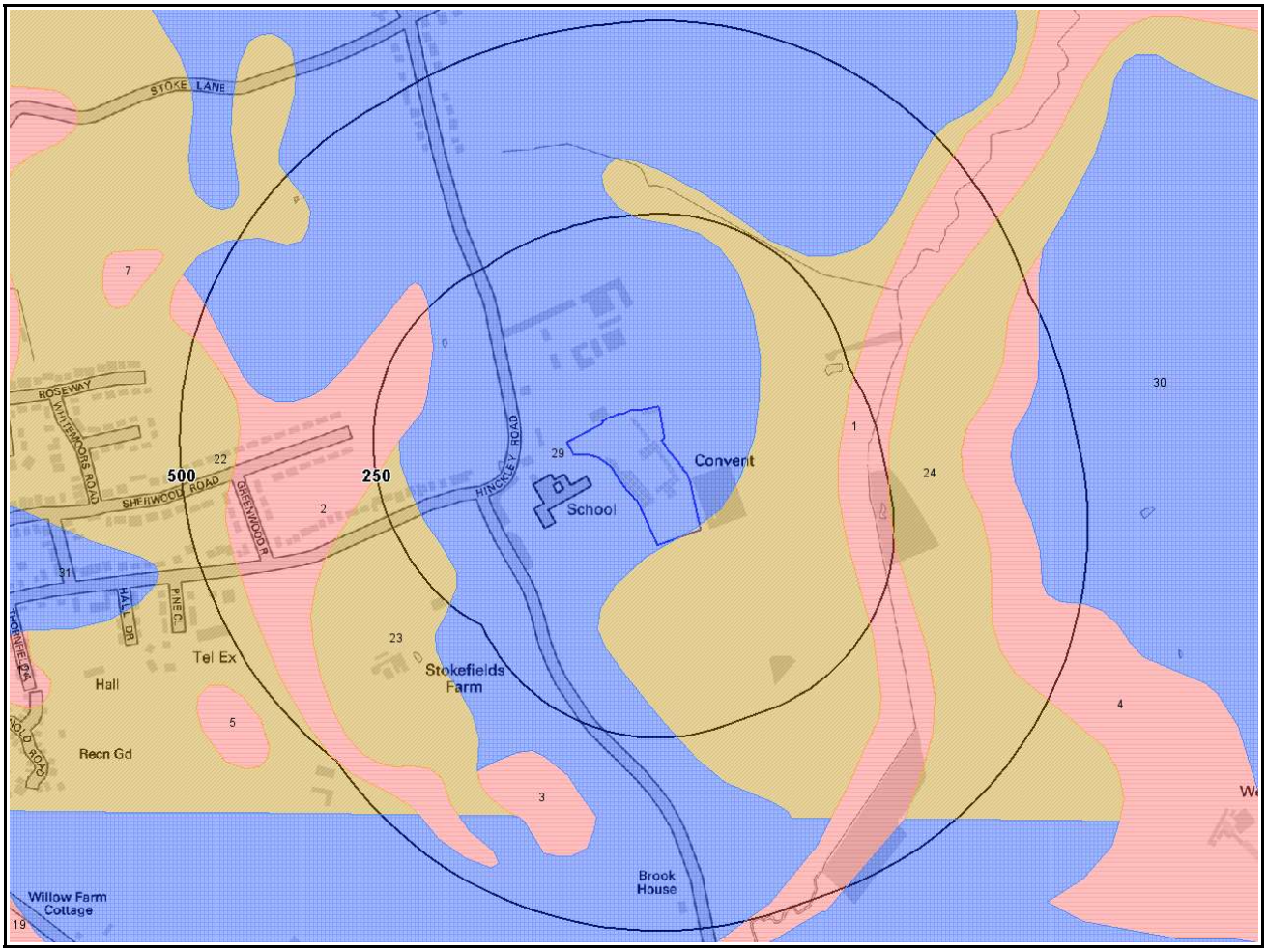
For more detailed geological and ground stability data please refer to the "GroundSure GeoInsight". Available from our website.

5a. Hydrogeology - Aquifer Within Superficial Geology

NW N NE

W E

SW S SE



Aquifer Within Superficial Geology Legend

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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

5b. Hydrogeology - Aquifer Within Bedrock Geology and Abstraction Licenses

NW N NE

W E

SW S SE



Aquifer Within Bedrock Geology Legend

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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

5c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses

NW N NE

W E

SW S SE



SPZ and Potable Water Abstraction Licenses
Legend

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Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

Source Protection Zone 4 - Zone of Special Interest

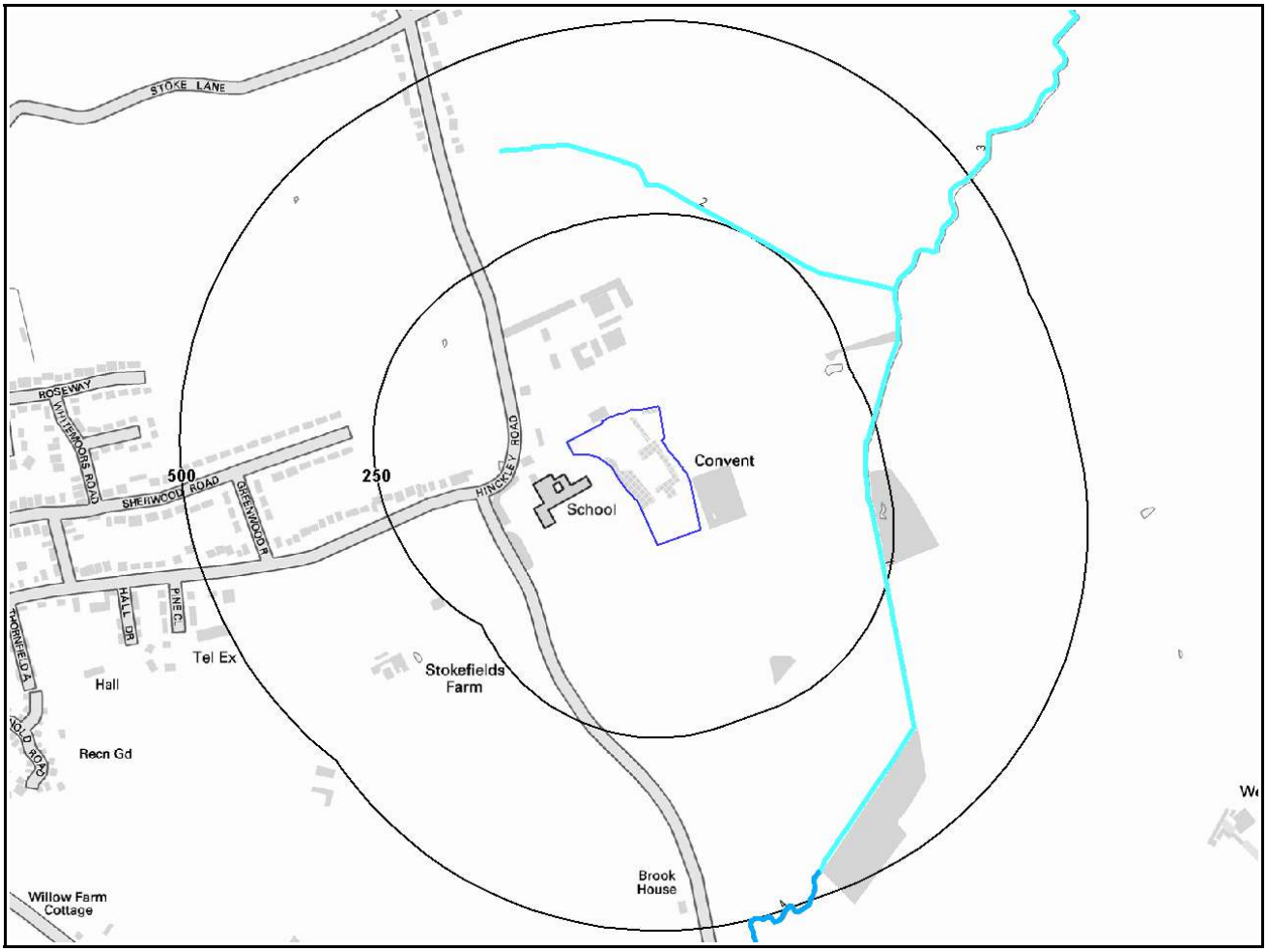
Potable Water Abstraction Licence

5d. Hydrology – Detailed River Network and River Quality

NW N NE

W E

SW S SE



Hydrology Legend

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- Site Outline
- 250 / 500 Search Buffers (m)
- Primary River
- Secondary River
- Tertiary River
- Lake/Reservoir
- Underground River (inferred)
- General Quality Assessment: Chemistry
- Canal
- Canal Tunnel
- Extended Culvert (greater than 50m)
- D/S of High Water Mark
- D/S seaward extension
- General Quality Assessment: Biology

5.Hydrogeology and Hydrology

5.1 Aquifer within Superficial Deposits

Are there records of productive strata within the superficial geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (5a):

ID	Distance [m]	Direction	Designation	Description
22	0.0	On Site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
29	0.0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
1	183.0	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	190.0	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
23	207.0	SW	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
24	245.0	E	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers
3	310.0	SW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	346.0	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
30	410.0	E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

5.2 Aquifer within Bedrock Deposits

Are there records of productive strata within the bedrock geology at or in proximity to the property? Yes

From 1 April 2010, the Environment Agency's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the GroundSure Enviroinsight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (5b):

ID	Distance [m]	Direction	Designation	Description
1	0.0	On Site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

5.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 1000m of the study site? **No**

Database searched and no data found.

5.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 1000m of the study site? **No**

Database searched and no data found.

5.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? **No**

Database searched and no data found.

5.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? **No**

Database searched and no data found.

5.7 River Quality

Is there any Environment Agency information on river quality within 1500m of the study site? **No**

Biological Quality:

Database searched and no data found.

Chemical Quality:

Database searched and no data found.

5.8 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? **Yes**

The following Detailed River Network records are represented on the Hydrology Map (5d):

ID	Distance	Direction	Details	
1	220.0	E	River Name: - Water Course Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Catchment: - Drain: NO Main River Status: Currently Undefined
2	252.0	NE	River Name: - Water Course Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Catchment: - Drain: NO Main River Status: Currently Undefined
3	341.0	NE	River Name: - Water Course Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Catchment: - Drain: NO Main River Status: Currently Undefined
4	469.0	S	River Name: - Water Course Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Catchment: - Drain: NO Main River Status: Currently Undefined

5.9 Surface Water Features

Are there any surface water features within 250m of the study site? **Yes**

The following surface water records are not represented on mapping:

Distance to Surface Water (m)	on-site	0-50	51-250
Surface water features within 250m of the study site	No	No	Yes

6. Environment Agency Flood Map

NW ▲ N NE

◄W E►

SW ▼ S SE



Environment Agency Flood Legend

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Site Outline

250
500
Search Buffers (m)

Zone 2 Floodplain

Zone 3 Floodplain

Flood Storage Area

Area Benefiting from Flood Defences

Flood Defences

6. Flooding

6.1 Zone 2 Flooding

Zone 2 floodplain estimates the annual probability of flooding as one in one thousand (0.1%) or greater from rivers and the sea but less than 1% from rivers or 0.5% from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 2 floodplain? **Yes**

The following floodplain records are represented as green shading on the Flood Map:

ID	Distance	Direction	Update	Type
1	176.0	E	04-Nov-2010	Zone 2 - (Fluvial Models and Fluvial / Tidal / Coastal Events)

6.2 Zone 3 Flooding

Zone 3 estimates the annual probability of flooding as one in one hundred (1%) or greater from rivers and a one in two hundred (0.5%) or greater from the sea. Alternatively, where information is available they may show the highest known flood level.

Is the site within 250m of an Environment Agency indicative Zone 3 floodplain? **Yes**

The following floodplain records are represented as blue shading on the Flood Map:

ID	Distance	Direction	Update	Type
2	176.0	E	04-Nov-2010	Zone 3 - (Fluvial Models)

6.3 Flood Defences

Are there any Flood Defences within 250m of the study site? **No**

6.4 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? **No**

6.5 Areas used for Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? **No**

6.6 Groundwater Flooding Susceptibility Areas

Are there any British Geological Survey groundwater flooding susceptibility flood areas within 50m of the boundary of the study site? **No**

What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?	**Negligible**

6.7 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?	**Moderately High**

Notes:

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

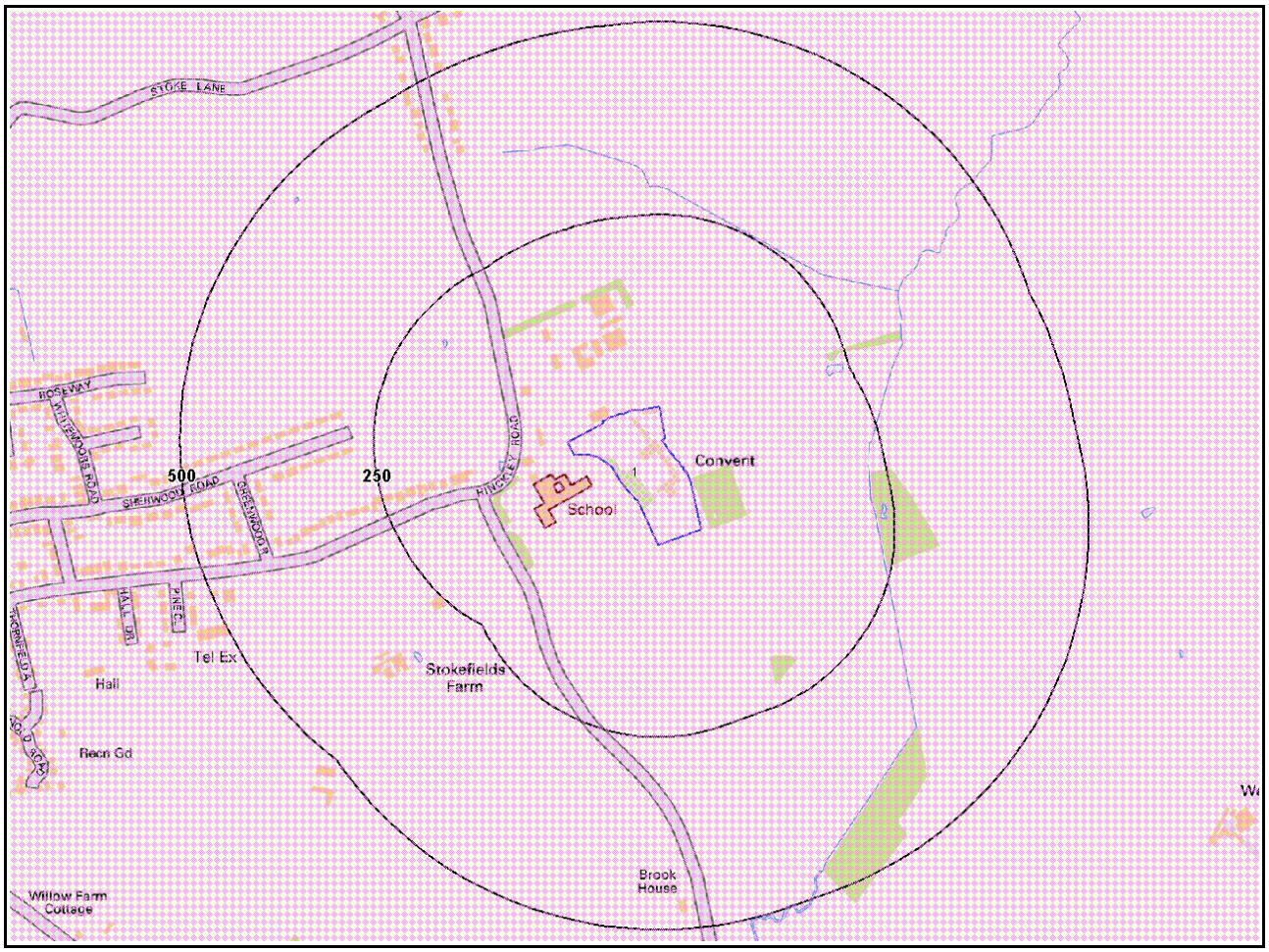
The **confidence rating** is on a fivefold scale - Low, Moderately Low, Moderate, Moderately High and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

7.Designated Environmentally Sensitive Sites Map

NW ▲ N NE

◄W E►

SW ▼ S SE



Designated Environmentally Sensitive Sites Legend

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- Site Outline
- Search Buffers (m) 250 500
- SAC
- SSSI
- NNR
- World Heritage Sites
- SPA
- Ramsar
- LNR
- Environmentally Sensitive Areas
- Areas of Outstanding Natural Beauty
- Nitrate Sensitive Areas
- National Parks

7.Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 500m of the study site? **Yes**

Records of Sites of Special Scientific Interest (SSSI) within 500m of the study site: **0**

Database searched and no data found.

Records of National Nature Reserves (NNR) within 500m of the study site: **0**

Database searched and no data found.

Records of Special Areas of Conservation (SAC) within 500m of the study site: **0**

Database searched and no data found.

Records of Special Protection Areas (SPA) within 500m of the study site: **0**

Database searched and no data found.

Records of Ramsar sites within 500m of the study site: **0**

Database searched and no data found.

Records of Local Nature Reserves (LNR) within 500m of the study site: **0**

Database searched and no data found.

Records of World Heritage Sites within 500m of the study site: **0**

Database searched and no data found.

Records of Environmentally Sensitive Areas within 500m of the study site: **0**

Database searched and no data found.

Records of Areas of Outstanding Natural Beauty (AONB) within 500m of the study site: **0**

Database searched and no data found.

Records of National Parks (NP) within 500m of the study site: **0**

Database searched and no data found.

Records of Nitrate Sensitive Areas within 500m of the study site: **0**

Database searched and no data found.

Records of Nitrate Vulnerable Zones within 500m of the study site: **1**

The following Nitrate Vulnerable Zone records produced by DEFRA are not represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance	Direction	NVZ Name	Data Source
1	0.0	On Site	No place name provided	DEFRA

8. Natural Hazards Findings

8.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a GroundSure GeoInsight, available from our website. The following information has been found:

8.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? **Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

8.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

8.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? **Null - Negligible**

Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

8.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? **Negligible**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

8.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? **Null - Negligible**

No indicators for collapsible deposits identified; No special actions required to avoid problems due to collapsible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with collapsible deposits.

8.1.6Running Sand

What is the maximum Running Sand* hazard rating identified on the study site? **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

* This indicates an automatically generated 50m buffer and site.

9.Mining

9.1 Coal Mining

Are there any coal mining areas within 75m of the study site? **No**

Database searched and no data found.

9.2 Shallow Mining

What is the subsidence hazard relating to shallow mining on-site*? **Negligible**

*Please note this data is searched with a 150m buffer.

9.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? **No**

Database searched and no data found.

10.Contacts

GroundSure Helpline
Telephone: 08444 159 000
info @ groundsure.com

British Geological Survey (England & Wales)
Kingsley Dunham Centre
Keyworth, Nottingham NG12 5GG
Tel: 0115 936 3143. Fax: 0115 936 3276. Email: enquiries@bgs.ac.uk
Web: www.bgs.ac.uk
BGS Geological Hazards Reports and general geological enquiries

Environment Agency
National Customer Contact Centre
PO Box 544
Rotherham
S60 1BY
Tel: 08708 506 506
Web: www.environment-agency.gov.uk
Email: enquiries@environment-agency.gov.uk

Health Protection Agency
Chilton, Didcot, Oxon, OX11 0RQ
Tel: 01235 822622 www.hpa.org.uk/radiation
Radon measures and general radon information and guidance

The Coal Authority
200 Lichfield Lane, Mansfield, Notts NG18 4RG
Tel: 0845 762 6848. DX 716176 Mansfield 5
www.coal-authority.co.uk
Coal mining reports and related enquiries

Ordnance Survey
Romsey Road
Southampton SO16 4GU
Tel: 08456 050505

Local Authority
Authority: Hinckley and Bosworth Borough Council
Phone: 01455 238141
Web: www.hinckleyandbosworthonline.org.uk
Address: Council Offices, Argents Mead, Hinckley, Leicestershire, LE10 1BZ

Get Mapping PLC
Virginia Villas, High Street, Hartley Witney, Hampshire RG27 8NW
Tel: 01252 845444

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This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

Report Reference: S EMS-124563_169563

Standard Terms and Conditions

1 Definitions

In these conditions unless the context otherwise requires:

"Beneficiary"means the Client or the customer of the Client for whom the Client has procured the Services.

"Commercial"means any building which is not Residential.

"Commission"means an order for Consultancy Services submitted by a Client.

"Consultancy Services" mean consultancy services provided by GroundSure including, without limitation, carrying out interpretation of third party and in-house environmental data, provision of environmental consultancy advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Content" means any data, database or other information contained in a Report or Mapping which is provided to GroundSure by a Data Provider.

"Contract" means the contract between GroundSure and the Client for the performance of the Services which arises upon GroundSure's acceptance of an Order or Commission and which shall incorporate these conditions, the relevant GroundSure User Guide, proposal by GroundSure and the content of any subsequent report, and any agreed amendments in accordance with clause 11.

"Client" means the party that submits an Orderor Commission.

"Data Provider" means any third party providing Content to GroundSure.

"Data Report" means reports comprising factual data with no professional interpretation in respect ofthe level of likely risk and/or liability available from GroundSure.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028 and whose registered office is at Greater London House, Hampstead Road, London NW1 7EJ.

"Intellectual Property" means any patent, copyright, design rights, service marks, moral rights, data protection rights, know-how, trademark or any other intellectual property rights.

"Mapping" an historical map or a combination of historical maps of various ages, time periods and scales available from GroundSure.

"Order" means an order form submitted by the Client requiring Services from GroundSure in respect of a specified Site.

"Order Website" means online platform via which Orders may be placed.

"Report" means a Risk Screening Report or Data Report for commercial or residential property available from GroundSure relating to the Site prepared in accordance with the specifications set out in the relevant User Guide.

"Residential" means any building used as or suitable for use as an individual dwelling.

"Risk Screening Report" means one of GroundSure's risk screening reports, comprising factual data with interpretation in respect ofthe level of likely risk and/or liability, excluding **"Consultancy Services"**.

"Services" means the provision of any Report, Mapping or Consultancy Services which GroundSure has agreed to carry out for the Client/Beneficiary on these terms and conditions in respect of the Site.

"Site"means the landsite in respect of which GroundSure provides the Services.

"User Guide" means the relevant current version of the user guide, available upon request from GroundSure.

2 Scope of Services

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.3 The Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in the Contract.

2.4 Terms and conditions appearing on a Client's order form, printed stationery or other communication, including invoices, to GroundSure, its employees, servants, agents or other representatives or any terms implied by custom, practice or course of dealing shall be of no effect and these terms and conditions shall prevail over all others.

2.5 In the event that a Client/Beneficiary opts to take out insurance in conjunction with or as a result of the Services, such insurance shall be subject solely to the terms of any policy issued to it in that respect and GroundSure will have no liability therefore.

2.6 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or Commission. GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

3 The Client's obligations

3.1 The Client shall ensure the Beneficiary complies with and is bound by the terms and conditions set out in the Contract and shall provide that Groundsure may in its own right enforce such terms and conditions against the Beneficiary pursuant to the Contracts (Rights of Third parties) Act 1999. The Client shall be liable for all breaches of the Contract by the Beneficiary as if they were breaches by the Client. The Client shall be solely responsible for ensuring that the Report/Mapping ordered is appropriate and suitable for the Beneficiary's needs.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary which may pertain to the Services and shall give such assistance as GroundSure shall reasonably require in the performance of the Services (including, without limitation, access to a Site, facilities and equipment as agreed in the Contract).

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the Site, or providing funding in relation to the Site, but such third party cannot rely on the same unless expressly permitted under clause 4.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

4 Reliance

4.1 Upon full payment of all relevant fees and subject to the provisions of these terms and conditions, the Client and Beneficiary are granted an irrevocable royalty-free licence to access the information contained in a Report, Mapping or in a report prepared by GroundSure in respect of or arising out of Consultancy Services. The Services may only be used for the benefit of the Client and those persons listed in clauses 4.2 and 4.3.

4.2 In relation to Data Reports, Mapping and Risk Screening Reports, the Client shall be entitled to make Reports available to (i) the Beneficiary, (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate), (iv) the first purchaser or first tenant of the Site (v) the professional advisers and lenders of the first purchaser or tenant of the Site. Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client and those persons shall have the benefit of any of the Client's rights under the Contract as if those persons were parties to the Contract. For the avoidance of doubt, the limitations of GroundSure's liability as set out in clauses 7 and 11.6 shall apply.

4.3 In relation to Consultancy Services, reliance shall be limited to the Client, Beneficiary and named parties on the Report.

4.4 Save as set out in clauses 4.2 and 4.3 and unless otherwise agreed in writing with GroundSure, any other party considering the information supplied by GroundSure as part of the Services, including (but not limited to) insurance underwriters, does so at their own risk and GroundSure has no legal obligations to such party unless otherwise agreed in writing.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report, (except as permitted herein or by separate agreement with GroundSure) to,: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking from the Report or Mapping; (b) create any product which is derived directly or indirectly from the data contained in the Report or Mapping; (c) combine the Report or Mapping with, or incorporate the Report or Mapping into any other information data or service; or (d) re-format or otherwise change (whether by modification, addition or enhancement) data or images contained in the Report or Mapping.

4.6 Notwithstanding clause 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise Beneficiaries. However, GroundSure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or a third party.

5 Fees and Disbursements

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract together, in the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client (**"Payment Date"**). GroundSure reserves the right to charge interest which shall accrue on a daily basis from 30 days after the date of Payment Date until the date of payment (whether before or after judgment) at the rate of five per cent per annum above the Bank of England base rate from time to time.

5.3 In the event that the Client disputes the amount payable in respect of GroundSure's invoice it shall notify GroundSure no later than 28 days after the date thereof that it is in dispute. In default of such notification the Client shall be deemed to have agreed the amount thereof. As soon as reasonably practicable following receipt of a notification in respect of any disputed invoice, a member of the management team at GroundSure shall contact the Client and the parties shall use all reasonable endeavours to resolve the dispute.

6 Intellectual Property

6.1 Subject to the provisions of clause 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services and Content are and shall remain owned by either GroundSure or the Data Providers and nothing in these terms purports to transfer or assign any rights to the Client or the Beneficiary in respect of the Intellectual Property.

6.2 The Client shall acknowledge the ownership of the Content where such Content is incorporated or used in the Client's own documents, reports, systems or services whether or not these are supplied to a third party.

6.3 Data Providers may enforce any breach of clauses 6.1 and 6.2 against the Client or Beneficiary.

6.4 The Client acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report are and shall remain (subject to clause 11.1) the property of GroundSure and/or any third party that has supplied data or information used to create a Report, and that these conditions do not purport to grant, assign or transfer any such rights in respect thereof to a Client and/or a Beneficiary.

6.5 The Client and each of the parties set out in clause 4.2 are permitted to make up to 8 (commercial) or 2 (residential) printed copies of the Report only. Further copies of the Report may not be made in whole or in part without the prior written permission of GroundSure who shall be entitled to make a charge for each additional copy.

6.6 The Client shall (and shall procure that any recipients of the Report as permitted under clause 4.2 shall):

(i) not remove, suppress or modify any trademark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

(iii) not create any product or report which is derived directly or indirectly from the data contained in the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
(iv) not combine the Services with or incorporate such Services into any other information data or service; and
(v) not reformat or otherwise change (whether by modification, addition or enhancement), data contained in the Services (save that those acting in a professional capacity to the Beneficiary shall not be in breach of this clause 6.6(v) where such reformatting is in the normal course of providing advice based upon the Services),
in each case of parts (iii) to (v) inclusive, whether or not such product or report is produced for commercial profit or not.
6.7 The Client and/or Beneficiary shall and shall procure that any party to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.

7. Liability

7.1 Nothing in these terms and conditions shall limit GroundSure's liability for causing death or personal injury through negligence or willful default.
7.2 Save as otherwise set out in these conditions, any information provided by one party ("**Disclosing Party**") to the other party ("**Receiving Party**") shall be treated as confidential except so far as authorised by the Disclosing Party to provide such information in whole or in part to a third party.
7.3 Nothing in these conditions shall affect the statutory rights of a consumer under the applicable consumer protection legislation from time to time.
7.4 In relation to Data Reports, Mapping and Risk Screening Reports, GroundSure's liability under the Contract shall cease upon the expiry of six years from the date when the Beneficiary became aware that it may have a claim against GroundSure in respect of the Services provided always that there shall be no liability at the expiration of twelve years from the completion of the Contract. For the avoidance of doubt, any claims in respect of which proceedings are notified to GroundSure in writing prior to the expiry of the time periods referred to in this clause shall survive the expiry of those time periods provided any such claim is actually commenced within six months of notification.
7.5 In relation to Consultancy Services GroundSure's liability under the Contract shall cease upon the expiry of six years from the date the Services were completed.
7.6 GroundSure shall not be liable to the Client or any person to whom the Client provides a copy of a Data Report, Mapping or Risk Screening Report in any circumstances whatsoever unless arising out of a breach on its part of the obligations set out in the Contract.
7.7 GroundSure shall not be liable if the Data Reports, Mapping or Risk Screening Report are used otherwise than as provided or referred to in these conditions and the relevant User Guide.
7.8 Subject to the provisions of clause 7.3, GroundSure makes no representation, warranties, express or implied, as to the accuracy, reliability, completeness, validity or fitness for purpose of any Content and shall not be liable for any omission, error or inaccuracy in relation thereto unless GroundSure should reasonably have been alerted to any omission, error or inaccuracy in the Content.
7.9 Subject to the provisions of clause 7.1 and irrespective of whether multiple parties make use of the same Services the total liability of GroundSure under or in connection with the Contract, whether in contract in tort for breach of statutory duty or otherwise shall not exceed £10 million per claim or series of connected claims,
7.10 Whilst GroundSure will use all reasonable endeavours to maintain operability of its internet ordering service it will not be liable for any loss or damages caused by a delay or loss of use of such service. The Client shall use GroundSure's internet ordering service at its own risk. GroundSure shall not be responsible for any damage to a Client or permitted assignee's computer, software, modem, telephone or other property resulting from the use of GroundSure's internet ordering service.
7.11 The Client accepts, and shall use all reasonable endeavours to procure that anyone who is provided with a copy of the Report accepts, that it has no claim or recourse to any Data Provider or to GroundSure in respect of the acts or omissions of such Data Providers including Content supplied by them.
7.12 GroundSure shall provide the Services using reasonable skill and care, however, GroundSure shall not be liable for any inaccurate statement or risk rating in a Report which resulted from a reasonable interpretation of the Content.
7.13 Subject to clause 7.1, GroundSure shall not be liable to the Client, the Beneficiary or any third party in contract, tort (including, without limitation, negligence) or for misrepresentation or breach of statutory duty or otherwise in respect of any loss of profits, goodwill, revenue or opportunity, or any indirect or consequential loss (even if such loss was reasonably foreseeable).
7.14 GroundSure undertakes for the duration of the liability periods referred to in clauses 7.4 and 7.5 to maintain professional indemnity insurance in respect of its liabilities under this Contract. GroundSure shall produce evidence of such insurance if requested by the Client. A greater level of cover may be available upon request and agreement with the Client.

8 GroundSure right to suspend or terminate

8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper performance of the Services, GroundSure shall be entitled on fourteen days written notice to suspend all further performance of the Services until such time as any such deficiency has been made good.
8.2 GroundSure may additionally terminate the Contract immediately on written notice in the event that:
(i) the Client shall fail to pay any sum due to GroundSure within 28 days of the Payment Date; or
(ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an Administration Order made against it or if a Receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
(iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
(iv) the Client or the Beneficiary breaches any material term of the Contract (including, but not limited to, the obligations in clause 4) incapable of remedy or if remediable, is not remedied within 14 days of notice of the breach.

9. Client's Right to Terminate and Suspend

9.1 Subject to clause 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately performance of all or any of the Services.
9.2 The Client waives all and any right of cancellation it may have under the Consumer Protection (Distance Selling) Regulations 2000 (as amended) in respect of the Order of a Report/Mapping. This does not affect the Beneficiary's statutory rights.

10 Consequences of Withdrawal, Termination or Suspension

10.1 Upon termination or any suspension of the Services, GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client/Beneficiary any property of the Client/ Beneficiary in GroundSure's possession or control.
10.2 In the event of termination/suspension of the Contract under clauses 8 or 9, the Client shall pay to GroundSure all and any fees payable in respect of the performance of the Services up to the date of termination/suspension. In respect of any Consultancy Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination/suspension of the Contract.

11 General

11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in these terms.
11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.
11.3 No failure on the part of GroundSure to exercise and no delay in exercising, any right, power or provision under these terms and conditions shall operate as a waiver thereof.
11.4 Save as expressly provided in clauses 4.2, 4.3, 6.3 and 11.5, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.
11.5 The Secretary of State for Communities and Local Government acting through Ordnance Survey may enforce breach of clause 6.1 of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.
11.6 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:
(i) the Client or Beneficiary's failure to provide facilities, access or information;
(ii) fire, storm, flood, tempest or epidemic;
(iii) Acts of God or the public enemy;
(iv) riot, civil commotion or war;
(v) strikes, labour disputes or industrial action;
(vi) acts or regulations of any governmental or other agency;
(vii) suspension or delay of services at public registries by Data Providers; or
(viii) changes in law.
11.7 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.
11.8 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email and on the second working day after the day of posting if sent by first class post.
11.9 The Contract constitutes the entire contract between the parties and shall supersede all previous arrangements between the parties.
11.10 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisionsshall not in any way be tainted or impaired.
11.11 These terms and conditions shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with these terms and conditions shall be subject to the exclusive jurisdiction of the English courts.
11.12 If the Client or Beneficiary has a complaint about the Services, notice can be given in any format eg writing, phone, email to the Compliance Officer at GroundSure who will respond in a timely manner.

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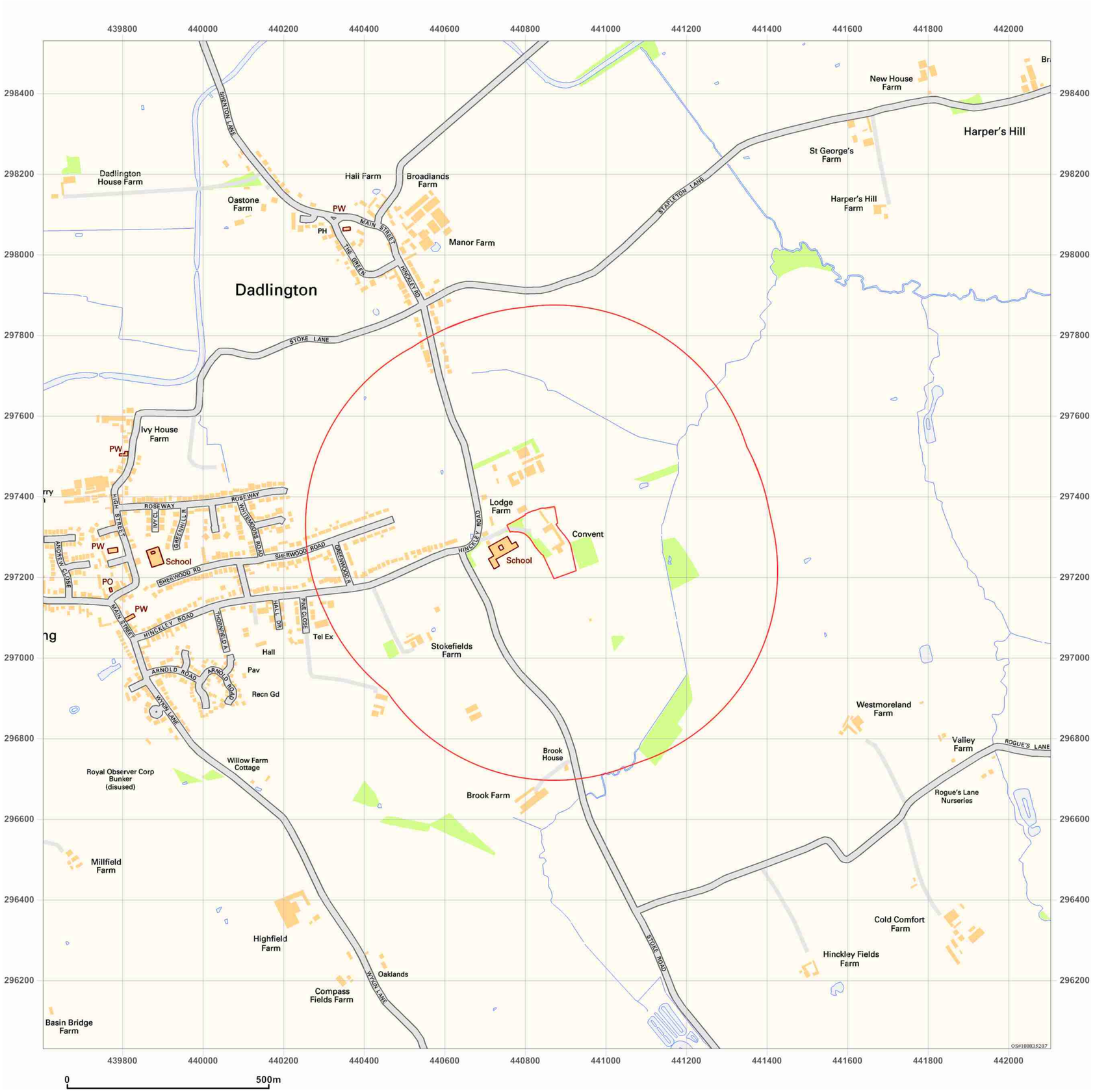
APPENDIX VI

Historical Mapping



emapsite™

Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: National Grid

Map date: **2011**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2011

GroundSure

Produced by
GroundSure Environmental Insight
www.groundsure.com

Ordnance Survey Licensed Partner

Supplied by:
www.emapsite.com
sales@emapsite.com

Crown copyright all rights reserved. Licence No: 100035207

Production date: 01 April 2011

To view map legend click here *Legend*



emapsite™

Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2002

Produced by
GroundSure Environmental Insight
www.groundsure.com

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sales@emapsite.com

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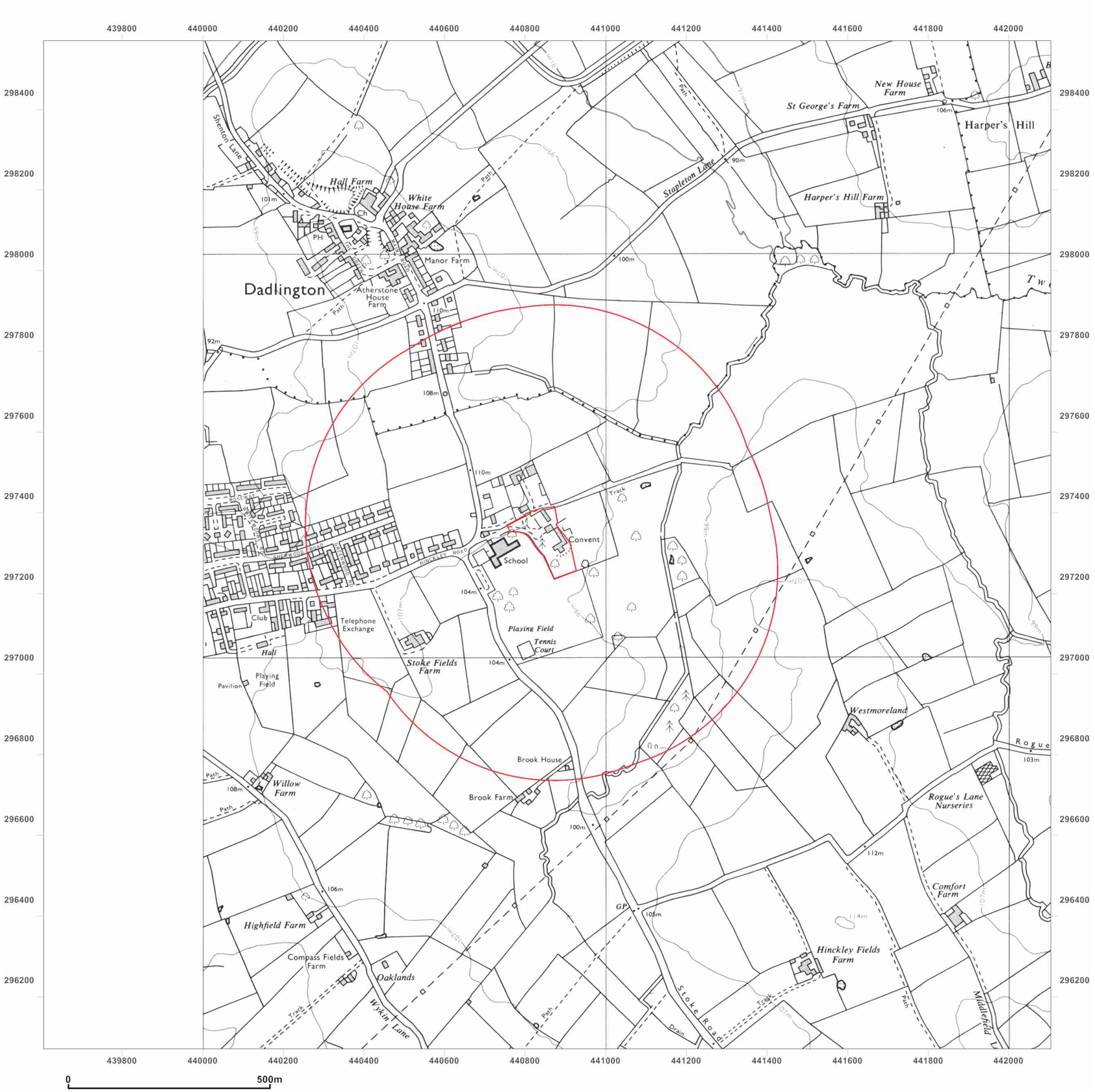
Production date: 01 April 2011

To view map legend click here *Legend*



emapsite™

Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

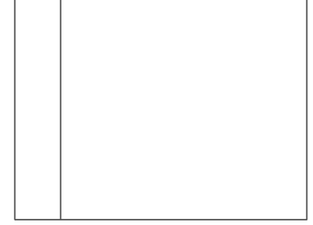
Map Name: National Grid

Map date: **1978**

Scale: 1:10,000

Printed at: 1:10,000

N W E S



Surveyed 1977
Revised 1978
Edition NA
Copyright NA
Levelled NA

GroundSure

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GroundSure Environmental Insight
www.groundsure.com

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sales@emapsite.com

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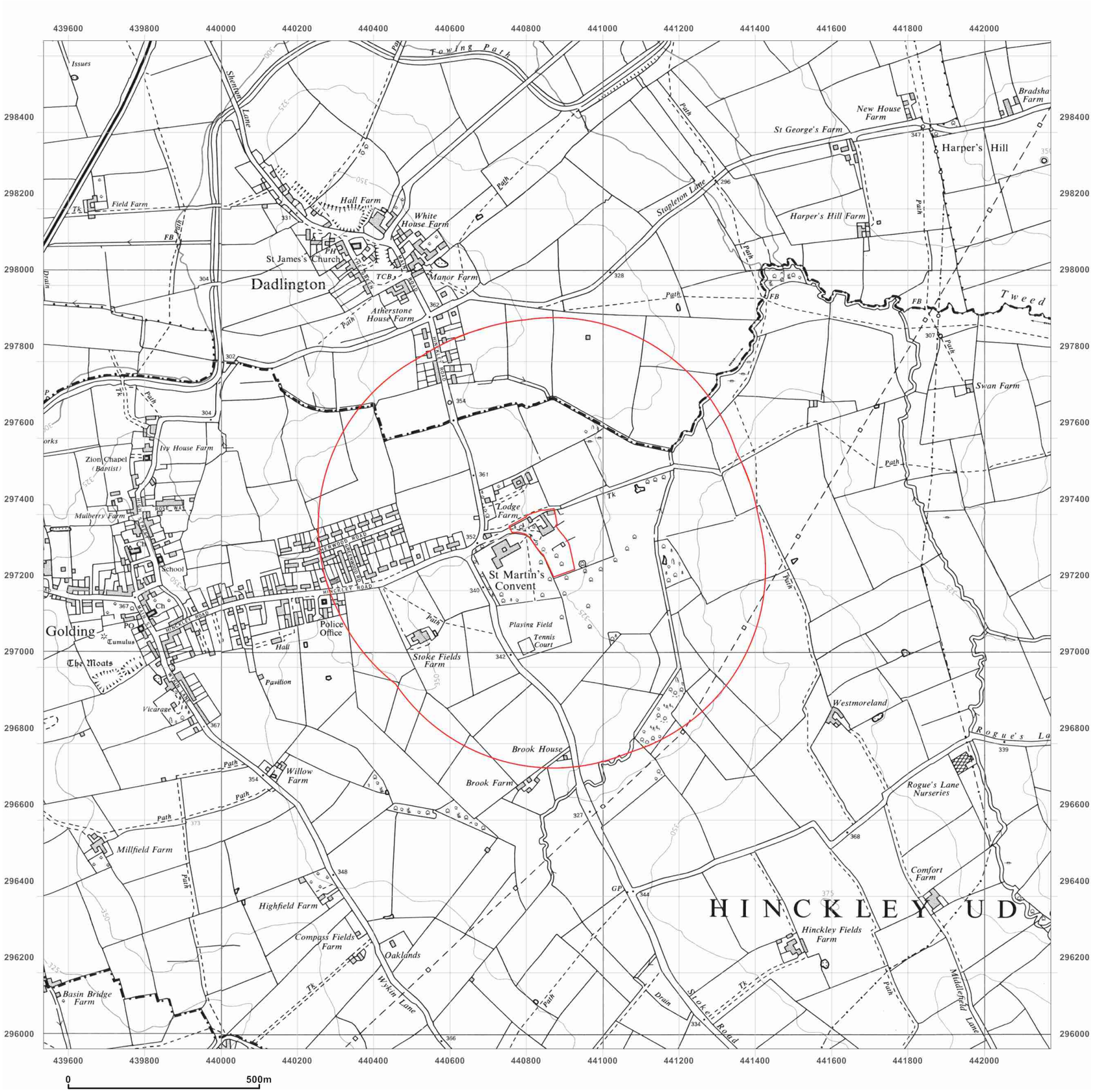
Production date: 01 April 2011

To view map legend click here *Legend*



emapsite™

Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

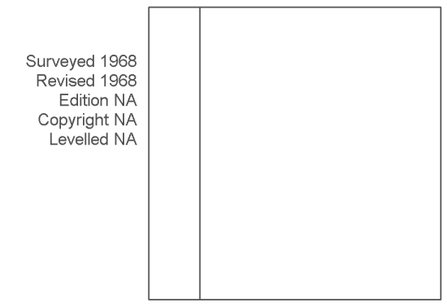
Map Name: Provisional

Map date: **1967-1968**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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Revised 1968
Edition NA
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Levelled NA

Surveyed 1967
Revised 1967
Edition NA
Copyright NA
Levelled NA

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Production date: 01 April 2011

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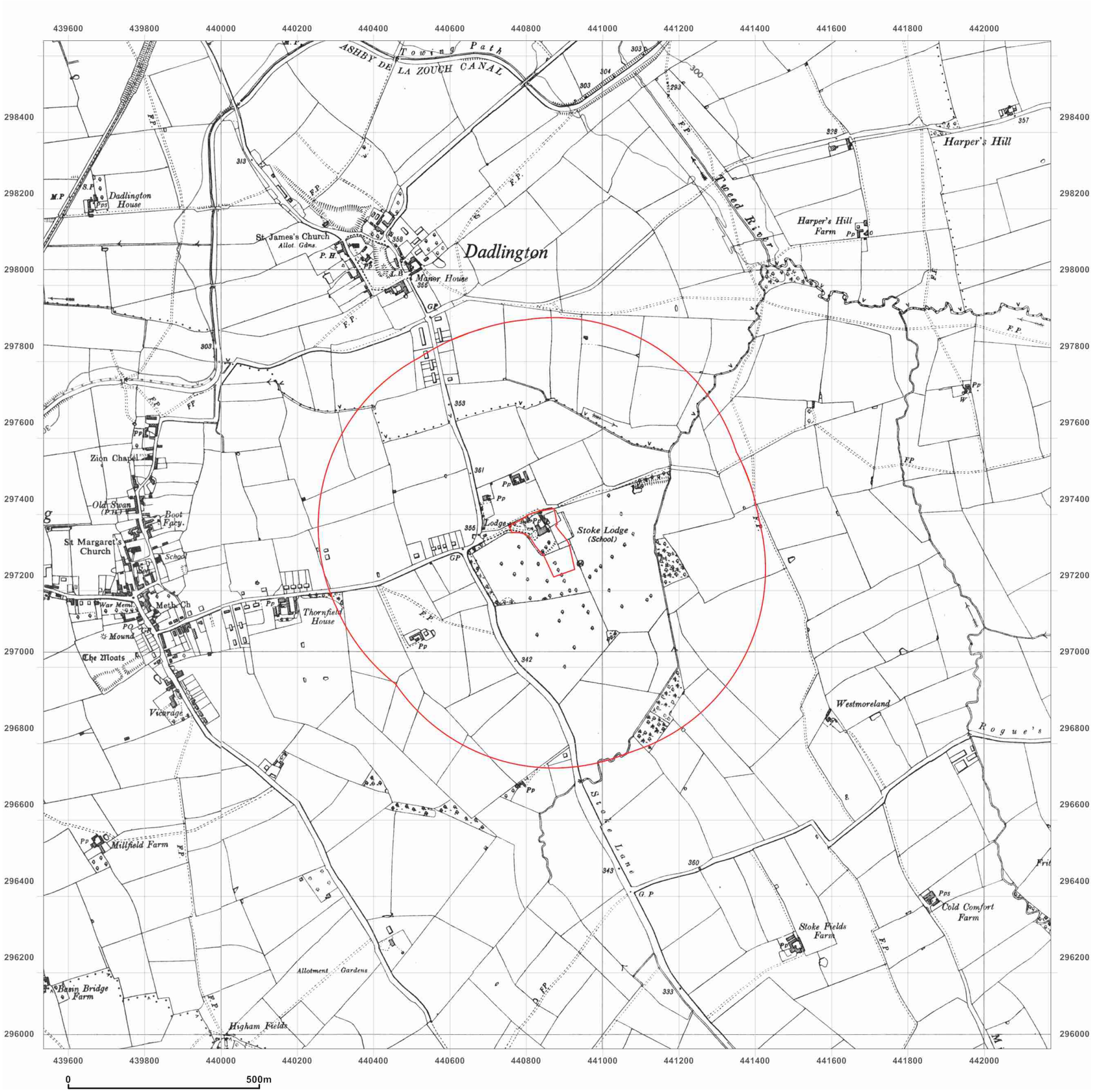

emapsite™

Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: Provisional

Map date: **1950**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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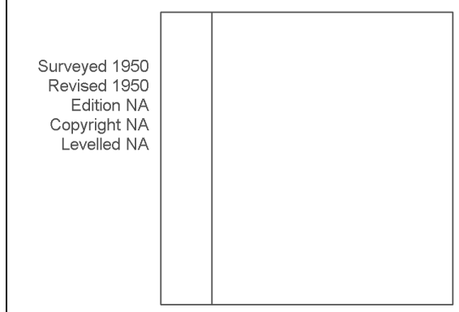

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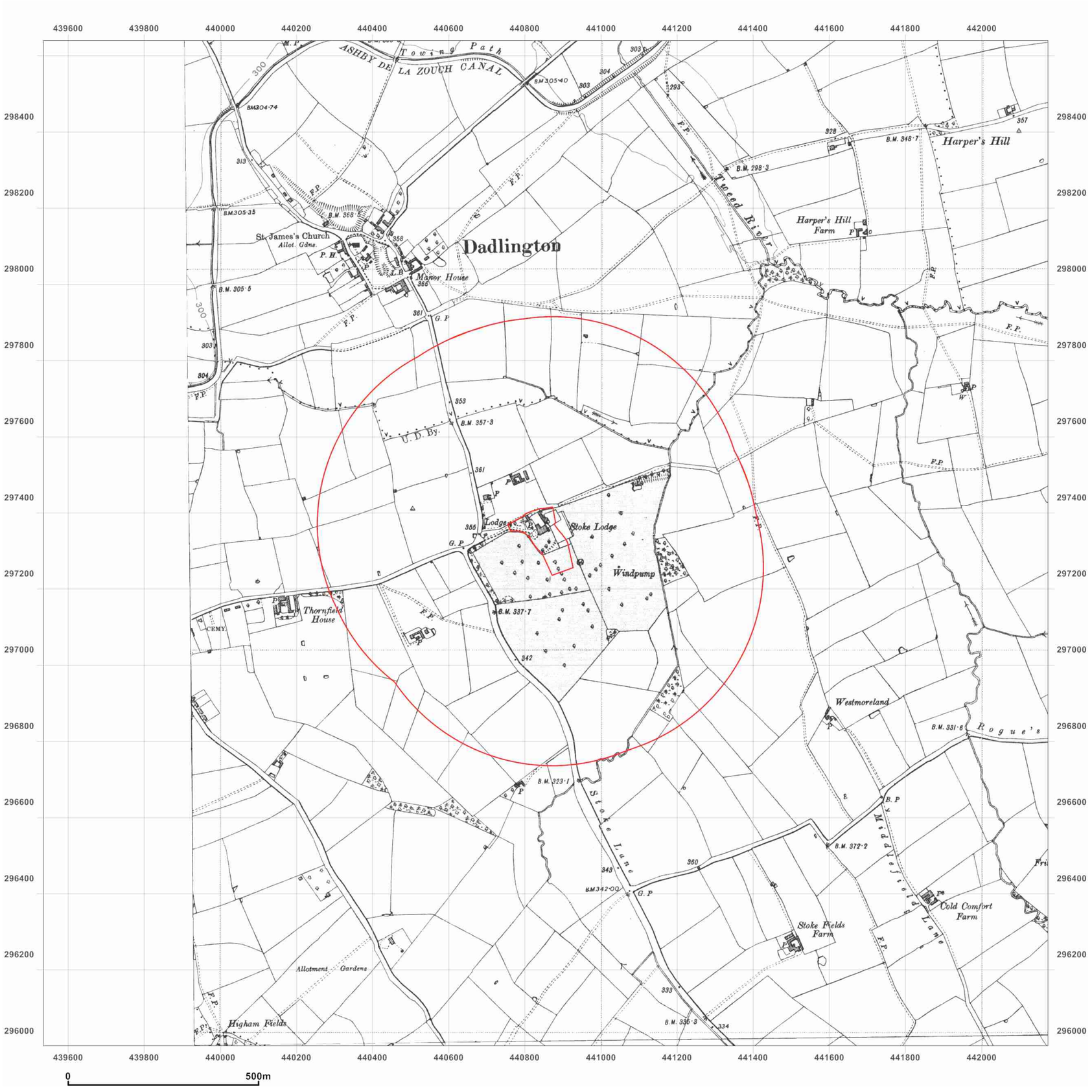

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Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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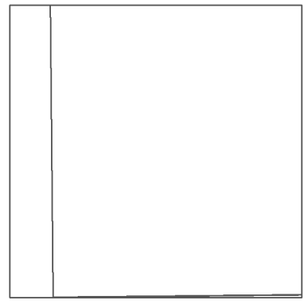

Surveyed 1886
Revised 1938
Edition NA
Copyright NA
Levelled NA

Surveyed 1886
Revised 1938
Edition NA
Copyright NA
Levelled NA

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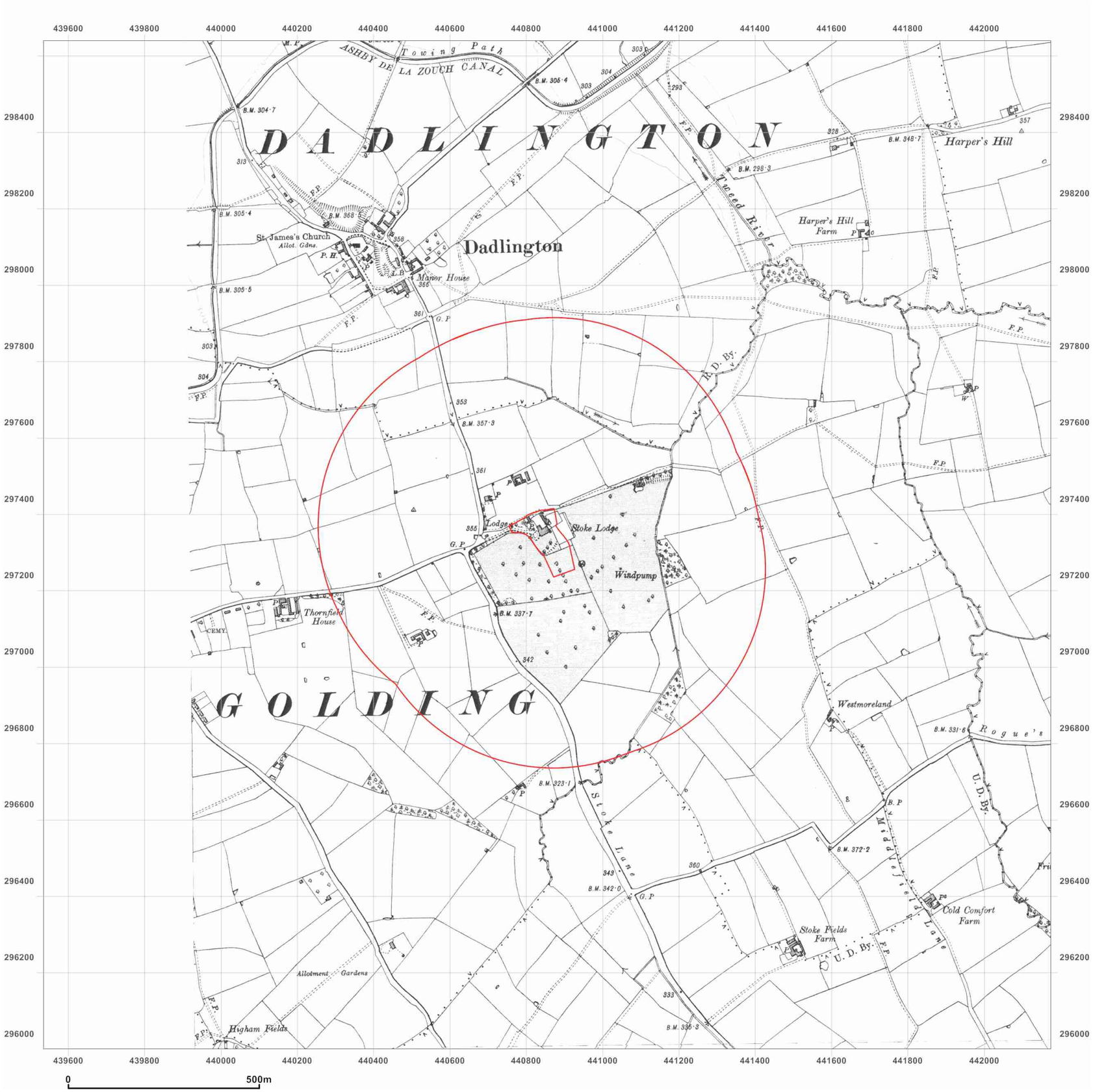

emapsite™

Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: County Series

Map date: **1923-1927**

Scale: 1:10,560

Printed at: 1:10,560

N
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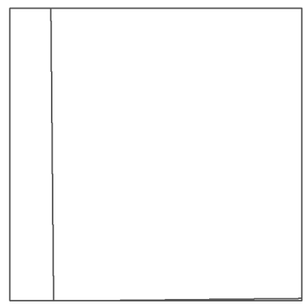
S



Surveyed 1886
Revised 1927
Edition NA
Copyright NA
Levelled NA

Surveyed 1886
Revised 1923
Edition NA
Copyright NA
Levelled NA

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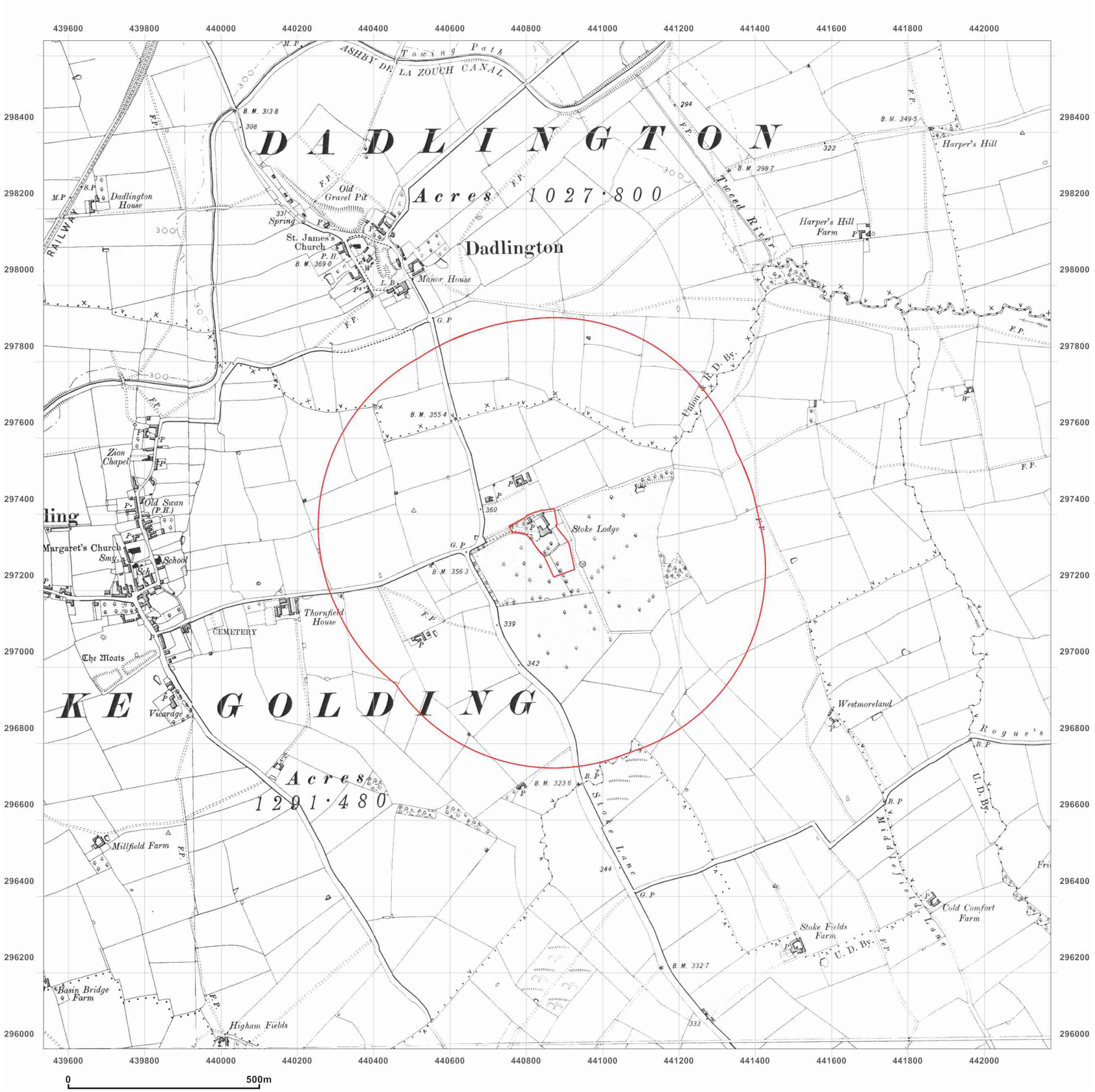

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Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: County Series

Map date: **1901**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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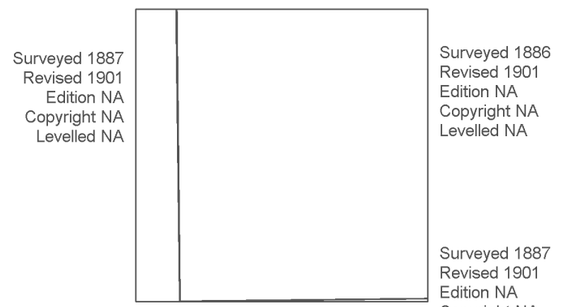

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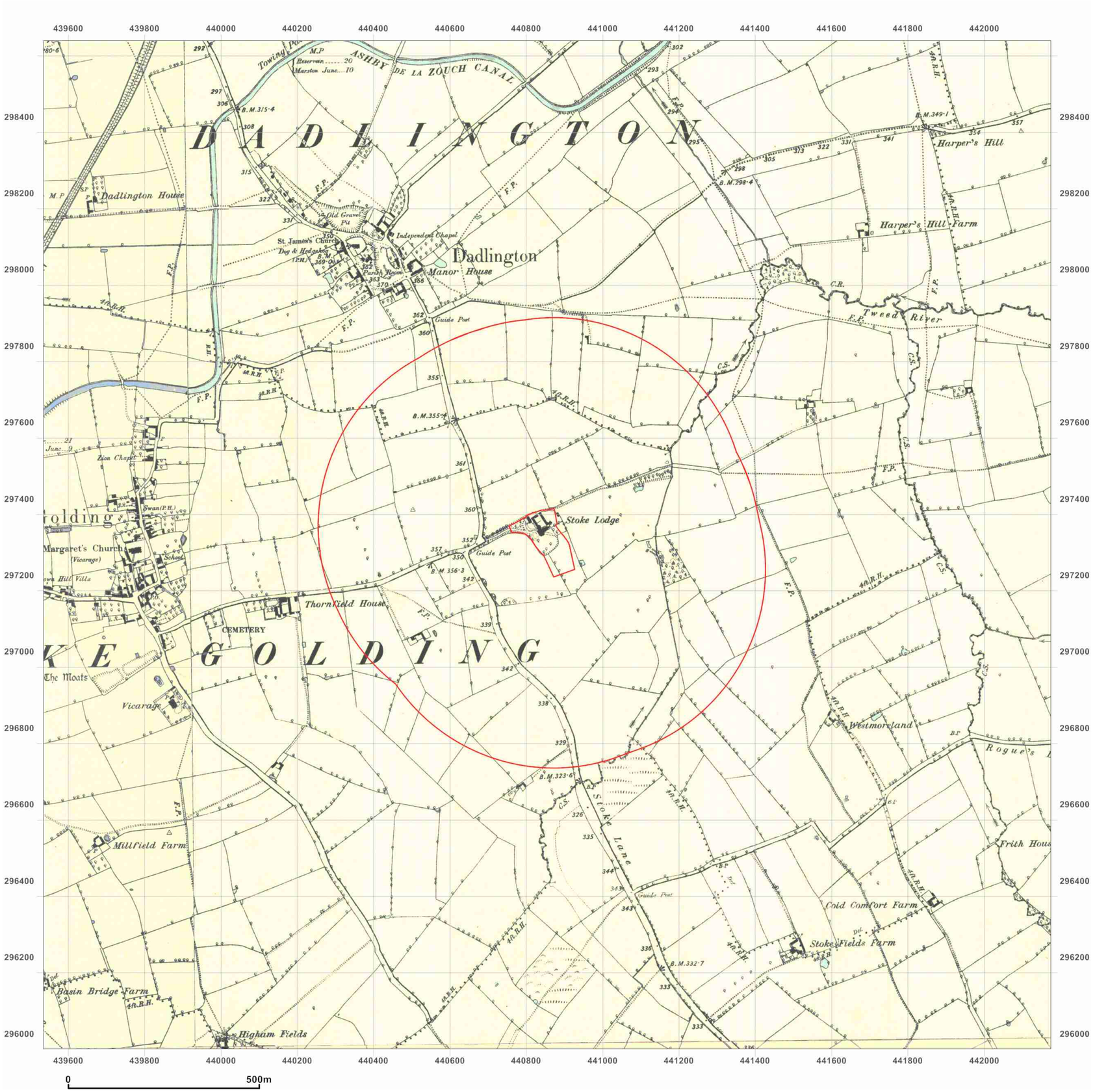

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Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: County Series

Map date: **1886-1887**

Scale: 1:10,560

Printed at: 1:10,560

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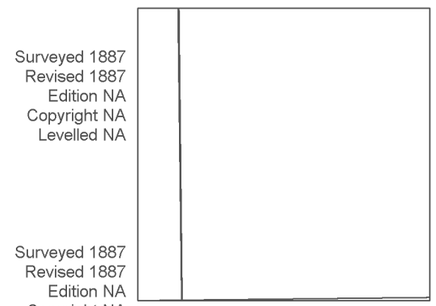

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Site Details:

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Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: MasterMap

Map date: **2011**

Scale: 1:2,500

Printed at: 1:2,500

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2011

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Site Details:

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Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: National Grid

Map date: **1992-1993**

Scale: 1:2,500

Printed at: 1:2,500

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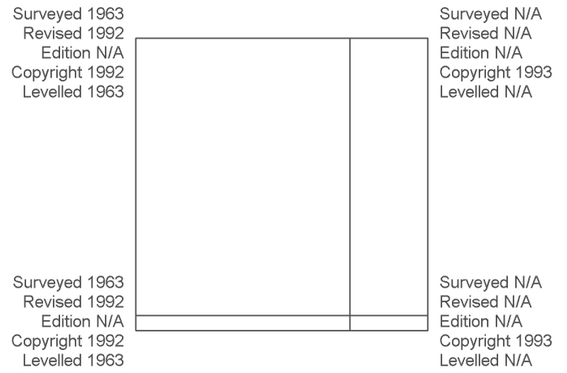

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Site Details:

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Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: National Grid

Map date: **1974**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1974
Revised 1974
Edition N/A
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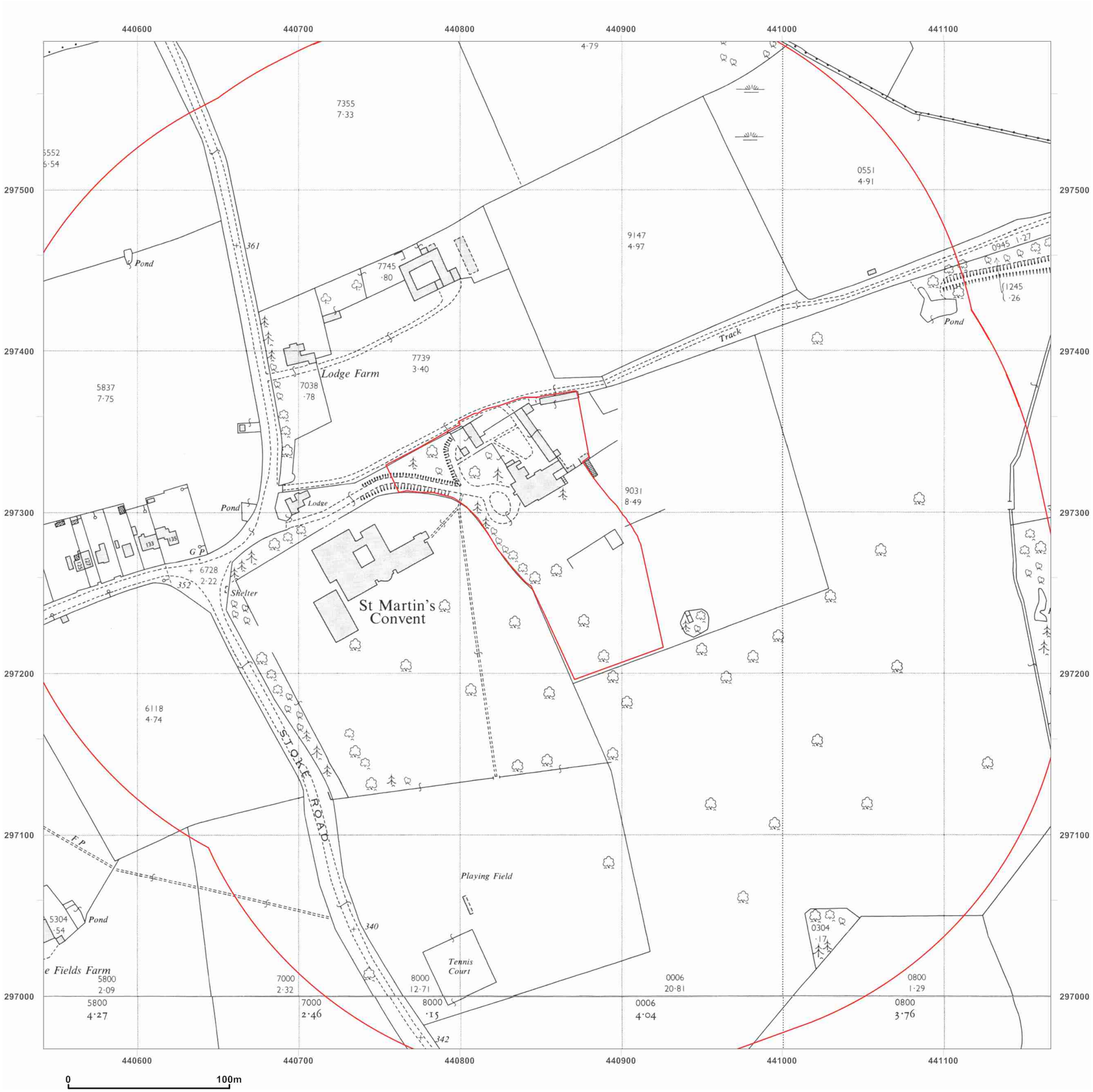

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Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: National Grid

Map date: **1962-1963**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1963
Revised 1963
Edition N/A
Copyright 1964
Levelled 1927

Surveyed 1962
Revised 1962
Edition N/A
Copyright 1963
Levelled 1924

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Site Details:

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Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: County Series

Map date: **1928-1929**

Scale: 1:2,500

Printed at: 1:2,500

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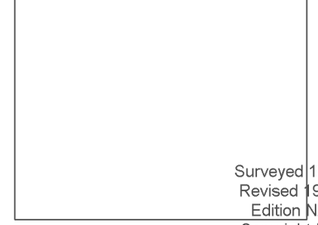
Surveyed 1928
Revised 1928
Edition NA
Copyright NA
Levelled NA



Surveyed 1929
Revised 1929
Edition NA
Copyright NA
Levelled NA

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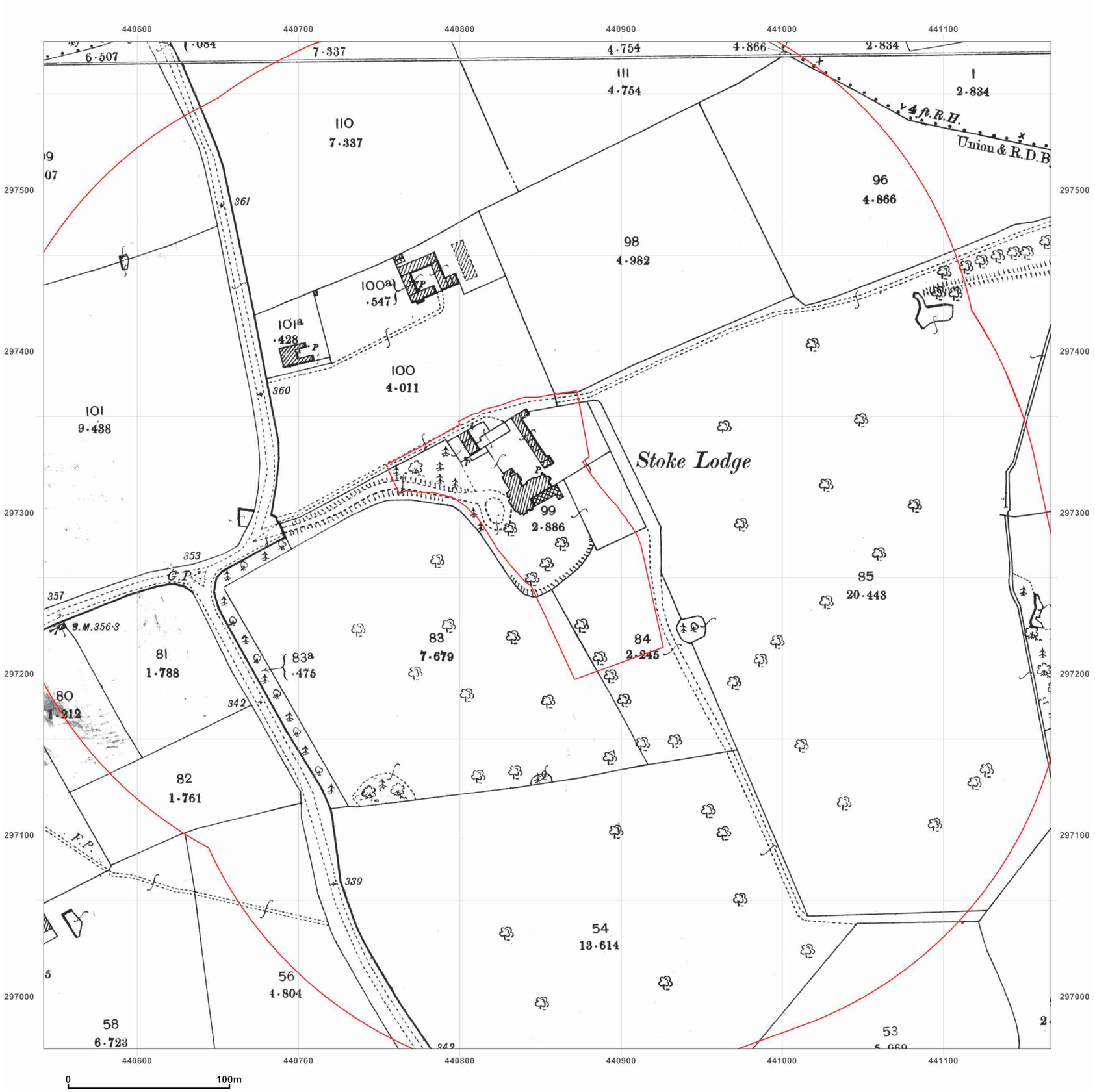

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Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: County Series

Map date: **1903**

Scale: 1:2,500

Printed at: 1:2,500

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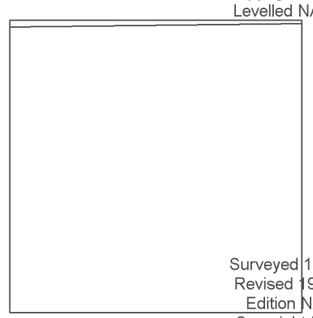
Surveyed 1903
Revised 1903
Edition NA
Copyright NA
Levelled NA



Surveyed 1903
Revised 1903
Edition NA
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Levelled NA

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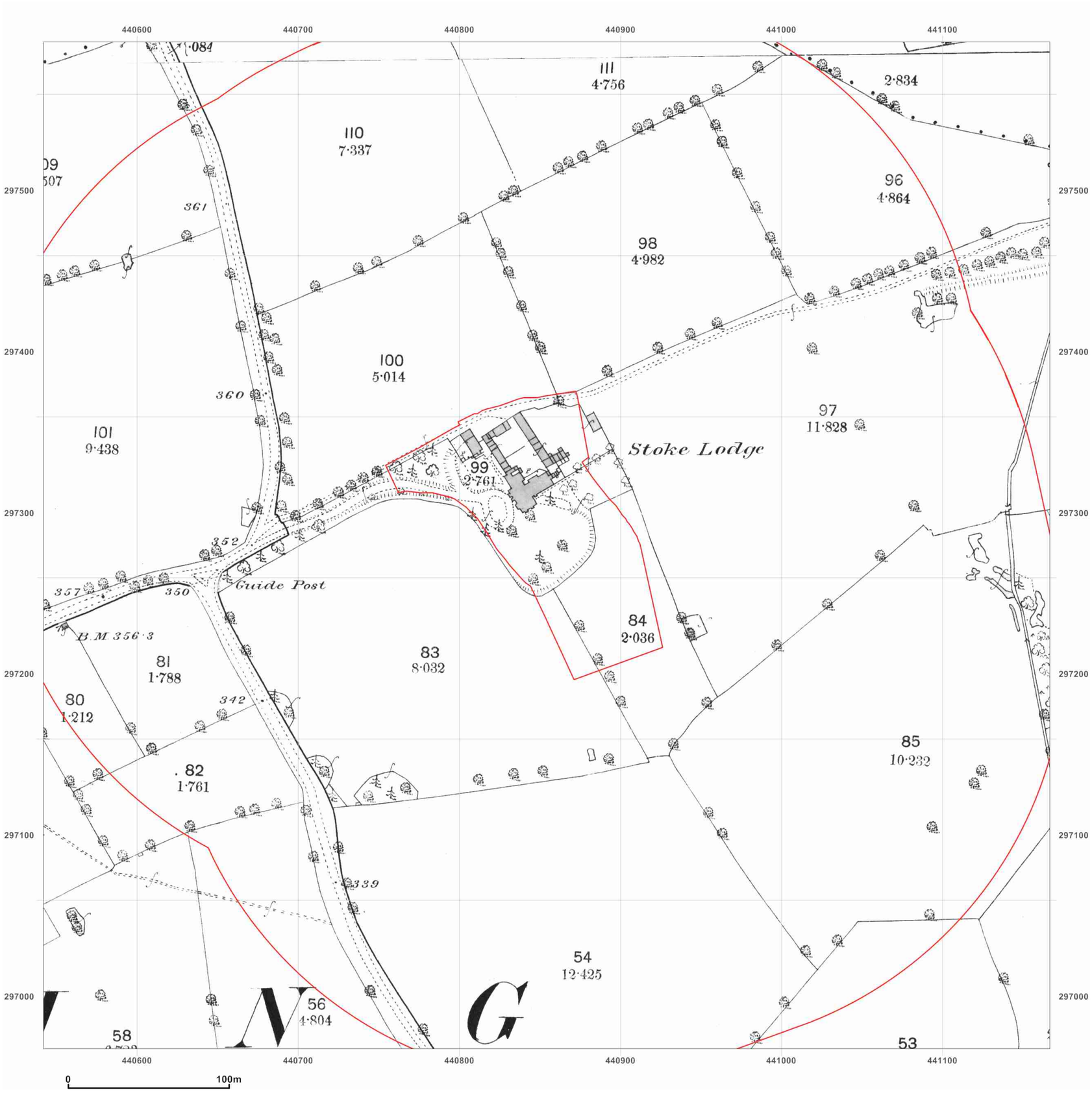

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Site Details:

St. Martin's Convent,Stoke Golding

Client Ref: EMS_124563_169561
Report Ref: S EMS-124563_169561
Grid Ref: 440854, 297280

Map Name: County Series

Map date: **1888**

Scale: 1:2,500

Printed at: 1:2,500

N
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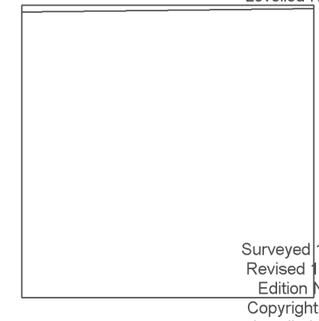
Surveyed 1888
Revised 1888
Edition NA
Copyright NA
Levelled NA



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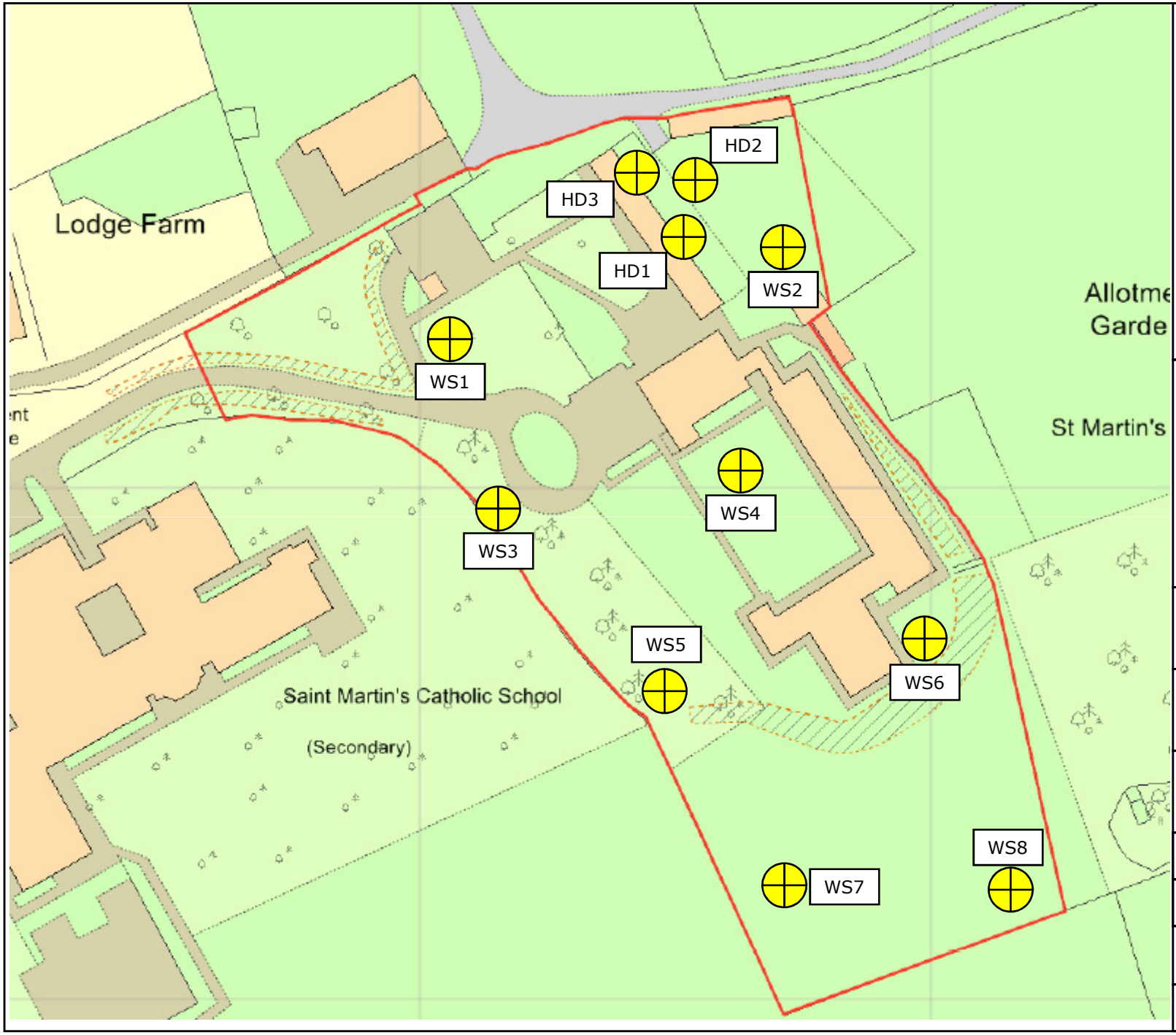
APPENDIX VII

Site Investigation Layout Plan



DO NOT SCALE

NOTES:

N

Approximate Borehole Location

Site Boundary

Sirius Midlands Ltd
Strelley Hall
Nottingham
NG8 6PE
Tel: 0115 9061 245 Fax: 0115 9061 251
info@thesiriusgroup.com www.thesiriusgroup.com

CLIENT: MarCity DEVELOPMENTS

PROJECT: Hinckley Road, Stoke Golding

TITLE: Site Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
AC	May. 2011
PROJECT No:	DRAWING No:
N11117	005

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APPENDIX VIII

Intrusive Investigation logs

Project Name: Hinckley Road, Stoke Golding	**Borehole No.** WS1
Client: Mar City Developments Ltd	**Date:** 07/04/2011
Method: Window Sampler	**Project No.** N11117
EASTING - NORTHING -	Ground Level (mAOD) -

Groundwater Strike	Groundwater Well	Depth (m)	Stratum Description	Legend	Level (m AOD)	Samples & In Situ Testing Depth	Type	Results
			MADE GROUND comprising a slightly gravelly silty reworked topsoil with ash and clinker fragments.			0.20	J,T	
		0.40	Firm orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse subangular to subrounded of mixed lithology.			0.60	J,T	
					1	1.00	B	N=6 (1,1/1,2,1,2)
		1.70	Stiff grey slightly gravelly CLAY. Gravel is fine and angular to subangular of mixed lithology.		2			N=14 (2,2/3,3,4,4)
			... becoming stiff from 3.00m depth.		3			N=21 (5,4/5,5,5,6)
		3.45	Window Sample Complete at 3.45 m					
					4			
					5			

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding	**Borehole No.** WS2
Client: Mar City Developments Ltd	**Date:** 07/04/2011
Method: Window Sampler	**Project No.** N11117
EASTING - NORTHING -	Ground Level (mAOD) -

Groundwater		Depth	Stratum Description	Legend	Level	Samples & In Situ Testing		
Strike	Well	(m)			(m AOD)	Depth	Type	Results
			MADE GROUND comprising a slightly gravelly silty reworked topsoil with ash and clinker fragments.			0.20	J,T	
		0.30	Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology.		1	0.90	J,T,B	N=12 (1,2/3,3,3,3)
		1.80	Stiff grey CLAY with occasional gravelly pockets. Gravel is fine and angular to subangular of mixed lithology.		2	1.90	J,T	N=20 (5,4/4,4,5,7)
			... becoming very stiff from 3.00m depth.		3			N=35 (2,3/5,8,11,11)
▽			... fine to coarse subangular to rounded gravel band from 3.6m to 3.8m depth.					
					4			N=28 (7,7/7,7,7,7)
		4.45	Window Sample Complete at 4.45 m		5			

KEY:
Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Confined/perched water seepages encountered from 3.6m to 3.8m depth.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding			**Borehole No.** WS3
Client: Mar City Developments Ltd			**Date:** 07/04/2011
Method: Window Sampler			**Project No.** N11117
EASTING -	NORTHING -		Ground Level (mAOD) -

Groundwater		Depth	Stratum Description	Legend	Level	Samples & In Situ Testing		
Strike	Well	(m)			(m AOD)	Depth	Type	Results
			Grass over a brown silty slightly gravelly TOPSOIL.					
		0.25	Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology.			0.20	J,T	
						0.60	J,T	
						0.70	B	
					1			N=11 (2,2/2,3,3,3)
						1.50	J,T	
					2			N=7 (1,1/1,2,2,2)
					3			N=19 (2,3/3,4,5,7)
		3.45	Window Sample Complete at 3.45 m					
					4			
					5			

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding			**Borehole No.** WS4
Client: Mar City Developments Ltd			**Date:** 07/04/2011
Method: Window Sampler			**Project No.** N11117
EASTING -	NORTHING -		Ground Level (mAOD) -

Groundwater		Depth	Stratum Description	Legend	Level	Samples & In Situ Testing		
Strike	Well	(m)			(m AOD)	Depth	Type	Results
			MADE GROUND comprising a silty slightly gravelly reworked topsoil with ash and clinker fragments.					
		0.25	Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology.			0.20	J,T	
						0.50	J,T	
					1	1.10	B	N=10 (1,1/2,2,3,3)
					2			N=9 (1,1/1,2,3,3)
						2.30	J,T	
					3			N=14 (2,2/3,3,4,4)
		3.45	Window Sample Complete at 3.45 m					
					4			
					5			

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding			**Borehole No.** WS5
Client: Mar City Developments Ltd			**Date:** 07/04/2011
Method: Window Sampler			**Project No.** N11117
EASTING -	NORTHING -		Ground Level (mAOD) -

Groundwater		Depth	Stratum Description	Legend	Level	Samples & In Situ Testing		
Strike	Well	(m)			(m AOD)	Depth	Type	Results
		0.15	Grass over a brown silty slightly gravelly TOPSOIL.			0.10	J,T	
			Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology.			0.60	J,T	
					1	1.10	B	N=8 (1,1/2,2,2,2)
					2	2.50	J,T	N=11 (2,1/2,2,3,4)
					3			N=13 (3,2/3,3,3,4)
		3.45	Window Sample Complete at 3.45 m					
					4			
					5			

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding	**Borehole No.** WS6
Client: Mar City Developments Ltd	**Date:** 07/04/2011
Method: Window Sampler	**Project No.** N11117
EASTING - NORTHING -	Ground Level (mAOD) -

Groundwater Strike	Groundwater Well	Depth (m)	Stratum Description	Legend	Level (m AOD)	Samples & In Situ Testing: Depth	Type	Results
		0.00	MADE GROUND comprising a silty slightly gravelly reworked topsoil with ash and clinker fragments. ... with a band of ash, brick and clinker from 2.6m to 2.7m depth.			0.20	J,T	
		0.25	MADE GROUND comprising reworked slightly gravelly very clayey sand with ash. Gravel is fine to coarse subangular to subrounded of mixed lithology.					
		0.81	MADE GROUND comprising gravel of ash and clinker.			0.80	J,T	
		0.83	MADE GROUND comprising reworked clay.		1			N=2 (1,1/1,0,1,0)
						1.90	J,T	
					2			N=16 (1,0/1,1,8,6)
		3.00	Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology.		3			N=15 (2,3/3,3,4,5)
						3.80	J,T,B	
					4			N=12 (2,2/2,3,3,4)
					5			N=17 (2,3/3,3,5,6)
		5.45	Window Sample Complete at 5.45 m					

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding	**Borehole No.** WS7
Client: Mar City Developments Ltd	**Date:** 07/04/2011
Method: Window Sampler	**Project No.** N11117
EASTING - NORTHING -	Ground Level (mAOD) -

Groundwater		Depth	Stratum Description	Legend	Level	Samples & In Situ Testing		
Strike	Well	(m)			(m AOD)	Depth	Type	Results
			Grass over a brown silty slightly gravelly TOPSOIL.			0.15	J,T	
		0.20	Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology.			0.70	B	
					1	1.10	J,T	N=8 (1,1/2,2,2,2)
		1.90	Loose orange brown very silty slightly gravelly SAND. Gravel is fine to coarse and subrounded of mixed lithology.		2			N=8 (1,1/1,2,2,3)
		2.30	Firm grey occasionally gravelly CLAY. Gravel is fine and angular to subangular of mixed lithology.		3			N=7 (1,1/1,2,2,2)
		3.45	Window Sample Complete at 3.45 m		4			
					5			

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Damp band encountered at 1.9m to 2.0m depth

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding	**Borehole No.** WS8
Client: Mar City Developments Ltd	**Date:** 07/04/2011
Method: Window Sampler	**Project No.** N11117
EASTING - NORTHING -	Ground Level (mAOD) -

Groundwater		Depth	Stratum Description	Legend	Level	Samples & In Situ Testing		
Strike	Well	(m)			(m AOD)	Depth	Type	Results
			Grass over a brown silty slightly gravelly TOPSOIL.			0.15	J,T	
		0.20	Firm to stiff orange brown slightly gravelly very silty CLAY. Gravel is fine to coarse and subangular of mixed lithology.			0.60	J,T	
		0.70	Medium dense orange brown slightly gravelly very silty SAND. Gravel is fine to coarse and subrounded of mixed lithology.		1	0.80	B	N=16 (4,4/4,4,4,4)
		1.70	Stiff grey occasionally gravelly CLAY. Gravel is fine and angular to subangular of mixed lithology.		2	2.10	J,T	N=20 (3,3/4,4,5,7)
			... very stiff from 3.0m depth.		3			N=22 (2,3/4,6,6,6)
		3.45	Window Sample Complete at 3.45 m		4			
					5			

KEY:
Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
S - Standard Penetration Test
C - Cone Penetration Test

Remarks:
1) Slight perched water seepages encountered from 0.7m depth.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:30	

Project Name: Hinckley Road, Stoke Golding	**Trial Pit No.** HD1
Client: Mar City Developments Ltd	**Date:** 07/04/2011
Method: Scissor shovels	**Project No.** N11117
EASTING - NORTHING -	Ground Level (mAOD) -

Groundwater Strike	Depth (m)	Stratum Description	Legend	Level (m AOD)	Samples & In Situ Testing		
					Depth	Type	Results
		MADE GROUND comprising a slightly gravelly silty reworked topsoil with ash and clinker fragments.			● 0.50	J,T	
	0.60	Trialpit Complete at 0.60 m					

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
HSV - Hand Shear Vane (kN/m ^{2})
PP - Pocket Penetrometer (daN/cm ^{2})

Remarks:
1) Hand dug pit advanced to retrieve samples adjacent to heating oil tank.
2) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:10	

Project Name: Hinckley Road, Stoke Golding		**Trial Pit No.** HD2
Client: Mar City Developments Ltd		**Date:** 07/04/2011
Method: Scissor shovels		**Project No.** N11117
EASTING -	NORTHING -	Ground Level (mAOD) -

Groundwater Strike	Depth (m)	Stratum Description	Legend	Level (m AOD)	Samples & In Situ Testing		
					Depth	Type	Results
		MADE GROUND comprising a slightly gravelly silty reworked topsoil with ash and clinker fragments.			● 0.60	J,T	
	0.80	Trialpit Complete at 0.80 m					

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
HSV - Hand Shear Vane (kN/m ^{2})
PP - Pocket Penetrometer (daN/cm ^{2})

Remarks:
1) Hand dug pit advanced to retrieve samples adjacent to heating oil tank.
2) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:10	

Project Name: Hinckley Road, Stoke Golding				**Trial Pit No.** HD3
Client: Mar City Developments Ltd				**Date:** 07/04/2011
Method: Scissor shovels				**Project No.** N11117
EASTING -		NORTHING -		Ground Level (mAOD) -

Groundwater Strike	Depth (m)	Stratum Description	Legend	Level (m AOD)	Samples & In Situ Testing		
					Depth	Type	Results
		MADE GROUND comprising a slightly gravelly silty reworked topsoil with ash and clinker fragments.			● 0.60	J,T	
	0.70	Trialpit Complete at 0.70 m					

KEY:

Sample Type:
T - Plastic Tub
J - Amber Glass Jar
V - Glass Vial
W - Water
D - Disturbed

Groundwater:
▽ - Water Strike
▼ - Water Level

In-situ Tests:
HSV - Hand Shear Vane (kN/m ^{2})
PP - Pocket Penetrometer (daN/cm ^{2})

Remarks:
1) Hand dug pit advanced to retrieve samples adjacent to heating oil tank.
2) Groundwater not encountered.

Logged By	Checked By	Approved By
AC	JR	
Figure	Scale 1:10	

APPENDIX IX

Laboratory Analysis Results

Chemtest
The right chemistry to deliver results

Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Sirius Group
Strelley Hall
Nottingham

NG8 6PE

FAO Ashley Copestake
20 April 2011

Dear Ashley Copestake

Test Report Number **135757**
Your Project Reference **N11117 - Stoke Golding**

Please find enclosed the results of analysis for the samples received 11 April 2011.

All soil samples will be retained for a period of one month and all water samples will be retained for 7 days following the date of the test report. Should you require an extended retention period then please detail your requirements in an email to customerservices@chemtest.co.uk. Please be aware that charges may be applicable for extended sample storage.

If you require any further assistance, please do not hesitate to contact the Customer Services team.

Yours sincerely

KT Jones

Authorised Signatory

☐	Darrell Hall	Director
☐	Phil Hellier	Director
☑	Keith Jones	Technical Manager
☐	John Crawford	Quality Manager
☐	Malcolm Avis	Director

UKAS TESTING
2183

ISO 14001 sira UKAS ENVIRONMENTAL MANAGEMENT

Notes to accompany report:

- *The sign < means 'less than'*
- *Tests marked 'U' hold UKAS accreditation*
- *Tests marked 'M' hold MCertS (and UKAS) accreditation*
- *Tests marked 'N' do not currently hold UKAS accreditation*
- *Tests marked 'S' were subcontracted to an approved laboratory*
- *n/e means 'not evaluated'*
- *i/s means 'insufficient sample'*
- *u/s means 'unsuitable sample'*
- *Comments or interpretations are beyond the scope of UKAS accreditation*
- *The results relate only to the items tested*

Newmarket • Tamworth • Glasgow
Registered in England & Wales - Registration Number 6511736 - Registered Office: 11 Depot Road Newmarket Suffolk CB8 0AL

Sirius Group
Strelley Hall
Nottingham

NG8 6PE

FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples
received 11 April 2011

N11117 - Stoke Golding

Report Date
20 April 2011

Login Batch No					**135757**	
Chemtest LIMS ID					AF94362	AF94363
Sample ID					WS1	WS4
Sample No						
Sampling Date					07/04/2011	07/04/2011
Depth					0.2m	0.2m
Matrix					*LEACHATE*	*LEACHATE*
SOP↓	Determinand↓	CAS No↓	Units↓	*		
1010	pH	PH		U	7.8	7.3
1610	Total Organic Carbon	TOC	mg l-1	N	44	20
1220	Sulfate	14808798	mg l-1	U	<1.0	1.3
1450	Arsenic	7440382	µg l-1	U	<1.0	<1.0
	Cadmium	7440439	µg l-1	U	<0.080	<0.080
	Chromium (total)	7440473	µg l-1	U	3.1	2.6
	Copper	7440508	µg l-1	U	<1.0	<1.0
	Mercury	7439976	µg l-1	U	<0.50	<0.50
	Nickel	7440020	µg l-1	U	1.9	1.5
	Lead	7439921	µg l-1	U	1.2	<1.0
	Selenium	7782492	µg l-1	U	<1.0	<1.0
	Zinc	7440666	µg l-1	U	1.1	<1.0
1800	Naphthalene	91203	µg l-1	N	< 0.01	< 0.01
	Acenaphthylene	208968	µg l-1	N	< 0.01	< 0.01
	Acenaphthene	83329	µg l-1	N	< 0.01	< 0.01
	Fluorene	86737	µg l-1	N	< 0.01	< 0.01
	Phenanthrene	85018	µg l-1	N	< 0.01	< 0.01
	Anthracene	120127	µg l-1	N	< 0.01	< 0.01
	Fluoranthene	206440	µg l-1	N	< 0.01	< 0.01
	Pyrene	129000	µg l-1	N	< 0.01	< 0.01
	Benzo[a]anthracene	56553	µg l-1	N	< 0.01	< 0.01
	Chrysene	218019	µg l-1	N	< 0.01	< 0.01
	Benzo[b]fluoranthene	205992	µg l-1	N	< 0.01	< 0.01
	Benzo[k]fluoranthene	207089	µg l-1	N	< 0.01	< 0.01
	Benzo[a]pyrene	50328	µg l-1	N	< 0.01	< 0.01
	Dibenzo[a,h]anthracene	53703	µg l-1	N	< 0.01	< 0.01
	Indeno[1,2,3-cd]pyrene	193395	µg l-1	N	< 0.01	< 0.01

All tests undertaken between 12/04/2011 and 20/04/2011

* Accreditation status

This report should be interpreted in conjuction with the notes on the accompanying cover page.

Sirius Group
Strelley Hall
Nottingham

NG8 6PE

FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples received 11 April 2011

N11117 - Stoke Golding

Report Date 20 April 2011

					135757	
					AF94362	AF94363
					WS1	WS4
					07/04/2011	07/04/2011
					0.2m	0.2m
					LEACHATE	*LEACHATE*
1800	Benzo[g,h,i]perylene	191242	µg l-¹	N	< 0.01	< 0.01
	Total (of 16) PAHs		µg l-¹	N	< 0.2	< 0.2
1920	Phenols (total)		mg l-¹	N	< 0.03	< 0.03

All tests undertaken between 12/04/2011 and 20/04/2011

* Accreditation status

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Nottingham

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FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples
received 11 April 2011

N11117 - Stoke Golding

Report Date
20 April 2011

Login Batch No					**135757**					
Chemtest LIMS ID					AF94340	AF94342	AF94343	AF94344	AF94346	AF94348
Sample ID					HD2	WS1	WS1	WS2	WS2	WS3
Sample No										
Sampling Date					07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011
Depth					0.6m	0.2m	0.6m	0.2m	1.9m	0.6m
Matrix					*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
SOP↓	Determinand↓	CAS No↓	Units↓	*						
2010	pH			M			7.4	7.5	8.3	
2186	Asbestos Containing Material			U		not found		not found		
2625	Total Organic Carbon		%	M			0.49	5.6	1.4	
2120	Sulfate (2:1 water soluble) as SO4	14808798	g l-1	M			<0.01	<0.01	<0.01	
2430	Sulfate (total)	14808798	%	M			0.02	0.17	0.06	
2450	Arsenic	7440382	mg kg-1	M			7.3	14	28	
	Cadmium	7440439	mg kg-1	M			0.20	0.39	0.38	
	Chromium	7440473	mg kg-1	M			17	32	40	
	Copper	7440508	mg kg-1	M			5.4	26	21	
	Mercury	7439976	mg kg-1	M			<0.10	<0.10	<0.10	
	Nickel	7440020	mg kg-1	M			13	26	44	
	Lead	7439921	mg kg-1	M			29	120	57	
	Selenium	7782492	mg kg-1	M			<0.20	<0.20	<0.20	
	Zinc	7440666	mg kg-1	M			21	160	120	
2670	TPH >C6-C10		mg kg-1	N	160					< 1
	TPH >C10-C21		mg kg-1	N	1100					< 1
	TPH >C21-C40		mg kg-1	N	< 1					< 1
	Total Petroleum Hydrocarbons		mg kg-1	M	1300					< 10
2800	Naphthalene	91203	mg kg-1	M			<0.1	<0.1	<0.1	
	Acenaphthylene	208968	mg kg-1	N			<0.1	<0.1	<0.1	
	Acenaphthene	83329	mg kg-1	M			<0.1	<0.1	<0.1	
	Fluorene	86737	mg kg-1	M			<0.1	<0.1	<0.1	
	Phenanthrene	85018	mg kg-1	M			<0.1	0.1	<0.1	
	Anthracene	120127	mg kg-1	M			<0.1	<0.1	<0.1	
	Fluoranthene	206440	mg kg-1	M			<0.1	0.5	<0.1	
	Pyrene	129000	mg kg-1	M			<0.1	0.5	<0.1	
	Benzo[a]anthracene	56553	mg kg-1	M			<0.1	0.1	<0.1	

All tests undertaken between 12/04/2011 and 20/04/2011

* Accreditation status

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Sirius Group
Strelley Hall
Nottingham

NG8 6PE

FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples received 11 April 2011

N11117 - Stoke Golding

Report Date 20 April 2011

Login Batch No					135757					
Chemtest LIMS ID					AF94350	AF94352	AF94354	AF94356	AF94358	AF94360
Sample ID					WS4	WS5	WS6	WS6	WS7	WS8
Sample No										
Sampling Date					07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011
Depth					0.2m	0.1m	0.2m	1.9m	0.15m	0.15m
Matrix					*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
SOP↓	Determinand↓	CAS No↓	Units↓							
2010	pH			M		6.2		8.3	6.4	6.1
2186	Asbestos Containing Material			U	not found		not found			
2625	Total Organic Carbon		%	M		2.8		0.58	1.8	1.8
2120	Sulfate (2:1 water soluble) as SO4	14808798	g l-1	M		<0.01		<0.01	<0.01	<0.01
2430	Sulfate (total)	14808798	%	M		0.12		0.12	0.06	0.05
2450	Arsenic	7440382	mg kg-1	M		8.7		19	5.1	6.3
	Cadmium	7440439	mg kg-1	M		0.23		0.14	0.17	0.15
	Chromium	7440473	mg kg-1	M		30		43	25	23
	Copper	7440508	mg kg-1	M		15		17	8.2	8.4
	Mercury	7439976	mg kg-1	M		<0.10		<0.10	<0.10	<0.10
	Nickel	7440020	mg kg-1	M		17		35	13	11
	Lead	7439921	mg kg-1	M		47		27	41	52
	Selenium	7782492	mg kg-1	M		<0.20		<0.20	<0.20	<0.20
	Zinc	7440666	mg kg-1	M		62		53	42	42
2670	TPH >C6-C10		mg kg-1	N						
	TPH >C10-C21		mg kg-1	N						
	TPH >C21-C40		mg kg-1	N						
	Total Petroleum Hydrocarbons		mg kg-1	M						
2800	Naphthalene	91203	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Acenaphthylene	208968	mg kg-1	N		<0.1		<0.1	<0.1	<0.1
	Acenaphthene	83329	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Fluorene	86737	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Phenanthrene	85018	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Anthracene	120127	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Fluoranthene	206440	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Pyrene	129000	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Benzo[a]anthracene	56553	mg kg-1	M		<0.1		<0.1	<0.1	<0.1

* Accreditation status

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Sirius Group
Strelley Hall
Nottingham

NG8 6PE

FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples received 11 April 2011

N11117 - Stoke Golding

Report Date 20 April 2011

Login Batch No					**135757**
Chemtest LIMS ID					AF94361
Sample ID					WS8
Sample No					
Sampling Date					07/04/2011
Depth					0.6m
Matrix					*SOIL*
SOP↓	Determinand↓	CAS No↓	Units↓		
2010	pH			M	7.8
2186	Asbestos Containing Material			U	
2625	Total Organic Carbon		%	M	0.30
2120	Sulfate (2:1 water soluble) as SO4	14808798	g l-1	M	<0.01
2430	Sulfate (total)	14808798	%	M	<0.01
2450	Arsenic	7440382	mg kg-1	M	16
	Cadmium	7440439	mg kg-1	M	0.14
	Chromium	7440473	mg kg-1	M	58
	Copper	7440508	mg kg-1	M	19
	Mercury	7439976	mg kg-1	M	<0.10
	Nickel	7440020	mg kg-1	M	39
	Lead	7439921	mg kg-1	M	55
	Selenium	7782492	mg kg-1	M	<0.20
	Zinc	7440666	mg kg-1	M	50
2670	TPH >C6-C10		mg kg-1	N	
	TPH >C10-C21		mg kg-1	N	
	TPH >C21-C40		mg kg-1	N	
	Total Petroleum Hydrocarbons		mg kg-1	M	
2800	Naphthalene	91203	mg kg-1	M	<0.1
	Acenaphthylene	208968	mg kg-1	N	<0.1
	Acenaphthene	83329	mg kg-1	M	<0.1
	Fluorene	86737	mg kg-1	M	<0.1
	Phenanthrene	85018	mg kg-1	M	<0.1
	Anthracene	120127	mg kg-1	M	<0.1
	Fluoranthene	206440	mg kg-1	M	<0.1
	Pyrene	129000	mg kg-1	M	<0.1
	Benzo[a]anthracene	56553	mg kg-1	M	<0.1

* Accreditation status

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Nottingham

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FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples received 11 April 2011

N11117 - Stoke Golding

Report Date 20 April 2011

					135757					
					AF94340	AF94342	AF94343	AF94344	AF94346	AF94348
					HD2	WS1	WS1	WS2	WS2	WS3
					07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011
					0.6m	0.2m	0.6m	0.2m	1.9m	0.6m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2800	Chrysene	218019	mg kg-¹	M			<0.1	0.1	<0.1	
	Benzo[b]fluoranthene	205992	mg kg-¹	M			<0.1	<0.1	<0.1	
	Benzo[k]fluoranthene	207089	mg kg-¹	N			<0.1	<0.1	<0.1	
	Benzo[a]pyrene	50328	mg kg-¹	M			<0.1	<0.1	<0.1	
	Dibenzo[a,h]anthracene	53703	mg kg-¹	N			<0.1	<0.1	<0.1	
	Indeno[1,2,3-cd]pyrene	193395	mg kg-¹	M			<0.1	<0.1	<0.1	
	Benzo[g,h,i]perylene	191242	mg kg-¹	M			<0.1	<0.1	<0.1	
	Total (of 16) PAHs		mg kg-¹	N			<2	<2	<2	
2920	Phenols (total)		mg kg-¹	N			<0.3	<0.3	<0.3	

All tests undertaken between 12/04/2011 and 20/04/2011

* Accreditation status

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Sirius Group
Strelley Hall
Nottingham

NG8 6PE

FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples received 11 April 2011

N11117 - Stoke Golding

Report Date 20 April 2011

					135757					
					AF94350	AF94352	AF94354	AF94356	AF94358	AF94360
					WS4	WS5	WS6	WS6	WS7	WS8
					07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011	07/04/2011
					0.2m	0.1m	0.2m	1.9m	0.15m	0.15m
					SOIL	*SOIL*	*SOIL*	*SOIL*	*SOIL*	*SOIL*
2800	Chrysene	218019	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Benzo[b]fluoranthene	205992	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Benzo[k]fluoranthene	207089	mg kg-1	N		<0.1		<0.1	<0.1	<0.1
	Benzo[a]pyrene	50328	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Dibenzo[a,h]anthracene	53703	mg kg-1	N		<0.1		<0.1	<0.1	<0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Benzo[g,h,i]perylene	191242	mg kg-1	M		<0.1		<0.1	<0.1	<0.1
	Total (of 16) PAHs		mg kg-1	N		<2		<2	<2	<2
2920	Phenols (total)		mg kg-1	N		<0.3		<0.3	<0.3	<0.3

Sirius Group
Strelley Hall
Nottingham

NG8 6PE

FAO Ashley Copestake

LABORATORY TEST REPORT

Results of analysis of 15 samples
received 11 April 2011

N11117 - Stoke Golding

Report Date
20 April 2011

					135757
					AF94361
					WS8
					07/04/2011
					0.6m
					SOIL
2800	Chrysene	218019	mg kg-¹	M	<0.1
	Benzo[b]fluoranthene	205992	mg kg-¹	M	<0.1
	Benzo[k]fluoranthene	207089	mg kg-¹	N	<0.1
	Benzo[a]pyrene	50328	mg kg-¹	M	<0.1
	Dibenzo[a,h]anthracene	53703	mg kg-¹	N	<0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg-¹	M	<0.1
	Benzo[g,h,i]perylene	191242	mg kg-¹	M	<0.1
	Total (of 16) PAHs		mg kg-¹	N	<2
2920	Phenols (total)		mg kg-¹	N	<0.3

Geosynthetics Soil & Steel Laboratories Ltd
Calder Trading Estate, Leeds Road, Bradley, Huddersfield, West Yorkshire HD5 0RS
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E: info@geosynthetics-lab.com W: www.geosynthetics-lab.com

UKAS TESTING 4107

CONFIDENTIAL SOILS TEST REPORT

26 April 2011

FAO Mr Ashley Copestake
The Sirius Group (Midlands) Ltd
Strelley Hall
Nottingham
NG8 6PE

Fax: +44 (0) 115 9061251

Dear Ashley,

Thank you for consulting GSSL Ltd for your Geotechnical testing needs. GSSL Ltd is pleased to submit this **final interim** test report for laboratory testing.

Client Ref/Order No: N11117

Test Report Number: GS-TSG-Abatech_N11117

Contract Reference: N11117 Stoke Golding

Sample ID & Type(s): **See page 2**

Results: See attached Sheets

Test(s) Requested;

Determination of Moisture Content Oven Drying Method {BS 1377-2:1990 Method 3.2}

Determination of the Liquid Limit – Cone Penetrometer (Definitive Method) {BS 1377-2:1990 Method 4.3}

Determination of the Plastic Limit, Plasticity Index {BS 1377-2:1990 Method 5}

Determination of Particle Size Distribution by the wet sieving method {BS 1377-2:1990 Method 9.2}

If you have any questions or require additional information, then please do not hesitate to contact us.

Yours Sincerely

Tony Dixon
Managing Director

TEST REPORT

Any opinions and interpretations expressed within this report are outside the scope of our UKAS Accreditation.
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Company Registration Number: 4832910 Registered in England and Wales

Geosynthetics Soil & Steel Laboratories Ltd
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UKAS TESTING 4107

Summary of laboratory soil descriptions

Contract Ref: N11117 Stoke Golding **Report Ref. No:** GS-TSG-Abatech_N11117

Client ID	Depth (m)	Description of Sample
WS1	1.00	Very soft orange brown sandy gravelly CLAY
WS2	0.90	Soft brown slightly silty sandy gravelly CLAY
WS5	1.10	Slightly stiff brown slightly sandy gravelly CLAY
WS8	0.80	Brown slightly gravelly SAND

Approved Signatory:

Date Reported: 26/04/11

TEST REPORT

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UKAS TESTING 4107

Determination of Moisture Content & Atterberg Limits

Contract Ref: N11117 Stoke Golding **Report Ref. No:** GS-TSG-Abatech_N11117

Sample Type(s): Small

Sample Preparation: Specimens taken from their Wet State

Client ID	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index %	% Passing 425µm test sieve	Remarks
WS1	1.00	24.2	48	24	24	63.6	Intermediate plasticity CI
WS2	0.90	23.4	46	24	22	60.3	Intermediate plasticity CI
WS5	1.10	22.8	51	25	26	82.2	High plasticity CH

Certification:-
Sample Preparation: In accordance with BS 1377-1 & 2 :1990. Moisture Content, Liquid Limit & Plastic Limit were determined in accordance with BS 1377-2: 1990, Method 3.2, 4.3 & 5. Test results reported herein do not apply to samples other than those supplied. GSSL Ltd neither accepts responsibility for nor makes claim as to the final use & purpose of the materials(s).

Approved Signatory:

Date Reported: 26/04/11

TEST REPORT

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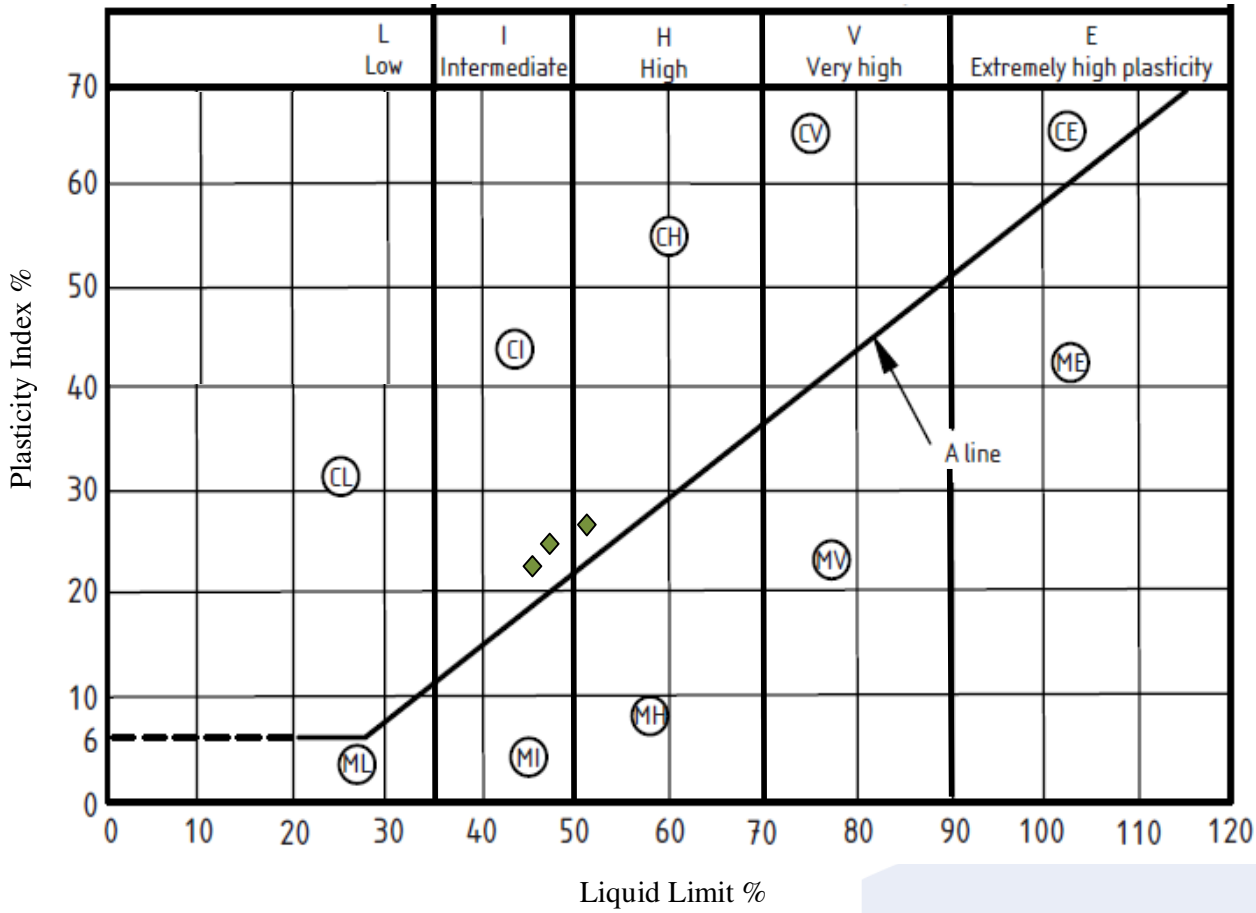
UKAS TESTING 4107

Plasticity Chart for Casagrande Classification (BS5930: 1999+A2: 2010)

Contract Ref: N11117 Stoke Golding **Report Ref. No:** GS-TSG-Abatech_N11117



Approved Signatory:

Date Reported: 26/04/11

TEST REPORT

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UKAS TESTING 4107

Determination of Particle Size Distribution (Wet Sieving)

Report Ref. No: GS-TSG-Abatech_N11117

GSSL Sample ID: 04

Client ID: WS8 @ 0.80m

Sample Mass (Kg): 3.5Kg {approx}

Client: The Sirius Group (Midlands) Ltd
Site: N11117 Stoke Golding

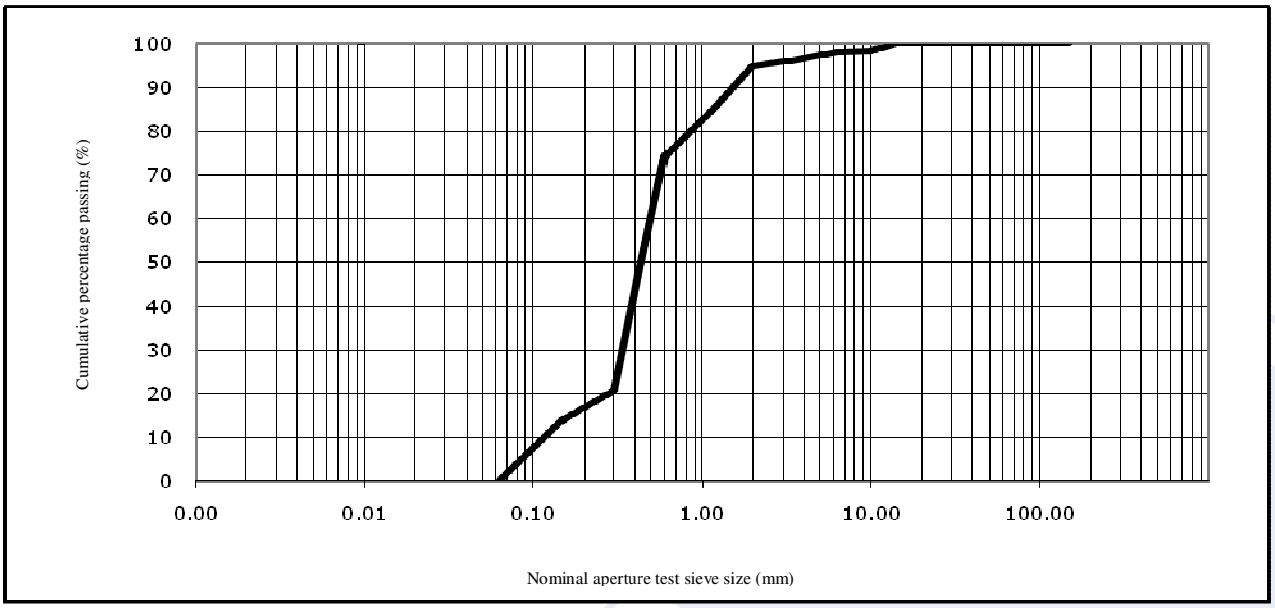
Sample Description: Brown slightly gravelly SAND

Sample Type: Small
Sampled by: Client
Date Sampled: 07/04/2011

Remarks: -

Soil Fraction	*Total Percentage*
COBBLES	-
GRAVEL	5.0
SAND	94.5
SILT / CLAY	0.5

BS Test Sieve (mm)	*% Material Passing*
150	100
63	100
50	100
37.5	100
28	100
20	100
14	100
10	98.4
6.3	98.0
5	97.3
3.35	96.1
2	95.0
1.18	85.2
0.600	74.2
0.425	49.1
0.300	20.9
0.150	14.2
0.063	0.5



Sample Preparation: In accordance with BS 1377-1 & 2:1990

Certification:-

Certified that the Particle Size Distribution was determined in accordance with BS 1377-2: 1990 Method 9.2.

Test results reported herein do not apply to samples other than those supplied. GSSL Ltd neither accepts responsibility for nor makes claim as to the final use & purpose of the materials(s)

Approved Signatory:

Date Reported: 26/04/11

TEST REPORT

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Company Registration Number: 4832910 Registered in England and Wales

APPENDIX X

Ground Gas Monitoring Record Sheets

MONITORING OF SOIL GASES & GROUNDWATER

Sirius Midlands Ltd,
Strelley Hall, Nottingham, NG8 6PE
Tel. 0115 9061 245

CONTRACT N° : N11117

CONTRACT : Hinckley Road, Stoke Golding

CLIENT : Mar City Developments Ltd

DATE : 4th May 2011

CONDITIONS : Sunny (Atmospheric Pressure: 1010mb)

SPECIFICATIONS : Waste Management Paper No 27
and BS 5930: 1999 'Code of Practice for Site Investigations'

OPERATOR : A Copestake

EQUIPMENT : GA2000 – Infrared gas analyser

RESULTS

Borehole No./Ref.	LEL %	Methane (CH_4) %	Carbon Dioxide (CO_2) %	Oxygen (O_2) %	Gas Flow Rate (l/hr)	H_2S ppm	CO ppm	Depth to Groundwater (mbgl) / Depth of wells
WS2	0	0.0	0.8	19.3	0.0	0	0	1.66 / 3.99
WS7	0	0.0	0.1	19.8	0.0	0	0	1.04 / 2.63

Notes
L.E.L = Lower Explosive Limit (100% L.E.L. = 5% Flammable Gas)
% = By Volume

Signed (Operator).....

Signed (James Regan).....

MONITORING OF SOIL GASES & GROUNDWATER

Sirius Midlands Ltd,
Strelley Hall, Nottingham, NG8 6PE
Tel. 0115 9061 245

CONTRACT N° : N11117

CONTRACT : Hinckley Road, Stoke Golding

CLIENT : Mar City Developments Ltd

DATE : 9th May 2011

CONDITIONS : Cloudy (Atmospheric Pressure: 1010mb)

SPECIFICATIONS : Waste Management Paper No 27
and BS 5930: 1999 'Code of Practice for Site Investigations'

OPERATOR : A Copestake

EQUIPMENT : GA2000 – Infrared gas analyser

RESULTS

Borehole No./Ref.	LEL %	Methane (CH_4) %	Carbon Dioxide (CO_2) %	Oxygen (O_2) %	Gas Flow Rate (l/hr)	H_2S ppm	CO ppm	Depth to Groundwater (mbgl) / Depth of wells
WS2	0	0.0	0.8	19.2	0.0	0	0	1.63 / 3.99
WS7	0	0.0	0.1	19.7	0.0	0	0	1.06 / 2.63

Notes
L.E.L = Lower Explosive Limit (100% L.E.L. = 5% Flammable Gas)
% = By Volume

Signed (Operator).....

Signed (James Regan).....

MONITORING OF SOIL GASES & GROUNDWATER

Sirius Midlands Ltd,
Strelley Hall, Nottingham, NG8 6PE
Tel. 0115 9061 245

CONTRACT N° : N11117

CONTRACT : Hinckley Road, Stoke Golding

CLIENT : Mar City Developments Ltd

DATE : 16th May 2011

CONDITIONS : Cloudy (Atmospheric Pressure: 1010mb)

SPECIFICATIONS : Waste Management Paper No 27
and BS 5930: 1999 'Code of Practice for Site Investigations'

OPERATOR : A Copestake

EQUIPMENT : GA2000 – Infrared gas analyser

RESULTS

Borehole No./Ref.	LEL %	Methane (CH_4) %	Carbon Dioxide (CO_2) %	Oxygen (O_2) %	Gas Flow Rate (l/hr)	H_2S ppm	CO ppm	Depth to Groundwater (mbgl) / Depth of wells
WS2	0	0.0	1.1	18.8	0.0	0	0	1.73 / 3.99
WS7	0	0.0	0.1	19.4	0.0	0	0	1.09 / 2.63

Notes
L.E.L = Lower Explosive Limit (100% L.E.L. = 5% Flammable Gas)
% = By Volume

Signed (Operator).....

Signed (James Regan).....

MONITORING OF SOIL GASES & GROUNDWATER

Sirius Midlands Ltd,
Strelley Hall, Nottingham, NG8 6PE
Tel. 0115 9061 245

CONTRACT N° : N11117

CONTRACT : Hinckley Road, Stoke Golding

CLIENT : Mar City Developments Ltd

DATE : 23rd May 2011

CONDITIONS : Cloudy (Atmospheric Pressure: 1011mb)

SPECIFICATIONS : Waste Management Paper No 27
and BS 5930: 1999 'Code of Practice for Site Investigations'

OPERATOR : A Copestake

EQUIPMENT : GA2000 – Infrared gas analyser

RESULTS

Borehole No./Ref.	LEL %	Methane (CH_4) %	Carbon Dioxide (CO_2) %	Oxygen (O_2) %	Gas Flow Rate (l/hr)	H_2S ppm	CO ppm	Depth to Groundwater (mbgl) / Depth of wells
WS2	0	0.0	0.6	19.0	0.0	0	0	1.68 / 3.99
WS7	0	0.0	0.0	19.0	0.0	0	0	1.07 / 2.63

Notes
L.E.L = Lower Explosive Limit (100% L.E.L. = 5% Flammable Gas)
% = By Volume

Signed (Operator).....

Signed (James Regan).....

MONITORING OF SOIL GASES & GROUNDWATER

Sirius Midlands Ltd,
Strelley Hall, Nottingham, NG8 6PE
Tel. 0115 9061 245

CONTRACT N° : N11117

CONTRACT : Hinckley Road, Stoke Golding

CLIENT : Mar City Developments Ltd

DATE : 18th April 2011

CONDITIONS : Cloudy (Atmospheric Pressure: 1008mb)

SPECIFICATIONS : Waste Management Paper No 27
and BS 5930: 1999 'Code of Practice for Site Investigations'

OPERATOR : A Copestake

EQUIPMENT : GA2000 – Infrared gas analyser

RESULTS

Borehole No./Ref.	LEL %	Methane (CH_4) %	Carbon Dioxide (CO_2) %	Oxygen (O_2) %	Gas Flow Rate (l/hr)	H_2S ppm	CO ppm	Depth to Groundwater (mbgl) / Depth of wells
WS2	0	0.0	0.8	19.5	0.0	0	0	1.40 / 3.99
WS7	0	0.0	0.0	20.0	0.0	0	0	0.94 / 2.63

Notes
L.E.L = Lower Explosive Limit (100% L.E.L. = 5% Flammable Gas)
% = By Volume

Signed (Operator).....

Signed (James Regan).....

MONITORING OF SOIL GASES & GROUNDWATER

Sirius Midlands Ltd,
Strelley Hall, Nottingham, NG8 6PE
Tel. 0115 9061 245

CONTRACT N° : N11117

CONTRACT : Hinckley Road, Stoke Golding

CLIENT : Mar City Developments Ltd

DATE : 28th April 2011

CONDITIONS : Sunny (Atmospheric Pressure: 1011mb)

SPECIFICATIONS : Waste Management Paper No 27
and BS 5930: 1999 'Code of Practice for Site Investigations'

OPERATOR : A Copestake

EQUIPMENT : GA2000 – Infrared gas analyser

RESULTS

Borehole No./Ref.	LEL %	Methane (CH_4) %	Carbon Dioxide (CO_2) %	Oxygen (O_2) %	Gas Flow Rate (l/hr)	H_2S ppm	CO ppm	Depth to Groundwater (mbgl) / Depth of wells
WS2	0	0.0	1.4	19.4	0.0	0	0	1.56 / 3.99
WS7	0	0.0	0.1	20.1	0.0	0	0	1.00 / 2.63

Notes
L.E.L = Lower Explosive Limit (100% L.E.L. = 5% Flammable Gas)
% = By Volume

Signed (Operator).....

Signed (James Regan).....