Taylor Wimpey Strategic Land

Land North of Barkby Road, Syston, Leicestershire

Phase 1 and 2 Geo-Environmental Site Investigation

Project no. 302001 R01 (01)

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RSK GENERAL NOTES

Project No.: 302001 R01 (01)

Title: Phase 1 and 2 Geo-environmental Site Assessment: Land North of Barkby Road, Syston, Leicestershire

Client: Taylor Wimpey Strategic Land (Eastern) Newton House, 2 Sark Drive, Newton Leys, Milton Keynes, MK3 5SD

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CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

RSK Environment Limited (RSK) was commissioned by Taylor Wimpey Strategic Land (the client) to carry out a Phase 1 and Phase 2 Geo-environmental investigation of the land located North of Barkby Road, Syston, Leicestershire.

It is understood that the Client proposes to redevelop the site with a residential end use.

This report is subject to the RSK service constraints given in Appendix A.

A summary of legislation and policy relating to contaminated land is given in Appendix B.

1.1 Objective

The objective of the work is to support a planning application.

1.2 Scope

The scope of the investigation and layout of this report has been designed with consideration of CLR11 (Environment Agency, 2004) and BS 10175: 2013 (BSI, 2013) and guidance on land contamination reports issued by the Environment Agency (EA) (2010a).

The project was carried out to an agreed brief as set out in RSK's proposal T302001/T01(00)MR dated 8 December 2017.

The scope of works for the assessment included:

- a preliminary risk assessment (PRA) to include a review of geological, hydrogeological and hydrological information.
- commission of a commercially available environmental database, and historical plans; and a site walkover.
- development of an Initial Conceptual Site Model (ICSM) to consider any potentially complete pollutant linkages
- a review of published geological data to assess ground stability and identify possible geotechnical constraints.
- an intrusive investigation consisting of 12 window sampler boreholes and 16 trial pits with laboratory analysis plus subsequent groundwater and gas monitoring.
- development of a refined conceptual site model (CSM) followed by generic quantitative risk assessment (GQRA) to assess complete pollutant linkages that may require the implementation of mitigation measures to facilitate redevelopment.
- interpretation of ground conditions and geotechnical data to provide recommendations with respect to foundations and infrastructure design.
- production of a combined Phase 1 and 2 factual and interpretative report with recommendations for further works (i.e. undertake a remedial options appraisal

to identify appropriate mitigation measures/produce a remedial implementation and verification plan) and/or remediation as necessary

1.3 Limitations

The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of Made Ground not detected due to the limited nature of the investigation or the thickness and quality of Made Ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows may vary from those reported due to seasonal, or other, effects.

While asbestos-containing materials were not identified during the fieldwork or supporting laboratory analysis, the history of the site indicates that asbestos may be present associated with possible infilling of areas of the site. Asbestos is often present in discrete areas. Although it may not be encountered during the site investigation, it may be found during more extensive ground works.

2 THE SITE

2.1 Site location

The site is located to the north of Barkby Road, Syston, Leicestershire, at National Grid reference 463740, 311130 as shown on Figure 1.

2.2 Site description

The site is irregular in shape comprising three fields currently used for arable farming covering approximately 8.4 hectares and is bounded by a hedgerow.

Surface elevations vary with the north-western boundary and southern boundaries at ~63m AOD which reduces towards a brook that flows through the centre of the site, flowing from the sites eastern boundary (~60mAOD) to its western boundary (~58mAOD).

A plan showing the site location and boundary is included as Figure 2.

2.3 Site setting

The area around the site is mostly used for agricultural and residential purposes as detailed in Table 1.

Table 1: Site setting

To the north:	Arable land lies beyond the western section of the northern site boundary and an open field is located beyond the eastern section.
To the east:	Queniborough Road with arable land beyond.
To the south:	Barkby Road with arable land beyond.
To the west:	Residential housing.

2.4 Site reconnaissance

RSK attended site on 22 February 2018, during which no potentially significant ground contamination or geotechnical issues were observed during the site reconnaissance.

The crops appeared to have been recently harvested and no areas of hardstanding were identified on-site. A public footpath passes through the site trending east-west separating the northernmost and central field. The southernmost field is separated from the central field by a hedgerow and a drainage ditch containing flowing water. An area in the centre of this boundary allows vehicular access between the two fields with a culvert below. The western portion of the central field, where the elevation is lowest, was saturated and crops were absent. Vehicular access onto the site is possible from Queniborough Road secured by a metal gate.

Photographs taken during RSKs reconnaissance is included within a photographic log provided in Appendix C.

2.5 Proposed development

The site is understood to be being considered for redevelopment with 195 residential dwellings with associated parking and infrastructure.

3 DESK STUDY INFORMATION

3.1 History

The history of the land-use and development of the site and surrounding area has been assessed based on the following sources:

- historical maps within the environmental database from 1884 to 2017 (Appendix D)
- internet search
- aerial photography

Reference to historical maps provides invaluable information regarding the land use history of the site, but historical evidence may be incomplete for the period pre-dating the first edition and between successive maps.

The development history of the site and surrounding area from the above sources is detailed in Table 2 and summarised below.

Table 2 : Summary of historical development

Date	Land use/features on-site	Land use/features relevant to the conceptual model
1884-1885	The site covers the majority of three adjoining fields with sporadic trees along the field boundaries. A public footpath runs through the middle field trending east-west. A pond is located along the northernmost site boundary. A rectangular feature is identified along the boundary between the northernmost and central field, and a larger feature is shown between the southernmost field and the central field (both assumed to be ponds based on more recent maps and referred to as such through the report).	Clay pits and a brick yard are shown to be present to the north-east of the site. Queniborough Road and Barkby Road are shown in their present-day location along the eastern and southern site boundaries respectively. Syston Grange is shown to be present to the south-east of the intersection between the two roads in the south-east corner of the site. The rest of the area surrounding the site appears to be open fields. A pond is located along a field boundary approximately 50 m to the west of the site. An orchard is shown to be located to the south of the site beyond Barky Road. A pump is labelled adjacent to the

Date	Land use/features on-site	Land use/features relevant to the conceptual model
		north-eastern site boundary.
1903	Trees are no longer shown along the field boundaries.	The quarried area is labelled as the 'Old Brick Yard'
1956-1957	No significant change	The pond to the west is no longer labelled on the map. The pump is also no longer indicated.
1966	The ponds previously identified are no longer shown and have presumably been backfilled.	The clay pits appear smaller in size (this could be indicative of their closure).
1973-1978	No significant change	A nursery is shown approximately 70 m to the south-west of the site, north of Barkby Road.
1974	A water feature is shown within the centre of the site.	No significant change
1982-1989	The water feature is no longer shown.	The orchard to the south of the site no longer appears to be present. An equestrian centre is shown adjacent to the west of the site.
1994	Field boundaries are adjusted to the site boundary.	The equestrian centre (named The Ridgemere Centre) appears to have expanded and the nursery to the south-east shows additional buildings, as well as evidence of demolition of a current building.
1999	No significant change	The aerial photograph does not appear to show a quarry or the associated infrastructure to the north-east of the site (confirming its closure).
2017	A water feature is shown within the north-east of the site.	Residential development adjacent to the western site boundary following the demolition of The Ridgemere Centre and the nursery.
2018	No evidence of a surface water feature on aerial maps.	No significant change

The site has comprised the majority portion of three fields since 1984 and three whole fields following the adjustment of field boundaries since 1994. Three ponds have historically been located on-site along the field boundaries but are no longer shown on later map editions (1966) and may have been backfilled. The public footpath identified during the site walkover has been present on historic maps since 1884. A water feature in the centre of the site was recorded from 1974 but was not present on the 1982-1989 map edition, another was recorded in the north-east of the site in 2017, which was not observed to be present during the site reconnaissance in February 2018.

In 1884, the area surrounding the site was mostly open fields with a brick yard and clay pits adjacent to the northern site boundary. Barkby Road and Queniborough Road were both present from 1884, as well as Syston Grange to the south-east of the site. A pond is recorded adjacent to the western site boundary in 1884, which is assumed to have been backfilled by 1956-1957.

The closure of the clay pits located beyond the northern boundary of the site is thought to have possibly occurred in or around 1966 as it appears smaller or absent on the historical maps. The landfill site at this location is recorded as a historic landfill in the environmental database report (Map ID 54) although the last input date is not known.

A (plant) nursery is located approximately 70 m to the south-west of the site in the 1973-1978 map and an equestrian centre (The Ridgemere Center) is located adjacent to the western site boundary in the 1982-1989 map. Residential development adjacent to the western boundary occurred between 2006 and 2017 following the assumed demolition of the nursery and equestrian centre.

3.2 Geology

3.2.1 Superficial deposits

According to the BGS geological maps, the majority of the site is not underlain by superficial deposits.

Head Deposits are shown to encroach on to the edge of the southern site boundary, described by the BGS as comprising clay, silt, sand and gravel. The Birstall Member is recorded by the BGS to exist off-site, approximately 25 m to the south and 200 m to the north-west of the site, up to 4 m thick. It is described as sand and gravel with minor clay and silt lenses.

3.2.2 Bedrock

The geological records indicate that the Branscombe Mudstone Formation of Triassic age underlies the whole site. It is described by the BGS as being red-brown with common grey-green reduction patches and spots, mostly stuctureless mudstone and siltstone with a blocky weathering habit and bedded with nodules and veins of gypsum/anhydrite common throughout. It is typically found between 25-60 m in thickness in the East Midlands.

Gypsum has a rapid dissolution rate which can result in small cavities enlarging locally to caves over a short period of time. The caves can then become unstable and collapse, causing subsidence at the surface. Anhydrite tends to be found at greater depths than gypsum and its rehydration to gypsum is accompanied by changes in volume. According to the BGS, gypsum karsts commonly occur locally in Triassic strata in the Midlands.

3.2.3 Made Ground

Historical records show no evidence of Made Ground on-site, however, Made Ground (undivided) is shown on the BGS Geoindex Onshore Index adjacent to the eastern part of the northern site boundary with in filled ground beyond. This location appears to relate to the area of the historic landfill site in the environmental database report.

Historical maps suggest that localised Made Ground may be anticipated in areas where small historical ponds existed along field boundaries across the site and are no longer visually present on-site.

3.2.4 BGS Boreholes

There are no publically available borehole records on-site. The closest (ref. SK61/SW/57) is located approximately 330 m to the south-west of the site which records 1 m of Made Ground underlain by clay to 1.35 m with subsequent sand to 3.6 m, assumed to represent Head Deposits and the Birstall Member respectively. At depth, clay and silt are found which are assumed to be representative of the Branscombe Mudstone Formation. A copy of the discussed BGS log is included in Appendix E.

3.2.5 Faults

There are no mapped geological faults shown across or in close vicinity of the site.

3.2.6 Radon

The environmental database report indicates that the site is in a lower probability radon area, as less than 1% of homes are above the action level as defined by the Documents of the National Radiological Protection Board (Radon Atlas of England and Wales, NRPB-W26-2002). Therefore, no radon protection measures are necessary in the construction of new dwellings or extensions.

3.3 Hydrogeology

3.3.1 Aquifer characteristics

The Birstall Member off-site beyond the southern and north-eastern site boundaries have been designated by the Environment Agency as a **Secondary A Aquifer**.

Superficial Head Deposits encroaching the southern boundary of the site have been designated by the Environment Agency as a **Secondary Undifferentiated Aquifer**.

The underlying Branscombe Mudstone Formation has been designated as a **Secondary B aquifer**.

Where:

- secondary A aquifer: 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
- secondary B aquifer: predominantly lower permeability layers that may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering
- secondary undifferentiated aquifer: it has not been possible to attribute either a category A or B to a rock type. In most cases this means that it was previously designated as both minor and non-aquifer in different locations owing to the variable characteristics.

The presence of low permeability clay at relatively shallow depths beneath the site, while restricting downwards migration, may increase the potential for lateral migration of shallow groundwater (and therefore mobile contamination, if present).

3.3.2 Groundwater vulnerability

The soils which underlie the majority of the site are negligibly permeable and are described as a 'non aquifer' in the environmental database report. However, the soils in the north-west of the site and along the southern boundary are described as having an intermediate leaching potential (I1) which are 'soils which can possibly transmit a wide range of pollutants'.

3.3.3 Licensed groundwater abstraction

No groundwater abstractions were identified within a 2-km radius of the site.

Information available on the EA website indicates that the site does not lie within a currently designated groundwater Source Protection Zone (SPZ).

3.4 Hydrology

3.4.1 Surface watercourses

According to the environmental database report, there is a surface water feature in the east of the site. This is assumed to be the drainage ditch which runs through the site, identified during the site reconnaissance. This is thought to be a tributary of Barkby Brook approximately 550 m to the south-west, which feeds into the River Wreake approximately 2.5 km to the north-west.

3.4.2 Surface water abstractions

The environmental database report indicates that there are no surface water abstractions within a 1 km radius of the site.

3.4.3 Site drainage

Surface drainage across the site appears to be discharged into the drainage ditch that runs through the centre of the site. During RSK's site reconnaissance, the drainage ditch was noted as being approximately 0.5m wide and deep, containing water, with a silty appearance, to a high level which flows in a westerly direction.

The central western portion of the site was saturated with ponded water observed, potentially indicating poor drainage characteristics.

3.4.4 Preliminary flood risk assessment

The environmental database report, indicates that the site is not at risk of flooding. This report is not intended to replace a full hydrological study.

However, the report shows that an area in the western region of the central field and the land along the drainage ditch are at a high risk (30 year return) of surface water flooding.

The site also has the potential for groundwater flooding to occur in the south of the site and along the eastern portion of the northern boundary.

3.5 Environmental Information & Records

3.5.1 Mining

In accordance with publicly available Coal Authority records (available online at http://mapapps2.bgs.ac.uk/coalauthority/home.html) the site does not lie within a Coal Mining Reporting Area.

Consequently, it is considered that the site does not lie within the likely zone of influence on the surface from current or historical underground coal workings

3.5.2 Quarrying

According to the environmental database report, there is no quarrying or mining activity within a 250 m radius of the site

3.5.3 Landfilling and land reclamation

There are no records of landfill sites (former or current) on-site. However, the environmental database report shows that there is a historic landfill immediately adjacent to the northern site boundary (Ref. EAHLD22640). Available records indicate that the landfill consists of deposited waste including household waste and liquid sludge with a first input date of 31 December 1900 but no last input date.

No further records of landfill sites (former or current) within 250 m of the site (i.e. within the planning consultation zone) appear to exist.

An area of Made Ground is recorded on the BGS Onshore GeoIndex beyond the northern site boundary and an area of infilled land (non-water) recorded in the environmental database report located approximately 27 m to the north-east of the site boundary.

The historic landfill (Ref. EAHLD22640) is assumed to be associated with the clay pits observed in the historical maps, as discussed in Section 3.1.

3.6 Sensitive land uses

The site is indicated as being located within a Nitrate Vulnerable Zone, although it is understood that this classification is considered not to present a potential risk to the redevelopment of the site.

No national or internationally designated sensitive land uses such as sites of special scientific interest (SSSI) were identified in the vicinity of the site.

3.7 Trade entries

There are no active contemporary Trade Directory Entries within a 250m radius of the site boundaries. The nearest and only active contemporary Trade Directory Entry within a 500m radius of the site is 'Leicester Carpet Cleaners' located 460m north-west.

3.8 Data gaps and uncertainties

The data gaps and uncertainties identified during the desk study are as follows:

- Groundwater conditions, including depth and direction of flow;
- The location, thickness and composition of the superficial deposits;
- Depth to the underlying Bedrock Formation; and
- The presence, composition and thickness of any Made Ground.

4 INITIAL CONCEPTUAL SITE MODEL

The information presented in Sections 2 and 3, has been used to compile an initial conceptual site model (ICSM). The identified potential sources of contamination, associated contaminants and receptors have been considered with plausible pathways that may link them. The resulting potential pollutant linkages are considered in Section 3.10.4. The risk classification has been estimated in accordance with information in Appendix F.

4.1.1 Summary of potential contaminant sources

Potential sources and contaminants of concern are summarised in Table 3.

Table 3: Potential sources and types of contamination

Potential sources	Contaminants of concern
On-site	
The site is shown to comprise fields throughout the historical records.	Pesticides and herbicides associated with the former sites use as farmland.
Possible Made Ground associated with ponds potentially backfilled by 1966.	Metals and their compounds, polycyclic aromatic hydrocarbons (PAHs), asbestos, acid/sulphate contaminated soils and ground gas (carbon dioxide and methane) may be present within the Made Ground.
In accordance with BRE Special Digest 1-2005 Concrete in Aggressive Ground, the Branscombe Mudstone Formation, part of the Mercia Mudstone Group, could contain sulphates.	Sulphates, particularly pyrite
Off-site	
Possible Made Ground associated with backfilled pond approximately 50 m to the west backfilled by 1957.	Metals and their compounds, polycyclic aromatic hydrocarbons (PAHs), asbestos, acid/sulphate contaminated soils and ground gas (carbon dioxide and methane) may be present within the Made Ground.
Historical Landfill located immediately adjacent to the north-eastern boundary.	Ground gas and possible leachate
Made ground to the north-east of the site, assumed to be associated with the historic landfill	Metals and their compounds, polycyclic aromatic hydrocarbons (PAHs), asbestos, acid/sulphate contaminated soils and ground gas (carbon dioxide and methane) may be present within the Made Ground.

No potentially significant ground contamination issues were visually observed during RSKs site reconnaissance.

4.1.2 Sensitive receptors

The following potential sensitive receptors are identified with the proposed site development:

- future site occupants/users;
- adjacent site users (residential housing adjacent to the western site boundary)
- buildings and infrastructure;
- potable water supply pipes;
- groundwater beneath the site (secondary undifferentiated aquifer and secondary B aquifer); and
- surface water course adjacent to the western site boundary (tributary of the Barkby Brook and River Wreake)

Please note that construction workers have not been identified in the conceptual model as receptors because risks are considered to be managed through health and safety procedures including CDM Regulations.

4.1.3 Summary of plausible pathways

The routes by which potential sources could plausibly come into contact with the receptors are:

- direct contact (soil and dust ingestion, consumption of home-grown produce, dermal contact and dust inhalation)
- gas or vapour migration either through strata or via preferential pathways such as backfill around services or compromised drainage and subsequent inhalation (potential for explosion)
- vertical and lateral migration including leaching
- chemical attack of infrastructure (including permeation of water supply pipes) and buildings

4.1.4 Potentially complete pollutant linkages

The ICSM including an estimate of the risk associated with each linkage is summarised in Table 4. The risk classification has been undertaken in accordance with CIRIA C552 (Rudland et al., 2001), a summary of which is included in Appendix F.

Table 4: Risk estimation for potentially complete pollutant linkages

Pollutant Linkage	Potential contaminant	Possible pathway	Potential receptor	Likelihood	Severity	Risk and justification
Human Health						
1	On-site gas generation associated with possible Made Ground in on-site infilled ponds	Ground gas or vapour migration and inhalation	Adjacent site users	Unlikely	Severe	**Moderate/low:** It is not known what the depth of the ponds were, or what material was used for infilling (if the ponds were infilled rather than graded out) but they appear likely to have been in-filled >50 years ago so ground gas generation potential is considered to be low. It is not anticipated that the impermeable nature of the Branscombe Mudstone Formation underlying the site and immediate surroundings will permit significant lateral migration of gases. However, this pathway cannot be discounted owing to the inherent variability of the Branscombe Mudstone Formation and Head Deposits in the south. Risks associated with ground gases are acute, therefore a severity rating of severe has been applied leading to a risk classification of moderate/low. In reality the risks are thought to be low.
2	Contaminants within potential Made Ground associated with presumed infilled ponds present on-site	Direct contact (soil, dust and vegetable ingestion, dermal contact, dust and vapour inhalation)	Future site occupants/users	Low	Medium	**Moderate/low:** Contaminants within Made Ground associated with four presumed infilled ponds on-site have the potential to cause chronic damage to human health through direct contact. However, the areas of presumed infilled ponds are isolated and represent a small proportion of the site therefore the likelihood assigned is low.

3	On-site gas generation associated with possible Made Ground in infilled ponds.	Ground gas or vapour migration and inhalation	Future site occupants/users	Unlikely	Severe	**Moderate/low:** It is not known what the depth of the ponds were, or what material was used for infilling but they appear likely to have been in-filled >50 years ago so ground gas potential is considered to be low. Risks associated with ground gases are acute, therefore, a severity rating of severe has been applied. In reality the risks are thought to be low.
4	Off-site gas generation associated with the historic landfill site and the associated Made Ground and the possible Made Ground in the infilled pond to the west	Ground gas or vapour migration and inhalation	Future site occupants/users	Unlikely	Severe	**Moderate/Low risk:** It is not anticipated that the impermeable nature of the Branscombe Mudstone Formation underlying the site and immediate surroundings will permit significant lateral migration of gases. However, this is subject to site investigation to determine the nature of the soil across the site. The risks from ground gas are acute, therefore, a severity rating of severe has been determined.
5	Pesticides from general arable land use	Direct contact (soil, dust and vegetable ingestion, dermal contact, dust and vapour inhalation)	Future site occupants/users	Unlikely	Medium	**Low risk:** The site is currently, and was historically, used as agricultural land. It is assumed that recent and current use of pesticides will have been subject to statutory control. Historic usage of pesticides, which was not subject to current statutory control, has potentially occurred at the site although the extent to which cannot be known. However, potential usage of pesticides is considered to be of low risk as the probability of future exposure on a Greenfield site where the only potential source is usage on crops is considered unlikely.

6	Leachate associated with the off-site historic landfill adjacent to the northern site boundary.	Vertical and lateral migration and direct contact (soil, dust and vegetable ingestion, dermal contact, dust and vapour inhalation)	Future site occupants/users	Unlikely	Medium	**Low risk:** It is not anticipated that the impermeable nature of the Branscombe Mudstone Formation underlying the site and immediate surroundings will permit significant lateral and vertical migration of leachate. Leachate from the off-site landfill has the potential to migrate to soil or groundwater beneath the site, although this is considered unlikely taking into account the age of the historic landfill site.
Controlled Waters						
7	Contaminants within potential Made Ground associated with presumed infilled ponds present on-site	Vertical and lateral migration	Surface water course	Low	Mild	**Low risk:** Contaminants within potential Made Ground associated with the infilled ponds on-site may have the potential to impact the surface watercourse to the west of the site. However, as the potential Made Ground is located a significant distance from the surface watercourse and the potential extent of any Made Ground, if present, is considered to be small in relation to the wider site area, the likelihood is considered to be low.
8	Contaminants within potential Made Ground associated with presumed infilled ponds present on-site	Vertical and lateral migration	Groundwater – Secondary B	Low	Mild	**Low risk:** Contaminants within potential Made Ground associated with the infilled ponds on-site may have the potential to impact groundwater aquifers underlying the site. The extent of any Made Ground if present, is considered to be small in relation to the wider site area, the likelihood is considered to be low.

9	Pesticides from general arable land use	Vertical and lateral migration	Surface water course	Unlikely	Mild	**Very low risk:** The site is currently and was historically used as agricultural land. It is considered that recent and current use of pesticides will have been subject to statutory control. Historic usage of pesticides, which was not subject to current statutory control, has potentially occurred at the site but the extent of any such application cannot be known.
10	Pesticides from general arable land use	Vertical and lateral migration	Groundwater – Secondary B	Unlikely	Mild	**Very low risk:** The site is currently and was historically used as agricultural land. It is considered that recent and current use of pesticides will have been subject to statutory control. Historic usage of pesticides and herbicides, which was not subject to current statutory control, has potentially occurred at the site but the extent of any such application cannot be known.
11	Leachate associated with the landfill adjacent to the northern site boundary.	Vertical and lateral migration	Groundwater – Secondary B	Low	Mild	**Low risk:** It is not anticipated that the impermeable nature of the Branscombe Mudstone Formation underlying the site and immediate surroundings will permit significant lateral and vertical migration of leachate. The source is located off-site but has the theoretical potential to impact the aquifer that is present under the site and extends beyond the site boundary, although this is considered unlikely taking into account the age of the historic landfill site.
Building infrastructure						
12	Contaminants within potential Made Ground associated with presumed infilled ponds present on-site	Permeation	Underground potable water supply service pipe	Low	Mild	**Low risk:** The areas of presumed infilled ponds which may contain Made Ground are isolated and represent a small proportion of the site area. However, any organic contaminants may permeate potable water supply pipes with the potential to cause chronic damage to human health.
13	Contaminants within potential Made Ground associated with presumed infilled ponds present on-site	Chemical attack	Buildings and infrastructure	Low	Mild	**Low risk:** Potential contaminants within the presumed infilled ponds may result in aggressive conditions for foundations causing damage to structures. The potential areas of infilled ponds however are isolated and represent a small proportion of the site.

14	Possible sulphates associated with the Branscombe Mudstone Formation	Chemical attack	Buildings and infrastructure	Low	Mild	**Low risk:** Sulphates can effect buried concrete and have the potential to cause significant damage to buildings and infrastructure. However, the likelihood of sulphates being present in natural ground depends on the geological strata and the groundwater flow patterns. Significant quantities of sulphates would only be present in the weathered zone in the Mercia Mudstone.
15	Off-site gas generation associated with the historic landfill site, the associated Made Ground and the possible made ground in the infilled pond to the west of the site	Ground gas or vapour migration	Buildings and infrastructure	Unlikely	Severe	**Moderate/low risk:** There is a low to moderate ground gas potential associated with the historic landfill site and related Made Ground and possible Made Ground in the off-site infilled pond. It is not anticipated that the impermeable nature of the Branscombe Mudstone Formation underlying the site and immediate surroundings will permit significant lateral migration of gases. However, risks from ground gas are acute, therefore, a severity rating of severe has been determined.
16	On-site gas generation associated with possible Made Ground in infilled ponds.	Ground gas or vapour migration	Buildings and infrastructure	Unlikely	Severe	**Moderate/low risk:** There is a low ground gas potential associated with the possible Made Ground in the presumed infilled ponds present on-site. The anticipated areas of infilled ponds are isolated and represent a small proportion of the site. It is not anticipated that the impermeable nature of the Branscombe Mudstone Formation underlying the site and immediate surroundings will permit significant lateral migration of gases. However, risks from ground gas are acute, therefore, a severity rating of severe has been determined.

No potentially complete pollutant linkages within Table 4 were identified with a risk rating of moderate or above.

The following potential pollutant linkages were found to have a low/moderate risk and are considered by RSK, as a precautionary approach, need further investigating:

- On-site gas generation associated with possible Made Ground in the historic ponds effecting adjacent site users via ground gas or vapour migration and subsequent inhalation.
- On-site gas generation associated with the possible Made Ground in the historic ponds effecting future site occupants and users via ground gas or vapour migration and subsequent inhalation.
- Off-site gas generation associated with the possible Made Ground in a historic pond close to the western site boundary and the landfill and associated Made Ground adjacent to the north effecting future site occupants and users via ground gas or vapour migration and subsequent inhalation.
- Direct contact with the possible Made Ground in the historic ponds by future site occupants and users.
- Off-site gas generation associated with the possible Made Ground in a historic pond close to the western site boundary and the landfill and associated Made Ground adjacent to the north effecting buildings and infrastructure via ground gas or vapour migration.
- On-site gas generation associated with the possible Made Ground in the historic ponds effecting buildings and infrastructure via ground gas or vapour migration.

All other contamination risks assessed within the initial conceptual model have been considered as low.

5 SITE INVESTIGATION METHODOLOGY

5.1 Fieldwork

RSK carried out intrusive investigation work on 22 and 23 February 2018 to further investigate the potential linkages identified in the ICSM and to inform geotechnical constraints.

An experienced RSK engineer supervised all intrusive works. The investigation and the recorded soil descriptions were completed in general accordance with BS5930: 2015 - Code of Practice for Ground Investigations. The exploratory hole logs and other site work records are presented in Appendices G and H.

Fieldwork was carried out at the site in the sequence described in Table 5.

Table 5: Summary of fieldwork

Date(s)	Task
16 February 2018	Service clearance and exploratory hole survey
22 & 23 February 2018	Windowless sampler boreholes and monitoring well installation
22 & 23 February 2018	Mechanically excavated trial pits
Ongoing	Ground gas and groundwater monitoring visit

5.2 Methodology

5.2.1 Trial pits

Fifteen mechanically excavated trial pits were undertaken by a tracked mechanical excavator in order to inspect and record to near surface materials or structures, and to obtain soil samples for laboratory analysis.

The trial pits were positioned to provide an adequate coverage of the site and to provide information with regard to the ground conditions.

On completion, excavated stockpiled materials were replaced and compacted in layers. Due to ‘bulking’, the backfilled excavations are often left proud of the surrounding surface. This resulting ‘hump’ settles with time.

5.2.2 Windowless sampling

Twelve windowless sampler boreholes were positioned to provide an adequate coverage of the site and to provide information with regard to the ground conditions (see Figure 2).

During sinking of each borehole, Standard Penetration Tests (SPT) are undertaken at 1.0 m intervals in accordance with part 9 of BS 1377:1990 (BSI, 1990).

Combined ground gas and groundwater monitoring standpipes were installed within all borehole positions.

5.2.3 Soil sampling, in-situ testing and laboratory analysis

Soil sampling was designed to select samples at regular intervals throughout each of the encountered strata. Samples were stored in accordance with the RSK quality procedures to maintain sample integrity and preservation and to minimise the chance of cross contamination. Records of the samples taken as part of the investigation works, including their depths and locations, are included within the exploratory hole records in Appendices G and H.

Twenty-two samples obtained from the site investigation works were sent for environmental analysis. The samples sent for analysis are recorded on the laboratory results sheet included as Appendices I and J, the samples collected are also recorded, together with their depths, on the exploratory hole logs in Appendices G and H. The samples were transported to the laboratory in chilled cool boxes. The testing was scheduled to provide general coverage of the site in terms of analyses, including samples of reworked topsoil and natural ground to determine a standard suite of metals, polycyclic aromatic hydrocarbons (PAH), pH, pyrite, a pesticides suite and soil organic matter (SOM). Asbestos screening was undertaken only on the samples of reworked topsoil.

A selection of eight disturbed samples were taken from the exploration holes advanced at the site and sent for geotechnical analysis. Geotechnical testing included liquid and plastic limit testing and moisture content testing on cohesive soils and particle size distribution testing on granular soils. The laboratory results for geotechnical testing are included within Appendix J.

A shear vane was used on in-situ and ex-situ samples to provide an approximate measure of undrained shear strength values of the cohesive soils. A Clegg Hammer was used on in-situ samples within the trial pits, typically at 0.5 m below existing ground level, to give an impact value (IV) that related to the strength and the stiffness of the soil and can provide a California Bearing Ratio (CBR) value. The purpose of the test is to ascertain preliminary parameters for the structural design of road pavements. Reference should however be made to both gradings and plasticity of the proposed road formation.

SPT tests were also conducted by the drilling rig, which gives the standard penetration resistance (N-value) of the soil. The undrained shear strength values, IV values/CBR values and N values are included within the exploratory logs in Appendices G and H.

5.2.4 Survey

The ground levels of each of the exploratory holes were surveyed using GPS prior to commencement of the intrusive works.

5.2.5 Ground gas and groundwater monitoring

RSK are currently undertaking a ground gas and groundwater monitoring programme, consisting of six rounds of spot monitoring.

An infrared gas meter was used to measure gas flow, concentrations of carbon dioxide (CO_2), methane (CH_4) and oxygen (O_2) in percentage by volume, while hydrogen sulphide (H_2S) and carbon monoxide (CO) were recorded in parts per million. Initial and steady state concentrations were recorded.

In line with BS8576:2013 “Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs)”, each monitoring well installed within a windowless sampler borehole has been installed with a dual gas taps were installed.

Depths to groundwater were recorded using an electronic dip meter. All available monitoring data are contained within Appendix K. The available monitoring data is summarised in Section 6.4.

5.2.6 Preliminary infiltration testing

Soakaway tests were carried out in installed monitoring wells WS01 and WS05 to provide an indication of the potential drainage characteristics of the underlying soil.

This involved filling the monitoring well with water close to existing ground level and recording the falling head of water within the monitoring wells. The data are presented in Appendix L.

5.3 Health, safety and environment considerations

The intrusive works were completed in line with RSK’s Safety, Health, Environment and Quality Management Systems (SHEQMS), which is accredited to ISO9001: 2008 (Quality Management System standard), ISO14001:2004 (Environmental Management Systems standard) and OHSAS18001:2007 (Occupational Health and Safety Management Systems standards).

Service plans for the site were obtained in advance of site works and a specialist contractor attended site prior to the intrusive works to scan and clear for underground services at proposed exploratory hole locations.

As a further precaution for the avoidance of buried services, prior to breaking ground, each exploratory location was scanned using a Cable Avoidance Tool (CAT) and hand dug inspection pits were excavated to a depth of 1.20 m at each borehole location prior to drilling.

6 GROUND CONDITIONS

The results of the intrusive investigation and subsequent laboratory analysis undertaken are detailed below. The descriptions of the strata encountered, notes regarding visual or olfactory evidence of contamination, list of samples taken, field observations of soil and groundwater, in-situ testing and details of monitoring well installations are included on the exploratory hole records presented in Appendices G and H.

6.1 Soil

The exploratory holes revealed that the site is generally underlain by a variable thickness of topsoil directly over Head Deposits in the south and in the central portion of the site, the Birstall Member in the north-west and the Branscombe Formation elsewhere and beneath the superficial deposits. This is similar to the anticipated stratigraphy described within the PRA, however, the Birstall Member was recorded by the BGS to be located off-site, approximately 200 m to the north-west. Similarly, superficial deposits were not recorded to be present within the central portion of the site.

For the purpose of discussion, the ground conditions are summarised in Table 6 and the strata discussed in subsequent subsections

Table 6: General succession of strata encountered

Strata	Exploratory holes encountered	Depth to top of stratum m bgl	Thickness (m)
Topsoil	All exploratory holes	Ground Level	0.2-0.5
Subsoil	TP08, TP09, TP10, TP12, TP15	0.2-0.3	0.2-0.4
Head Deposits	WS04, WS07, WS08, WS11, WS12, TP05-TP09, TP14, TP15	0.2-0.6	0.4-1.9
Birstall Member	WS01, TP01, TP02	0.2-0.3	0.8-2.1
Branscombe Mudstone Formation	All exploratory holes	0.3-2.4	3.4 + (Not pen)
Note: Not pen = where the base of a stratum was not penetrated by the investigation			

6.1.1 Topsoil

Topsoil was encountered within all excavation holes advanced at the site typically as a soft to firm dark brown clay. Typically, it contains less than 35% of fine to coarse, angular to rounded gravel including quartzite and flint and variable concentrations of fine to coarse sand and silt. Occasional rootlets and rare coal, brick and slate were observed in the topsoil. The topsoil thickness is considerably variable across the site, encountered to depths ranging between 0.2 m bgl and 0.5 m bgl.

6.1.2 Subsoil

A distinguishable unit, recorded as subsoil, was observed in TP08, TP09, TP10, TP12 and TP16. The subsoil was generally described as a firm brown slightly sandy slightly gravelly/gravelly CLAY. The sand was observed to be fine to coarse and the gravel was fine to coarse, subangular to rounded quartzite and flint.

6.1.3 Head Deposits

Head Deposits directly underlie the topsoil (or subsoil in TP08, TP09 and TP15) in certain areas of the site and were encountered from 0.2-0.6 m to thicknesses of 0.4-1.9 m.

Head Deposits were encountered in TP14, TP15, WS11 and WS12 along the southern boundary described as firm-stiff orangish brown gravelly sandy CLAY. The proportion of gravel and sand within the soil varies, with patches of very sandy clay recorded. The sand is described as fine to coarse and the gravel as fine to coarse and rounded to angular, consisting of flint, quartzite and anhydrite.

Head Deposits were also encountered in TP05-TP09, WS04, WS07 and WS08 in the centre of the site, described as a firm/stiff red/orange/brown CLAY with differing proportions of sand and gravel of quartzite, flint and anhydrite. The Head Deposits were observed as light grey/green with some high sand proportions at depth. Organic bands (e.g. peat, relict wood, roots) are occasionally reported to be present, associated with the grey/green units within the exploratory holes at depth.

A summary of the in-situ results in this stratum is presented in Table 7.

Table 7: Summary of in-situ results for the Head Deposits

Soil parameters	Range	Reference
Liquid limit (%)	49-59	Appendix J
Plastic limit (%)	20-25	Appendix J
Plasticity index (%)	29-35	Appendix J
Modified Plasticity Index (%)	28.42-35	n/a
Volume Change Potential	Medium	n/a
Moisture content (%)	23-37	Appendix J
Undrained shear strength c_u (kN/m^2)	36->105	Appendices G and H
SPT N Values	7-15	Appendix G

6.1.4 Birstall Member

The Birstall Member was encountered in WS01, TP01 and TP02 directly below the topsoil from 0.2-0.3 m in the north-west of the site. As previously discussed, the Birstall Member was recorded by the BGS to be located off-site, approximately 200 m to the north-west and therefore was not anticipated to be encountered on-site. It has been described as and orangish/reddish brown gravelly clayey fine to coarse SAND. The

fraction of gravel within the sand varies and is described as fine to coarse, subrounded to rounded quartzite and flint.

The Birstall Member has a maximum recorded thickness of 2.1 m and reaches 2.3 m bgl in TP02. A particle size distribution test was undertaken on one sample recovered from TP02 at 1.3 m bgl, the analysis revealed that the sample comprised 5% gravel, 83% sand and 12% clay.

6.1.5 Branscombe Mudstone Formation

Underlying the topsoil or superficial deposits if present, the Branscombe Mudstone Formation is found to a maximum depth of 5.0 m in WS05, however, the formation was never fully penetrated.

The Branscombe Mudstone Formation is generally encountered as a firm to very stiff red/brown/pink/orange slightly sandy CLAY, occasionally found with varying amounts of sandy and gravel and localised grey mottling is noted. Gravel consists of flint and anhydrite. The Branscombe Mudstone Formation is also found as a very weak/weak, distinctly weathered, thinly laminated MUDSTONE, often at depth below the clay.

A summary of the in-situ and laboratory test results in this stratum is presented in Table 8.

Table 8: Summary of in-situ and laboratory test results for the Branscombe Mudstone Formation

Soil parameters	Range	Reference
Liquid limit (%)	29-37	Appendix J
Plastic limit (%)	15-18	Appendix J
Plasticity index (%)	14-20	Appendix J
Modified Plasticity Index (%)	12.6-19.6	n/a
Volume Change Potential	Low	n/a
Moisture content (%)	12-18	Appendix J
Undrained shear strength c_u (kN/m^2)	66->130	Appendices G and H
SPT N Values	9-50	Appendix G

6.2 Groundwater

Groundwater was not encountered within the majority of the exploratory holes advanced at the site. However, groundwater seepage was encountered within TP01 at 1.9 mbgl within the Birstall Member and WS07, WS08, WS09 and WS10 at the boundary between the Head Deposits and Topsoil.

Water strikes were only encountered at 2.0 mbgl in TP05, which rose to 1.8 m after 5 minutes, and at 1.9 mbgl in WS07 which rose to 0.8 mbgl, both encountered within Head Deposits.

Depths that groundwater seepage and strikes were encountered are included within the exploratory logs included within Appendices G and H.

6.3 Evidence of soil and groundwater contamination

No visual or olfactory indication of hydrocarbon contamination was observed during the investigation.

6.4 Ground gas regime

The results of the two rounds of ground gas monitoring carried out to date are summarised within Table 9. Monitoring data is provided within Appendix K.

Table 9: Summary of ground gas monitoring results

Borehole	Response zone/strata	Number of monitoring visits	Max. Methane (%)	Max. Carbon dioxide (%)	Min. Oxygen (%)	Max. Flow rate (l/hr)	Water level (m b TOC)	Atmospheric pressure (mbar)
WS01	Birstall Member(1-1.2 mbgl), Branscombe (1.2-3 mbgl)	2	0	0.8	19.4	0	0.83-2.92	985-984
WS02	Branscombe Mudstone Formation (1-2 mbgl)	2	0	0.7	18.8	0	1.98-flooded	985
WS03	Branscombe Mudstone Formation (1-2 mbgl)	2	0	0.4	18.4	0.2	0.62-1.98	984-986
WS04	Branscombe Mudstone Formation (1-5 mbgl)	2	0	5.3	0.1	2.0	3.16-4.77	986
WS05	Branscombe Mudstone Formation (1-2 mbgl)	2	0	0	19.0	0	1.64-1.98	984-987
WS06	Branscombe Mudstone Formation (1-2 mbgl)	2	0	0.6	19.5	0	1.96-1.71	984-987

WS07	Branscombe Mudstone Formation (1-3 mbgl)	2	0	0.1	20.9	-	flooded	-
WS08	Branscombe Mudstone Formation (1-4 mbgl)	2	0	0.1	20.9	-	flooded	-
WS09	Branscombe Mudstone Formation (1-2 mbgl)	2	0	0.1	20.9	-	flooded	-
WS10	Branscombe Mudstone Formation (1-2 mbgl)	2	0	0.1	20.7	0	0.02-flooded	983
WS11	Branscombe Mudstone Formation (1-2 mbgl)	2	0	0.7	18.9	0	1.5-1.950	984
WS12	Branscombe Mudstone Formation (1-3 mbgl)	2	0	0.5	20.2	0.1	2.92-0.28	984-987
Note: *Steady state gas concentrations and flows are presented in this table.*								

The ground-gas monitoring programme is due to be completed by the start of May 2018. The monitoring data and any relevant risk assessment will be presented within an addendum to this report on completion of the monitoring programme.

6.5 Refinement of the initial conceptual site model

The PRA identified a number of ponds that may have been backfilled, which potentially could act as a source of ground gas. Made Ground, thought to be associated with the infill of the ponds, has not been encountered during the intrusive investigation. However this Made Ground cannot be ruled out as a potential source of contamination or ground gas as may be present in discrete pockets that were not encountered during intrusive works but may be encountered during future earthworks.

The intrusive investigation revealed the site to be underlain by the Birstall Member in the north-west part of the site (which was not anticipated from the documentary research), consisting of gravelly clayey sand. This unit is likely to have a relatively higher permeability than the Branscombe Mudstone Formation encountered across the majority of the site, and could permit the migration of ground gas. However, the risks associated with gas generation from potential areas of Made Ground on-site are considered negligible and the historic landfill adjacent to the north-eastern site boundary is thought to be surrounded by the impermeable Branscombe Mudstone Formation. Therefore, the risks associated with the potential migration of ground gas and leachate is still considered low likelihood/unlikely.

As discussed in Section 3.3.1, the Birstall Member is designated by the Environment Agency as a Secondary A Aquifer and is therefore an additional potential sensitive receptor on-site. However, on-site sources of contamination with a plausible pathway to this aquifer are limited to contaminants within potential Made Ground associated with the backfilled ponds on-site and pesticides from general arable land use. As Made Ground has not been identified on-site during, the intrusive works and the associated risk with possible pesticide used on-site are considered low, the presence of the Secondary A Aquifer associated with the Birstall Member is considered to be low. The conceptual model has therefore not been refined to take into account this additional pollutant linkage.

No visual or olfactory evidence of contamination was observed during the investigation that would lead to refinement of the ICSM.

The following linkages identified in the ICSM are still considered potentially complete at this stage and pose a low/moderate risk requiring further investigation as a precautionary approach:

- On-site gas generation associated with the possible Made Ground in the historic ponds effecting adjacent site users via ground gas or vapour migration and subsequent inhalation.
- On-site gas generation associated with the possible Made Ground in the historic ponds effecting future site occupants and users via ground gas or vapour migration and subsequent inhalation.
- Off-site gas generation associated with the possible Made Ground in a historic pond close to the western site boundary and the landfill and associated Made Ground adjacent to the north effecting future site occupants and users via ground gas or vapour migration and subsequent inhalation.
- Direct contact of the possible Made Ground in the historic ponds by future site occupants and users.
- Off-site gas generation associated with the possible Made Ground in a historic pond close to the western site boundary and the landfill and associated Made Ground adjacent to the north effecting buildings and infrastructure via ground gas or vapour migration.
- On-site gas generation associated with the possible Made Ground in the historic ponds effecting buildings and infrastructure via ground gas or vapour migration.

6.5.1 Uncertainty and data gaps

No Made Ground was encountered during the investigation works. A watching brief during future earthworks for areas of infilled ground should be maintained. If areas of Made Ground are encountered these should be subject to further investigation, which may include environmental testing, additional ground gas monitoring and an associated risk assessment. The additional investigation that may be required would be subject to the size and composition of the encountered areas of Made Ground.

Due to shallow refusal of window sampling, the number of SPTs undertaken on-site are limited. Therefore, data gaps may exist in relation to the relative density of granular soil and the shear strength correlations for cohesive soils.

7 QUANTITATIVE RISK ASSESSMENT (QRA)

In line with CLR11 (EA, 2004), there are two stages of quantitative risk assessment, generic and detailed. The GQRA comprises the comparison of soil, groundwater, soil gas and ground gas results with generic assessment criteria (GAC) that are appropriate to the linkage being assessed. This comparison can be undertaken directly against the laboratory results or following statistical analysis depending upon the sampling procedure that was adopted.

7.1 Linkages for assessment

Section 6.5 presents the refined CSM, which identified the linkages that required assessment after the findings of the site investigation had been considered. These linkages together with the method of assessment are presented in Table 10.

Table 10: Linkages for generic quantitative risk assessment

Potentially relevant pollutant linkage	Assessment method
1. Direct contact with impacted soil by future residents	Direct comparison of laboratory test results to human health Generic Acceptance Criteria (GACs) for a proposed residential end use with home-grown produce. The RSK GAC are provided in Appendix M.
2. Concentrations of methane and carbon dioxide in ground gas from on-site and off-site sources affecting adjacent site users, future site occupants/users and buildings and infrastructure.	The ground-gas monitoring programme is due to be completed by the start of May 2018. The monitoring data and associated risk assessment will be presented within an addendum to this report on completion of the monitoring programme.

7.2 Methodology and results

The methodology and results of the GQRA are presented for each relevant pollutant linkage in turn.

7.2.1 Direct contact with impacted soil by future residents

Selected soil samples were analysed for a range of determinands, which have been compared directly to RSK's human health GAC (Appendix M) for a residential end use with home-grown produce adopting a conservative SOM of 1%. A summary report of the GQRA screening of the laboratory test results is provided in Appendix N.

The CSM has not identified the likely presence of contaminants such as elemental mercury or chromium VI and therefore the reported total concentrations for mercury and chromium have been compared to the GAC for chromium (III) or inorganic mercury.

Four samples were tested for a generic pesticide suite; all results were below the laboratory method detection limit. Asbestos was not reported in any of the four samples screened.

No potentially significant risks associated with the soil contamination have been identified and it is considered that the site may be regarded as suitable for the proposed end use.

7.2.2 Ground gas assessment

The ground-gas monitoring programme is due to be completed by the start of May 2018. The monitoring data and associated risk assessment will be presented within an addendum to this report on completion of the monitoring programme.

7.2.3 Impact of organic contaminants on potable water supply pipes

At the time of the investigation, the future routes of the potable water supply pipes had not been established. Therefore, determinands have not been compared with the generic assessment criteria for potable water supply pipes reproduced from *UKWIR Report 10/WM/03/2. Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites* (UKWIR, 2010).

A targeted investigation and specific sampling/analytical strategy may be required at a later date once the routes of the supply pipes are known. In addition, it is recommended that the relevant water supply company be contacted at an early stage to confirm its requirements for assessment, which may not necessarily be the same as those recommended by UKWIR.

7.3 Environmental assessment conclusions

The available results of the GQRA indicate that relevant pollutant linkages are absent and therefore the site is suitable for the proposed end use.

The ground-gas monitoring programme is due to be completed by the start of May 2018. The monitoring data and the necessary assessment will be presented within an addendum to this report on completion of the monitoring programme.

8 GEOTECHNICAL SITE ASSESSMENT

8.1 Geotechnical hazards

The environmental database report has identified that land located 43 m north-east of the site has a **moderate** potential for Compressible Ground Stability Hazards.

All other stability hazards identified within the Landmark Envirocheck report, within the immediate vicinity of the site (i.e. less than 100 m), are deemed as having a 'Very Low Hazard' or 'No Hazard' potential.

Laboratory test data indicates that the Head Deposits in the centre of the site have a medium volume change potential and the Branscombe Mudstone Formation has a low volume change potential (in accordance with NHBC Standards, Chapter 4.2).

8.2 Foundations

8.2.1 General suitability

Given the presence of competent natural soils at a relatively shallow depth, it is considered that traditional spread footings will be suitable for low-rise residential buildings across the majority of the site.

Foundations should be advanced into the undisturbed suitably competent natural soils. Strip or trench fill foundations should be suitable to support the low-rise residential buildings across the Branscombe Mudstone Formation, designed to an allowable bearing pressure of up to 150 kN/m^2 at a minimum founding depth of 0.90m in cohesive strata.

Shallow spread foundations would need to be taken down through any topsoil, Made Ground (if present), loose sands or soft clays and founded on either the medium dense sands; or firm to stiff clays (having Cu>60kN/m^2).

Where significant lateral and vertical variability of the founding strata has been observed, consideration should be given to incorporating appropriate reinforcement into strip foundations to minimise the risk of future unacceptable differential foundation movements.

All foundation excavations should be inspected by a competent and experienced engineer. Any Made Ground or soft, organic or otherwise unsuitable materials should be removed and replaced to form a trench fill type foundation with mass concrete and appropriately benched.

The nature of the soils encountered during the investigation suggests that ground bearing floor slabs may be adopted (in areas of Made Ground < 600mm) supported off a suitable sub-base layer. All formation levels should be proof-rolled and all topsoil and any other loose, soft, organic or otherwise unsuitable materials should be removed and replaced with well-compacted, suitable granular fill. Alternatively, a suspended beam and block floor slab may be adopted in accordance with NHBC Standards, Chapter 5.2, 'Suspended ground floors'.

Hand shear vane testing was undertaken during the site investigation works. These typically recorded approximate undrained shear strength readings of >50 kPa. Those recorded within the Branscombe Mudstone Formation ranged in value between 66 and >130 kPa. Those recorded within the Head Deposits ranged in value between 36 and >105 kPa.

SPT 'N' values within the Head and Branscombe Mudstone Formation ranged between N= 7 and N= >50. Lower bound values were recorded within the western area of the central field, therefore, consideration should be taken to locally deepen the foundations as a trench fill type foundation formed into the underlying competent ground. During the works if in doubt, further advice should be sort from a Geotechnical Engineer.

Sand and gravels of the Birstall Member are limited to the north-western corner of the site, to depths of up to 2.3 m bgl (Ref: TP01). The granular deposits appear competent and are anticipated to be able support shallow lightly reinforced (Mesh) foundations, designed to an allowable bearing pressure of up to 100 KN/m^2.

Where sand and gravels are shallow, foundations may be best supported off the underlying clays/mudstones, enabling the foundations to be designed to an allowable bearing pressure of up to 150 KN/m^2.

8.2.2 Building near trees

Owing to the presence of moderately shrinkable and expansive clay soils within the vicinity of existing trees, hedgerows and shrubs, foundations should be designed taking into account the soils plasticity, tree species and mature height and whether the trees are to remain, be removed or indeed planted. To minimise the risk of future foundation movements, guidance should be read in accordance with NHBC standards (2018), Chapter 4.2.

8.3 Chemical attack on sub surface concrete

This assessment of the potential for chemical attack on buried sub-surface concrete at the site is based on *BRE Special Digest 1: Concrete in aggressive ground*, which represents the most up-to-date guidance on this topic currently available in the UK.

The desk study and site walkover indicate that, for the purposes of assessing the aggressive chemical environment, the site should be considered as comprising natural ground likely to contain pyrite.

Water-soluble sulphate testing was undertaken on eight samples of the Natural Strata at the site, four from the Branscombe Mudstone Formation, one from the Birstall Member and three from Head Deposits. The pH values of these samples ranged between 6.35 and 7.91.

In general accordance with the Building Research Establishment publication Special Digest 1:2005 'Concrete in Aggressive Ground', the mean value of the two highest sulphate test values (106.5 mg/l) and the lowest measured value of pH (6.35) have been adopted for the sulphate assessment. Therefore, in accordance with Special Digest 1 (assuming a static groundwater and a Greenfield location) the site falls into Design

Sulphate Class DS-1 and an Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1s.

8.4 Excavations

The trial pits advanced through the cohesive deposits of the Branscombe Mudstone Formation and the Head Deposits remained stable during excavation, which indicates that foundation excavations should remain stable in the short term, during construction of conventional spread foundations and services. Trial pits advanced through the granular deposits of the Birstall Member (TP01 and TP02) were unstable at shallow depths during excavation where the sand deposits exist and ground water was encountered at 1.9 mbgl.

Where foundation excavations are advanced through granular deposits in the north-west of the site or are to remain open for longer periods constructed into the underlying cohesive deposits across the remainder of the site, consideration should be given to the use of trench support systems and sump pump type dewatering where appropriate.

8.5 Roads, hardstanding and drainage

The intrusive investigation revealed a soil profile comprising Head Deposits in the south and the centre of the site, the Birstall Member in the north-west of the site and the Branscombe Mudstone Formation below these superficial deposits or directly below the topsoil across the rest of the site. The Branscombe Mudstone Formation comprises a firm to very stiff slightly sandy clay directly below the topsoil across the majority of the site. The results of the laboratory classification testing indicate that the plasticity index of the clay ranges from 14% to 35%.

In pavement design terms, the groundwater conditions are anticipated to comprise a high water table, i.e. within 300 mm of the road pavement formation level, based on the depth to standing water recorded during the return monitoring programme. It should also be noted that whilst a proposed layout plan has been provided, the exact location of proposed highways at the site are unknown.

Reference to Table C1 in TRRL (1984) Report LR1132 (Ref No.15) indicates the estimated minimum, equilibrium soil-suction, California Bearing Ratio (CBR) value for the clay sub-grade soils and groundwater conditions described above under a completed pavement is 3%.

The results of in-situ testing indicate that the near surface soils have a CBR value that ranges from between 3% and 9%, the results are summarised in **Error! Reference source not found.**.

Table 11: Summary of CBR values derived from in-situ Clegg Hammer

Test location	Depth (m)	Clegg Hammer 4th Impact Value (IV)	Estimated CBR value (%)
TP01	0.50	5-6	5-6

TP02	0.50	4-5	4-5
TP03	0.50	4	4
TP04	0.50	7-8	7-9
TP05	0.50	4	4
TP07	0.50	3	3
TP08	0.50	3-4	3-4
TP09	0.55	5	5
TP10	0.50	6-7	6-7
TP12	0.50	7	7
Note: CBR value determined using 4th Impact Value (IV) using Clegg Hammer at or below anticipated formation level. Three tests were conducted at each location and the results above show the range of values at each depth.			

The recommended sub-grade soil CBR value for road pavement design is therefore 3%. This value assumes that during construction, the formation level will be carefully compacted and any soft spots removed and replaced with well-compacted granular fill. The condition of the formation during construction should be confirmed by additional in-situ testing of the final formation level.

The sub-grade soils should be considered frost-susceptible, based upon the criteria given in Appendix 1 of TRRL (1970) Report Road Note 29; given that the strata encountered is typically cohesive. When the sub-grade is frost-susceptible, the thickness of sub-base must be sufficient to give a total thickness of non-frost-susceptible pavement construction over the soil of no less than 450 mm.

8.5.1 Soakaways

Preliminary infiltration tests were performed within installed monitoring wells WS01 and WS05 on 8th March 2018.

An extrapolated permeability rate of $3.15x10^{-7}$ m/s within the Bristall Member and extrapolated permeability rate of $8.23x10^{-9}$ m/s within the Branscombe Mudstone Formation indicate low infiltration characteristics of the sub-soils and therefore do not appear suitable for the use of pit type soakaways (see Appendix L). In this regard alternative surface water control/management will need to be considered.

8.6 Preliminary Mineral Resource Assessment

The site lies within a British Geological Survey (BGS) designated Sand and Gravel Mineral Consultation Area (MCA).

To ensure that the minerals potential is assessed and addressed in accordance with the National Planning Policy Framework (NPPF) and Leicestershire County Council Minerals Local Plan, the intrusive geotechnical investigation has been undertaken to identify the type, quantity and quality of mineral deposits that exist to determine the commercial potential for mineral extraction on the proposed site.

The comments given are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory.

8.6.1 History of mining activities

According to the environmental database report (Landmark Envirocheck Report, January 2018), there is no quarrying or mining activity in the immediate vicinity of the site at present day. The site also does not lie within an area affected by coal mining.

From reviewing the historical maps, available as part of the environmental database report, a quarry used for extracting clay was located adjacent to the northern site boundary. It is assumed this was used as a landfill for deposited waste including household waste and liquid sludge. There are no records of landfill sites (former or current) on-site.

8.6.2 Ground Conditions

Published geological records for the site and the surrounding areas is largely characterised by mudstones and siltstones of the Branscombe Mudstone Formation, overlain by Head Deposits along the southern site boundary.

The exploratory holes revealed that the site is typically underlain by topsoil over Head Deposits in the south and central portion of the site and gravelly clayey sand of the Birstall Member in the north-west corner. A particle size distribution test was undertaken on one sample recovered from TP02 at 1.3 mbgl, the analysis revealed that the sample comprised 5% gravel, 83% sand and 12% fines. The Branscombe Mudstone Formation is found beneath these superficial deposits and directly beneath the topsoil across the rest of the site.

8.6.3 Remarks

Granular deposits of the Birstall Member were encountered at TP01, TP02 and WS01 situated within the north-western portion of the site.

Considering the close proximity of existing residential dwellings to the western boundary of the site, and the anticipated low volume of granular deposits encountered identified as the Birstall Member, it is considered unlikely that this will be seen as a viable source of aggregate.

9 CONCLUSIONS AND RECOMMENDATIONS

The conclusions section summarises the pertinent information from the environmental and geotechnical sections. This section is purposefully brief and should be read in conjunction with the main report text.

9.1 Environmental

The PRA indicates that any risk of contamination at the site can be considered **low** or **moderate/low**. Those pollutant linkages considered moderate/low relate to the generation, migration and the build up or inhalation of ground gas or the direct contact with possible Made Ground with future site users, and are considered by RSK, as a precautionary approach to need further investigation.

A human health GQRA was undertaken comparing the laboratory results of a range of determinands to RSK's human health GAC for a proposed residential end use with home-grown produce. The assessment demonstrated that the majority of determinands were below the GAC value. It is therefore considered that the risks to human health associated with contaminants in shallow soils are low.

The ground-gas monitoring programme to determine the associated risk is due to be completed by the start of May 2018. The monitoring data and the necessary assessment will be presented within an addendum to this report on completion of the monitoring programme.

9.2 Geotechnical

9.2.1 Foundations

The site is largely characterised by mudstones and siltstones of the Branscombe Mudstone Formation, overlain by Head Deposits along the southern boundary and in the central portion and granular deposits of the Birstall Member in the north-west corner of the site.

Strip or trench fill foundations should be suitable to support low-rise residential buildings across the Branscombe Mudstone Formation, assuming an allowable bearing pressure of up to 150 kN/m2 from a minimum founding depth of 0.90m in cohesive strata.

Ground bearing floor slabs may be adopted above a suitable sub-base layer for the proposed development. All formation levels should be proof-rolled and all topsoil and any other loose, soft, organic or otherwise unsuitable materials should be removed and replaced with well-compacted, suitable granular fill. Alternatively, a suspended beam and block floor slab may be adopted.

Consideration should be taken to advance the depth of foundations into more competent ground where soft spots have been identified at shallow depths (i.e. less than 1.5 mbgl), particularly in the western section of the central field area.

The granular deposits of the Birstall Member are anticipated to be able to support shallow lightly reinforced (Mesh) foundations, designed to an allowable bearing pressure of 100 KN/m^2. Where sand and gravels are shallow, foundations may alternatively be supported off the underlying clays/mudstones, with foundations designed to a higher allowable bearing pressure of up to 150 KN/m^2.

Further specialist design considerations are presented in Section 8.

9.2.2 Chemical attack on buried concrete

The site falls into Design Sulphate Class DS-1 and an Aggressive Chemical Environment for Concrete (ACEC) classification of AC-1s.

9.2.3 Excavations

Where foundation excavations are advanced through granular deposits in the north-west of the site or have a need to remain open for longer periods within underlying cohesive deposits across the remainder of the site, consideration should be given to the use of trench support systems and if necessary sump pump type de watering.

9.2.4 Roads, hardstanding and drainage

The results of in-situ testing indicate that the near surface soils have a CBR value that ranges between 3% and 9%. The recommended equilibrium sub-grade soil CBR value for road pavement design should therefore be 3%.

Following preliminary infiltration tests, it is indicated that the sub-soils have poor infiltration characteristics and are therefore not suitable for the use of soakaway systems.

9.2.5 Preliminary mineral resource assessment

The site lies within a British Geological Survey (BGS) designated Sand and Gravel Mineral Consultation Area (MCA).

Granular deposits of the Birstall Member were encountered within the north-western portion of the site.

Considering the close proximity of existing residential dwellings to the western boundary of the site, and the anticipated volume of granular deposits, it would be unlikely that this will be seen as a viable source of minerals.

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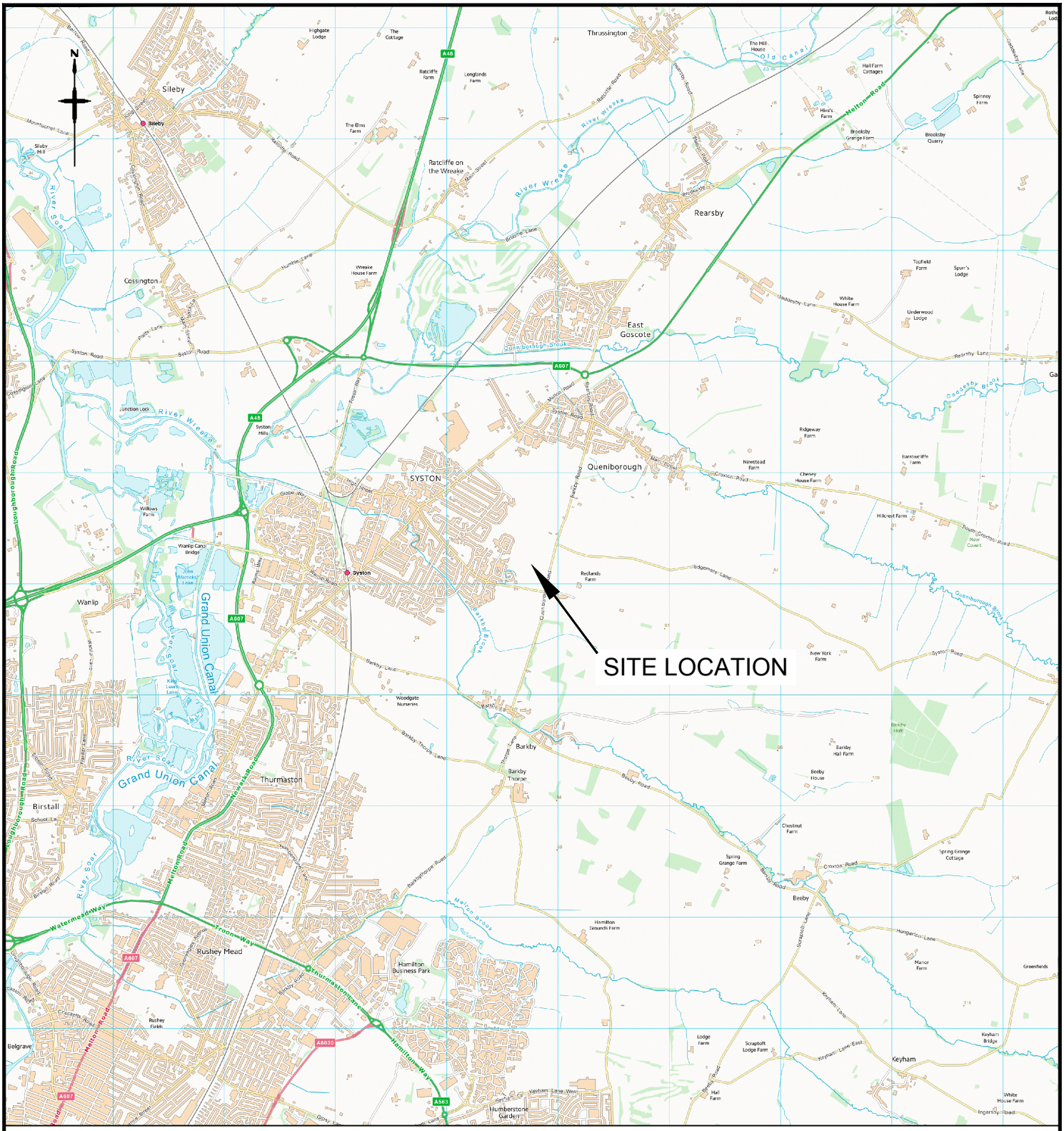
FIGURES



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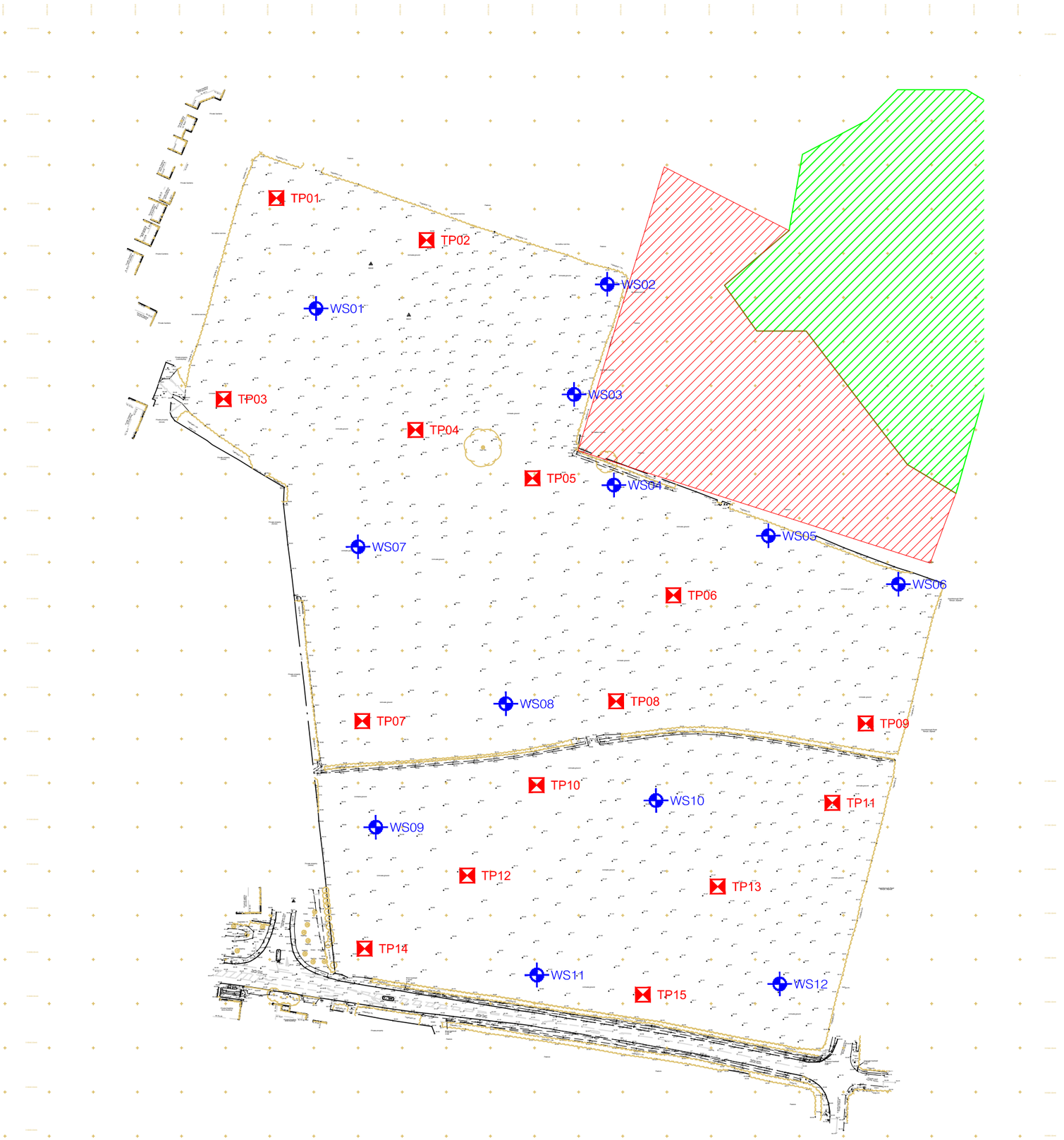
Client
TAYLOR WIMPEY STRATEGIC LAND (EASTERN)

Project Title
LAND NORTH OF BARKBY ROAD, SYSTON

Drawing Title
SITE LOCATION PLAN

Drawn	Date	Checked	Date	Approved	Date	Project No.	Drawing File
AP	26.03.18	KH	26.03.18	KH	26.03.18	302001	302001-R01(00)D001A

Scale	Orig Size	Dimensions	Drawing No.	Rev.
1:50000	A4	—	FIGURE 1	A



LEGEND:

- Trial pit
- Window sample
- Infilled ground
- Made ground (undivided)

N

Notes

Base plan from Survey Solutions, Drawing No 21105cv-01, Dated 11.01.18.

REV.	DATE	DESCRIPTION	BY	CHD.	APR.
A	26.03.18	FIRST ISSUE	AP	KH	KH

Dimensions	Projection	Scale	Orig Size
m		1:2000	A3

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CLIENT
TAYLOR WIMPEY STRATEGIC LAND (EASTERN)

PROJECT
LAND NORTH OF BARKBY ROAD, SYSTON

TITLE
SITE FEATURES AND EXPLORATORY HOLE LOCATION PLAN

JOB No.:	DRAWING FILE:
302001	302001-R01(00)D002A

BY:	DATE:	CONTRACT NO.		REV:
AP	26.03.18		FIGURE 2	A

Scale 1 : 2,000

0 20 40 60 80 100m

LEGEND

Site boundary

Rev	Date	Amendment	Drawn	Chkd	Appd
01	30.09.21	FIRST ISSUE	AE	MR	MR

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Client
Taylor Wimpey Strategic Land

Project Name
Land North of Barkby Road, Syston

Description
Proposed Development Plan

Project ID	Figure	Rev
302001	01	01

File name
302001-Proposed Development Plan-REV01

Dimensions	Scale	Size
m	N.T.S	A3

APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Taylor Wimpey Strategic Land (the "client") in accordance with the terms of a contract between RSK and the "client", dated 8 December 2017. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
SUMMARY OF LEGISLATION AND POLICY RELATING TO CONTAMINATED LAND

Part IIA of the Environmental Protection Act 1990 (EPA) and its associated Contaminated Land Regulations 2000 (SI 2000/227), which came into force in England on 1 April 2000, formed the basis for the current regulatory framework and the statutory regime for the identification and remediation of contaminated land. Part IIA of the EPA 1990 defines contaminated land as 'any land which appears to the Local Authority in whose area it is situated to be in such a condition by reason of substances in, on or under the land, that significant harm is being caused, or that there is significant possibility of significant harm being caused, or that pollution of controlled waters is being or is likely to be caused'. Controlled waters are considered to include all groundwater, inland waters and estuaries.

In August 2006, the Contaminated Land (England) Regulations 2006 (SI 2006/1380) were implemented, which extended the statutory regime to include Part IIA of the EPA as originally introduced on 1 April 2000, together with changes intended chiefly to address land that is contaminated by virtue of radioactivity. These have been replaced subsequently by the Contaminated Land (England) (Amendment) Regulations 2012, which now exclude land that is contaminated by virtue of radioactivity.

The intention of Part IIA of the EPA is to deal with contaminated land issues that are considered to cause significant harm on land that is not undergoing development (see Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance, April 2012). This document replaces Annex III of Defra Circular 01/2006, published in September 2006 (the remainder of this document is now obsolete).

Water Framework Directive (WFD)

The Water Framework Directive 2000/60/EC is designed to:

- enhance the status and prevent further deterioration of aquatic ecosystems and associated wetlands that depend on the aquatic ecosystems
- promote the sustainable use of water
- reduce pollution of water, especially by 'priority' and 'priority hazardous' substances
- ensure progressive reduction of groundwater pollution.

The WFD requires a management plan for each river basin be developed every six years.

Groundwater Directive (GWD)

The 1980 Groundwater Directive 80/68/EEC and the 2006 Groundwater Daughter Directive 2006/118/EC of the WFD are the main European legislation in place to protect groundwater. The 1980 Directive is due to be repealed in December 2013. The European legislation has been transposed into national legislation by regulations and directions to the Environment Agency.

Environmental Permitting Regulations (EPR)

The Environmental Permitting (England and Wales) Regulations 2010 provide a single regulatory framework that streamlines and integrates waste management licensing, pollution prevention and control, water discharge consenting, groundwater authorisations, and radioactive substances regulation. Schedule 22, paragraph 6 of EPR 2010 states: 'the regulator must, in exercising its relevant functions, take all necessary measures - (a) to prevent the input of any hazardous substance to groundwater; and (b) to limit the input of non-hazardous pollutants to groundwater so as to ensure that such inputs do not cause pollution of groundwater.'

Water Resources Act (WRA)

The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 updated the Water Resources Act 1991, which introduced the offence of causing or knowingly permitting pollution of controlled waters. The Act provides the Environment Agency with powers to implement remediation necessary to protect controlled waters and recover all reasonable costs of doing so.

Priority Substances Directive (PSD)

The Priority Substances Directive 2008/105/EC is a 'Daughter' Directive of the WFD, which sets out a priority list of substances posing a threat to or via the aquatic environment. The PSD establishes environmental quality standards for priority substances, which have been set at concentrations that are safe for the aquatic environment and for human health. In addition, there is a further aim of reducing (or eliminating) pollution of surface water (rivers, lakes, estuaries and coastal waters) by pollutants on the list. The WFD requires that countries establish a list of dangerous substances that are being discharged and EQS for them. In England and Wales, this list is provided in the River Basin Districts Typology, Standards and Groundwater threshold values (Water Framework Directive) (England and Wales) Directions 2010. In order to achieve the objectives of the WFD, classification schemes are used to describe where the water environment is of good quality and where it may require improvement.

Planning Policy

Contaminated land is often dealt with through planning because of land redevelopment. This approach was documented in Planning Policy Statement: Planning and Pollution Control PPS23, which states that it remains the responsibility of the landowner and developer to identify land affected by contamination and carry out sufficient remediation to render the land suitable for use. PPS23 was withdrawn early in 2012 and has been replaced by much reduced guidance within the National Planning Policy Framework (NPPF).

The new framework has only limited guidance on contaminated land, as follows:

- *"planning policies and decisions should also ensure that:*
    - *the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;*

- *after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and*
- *adequate site investigation information, prepared by a competent person, is presented".*

APPENDIX C
SITE PHOTOGRAPHIC LOG

PHOTOGRAPHIC RECORD

PHOTOGRAPHIC LOG

Photo no.	**Date:**
1	22.02.18

Description:

General view of the site facing north west.

Photo No.	**Date:**
2	22.02.18

Description:

The topsoil in the north west corner of the site.

Photo No.	Date:
3	22.02.18

Description:

View of the access point along the eastern site boundary.

Photo No.	Date:
4	22.02.18

Description:

View towards the south west showing the draining ditch running between the southern and central field. The flowing water goes through a culvert under the access between the two fields.

Photo No.	Date:
5	22.02.18

Description:

View of Queniborough Road which runs along the east of the site. A dry drainage ditch runs along the eastern site boundary adjacent to the road.

Photo No.	Date:
6	22.02.18

Description:

View of the historic landfill site beyond the northern site boundary in the east.

Photo No.	Date:
7	22.02.18

Description:

A drainage ditch along the northern site boundary adjacent to the public footpath which has a high water level. The western part of the central field is shown to be waterlogged in the background.

Photo No.	Date:
8	22.02.18

Description:

The drainage ditch which contains flowing water running between the southern and central field.

Photo No.	Date:
9	22.02.18

Description:

Unstable sides of TP02 due a slightly gravelly clayey fine to medium SAND (also found in TP01 and WS01).

Photo No.	Date:
10	22.02.18

Description:

TP05 showing evidence of the greenish grey reduction patches of soil within the Branscombe Mudstone Formation.

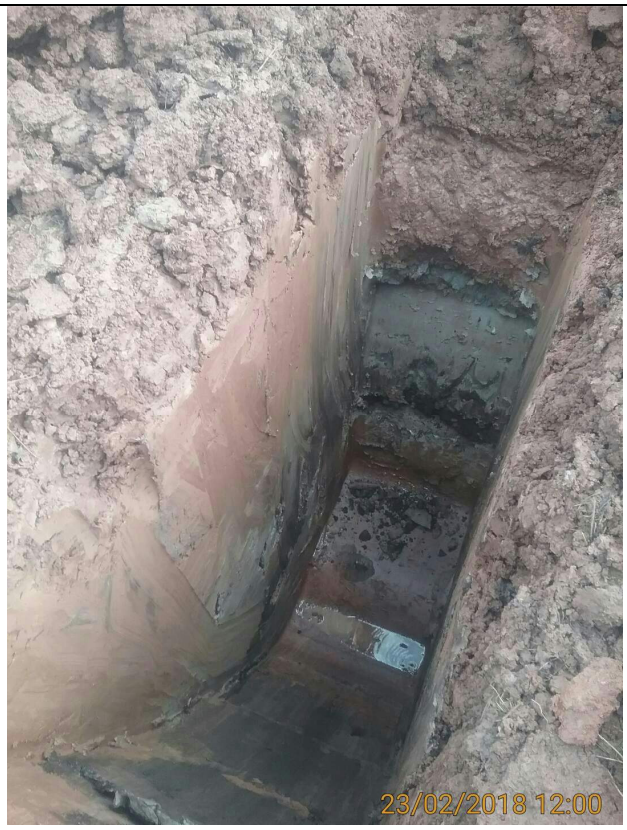


Photo No.	Date:
11	22.02.18

Description:

TP01 showing topsoil overlying a clayey slightly gravelly SAND (Birstall Member), with a slightly sandy CLAY at depth (Branscombe Mudstone Formation).

Photo No.	Date:
12	22.02.18

Description:

TP14 showing topsoil at the surface underlain by Head Deposits with the Branscombe Formation at depth.

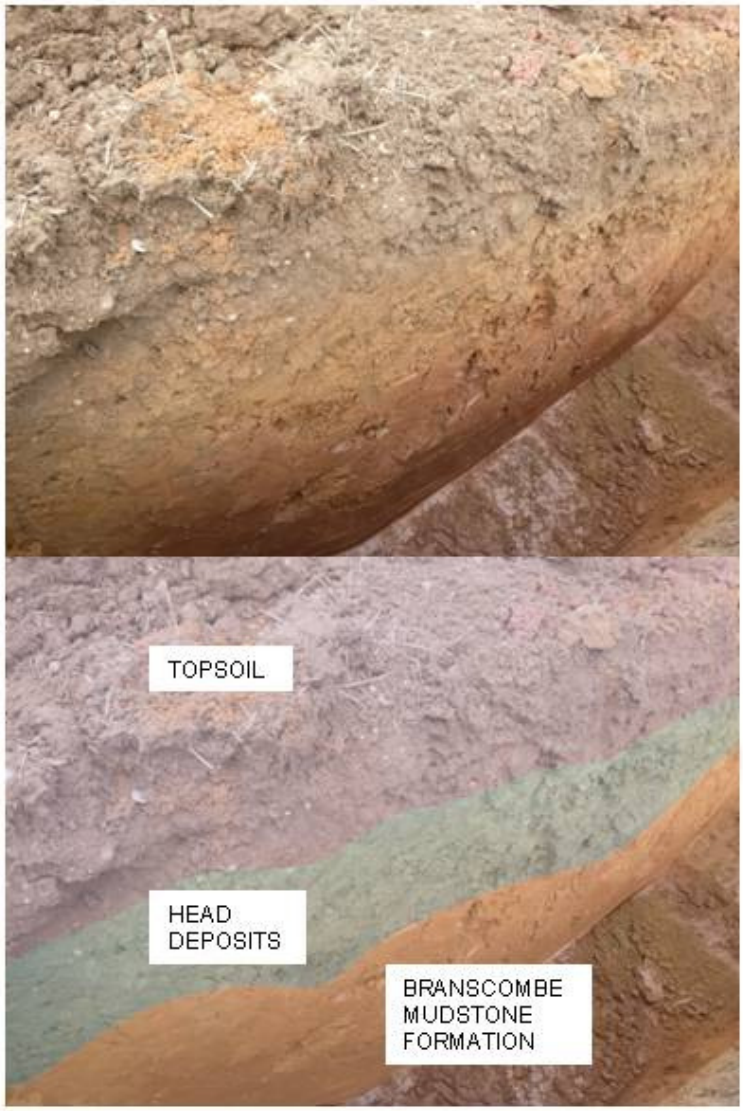


Photo No.	Date:
13	22.02.18

Description:

TP11 showing topsoil directly underlain by slightly sandy clay of the Branscombe Mudstone Formation at depth.

APPENDIX D
ENVIRONMENTAL DATABASE

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Cenozoic - Cenozoic
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	COLV	Colluvium	Clay, Silt, Sand and Gravel	Flandrian - Flandrian
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Flandrian
	WASG	WANLIP MEMBER	Sand and Gravel	Devensian - Devensian
	SYSG	SYSTON MEMBER	Sand and Gravel	Devensian - Devensian
	BISG	BIRSTALL MEMBER	Sand and Gravel	Wolstonian - Wolstonian
	THT	THRUSSINGTON MEMBER	Diamicton	Anglian - Anglian
	ODTL	Oadby Member (Lias-Rich)	Diamicton	Anglian - Anglian
	ODT	Oadby Member	Diamicton	Anglian - Anglian
	GFDMP	Glaciofluvial Deposits, Mid Pleistocene	Sand and Gravel	Ipswichian - Cromerian
	BYTH	Bytham Sand and Gravel Formation	Sand and Gravel	Pleistocene - Pleistocene
	HEAD	Head	Clay, Silt, Sand and Gravel	Quaternary - Quaternary
	WIGS	WIGSTON MEMBER	Sand and Gravel	Quaternary - Quaternary
	RTD1	River Terrace Deposits, 1	Sand and Gravel	Quaternary - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WBY	Westbury Formation	Mudstone	Rhaetian - Rhaetian
	CTM	Cotham Member	Mudstone	Rhaetian - Rhaetian
	WCT	Wilmcote Limestone Member	Mudstone and Limestone, Interbedded	Hettangian - Rhaetian
	BLI	Blue Lias Formation	Mudstone	Sinemurian - Rhaetian
	BCMU	Branscombe Mudstone Formation	Mudstone	Rhaetian - Norian
	BAN	Blue Anchor Formation	Mudstone	Rhaetian - Norian
	EDW	Edwalton Member	Mudstone	Carnian - Carnian
	AS	Arden Sandstone Formation	Sandstone	Carnian - Carnian
		Faults		
		Rock Segments		

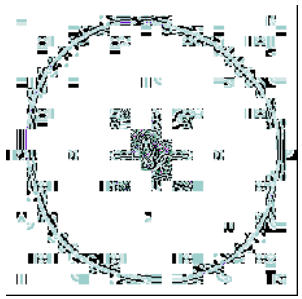
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**156**
Map Name:	**Leicester**
Map Date:	**1975**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Not Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A



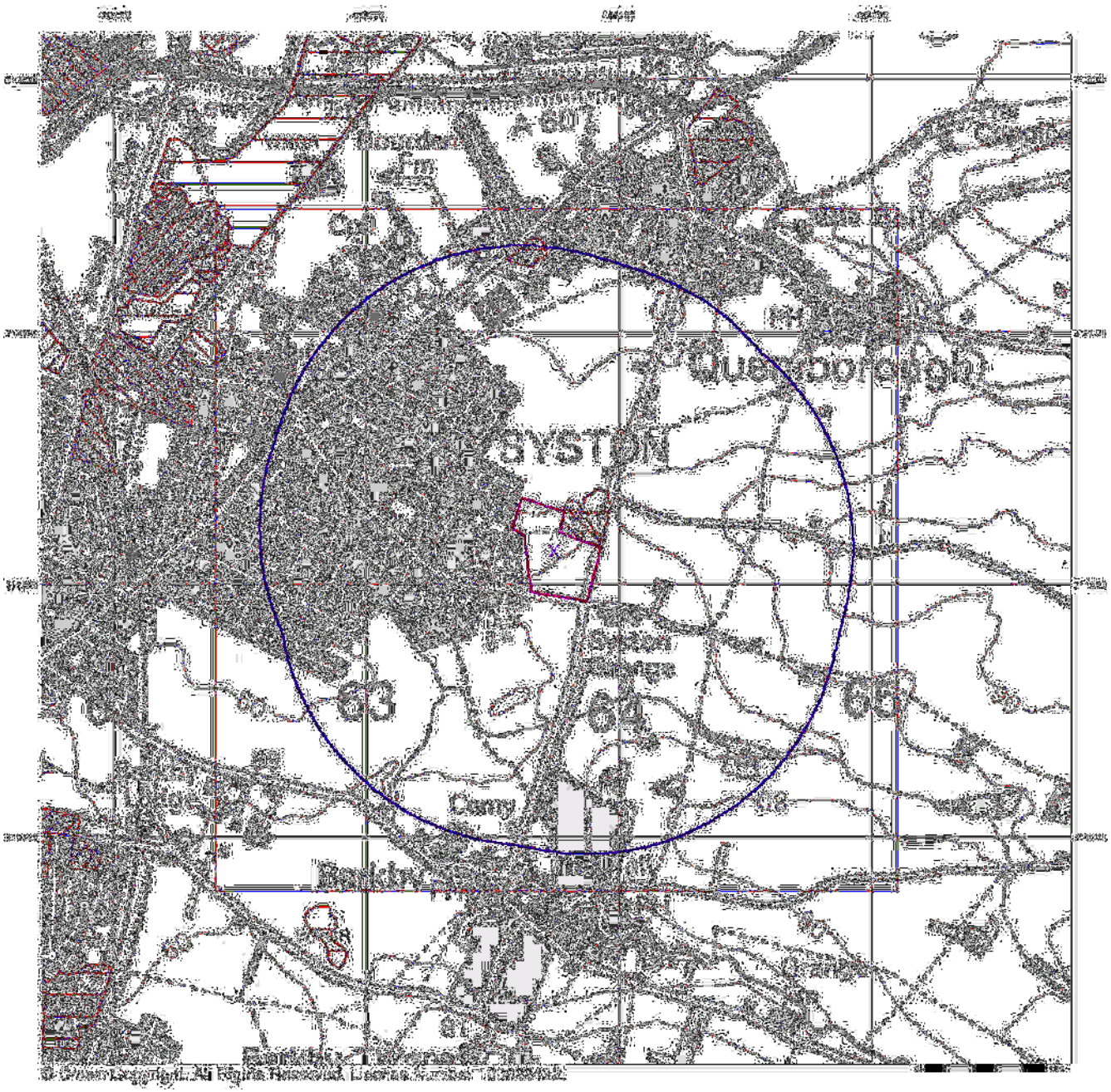
Order Details:

Order Number:	153824059_1_1
Customer Reference:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details:

Site at, Syston, Leicestershire

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Artificial Ground and Landslip

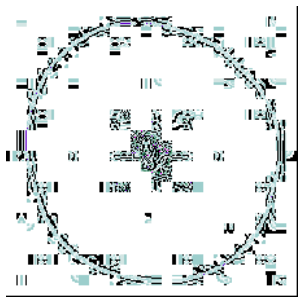
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details:

Order Number:	153824059_1_1
Customer Reference:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details:

Site at, Syston, Leicestershire

Tel: 0844 844 9952
Fax: 0844 844 9951
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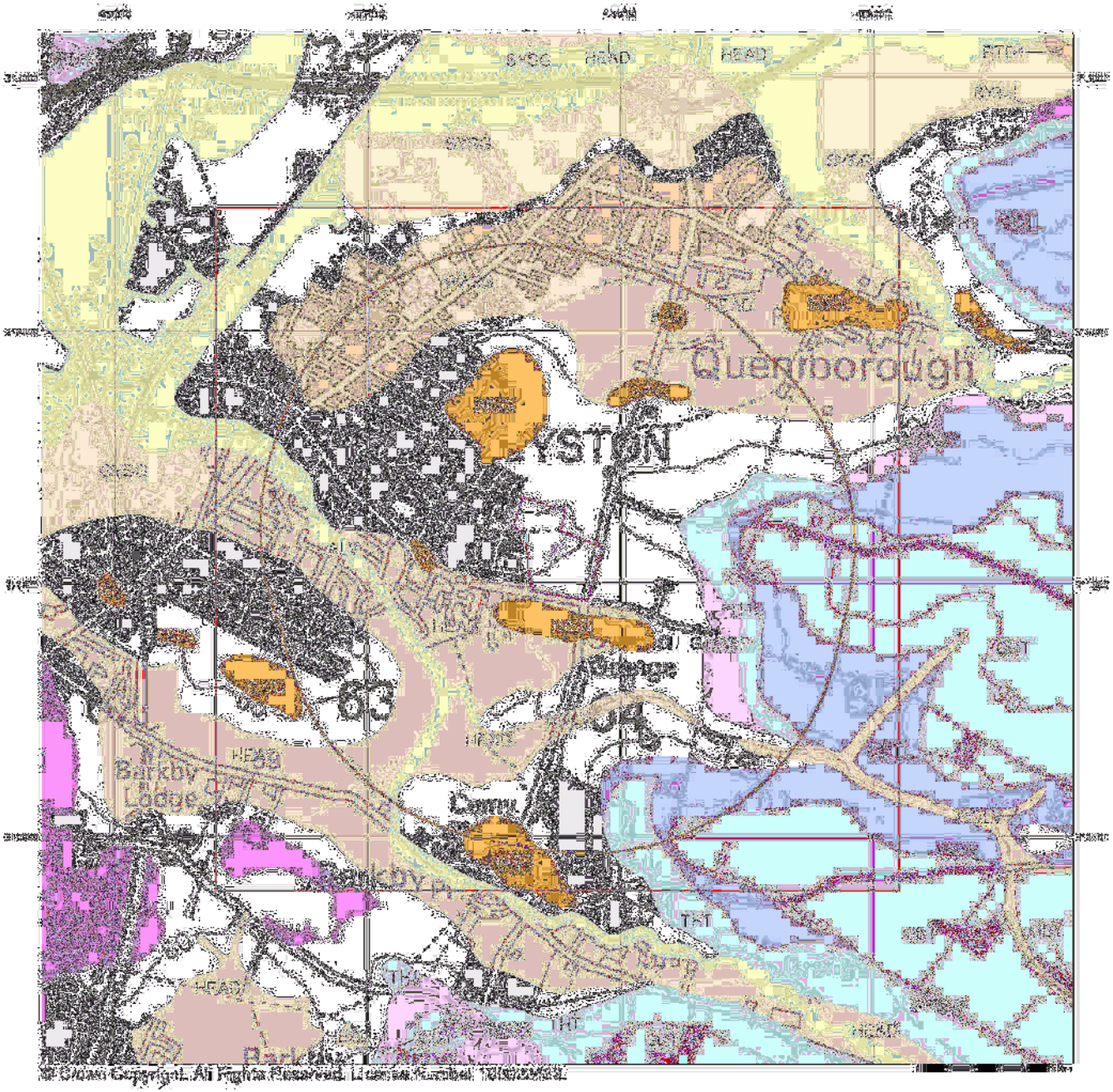


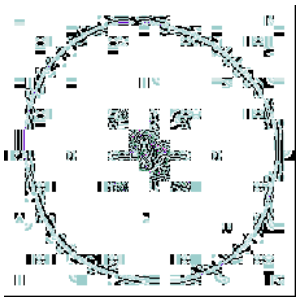
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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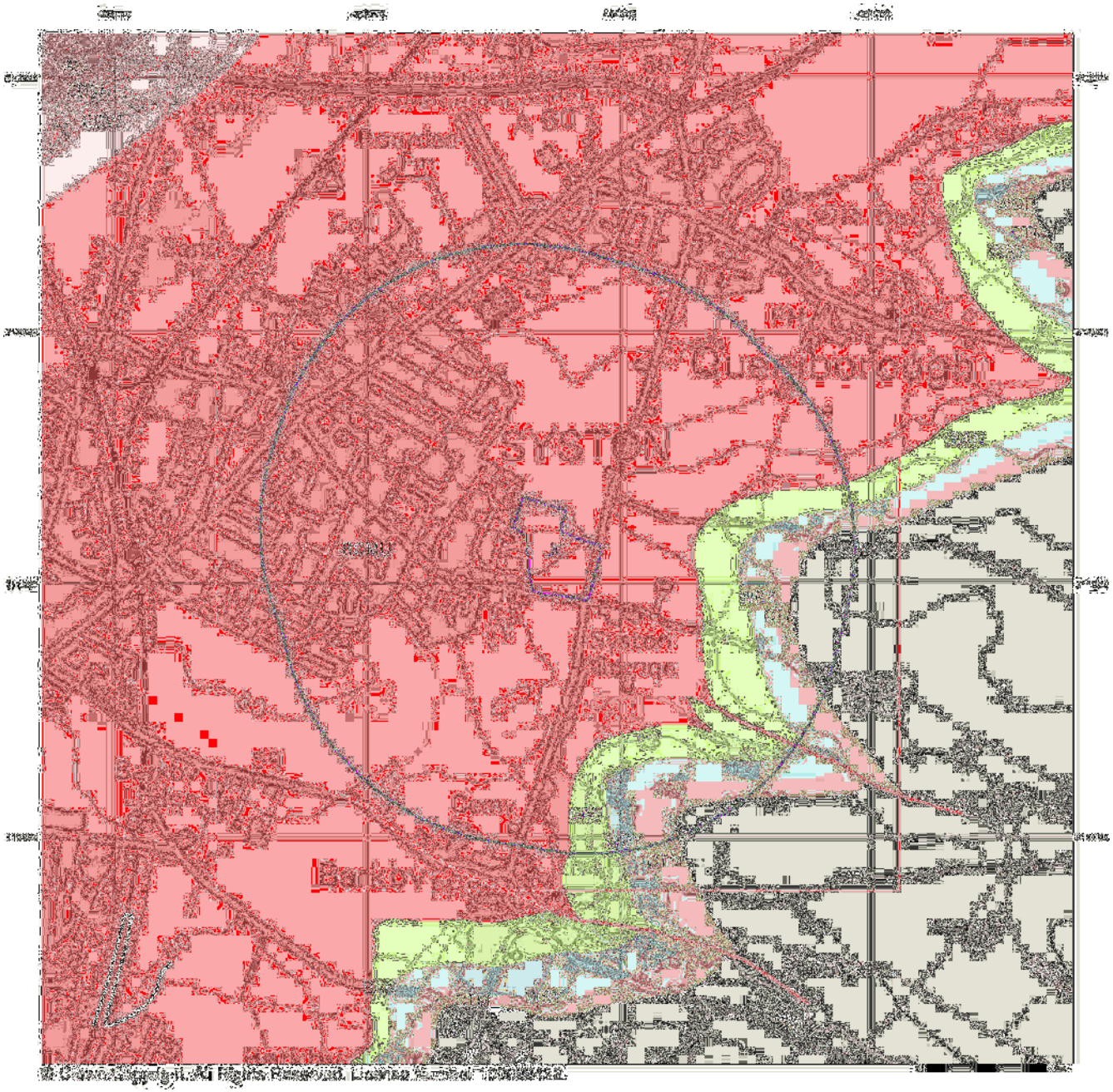


Bedrock and Faults

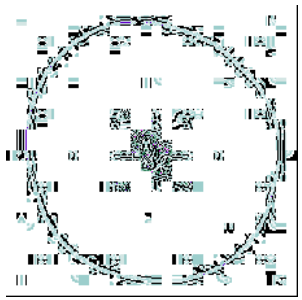
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

Order Number:	153824059_1_1
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National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
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Site Details:

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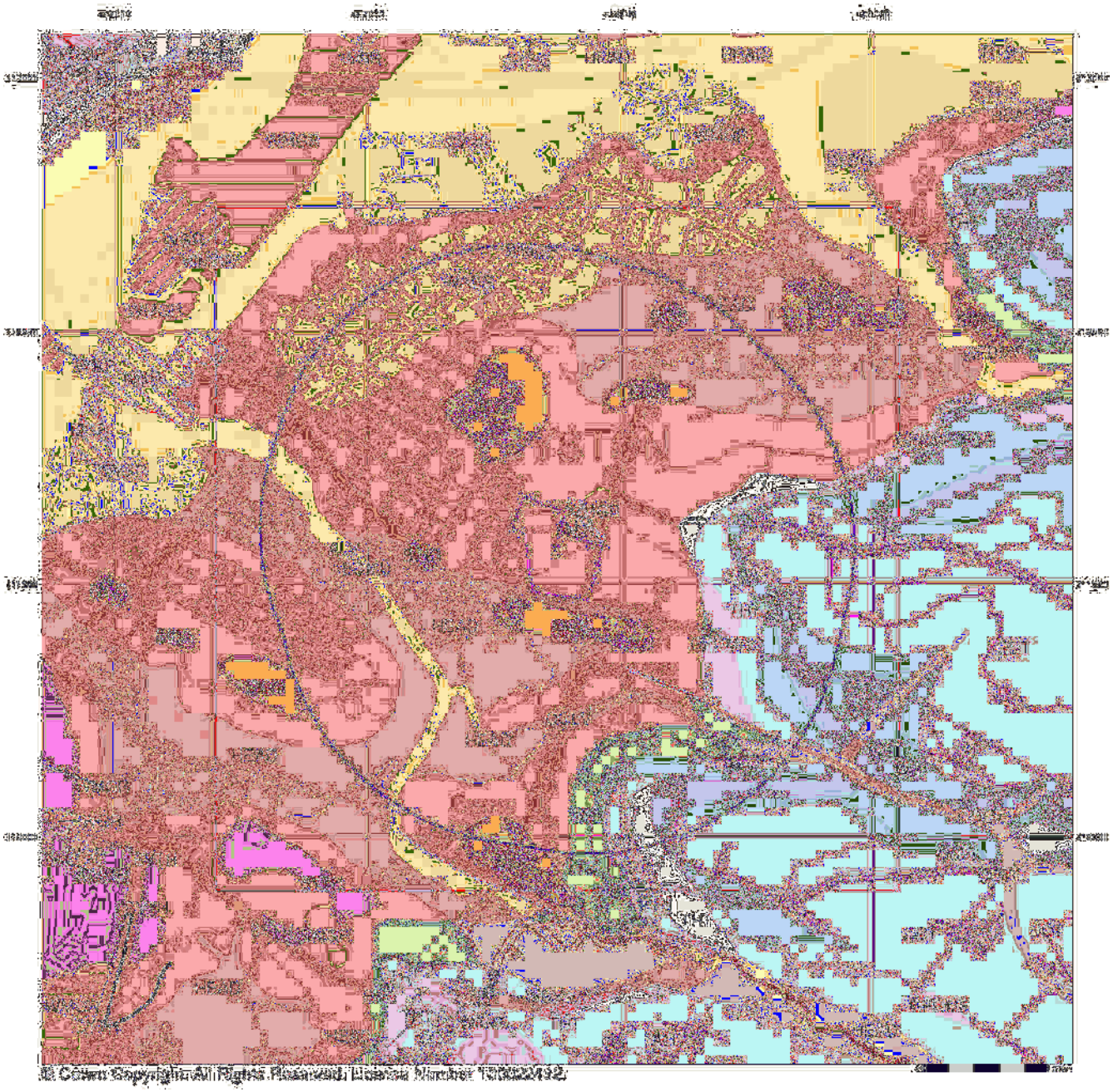


Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

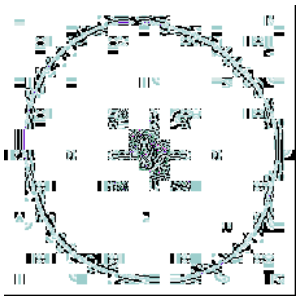
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



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Customer Reference:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
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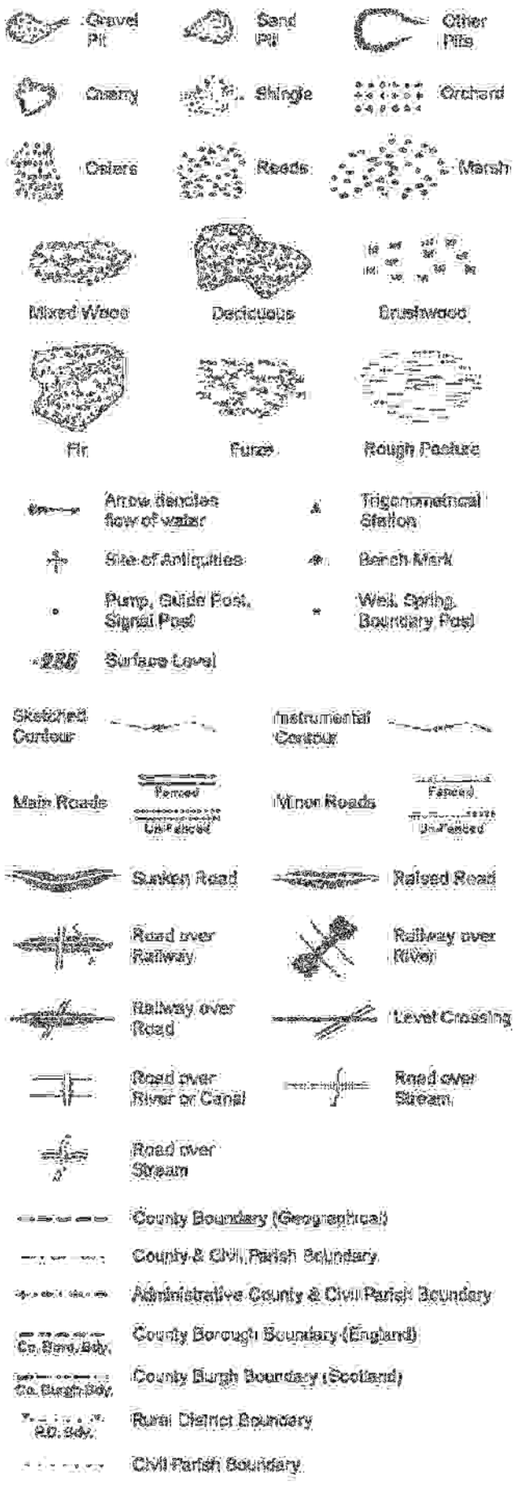
Site Details:

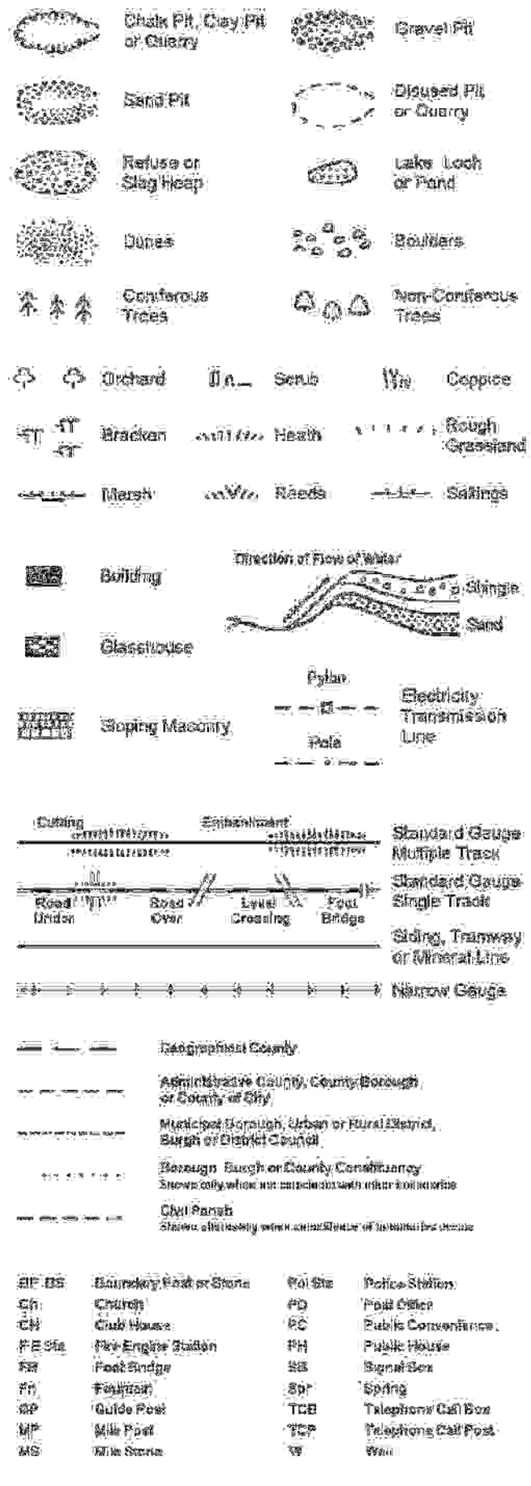
Site at, Syston, Leicestershire

Historical Mapping Legends

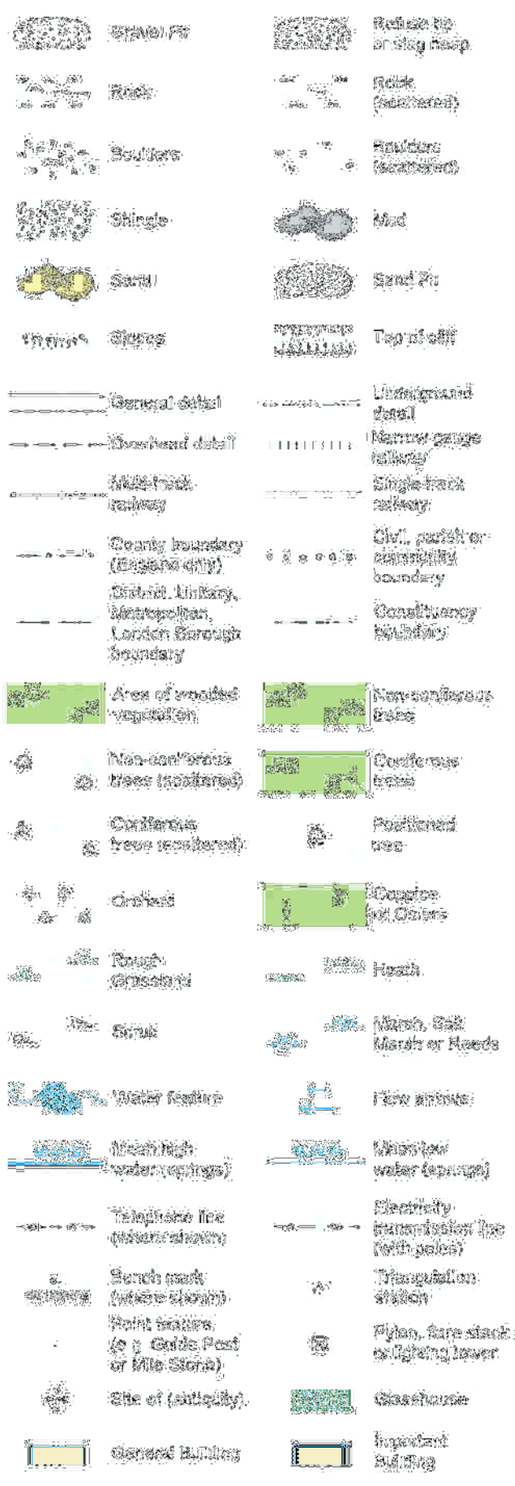
Ordnance Survey County Series 1:10,560



Ordnance Survey Plan 1:10,000



1:10,000 Raster Mapping

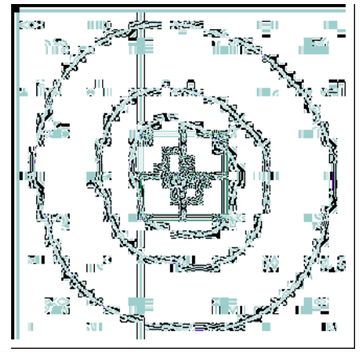


RSK

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Leicestershire	1:10,560	1884	3
Leicestershire	1:10,560	1904	4
Leicestershire	1:10,560	1930 - 1931	5
Leicestershire	1:10,560	1938 - 1952	6
Leicestershire	1:10,560	1952	7
Ordnance Survey Plan	1:10,000	1956 - 1959	8
Ordnance Survey Plan	1:10,000	1966 - 1967	9
Ordnance Survey Plan	1:10,000	1973 - 1978	10
Leicester	1:10,000	1974	11
Ordnance Survey Plan	1:10,000	1982 - 1989	12
10K Raster Mapping	1:10,000	2000	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2017	15

Historical Map - Slice A



Order Details

Order Number: 153824059_1_1
Customer Ref: 302001
National Grid Reference: 463740, 311130
Slice: A
Site Area (Ha): 8.4
Search Buffer (m): 1000

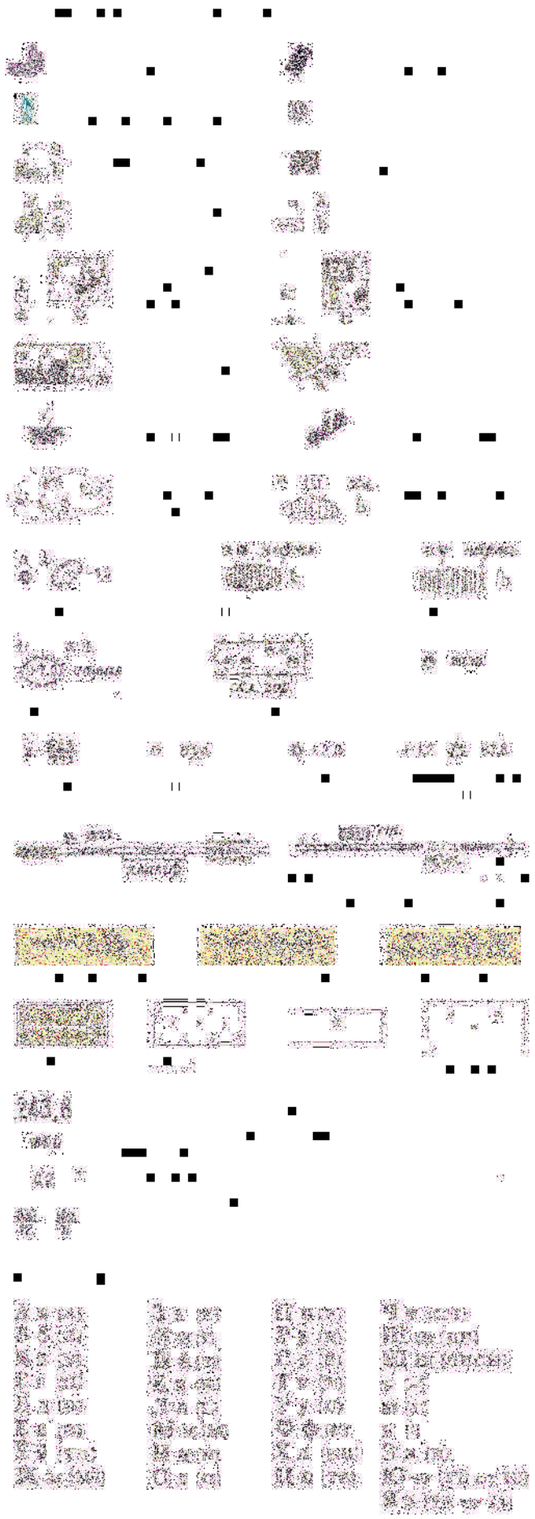
Site Details

Site at, Syston, Leicestershire

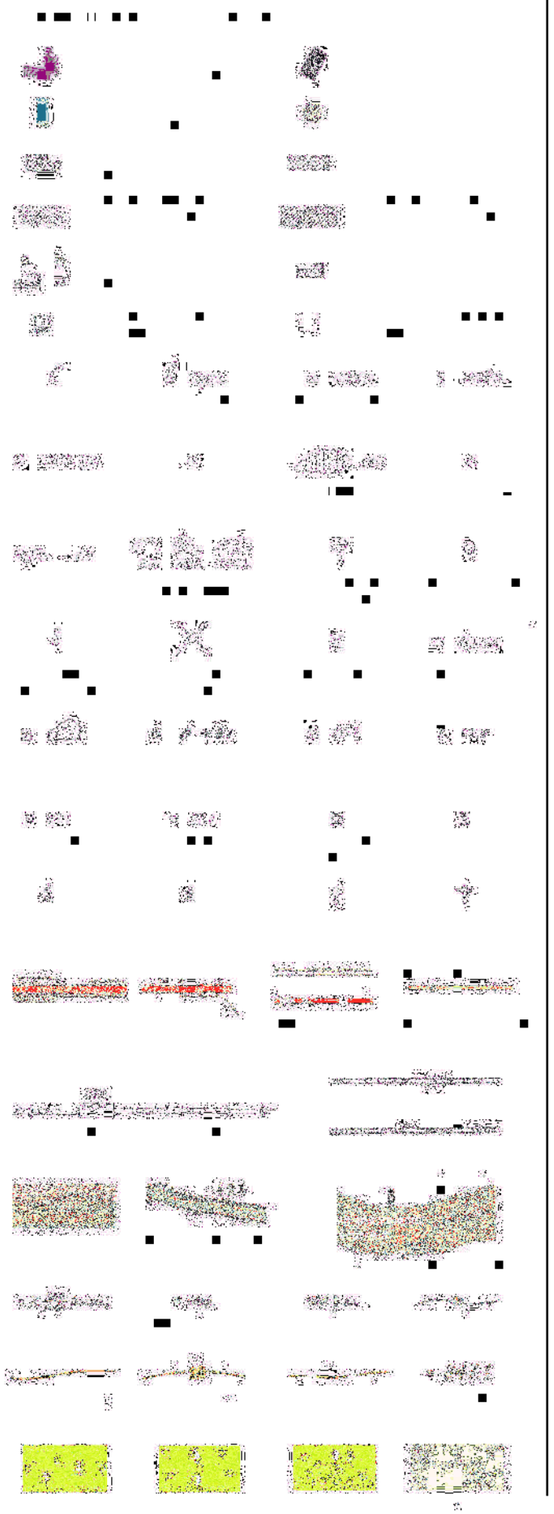
Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping



1:25,000 mapping



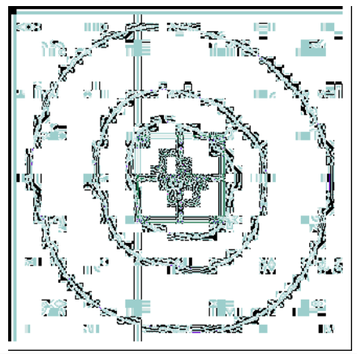
Key to Numbers on Mapping

RSK

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Leicestershire	1:10,560	1884	3
Leicestershire	1:10,560	1904	4
Leicestershire	1:10,560	1930 - 1931	5
Leicestershire	1:10,560	1938 - 1952	6
Leicestershire	1:10,560	1952	7
Ordnance Survey Plan	1:10,000	1956 - 1959	8
Ordnance Survey Plan	1:10,000	1966 - 1967	9
Ordnance Survey Plan	1:10,000	1973 - 1978	10
Leicester	1:10,000	1974	11
Ordnance Survey Plan	1:10,000	1982 - 1989	12
10K Raster Mapping	1:10,000	2000	13
10K Raster Mapping	1:10,000	2006	14
VectorMap Local	1:10,000	2017	15

Russian Map - Slice A



Order Details

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Customer Ref: 302001
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Slice: A
Site Area (Ha): 8.4
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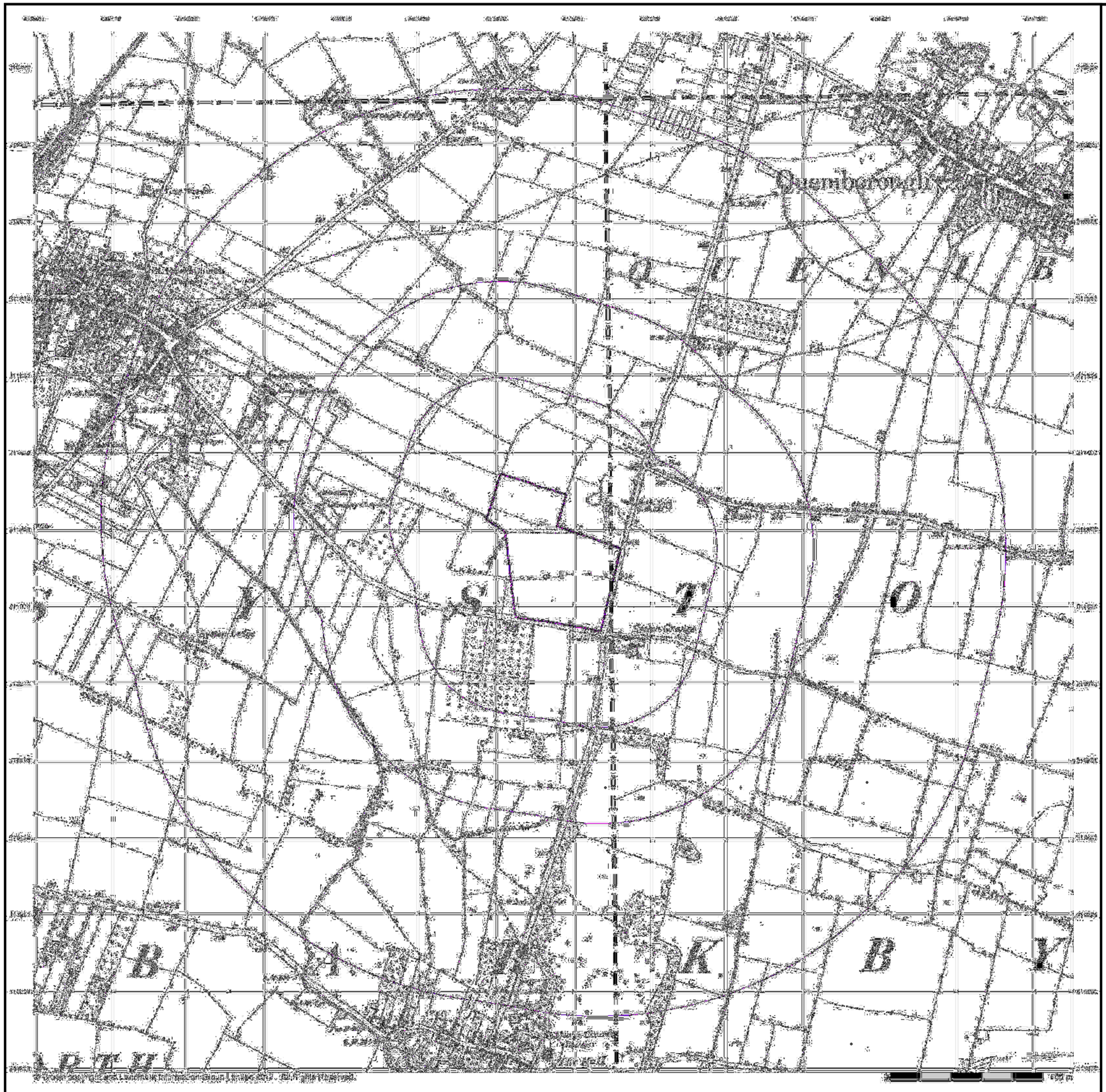


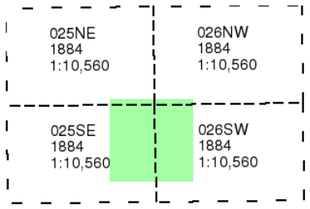
Leicestershire

Published 1884

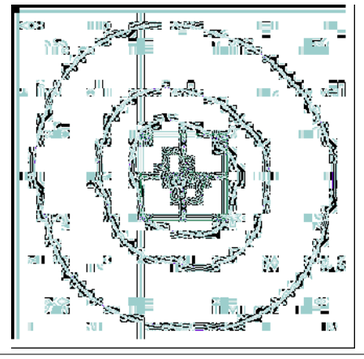
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
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Site Details

Site at, Syston, Leicestershire

Landmark
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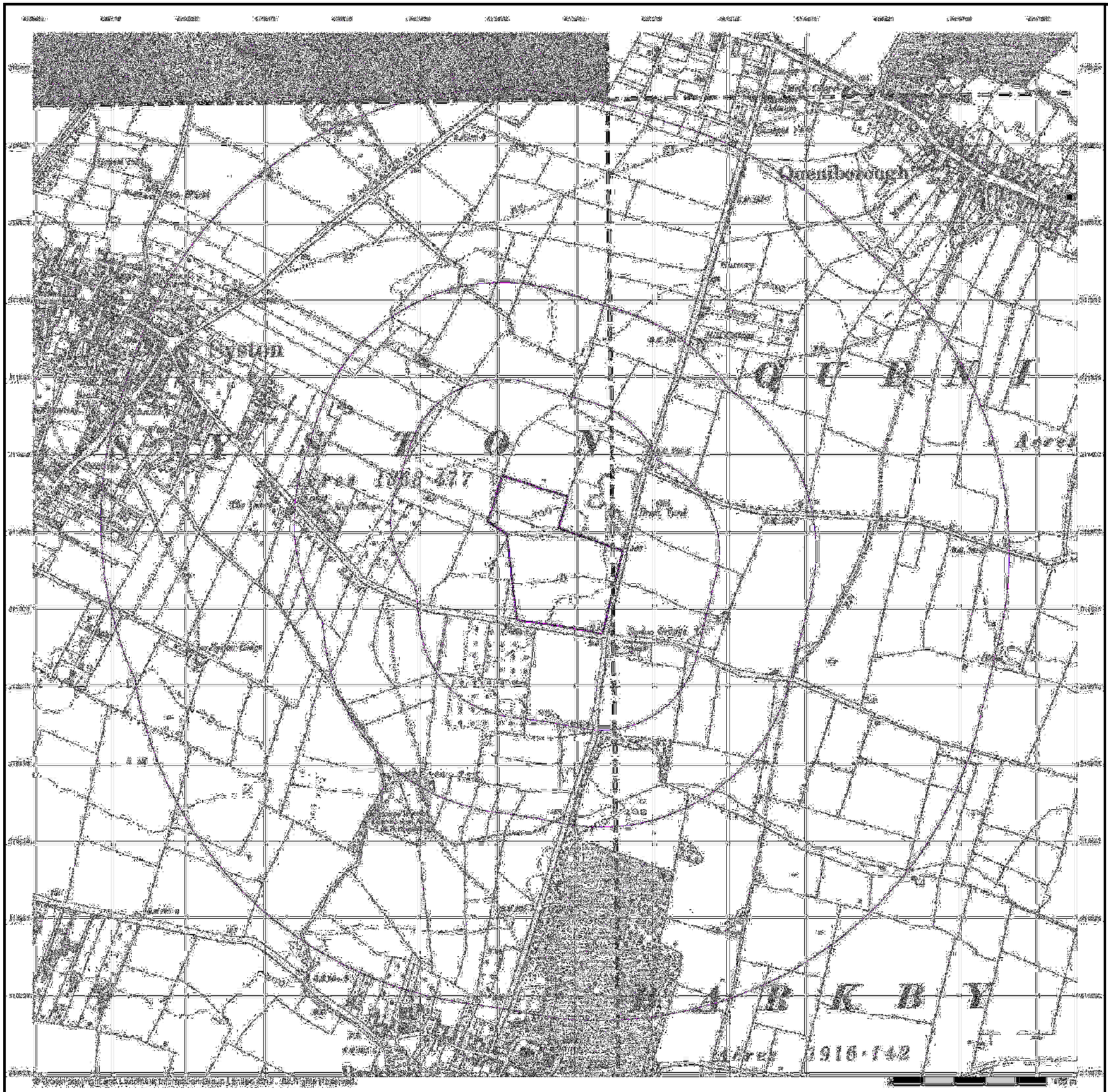

Leicestershire

Published 1904

Source map scale - 1:10,560

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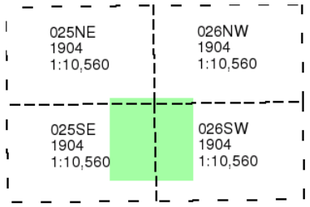
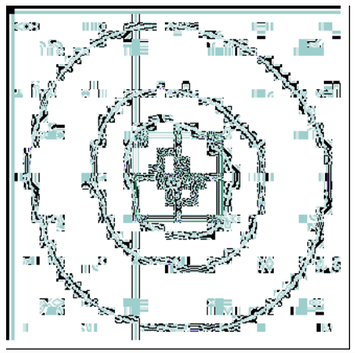
Map Name(s) and Date(s)



Historical Map - Slice A



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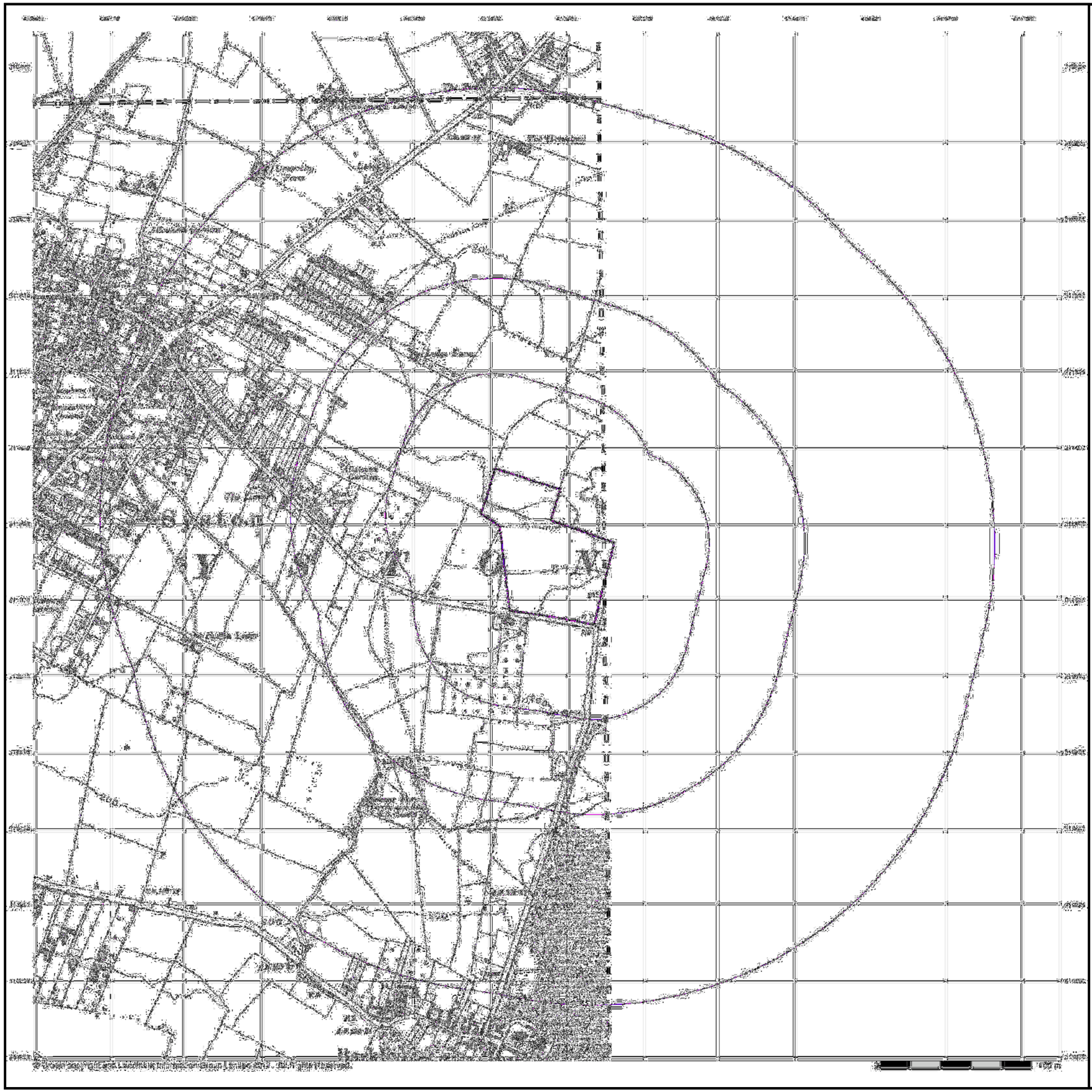

Leicestershire

Published 1930 - 1931

Source map scale - 1:10,560

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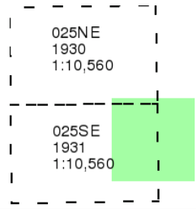
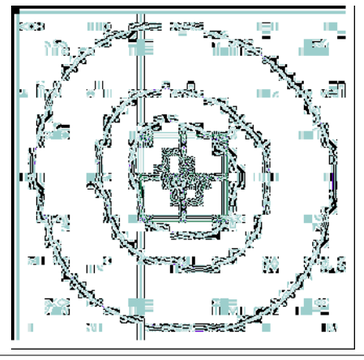
Map Name(s) and Date(s)



Historical Map - Slice A



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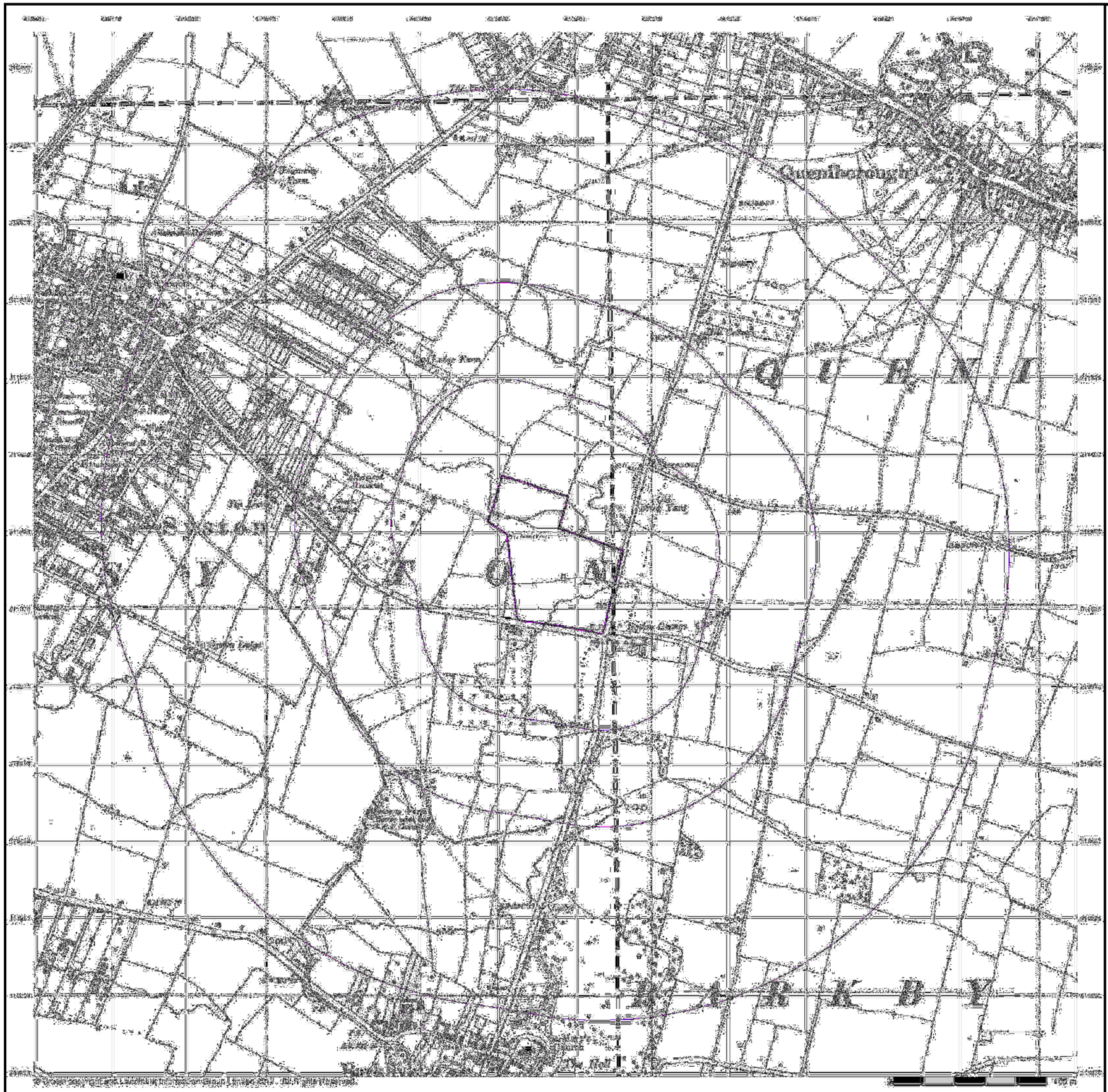
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire



Leicestershire

Published 1938 - 1952

Source map scale - 1:10,560

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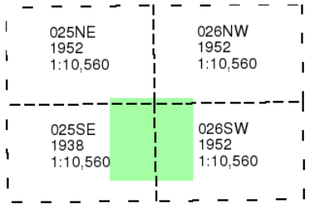
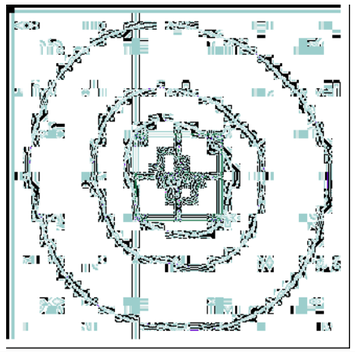


Historical Map - Slice A



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Slice:	A
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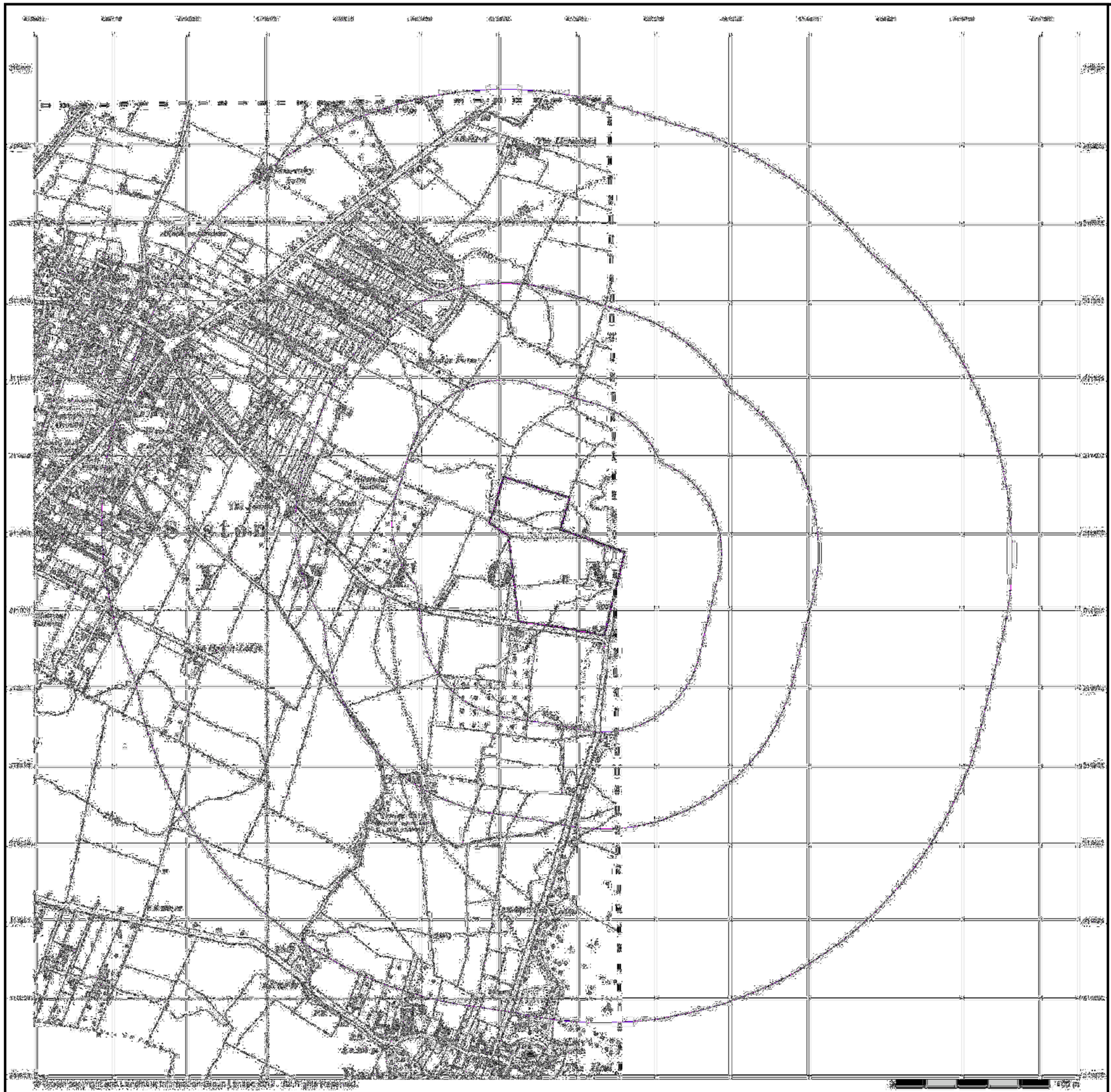
Site Details

Site at, Syston, Leicestershire



Leicestershire

Published 1952

Source map scale - 1:10,560

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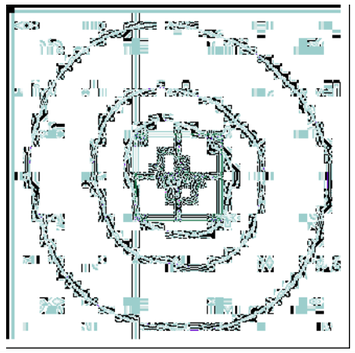
Map Name(s) and Date(s)

Historical Map - Slice A



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Site Details

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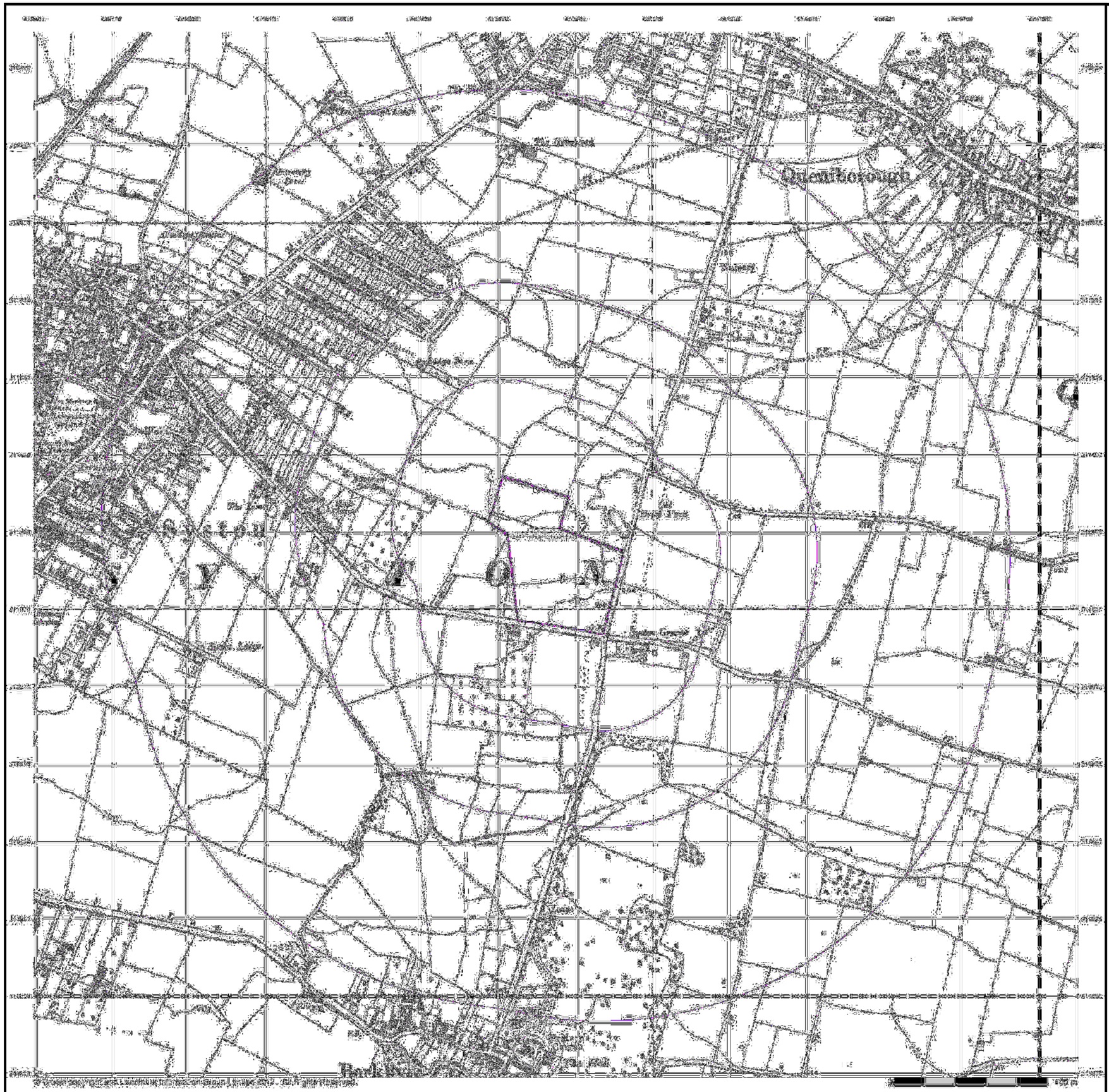


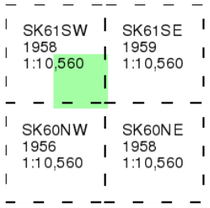
Ordnance Survey Plan

Published 1956 - 1959

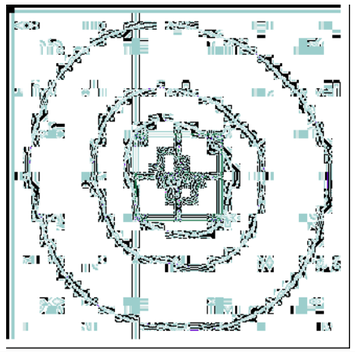
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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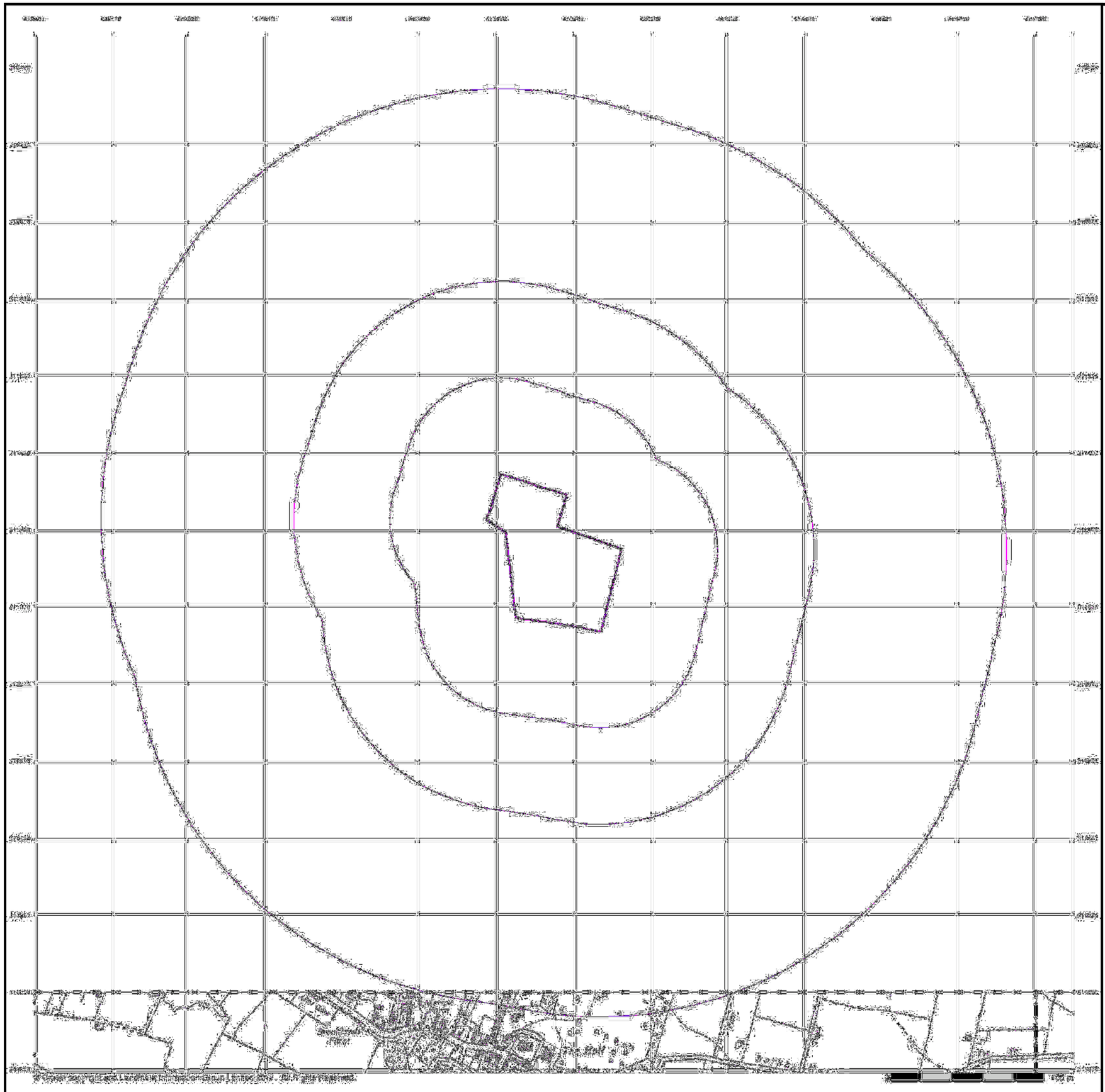
Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



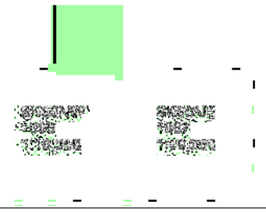
Ordnance Survey Plan

Published 1966 - 1967

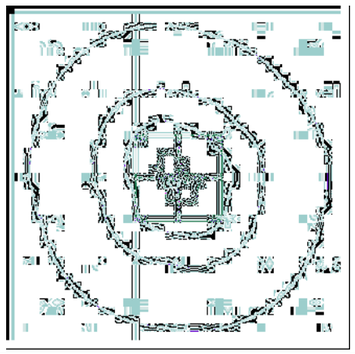
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

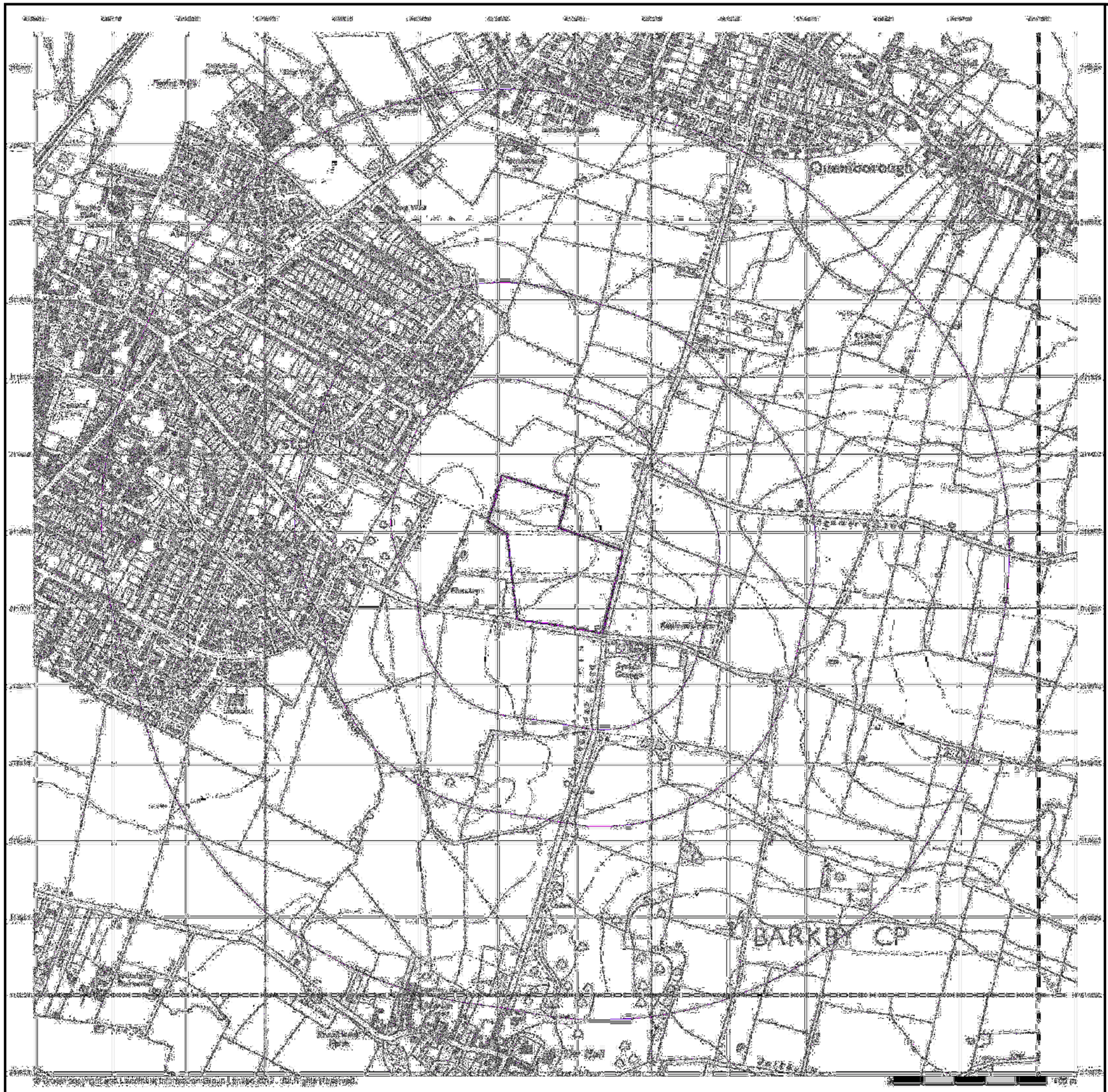
Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Ordnance Survey Plan

Published 1973 - 1978

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

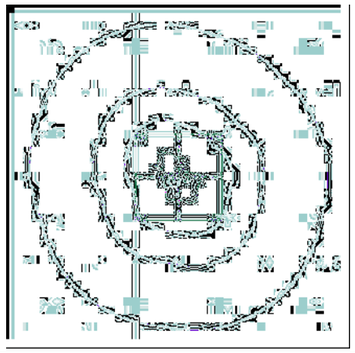
Map Name(s) and Date(s)

SK61SW
1976
1:10,000

SK61SE
1978
1:10,000

SK60NW
1973
1:10,000

Historical Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

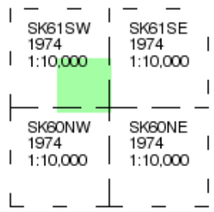
Leicester

Published 1974

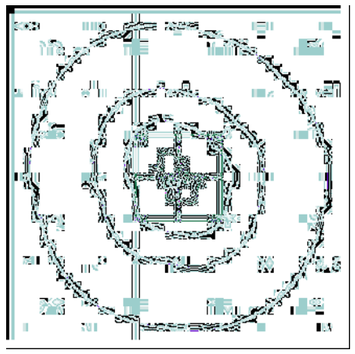
Source map scale - 1:10,000

These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.
They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
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Site Details

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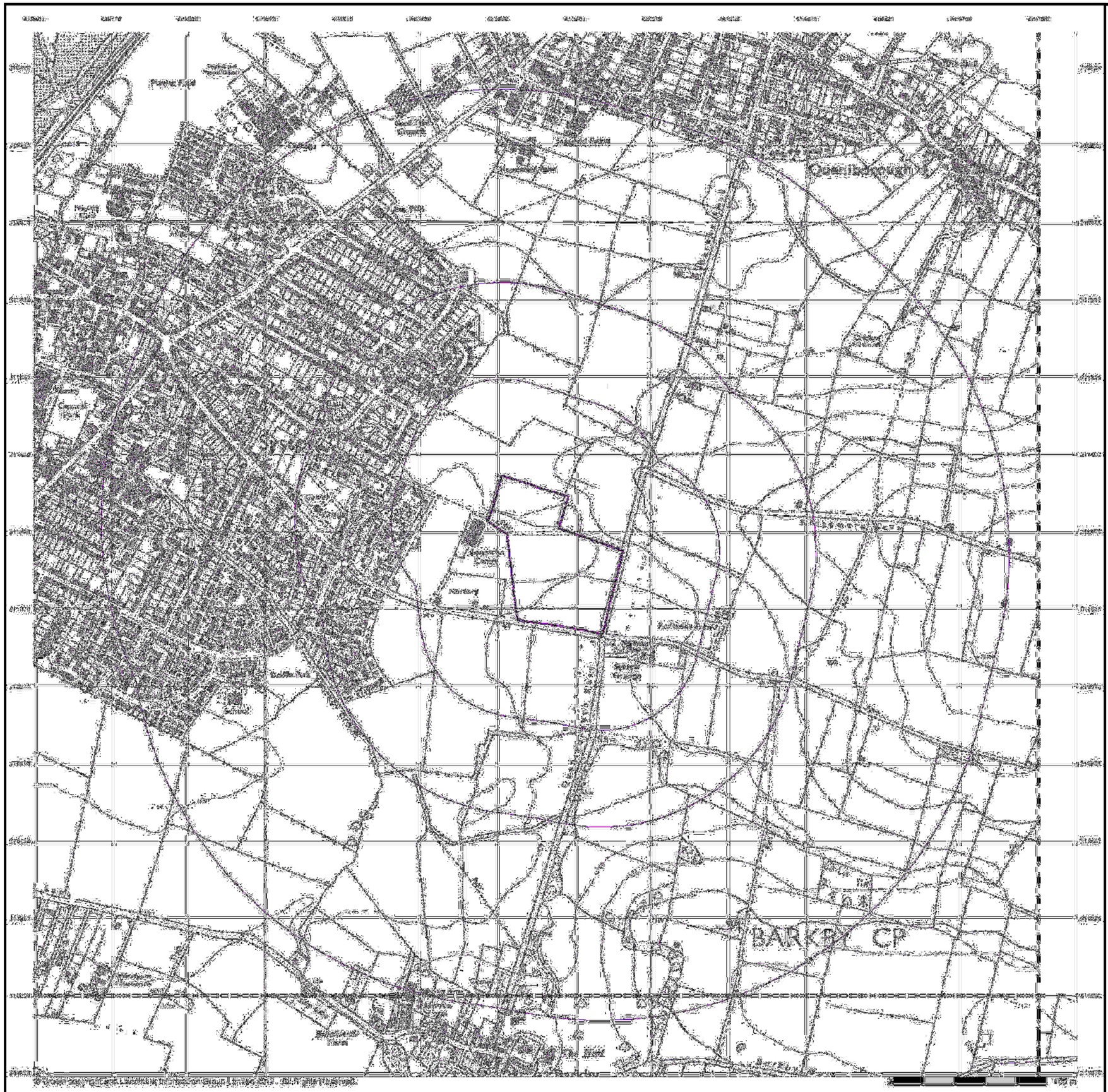


Ordnance Survey Plan

Published 1982 - 1989

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

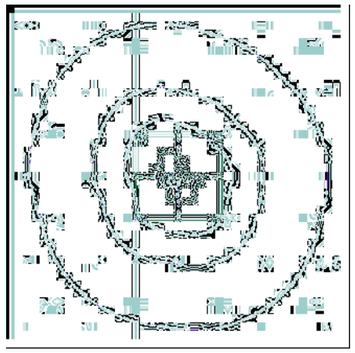
Map Name(s) and Date(s)

SK61SW
1989
1:10,000

SK60NW
1982
1:10,000

SK60NE
1987
1:10,000

Historical Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

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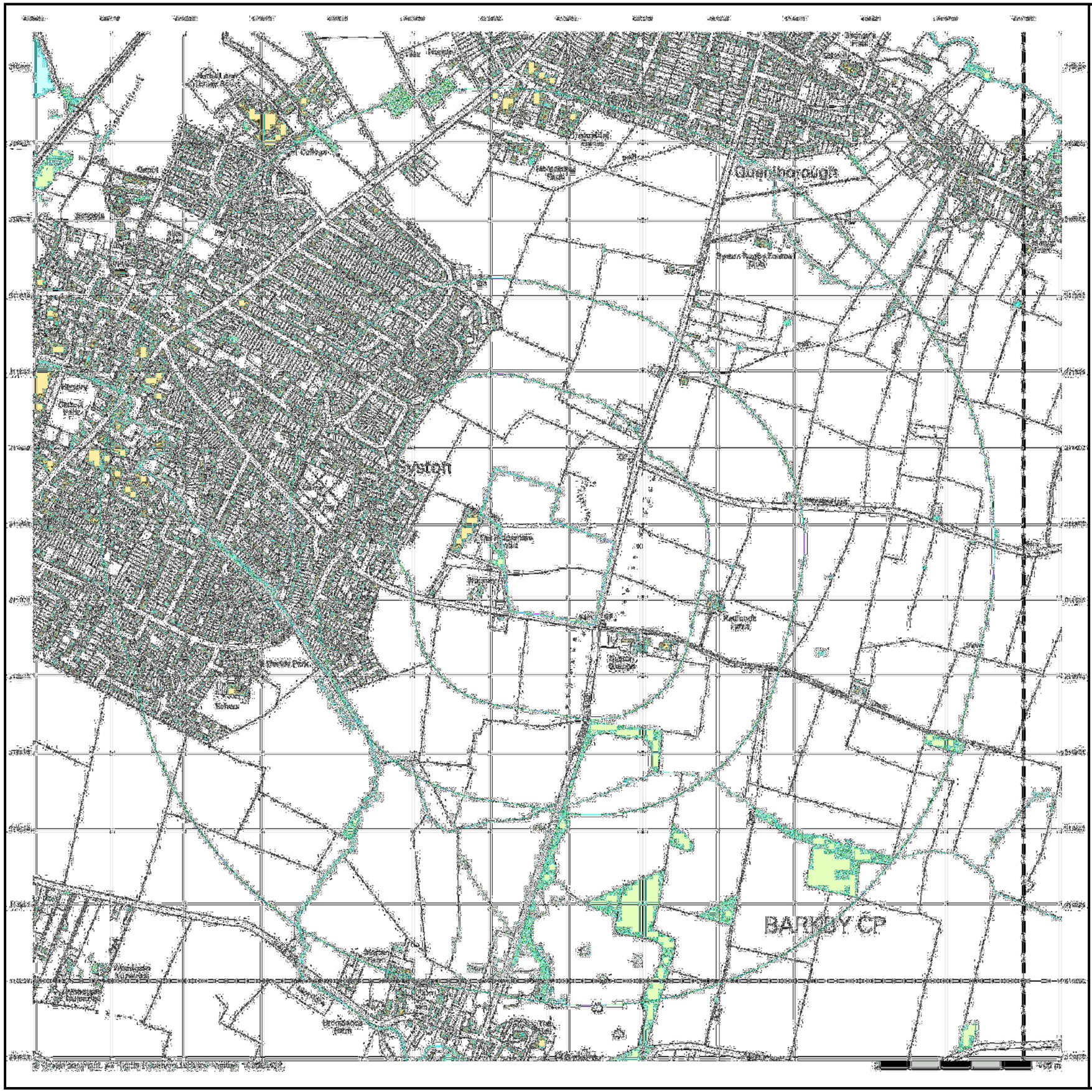


10k Raster Mapping

Published 2000

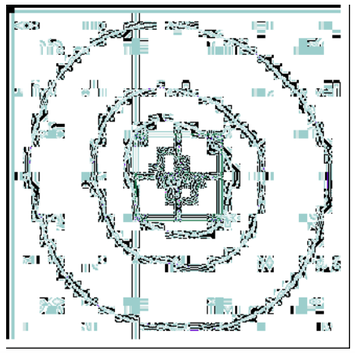
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SK61SW 2000 1:10,000	SK61SE 2000 1:10,000
SK60NW 2000 1:10,000	SK60NE 2000 1:10,000

Historical Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
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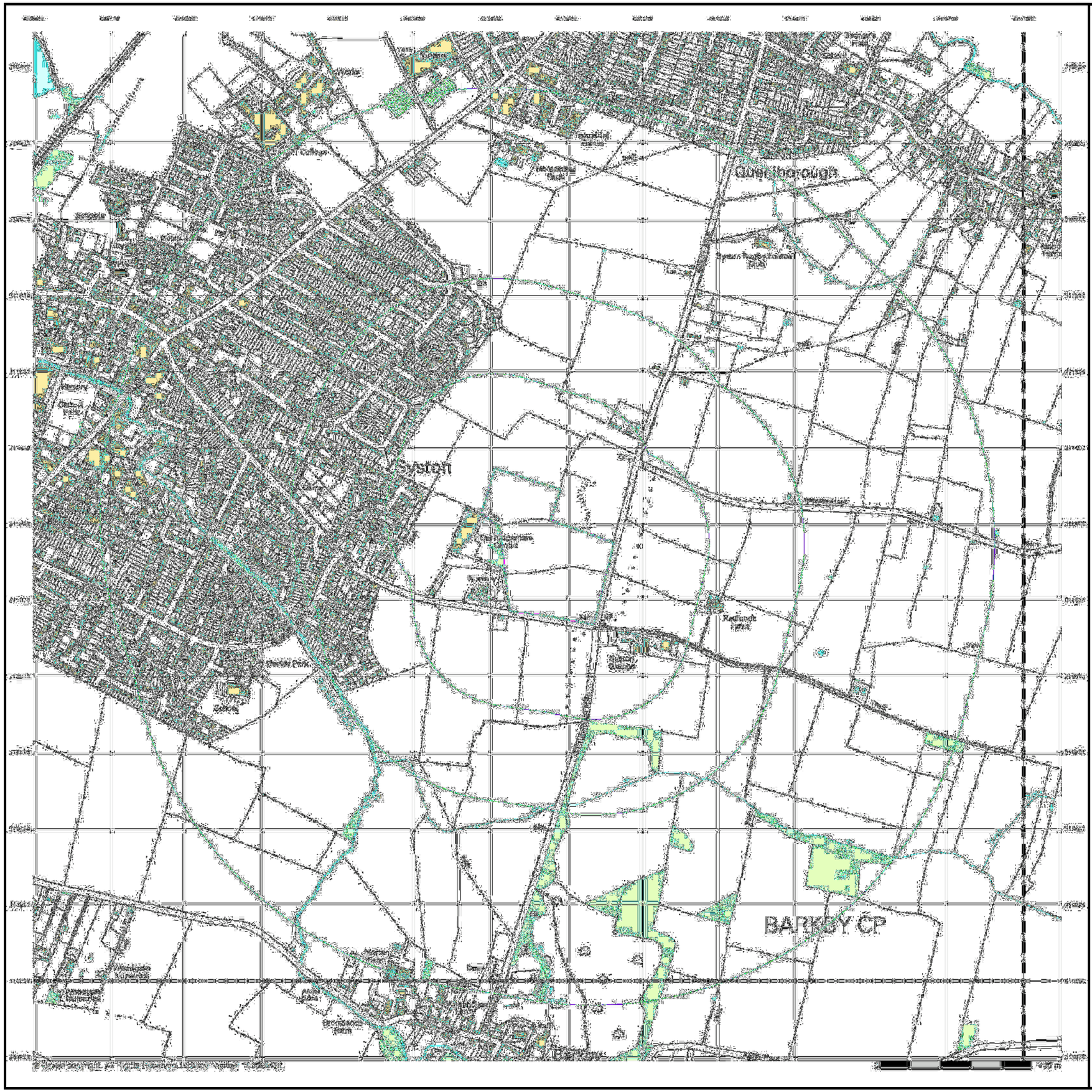


10k Raster Mapping

Published 2006

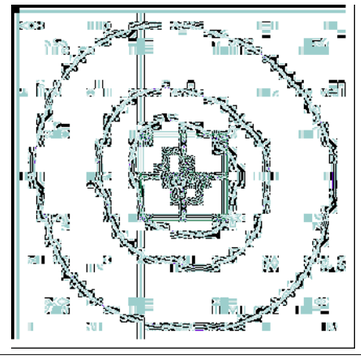
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SK61SW 2006 1:10,000	SK61SE 2006 1:10,000
SK60NW 2006 1:10,000	SK60NE 2006 1:10,000

Historical Map - Slice A



Order Details

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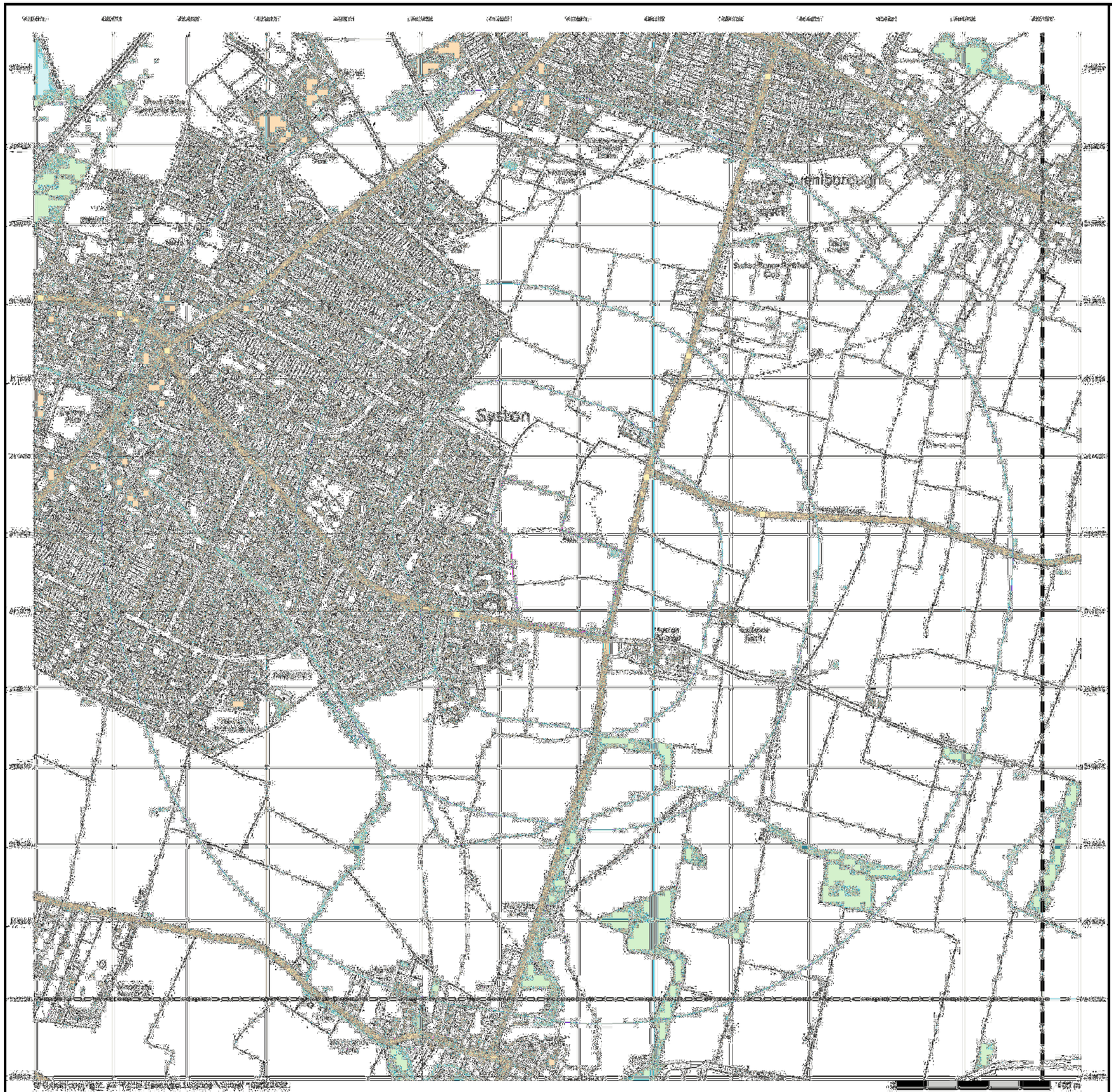


VectorMap Local

Published 2017

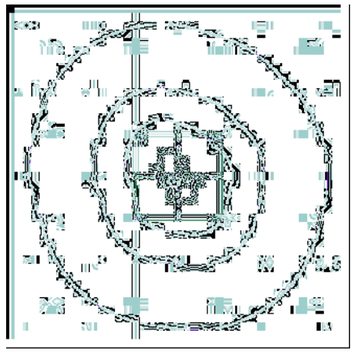
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SK61SW 2017 Variable	SK61SE 2017 Variable
SK60NW 2017 Variable	SK60NE 2017 Variable

Historical Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
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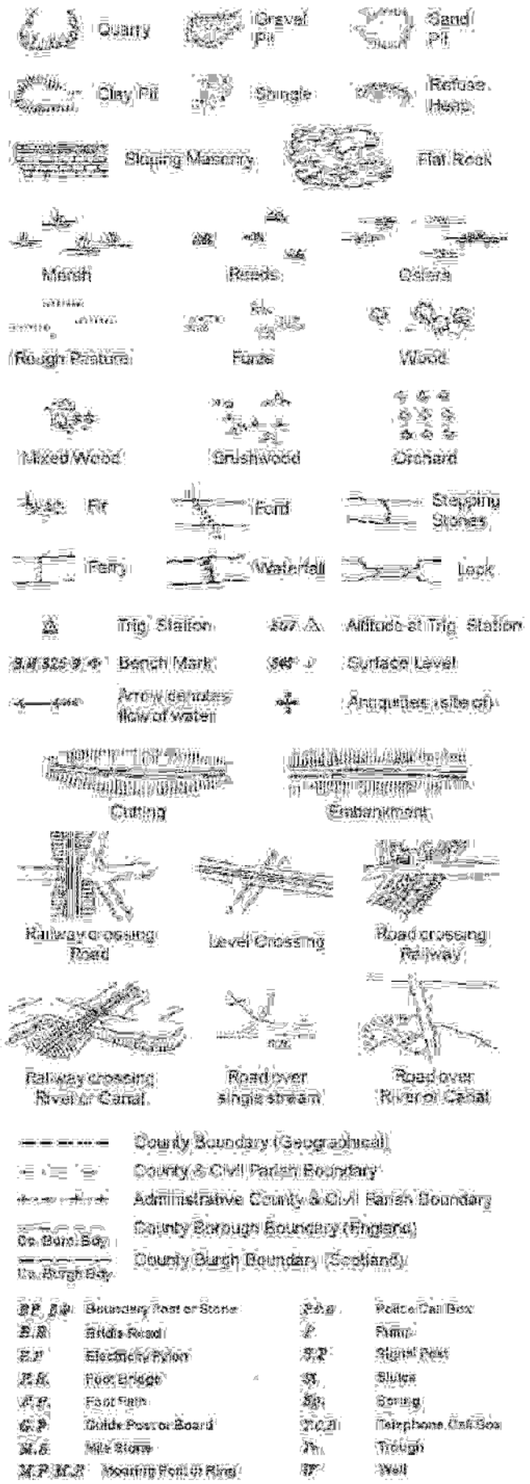
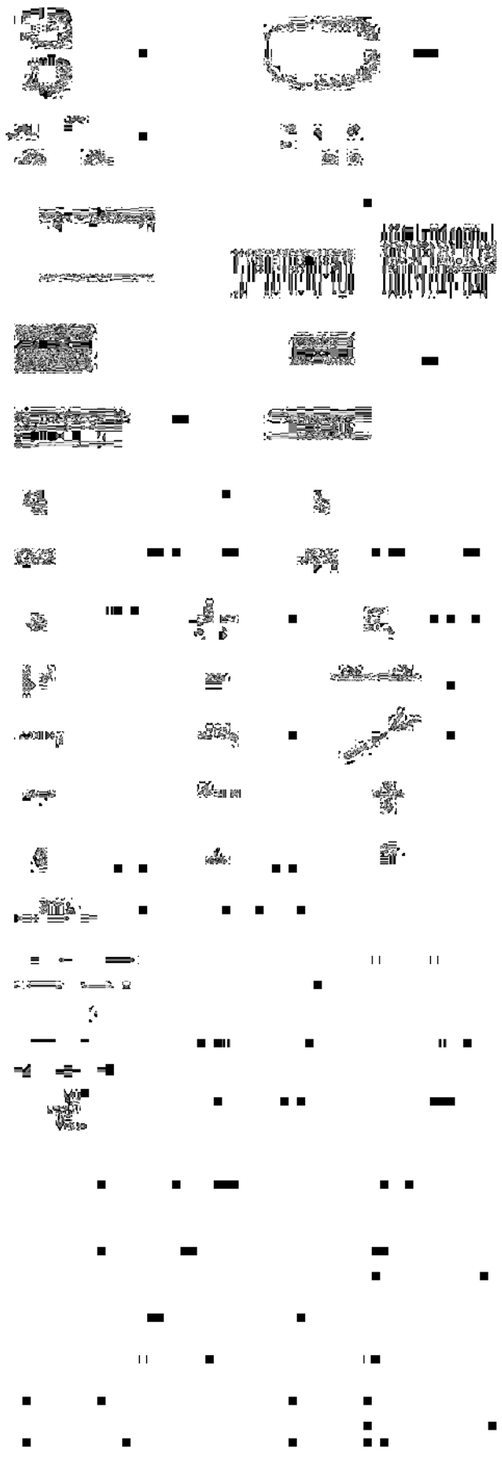
Web: www.envirocheck.co.uk

Historical Mapping Legends

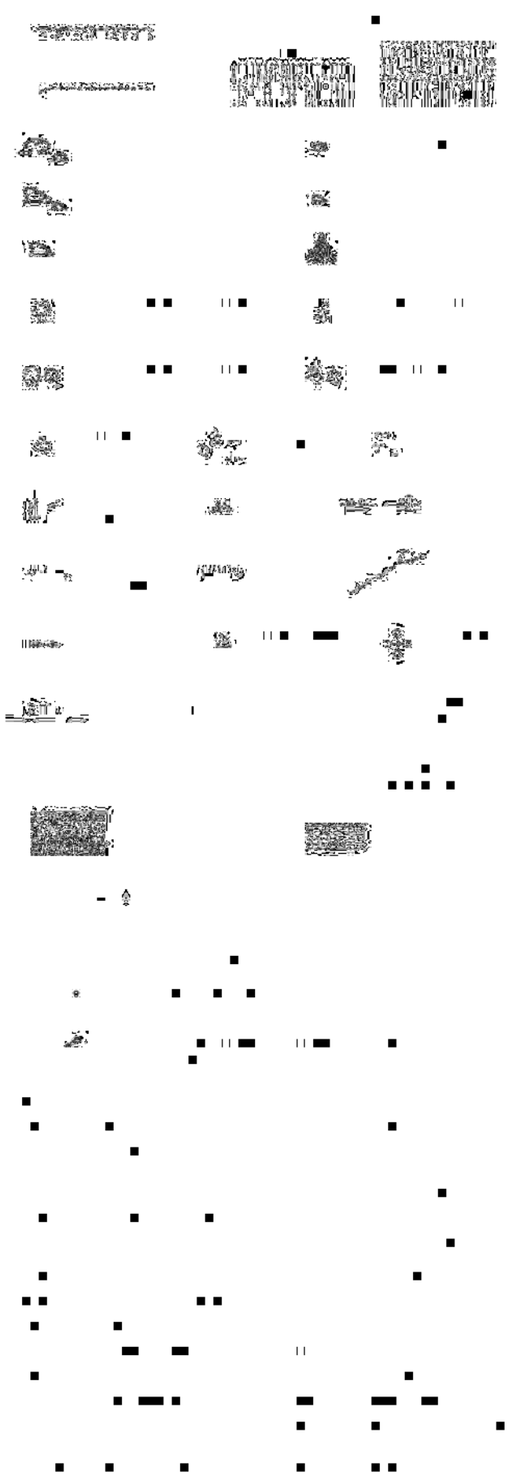
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



Large-Scale National Grid Data 1:2,500 and 1:1,250

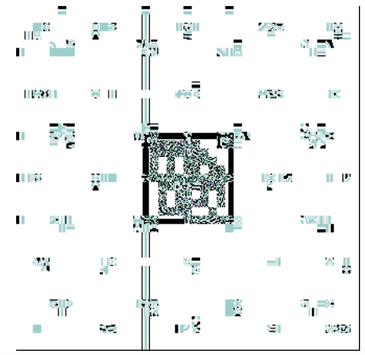


RSK

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Leicestershire	1:2,500	1884 - 1885	2
Leicestershire	1:2,500	1903	3
Leicestershire	1:2,500	1930	4
Ordnance Survey Plan	1:2,500	1956 - 1957	5
Additional SIMs	1:2,500	1956 - 1990	6
Ordnance Survey Plan	1:2,500	1966	7
Ordnance Survey Plan	1:1,250	1973 - 1985	8
Supply of Unpublished Survey Information	1:1,250	1974	9
Supply of Unpublished Survey Information	1:2,500	1974	10
Additional SIMs	1:1,250	1977	11
Additional SIMs	1:1,250	1980	12
Additional SIMs	1:1,250	1984	13
Ordnance Survey Plan	1:1,250	1987	14
Additional SIMs	1:2,500	1990	15
Large-Scale National Grid Data	1:2,500	1993	16
Large-Scale National Grid Data	1:1,250	1993	17
Large-Scale National Grid Data	1:1,250	1994	18
Large-Scale National Grid Data	1:2,500	1994	19
Historical Aerial Photography	1:2,500	1999	20

Historical Map - Segment A13



Order Details

Order Number: 153824059_1_1
Customer Ref: 302001
National Grid Reference: 463740, 311130
Slice: A
Site Area (Ha): 8.4
Search Buffer (m): 100

Site Details

Site at, Syston, Leicestershire

Landmark Information Group

Tel: 0844 844 9952
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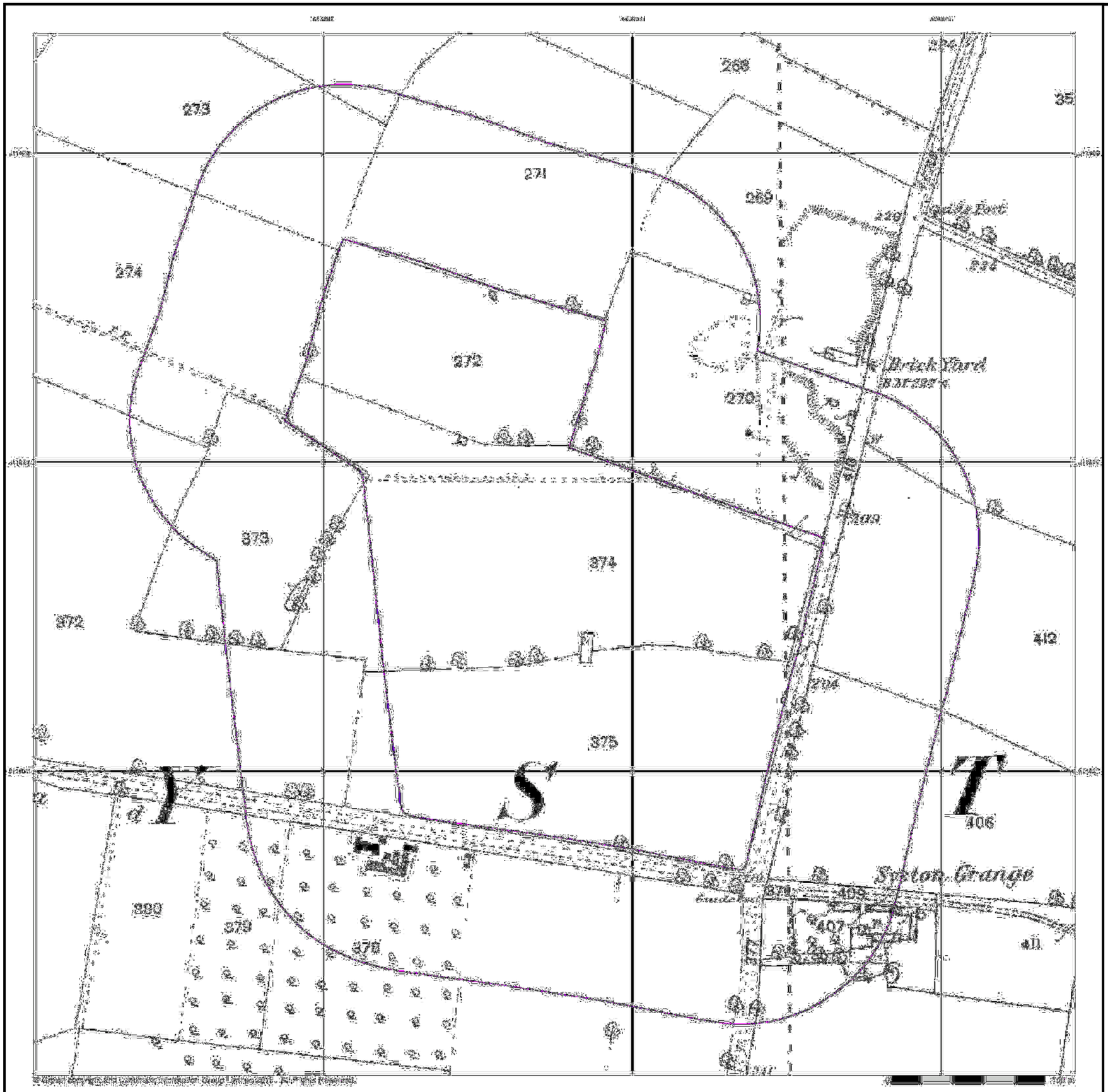
Web: www.envirocheck.co.uk



RSK

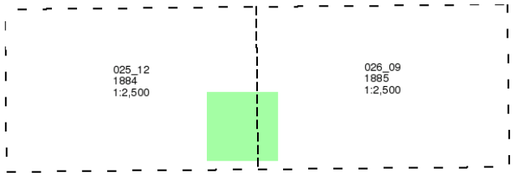
Leicestershire

Published 1884 - 1885

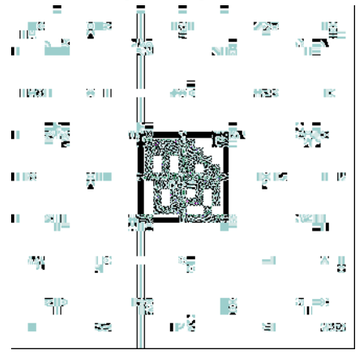
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark Information Group

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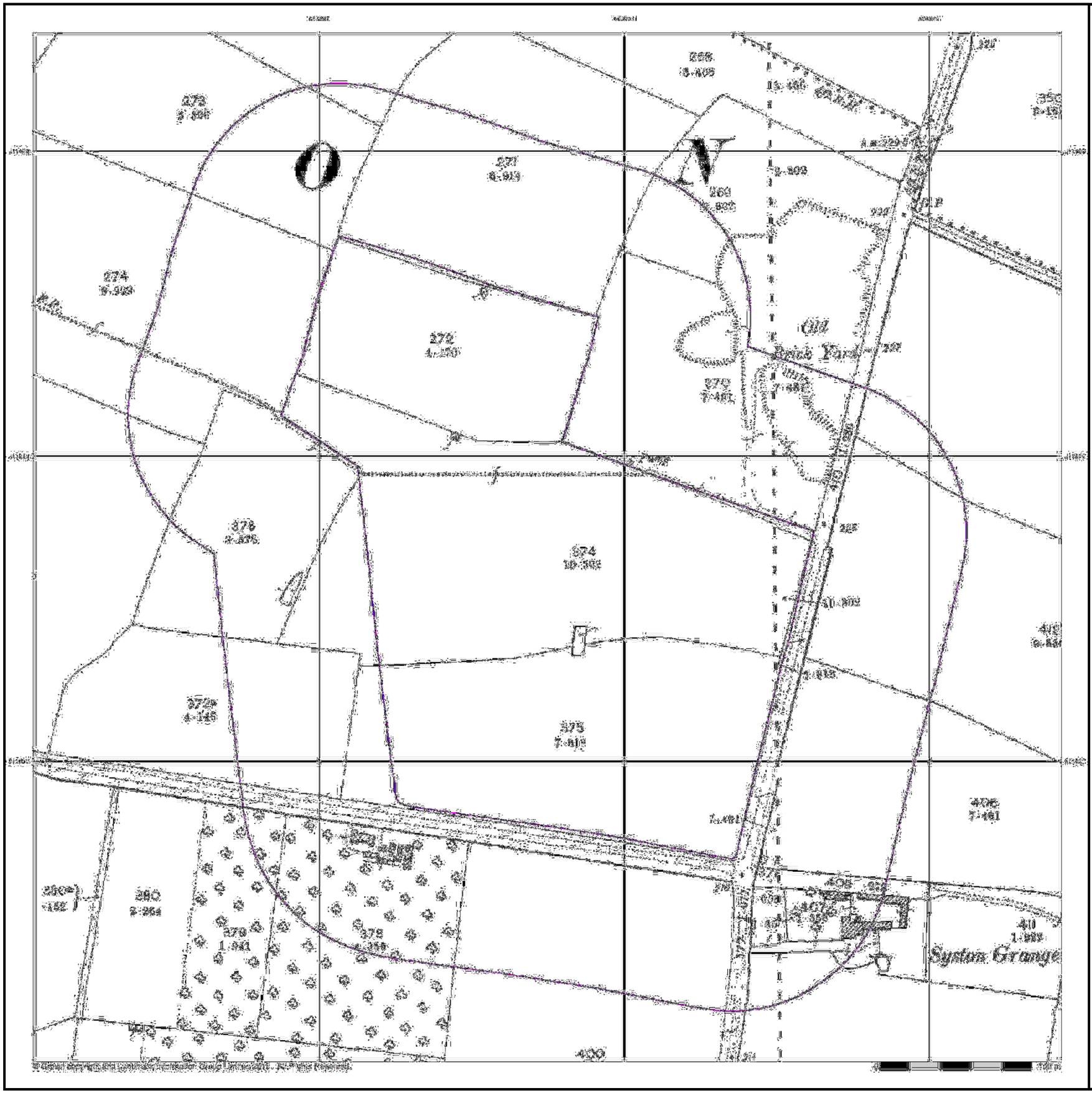
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



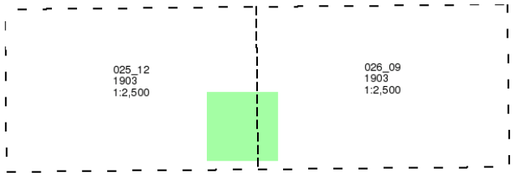
Leicestershire

Published 1903

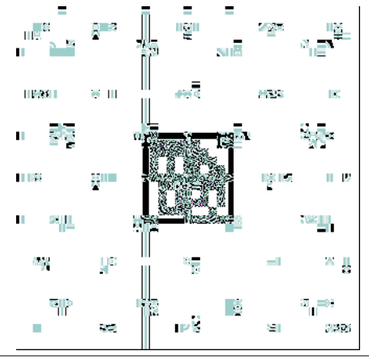
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
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Slice:	A
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Site Details

Site at, Syston, Leicestershire

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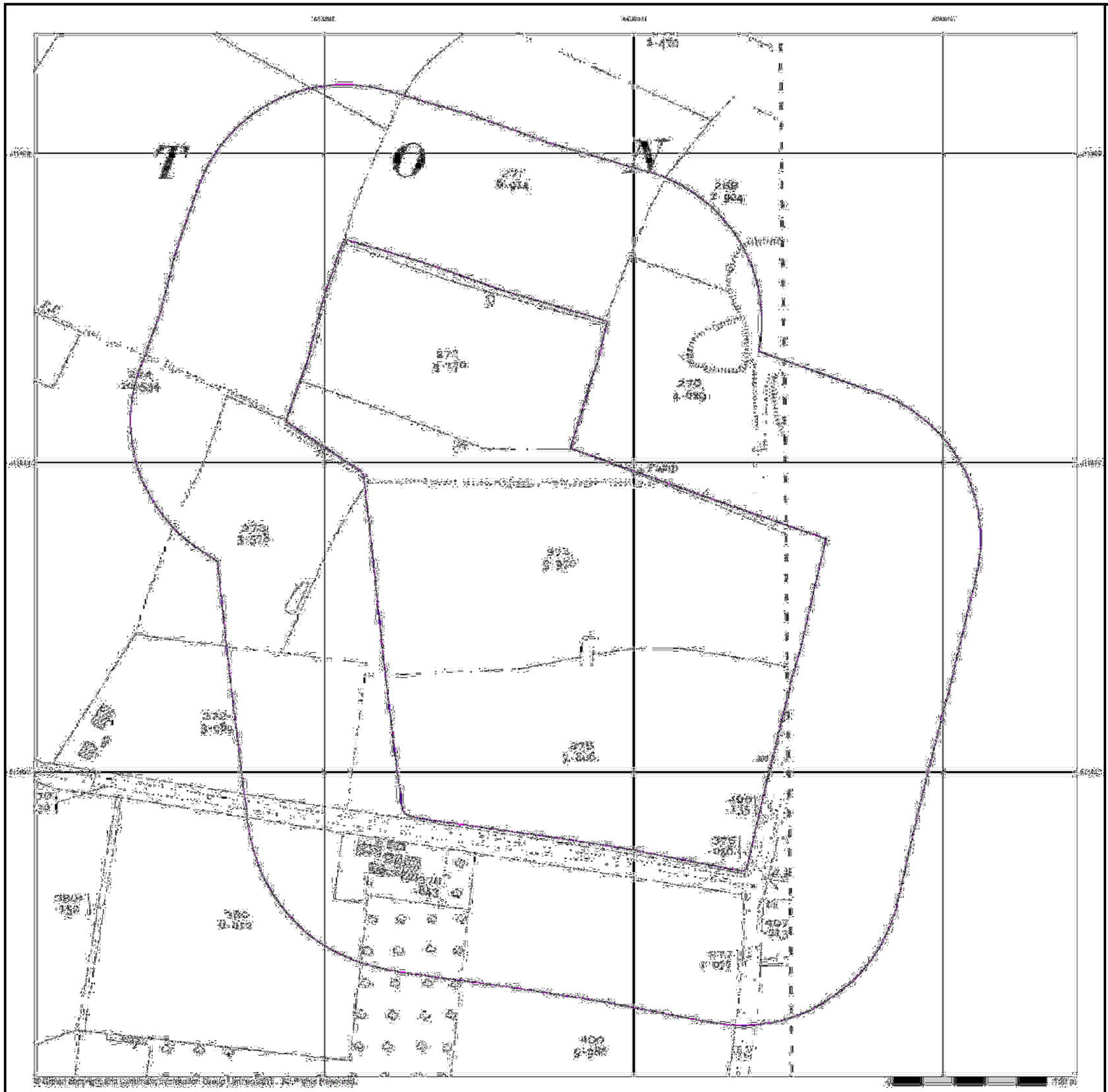


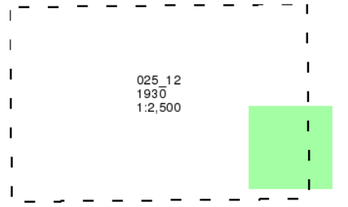
Leicestershire

Published 1930

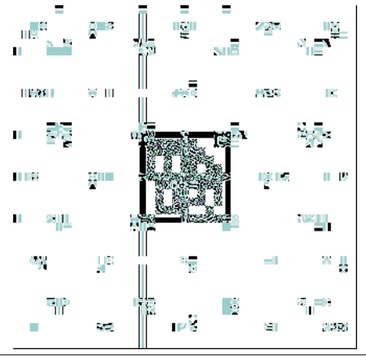
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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Slice:	A
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Landmark
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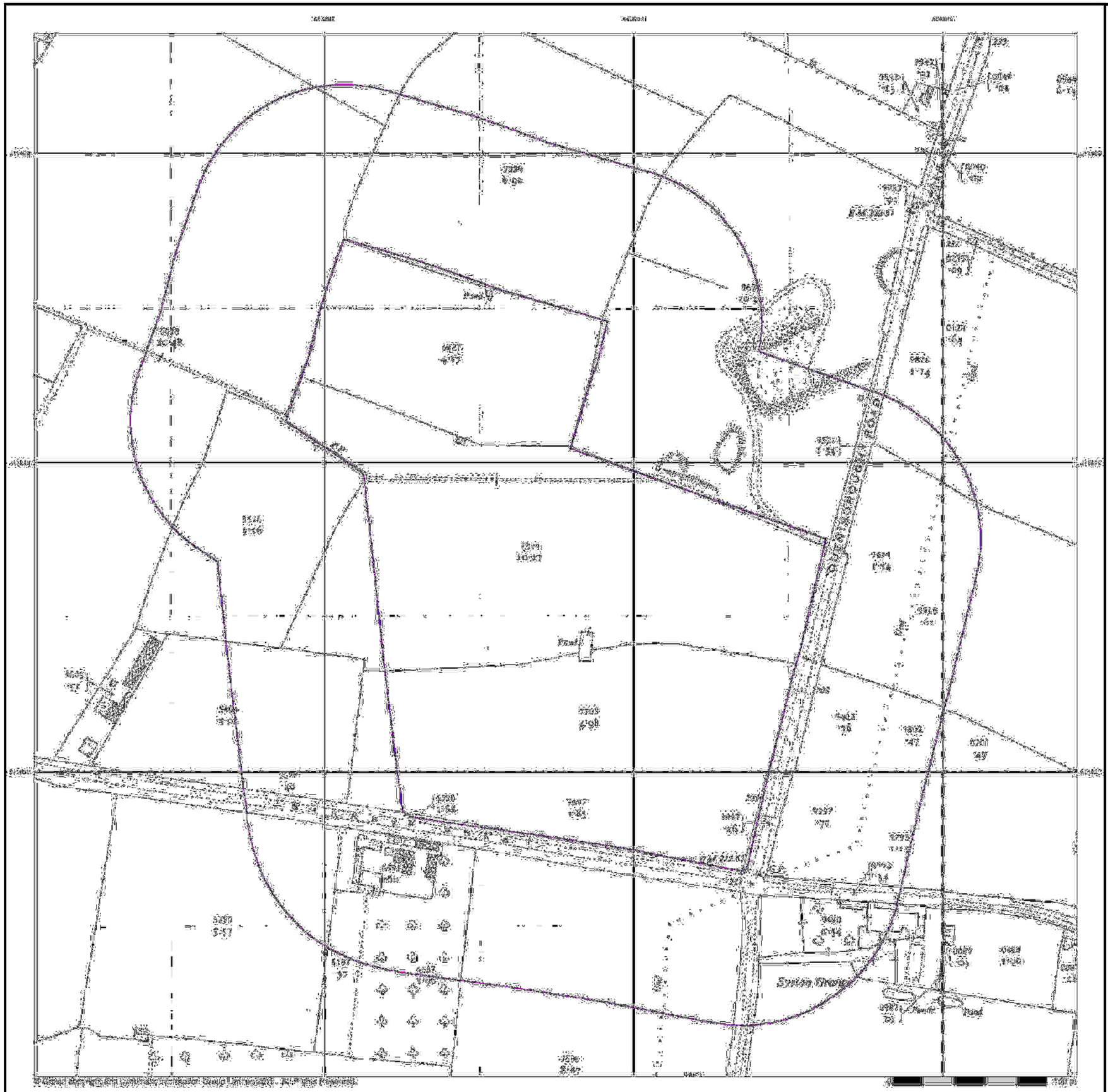


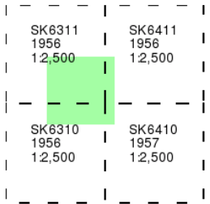
Ordnance Survey Plan

Published 1956 - 1957

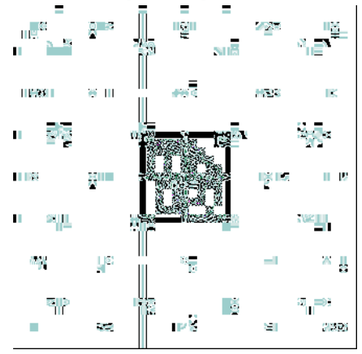
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
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Slice:	A
Site Area (Ha):	8.4
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Site Details

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Fax: 0844 844 9951
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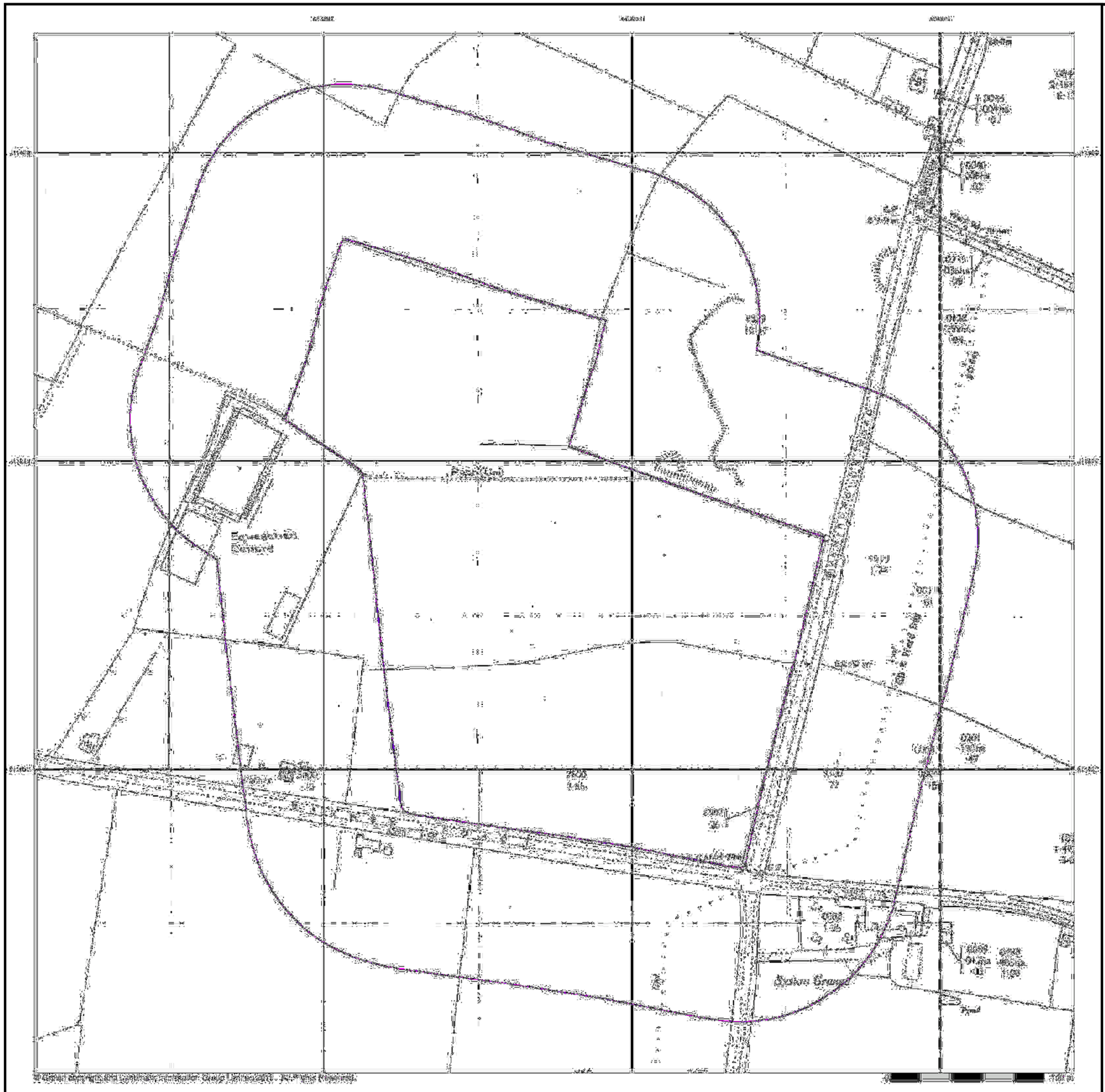


RSK

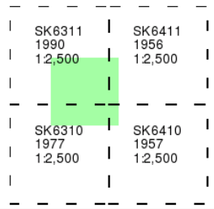
Additional SIMs

Published 1956 - 1990

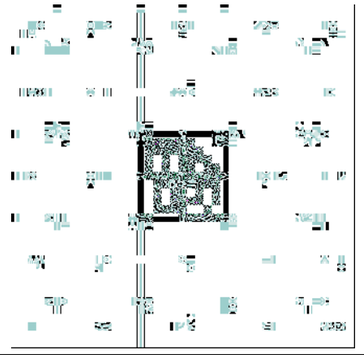
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

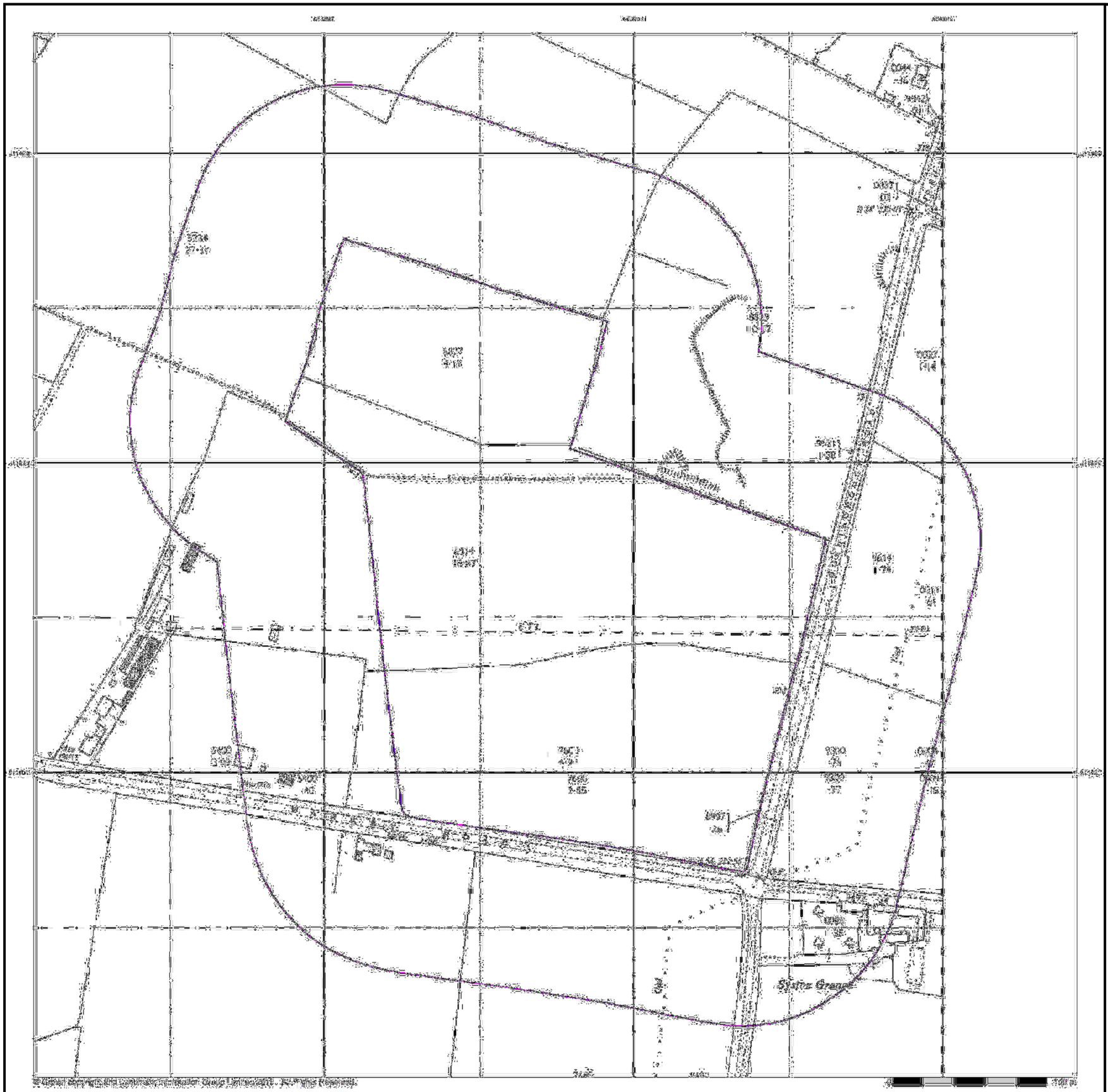
Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark Information Group

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



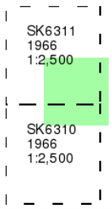
Ordnance Survey Plan

Published 1966

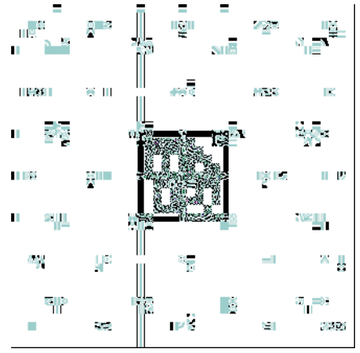
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

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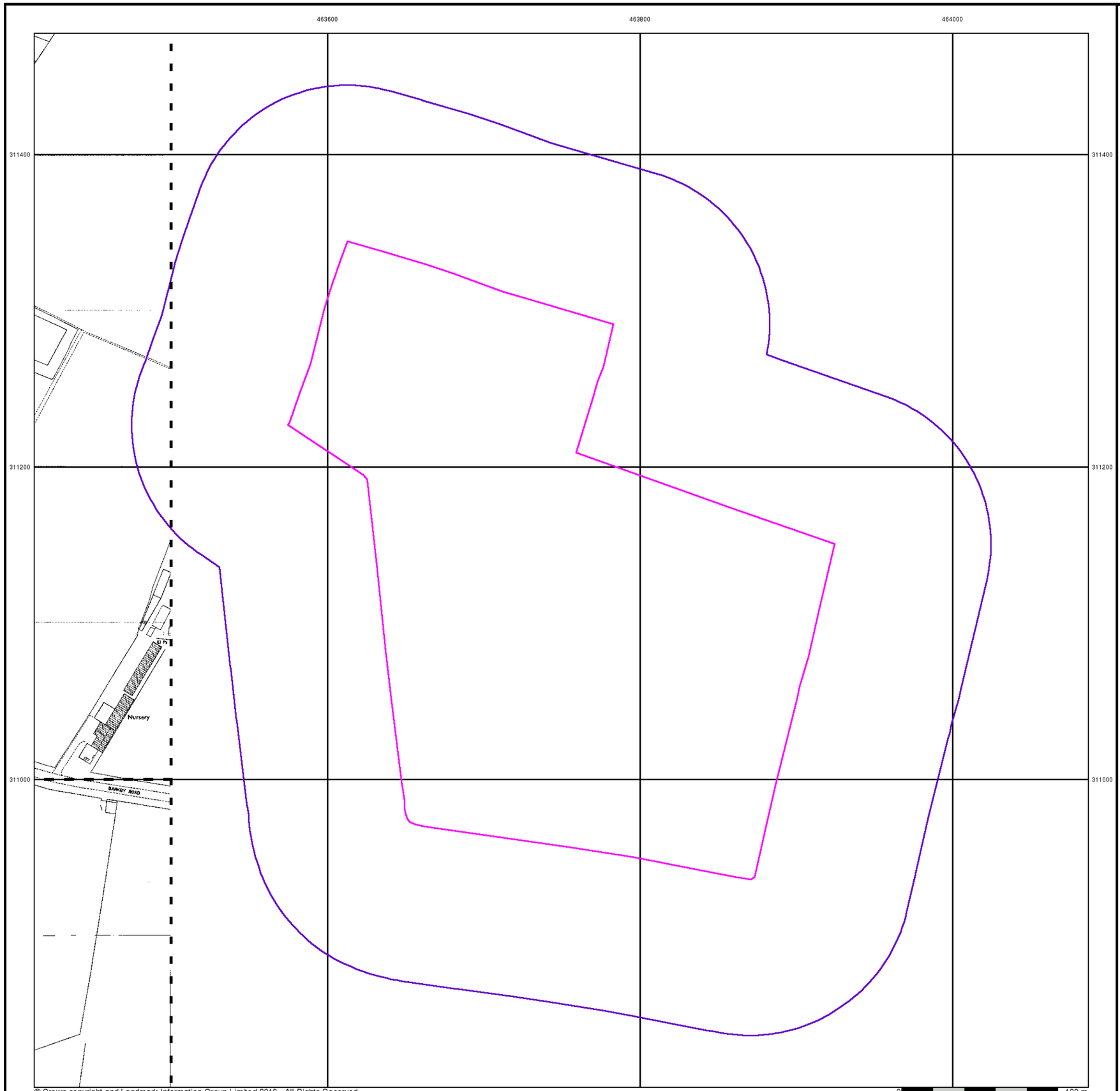


RSK

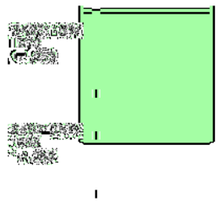
Ordnance Survey Plan

Published 1973 - 1985

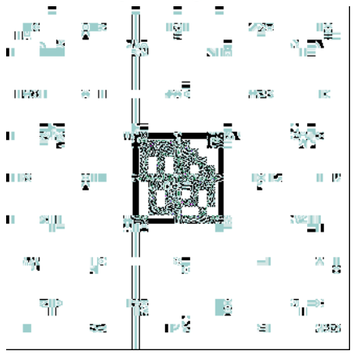
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark
Tel: 0844 844 9952
Fax: 0844 844 9951
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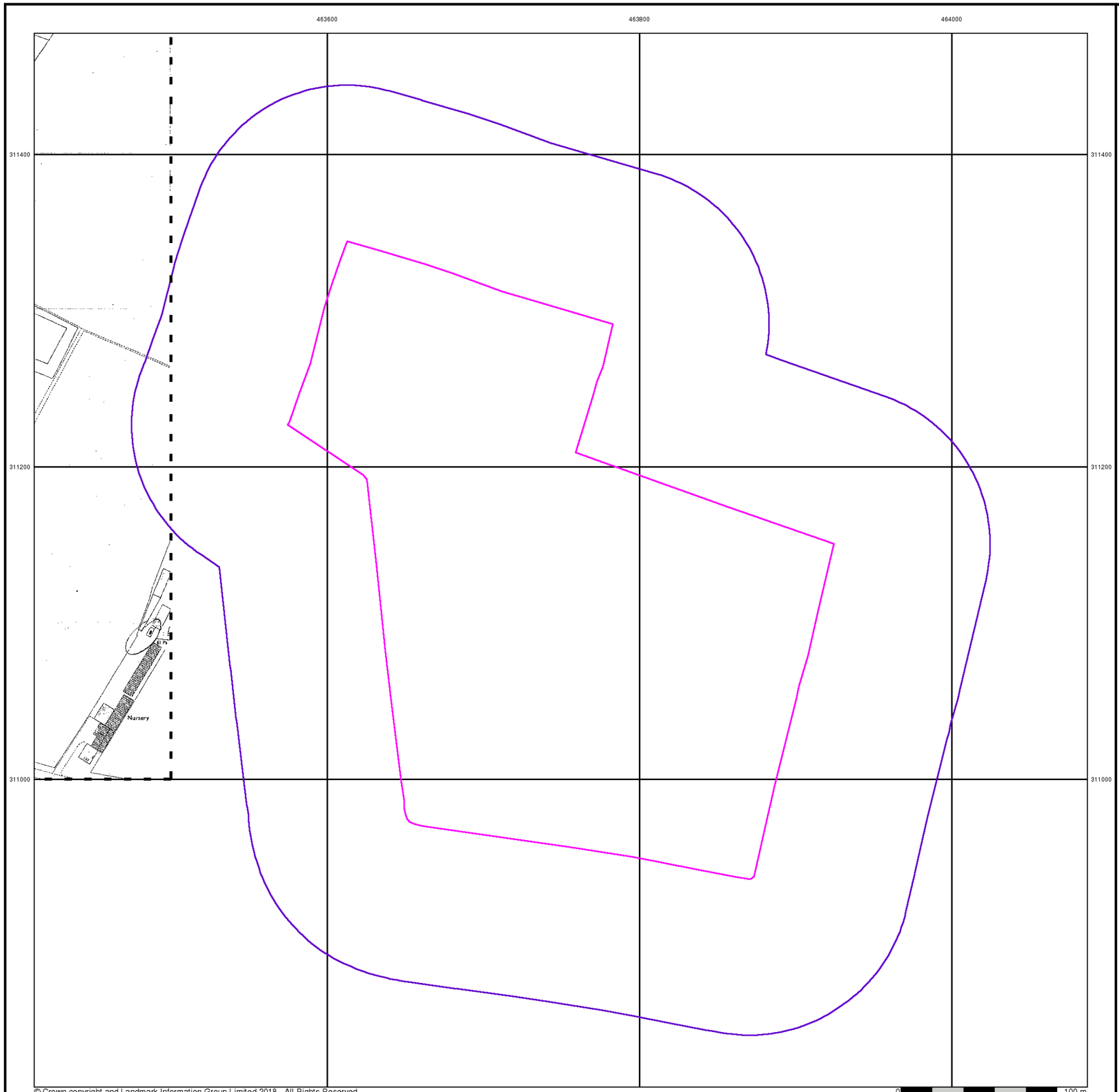


RSK

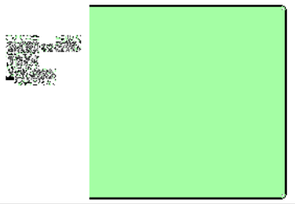
Supply of Unpublished Survey Information

Published 1974

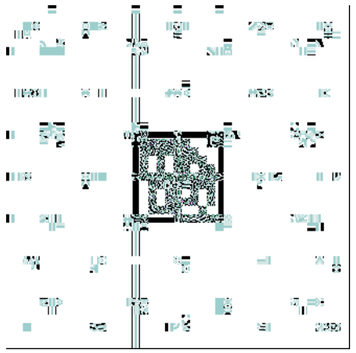
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
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Site at, Syston, Leicestershire

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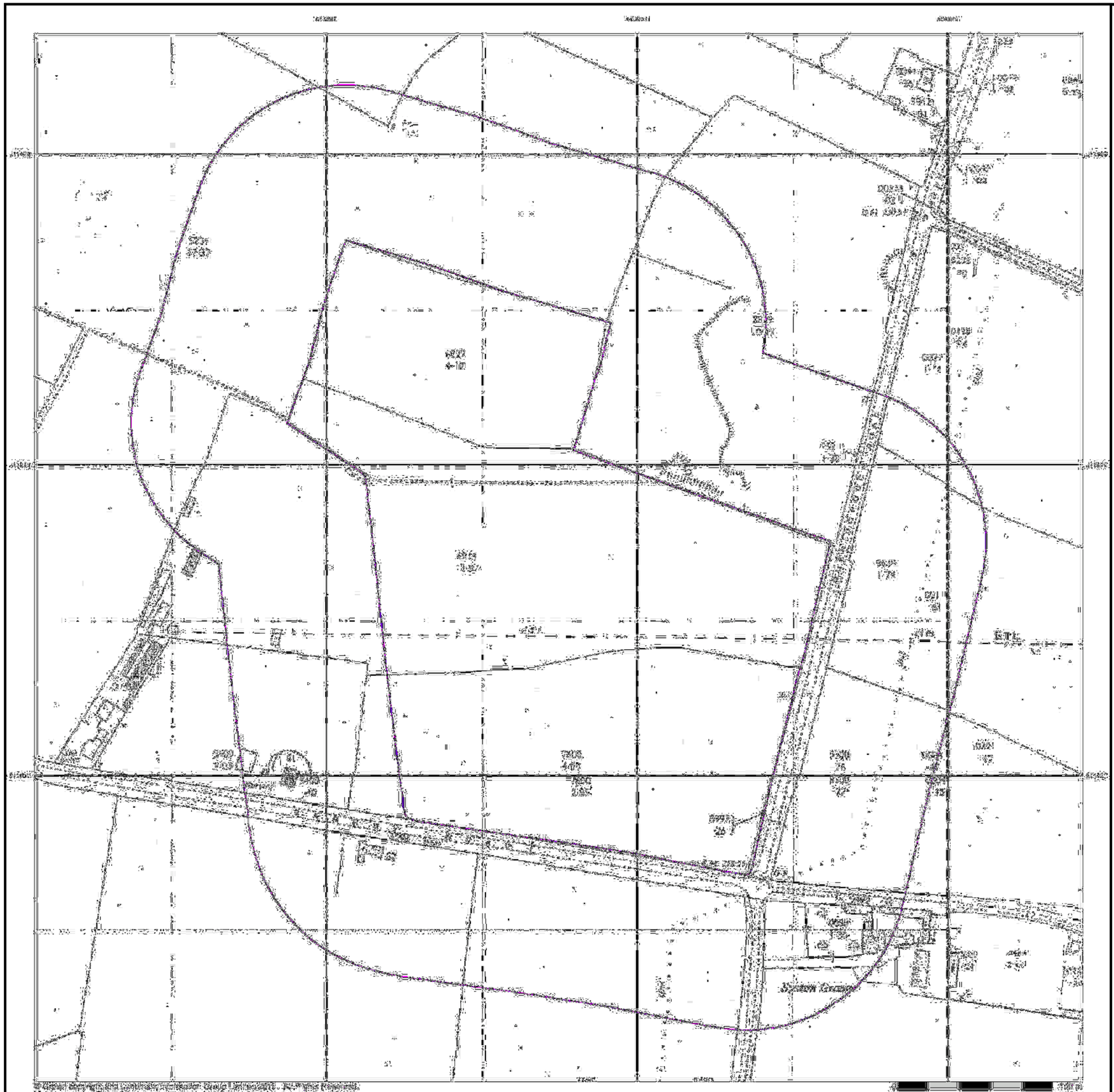


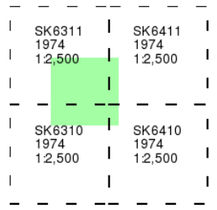
Supply of Unpublished Survey Information

Published 1974

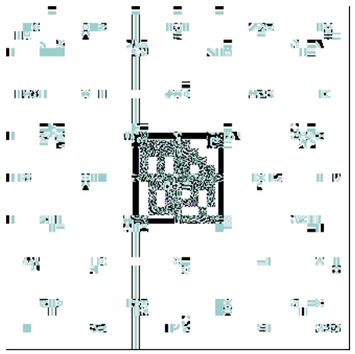
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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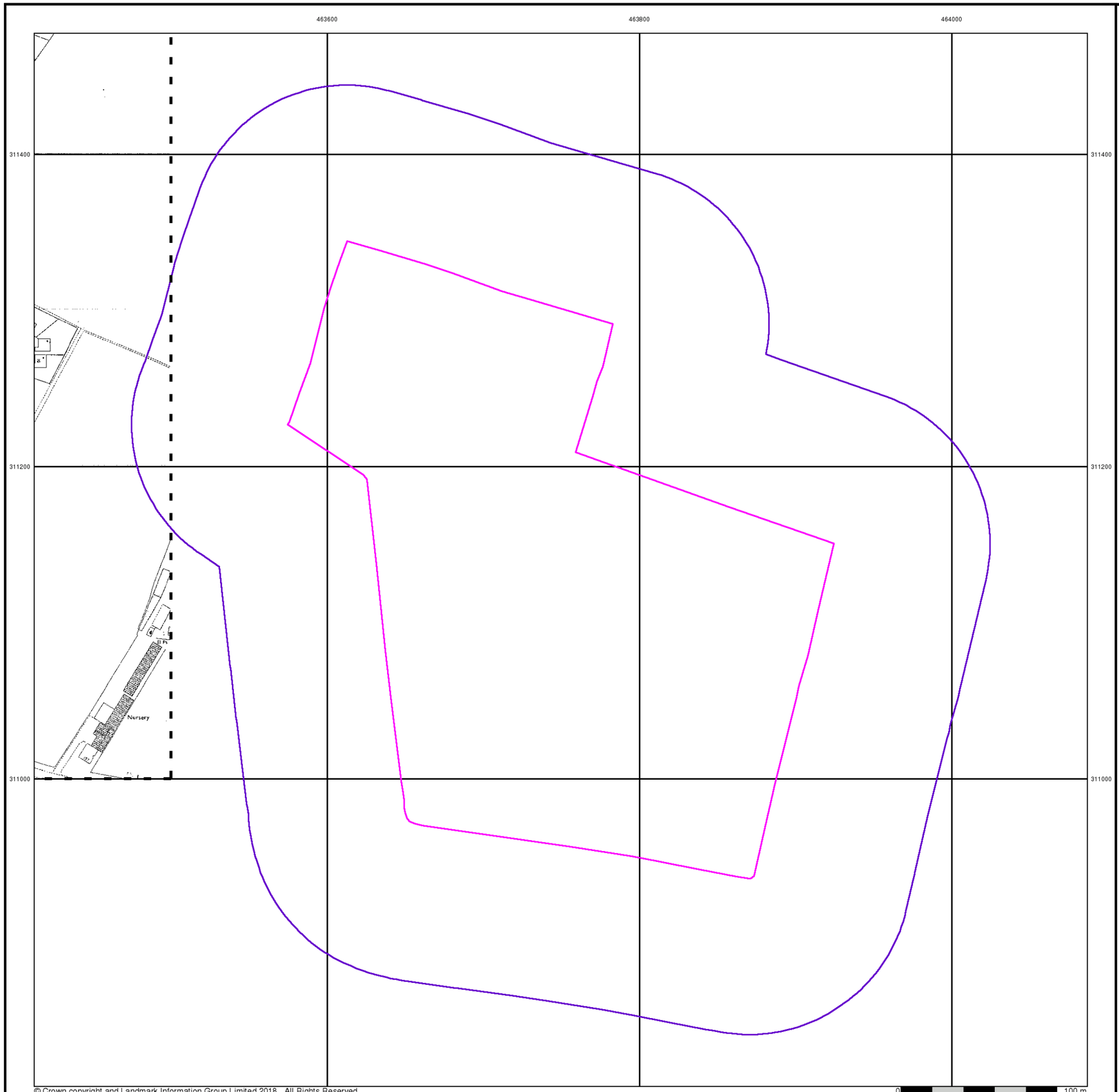


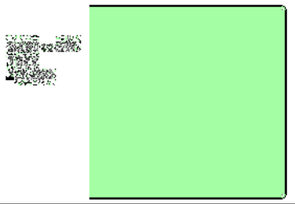
Additional SIMs

Published 1977

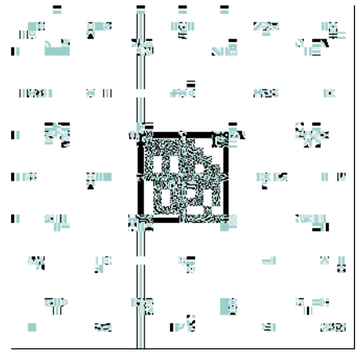
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
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National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

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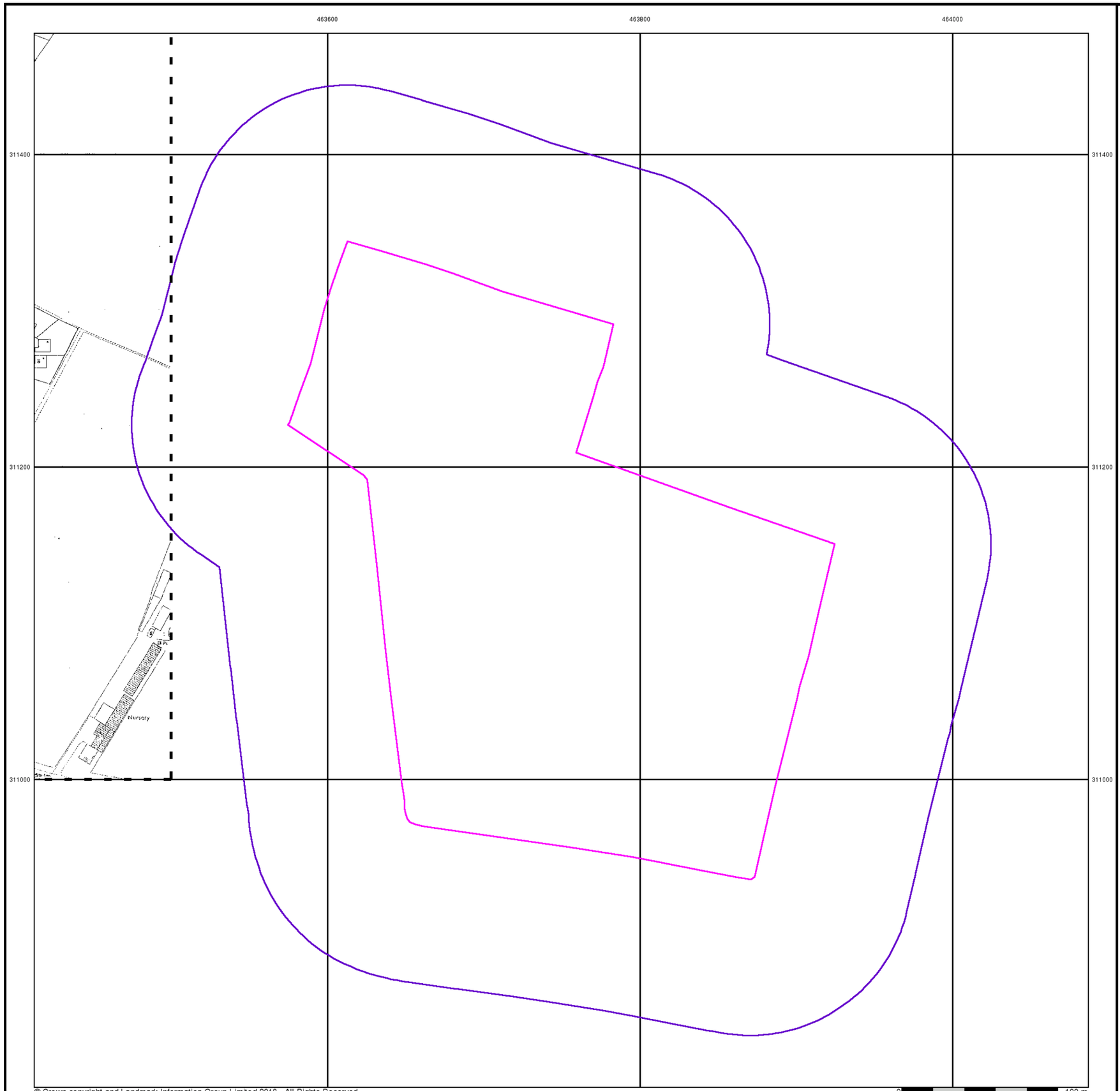


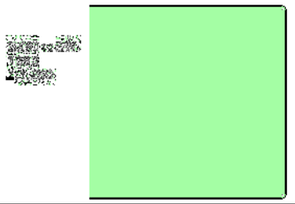
Additional SIMs

Published 1980

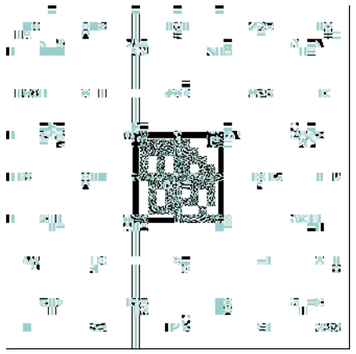
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



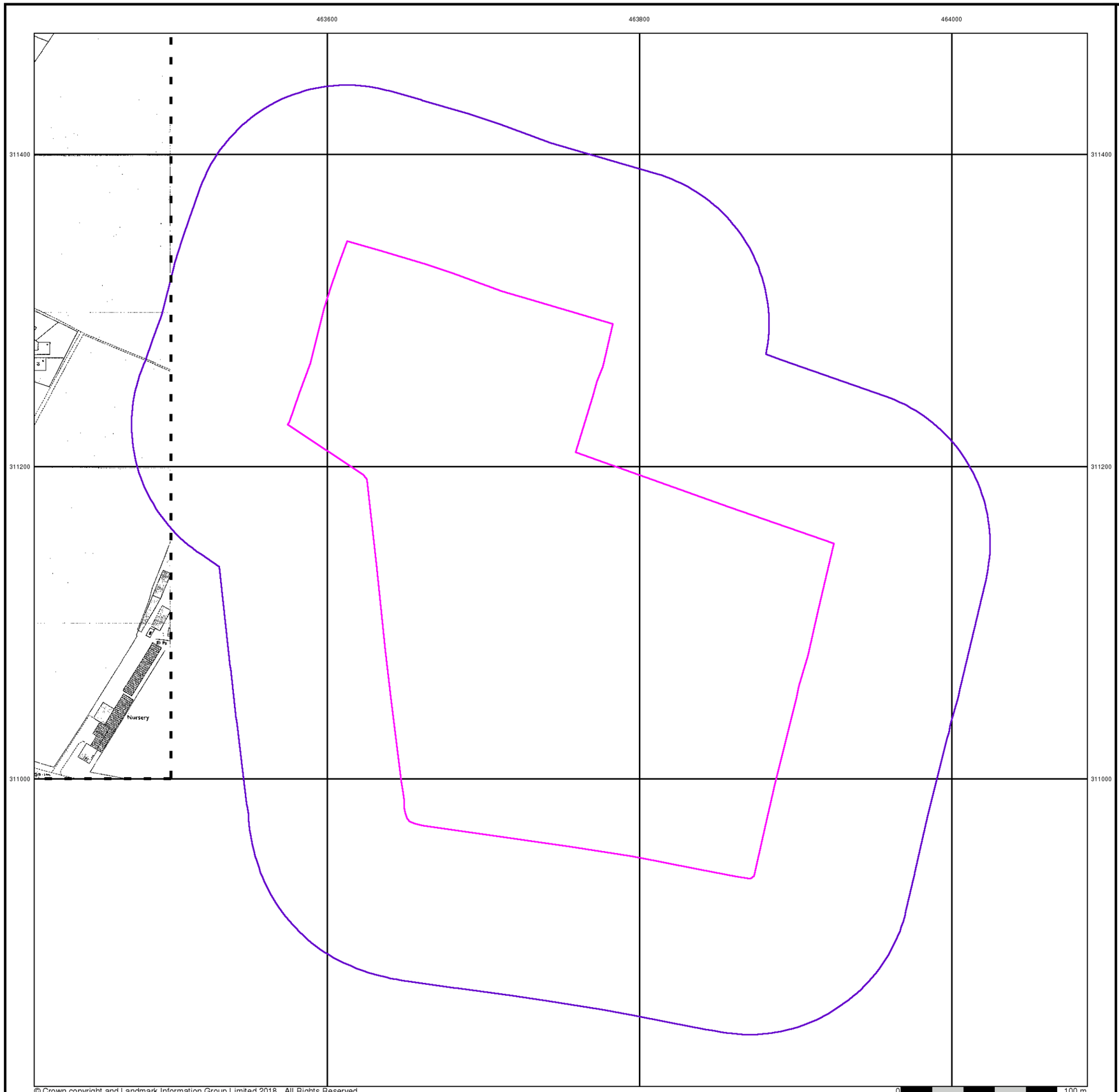
Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



RSK

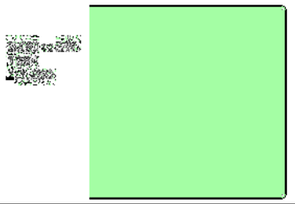
Additional SIMs

Published 1984

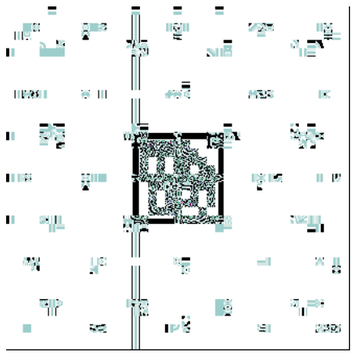
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark Information Group

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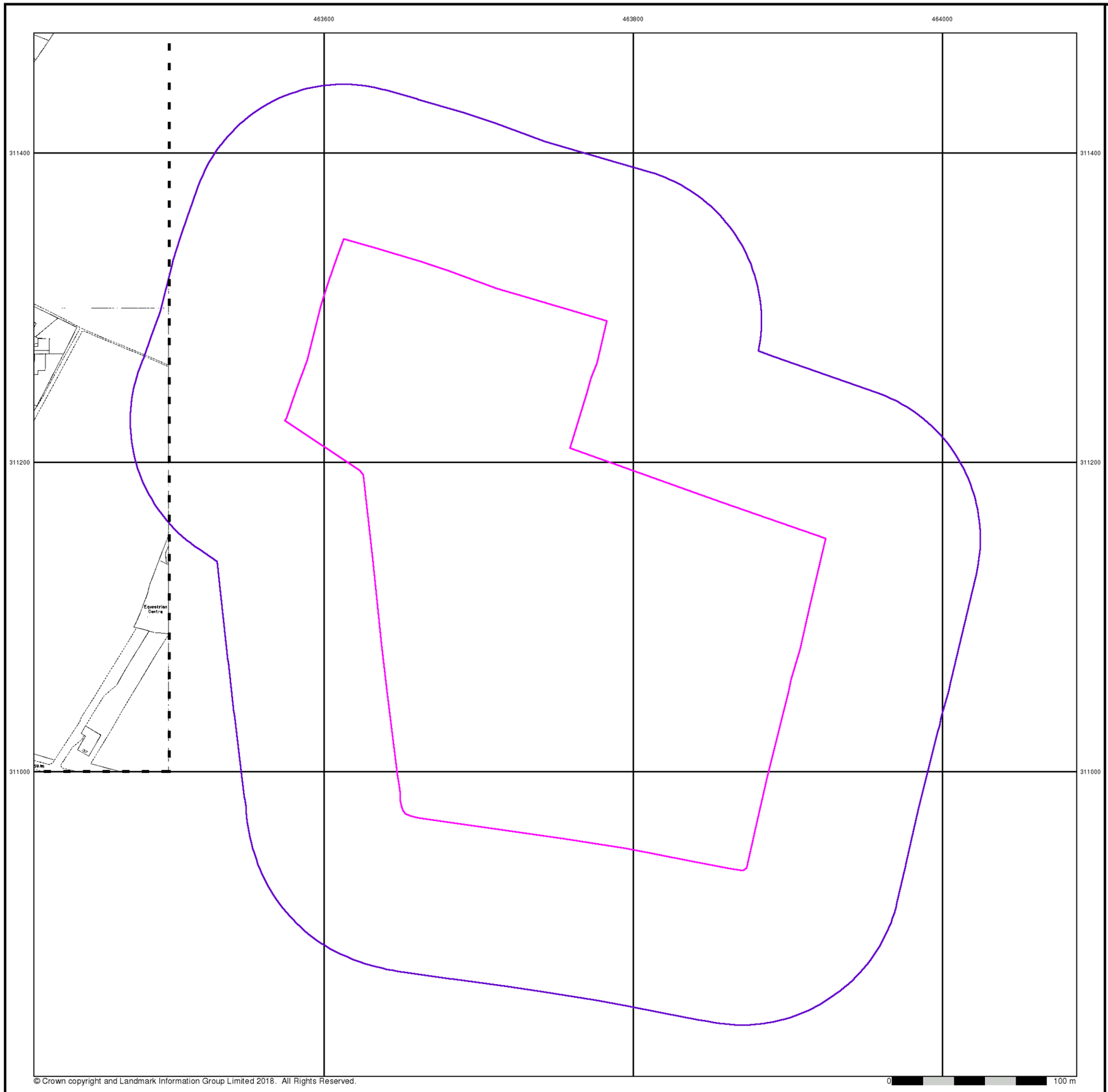
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



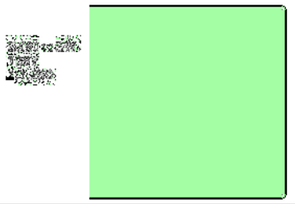
Ordnance Survey Plan

Published 1987

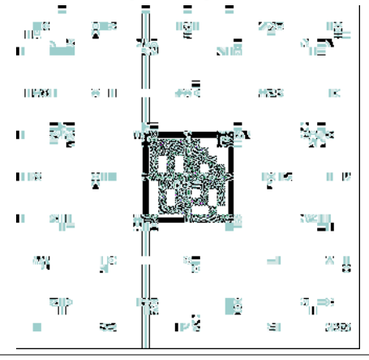
Source map scale - 1:1,250

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
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Site Details

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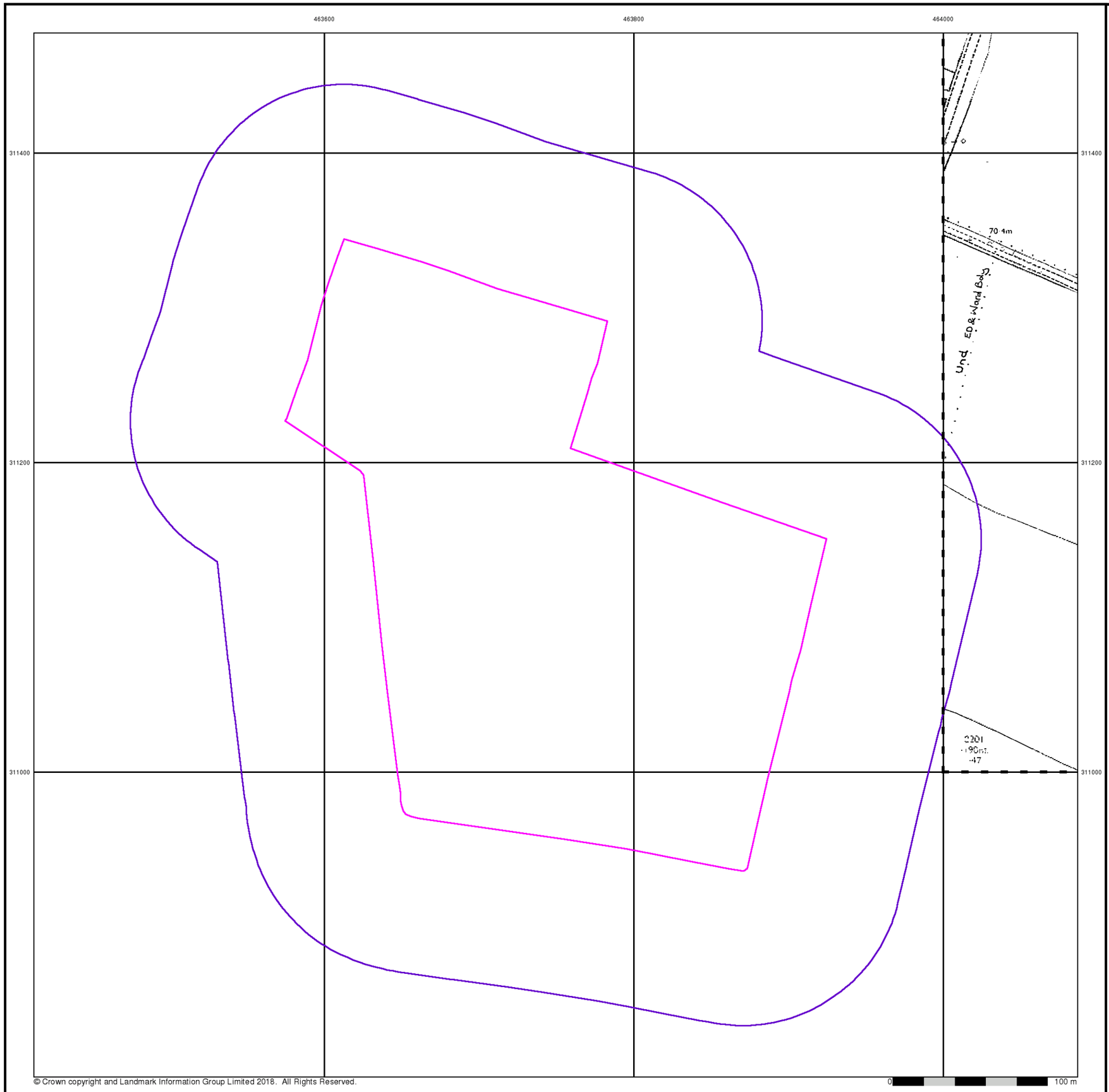


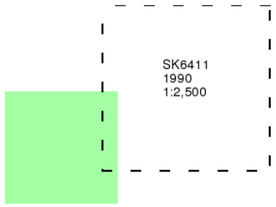
Additional SIMs

Published 1990

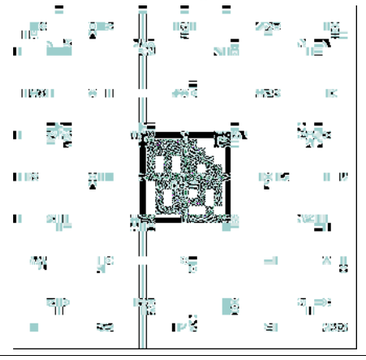
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
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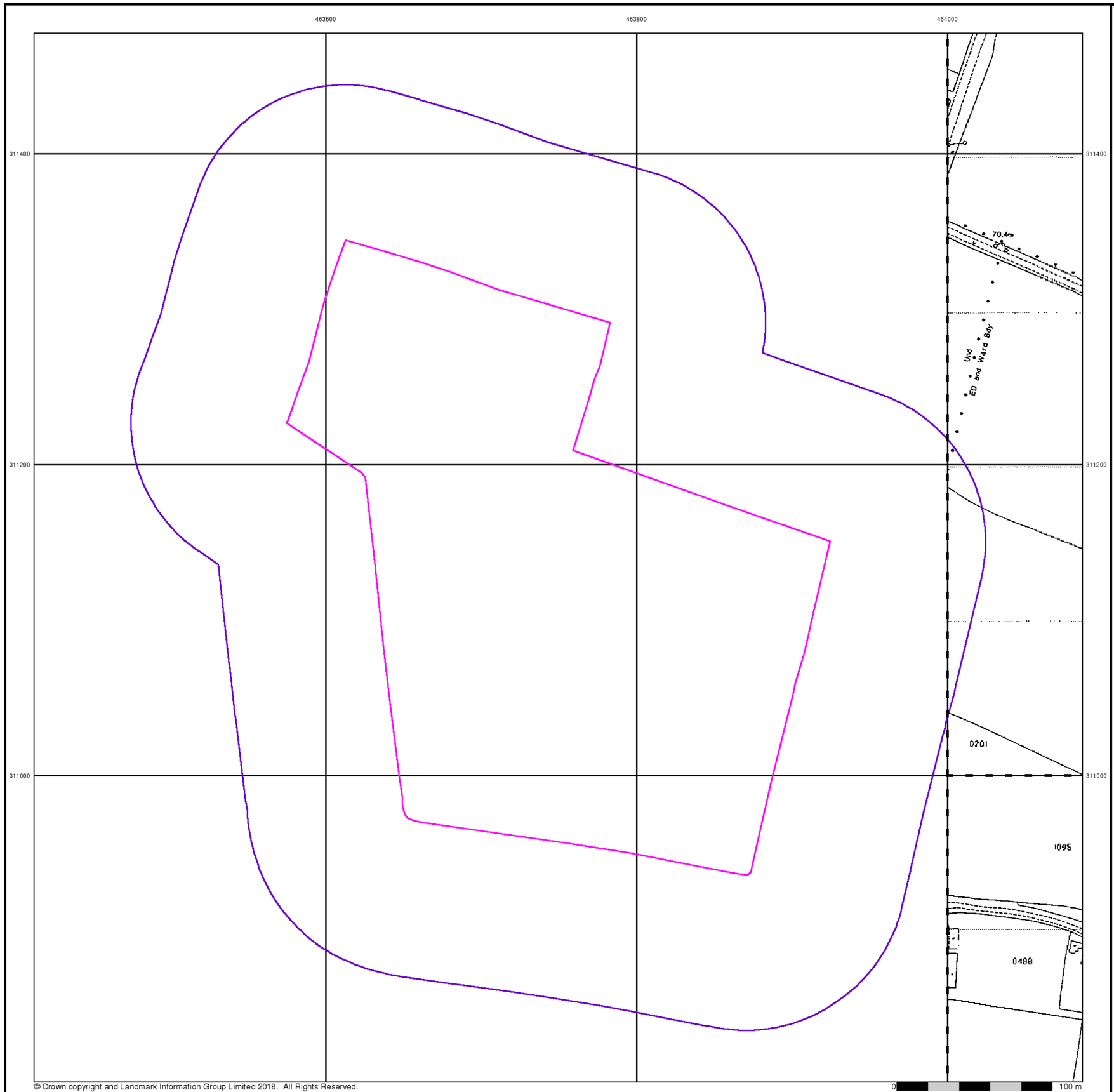


RSK

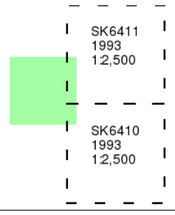
Large-Scale National Grid Data

Published 1993

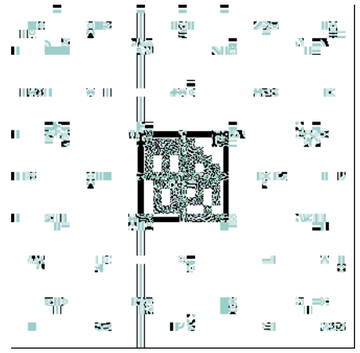
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark Information Group

Tel: 0844 844 9952
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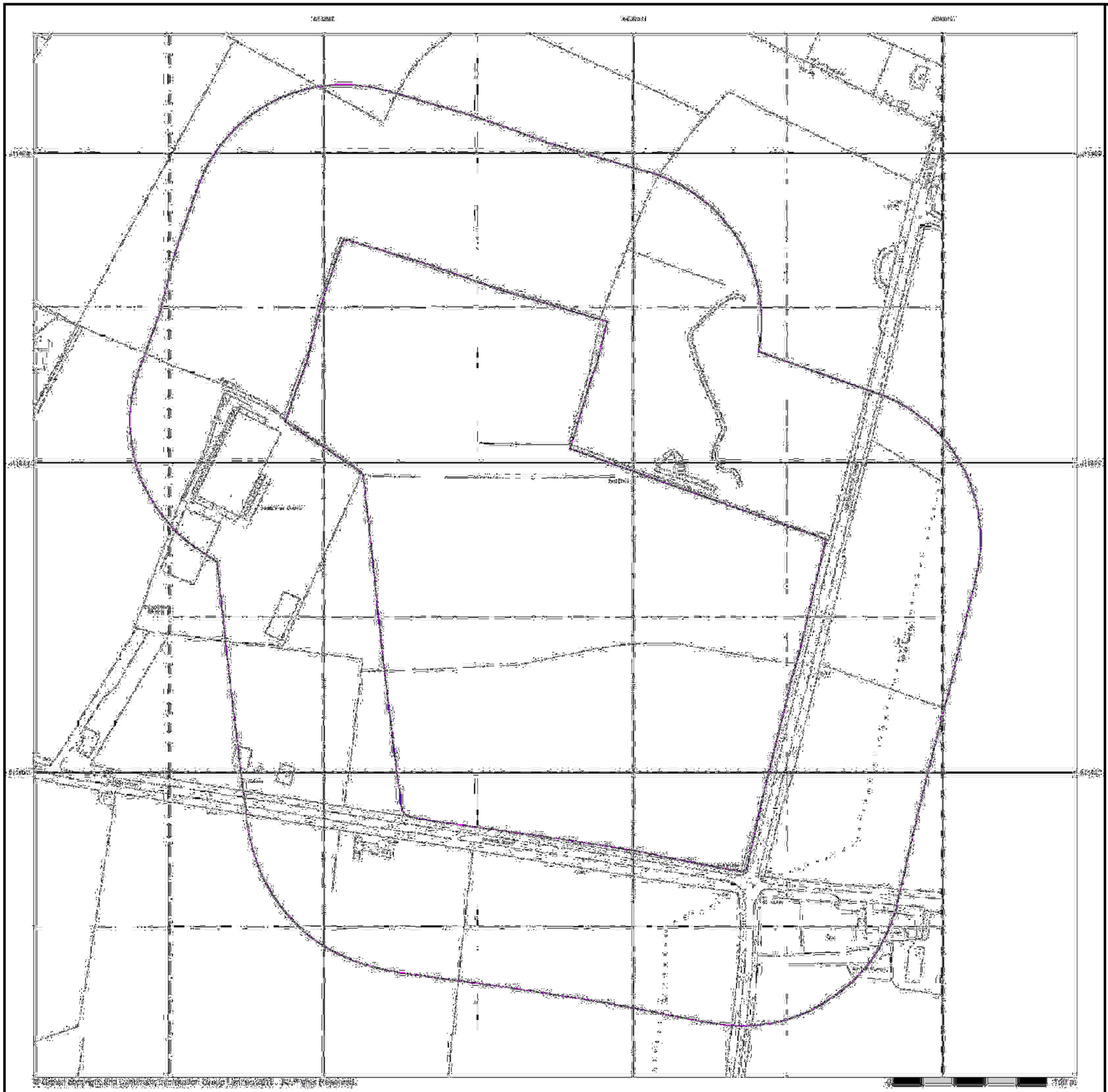


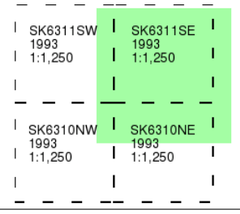
Large-Scale National Grid Data

Published 1993

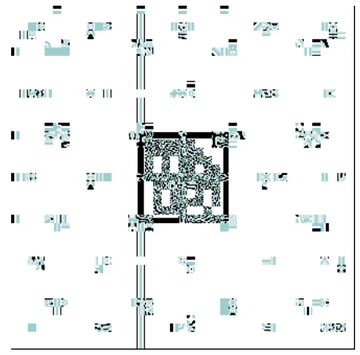
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	153824059_1_1
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Slice:	A
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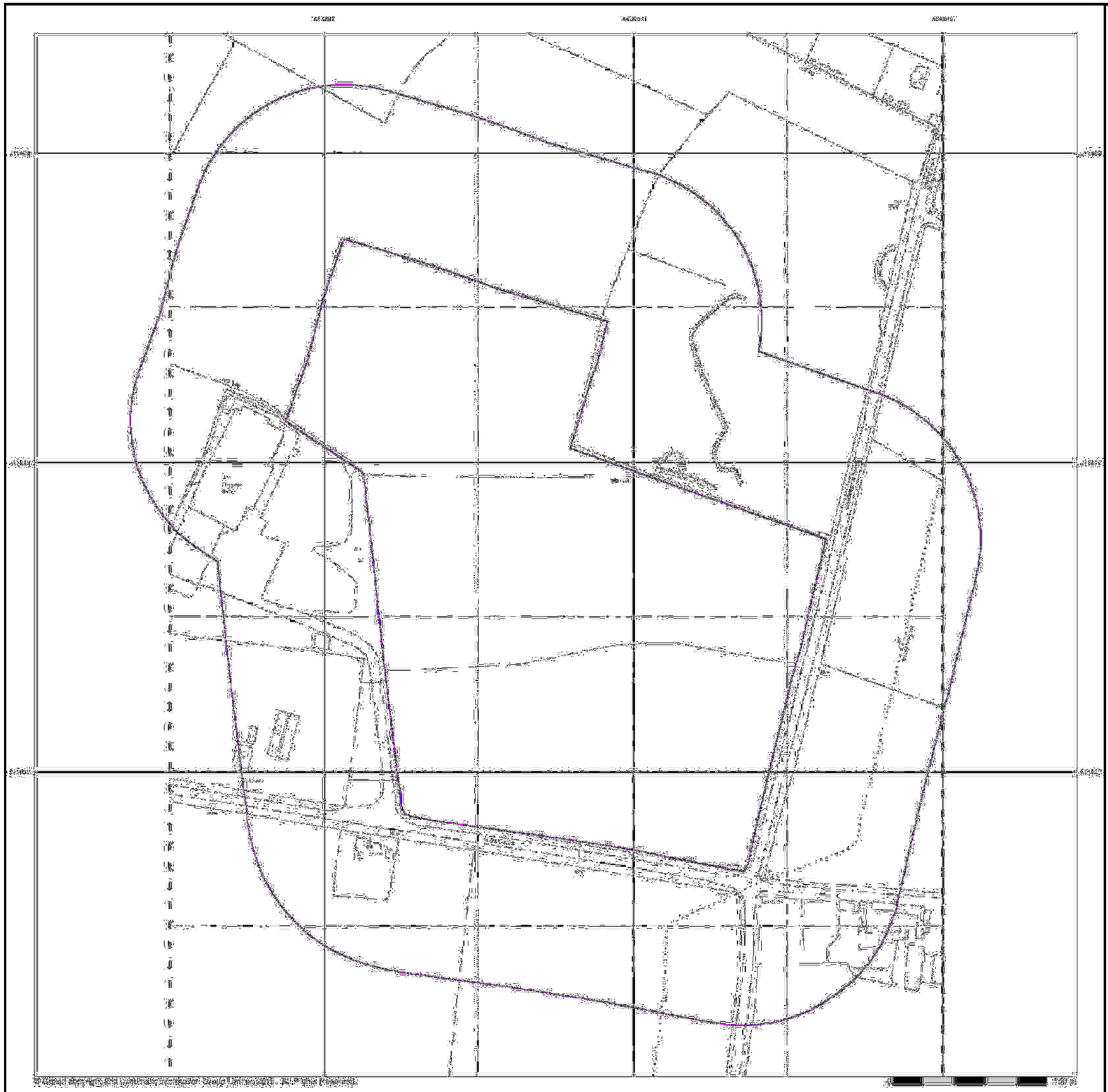
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire



Large-Scale National Grid Data

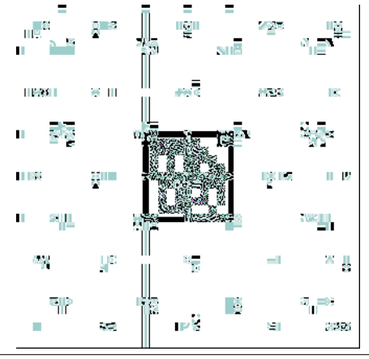
Published 1994

Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

Historical Map - Segment A13



Order Details

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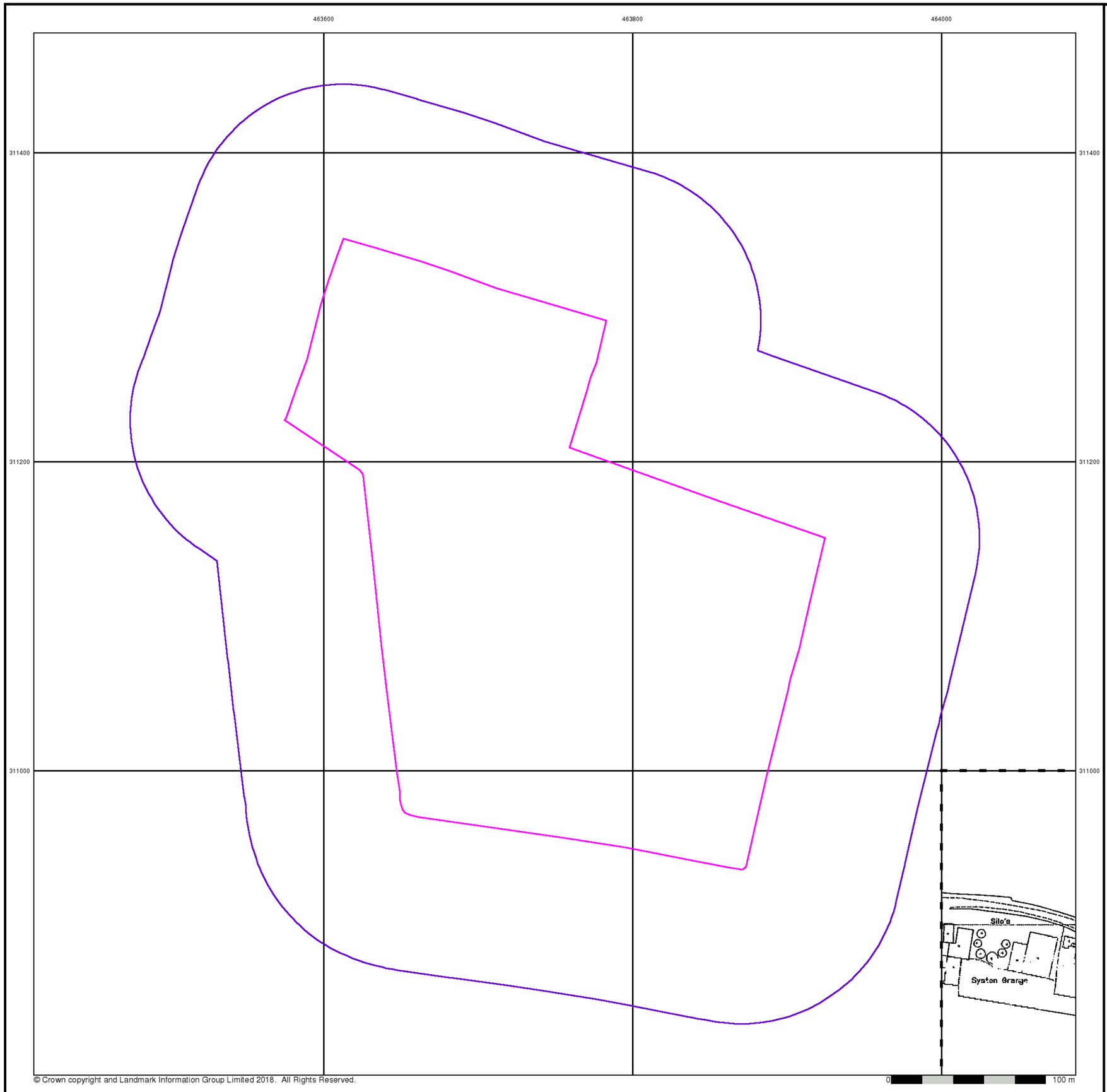
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



RSK

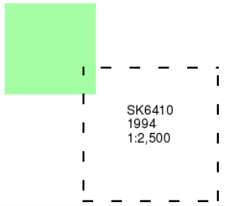
Large-Scale National Grid Data

Published 1994

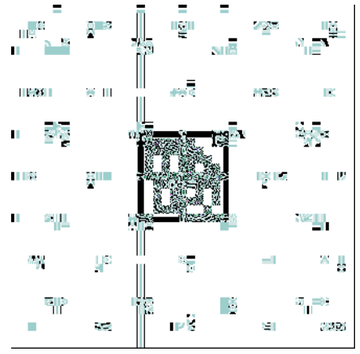
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



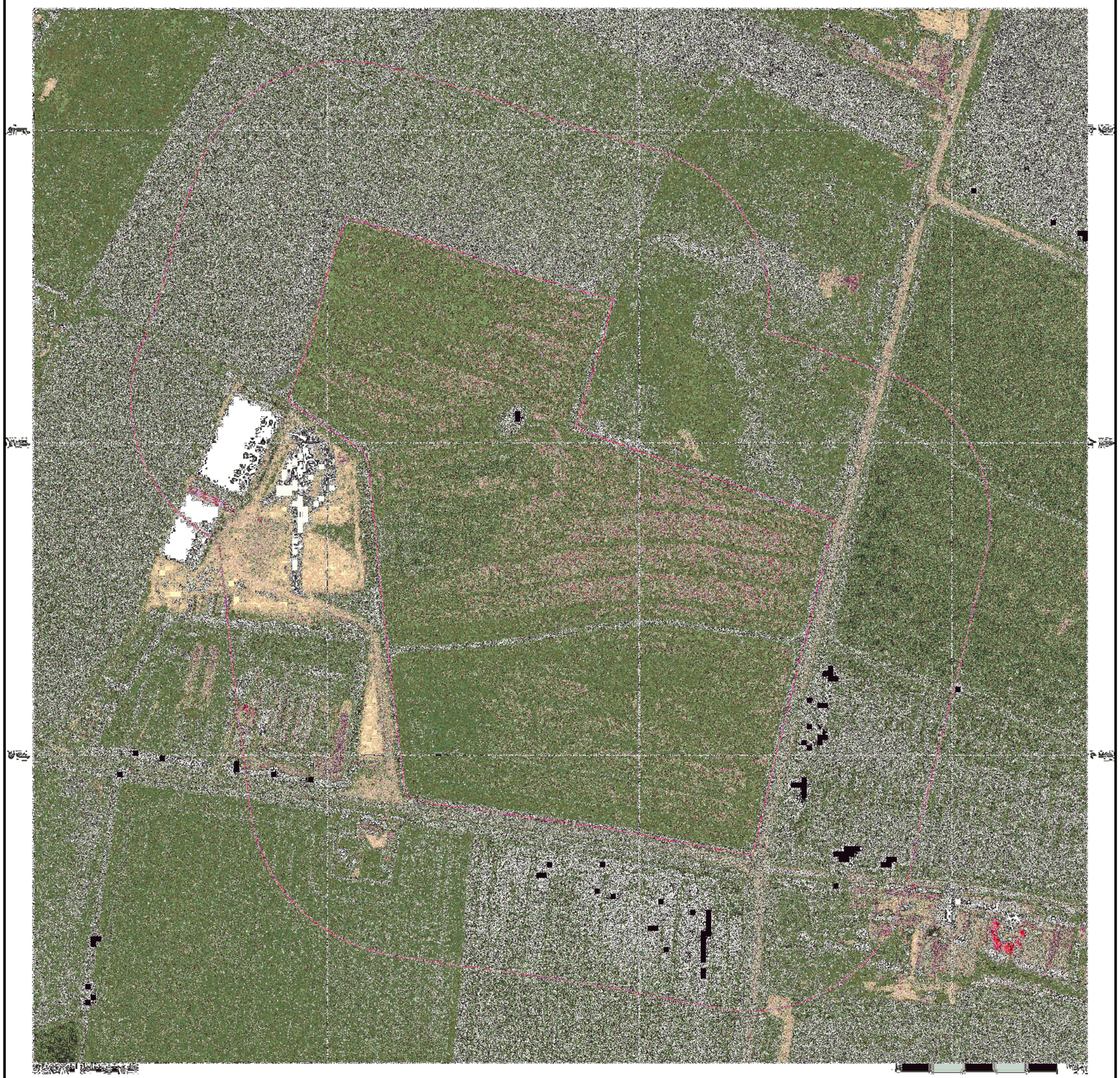
Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



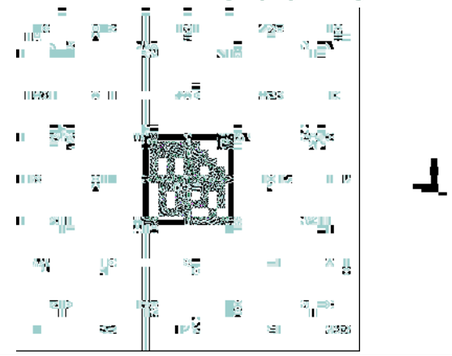
RSK

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark Information Group

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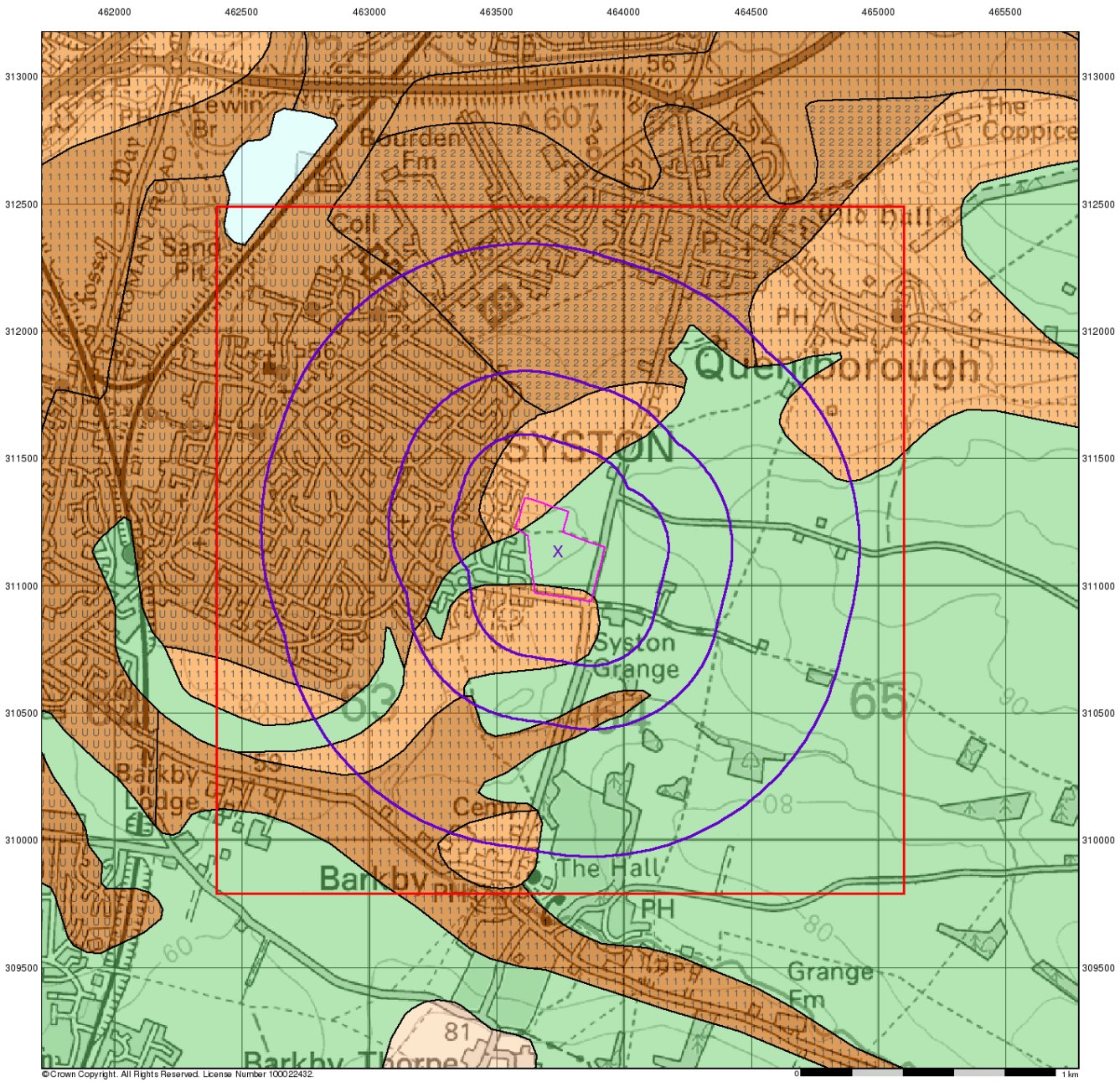
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Groundwater Vulnerability

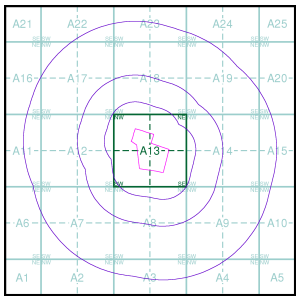
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



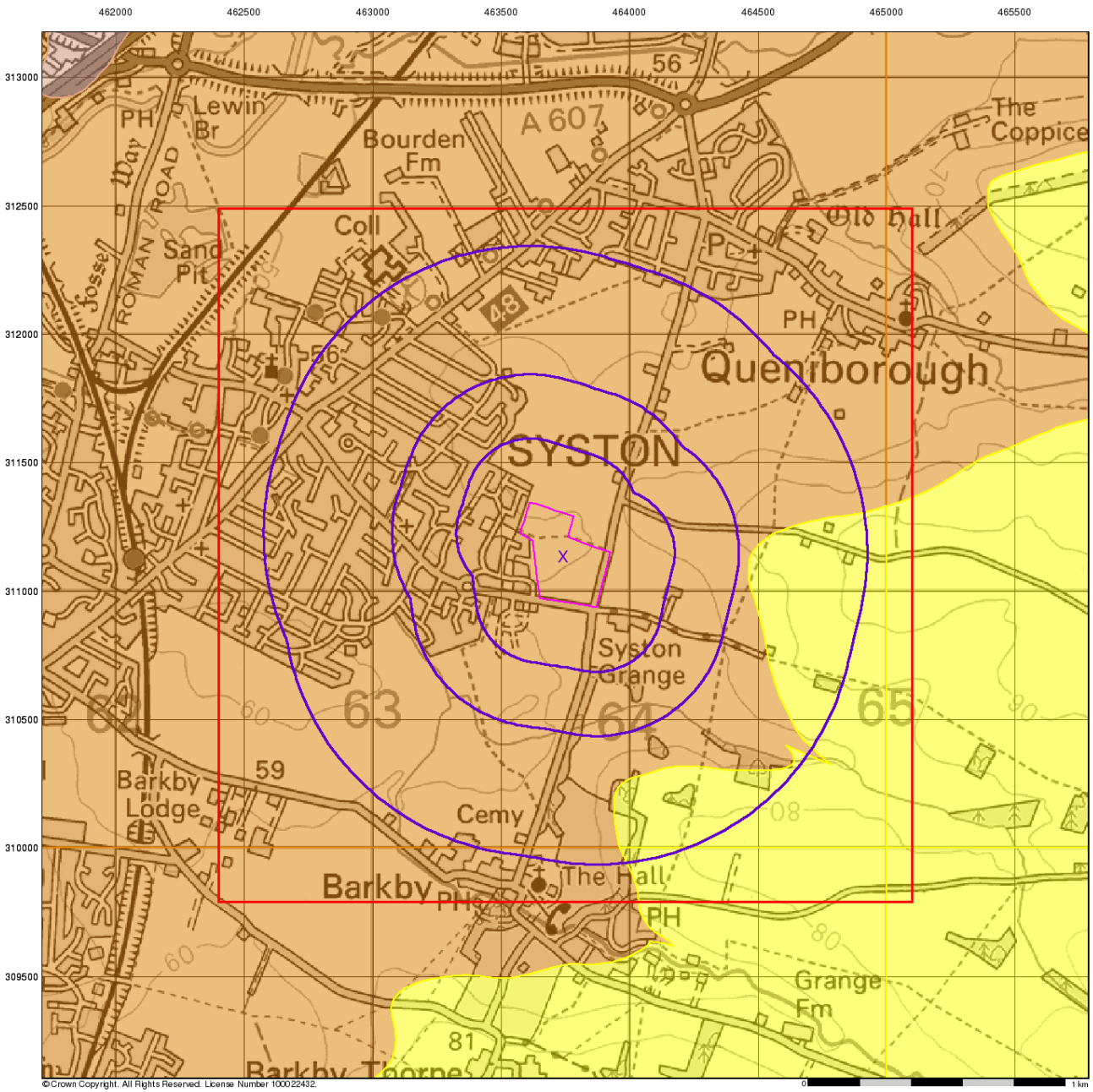
Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Bedrock Aquifer Designation

General

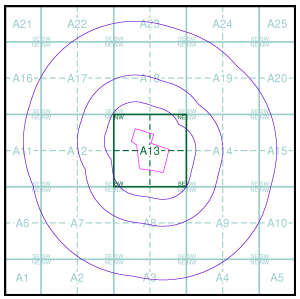
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



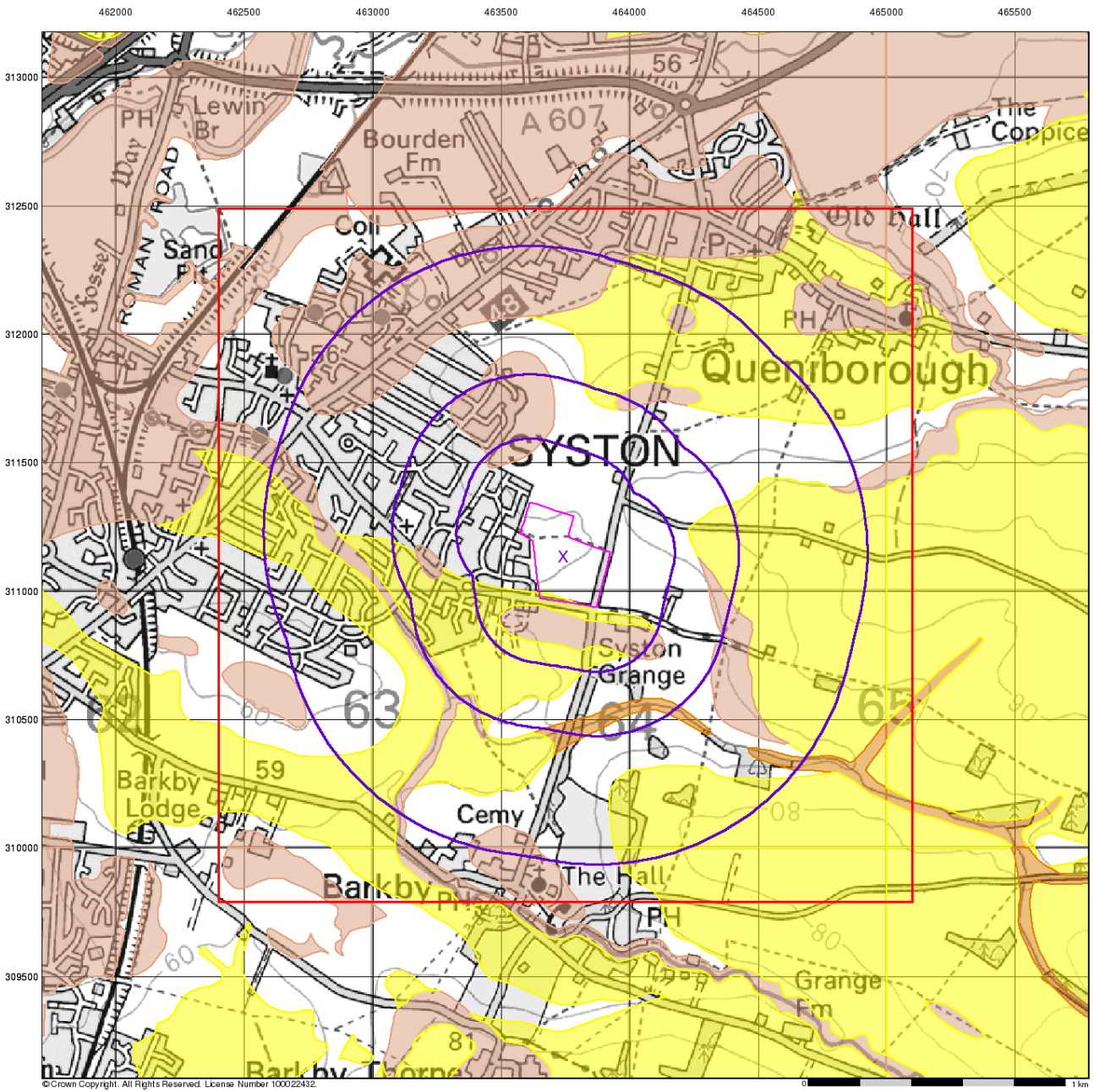
Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



RSK

Superficial Aquifer Designation

General

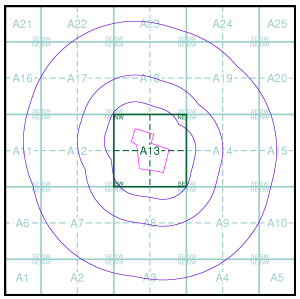
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



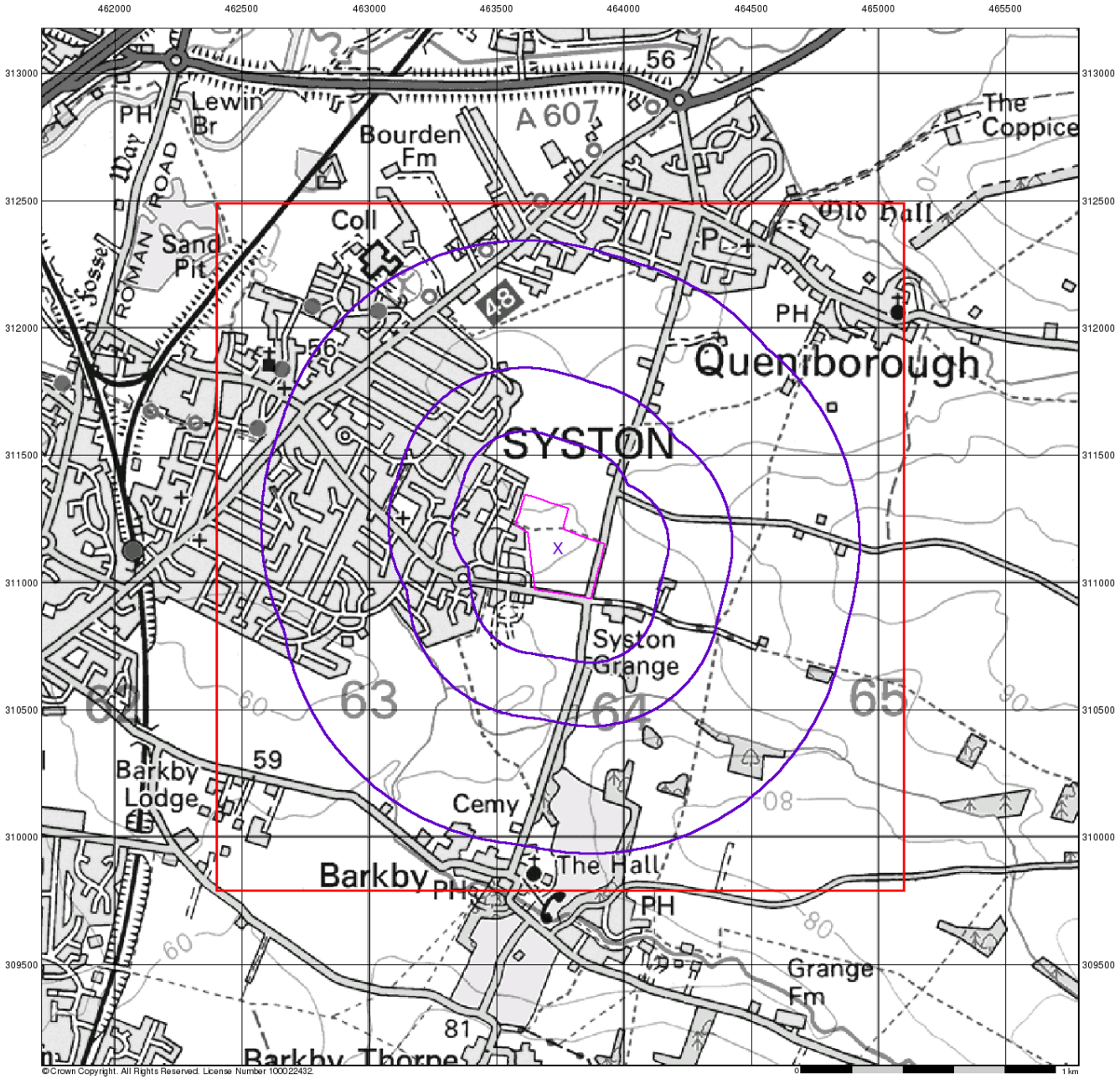
Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Source Protection Zones

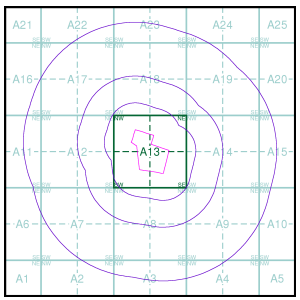
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A

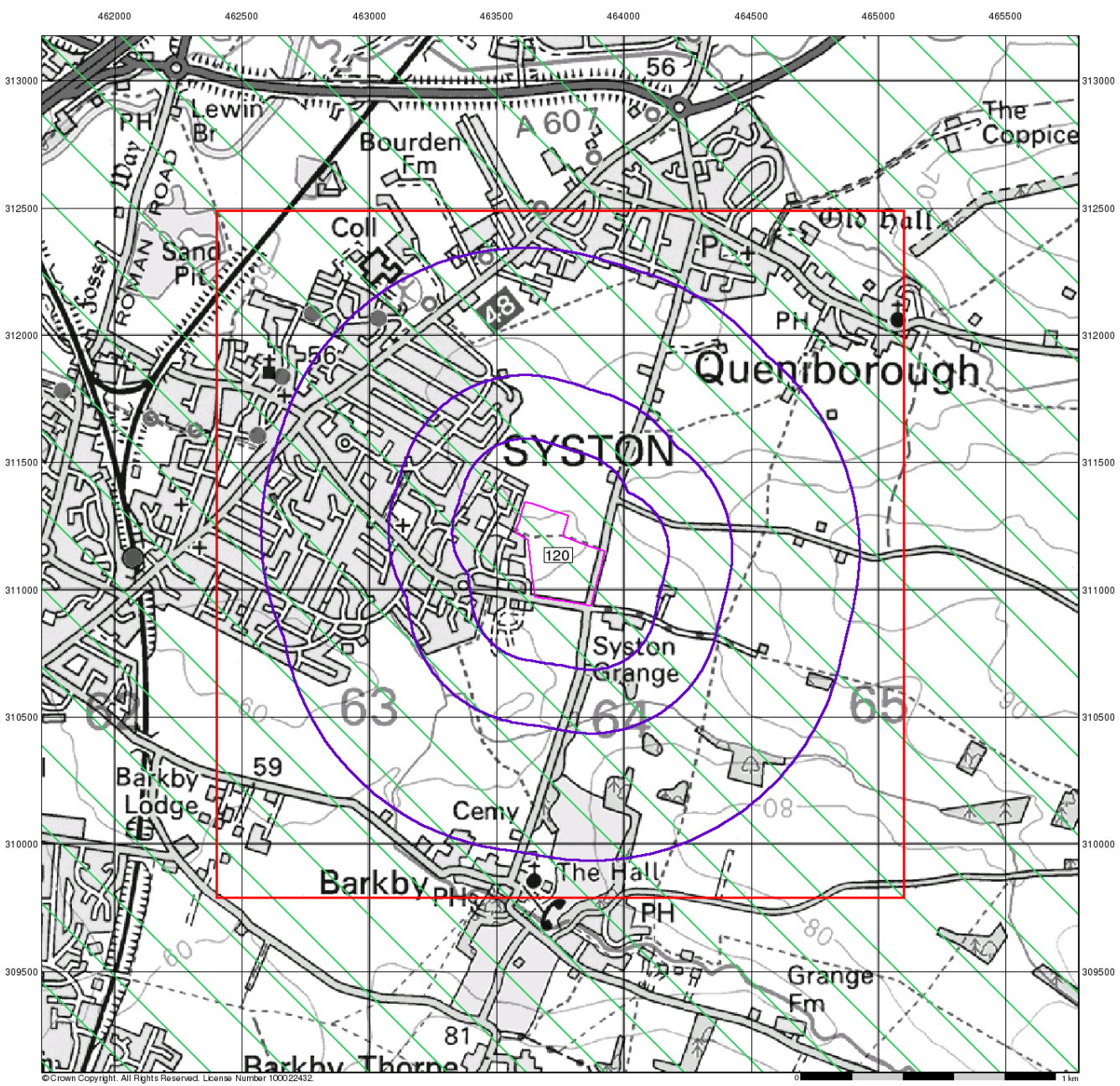


Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire



RSK

Sensitive Land Uses

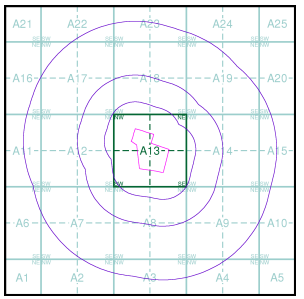
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



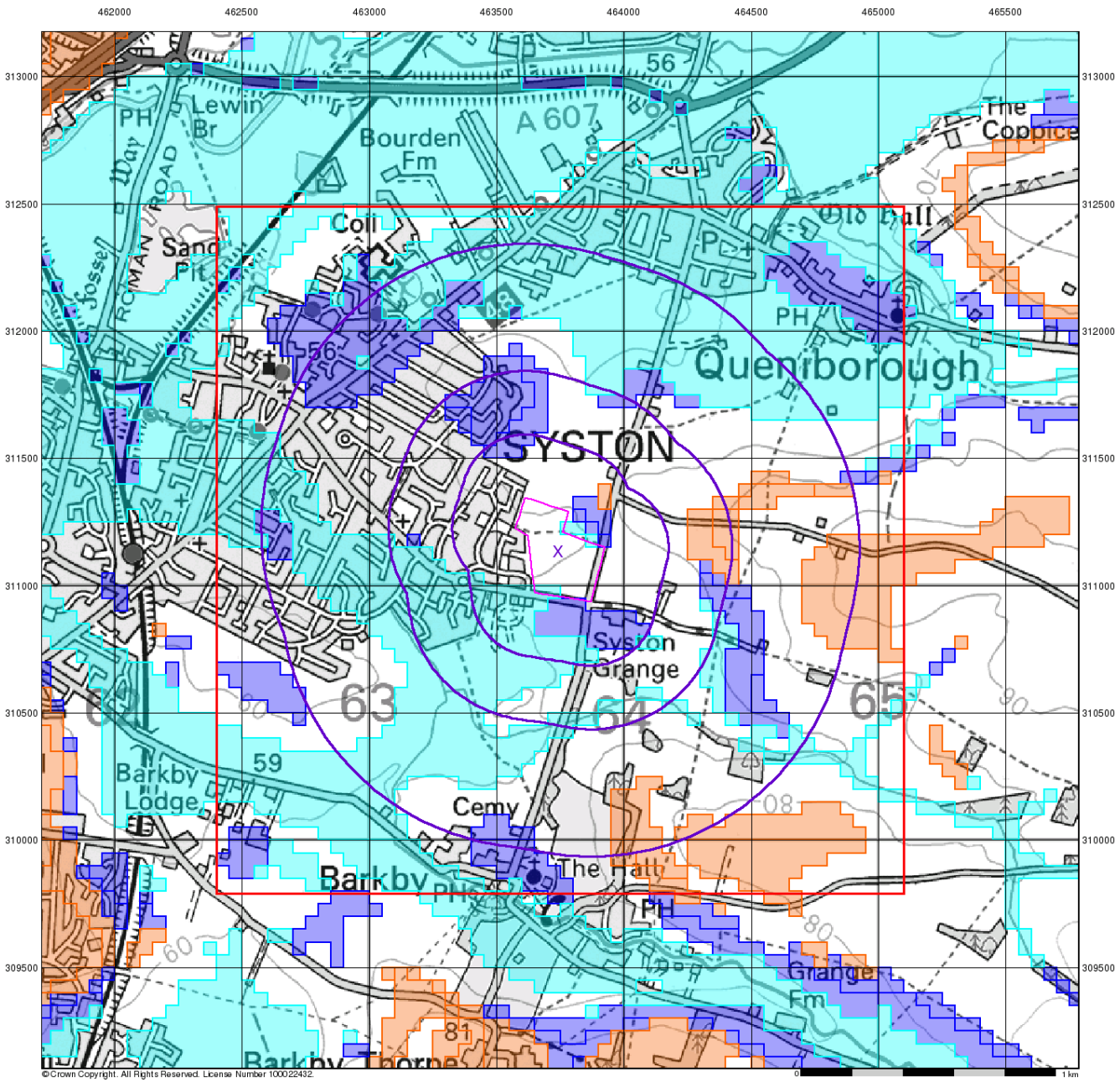
Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



RSK

BGS Flood GFS Data

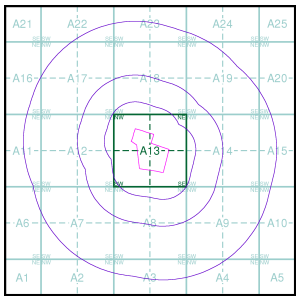
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
153824059_1_1

Customer Reference:
302001

National Grid Reference:
463740, 311130

Slice:
A

Site Area (Ha):
8.4

Search Buffer (m):
1000

Site Details:

Site at
Syston
Leicestershire

Client Details:

Mr M Brannock
RSK Environment Ltd
Spring Lodge
172 Chester Road
Helsby
Cheshire
WA6 0AR

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

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

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Natural England Copyright Notice

Ove Arup Copyright Notice

Peter Brett Associates Copyright Notice

Radon Potential dataset Copyright Notice

Report Version v53.0

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2				9
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 4				6
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 5	Yes			
Pollution Incidents to Controlled Waters	pg 5				3
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 5				1
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 6				1
Water Abstractions	pg 6				(*9)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 8	Yes	n/a	n/a	n/a
Drift Deposits			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 8	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 8	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 8		7	13	20

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 14	1			
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)					
Local Authority Landfill Coverage	pg 14	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 14	1			
Potentially Infilled Land (Non-Water)	pg 14		1		1
Potentially Infilled Land (Water)	pg 14			1	
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites					
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 15	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 15	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry	pg 16	Yes	Yes	Yes	Yes
BGS Urban Soil Chemistry Averages	pg 19	Yes			
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 19	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 19	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 19	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 19	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 20	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 21		1	3	68
Fuel Station Entries	pg 27				2
Points of Interest - Commercial Services	pg 27				17
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 28			1	29
Points of Interest - Public Infrastructure	pg 31			2	10
Points of Interest - Recreational and Environmental					
Gas Pipelines					
Underground Electrical Cables					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 33	1			
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (N)	0	1	463750 311200
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SW (S)	0	1	463742 310950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (E)	0	1	463850 311150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	0	1	463900 311150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SW (S)	0	1	463742 311000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	18	1	463800 311250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	20	1	463850 311250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	22	1	463850 311200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (NE)	118	1	463900 311300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (N)	157	1	463600 311500
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (SE)	225	1	464050 310800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SW (NW)	235	1	463500 311550
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14SW (E)	326	1	464250 311134
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A17SE (NW)	333	1	463400 311600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12NE (W)	376	1	463200 311150
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	379	1	464300 311100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (SE)	381	1	464050 310600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NE (S)	388	1	463900 310550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	389	1	464300 311050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (E)	413	1	464300 310950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A18SE (N)	425	1	463900 311700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	426	1	464350 311150

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	438	1	464350 311050
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	451	1	464350 311300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A14SW (E)	467	1	464350 310900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A9NW (SE)	477	1	464150 310550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A14SW (E)	498	1	464400 311000
1	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Main Street Storm Overflow, Main Street, Barkby Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: T/55/21460/O Permit Version: 1 Effective Date: 25th April 1992 Issued Date: 25th April 1992 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Barkby Brook **Status: Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	612	2	463290 310480
2	**Discharge Consents** Operator: Mr Ajp Pochin Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: New White Lodge Barkby Hall, Queniborough Road, Barkby, Leics Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: T/55/45595/S Permit Version: 1 Effective Date: 16th April 2002 Issued Date: 16th April 2002 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Trib Syston Brook **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A8SW (S)	734	2	463710 310220
3	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Queniborough, Sewage Disposal Works, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: Dt/1370 Permit Version: 1 Effective Date: 31st May 1963 Issued Date: 31st May 1963 Revocation Date: 1st March 2001 Discharge Type: Sewage Discharges - Final/Treated Effluent - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Queniborough Brook **Status: Application refused - 1961 Rivers (Prevention of Pollution) Act** Positional Accuracy: Approximate location provided by supplier	A18NE (N)	741	2	464000 312000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
3	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Queniborough, Sewage Disposal Works, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: Dt/1371 Permit Version: 1 Effective Date: 31st May 1963 Issued Date: 31st May 1963 Revocation Date: 1st March 2001 Discharge Type: Sewage Discharges - Stw Storm Overflow/Storm Tank - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Queniborough Brook **Status: Application refused - 1961 Rivers (Prevention of Pollution) Act** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	746	2	464000 312005
3	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: WWTW/SEWAGE TREATMENT WORKS (WATER COMPANY) Location: Queniborough Stw, Sewage Disposal Works, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: Dt/1372 Permit Version: 1 Effective Date: 31st May 1963 Issued Date: 31st May 1963 Revocation Date: 1st March 2001 Discharge Type: Sewage Discharges - Pumping Station - Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Queniborough Brook **Status: Application refused - 1961 Rivers (Prevention of Pollution) Act** Positional Accuracy: Located by supplier to within 10m	A18NE (N)	748	2	464005 312005
4	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Syston, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: T/55/01522/O Permit Version: 2 Effective Date: 23rd July 2003 Issued Date: 23rd July 2003 Revocation Date: 19th May 2017 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Wreake (Eye) (Trib) **Status: Surrendered under EPR 2010** Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	760	2	463300 310300
4	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Syston, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: T/55/01522/O Permit Version: 1 Effective Date: 15th March 1966 Issued Date: 15th March 1966 Revocation Date: 22nd July 2003 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Wreake (Eye) (Trib) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A7SE (SW)	760	2	463300 310300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Syston, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: T/55/01522/O Permit Version: 2 Effective Date: 23rd July 2003 Issued Date: 23rd July 2003 Revocation Date: 19th May 2017 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Wreake (Eye) (Trib) **Status: Surrendered under EPR 2010** Positional Accuracy: Located by supplier to within 100m	A11NE (W)	892	2	462700 311400
5	**Discharge Consents** Operator: Severn Trent Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Syston, Leicestershire Authority: Environment Agency, Midlands Region Catchment Area: Lower Wreake Catchment Reference: T/55/01522/O Permit Version: 1 Effective Date: 15th March 1966 Issued Date: 15th March 1966 Revocation Date: 22nd July 2003 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: River Wreake (Eye) (Trib) **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A11NE (W)	892	2	462700 311400
6	**Local Authority Pollution Prevention and Controls** Name: Antone Displays Location: Cross Street, Syston, LEICESTER, Leicestershire, LE7 2JG Authority: Charnwood Borough Council, Environmental Health Department Permit Reference: 091 Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG6/33 Wood coating **Status: Authorisation revokedRevoked** Positional Accuracy: Automatically positioned to the address	A11NE (W)	893	3	462686 311307
7	**Local Authority Pollution Prevention and Controls** Name: Johnsons Cleaners Location: 1286 Melton Road, Syston Authority: Charnwood Borough Council, Environmental Health Department Permit Reference: 120 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A16SE (NW)	967	3	462681 311606
8	**Local Authority Pollution Prevention and Controls** Name: Syston Dry Cleaners Location: 5 High Street, Syston Authority: Charnwood Borough Council, Environmental Health Department Permit Reference: 123 Dated: 30th September 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A16SE (NW)	973	3	462707 311698
9	**Local Authority Pollution Prevention and Controls** Name: Branston Service Station Location: 1487 Melton Road, Queniborough Authority: Charnwood Borough Council, Environmental Health Department Permit Reference: 138 Dated: Not Supplied Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A23SW (N)	977	3	463620 312321

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
9	**Local Authority Pollution Prevention and Controls** Name: Branston Service Station Location: Melton Road, QUENIBOROUGH, LE7 3F Authority: Charnwood Borough Council, Environmental Health Department Permit Reference: 108 Dated: 5th May 2002 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A23SW (N)	982	3	463608 312326
9	**Local Authority Pollution Prevention and Controls** Name: Branston Service Station Location: 1487 Melton Road, Queniborough, LEICESTER, Leicestershire, LE7 3FP Authority: Charnwood Borough Council, Environmental Health Department Permit Reference: 011 Dated: 16th February 1999 Process Type: Local Authority Air Pollution Control Description: PG1/1Waste oil burners, less than 0.4MW net rated thermal input **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A23SW (N)	982	3	463608 312326
	Nearest Surface Water Feature	A13NE (E)	0	-	463887 311147
10	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Surface Water Outfall Location: College Road, Syston, LEICESTER, Leicestershire, LE7 Authority: Environment Agency, Midlands Region Pollutant: Other Sewage Note: Syston Brook; Surface Water Sewer With Wrong Connection; No Adverse Effects; Incident Date: 23rd June 1999 Incident Reference: 2806229 Catchment Area: Trent Catchment : Lower Wreak Receiving Water: Watercourse Cause of Incident: Wrong Connection Incident Severity: Category 3 - Minor Incident Positional Accuracy: Approximate location provided by supplier	A12NW (W)	775	2	462800 311200
11	**Pollution Incidents to Controlled Waters** Property Type: Water Company Sewage: Other Location: Pond In Field, Between Queniborough &, SOUTH CROXTON Authority: Environment Agency, Midlands Region Pollutant: Sewage Sludge Note: Sewage Sprayed To Land - To Pond; Amenity Affected Incident Date: 30th November 1995 Incident Reference: 1800601 Catchment Area: Trent Catchment : Lower Wreak Receiving Water: Pond/Lake Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A15NW (E)	882	2	464800 311250
12	**Pollution Incidents to Controlled Waters** Property Type: Miscellaneous Premises: Unknown Location: A607 Road, Melton Road, SYSTON Authority: Environment Agency, Midlands Region Pollutant: Oils - Unknown Note: Amenity Affected; Syston Brook; Rainbow Film/Dark Colour Incident Date: 19th January 1996 Incident Reference: 2801865 Catchment Area: Trent Catchment : Lower Wreak Receiving Water: Watercourse Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17SW (NW)	891	2	462800 311710
	River Quality Name: Syston Bk GQA Grade: River Quality B Reach: Trib Beeby To Conf. R. Wreake Estimated Distance (km): 8 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A7NE (SW)	635	2	463077 310692

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Substantiated Pollution Incident Register** Authority: Environment Agency - Midlands Region, East Area Incident Date: 15th June 2003 Incident Reference: 165943 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Crude Sewage	A11NE (W)	910	2	462690 311440
	Water Abstractions Operator: James Coles & Sons (Nurseries) Ltd Licence Number: 03/28/55/0080 Permit Version: 100 Location: Premises At Melton Road, Syston - Borehole Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises At Melton Road, Syston - B/Hole Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2008 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A23SW (N)	1091	2	463510 312430
	Water Abstractions Operator: Mr G E Carnall Licence Number: 03/28/53/0027 Permit Version: Not Supplied Location: Woodgate Nursery Authority: Environment Agency, Midlands Region Abstraction: Spray Irrigation Abstraction Type: Not Supplied Source: Borehole Daily Rate (m3): 34 Yearly Rate (m3): 4582 Details: Status: Revoked; Lapsed Or Cancelled Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A1NE (SW)	1507	2	462501 310001
	Water Abstractions Operator: Mr S P Tivey Licence Number: 03/28/55/0073 Permit Version: 100 Location: 28 Wanlip Road - Borehole Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 28 Wanlip Road Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th January 1972 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1680	2	461900 311100
	Water Abstractions Operator: Mr S P Tivey Licence Number: 03/28/55/0073 Permit Version: 100 Location: 28 Wanlip Road - Borehole Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: 28 Wanlip Road Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 29th January 1972 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(W)	1680	2	461900 311100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Mr A H Pick Licence Number: 03/28/55/0048 Permit Version: 100 Location: Manor Farm Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Manor Farm Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1832	2	463450 309150
	Water Abstractions Operator: Mr N Crawford Licence Number: 03/28/55/0036 Permit Version: 100 Location: Manor Farm - Borehole Authority: Environment Agency, Midlands Region Abstraction: Private Water Undertaking: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Manor Farm Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1882	2	465800 311000
	Water Abstractions Operator: Sherwood Farms Licence Number: 03/28/55/0084 Permit Version: 100 Location: Wreake House Farm - River Wreake Authority: Environment Agency, Midlands Region Abstraction: General Agriculture: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a river or stream reach, or a row of wellpoints Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Wreake House Farm - River Wreake Authorised Start: 01 April Authorised End: 30 September Permit Start Date: 3rd August 1979 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NW)	1892	2	462680 312990
	Water Abstractions Operator: Mr B D Mr B D Mount Licence Number: 03/28/53/0011 Permit Version: 100 Location: Barkby Thorpe - Boreholes Authority: Environment Agency, Midlands Region Abstraction: General Farming And Domestic Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Barkby Thorpe - Boreholes Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(S)	1971	2	463500 309000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Pedigree Petfoods A Division Of Mars(Uk) Licence Number: 03/28/55/0078 Permit Version: 100 Location: Ratcliffe-On-The-Wreake - Old Gravel Pit Authority: Environment Agency, Midlands Region Abstraction: Food And Drink: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Old Gravel Pit - Emergency Backup Supply Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 31st January 1996 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(N)	1999	2	463200 313300
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 23 Leicestershire Scale: 1:100,000	A13SW (W)	0	2	463742 311134
	Groundwater Vulnerability Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 23 Leicestershire Scale: 1:100,000	A13SW (S)	0	2	463723 310996
	Groundwater Vulnerability Soil Classification: Soils of Intermediate Leaching Potential (I1) - Soils which can possibly transmit a wide range of pollutants Map Sheet: Sheet 23 Leicestershire Scale: 1:100,000	A13NW (NW)	0	2	463659 311259
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - B	A13SW (W)	0	1	463742 311134
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13SW (S)	0	1	463693 310987
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
14	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 189.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A13SW (W)	14	4	463617 311093
15	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A13SW (W)	109	4	463532 311051

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 90.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A13SW (SW)	113	4	463530 311032
17	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A13SW (SW)	177	4	463469 311005
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 46.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A13SW (SW)	194	4	463455 310981
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 16.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A13SW (SW)	205	4	463450 310936
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 108.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A13SW (SW)	214	4	463445 310920
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A12SE (SW)	287	4	463402 310833
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 200.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A12SE (SW)	302	4	463388 310827
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 429.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8NE (SE)	426	4	464000 310530
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8NE (S)	446	4	463901 310491

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 85.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8NE (S)	448	4	463895 310489
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8SE (S)	478	4	463812 310462
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 24.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8SE (S)	478	4	463794 310463
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 96.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A7NE (SW)	479	4	463384 310577
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 564.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8SE (S)	482	4	463788 310462
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 231.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A7NE (SW)	482	4	463390 310569
31	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 233.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8SE (S)	482	4	463773 310465
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 206.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Barkby Brook Catchment Name: Trent Primacy: 1	A7NE (SW)	492	4	463208 310752
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 542.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Barkby Brook Catchment Name: Trent Primacy: 1	A7NE (SW)	496	4	463202 310765

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 863.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Barkby Brook Catchment Name: Trent Primacy: 1	A7NE (SW)	535	4	463298 310572
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 59.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8SW (S)	572	4	463563 310407
36	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 2.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8SW (S)	572	4	463565 310407
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A8SW (S)	595	4	463505 310396
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.4 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A9SW (SE)	643	4	464294 310453
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 385.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A9SW (SE)	644	4	464296 310453
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Barkby Brook Catchment Name: Trent Primacy: 1	A12NW (W)	713	4	462865 311164
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 660.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Barkby Brook Catchment Name: Trent Primacy: 1	A12NW (W)	719	4	462859 311170
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A17NE (NW)	810	4	463324 312101

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 288.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NE (NE)	885	4	464440 311884
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 12.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NW (NE)	911	4	464360 311997
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NW (NE)	916	4	464354 312007
46	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 4.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NE (NE)	931	4	464571 311821
47	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 263.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NE (NE)	934	4	464575 311820
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 25.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NW (NE)	938	4	464348 312039
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 50.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NW (NE)	958	4	464347 312065
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NW (NE)	979	4	464288 312129
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 374.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NW (NE)	980	4	464280 312136

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 33.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A19NW (NE)	980	4	464302 312122
53	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 21.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Trent Primacy: 1	A9SE (SE)	987	4	464647 310327

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	**Historical Landfill Sites** Licence Holder: Mr P Winterton Limited Location: Barkby Road, Syston Name: Queniborough, Off Barkby Road Operator Location: Willows Farm, Wanlip Lane, Syston, Leicestershire Boundary Accuracy: As Supplied Provider Reference: EAHLD22640 First Input Date: 31st December 1900 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Household Waste and Liquid Sludge EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: 346	A13NE (N)	0	2	463769 311206
	Local Authority Landfill Coverage Name: Leicestershire County Council - Has supplied landfill data		0	5	463742 311134
	Local Authority Landfill Coverage Name: Charnwood Borough Council - Has no landfill data to supply		0	3	463742 311134
55	**Local Authority Recorded Landfill Sites** Location: Not Supplied Reference: 346 Authority: Leicestershire County Council **Last Reported Status:** **Unknown** Types of Waste: Not Supplied Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A13NE (N)	0	5	463770 311208
56	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A13NE (NE)	27	-	463834 311271
57	**Potentially Infilled Land (Non-Water)** Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1989	A23SW (N)	899	-	463652 312242
58	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1958	A14SW (E)	318	-	464234 311080

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Triassic Rocks (Undifferentiated)	A13SW (W)	0	1	463742 311134
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NW (NW)	0	1	463687 311251
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (S)	0	1	463750 311011
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (W)	0	1	463742 311134
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A13SE (SE)	48	1	463937 311000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	418	1	464338 311207
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A14NW (E)	462	1	464385 311172

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8SE (S)	612	1	464019 310340
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A8SE (S)	657	1	464000 310292
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (SW)	744	1	463000 310615
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Rural Soil Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 40 - 60 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A8SW (S)	771	1	463683 310186
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463760, 311220 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 7.70 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 44.80 mg/kg Lead Measured Concentration: 37.90 mg/kg Nickel Measured Concentration: 15.00 mg/kg	A13NE (N)	0	1	463760 311220
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463740, 310780 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 17.20 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 61.10 mg/kg Lead Measured Concentration: 41.30 mg/kg Nickel Measured Concentration: 17.90 mg/kg	A8NW (S)	177	1	463740 310780

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463220, 311280 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 19.30 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 58.80 mg/kg Lead Measured Concentration: 93.80 mg/kg Nickel Measured Concentration: 22.30 mg/kg	A12NE (W)	359	1	463220 311280
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463750, 311730 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 17.60 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 61.80 mg/kg Lead Measured Concentration: 43.40 mg/kg Nickel Measured Concentration: 15.80 mg/kg	A18SE (N)	409	1	463750 311730
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463320, 310680 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 15.60 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 88.30 mg/kg Lead Measured Concentration: 51.60 mg/kg Nickel Measured Concentration: 32.00 mg/kg	A7NE (SW)	444	1	463320 310680
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463220, 311780 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 21.70 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 64.00 mg/kg Lead Measured Concentration: 237.40 mg/kg Nickel Measured Concentration: 21.30 mg/kg	A17SE (NW)	587	1	463220 311780
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 462840, 311200 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 12.50 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 68.40 mg/kg Lead Measured Concentration: 71.50 mg/kg Nickel Measured Concentration: 24.60 mg/kg	A12NW (W)	735	1	462840 311200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463640, 310220 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 10.20 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 64.70 mg/kg Lead Measured Concentration: 48.30 mg/kg Nickel Measured Concentration: 19.20 mg/kg	A8SW (S)	746	1	463640 310220
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 463330, 310190 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 19.40 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 112.60 mg/kg Lead Measured Concentration: 74.40 mg/kg Nickel Measured Concentration: 43.30 mg/kg	A7SE (SW)	847	1	463330 310190
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 462740, 310640 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 8.60 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 57.40 mg/kg Lead Measured Concentration: 37.80 mg/kg Nickel Measured Concentration: 14.70 mg/kg	A7NW (SW)	971	1	462740 310640
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 462750, 311850 Soil Sample Type: Topsoil Sample Area: Leicester Arsenic Measured Concentration: 17.60 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 59.60 mg/kg Lead Measured Concentration: 162.30 mg/kg Nickel Measured Concentration: 22.90 mg/kg	A17NW (NW)	1000	1	462750 311850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: Leicester Count Id: 652 Arsenic Minimum Concentration: 4.00 mg/kg Arsenic Average Concentration: 14.00 mg/kg Arsenic Maximum Concentration: 84.00 mg/kg Cadmium Minimum Concentration: 0.30 mg/kg Cadmium Average Concentration: 0.50 mg/kg Cadmium Maximum Concentration: 9.30 mg/kg Chromium Minimum Concentration: 42.00 mg/kg Chromium Average Concentration: 86.00 mg/kg Chromium Maximum Concentration: 771.00 mg/kg Lead Minimum Concentration: 16.00 mg/kg Lead Average Concentration: 109.00 mg/kg Lead Maximum Concentration: 2053.00 mg/kg Nickel Minimum Concentration: 10.00 mg/kg Nickel Average Concentration: 28.00 mg/kg Nickel Maximum Concentration: 87.00 mg/kg	A13SW (W)	0	1	463742 311134
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	463770 311208
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	43	1	463831 311271
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	0	1	463693 310987
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	463770 311208
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A18SW (NW)	172	1	463572 311512

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	0	1	463742 311134

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
59	**Contemporary Trade Directory Entries** Name: J K Mount Location: Syston Grange, Barkby Road, Syston, Leicester, LE7 2AJ Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	91	-	463951 310893
60	**Contemporary Trade Directory Entries** Name: Leicester Carpet Cleaners Location: 4a, East Avenue, Syston, Leicester, LE7 2EH Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SW (NW)	460	-	463460 311778
60	**Contemporary Trade Directory Entries** Name: Leicester Carpet Cleaners Location: 4a, East Avenue, Syston, Leicester, LE7 2EH Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (NW)	460	-	463459 311777
61	**Contemporary Trade Directory Entries** Name: Line Makers Ltd Location: 138, Barkby Road, Syston, Leicester, LE7 2AH Classification: Road Marking & Surfacing Equipment & Material Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NE (W)	486	-	463089 311224
62	**Contemporary Trade Directory Entries** Name: Trophy Location: 27, St. Johns Avenue, Syston, Leicester, LE7 2AW Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SE (W)	515	-	463089 311055
63	**Contemporary Trade Directory Entries** Name: Ableflow Ltd Location: 88, Barkby Road, Syston, Leicester, LE7 2AH Classification: Plastics - Injection Moulding **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	579	-	463003 311315
63	**Contemporary Trade Directory Entries** Name: Mid-Link (Transport) Ltd Location: 86, Barkby Road, Syston, Leicester, Leicestershire, LE7 2AH Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12NW (W)	586	-	462996 311320
64	**Contemporary Trade Directory Entries** Name: Charnwood Paper Salvage Location: 34, Brighton Avenue, Syston, Leicester, LE7 2EB Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	612	-	463317 311879
65	**Contemporary Trade Directory Entries** Name: C N C Retro Services Location: 2a, Oxford Street, Syston, Leicester, LE7 2AS Classification: Machine Tool Accessories & Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	639	-	463006 311543
66	**Contemporary Trade Directory Entries** Name: P R Media Location: 11, Central Avenue, Syston, Leicester, LE7 2EF Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	739	-	462989 311740
66	**Contemporary Trade Directory Entries** Name: Ackwa Ltd Location: Braemar Court, 1315, Melton Road, Syston, Leicester, LE7 2EN Classification: Catering Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	766	-	462988 311788
67	**Contemporary Trade Directory Entries** Name: Homeclenze Location: 1313, Melton Road, Syston, Leicester, LE7 2EN Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	765	-	462995 311796

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
68	**Contemporary Trade Directory Entries** Name: L C V International Location: 1369, Melton Road, Syston, Leicester, LE7 2EP Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	766	-	463209 311995
68	**Contemporary Trade Directory Entries** Name: A & T Electrical Services Ltd Location: 1379, Melton Road, Syston, Leicester, LE7 2EP Classification: Domestic Appliances - Servicing, Repairs & Parts **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	779	-	463238 312027
69	**Contemporary Trade Directory Entries** Name: Tracks 2000 Location: 14, Oak Drive, Syston, Leicester, LE7 2PX Classification: Sports Equipment Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	795	-	462874 310807
69	**Contemporary Trade Directory Entries** Name: Oak Homebrew Location: 16, Oak Drive, Syston, LEICESTER, LE7 2PX Classification: Brewery Supplies **Status: Active** Positional Accuracy: Automatically positioned to the address	A12SW (W)	799	-	462871 310803
69	**Contemporary Trade Directory Entries** Name: Taylor Brown Print Media Solutions Ltd Location: 1, Oak Drive, Syston, LEICESTER, LE7 2PX Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	815	-	462848 310838
70	**Contemporary Trade Directory Entries** Name: Hydro Teq Services Location: Melton Rd, Queniborough, Leicester, Leicestershire, LE7 3FP Classification: Disability Equipment - Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A17NE (NW)	808	-	463266 312074
71	**Contemporary Trade Directory Entries** Name: Jm Damp And Timber Treatment Location: 12, Wreake Close, Syston, Leicester, LE7 2HF Classification: Damp & Dry Rot Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	810	-	462851 311621
72	**Contemporary Trade Directory Entries** Name: Thorntons Location: 1374, Melton Road, Syston, Leicester, LE7 2EQ Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	816	-	463079 311961
73	**Contemporary Trade Directory Entries** Name: K B Elmore & Sons Ltd Location: Brookfield Street, Syston, Leicester, LE7 2AE Classification: Pattern Makers - Industrial **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SW (W)	817	-	462800 311487
73	**Contemporary Trade Directory Entries** Name: K B Elsmore & Sons Ltd Location: Brookfield Street, Syston, LEICESTER, LE7 2AE Classification: Pattern Makers - Industrial **Status: Active** Positional Accuracy: Automatically positioned to the address	A17SW (W)	819	-	462799 311489
74	**Contemporary Trade Directory Entries** Name: Fire Protection Products Uk Ltd Location: 85, Pembroke Avenue, Syston, Leicester, LE7 2BZ Classification: Firefighting Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	818	-	462817 310920
75	**Contemporary Trade Directory Entries** Name: F F Marble Location: Melton Road, Queniborough, Leicester, LE7 3FP Classification: Fireplaces & Mantelpieces **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SW (N)	837	-	463680 312178

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
75	**Contemporary Trade Directory Entries** Name: T O & E M Pretty Location: 1447, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Engineers - General **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	842	-	463683 312183
76	**Contemporary Trade Directory Entries** Name: Anchor Print Group Ltd Location: 11, Victoria Street, Syston, Leicester, LE7 2LE Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A11NE (W)	862	-	462734 311415
76	**Contemporary Trade Directory Entries** Name: Inkolor Ltd Location: 11, Victoria Street, Syston, Leicester, LE7 2LE Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NE (W)	862	-	462734 311415
76	**Contemporary Trade Directory Entries** Name: Inkolor Ltd Location: 11, Victoria Street, Syston, Leicester, LE7 2LE Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NE (W)	862	-	462734 311415
77	**Contemporary Trade Directory Entries** Name: J D S Location: 6, Parkstone Road, Syston, Leicester, LE7 1LY Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17NE (NW)	879	-	463076 312041
78	**Contemporary Trade Directory Entries** Name: Hopgoods Upholsteries Location: 1267, Melton Road, Syston, Leicester, LE7 2EN Classification: Furniture - Repairing & Restoring **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	879	-	462804 311687
79	**Contemporary Trade Directory Entries** Name: Hyspeed Location: 10, Merton Avenue, Syston, Leicester, LE7 2JP Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SE (W)	887	-	462711 311027
80	**Contemporary Trade Directory Entries** Name: Arena Location: Nelson Street, Syston, Leicester, LE7 2JQ Classification: Sportswear - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NE (W)	889	-	462686 311232
80	**Contemporary Trade Directory Entries** Name: N P Services Ltd Location: Brook House, Cross Street, Syston, Leicester, LE7 2JG Classification: Metal Products - Fabricated **Status: Active** Positional Accuracy: Automatically positioned to the address	A11NE (W)	892	-	462686 311307
80	**Contemporary Trade Directory Entries** Name: Vibracoustics Ltd Location: Unit 1,Brook House,Cross St, Syston, Leicester, Leicestershire, LE7 2JG Classification: Rubber & Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A11NE (W)	892	-	462686 311306
80	**Contemporary Trade Directory Entries** Name: A P Displays Leicester Ltd Location: 39a, Albert Street, Syston, Leicester, LE7 2JA Classification: Screen Process Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NE (W)	905	-	462672 311271
81	**Contemporary Trade Directory Entries** Name: Thermosonics Location: Unit 12a,Melton Rd, Queniborough, Leicester, Leicestershire, LE7 3FP Classification: Ultrasonic Equipment Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A23SW (N)	890	-	463732 312226

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
82	**Contemporary Trade Directory Entries** Name: R O C Engineering Location: 1489, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Precision Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SE (N)	902	-	463796 312227
83	**Contemporary Trade Directory Entries** Name: Victoria Street Foundry Ltd Location: Victoria Street, Syston, Leicester, LE7 2LF Classification: Foundries **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NE (W)	907	-	462679 311364
83	**Contemporary Trade Directory Entries** Name: S M F Uk Ltd Location: Victoria Street, Syston, Leicester, LE7 2LF Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NE (W)	907	-	462679 311364
83	**Contemporary Trade Directory Entries** Name: Fast Forward Road Services Location: Victoria Street, Syston, Leicester, LE7 2LF Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11NE (W)	907	-	462679 311364
84	**Contemporary Trade Directory Entries** Name: A & S Tooling Location: Melton Road, Queniborough, Leicester, LE7 3FP Classification: Tool Sharpening, Repairing & Servicing **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	915	-	463736 312250
84	**Contemporary Trade Directory Entries** Name: Midlands Autotec Ltd Location: Unit 10a, 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	940	-	463743 312275
84	**Contemporary Trade Directory Entries** Name: Soar Valley Location: Unit 6b Queniborough Ondustrial Estate, Queniborough, Leicester, Leicestershire, LE7 3FP Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the address or location	A23SE (N)	963	-	463752 312297
84	**Contemporary Trade Directory Entries** Name: Temple Lifts Location: Unit 8, Queniborough Industrial Estate, 1489, Melton Road, Queniborough, LE7 3FP Classification: Lifting Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SE (N)	966	-	463769 312297
84	**Contemporary Trade Directory Entries** Name: The Mobile Garage People Location: Unit 6b,Queniborough Industrial Estate, Queniborough, Leicester, Leicestershire, LE7 3FP Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A23SE (N)	995	-	463756 312329
85	**Contemporary Trade Directory Entries** Name: Moir Wade Design Location: Nelson Street, Syston, Leicester, Leicestershire, LE7 2JQ Classification: Cabinet Makers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A11NE (W)	934	-	462643 311163
86	**Contemporary Trade Directory Entries** Name: Garden Machinery Location: Melton Rd, Syston, Leicester, Leicestershire, LE7 2HD Classification: Lawnmowers & Garden Machinery - Sales & Service **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A16SE (NW)	942	-	462721 311648

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
86	**Contemporary Trade Directory Entries** Name: Syston Dry Cleaners & Laundry Location: 5, High Street, Syston, Leicester, LE7 1GP Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A16SE (NW)	967	-	462712 311696
87	**Contemporary Trade Directory Entries** Name: Barton Petroleum Ltd Location: 1485, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Oil Fuel Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	946	-	463587 312289
87	**Contemporary Trade Directory Entries** Name: B P Service Station Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	949	-	463593 312293
87	**Contemporary Trade Directory Entries** Name: Walkers Tyre Service Ltd Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	949	-	463593 312293
87	**Contemporary Trade Directory Entries** Name: Rotor Motion Ltd Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SW (N)	969	-	463623 312313
87	**Contemporary Trade Directory Entries** Name: Elcom Uk Ltd Location: 1489, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Packaging Materials Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	977	-	463617 312321
87	**Contemporary Trade Directory Entries** Name: Queniborough County Garage Location: 1489, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Mot Testing Centres **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	977	-	463617 312321
87	**Contemporary Trade Directory Entries** Name: Stapletons Systems Location: 1489, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Joinery Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	977	-	463617 312321
87	**Contemporary Trade Directory Entries** Name: Queniborough County Garage Location: 1489, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SW (N)	977	-	463617 312321
87	**Contemporary Trade Directory Entries** Name: Queniborough Aluminium Services Ltd Location: 1489, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Aluminium Fabricators **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SW (N)	977	-	463617 312321
87	**Contemporary Trade Directory Entries** Name: Midland Engine Services Location: 1489, Melton Road, Queniborough, Leicester, Leicestershire, LE7 3FP Classification: Engine Rebuilding & Reconditioning **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A23SW (N)	977	-	463617 312321
87	**Contemporary Trade Directory Entries** Name: All Star Garages Ltd Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	979	-	463622 312323

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
87	**Contemporary Trade Directory Entries** Name: Uk Trims Ltd Location: 1489 Melton Rd, Queniborough, Leicester, Leicestershire, LE7 3FP Classification: Knitwear Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A23SW (N)	980	-	463584 312324
87	**Contemporary Trade Directory Entries** Name: K Johnston Tooling Location: 1489 Melton Rd, Queniborough, Leicester, Leicestershire, LE7 3FP Classification: Plastics - Injection Moulding **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A23SW (N)	984	-	463588 312328
88	**Contemporary Trade Directory Entries** Name: Blue Skips Location: 8, Ash Drive, Syston, Leicester, LE7 2PQ Classification: Waste Disposal Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A11SE (W)	947	-	462717 310817
89	**Contemporary Trade Directory Entries** Name: Millipix Location: 1215, Melton Road, Syston, Leicester, LE7 2JT Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A16SE (W)	952	-	462680 311550
90	**Contemporary Trade Directory Entries** Name: Johnson Cleaners (Uk) Ltd Location: Metro Wines Unit, 1286, Melton Road, Syston, Leicester, LE7 2HD Classification: Dry Cleaners **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A16SE (NW)	954	-	462692 311600
91	**Contemporary Trade Directory Entries** Name: Syston Doors Ltd Location: 33, Albert Street, Syston, Leicester, LE7 2JB Classification: Roller Shutter Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A11NE (W)	959	-	462619 311311
92	**Contemporary Trade Directory Entries** Name: Leicestershire Airguns Location: Suite 13, 1487, Melton Road, Queniborough, LE7 3FP Classification: Gunsmiths **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	972	-	463654 312315
92	**Contemporary Trade Directory Entries** Name: Destiny Clothing Location: Suite 23, Unit 3, Melton Road, Queniborough, LE7 3FP Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SW (N)	972	-	463654 312315
92	**Contemporary Trade Directory Entries** Name: High Class Ironing Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Ironing & Home Laundry Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	976	-	463651 312319
92	**Contemporary Trade Directory Entries** Name: J M S Powder Coating Ltd Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Powder Coatings **Status: Active** Positional Accuracy: Automatically positioned to the address	A23SW (N)	976	-	463651 312319
92	**Contemporary Trade Directory Entries** Name: Vee Dub Services Ltd Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Classification: Car Customisation & Conversion Specialists **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A23SW (N)	976	-	463651 312319
93	**Contemporary Trade Directory Entries** Name: Costcutter Carpets Location: 1185-1187, Melton Road, Syston, Leicester, LE7 2JT Classification: Blinds, Awnings & Canopies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A16SE (W)	974	-	462639 311494

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
93	**Contemporary Trade Directory Entries** Name: Stewart Houston Location: 5, Brookbridge Court, 1189, Melton Road, Syston, Leicester, Leicestershire, LE7 2JT Classification: Engineering Services **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A16SE (W)	985	-	462629 311503
94	**Fuel Station Entries** Name: Melton Road Service Station Location: 374 Melton Road, Syston, LEICESTER, Leicestershire, LE7 2EQ Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Approximate location provided by supplier	A17NE (NW)	658	-	463190 311848
95	**Fuel Station Entries** Name: Branston Sf Connect Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Brand: Bp Premises Type: Petrol Station **Status: Open** Positional Accuracy: Manually positioned to the address or location	A23SW (N)	974	-	463618 312318
96	**Points of Interest - Commercial Services** Name: Mid Link Transport Ltd Location: 86 Barkby Road, Syston, Leicester, LE7 2AH Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A12NW (W)	586	6	462996 311320
97	**Points of Interest - Commercial Services** Name: L C V International Location: 1369 Melton Road, Syston, Leicester, LE7 2EP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	766	6	463209 311995
97	**Points of Interest - Commercial Services** Name: L C V International Location: 1369 Melton Road, Syston, Leicester, LE7 2EP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A17NE (NW)	766	6	463209 311995
98	**Points of Interest - Commercial Services** Name: S M F (UK) Ltd Location: Victoria Street, Syston, Leicester, LE7 2LF Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A11NE (W)	907	6	462679 311364
99	**Points of Interest - Commercial Services** Name: S M F UK Ltd Location: 2 Victoria Street, Syston, Leicester, LE7 2LF Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A11NE (W)	928	6	462648 311275
99	**Points of Interest - Commercial Services** Name: Multi Vehicle Technology Location: 2 Victoria Street, Syston, Leicester, LE7 2LF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11NE (W)	934	6	462643 311282
100	**Points of Interest - Commercial Services** Name: Midlands Autotec Ltd Location: Unit 10a Queniborough Industrial Estate, Melton Road, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SW (N)	939	6	463746 312273
100	**Points of Interest - Commercial Services** Name: The Mobile Garage People Location: Unit 6b, Queniborough Industrial Estate, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SE (N)	966	6	463754 312300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
101	**Points of Interest - Commercial Services** Name: A A Plant Glass Location: 6 Ash Drive, Syston, Leicester, LE7 2PQ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A11SE (W)	942	6	462723 310814
102	**Points of Interest - Commercial Services** Name: Branston Sf Connect Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A23SW (N)	974	6	463618 312318
102	**Points of Interest - Commercial Services** Name: Car Wash Location: 1487 Melton Road, Queniborough, Leicester, LE7 3FP Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A23SW (N)	974	6	463618 312318
102	**Points of Interest - Commercial Services** Name: Queniborough County Garage Location: 1489 Melton Road, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SW (N)	976	6	463616 312320
102	**Points of Interest - Commercial Services** Name: Jumblie Autogas Suppliers Location: 1487 Melton Road, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SW (N)	976	6	463651 312319
102	**Points of Interest - Commercial Services** Name: Queniborough County Garage Location: 1489 Melton Road, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SW (N)	977	6	463617 312321
102	**Points of Interest - Commercial Services** Name: Midland Engine Services Location: 1489 Melton Road, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SW (N)	977	6	463617 312321
102	**Points of Interest - Commercial Services** Name: Midland Engine Services Location: 1489 Melton Road, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SW (N)	977	6	463617 312321
102	**Points of Interest - Commercial Services** Name: Queniborough County Garage Location: 1489 Melton Road, Queniborough, Leicester, LE7 3FP Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A23SW (N)	977	6	463617 312321
103	**Points of Interest - Manufacturing and Production** Name: Eric Edward Rose Location: 41 Hungarton Drive, Syston, Leicester, LE7 2AU Category: Farming Class Code: Arable Farming Positional Accuracy: Positioned to address or location	A12NE (NW)	392	6	463217 311393
104	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	595	6	463052 311542
105	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17NE (NW)	756	6	463293 312029

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
106	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (W)	823	6	462795 311491
106	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (W)	823	6	462795 311491
107	**Points of Interest - Manufacturing and Production** Name: F F Marble Location: Melton Road, Queniborough, Leicester, LE7 3FP Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A23SW (N)	837	6	463680 312178
107	**Points of Interest - Manufacturing and Production** Name: Queniborough Industrial Estate Location: LE7 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A23SW (N)	885	6	463741 312220
108	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	865	6	462730 311411
108	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	865	6	462730 311411
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	881	6	462694 311227
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A11NE (W)	882	6	462693 311233
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	884	6	462704 311380
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	886	6	462702 311380
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	889	6	462690 311309
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	889	6	462690 311309

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	896	6	462680 311262
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	896	6	462680 311262
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	909	6	462676 311362
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	909	6	462676 311362
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	917	6	462660 311293
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	917	6	462660 311293
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	933	6	462644 311281
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	933	6	462644 311281
109	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	952	6	462627 311312
109	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	956	6	462623 311311
110	**Points of Interest - Manufacturing and Production** Name: Tank Location: LE7 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19NW (NE)	902	6	464273 312048
111	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A17SW (NW)	902	6	462826 311785

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
112	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	974	6	462632 311472
112	**Points of Interest - Manufacturing and Production** Name: Works Location: LE7 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	977	6	462630 311474
113	**Points of Interest - Manufacturing and Production** Name: Tank Location: LE7 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A11NE (W)	987	6	462596 311352
114	**Points of Interest - Public Infrastructure** Name: Syston Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	428	6	463152 311291
114	**Points of Interest - Public Infrastructure** Name: Syston Cemetery Location: LE7 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A12NE (W)	428	6	463152 311290
115	**Points of Interest - Public Infrastructure** Name: Syston Fire Station Location: Syston Fire Station 1370, Melton Road, Syston, Leicester, LE7 2EQ Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A17NW (NW)	824	6	463011 311907
116	**Points of Interest - Public Infrastructure** Name: Syston Local Policing Unit Location: 1293 Melton Road, Syston, Leicester, LE7 2EN Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A17SW (NW)	855	6	462848 311726
117	**Points of Interest - Public Infrastructure** Name: Cemetery Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	943	6	463603 310026
117	**Points of Interest - Public Infrastructure** Name: Cemetery Location: LE7 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	943	6	463603 310026
118	**Points of Interest - Public Infrastructure** Name: Blue Skips Location: 8 Ash Drive, Syston, Leicester, LE7 2PQ Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A11SE (W)	947	6	462717 310817
119	**Points of Interest - Public Infrastructure** Name: Branstons Garage Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A23SW (N)	973	6	463618 312317
119	**Points of Interest - Public Infrastructure** Name: Branstons Garage Location: 1487 Melton Road, Queniborough, Leicester, LE7 3FP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A23SW (N)	974	6	463618 312318

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
119	**Points of Interest - Public Infrastructure** Name: Branston Sf Connect Location: 1487, Melton Road, Queniborough, Leicester, LE7 3FP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A23SW (N)	974	6	463618 312318
119	**Points of Interest - Public Infrastructure** Name: BP Service Station Branstons Garage Location: Melton Road, Queniborough, Leicester, LE7 3FP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A23SW (N)	977	6	463617 312321
119	**Points of Interest - Public Infrastructure** Name: Branstons Garage Location: 1487 Melton Road, Queniborough, Leicester, LE7 3FP Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A23SW (N)	977	6	463617 312321

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
120	**Nitrate Vulnerable Zones** Name: Soar R Nvz Description: Surface Water Source: Environment Agency, Head Office	A13SW (W)	0	7	463742 311134

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Harborough District Council - Environmental Health Department	April 2014	Annual Rolling Update
Charnwood Borough Council - Environmental Health Department	January 2015	Annual Rolling Update
Leicester City Council - Environmental Health Department	March 2015	Annual Rolling Update
Melton Borough Council - Community Services	September 2013	Annual Rolling Update
Discharge Consents		
Environment Agency - Midlands Region	October 2017	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - Midlands Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - Midlands Region	October 2008	Not Applicable
Integrated Pollution Prevention And Control		
Environment Agency - Midlands Region	October 2017	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Leicester City Council - Environmental Health Department	February 2013	Annual Rolling Update
Charnwood Borough Council - Environmental Health Department	March 2015	Annual Rolling Update
Harborough District Council - Environmental Health Department	March 2015	Annual Rolling Update
Melton Borough Council - Environmental Health Department	May 2016	Annual Rolling Update
Local Authority Pollution Prevention and Controls		
Charnwood Borough Council - Environmental Health Department	March 2015	Annual Rolling Update
Harborough District Council - Environmental Health Department	March 2015	Annual Rolling Update
Melton Borough Council - Environmental Health Department	May 2016	Annual Rolling Update
Leicester City Council - Environmental Health Department	September 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Leicester City Council - Environmental Health Department	February 2013	Annual Rolling Update
Charnwood Borough Council - Environmental Health Department	March 2015	Annual Rolling Update
Harborough District Council - Environmental Health Department	March 2015	Annual Rolling Update
Melton Borough Council - Environmental Health Department	May 2016	Annual Rolling Update
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - Midlands Region	December 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - Midlands Region	July 2015	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - Midlands Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - Midlands Region	January 2015	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - Midlands Region - East Area	October 2017	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2017	Quarterly
Water Abstractions		
Environment Agency - Midlands Region	October 2017	Quarterly
Water Industry Act Referrals		
Environment Agency - Midlands Region	October 2017	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Groundwater Vulnerability Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones Environment Agency - Head Office	October 2017	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	November 2017	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	November 2017	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	November 2017	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	November 2017	Quarterly
Flood Defences Environment Agency - Head Office	November 2017	Quarterly
OS Water Network Lines Ordnance Survey	October 2017	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	As notified

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	October 2017	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - Midlands Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - Midlands Region - East Area	October 2017	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2017	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - Midlands Region - East Area	October 2017	Quarterly
Environment Agency - Midlands Region - Lower Trent Area	October 2017	Quarterly
Local Authority Landfill Coverage		
Charnwood Borough Council - Environmental Health Department	May 2000	Not Applicable
Harborough District Council - Environmental Health Department	May 2000	Not Applicable
Leicester City Council - Environment and Development	May 2000	Not Applicable
Leicestershire County Council	May 2000	Not Applicable
Melton Borough Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Charnwood Borough Council - Environmental Health Department	May 2000	Not Applicable
Harborough District Council - Environmental Health Department	May 2000	Not Applicable
Leicester City Council - Environment and Development	May 2000	Not Applicable
Leicestershire County Council	May 2000	Not Applicable
Melton Borough Council - Environmental Health Department	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - Midlands Region - East Area	March 2003	Not Applicable
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - Midlands Region - East Area	March 2003	Not Applicable
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - Midlands Region - East Area	March 2003	Not Applicable
Environment Agency - Midlands Region - Lower Trent Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Charnwood Borough Council	February 2016	Annual Rolling Update
Harborough District Council	February 2016	Annual Rolling Update
Leicester City Council - Environment and Development	February 2016	Annual Rolling Update
Leicestershire County Council	February 2016	Annual Rolling Update
Melton Borough Council	February 2016	Annual Rolling Update
Planning Hazardous Substance Consents		
Charnwood Borough Council	February 2016	Annual Rolling Update
Harborough District Council	February 2016	Annual Rolling Update
Leicester City Council - Environment and Development	February 2016	Annual Rolling Update
Leicestershire County Council	February 2016	Annual Rolling Update
Melton Borough Council	February 2016	Annual Rolling Update

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	November 2017	Bi-Annually
BGS Urban Soil Chemistry British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Urban Soil Chemistry Averages British Geological Survey - National Geoscience Information Service	October 2015	As notified
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	As notified
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	June 2015	As notified
Radon Potential - Radon Affected Areas British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	November 2017	Quarterly
Fuel Station Entries Catalist Ltd - Experian	November 2017	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	December 2017	Quarterly
Points of Interest - Education and Health PointX	December 2017	Quarterly
Points of Interest - Manufacturing and Production PointX	December 2017	Quarterly
Points of Interest - Public Infrastructure PointX	December 2017	Quarterly
Points of Interest - Recreational and Environmental PointX	December 2017	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually
Sensitive Land Use	**Version**	**Update Cycle**
Ancient Woodland Natural England	October 2017	Bi-Annually
Areas of Outstanding Natural Beauty Natural England	August 2017	Bi-Annually
Environmentally Sensitive Areas Natural England	January 2017	
Forest Parks Forestry Commission	April 1997	Not Applicable
Local Nature Reserves Natural England	August 2017	Bi-Annually
Marine Nature Reserves Natural England	August 2017	Bi-Annually
National Nature Reserves Natural England	August 2017	Bi-Annually
National Parks Natural England	August 2017	Bi-Annually
Nitrate Vulnerable Zones Environment Agency - Head Office Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	December 2017 October 2015	Bi-Annually
Ramsar Sites Natural England	August 2017	Bi-Annually
Sites of Special Scientific Interest Natural England	August 2017	Bi-Annually
Special Areas of Conservation Natural England	August 2017	Bi-Annually
Special Protection Areas Natural England	August 2017	Bi-Annually

Data Suppliers

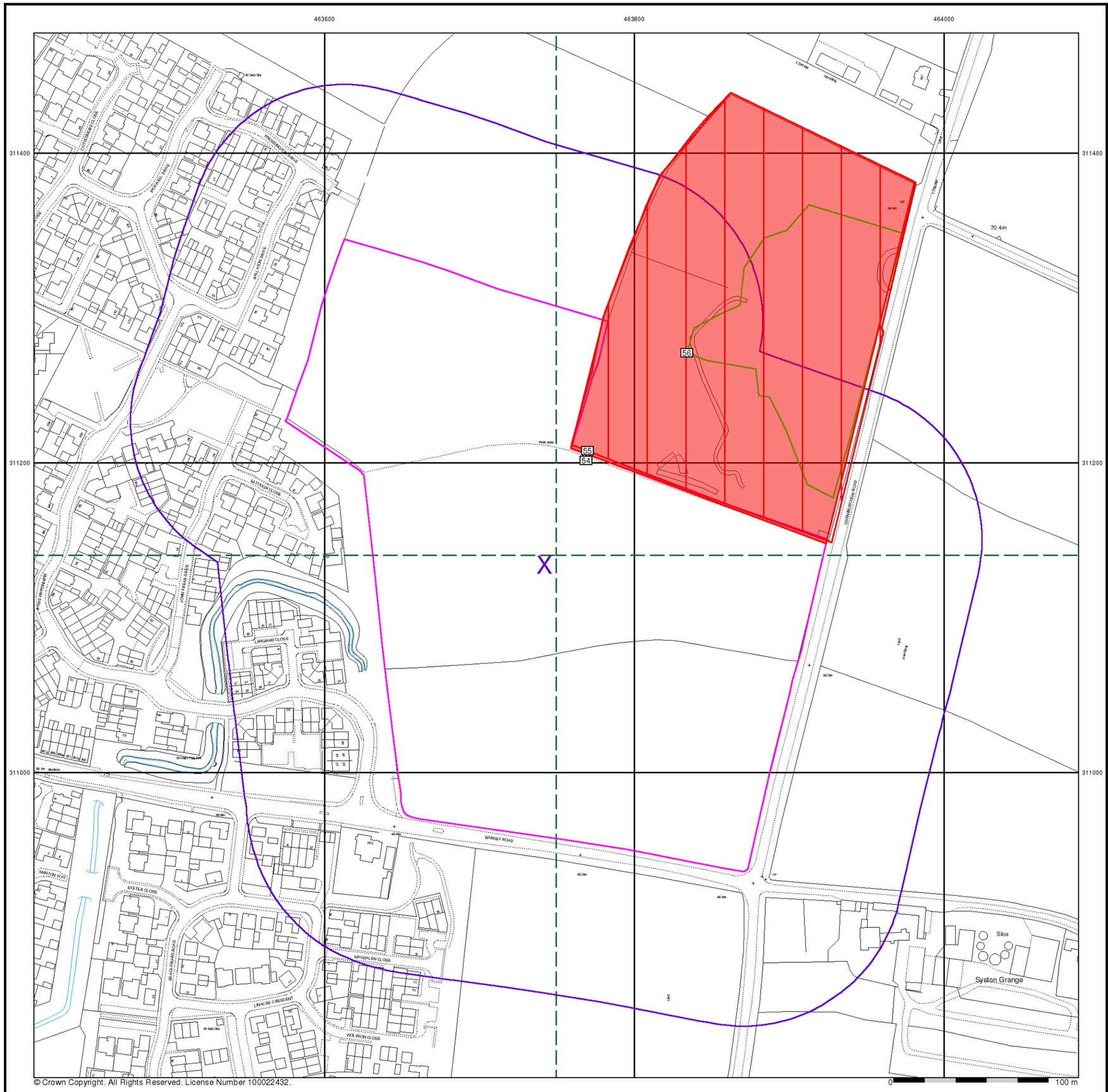
A selection of organisations who provide data within this report

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

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Charnwood Borough Council - Environmental Health Department** Macaulay House, 5 Cattle Market, Loughborough, Leicestershire, LE11 3DH	Telephone: 01509 634636 Fax: 01509 211703 Website: www.charnwoodbc.gov.uk
4	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	**Leicestershire County Council** County Hall, Glenfield, Leicestershire, LE3 8RH	Website: www.leics.gov.uk
6	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
7	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

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



RSK

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

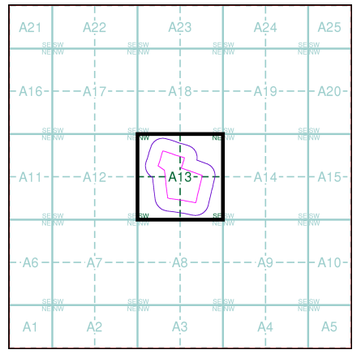
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13



Order Details

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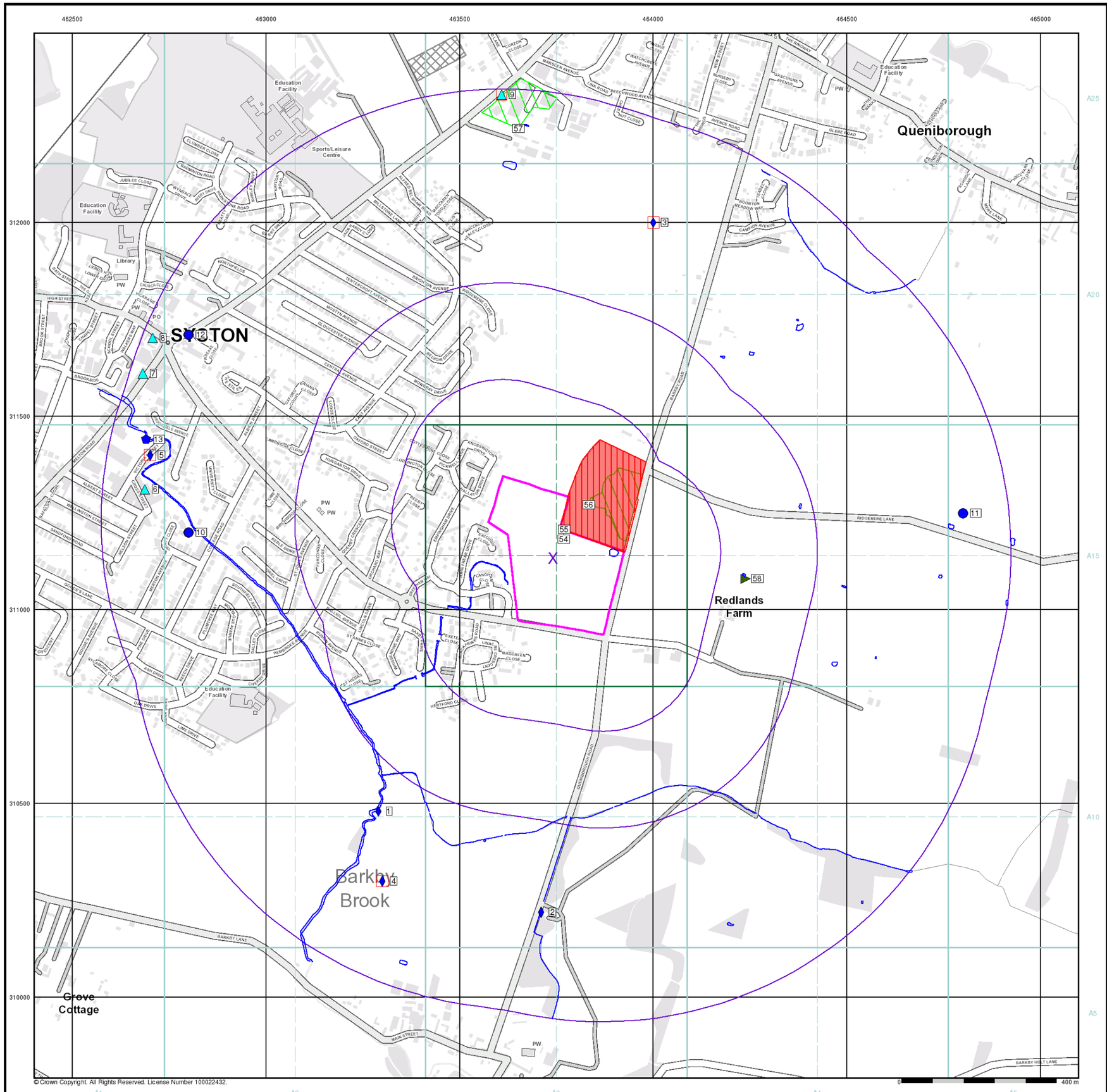
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Plot Buffer (m):	100

Site Details

Site at, Syston, Leicestershire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



RSK

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
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- Registered Radioactive Substance
- River Network or Water Feature
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- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

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COMAH Site | Explosive Site | NIHHS Site

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- Registered Landfill Site
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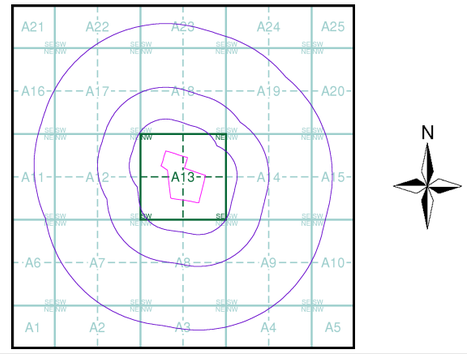
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

Order Number:	153824059_1_1
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National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

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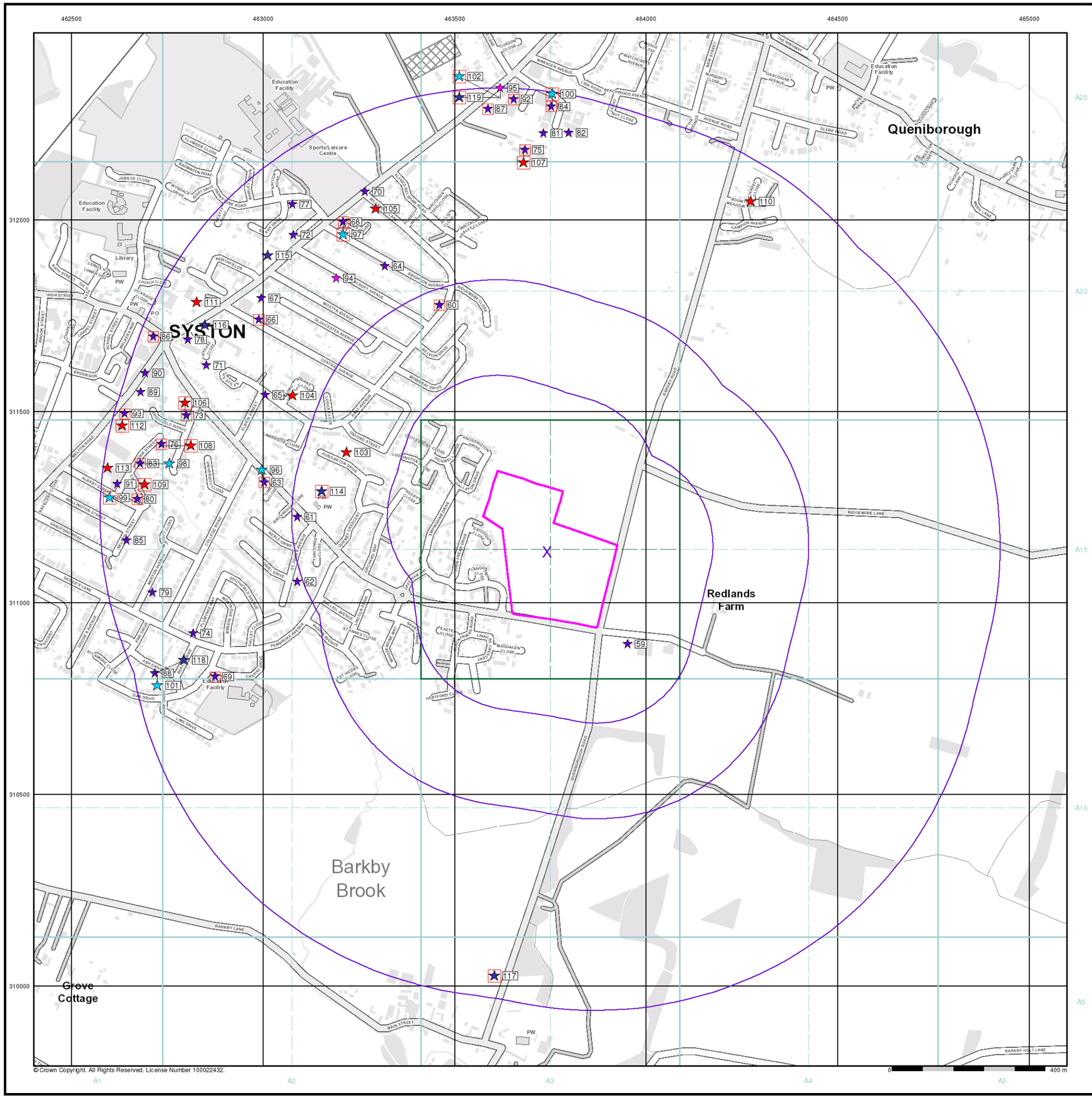


Industrial Land Use Map

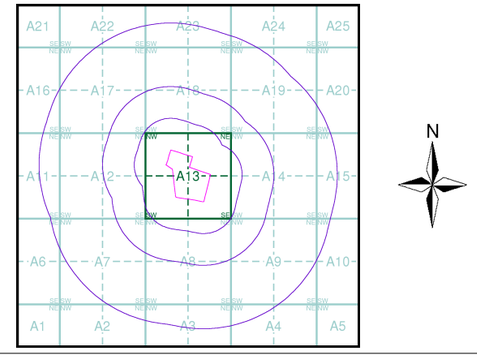
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



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Search Buffer (m):	1000

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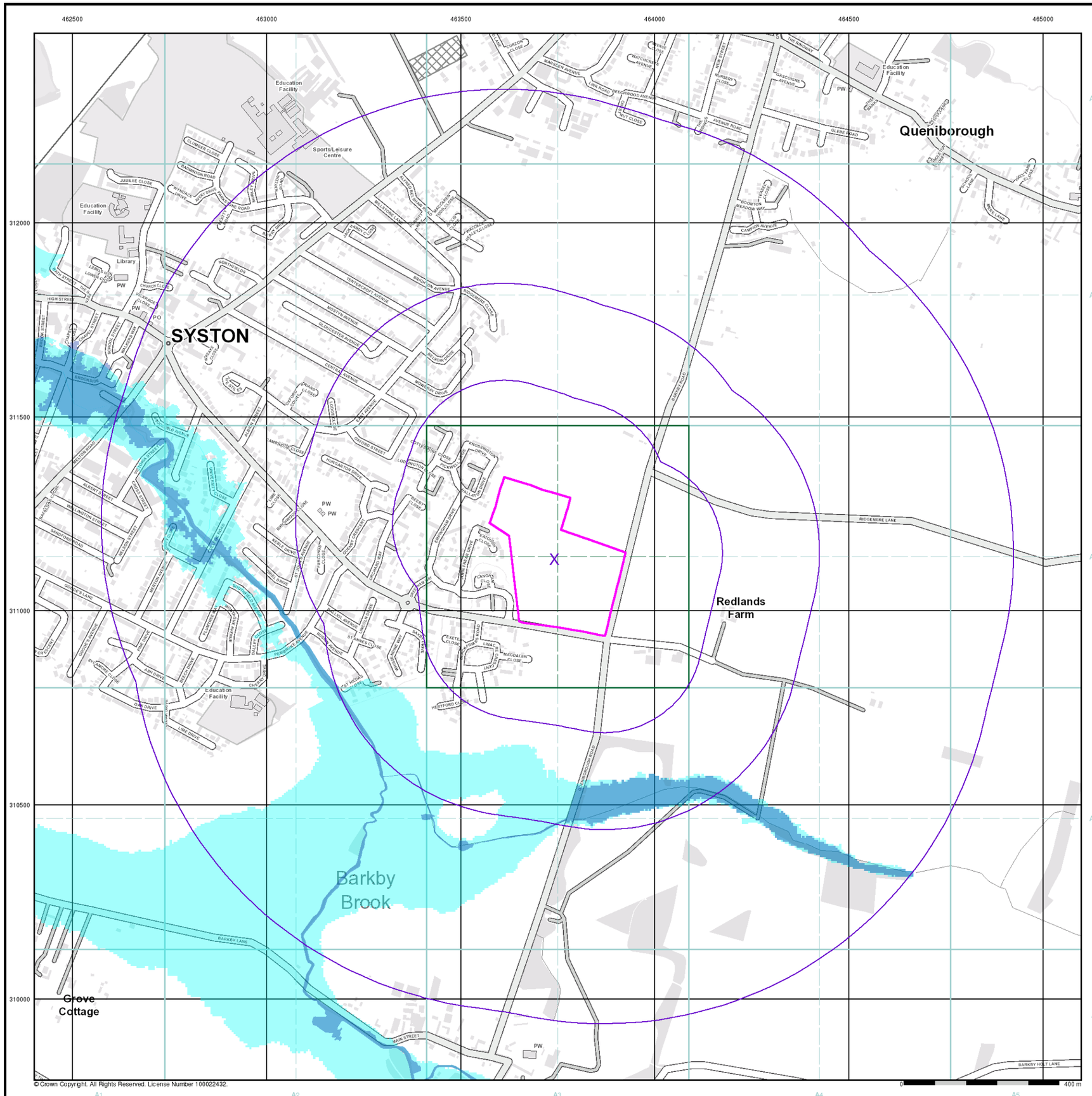


RSK

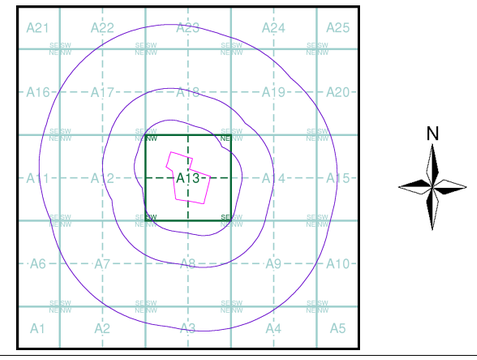
General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

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Search Buffer (m):	1000

Site Details

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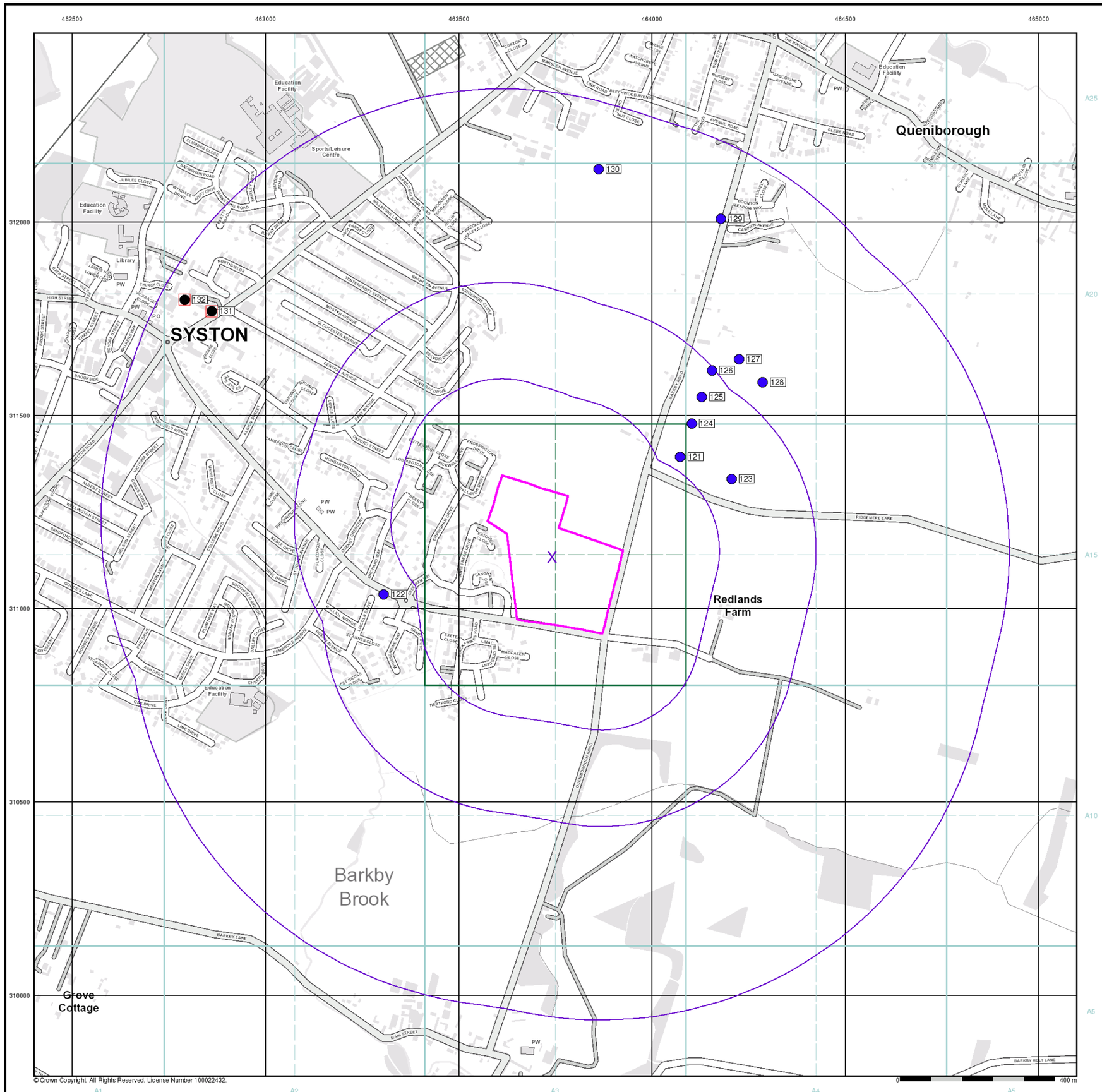


RSK

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

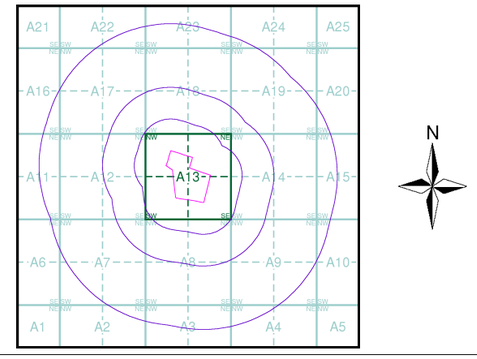
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
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Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

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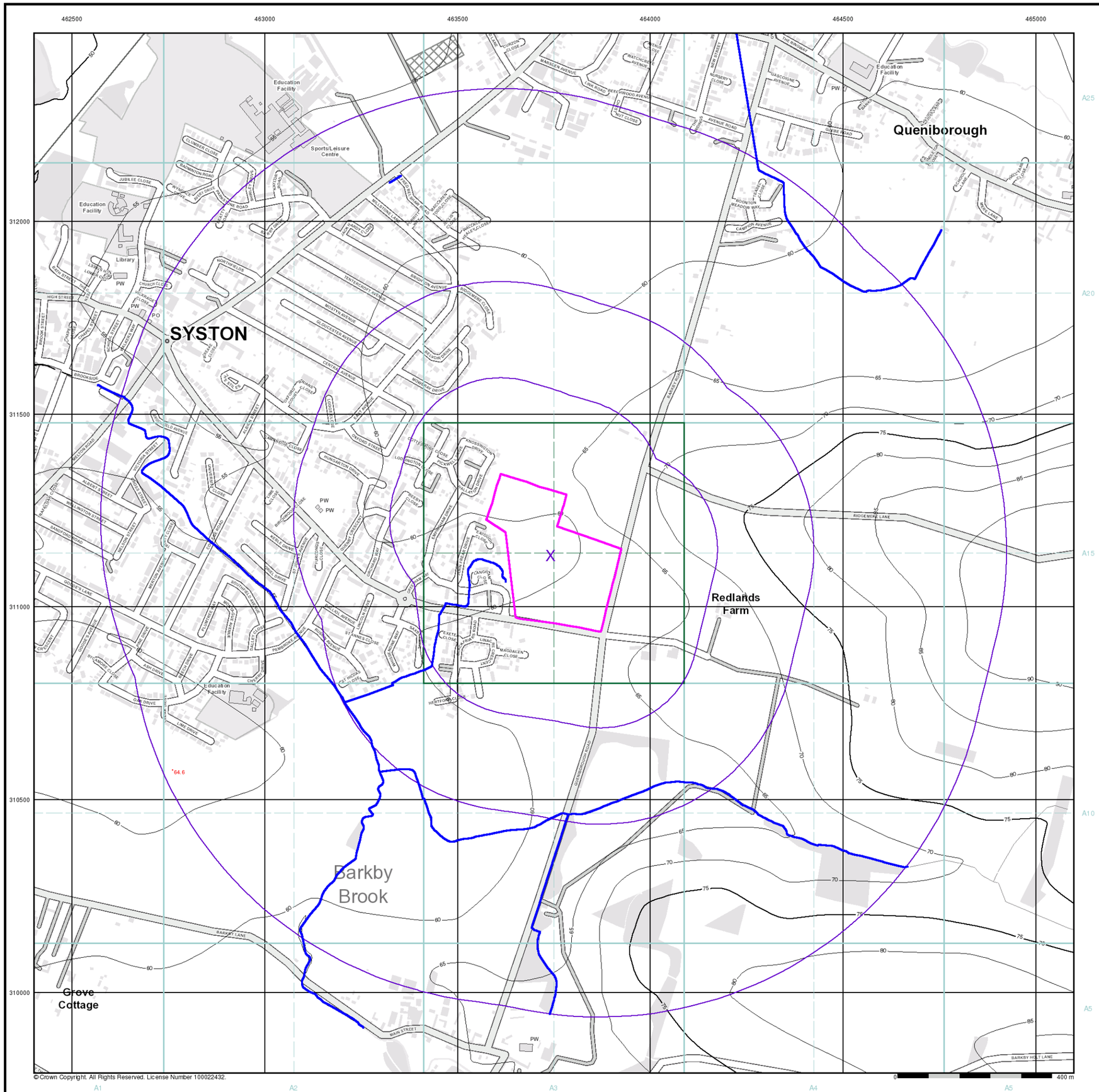


RSK

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

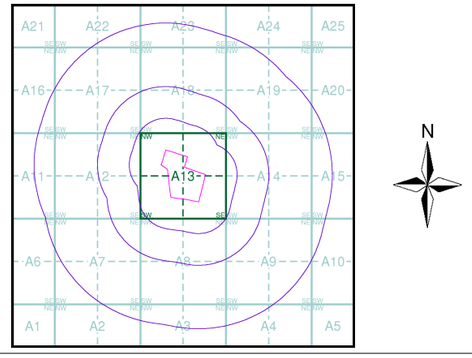
Standard Contour 105 100 95

Master Contour

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

Order Number:	153824059_1_1
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National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

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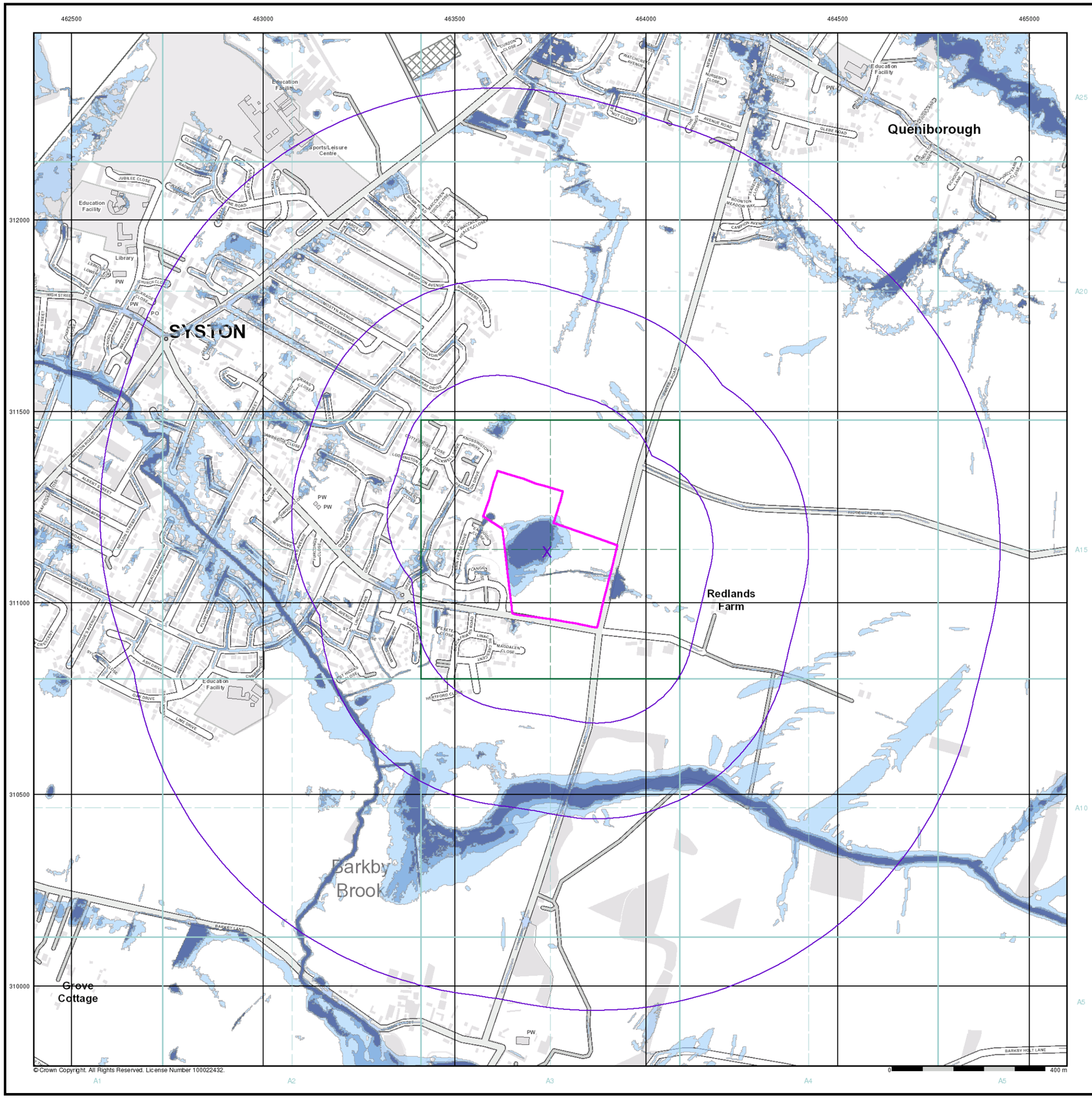


RSK

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Risk of Flooding from Surface Water

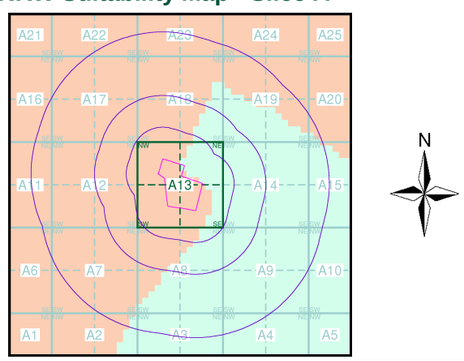
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



Order Details

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Site Details

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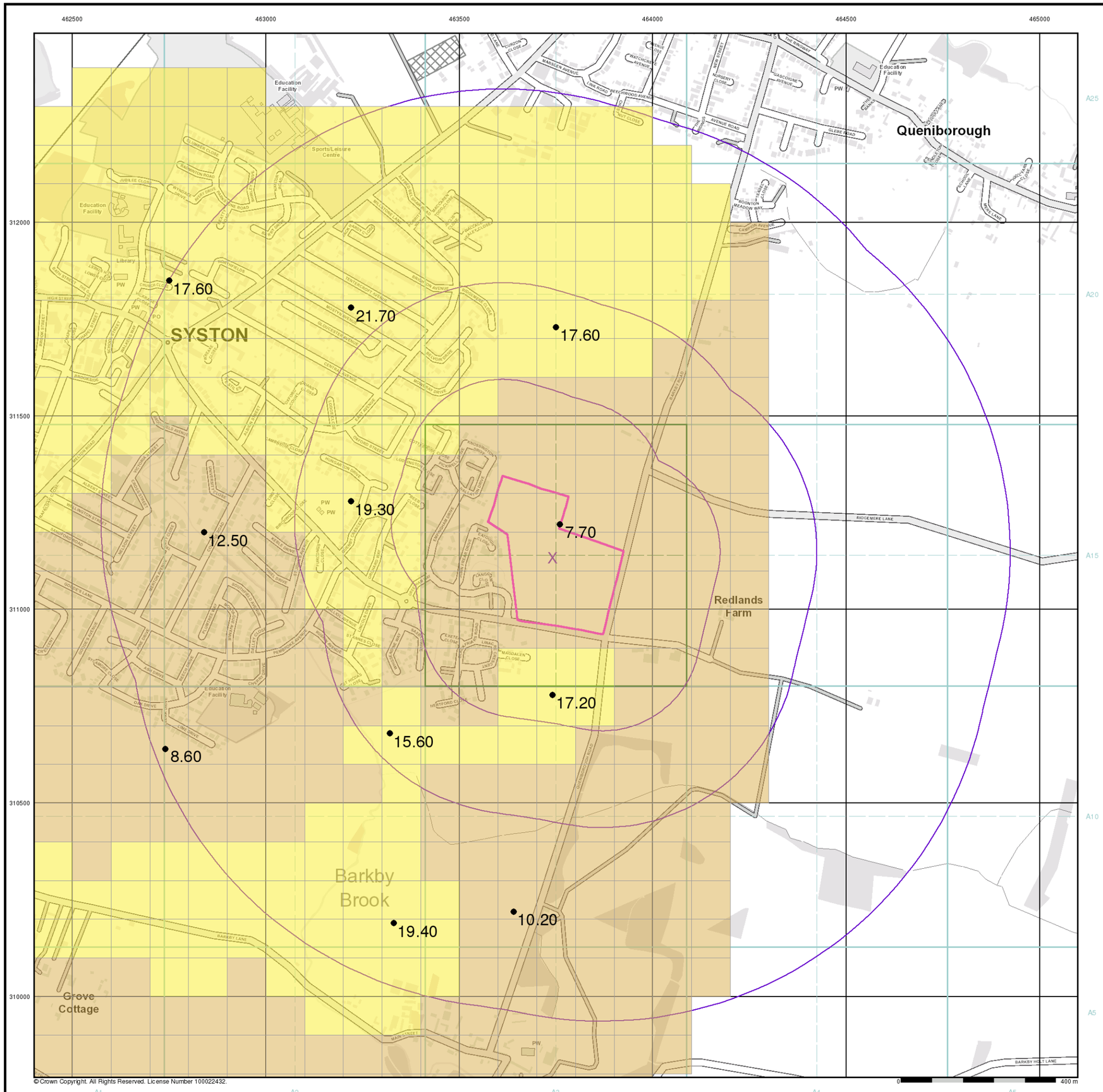


RSK

General

Specified Site | Specified Buffer(s) | X Bearing Reference Point

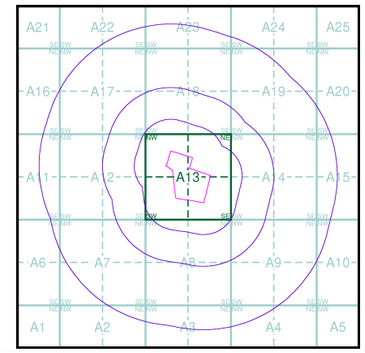
Urban Soil Chemistry Arsenic

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Arsenic Concentrations mg/kg

< 15
15 - 25
25 - 35
35 - 45
45 - 60
60 - 120
> 120

Urban Soil Chemistry Arsenic - Slice A



Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search buffer (m):	1000

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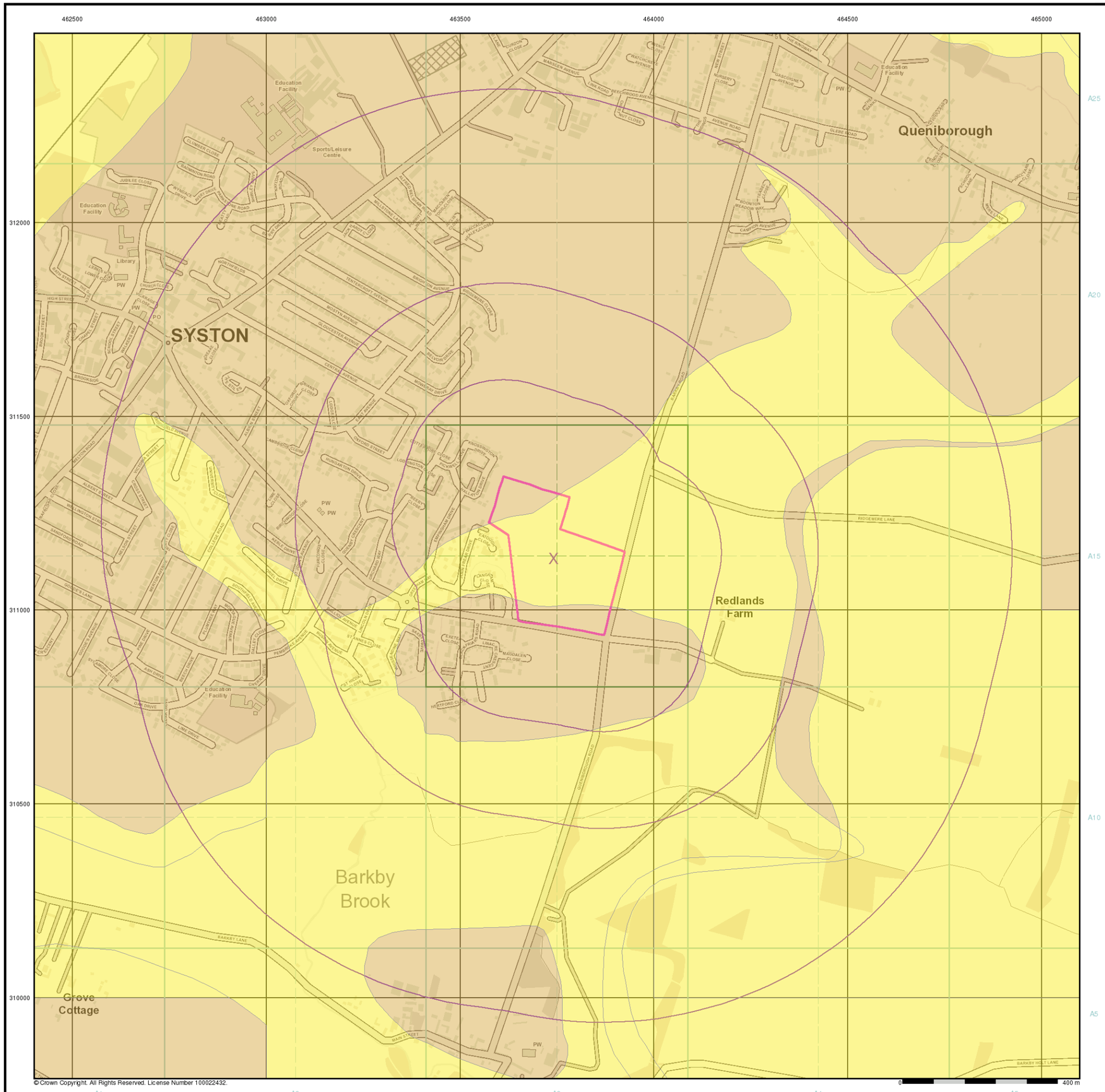


RSK

General

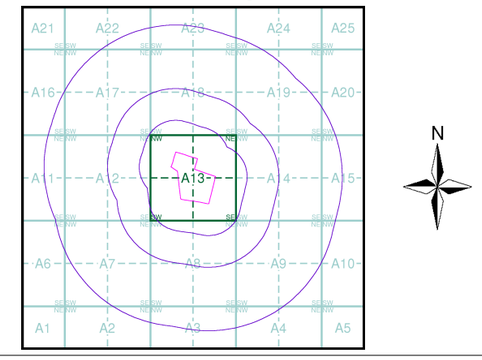
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search buffer (m):	1000

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Site at, Syston, Leicestershire

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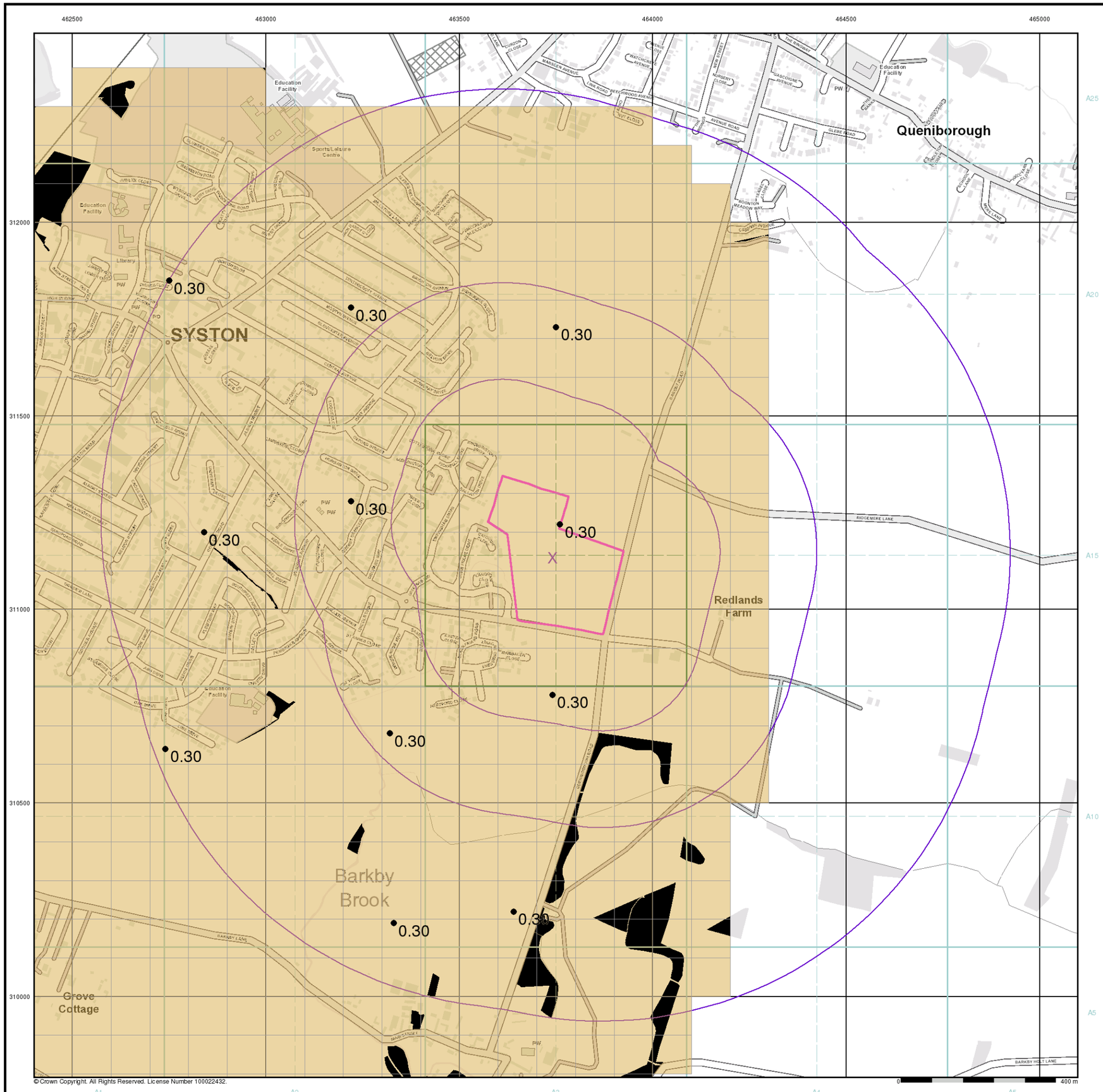


RSK

General

Specified Site | Specified Buffer(s) | Bearing Reference Point

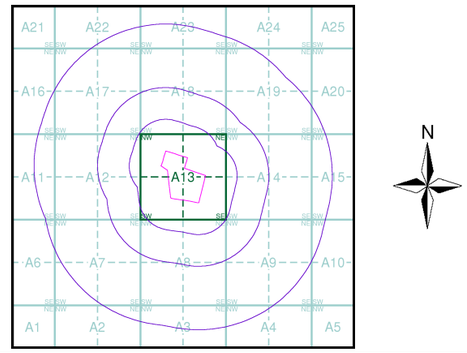
Urban Soil Chemistry Cadmium

BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Cadmium Concentrations mg/kg

< 1.8
1.8 - 2.2
2.2 - 3.0
> 3.0

Urban Soil Chemistry Cadmium - Slice A



Order Details

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Customer Ref:	302001
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Site Details

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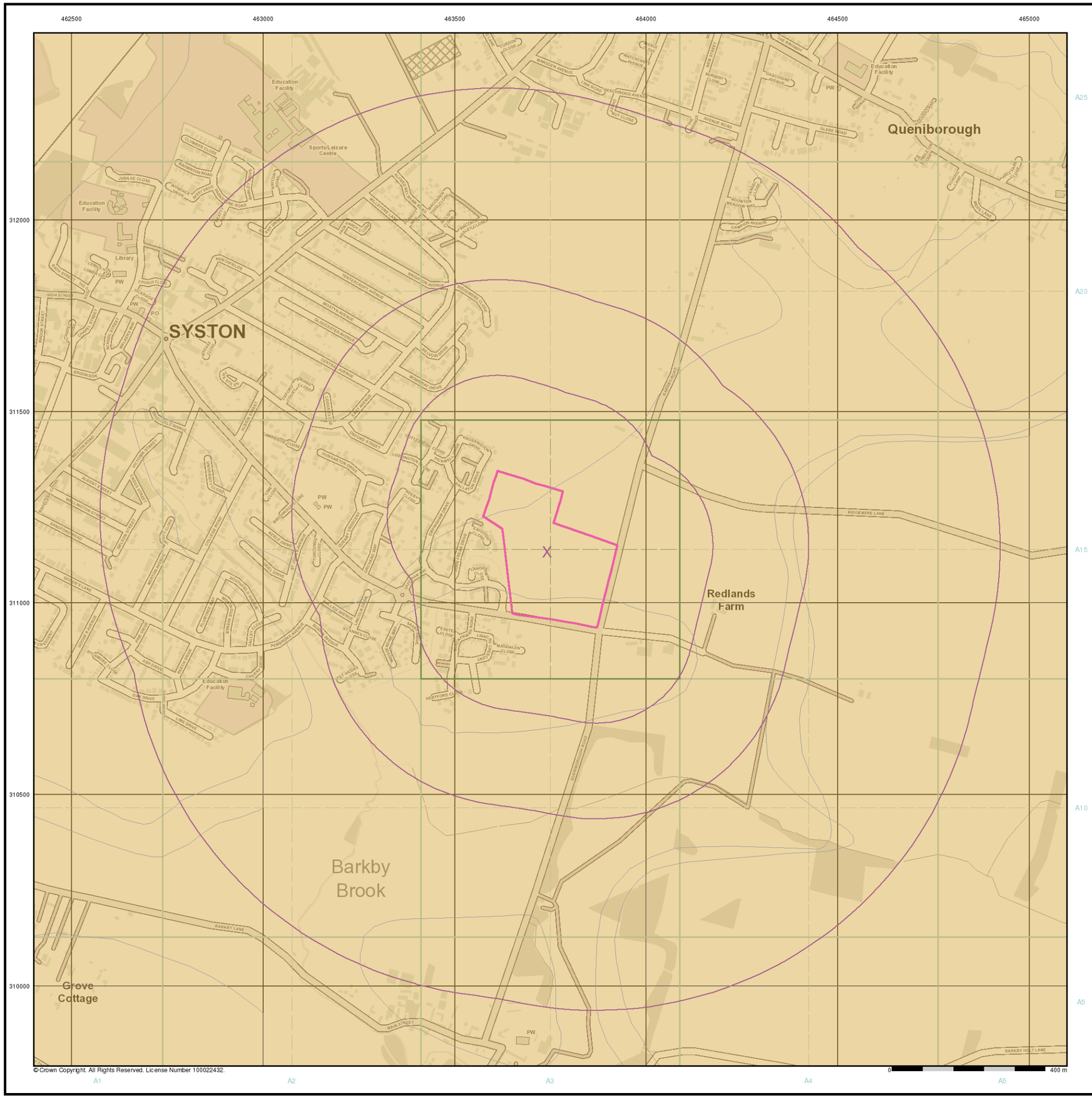


RSK

General

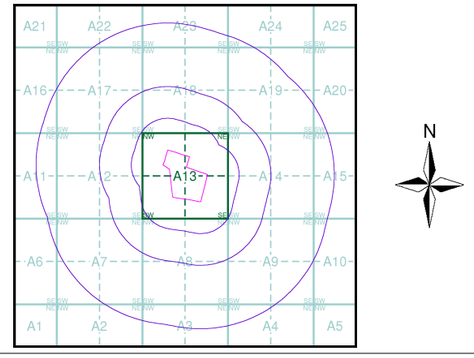
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

	< 1.8
	1.8 - 2.2
	2.2 - 3.0
	> 3.0

Estimated Soil Chemistry Cadmium - Slice A



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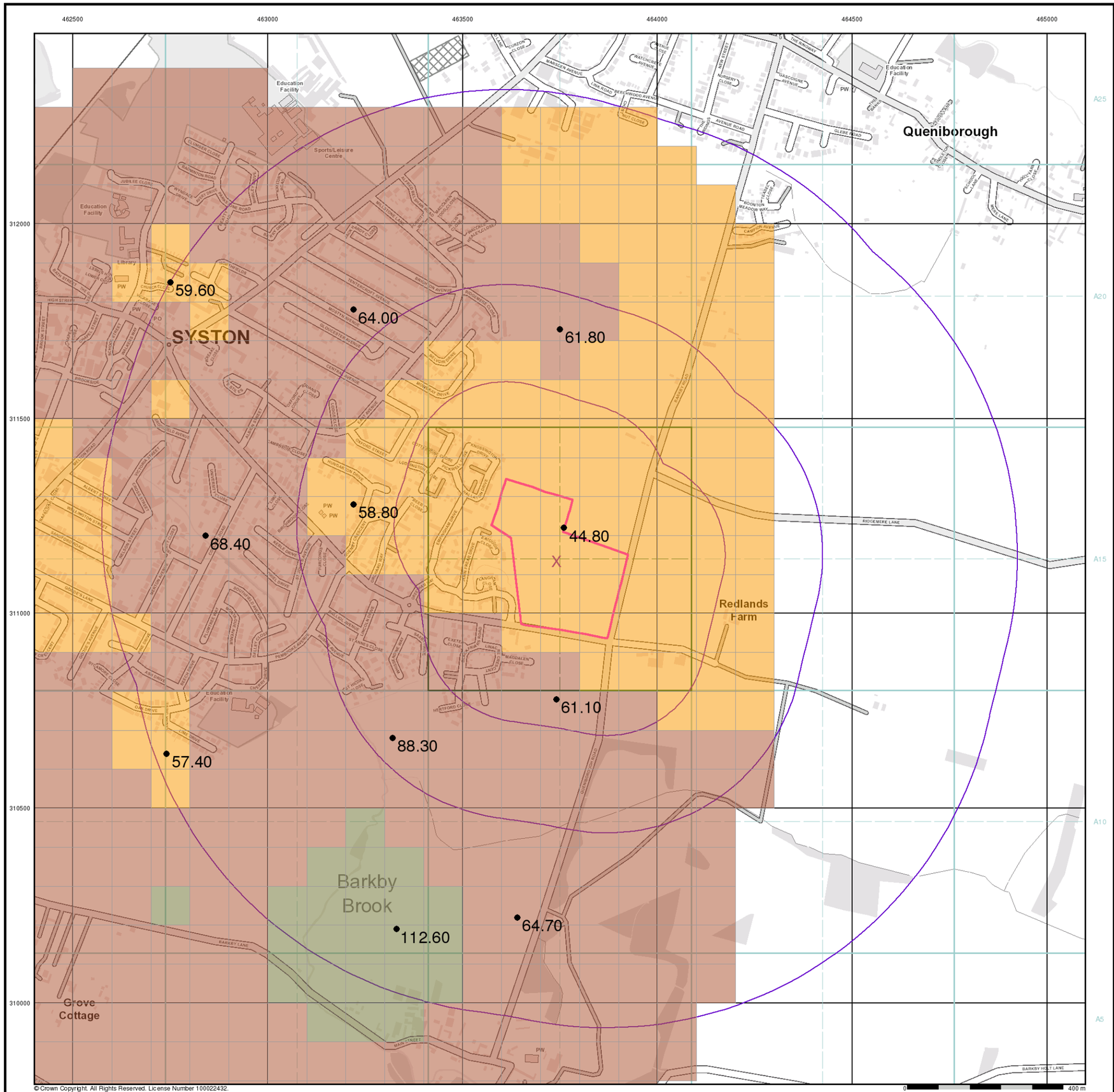


RSK

General

Specified Site | Specified Buffer(s) | X Bearing Reference Point

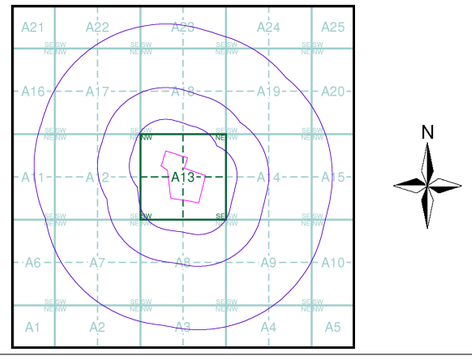
Urban Soil Chemistry Chromium

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Urban Soil Chemistry Chromium - Slice A



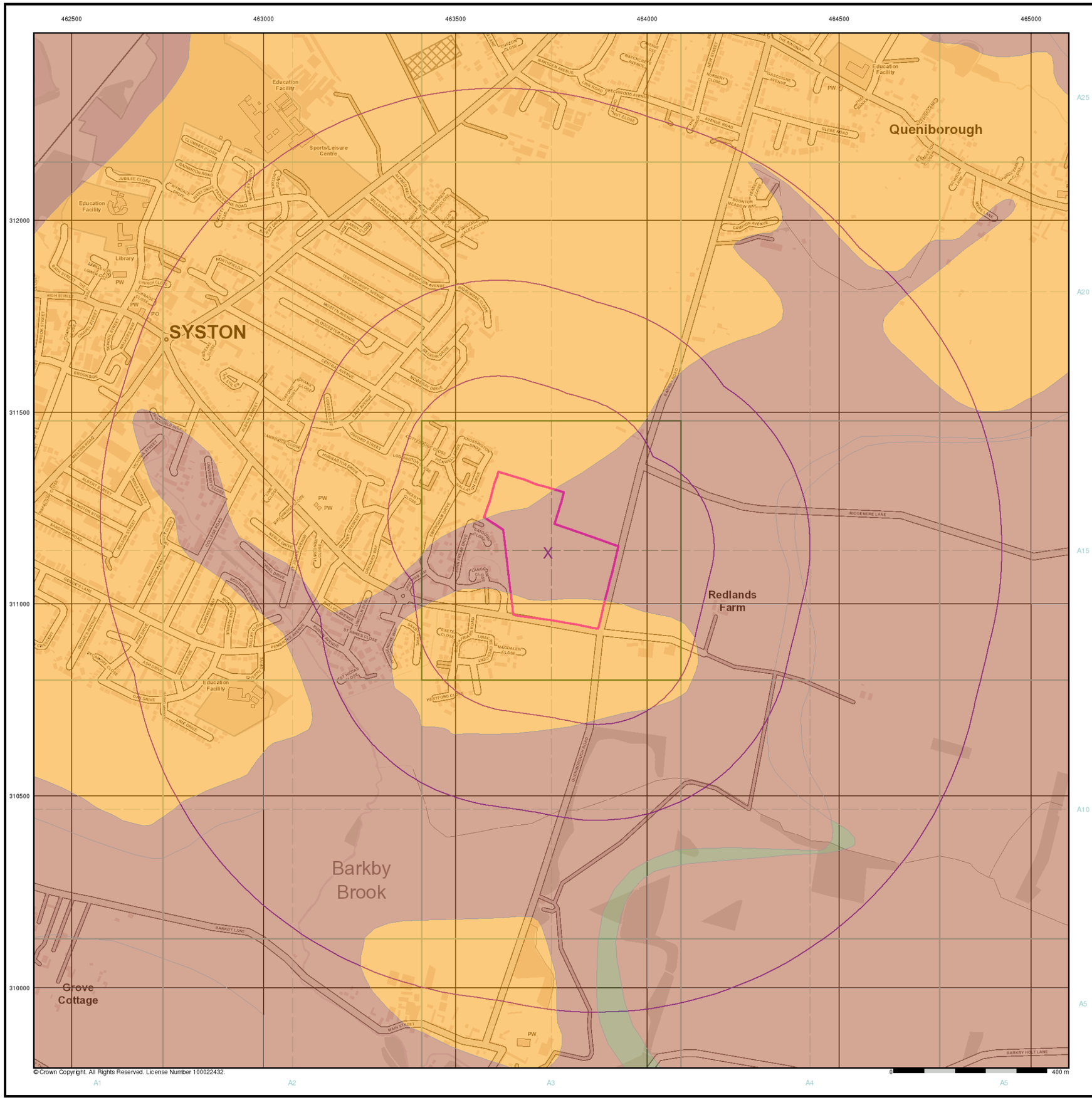
Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



RSK

General

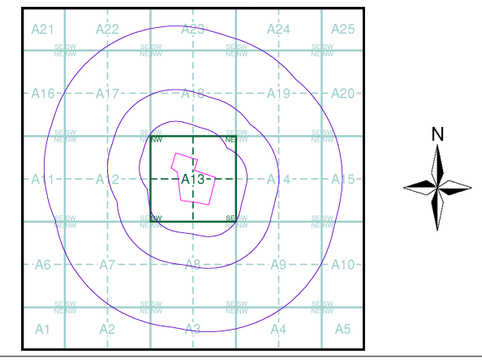
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
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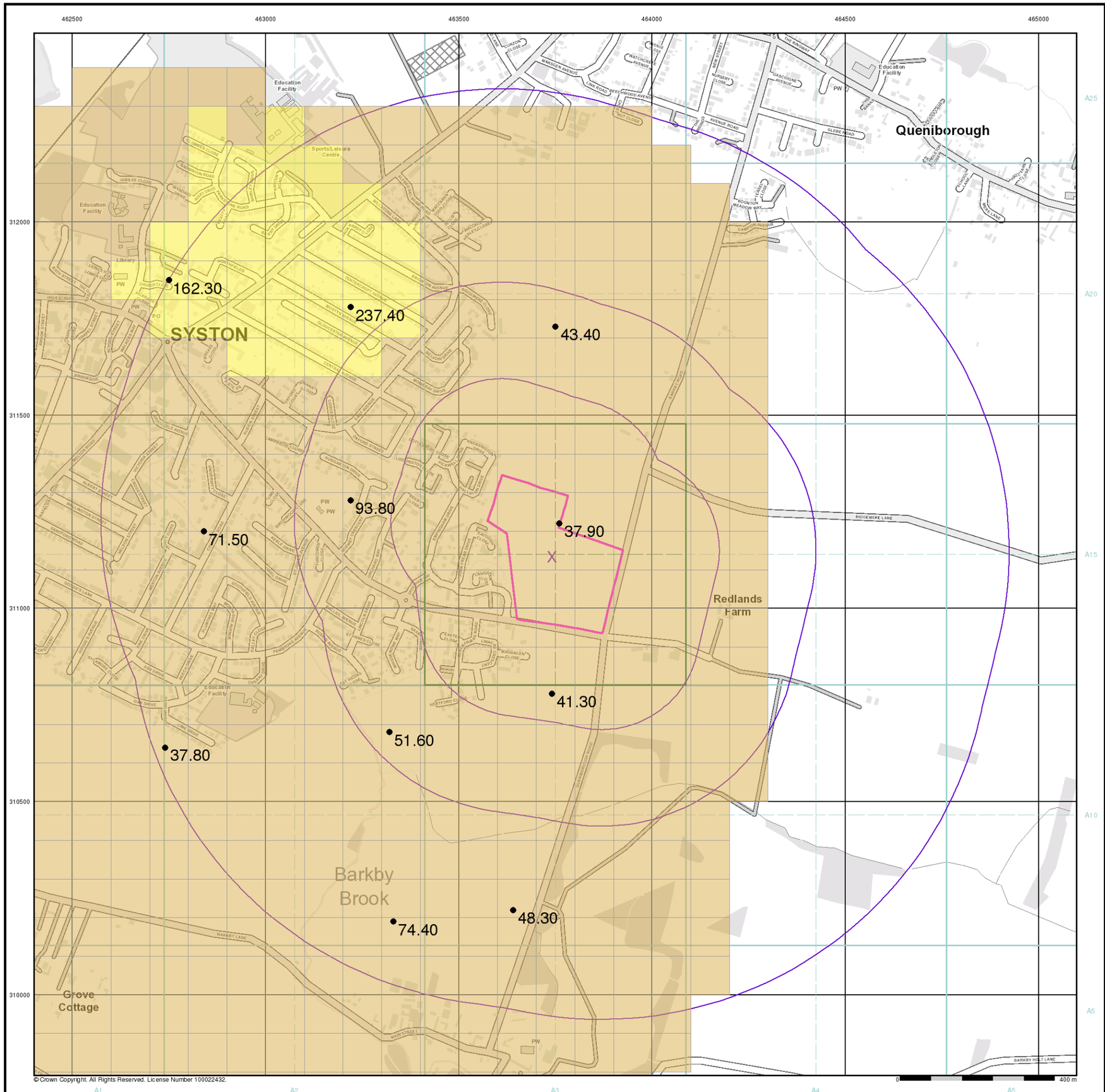


General

Specified Site | Specified Buffer(s) | X Bearing Reference Point

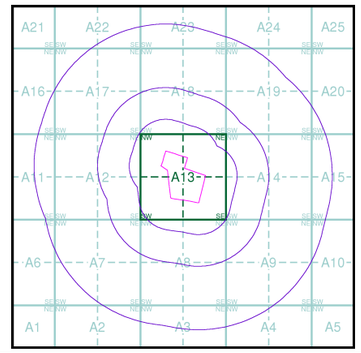
Urban Soil Chemistry Lead

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Lead Concentrations mg/kg

- < 150
- 150 - 300
- 300 - 600
- 600 - 900
- > 900

Urban Soil Chemistry Lead - Slice A



Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search buffer (m):	1000

Site Details

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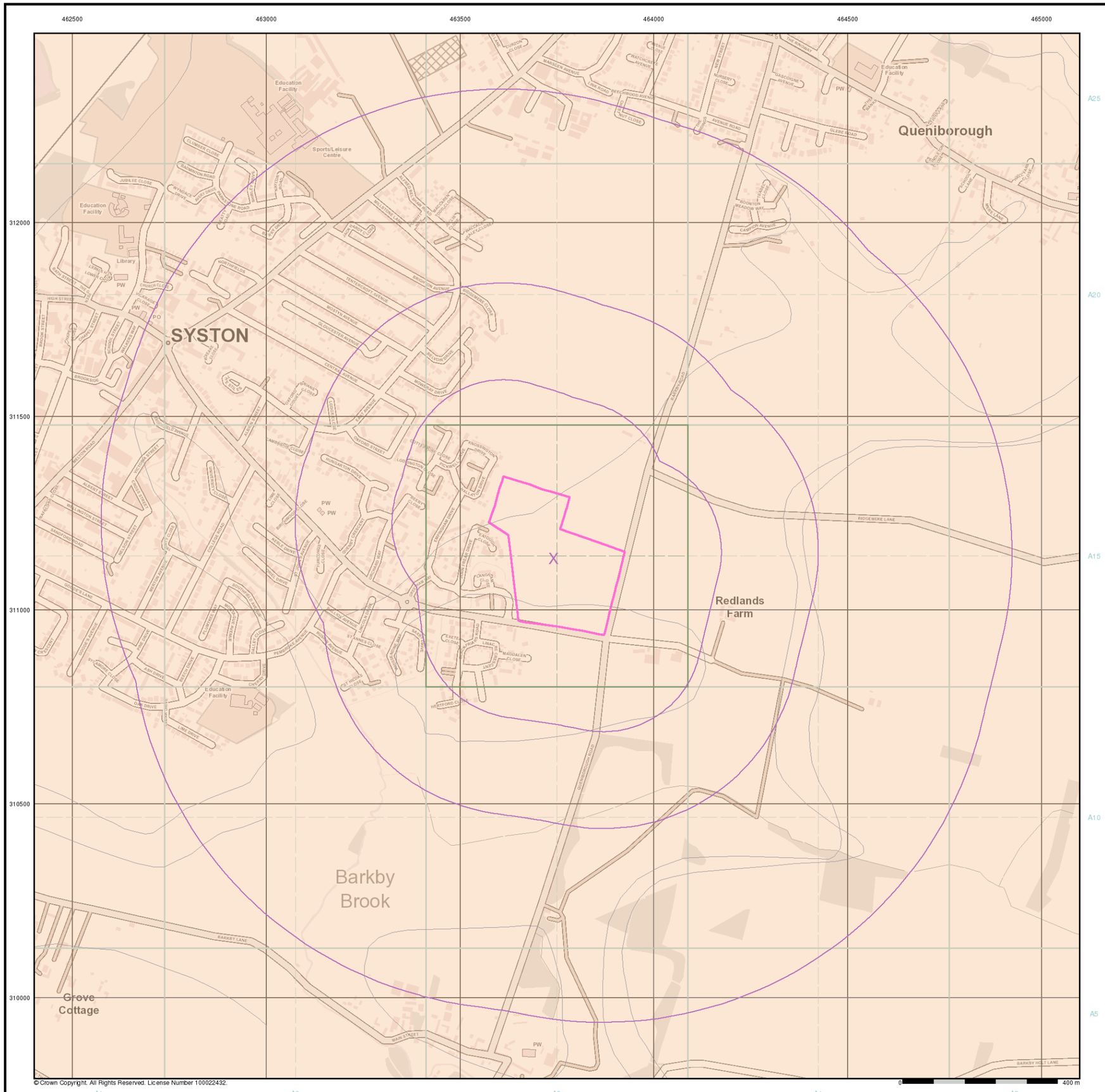


RSK

General

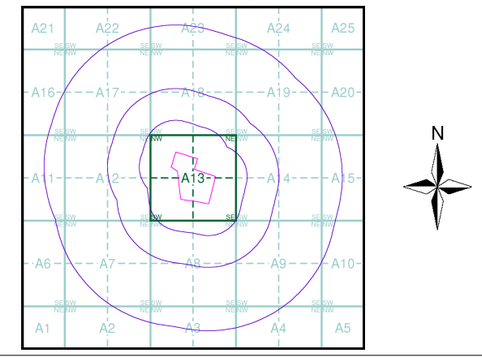
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search buffer (m):	1000

Site Details

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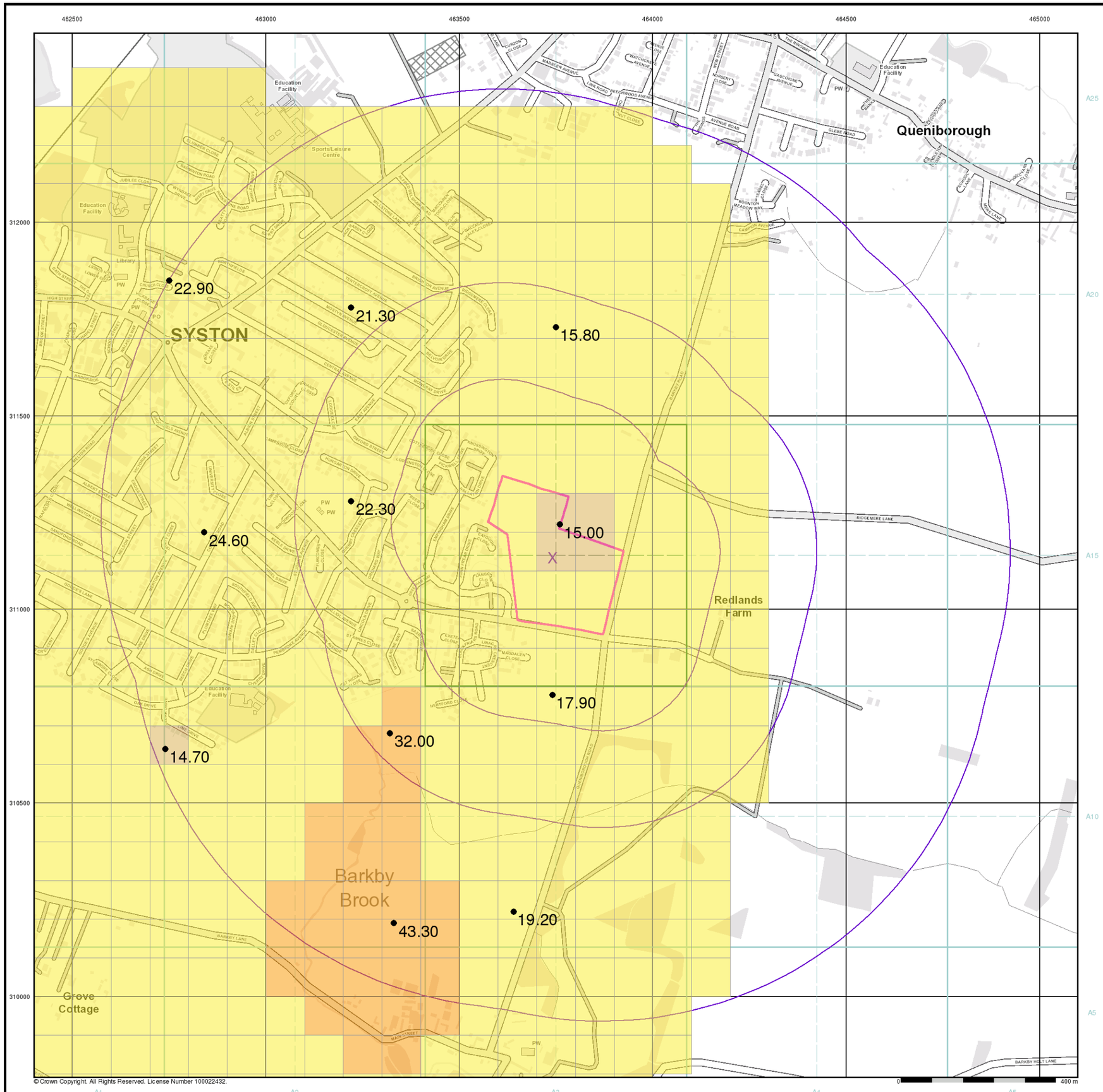


RSK

General

Specified Site | Specified Buffer(s) | X Bearing Reference Point

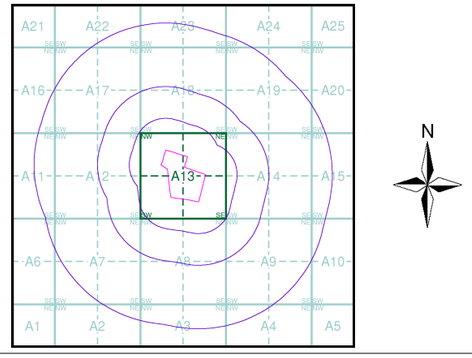
Urban Soil Chemistry Nickel

● BGS Urban Soil Chemistry Measured Concentration Values (mg/kg)

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Urban Soil Chemistry Nickel - Slice A



Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
Search buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

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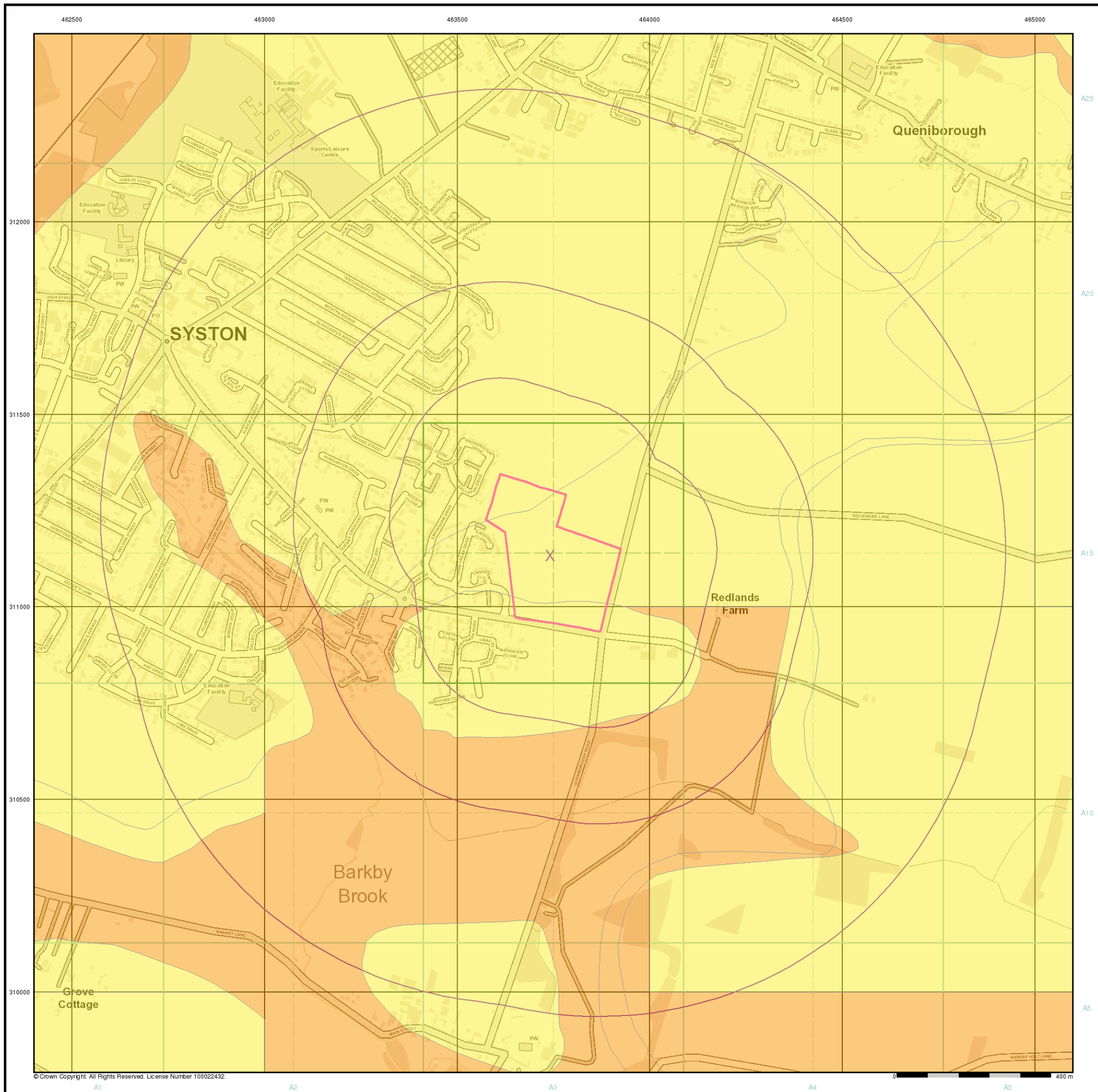


RSK

General

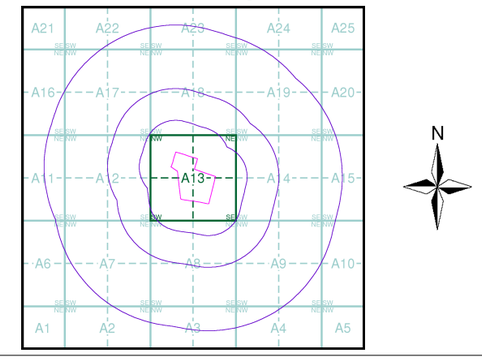
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Slice:	A
Site Area (Ha):	8.4
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Site Details

Site at, Syston, Leicestershire

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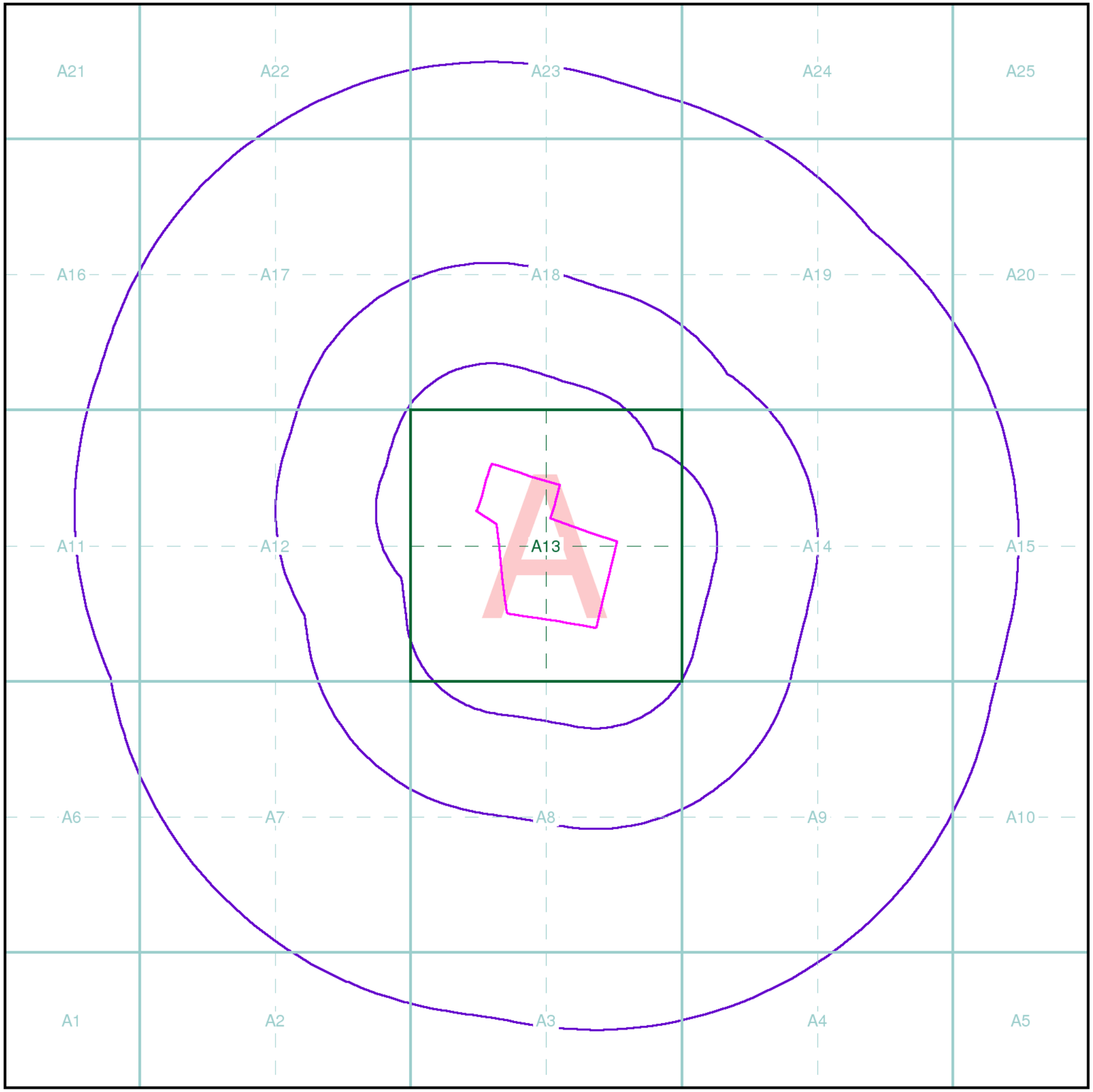

Index Map

For ease of identification, your site and buffer have been split into Slices, Segments and Quadrants. These are illustrated on the Index Map opposite and explained further below.

Slice
Each slice represents a 1:10,000 plot area (2.7km x 2.7km) for your site and buffer. A large site and buffer may be made up of several slices (represented by a red outline), that are referenced by letters of the alphabet, starting from the bottom left corner of the slice "grid". This grid does not relate to National Grid lines but is designed to give best fit over the site and buffer.

Segment
A segment represents a 1:2,500 plot area. Segments that have plot files associated with them are shown in dark green, others in light blue. These are numbered from the bottom left hand corner within each slice.

Quadrant
A quadrant is a quarter of a segment. These are labelled as NW, NE, SW, SE and are referenced in the datasheet to allow features to be quickly located on plots. Therefore a feature that has a quadrant reference of A7NW will be in Slice A, Segment 7 and the NW Quadrant.

A selection of organisations who provide data within this report:

Envirocheck reports are compiled from 136 different sources of data.

Client Details

Mr M Brannock, RSK Environment Ltd, Spring Lodge, 172 Chester Road, Helsby, Cheshire, WA6 0AR

Order Details

Order Number:	153824059_1_1
Customer Ref:	302001
National Grid Reference:	463740, 311130
Site Area (Ha):	8.4
Search Buffer (m):	1000

Site Details

Site at, Syston, Leicestershire

Full Terms and Conditions can be found on the following link:
http://www.landmarkinfo.co.uk/Terms/Show/515

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APPENDIX E
BRITISH GEOLOGICAL SURVEY (BGS) LOGS

SK 61 SW 57

DEPARTMENT OF THE ENVIRONMENT | **RECORD OF BOREHOLE No. 61 SW 13**

CONTRACT PECD 7/1/112 : RESEARCH PROGRAMME TO ASSESS THE POTENTIALLY WORKABLE SAND AND GRAVEL RESOURCES IN THE SOAR VALLEY LEICESTERSHIRE. | **Sheet No. 1 of 1**

DRILLING CONTRACTOR FOUNDATION ENGINEERING LTD.	**COORDINATES** 463305E 311037N	**DATE** 22.5.84
DRILLING METHOD/MACHINE Cable Tool Percussion/Pilcon Wayfarer	**GROUND LEVEL** 58.7m OD	**HOLE DIAMETER** 200 mm

SAMPLE DEPTH (m)	PARTICLE SIZE SUMMARY % (mm) BS 5930 : 1981 cobbles > 60	gravel 60–2	sand 2–0.06	fines < 0.06	BS 882 : 1983 > 40	40–5	5–0.075	< 0.075	STRATA DESCRIPTION (According to BS 5930 : 1981)	DEPTH & THICKNESS (m)	REDUCED LEVEL (M.O.D.)	SYMBOLIC LOG
									MADE GROUND	1.00	57.70	
									Stiff, brown mottled red brown, silty, very sandy CLAY	1.35	57.35	
									Yellow brown mottled grey green, silty, clayey, fine to medium SAND	(2.25)		
										3.60	55.10	
									Stiff, yellow brown, silty CLAY	5.15	53.55	
									Very soft, light brown mottled red brown, gravelly, very sandy CLAY	5.75	52.95	
									Very soft, becoming firm with depth, red brown mottled grey green, very clayey SILT with well rounded quartzite cobbles	7.80	50.90	
									END OF BOREHOLE 7.80 m.			

REMARKS:-

Water level after drilling 5.40 m.

Overburden thickness 1.35 m.

Mineral thickness 2.25 m.

Overburden ratio 0.6

ENGINEERING GEOLOGY LTD.
in association with
GEOMORPHOLOGICAL SERVICES LTD.

APPENDIX F
RISK ASSESSMENT METHODOLOGY

CLR11 outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. Under CLR11, three stages of risk assessment exist: preliminary, generic quantitative and detailed quantitative. An outline conceptual model should be formed at the preliminary risk assessment stage that collates all the existing information pertaining to a site in text, tabular or diagrammatic form. The outline conceptual model identifies potentially complete (termed possible) pollutant linkages (contaminant–pathway–receptor) and is used as the basis for the design of the site investigation. The outline conceptual model is updated as further information becomes available, for example as a result of the site investigation.

Production of a conceptual model requires an assessment of risk to be made. Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk. RSK has adopted guidance provided in CIRIA C552 for use in the production of conceptual models.

The likelihood of an event can be classified on a four-point system using the following terms and definitions based on CIRIA C552:

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

The severity can be classified using a similar system also based on CIRIA C552. The terms and definitions relating to severity are:

- severe: short term (acute) risk to human health likely to result in ‘significant harm’ as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short-term risk to an ecosystem or organism forming part of that ecosystem (note definition of ecosystem in ‘Draft Circular on Contaminated Land’, DETR 2000)
- medium: chronic damage to human health (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem
- mild: pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services (‘significant harm’ as defined in ‘Draft Circular on Contaminated Land’, DETR 2000). Damage to sensitive buildings, structures or the environment

- minor: harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

Once the probability of an event occurring and its consequences have been classified, a risk category can be assigned according to the table below.

		Consequences			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**Highly likely**	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low

Definitions of these risk categories are as follows together with an assessment of the further work that may be required:

- Very high: there is a high probability that severe harm could occur or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability; urgent investigation and remediation are likely to be required.
- High: harm is likely to occur. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required. Remedial works may be necessary in the short term and are likely over the long term.
- Moderate: it is possible that harm could arise, but it is unlikely that the harm would be severe and it is more likely that the harm would be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term.
- Low: it is possible that harm could occur, but it is likely that if realised this harm would at worst normally be mild.
- Very low: there is a low possibility that harm could occur and if realised the harm is unlikely to be severe.

APPENDIX G
WINDOW SAMPLE LOGS

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS01**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**61.60**	**E:463641.0 N:311275.0**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10	1	ES	TJV			Stiff brown slightly gravelly sandy CLAY. Gravel is fine to medium subangular to subrounded quartzite and flint. Sand is fine to medium. (TOPSOIL)	(0.30) 0.30	
	0.50	3	ES	TJV			Orangish brown gravelly clayey SAND. Gravel is fine to coarse subrounded to rounded quartzite. (BIRSTALL MEMBER)	(0.50) 0.80	
	0.90	2	ES	TJV			Reddish brown very gravelly clayey medium to coarse SAND. Gravel is rounded to subrounded fine to medium quartzite and flint. (BIRSTALL MEMBER)	(0.30) 1.10	
	1.20-1.65	S	SPT	N=31			Very stiff orangish brown CLAY. (BRANSCOMBE MUDSTONE FORMATION)	(2.33)	
	2.00-2.45	S	SPT	N=19			. . . From 2.5 m to 2.6 m, soft to firm.		
	3.00-3.43	S	SPT	N=50				3.43	
							Window sample hole refused at 3.43 m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Installation: 1.00 m plain, 2.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS02**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**62.56**	**E:463773.0 N:311286.0**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	TJV			Stiff brown slightly gravelly sandy CLAY. Gravel is fine to medium subangular to subrounded quartzite and flint. Sand is fine to medium. (TOPSOIL)	(0.30) 0.30	
	0.50		V	c_u=>105/>105			Very weak thinly laminated orangish brown distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)		
	1.00	2	ES	TJV					
	1.20-1.65	S	SPT	N=26				(2.13)	
	2.00-2.43	s	SPT	N=50				2.43	
							Window sample hole refused at 2.43 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Installation: 1.00 m plain, 1.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS03**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**59.09**	**E:463757.9 N:311236.0**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20 0.20	1	ES V	TJV c_u=>105/>105/>105			Stiff brown slightly gravelly sandy CLAY. Gravel is fine to medium subangular to subrounded quartzite and flint. Sand is fine to medium. (TOPSOIL)	(0.30) 0.30	
							Very weak thinly laminated reddish brown distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)		
	1.20-1.65 1.20	S 2	SPT ES	N=35			. . . from 1.00m, becoming orangish brown and weak.	(2.11)	
	2.00-2.41	S	SPT	N=50					
							Window sample hole refused at 2.41 m depth.	2.41	

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Installation: 1.00 m plain, 1.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS04**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**58.72**	**E:463776.0 N:311195.0**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	TJV			Soft to firm brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium subangular to rounded quartzite, flint and anhydrite. Sand is fine to coarse. (TOPSOIL)	0.30	
	0.50	2	ES	TJV			Firm to stiff orangish brown slightly sandy CLAY. Sand is fine to medium. (HEAD DEPOSITS)	(0.80)	
	0.50		V	c_u=>105/>105/>105				1.10	
	1.20-1.65	S	SPT	N=15			Stiff light grey mottled orange slightly sandy CLAY. Sand is medium. (HEAD DEPOSITS)	(0.50)	
	1.40	3	ES	TJV				1.60	
	2.00-2.45	S	SPT	N=24			Very stiff slightly sandy CLAY with relict roots. Sand is medium to coarse. (BRANSCOMBE MUDSTONE FORMATION)	(2.60)	
	3.00-3.45	S	SPT	N=13			. . . from 3.5 m, becoming mottled grey.		
	4.00-4.45	S	SPT	N=9				4.20	
	4.50	1	D				Extremely weak green mottled brown distinctly weathered MUDSTONE. Recovering as sands and gravel. (BRANSCOMBE MUDSTONE FORMATION)	(1.25)	
	5.00-5.45	S	SPT	N=12				5.45	
							Window sample hole terminated at 5.00 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Installation: 1.00 m plain, 4.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:33**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS05**

Contract Ref:	Start: **23.02.18**	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	End: **23.02.18**	**59.77**	**E:463846.0 N:311172.0**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	TJV			Soft to firm, brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium subangular to rounded quartzite flint and coal. Sand is fine to coarse. (TOPSOIL)	(0.30)	
								0.30	
	0.50		V	c_u=>105			Very stiff, slightly sandy CLAY. Sand is medium to coarse. (BRANSCOMBE MUDSTONE FORMATION)		
	1.00	2	ES	TJV					
	1.20-1.65	S	SPT	N=44				(2.11)	
							. . . from 1.50 m, becoming weathered mudstone.		
	2.00-2.41	S	SPT	N=50					
								2.41	
							Window sample hole refused at 2.41 m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Installation: 1.00 m plain, 1.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS06**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18**	**61.68**	**E:463904.9 N:311150.1**	**1** of **1**
	End: **23.02.18**			

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
							Soft to firm brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to medium subangular to rounded quartzite flint and coal. Sand is fine to coarse. (TOPSOIL)	(0.30) 0.30	
	0.60	1	ES	TJV			Very stiff slightly sandy CLAY. Sand is medium to coarse. (BRANSCOMBE MUDSTONE FORMATION)		
	1.20-1.59	S	SPT	N=50			. . . from 1.20 m, becoming horizontally laminated.	(2.07)	
							. . . becoming weathered bedrock with depth.		
	2.00-2.37	S	SPT	N=50				2.37	
							Window sample hole refused at 2.37 m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Hand vane refused at 0.50 m.
4. Installation: 1.00 m plain, 1.00 m slotted.
4. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS07**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**58.49**	**E:463660.0 N:311167.0**	**1** of **1**
	End: **22.02.18**			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.55		V	c_u=68/69/99			TOPSOIL: Soft to firm brown slightly gravelly slightly sandy CLAY. Gravel is fine subrounded to subangular. Sand is fine to medium. (TOPSOIL)	(0.30) 0.30	
							Firm to stiff orangish brown slightly gravelly slightly sandy CLAY. Gravel is fine subrounded to subangular. Sand is fine to medium. (HEAD DEPOSITS)	(0.40) 0.70	
	1.20-1.65	S	SPT	N=8			Orangish brown mottled grey slightly sandy CLAY. Sand is fine. (HEAD DEPOSITS) . . . from 1.20 m, becoming grey mottled orange.	(1.50)	
	2.00-2.45 2.00	S 1	SPT ES	N=15			. . . 1.95 m, band of black slight organic odour, possible relict wood.	2.20	
	3.00-3.45	S	SPT	N=50			Stiff to very stiff reddish brown mottled grey gravelly CLAY. Gravel is angular to subangular fine to coarse mudstone. (BRANSCOMBE MUDSTONE FORMATION)	(1.25) 3.45	
							Window sample hole terminated at 3.45 m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Water seepage from 0.35 m
2. Installation: 1.00 m plain, 2.00 m slotted.
3. Difficult to identify the depth of the boundary between the topsoil and the underlyong soil due to a high moisture content.
4. Water encountered at 1.90 m rose to 0.80 m.
5. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS08**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**58.87**	**E:463727.0 N:311095.9**	**1** of **2**
	End: **22.02.18**			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	TJV	≈		Soft to firm brown slightly gravelly slightly sandy CLAY. Gravel is fine subrounded to subangular. Sand is fine to medium. (TOPSOIL)	(0.30) 0.30	
	0.50		V	c_u=100/>105/95			Firm to stiff orangish brown slightly sandy CLAY. Sand is medium to coarse. (HEAD DEPOSITS)	(0.90)	
	1.00	2	ES	TJV				1.20	
	1.20-1.65	S	SPT	N=7			Firm to stiff light grey mottled orange slightly sandy CLAY. Sand is fine. (HEAD DEPOSITS)	(0.50)	
1.20 - 2.00 (98mm dia) 100% rec	1.55	3	ES	TJV			. . . at 1.40 m becoming gravelly. Gravel is medium to coarse rounded to subrounded quartzite.	1.70	
	1.80	4	D				. . . from 1.50 m to 1.60 m, dark greyish brown slightly sandy CLAY. Sand is fine to medium.	1.95	
	2.00-2.45	S	SPT	N=17			Firm to stiff grey mottled orange gravelly sandy CLAY. Gravel is medium to coarse subrounded to rounded quartzite and subangular to angular flint. Sand is fine to medium. (HEAD DEPOSITS)		
2.00 - 3.00 (98mm dia) 100% rec							Firm to stiff reddish brown slightly sandy CLAY. Sand is fine to medium. (BRANSCOMBE MUDSTONE FORMATION)		
	3.00-3.45	S	SPT	N=26				(2.50)	
	3.00	5	ES						
3.00 - 4.00 (98mm dia) 95% rec									
	4.00-4.45	S	SPT	N=50					
							Window sample hole refused at 4.45 m depth.	4.45	

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Water punded at 0.50 m in hand dug pit.
2. Water seepage from 0.35 m.
3. No recovery from 2.00 m to 3.00 m.
4. Installation: 1.00 m plain, 3.00 m slotted.
5. Difficult to identify the depth of the boundary between the topsoil and the underlying soil due to a high moisture content.
6. Cased to 3.0 m

All dimensions in metres | Scale: **1:28**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS08**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**58.87**	**E:463727.0 N:311095.9**	**2** of **2**
	End: **22.02.18**			

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

7. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:28**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS09**

Contract Ref:	Start: **22.02.18** End: **22.02.18**	Ground Level:	National Grid Co-ordinate:	Sheet:
302001		**58.89**	**E:463668.1 N:311040.0**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instru-mentation	Description of Strata	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.10	1	ES	TJV			Soft brown slightly gravelly, slightly sandy silty CLAY. Gravel is fine to coarse angular to rounded quartzite and flint. Sand is fine. (TOPSOIL)	(0.35) 0.35	
							Firm to stiff orangish brown slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded anhydrite. (BRANSCOMBE MUDSTONE FORMATION)	(2.05)	
	1.00	2	ES	TJV					
1.20 - 2.00 (98mm dia) 80% rec	1.20-1.65	S	SPT	N=45					
	2.00-2.40	S	SPT	N=50				2.40	
							Window sample hole refused at 2.40 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Installation: 1.00 m plain, 1.00 m slotted.
2. Water seepage from 0.35 m
3. Sides remained stable throughout excavation.
4. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS10**

Contract Ref:	Start: **22.02.18**	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	End: **22.02.18**	**59.97**	**E:463795.1 N:311052.1**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	TJV	≈		Soft brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular to rounded. Sand is fine. (TOPSOIL)	(0.30)	
								0.30	
	0.45		V	c_u=98/>105/>105			Firm to stiff, orangish red slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded anhydrite. (BRANSCOMBE MUDSTONE FORMATION)		
	1.20-1.65 1.20	S 2	SPT ES	N=40				(2.11)	
	2.00-2.41	S	SPT	N=50					
								2.41	
							Window sample hole refused at 2.41 m depth.		

Drilling Progress and Water Observations					
Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. Water seepage from 0.30 m.
2. Installation: 1.00 m plain, 1.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS11**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18** End: **22.02.18**	**60.84**	**E:463741.1 N:310973.0**	**1** of **1**

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	TJV			Brown slightly gravelly silty clayey fine to medium SAND. Gravel is fine to coarse rounded to subrounded quartzite and subrounded to subangular flint. (TOPSOIL)	(0.30) 0.30	
	0.50		V	c_u=90/98/68/98			Firm to stiff orangish brown slightly gravelly sandy CLAY. With patches of very sandy clay. Gravel is fine to coarse subrounded to rounded quartzite and anhydrite with rare subangular to subrounded flint. Sand is fine to coarse. (HEAD DEPOSITS)	(0.40) 0.70	
	0.80	2	ES	TJV			Stiff to very stiff reddish brown slightly gravelly CLAY. Gravel is fine subrounded to subangular flint. (BRANSCOMBE MUDSTONE FORMATION)		
	1.20-1.65	S	SPT	N=31			. . . from 1.30 m, no gravel present.	(1.71)	
							. . . from 1.60 m, becoming laminated.		
	2.00-2.41	S	SPT	N=50				2.41	
							Window sample hole refused at 2.41 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Installation: 1.00 m plain, 2.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

WINDOW SAMPLE LOG

Contract:	Client:	Window Sample:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**WS12**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**62.70**	**E:463851.1 N:310969.0**	**1** of **1**
	End: **22.02.18**			

Progress	Samples / Tests				Water	Backfill & Instrumentation	Description of Strata	Depth (Thickness)	Material Graphic Legend
Window Run	Depth	No	Type	Results					
	0.20	1	ES	TJV			Slightly gravelly silty clayey fine SAND. Gravel is fine to coarse rounded quartzite with rare angular flint. (TOPSOIL)	(0.35)	
							. . . localised patches of cohesive sandy silty clay.	0.35	
	0.50		V	c_u=>105/>105/>105			Firm to stiff orangish brown slightly gravelly sandy CLAY. With patches of very sandy clay. Gravel is fine to coarse subrounded to rounded quartzite and anhydrite with rare subangular to subrounded flint. Sand is fine to coarse. (HEAD DEPOSITS)	(0.55)	
	0.60	2	ES	TJV				0.90	
	1.20-1.65	S	SPT	N=19			Stiff light grey mottled orange slightly gravelly slightly sandy CLAY, with occasional patches of sand. Gravel is fine to medium subrounded to rounded quartzite. Sand is fine to medium. (HEAD DEPOSITS)	(0.70)	
	1.20	3	ES				. . . from 1.10 m, no sandy patches, gravel becomes fine and frequent black irregular lineations occur (possible relict roots).	1.60	
							Firm to stiff brown mottled black slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to rounded quartzite angular flint subrounded to subangular sandstone. Sand is fine to medium. (HEAD DEPOSITS)	(0.50)	
	2.00-2.45	S	SPT	N=32				2.10	
	2.00	4	ES				Stiff orangish brown CLAY. (BRANSCOMBE MUDSTONE FORMATION)	(1.31)	
	2.90	5	ES	TJV					
	3.00-3.41	S	SPT	N=50				3.41	
							Window sample hole refused at 3.41 m depth.		

Drilling Progress and Water Observations

Date	Time	Borehole Depth (m)	Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)

General Remarks

1. No groundwater was encountered.
2. Installation: 1.00 m plain, 2.00 m slotted.
3. SPT hammer 110.34-2018 (E_r = 71.00%) used.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Tracked window sampling	**Premier rig**	**Geoffrey Fawcett**	**HWarrener**	

APPENDIX H
TRIAL PIT LOGS

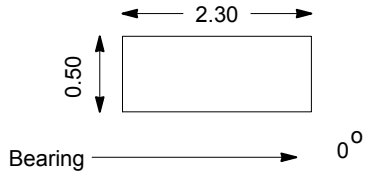
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP01**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**61.86**	**E:463623.0 N:311325.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown silty slightly gravelly CLAY. Gravel is fine to coarse. Fine rootlets noted. (TOPSOIL)	(0.30) 0.30	
0.40	1	D				Orangish brown clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse subrounded to rounded quartzite, (BIRSTALL MEMBER)		
1.20	1	ES	T+V+J				(1.80)	
						. . . from 1.4 m, becoming reddish and damp		
2.00	1	B					2.10	
						Stiff red slightly sandy CLAY. Sand is fine. Occasional anhydrite noted. (BRANSCOMBE MUDSTONE FORMATION)	(0.40) 2.50	
						Trial pit terminated at 2.50 m depth.		

Plan (Not to Scale)



General Remarks

1. Groundwater seepage at 1.90 m bgl.
2. Trial pit backfilled with arisings.
3. Sides slightly unstable during excavation down to 2.1 m.
4. Excavated using a two foot toothless bucket.
5. Clegg Hammer results at 0.50 m: test 1=3,4,4,5,6; test 2=3,4,4,5,5; test 3=3,4,5,6,7

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

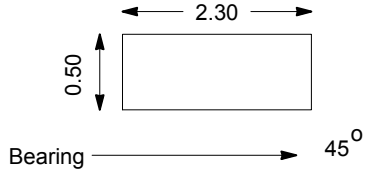
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP02**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**62.88**	**E:463691.1 N:311306.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subrounded to subangular flint. Fine rootlets noted. (TOPSOIL)	0.20	
						Orangish brown slightly gravelly clayey fine to medium SAND. Gravel is fine to coarse, subrounded to rounded quartzite. (BIRSTALL MEMBER)	(2.10)	
1.30	1	ES	V+J					
1.30	1	B						
2.30	2	ES	V+J			Stiff red slightly sandy CLAY. Localised grey mottling and rare anhydrite. (BRANSCOMBE MUDSTONE FORMATION)	2.30	
2.30	2	D					2.50	
2.30		V	c_u=>130/>130/>130			Trial pit terminated at 2.50 m depth.		

Plan (Not to Scale)



General Remarks

1. No groundwater encountered.
2. Trial pit was unstable within sand.
3. Trial pit backfilled with arisings.
4. Excavated using a two foot toothless bucket.
5. Clegg Hammer results at 0.50 m: test 1=3,3,4,4,4; test 2=3,3,4,4,5; test 3=3,4,4,5,5

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

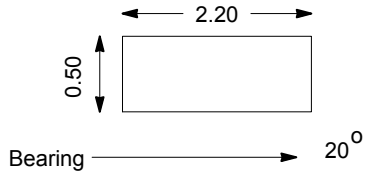
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP03**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18**	**58.99**	**E:463599.1 N:311234.0**	**1** of **1**
	End: **23.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown slightly gravelly sandy CLAY. Sand is fine. Occasional rootlets. (TOPSOIL)	(0.30) 0.30	
						Firm brown gravelly sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse well rounded to angular flint. Rare anhydrite noted. (BRANSCOMBE MUDSTONE FORMATION)	(0.50) 0.80	
0.60		V	c_u=70/72/66			Firm to stiff pinkish brown slightly sandy CLAY. (BRANSCOMBE MUDSTONE FORMATION)	(1.20) 2.00	
						Trial pit terminated at 2.00 m depth due to dense geology.		

Plan (Not to Scale)



General Remarks

1. Unable to complete hand vane within weathered mudstone due to friable nature of arisings.
2. No groundwater encountered.
3. Trial pit remained stable during excavation.
4. Trial pit backfilled with arisings.
5. Excavated using a two foot toothless bucket.
6. Clegg Hammer results at 0.50 m: test 1=3,4,4,4,4; test 2=3,3,4,4,4; test 3=5,5,5,4,5

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

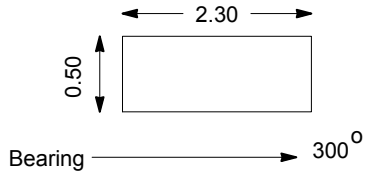
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP04**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18**	**59.28**	**E:463686.0 N:311220.0**	**1** of **1**
	End: **23.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown silty sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subangular to angular flint with rare brick and slate. (TOPSOIL)	(0.50)	
							0.50	
0.60		V	c_u=102/102/120			Firm reddish brown slightly sandy CLAY. Sand is fine. Weathered surface. (BRANSCOMBE MUDSTONE FORMATION)		
0.80	1	ES	V+J					
0.80	1	D					(1.50)	
1.50	2	ES	V+J					
1.50	2	D						
							2.00	
						Trial pit terminated at 2.00 m depth due to dense geology.		

Plan (Not to Scale)



General Remarks

1. Trial pit backfilled with arisings.
2. Trial pit remained stable during excavation.
3. No groundwater encountered.
4. Unable to complete hand vane tests due to friable nature of soil arising from weathered bedrock.
5. Excavated using a two foot toothless bucket.
6. Clegg Hammer results at 0.50 m: test 1=6,7,7,7,7; test 2=6,7,7,8,7; test 3=5,6,6,7,7

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

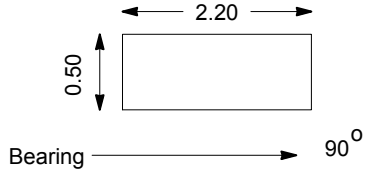
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP05**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18**	**58.54**	**E:463739.1 N:311198.1**	**1** of **1**
	End: **23.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown silty sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subrounded to angular. Damp topsoil. (TOPSOIL)	(0.30)	
							0.30	
						Firm brown CLAY. (HEAD DEPOSITS)		
0.60		V	c_u=66/68/70				(0.70)	
0.70	1	ES	V+J					
0.70	1	D						
							1.00	
						Soft to firm greenish grey CLAY. (HEAD DEPOSITS)		
1.10		V	c_u=60/52/48					
1.50	2	ES	V+J				(1.20)	
1.50	2	D		1				
						. . . from 1.70 m to 1.90 m, black band of organic peat. Little plant structure evident, some fine rootlets. Organic odours noted.		
2.00		V	c_u=52/58/62	1				
							2.20	
						Weak red distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)	(0.30)	
							2.50	
2.50	3	D				Trial pit terminated at 2.50 m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.
2. Unable to complete hand vane test in weathered mudstone due to friable nature of soil arising.
3. Groundwater encountered
4. Trial pit backfilled with arisings.
5. Excavated using a two foot toothless bucket.
6. Clegg Hammer results at 0.50 m: test 1=3,4,4,4,4; test 2=3,3,4,4,4; test 3=6,4,4,4,4

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

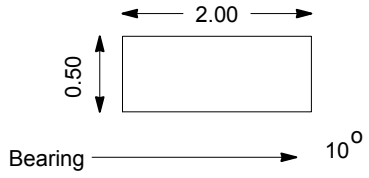
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP06**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**59.00**	**E:463802.9 N:311145.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm dark brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subrounded flint. Occasional rootlets noted. (TOPSOIL)	(0.30)	
							0.30	
						Firm brown slightly sandy CLAY. Sand is fine to medium. Rare anhydrite noted. (HEAD DEPOSITS)		
0.60		V	c_u=68/78/88			. . . from 0.60 m, becoming greenish grey with some orange sand filled partings.	(0.70)	
							1.00	
1.10	1	ES	V+J			Weak reddish brown distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)		
1.10	1	D						
1.10		V	c_u=74/70/70					
							(1.50)	
2.00		V	c_u=>130/112/110					
2.30	2	D						
							2.50	
						Trial pit terminated at 2.50 m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit remained stable during excavation.
2. No groundwater encountered.
3. Trial pit backfilled with arisings.
4. Excavated using a two foot toothless bucket.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

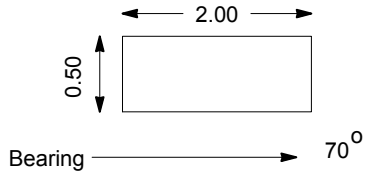
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP07**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**58.67**	**E:463661.9 N:311088.1**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown silty sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to medium rounded flint. Rootlets noted. (TOPSOIL)	(0.30)	
							0.30	
						Soft to firm greenish grey sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subrounded flint. (HEAD DEPOSITS)		
0.60		V	c_u=52/54/62				(1.10)	
1.00	1	ES	J+V					
1.00	1	D						
1.00		V	c_u=36/42/48			. . . from 1.10 m to 1.40 m, very sandy and very gravelly.		
							1.40	
						Weak reddish brown distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)		
1.80	2	ES	J+V					
1.80	2	D					(1.10)	
1.80		V	c_u=94/98/104					
							2.50	
						Trial pit terminated at 2.50 m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit backfilled with arisings.
2. Trial pit remained stable during excavation.
3. No groundwater encountered.
4. Excavated using a two foot toothless bucket.
5. Unable to complete hand vane tests below 1.80 m due to friable nature of soil arising.
6. Clegg Hammer results at 0.50 m: test 1=3,3,3,3,3; test 2=3,3,3,3,3; test 3=3,3,3,3,3

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

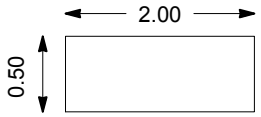
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP08**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**59.35**	**E:463777.0 N:311097.0**	**1** of **1**
	End: **22.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.20	1	ES				Firm dark brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse quartzite and flint. Occassional rootlets noted. (TOPSOIL)	0.20	
0.50		V	c_u=58/68/78			Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse quartzite and flint. (SUBSOIL)	(0.40) 0.60	
0.90	1	D				Firm brown slightly sandy CLAY. Sand is fine to medium. (HEAD DEPOSITS)		
0.90	2	ES					(0.90) 1.50	
1.80	2	D				Firm greenish grey sandy CLAY. Sand is fine. Fissured in areas. (HEAD DEPOSITS)		
1.80	3	ES					(0.70) 2.20	
1.80		V	c_u=82/82/86					
2.50	3	D				Firm to stiff red slightly sandy CLAY. Sand is fine. (BRANSCOMBE MUDSTONE FORMATION)	(0.40) 2.60	
2.50		V	c_u=66/76/86			Trial pit terminated at 2.60 m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit backfilled with arisings.
2. Sides remained stable during excavation.
3. No groundwater encountered.
4. Excavated using a two foot toothless bucket.
5. Clegg Hammer results at 0.50 m: test 1=3,3,3,3,3; test 2=3,4,4,4,3; test 3=3,4,3,3,3

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

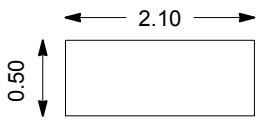
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP09**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18** End: **22.02.18**	**60.89**	**E:463890.1 N:311087.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.10	1	ES				Firm dark brown silty slighty sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse angular flint and quartzite. (TOPSOIL)	0.25	
						Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded flint and quartzite. (SUBSOIL)	(0.35)	
0.55		V	c_u=54/66/56				0.60	
0.80	2	ES				Firm reddish brown slightly sandy CLAY. Sand is fine with occassional anhydrite. (HEAD DEPOSITS)		
0.80	3	D						
1.20		V	c_u=70/92/100				(1.30)	
							1.90	
1.90		V	c_u=94/88/92			Firm greenish brown sandy CLAY. Sand is fine. Damp. (HEAD DEPOSITS)		
2.00	1	D					(0.50)	
							2.40	
						Weak red distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)	(0.40)	
2.80	2	D					2.80	
						Trial pit terminated at 2.80 m depth.		

Plan (Not to Scale)



General Remarks

1. Slow water seepage at 1.90-2.40 m.
2. Trial pit backfilled with arisings.
3. Sides remained stable during excavation.
4. Excavated using a two foot toothless bucket.
5. Clegg Hammer results at 0.55 m: test 1=5,6,5,5,6

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

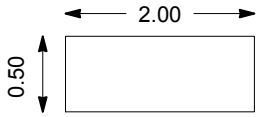
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP10**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**59.52**	**E:463740.9 N:311059.0**	**1** of **1**
	End: **22.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm brown silty sandy CLAY. Sand is fine. Rootlets noted. (TOPSOIL)	(0.30) 0.30	
0.50		V	c_u=78/76/90			Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded flint and quartzite. (SUBSOIL)	(0.40) 0.70	
1.00	1	D				Firm to stiff reddish brown slightly sandy CLAY. Sand is fine to medium. (BRANSCOMBE MUDSTONE FORMATION)	(0.80) 1.50	
						Trial pit terminated at 1.50 m depth due to dense geology.		

Plan (Not to Scale)



General Remarks

1. No groundwater encountered.
2. Trial pit remained stable during excavation.
3. Trial pit refused at 1.50 m due to difficulty digging.
4. Trial pit backfilled with arisings.
5. Excavated using a two foot toothless bucket.
6. Clegg Hammer results at 0.50 m: test 1=5,6,7,7,7; test 2=5,5,6,7,7; test 3=4,6,6,6,7

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

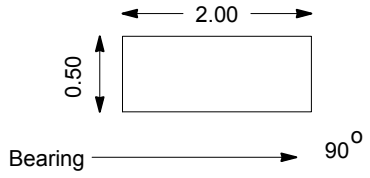
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP11**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18** End: **23.02.18**	**60.75**	**E:463875.0 N:311051.0**	**1** of **1**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm dark brown silty sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse. (TOPSOIL)	(0.30) 0.30	
						Weak reddish brown distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)	(1.70) 2.00	
0.60		V	c_u=84/96/>130					
1.50	1	D						
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit backfilled with arisings.
2. Trial pit remained stable during excavation.
3. No groundwater encountered.
4. Hard diggability through weathered mudstone.
5. Unable to complete hand vane tests in mudstone due to friable nature of soil arising.
6. Excavated using a two foot toothless bucket.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

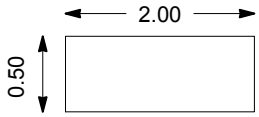
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP12**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**59.72**	**E:463709.5 N:311018.1**	**1** of **1**
	End: **22.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm dark brown silty slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subangular flint and quartzite. Fine rootlets noted. (TOPSOIL)	(0.30) 0.30	
0.50		V	c_u =>130/>130/>130			Firm brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subangular flint and quartzite. (SUBSOIL)	(0.40) 0.70	
1.20	1	D				Firm to stiff reddish brown slightly sandy CLAY. Sand is fine. (BRANSCOMBE MUDSTONE FORMATION)	(0.80)	
						. . . localised sandy lense at 1.40 m and wet.	1.50	
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. Localised water strike at 1.40 m depth.
2. Trial pit remained stable during excavation.
3. Trial pit backfilled with arisings.
4. Excavated using a two foot toothless bucket.
5. Clegg Hammer results at 0.50 m: test 1=4,6,7,7,7; test 2=6,7,7,7,7; test 3=5,6,6,7,7

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

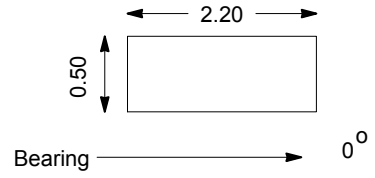
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP13**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**23.02.18**	**61.36**	**E:463823.0 N:311013.1**	**1** of **1**
	End: **23.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm dark brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subrounded flint. Occasional rootlets. (TOPSOIL)	(0.40)	
							0.40	
						Weak reddish brown distinctly weathered MUDSTONE. (BRANSCOMBE MUDSTONE FORMATION)	(1.40)	
1.50	1	D						
							1.80	
						Trial pit terminated at 1.80 m depth.		

Plan (Not to Scale)



General Remarks

1. Trial pit backfilled with arisings.
2. No groundwater encountered.
3. Trial pit remained stable during excavation.
4. Difficult diggability through weathered mudstone.
5. Unable to complete hand vane tests due to friable nature of soil arising.
6. Excavated using a two foot toothless bucket.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

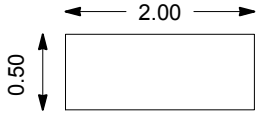
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP14**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**59.79**	**E:463663.0 N:310985.0**	**1** of **1**
	End: **22.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm dark brown slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse rounded flint. (TOPSOIL)	0.20	
0.20	1	ES				Orangish brown slightly gravelly very sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse rounded to subangular. (HEAD DEPOSITS)	(0.70)	
0.60	1	D						
0.60	2	ES					0.90	
						Firm pinkish brown silty slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse angular to subrounded with rare anhydrite. (BRANSCOMBE MUDSTONE FORMATION) . . . from 1.10 m, becoming stiff.	(1.10)	
1.40		V	c_u =>130/>130/>130					
1.50	2	D					2.00	
						Trial pit terminated at 2.00 m depth.		

Plan (Not to Scale)



General Remarks

1. No groundwater encountered.
2. Trial pit remained stable during excavation.
3. Trial pit backfilled with arisings.
4. Trial pit terminated at 2.00 m due to difficulty digging.
5. Excavated using a two foot toothless bucket.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

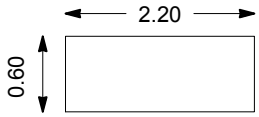
TRIAL PIT LOG

Contract:	Client:	Trial Pit:
Land North of Barkby Road, Syston	**Taylor Wimpey Strategic Land**	**TP15**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
302001	**22.02.18**	**61.70**	**E:463789.1 N:310964.1**	**1** of **1**
	End: **22.02.18**			

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Firm dark brown slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to coarse rounded flint. (TOPSOIL)	0.20	
						Firm brown slightly sandy CLAY. Sand is fine to medium. (SUBSOIL)	0.40	
						Firm orangish brown gravelly very sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse angular quartzite and flint. (HEAD DEPOSITS)	(0.60)	
							1.00	
1.20	1	D				Firm to stiff pinkish brown slightly sandy CLAY. Sand is fine. (BRANSCOMBE MUDSTONE FORMATION)		
1.50		V	c_u=124/102/126				(0.90)	
							1.90	
						Trial pit terminated at 1.90 m depth.		

Plan (Not to Scale)



General Remarks

1. No groundwater encountered.
2. Trial pit remained stable during excavation.
3. Trial pit backfilled with arisings.
4. Excavated using a two foot toothless bucket.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Machine dug	**Mini tracked excavator**	**KHolmes**	

APPENDIX I
CERTIFICATES FOR ENVIRONMENTAL ANALYSIS

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT
SUPPLEMENT TO TEST REPORT 18/01535/1

Envirolab Job Number: 18/01535
Issue Number: 2 **Date:** 23 March, 2018

Client:
RSK Environment Ltd Derby
12 Royal Scot Road
Pride Park
Derby
Derbyshire
UK
DE24 8AJ

Project Manager: Kevin Holmes
Project Name: Land North of Barkby Lane, Syston
Project Ref: 302001
Order No: N/A
Date Samples Received: 28/02/18
Date Instructions Received: 28/02/18
Date Analysis Completed: 13/03/18

Prepared by:

Danielle Brierley
Client Manager

Approved by:

Richard Wong
Client Manager

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/1	18/01535/3	18/01535/4	18/01535/6	18/01535/8	18/01535/12	18/01535/13	18/01535/14	Units	Method ref
Client Sample No	1	2	1	1	1	1	2	1		
Client Sample ID	WS01	WS01	WS02	WS03	WS04	WS05	WS05	WS06		
Depth to Top	0.1	0.9	0.2	0.2	0.2	0.2	1	0.6		
Depth To Bottom										
Date Sampled	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6AE	5A	5A	5A	5A	5A	5A	5A		
% Stones >10mm$_A$	<0.1	6.7	2.9	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	A-T-044
pH$_D$	5.94	6.88	6.44	6.77	7.49	4.87	7.61	7.71	pH	A-T-031s
pH BRE$_D$	-	-	-	-	-	-	7.61	-	pH	A-T-031s
Sulphate BRE (water sol 2:1)$_D^{M\#}$	-	-	-	-	-	-	<10	-	mg/l	A-T-026s
Sulphate BRE (acid sol)$_D^{M\#}$	-	-	-	-	-	-	<0.02	-	% w/w	A-T-028s
Sulphur BRE (total)$_D$	-	-	-	-	-	-	<0.01	-	% w/w	A-T-024s
Organic matter$_D^{M\#}$	1.2	<0.1	-	-	-	-	-	-	% w/w	A-T-032 OM
Arsenic$_D^{M\#}$	3	3	5	3	3	4	2	<1	mg/kg	A-T-024s
Cadmium$_D^{M\#}$	0.6	0.7	0.7	0.8	1.6	1.4	1.0	0.8	mg/kg	A-T-024s
Copper$_D^{M\#}$	14	7	10	14	26	14	5	5	mg/kg	A-T-024s
Chromium$_D^{M\#}$	16	16	17	20	47	31	28	28	mg/kg	A-T-024s
Lead$_D^{M\#}$	23	7	27	34	36	25	14	11	mg/kg	A-T-024s
Mercury$_D$	<0.17	<0.17	<0.17	<0.17	<0.17	0.21	0.19	0.25	mg/kg	A-T-024s
Nickel$_D^{M\#}$	11	19	17	19	37	32	36	29	mg/kg	A-T-024s
Selenium$_D^{M\#}$	<1	<1	<1	<1	<1	1	<1	<1	mg/kg	A-T-024s
Zinc$_D^{M\#}$	45	33	46	54	115	76	54	47	mg/kg	A-T-024s

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/1	18/01535/3	18/01535/4	18/01535/6	18/01535/8	18/01535/12	18/01535/13	18/01535/14	Units	Method ref
Client Sample No	1	2	1	1	1	1	2	1		
Client Sample ID	WS01	WS01	WS02	WS03	WS04	WS05	WS05	WS06		
Depth to Top	0.1	0.9	0.2	0.2	0.2	0.2	1	0.6		
Depth To Bottom										
Date Sampled	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6AE	5A	5A	5A	5A	5A	5A	5A		
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A^{\#}$	NAD	-	-	-	-	-	-	-		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	-	-	-	-	-	-	-		

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/1	18/01535/3	18/01535/4	18/01535/6	18/01535/8	18/01535/12	18/01535/13	18/01535/14	Units	Method ref
Client Sample No	1	2	1	1	1	1	2	1		
Client Sample ID	WS01	WS01	WS02	WS03	WS04	WS05	WS05	WS06		
Depth to Top	0.1	0.9	0.2	0.2	0.2	0.2	1	0.6		
Depth To Bottom										
Date Sampled	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6AE	5A	5A	5A	5A	5A	5A	5A		
Pest-c										
Mevinphos$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
Dichlorvos$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Diazinon$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Heptachlor$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Aldrin$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
beta-Hexachlorocyclohexane (HCH)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Methyl Parathion$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
Malathion$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
Fenitrothion$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
Heptachlor Epoxide$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Parathion (Ethyl Parathion)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
p,p-DDE (4,4)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
p,p-DDT (4,4)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
p,p-Methoxychlor$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
p,p-DDD (TDE) (4,4)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Endosulphan I (Alpha)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Endosulphan II (Beta)$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Endosulphan Sulphate$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Endrin$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Ethion$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon
Dieldrin$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw
Azinphos-methyl$_A$	<50	-	-	-	-	-	-	-	µg/kg	Subcon ALS Haw

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/1	18/01535/3	18/01535/4	18/01535/6	18/01535/8	18/01535/12	18/01535/13	18/01535/14	Units	Method ref
Client Sample No	1	2	1	1	1	1	2	1		
Client Sample ID	WS01	WS01	WS02	WS03	WS04	WS05	WS05	WS06		
Depth to Top	0.1	0.9	0.2	0.2	0.2	0.2	1	0.6		
Depth To Bottom										
Date Sampled	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	6AE	5A	5A	5A	5A	5A	5A	5A		
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	0.11	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	0.16	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Naphthalene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	A-T-019s
PAH (total 16)$_A^{M\#}$	<0.08	<0.08	0.42	<0.08	<0.08	<0.08	<0.08	<0.08	mg/kg	A-T-019s

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/16	18/01535/17	18/01535/21	18/01535/23	18/01535/24	18/01535/25	18/01535/26	18/01535/27	Units	Method ref
Client Sample No	1	2	1	1	2	1	2	1		
Client Sample ID	WS08	WS08	WS09	WS10	WS10	WS11	WS11	WS12		
Depth to Top	0.2	1	0.1	0.2	1.2	0.2	0.8	0.2		
Depth To Bottom										
Date Sampled	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5AE	5AE	5A	5AE	5	5AE	5A	5AE		
% Stones >10mm$_A$	16.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	A-T-044
pH$_D$	5.49	7.39	6.84	6.29	-	5.60	-	5.14	pH	A-T-031s
pH BRE$_D$	-	-	-	-	7.44	-	6.57	-	pH	A-T-031s
Sulphate BRE (water sol 2:1)$_D^{M\#}$	-	-	-	-	21	-	34	-	mg/l	A-T-026s
Sulphate BRE (acid sol)$_D^{M\#}$	-	-	-	-	0.05	-	<0.02	-	% w/w	A-T-028s
Sulphur BRE (total)$_D$	-	-	-	-	0.02	-	<0.01	-	% w/w	A-T-024s
Organic matter$_D^{M\#}$	3.0	1.3	-	3.1	-	-	-	2.1	% w/w	A-T-032 OM
Arsenic$_D^{M\#}$	3	4	6	6	-	7	-	5	mg/kg	A-T-024s
Cadmium$_D^{M\#}$	1.3	1.5	1.0	1.0	-	0.7	-	0.7	mg/kg	A-T-024s
Copper$_D^{M\#}$	38	25	18	19	-	16	-	20	mg/kg	A-T-024s
Chromium$_D^{M\#}$	35	49	24	24	-	20	-	21	mg/kg	A-T-024s
Lead$_D^{M\#}$	34	17	34	33	-	26	-	25	mg/kg	A-T-024s
Mercury$_D$	0.18	<0.17	<0.17	<0.17	-	<0.17	-	<0.17	mg/kg	A-T-024s
Nickel$_D^{M\#}$	27	42	19	20	-	13	-	12	mg/kg	A-T-024s
Selenium$_D^{M\#}$	2	1	<1	<1	-	<1	-	<1	mg/kg	A-T-024s
Zinc$_D^{M\#}$	81	92	66	65	-	48	-	48	mg/kg	A-T-024s

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/16	18/01535/17	18/01535/21	18/01535/23	18/01535/24	18/01535/25	18/01535/26	18/01535/27	Units	Method ref
Client Sample No	1	2	1	1	2	1	2	1		
Client Sample ID	WS08	WS08	WS09	WS10	WS10	WS11	WS11	WS12		
Depth to Top	0.2	1	0.1	0.2	1.2	0.2	0.8	0.2		
Depth To Bottom										
Date Sampled	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5AE	5AE	5A	5AE	5	5AE	5A	5AE		
Asbestos in Soil (inc. matrix)										
Asbestos in soil$_A^{\#}$	NAD	-	-	NAD	-	-	-	NAD		A-T-045
Asbestos ACM - Suitable for Water Absorption Test?	N/A	-	-	N/A	-	-	-	N/A		

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/16	18/01535/17	18/01535/21	18/01535/23	18/01535/24	18/01535/25	18/01535/26	18/01535/27	Units	Method ref
Client Sample No	1	2	1	1	2	1	2	1		
Client Sample ID	WS08	WS08	WS09	WS10	WS10	WS11	WS11	WS12		
Depth to Top	0.2	1	0.1	0.2	1.2	0.2	0.8	0.2		
Depth To Bottom										
Date Sampled	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5AE	5AE	5A	5AE	5	5AE	5A	5AE		
Pest-c										
Mevinphos$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
Dichlorvos$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
alpha-Hexachlorocyclohexane (HCH)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Diazinon$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
gamma-Hexachlorocyclohexane (HCH / Lindane)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Heptachlor$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Aldrin$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
beta-Hexachlorocyclohexane (HCH)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Methyl Parathion$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
Malathion$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
Fenitrothion$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
Heptachlor Epoxide$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Parathion (Ethyl Parathion)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
p,p-DDE (4,4)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
p,p-DDT (4,4)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
p,p-Methoxychlor$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
p,p-DDD (TDE) (4,4)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Endosulphan I (Alpha)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Endosulphan II (Beta)$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Endosulphan Sulphate$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Endrin$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Ethion$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon
Dieldrin$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw
Azinphos-methyl$_A$	<50	-	-	<50	-	-	-	<50	µg/kg	Subcon ALS Haw

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/16	18/01535/17	18/01535/21	18/01535/23	18/01535/24	18/01535/25	18/01535/26	18/01535/27	Units	Method ref
Client Sample No	1	2	1	1	2	1	2	1		
Client Sample ID	WS08	WS08	WS09	WS10	WS10	WS11	WS11	WS12		
Depth to Top	0.2	1	0.1	0.2	1.2	0.2	0.8	0.2		
Depth To Bottom										
Date Sampled	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18	22-Feb-18		
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES		
Sample Matrix Code	5AE	5AE	5A	5AE	5	5AE	5A	5AE		
PAH-16MS										
Acenaphthene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	A-T-019s
Acenaphthylene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	A-T-019s
Anthracene$_A^{M\#}$	<0.02	<0.02	<0.02	<0.02	-	<0.02	-	<0.02	mg/kg	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04	-	0.06	-	0.06	mg/kg	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04	-	0.08	-	0.07	mg/kg	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	<0.05	<0.05	<0.05	<0.05	-	0.07	-	0.06	mg/kg	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	<0.05	<0.05	<0.05	<0.05	-	<0.05	-	<0.05	mg/kg	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07	-	<0.07	-	<0.07	mg/kg	A-T-019s
Chrysene$_A^{M\#}$	<0.06	<0.06	<0.06	<0.06	-	0.08	-	0.08	mg/kg	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	<0.04	<0.04	<0.04	<0.04	-	<0.04	-	<0.04	mg/kg	A-T-019s
Fluoranthene$_A^{M\#}$	<0.08	<0.08	<0.08	<0.08	-	<0.08	-	0.09	mg/kg	A-T-019s
Fluorene$_A^{M\#}$	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	mg/kg	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	-	0.07	-	0.07	mg/kg	A-T-019s
Naphthalene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	-	<0.03	-	<0.03	mg/kg	A-T-019s
Phenanthrene$_A^{M\#}$	<0.03	<0.03	<0.03	<0.03	-	0.06	-	0.05	mg/kg	A-T-019s
Pyrene$_A^{M\#}$	<0.07	<0.07	<0.07	<0.07	-	0.08	-	0.09	mg/kg	A-T-019s
PAH (total 16)$_A^{M\#}$	<0.08	<0.08	<0.08	<0.08	-	0.51	-	0.57	mg/kg	A-T-019s

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/33	18/01535/37	18/01535/39	18/01535/42	18/01535/46	18/01535/47			Units	Method ref
Client Sample No										
Client Sample ID	TP02	TP04	TP05	TP07	TP09	TP09				
Depth to Top	1.3	0.8	0.7	1.0	0.2	0.8				
Depth To Bottom										
Date Sampled	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	22-Feb-18	22-Feb-18				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	1	5A	5A	5A	5AE	5A				
% Stones >10mm$_A$	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			% w/w	A-T-044
pH$_D$	-	-	7.60	-	7.52	-			pH	A-T-031s
pH BRE$_D$	6.35	7.60	7.60	7.54	-	7.91			pH	A-T-031s
Sulphate BRE (water sol 2:1)$_D^{M\#}$	<10	11	134	79	-	14			mg/l	A-T-026s
Sulphate BRE (acid sol)$_D^{M\#}$	<0.02	0.03	0.04	0.04	-	0.03			% w/w	A-T-028s
Sulphur BRE (total)$_D$	<0.01	0.01	0.02	0.02	-	0.01			% w/w	A-T-024s
Arsenic$_D^{M\#}$	-	-	5	-	5	-			mg/kg	A-T-024s
Cadmium$_D^{M\#}$	-	-	1.4	-	1.5	-			mg/kg	A-T-024s
Copper$_D^{M\#}$	-	-	18	-	42	-			mg/kg	A-T-024s
Chromium$_D^{M\#}$	-	-	38	-	37	-			mg/kg	A-T-024s
Lead$_D^{M\#}$	-	-	17	-	37	-			mg/kg	A-T-024s
Mercury$_D$	-	-	<0.17	-	<0.17	-			mg/kg	A-T-024s
Nickel$_D^{M\#}$	-	-	39	-	34	-			mg/kg	A-T-024s
Selenium$_D^{M\#}$	-	-	<1	-	1	-			mg/kg	A-T-024s
Zinc$_D^{M\#}$	-	-	79	-	101	-			mg/kg	A-T-024s

Envirolab Job Number: 18/01535

Client Project Name: Land North of Barkby Lane, Syston

Client Project Ref: 302001

Lab Sample ID	18/01535/33	18/01535/37	18/01535/39	18/01535/42	18/01535/46	18/01535/47			Units	Method ref
Client Sample No										
Client Sample ID	TP02	TP04	TP05	TP07	TP09	TP09				
Depth to Top	1.3	0.8	0.7	1.0	0.2	0.8				
Depth To Bottom										
Date Sampled	23-Feb-18	23-Feb-18	23-Feb-18	23-Feb-18	22-Feb-18	22-Feb-18				
Sample Type	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES	Soil - ES				
Sample Matrix Code	1	5A	5A	5A	5AE	5A				
PAH-16MS										
Acenaphthene$_A^{M\#}$	-	-	<0.01	-	<0.01	-			mg/kg	A-T-019s
Acenaphthylene$_A^{M\#}$	-	-	<0.01	-	<0.01	-			mg/kg	A-T-019s
Anthracene$_A^{M\#}$	-	-	<0.02	-	<0.02	-			mg/kg	A-T-019s
Benzo(a)anthracene$_A^{M\#}$	-	-	<0.04	-	<0.04	-			mg/kg	A-T-019s
Benzo(a)pyrene$_A^{M\#}$	-	-	<0.04	-	<0.04	-			mg/kg	A-T-019s
Benzo(b)fluoranthene$_A^{M\#}$	-	-	<0.05	-	<0.05	-			mg/kg	A-T-019s
Benzo(ghi)perylene$_A^{M\#}$	-	-	<0.05	-	<0.05	-			mg/kg	A-T-019s
Benzo(k)fluoranthene$_A^{M\#}$	-	-	<0.07	-	<0.07	-			mg/kg	A-T-019s
Chrysene$_A^{M\#}$	-	-	<0.06	-	<0.06	-			mg/kg	A-T-019s
Dibenzo(ah)anthracene$_A^{M\#}$	-	-	<0.04	-	<0.04	-			mg/kg	A-T-019s
Fluoranthene$_A^{M\#}$	-	-	<0.08	-	<0.08	-			mg/kg	A-T-019s
Fluorene$_A^{M\#}$	-	-	<0.01	-	<0.01	-			mg/kg	A-T-019s
Indeno(123-cd)pyrene$_A^{M\#}$	-	-	<0.03	-	<0.03	-			mg/kg	A-T-019s
Naphthalene$_A^{M\#}$	-	-	<0.03	-	<0.03	-			mg/kg	A-T-019s
Phenanthrene$_A^{M\#}$	-	-	<0.03	-	<0.03	-			mg/kg	A-T-019s
Pyrene$_A^{M\#}$	-	-	<0.07	-	<0.07	-			mg/kg	A-T-019s
PAH (total 16)$_A^{M\#}$	-	-	<0.08	-	<0.08	-			mg/kg	A-T-019s

REPORT NOTES

General:
This report shall not be reproduced, except in full, without written approval from Envirolab.
All samples contained within this report, and any received with the same delivery, will be disposed of one month after the date of this report.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure and there is insufficient sample to repeat the analysis. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.

APPENDIX J
CERTIFICATES FOR GEOTECHNICAL ANALYSIS

STRUCTURAL SOILS LTD

TEST REPORT

Report No. 783025 R1

1774

Date 04-April-2018 Contract Land North of Barkby Lane, Syston

Client RSK Environment Ltd
Address Spring Lodge
172 Chester Road
Helsby
Cheshire WA6 0AR

For the Attention of Kevin Holmes

Samples submitted by client	02/03/2018	Client Reference	302001
Testing Started	03/03/2018	Client Order No.	
Testing Completed	16/03/2018	Instruction Type	Written

Ukas Accredited Tests Underatken

Moisture Content (oven drying method) BS1377:Part 2:1990,clause 3.2 (superseded)**
Liquid Limit (definitive method) BS1377:Part 2:1990,clause 4.3
Plastic Limit BS1377:Part 2:1990,clause 5.3
Plasticity Index Derivation BS1377:Part 2:1990,clause 5.4
Particle Size Distribution wet sieve method BS1377:Part 2:1990,clause 9.2

* This clause of BS1377 is no longer the most up to date method due to the publication of ISO17892

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of.
Test were undertaken on samples 'as received' unless otherwise stated.
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

Structural Soils Ltd, The Potteries, Pottery Street, Castleford, WF10 1NJ Tel.01977 552255. E-mail mark.athorne@soils.co.uk

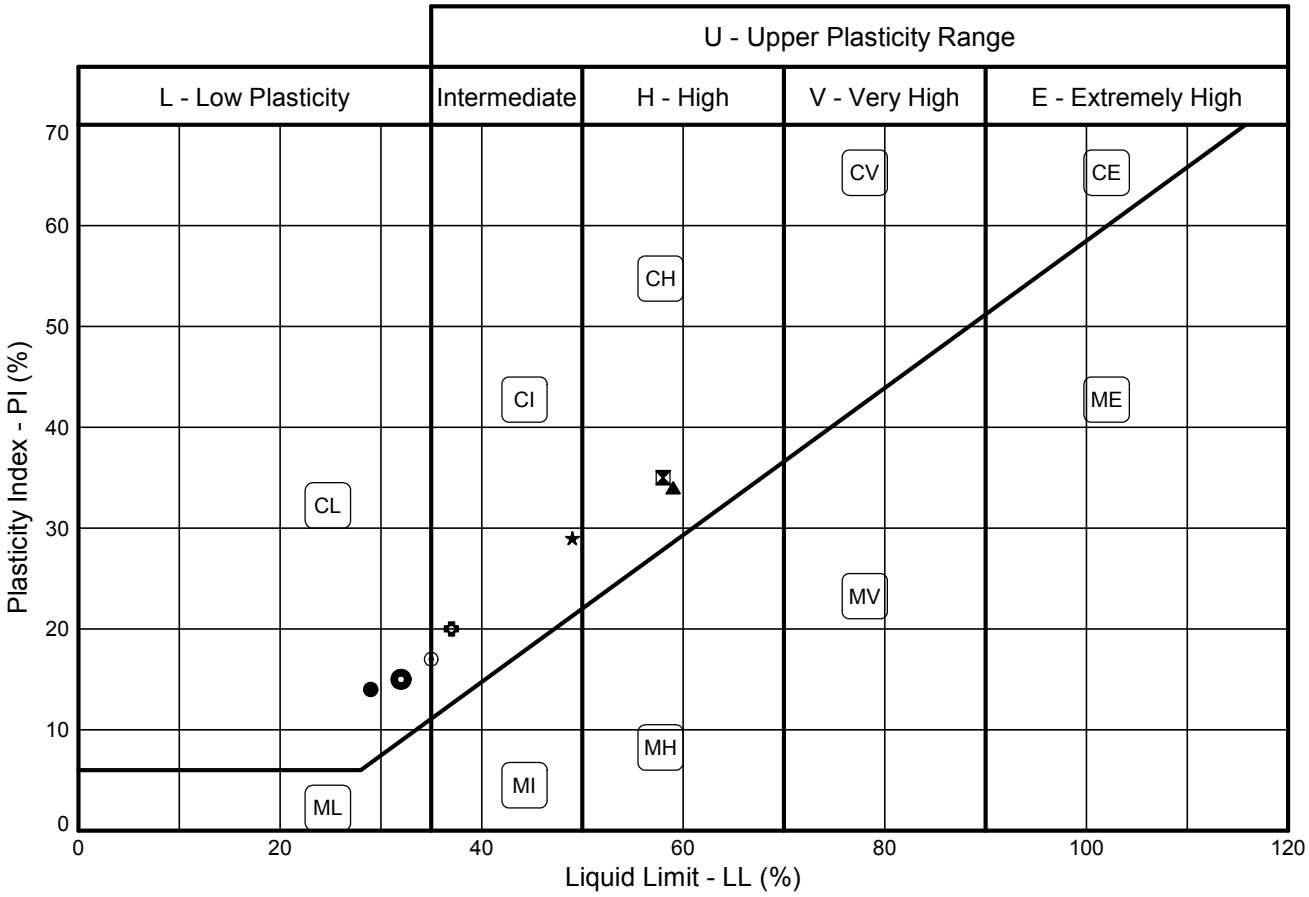
SUMMARY OF SOIL CLASSIFICATION TESTS

In accordance with clauses 3.2,4.3,4.4,5.3,5.4,7.2,8.2,8.3 of BS1377:Part 2:1990

Exploratory Position ID	Sample Ref	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425um	Description of Sample
TP03	2	D	1.00	12	29	15	14	90	Red brown slightly sandy slightly gravelly CLAY
TP05	2	D	1.50	35	58	23	35	100	Grey brown CLAY
TP07	2	D	1.00	37	59	25	34	94	Grey brown slightly sandy slightly gravelly CLAY
TP09	2	D	0.80	23	49	20	29	98	Red brown slightly sandy slightly gravelly CLAY
TP10	2	D	1.00	18	35	18	17	100	Red brown slightly sandy slightly gravelly CLAY
TP14	2	D	1.50	16	37	17	20	98	Red brown slightly sandy slightly gravelly CLAY
TP15	2	D	1.20	17	32	17	15	100	Red brown slightly sandy slightly gravelly CLAY

PLASTICITY CHART - PI Vs LL

In accordance with BS5930:2015
Testing in accordance with BS1377-2:1990



Sample Identification				BS Test Method #	Preparation Method +	MC	LL	PL	PI	<425um	Lab location	
	Exploratory Position ID	Sample	Depth (m)			%	%	%	%	%		
●	TP03	2D	1.00	3.2/4.4/5.3/5.4	4.2.4	12	29	15	14	90	C	
⊠	TP05	2D	1.50	3.2/4.4/5.3/5.4	4.2.3	35	58	23	35	100	C	
▲	TP07	2D	1.00	3.2/4.4/5.3/5.4	4.2.4	37	59	25	34	94	C	
★	TP09	2D	0.80	3.2/4.4/5.3/5.4	4.2.4	23	49	20	29	98	C	
⊙	TP10	2D	1.00	3.2/4.4/5.3/5.4	4.2.4	18	35	18	17	100	C	
✿	TP14	2D	1.50	3.2/4.4/5.3/5.4	4.2.4	16	37	17	20	98	C	
●	TP15	2D	1.20	3.2/4.4/5.3/5.4	4.2.4	17	32	17	15	100	C	

Tested in accordance with the following clauses of BS1377-2:1990.

3.2 - Moisture Content
4.3 - Cone Penetrometer Method
4.4 - One Point Cone Penetrometer Method
4.6 - One Point Casagrande Method
5.3 - Plastic Limit Method
5.4 - Plasticity Index

+ Tested in accordance with the following clauses of BS1377-2:1990.

4.2.3 - Natural State
4.2.4 - Wet Sieved

Key: * = Non-standard test, NP = Non plastic.

Lab location: B = Bristol (BS3 4AG), C = Castleford (WF10 1NJ), H = Hemel Hempstead (HP3 9RT), T = Tonbridge (TN11 9HU)

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
M. Athorne	**MARK ATHORNE**	**04/04/18**

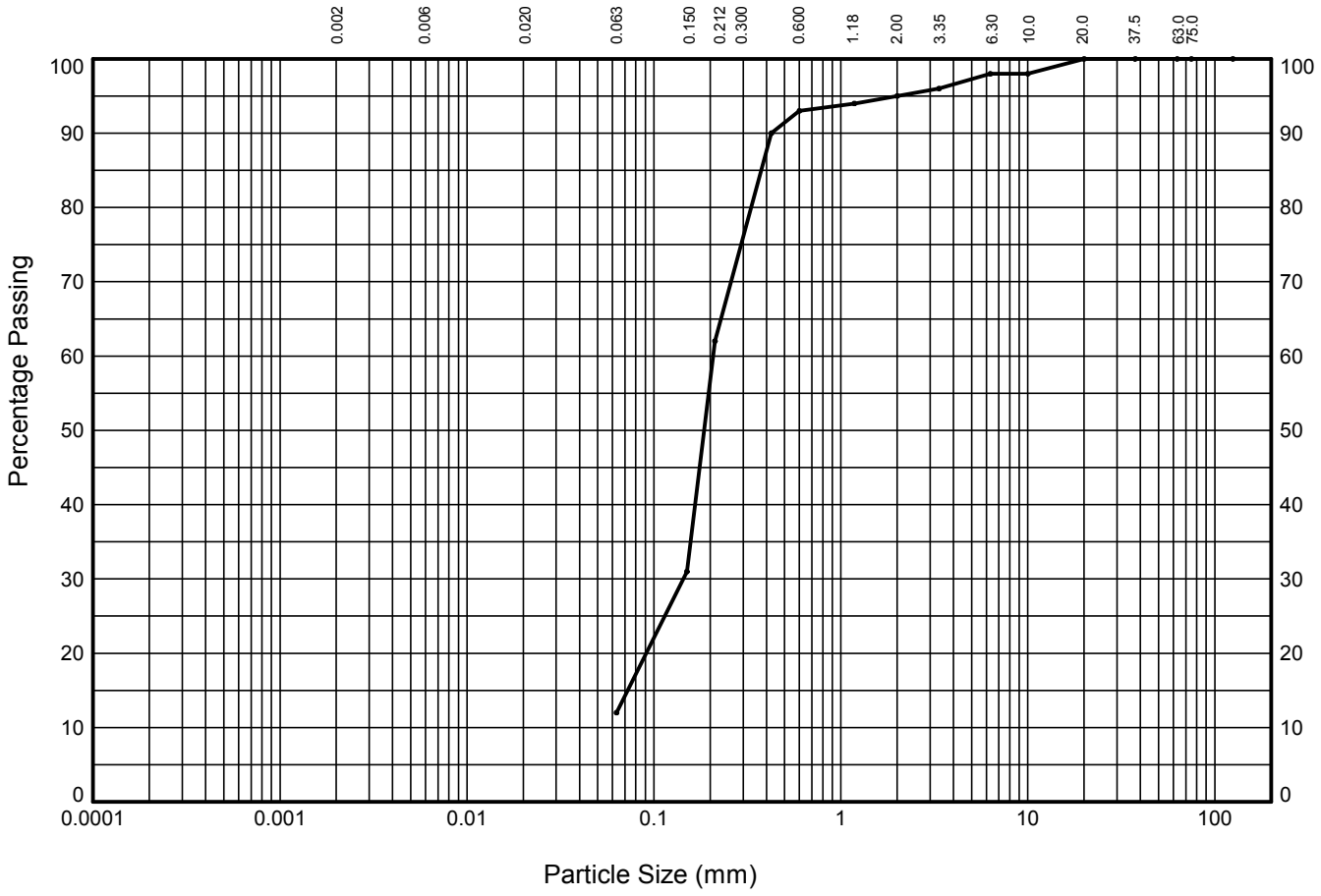
Contract	Contract Ref:
Land North of Barkby Lane	**783025**

AGS

PARTICLE SIZE DISTRIBUTION TEST

In accordance with clauses 9.2 of BS1377:Part 2:1990

Trial Pit: **TP02** Sample Ref: **1** Sample Type: **B** Depth (m): **1.30**



CLAY	fine	medium	coarse	fine	medium	coarse	fine	medium	coarse	COBBLES
	SILT			SAND			GRAVEL			

Test Sieve (mm)	Percent Passing (%)
125.0	**100**
75.0	**100**
63.0	**100**
37.5	**100**
20.0	**100**
10.0	**98**
6.30	**98**
3.35	**96**
2.00	**95**
1.18	**94**
0.600	**93**
0.425	**90**
0.212	**62**
0.150	**31**
0.063	**12**

Particle Diameter (mm)	Percent Passing (%)

Sedimentation sample was not pre-treated

Soil Fraction	Sieve Percentage (%)
GRAVEL	**5**
SAND	**83**
SILT/CLAY	**12**

Soil Description:

Red brown clayey gravelly SAND

STRUCTURAL SOILS
The Potteries
Pottery Street
Castleford
W. Yorkshire WF10 1NJ

Compiled By		Date
M. Fisher	**MAUREEN FISHER**	**04/04/18**

Contract	Contract Ref:
Land North of Barkby Lane	**783025**

AGS

TESTING VERIFICATION CERTIFICATE

1774

The test results included in this report are certified as:-

ISSUE STATUS: **FINAL**

In accordance with the Structural Soils Ltd Laboratory Quality Management System, results sheets and summaries of results issued by the laboratory are checked by an approved signatory. The integrity of the test data and results are ensured by control of the computer system employed by the laboratory as part of the Software Verification Program as detailed in the Laboratory Quality Manual.

This testing verification certificate covers all testing compiled on or before the following datetime: **04/04/2018 06:47:38**.

Testing reported after this date is not covered by this Verification Certificate.

Approved Signatory
Mark Athorne (Laboratory Manager)

(Head Office)
Bristol Laboratory
Unit 1A, Princess Street
Bedminster
Bristol
BS3 4AG

Castleford Laboratory
The Potteries, Pottery Street
Castleford
West Yorkshire
WF10 1NJ

Hemel Laboratory
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT

Tonbridge Laboratory
Anerley Court, Half Moon Lane
Hildenborough
Tonbridge
TN11 9HU

STRUCTURAL SOILS LTD	Contract: **Land North of Barkby Lane**	Job No: **783025**

APPENDIX K
GROUND GAS AND GROUNDWATER MONITORING DATA

IN-SITU GAS MONITORING RESULTS

[Pressures]	Previous	During	Start	End	Equipment Used & Remarks
Round 1	-	Rising	983	987	Weather: Raining + Ground: Wet + Wind: Medium + Air Temp: 2DegC
Round 2	-	Constant	984	984	GA5000 SN-G502481 + Weather: Cloudy + Ground: Wet + Wind: Light + Air Temp: 11DegC

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS01	1	50	1	3.00	---	1.00 to 3.00	08/03/2018 10:20:00	985	985	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS01	1	50	1		---	1.00 to 3.00	30 secs	985	985	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS01	1	50	1	3.00	---	1.00 to 3.00	08/03/2018 10:21:00	-	-	-	-	0.0	0.0	20.9	0.0	13.1	0	0
WS01	1	50	1		---	1.00 to 3.00	15 secs	-	-	-	-	0.7	0.0	19.9	0.0	-	0	0
WS01	1	50	1		---	1.00 to 3.00	30 secs	-	-	-	-	0.7	0.0	19.6	0.0	-	0	0
WS01	1	50	1		---	1.00 to 3.00	60 secs	-	-	-	-	0.7	0.0	19.6	0.0	-	0	0
WS01	1	50	1		---	1.00 to 3.00	90 secs	-	-	-	-	0.7	0.0	19.6	0.0	-	0	0
WS01	1	50	1		---	1.00 to 3.00	120 secs	-	-	-	-	0.7	0.0	19.6	0.0	-	0	0
WS01	1	50	1		---	1.00 to 3.00	180 secs	-	-	-	-	0.8	0.0	19.5	0.0	-	0	0
WS01	1	50	1		---	1.00 to 3.00	240 secs	-	-	-	-	0.8	0.0	19.4	0.0	-	0	0
WS01	1	50	1		3.06	1.00 to 3.00	300 secs	-	-	-	3.06	0.8	0.0	19.4	0.0	-	0	0
WS01	1	50	2	3.00	3.05	1.00 to 3.00	15/03/2018 08:59:00	984	984	$0.1_{(I)}$	0.97	-	-	-	-	-	-	-
WS01	1	50	2		3.05	1.00 to 3.00	30 secs	984	984	$0.0_{(SS)}$	0.97	-	-	-	-	-	-	-
WS01	1	50	2	3.00	3.05	1.00 to 3.00	15/03/2018 09:00:00	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0
WS01	1	50	2		3.05	1.00 to 3.00	15 secs	984	984	-	0.97	0.1	0.0	20.8	0.0	-	1	0
WS01	1	50	2		3.05	1.00 to 3.00	30 secs	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0
WS01	1	50	2		3.05	1.00 to 3.00	60 secs	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0
WS01	1	50	2		3.05	1.00 to 3.00	90 secs	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

RSK Environment Ltd
12 Royal Scot Road
Pride Park
Derby
DE24 8AJ

Compiled By	Date	Checked By	Date	Contract Ref:
	29/03/18			**302001**

Contract: **Land North of Barkby Road, Syston**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS01	1	50	2		3.05	1.00 to 3.00	120 secs	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0
WS01	1	50	2		3.05	1.00 to 3.00	180 secs	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0
WS01	1	50	2		3.05	1.00 to 3.00	240 secs	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0
WS01	1	50	2		3.05	1.00 to 3.00	300 secs	984	984	-	0.97	0.1	0.0	20.9	0.0	-	0	0
WS02	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 10:38:00	985	985	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS02	1	50	1		---	1.00 to 2.00	30 secs	985	985	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS02	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 10:39:00	-	-	-	-	0.0	0.0	20.9	0.0	5.0	0	0
WS02	1	50	1		---	1.00 to 2.00	15 secs	-	-	-	-	0.5	0.0	19.9	0.0	-	0	0
WS02	1	50	1		---	1.00 to 2.00	30 secs	-	-	-	-	0.5	0.0	19.5	0.0	-	0	0
WS02	1	50	1		---	1.00 to 2.00	60 secs	-	-	-	-	0.6	0.0	19.3	0.0	-	0	0
WS02	1	50	1		---	1.00 to 2.00	90 secs	-	-	-	-	0.6	0.0	19.2	0.0	-	0	0
WS02	1	50	1		---	1.00 to 2.00	120 secs	-	-	-	-	0.6	0.0	19.1	0.0	-	0	0
WS02	1	50	1		---	1.00 to 2.00	180 secs	-	-	-	-	0.6	0.0	19.0	0.0	-	0	0
WS02	1	50	1		---	1.00 to 2.00	240 secs	-	-	-	-	0.7	0.0	18.9	0.0	-	0	0
WS02	1	50	1		2.11	1.00 to 2.00	300 secs	-	-	-	2.11	0.7	0.0	18.8	0.0	-	0	0
WS02	1	50	2	2.00	2.10	1.00 to 2.00	15/03/2018 09:00:00	-	-	-	0.00	0.1	0.0	20.9	0.0	-	0	0
	Remarks: Flooded. Water around BH, filled BH.																	
WS03	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 10:48:00	986	986	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS03	1	50	1		---	1.00 to 2.00	30 secs	986	986	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS03	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 10:49:00	-	-	-	-	0.0	0.0	20.9	0.0	2.0	0	0
WS03	1	50	1		---	1.00 to 2.00	15 secs	-	-	-	-	0.4	0.0	19.8	0.0	-	0	0
WS03	1	50	1		---	1.00 to 2.00	30 secs	-	-	-	-	0.4	0.0	19.5	0.0	-	0	0
WS03	1	50	1		---	1.00 to 2.00	60 secs	-	-	-	-	0.4	0.0	19.4	0.0	-	0	0
WS03	1	50	1		---	1.00 to 2.00	90 secs	-	-	-	-	0.4	0.0	19.4	0.0	-	0	0

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

RSK Environment Ltd
12 Royal Scot Road
Pride Park
Derby
DE24 8AJ

Compiled By	Date	Checked By	Date	Contract Ref:
	29/03/18			**302001**

Contract: **Land North of Barkby Road, Syston**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS03	1	50	1		---	1.00 to 2.00	120 secs	-	-	-	-	0.4	0.0	19.4	0.0	-	0	0
WS03	1	50	1		---	1.00 to 2.00	180 secs	-	-	-	-	0.4	0.0	19.3	0.0	-	0	0
WS03	1	50	1		---	1.00 to 2.00	240 secs	-	-	-	-	0.4	0.0	19.3	0.0	-	0	0
WS03	1	50	1		2.09	1.00 to 2.00	300 secs	-	-	-	2.09	0.4	0.0	19.3	0.0	-	0	0
WS03	1	50	2	2.00	2.10	1.00 to 2.00	15/03/2018 08:59:00	991	984	$3.2_{(I)}$	0.73	-	-	-	-	-	-	-
WS03	1	50	2		2.10	1.00 to 2.00	30 secs	991	984	$0.2_{(SS)}$	0.73	-	-	-	-	-	-	-
WS03	1	50	2	2.00	2.10	1.00 to 2.00	15/03/2018 09:00:00	991	984	-	0.73	0.1	0.0	20.9	0.0	-	0	0
WS03	1	50	2		2.10	1.00 to 2.00	15 secs	991	984	-	0.73	0.4	0.0	19.0	0.0	-	2	0
WS03	1	50	2		2.10	1.00 to 2.00	30 secs	991	984	-	0.73	0.4	0.0	18.5	0.0	-	1	0
WS03	1	50	2		2.10	1.00 to 2.00	60 secs	991	984	-	0.73	0.4	0.0	18.4	0.0	-	1	0
WS03	1	50	2		2.10	1.00 to 2.00	90 secs	991	984	-	0.73	0.4	0.0	18.4	0.0	-	1	0
WS03	1	50	2		2.10	1.00 to 2.00	120 secs	991	984	-	0.73	0.4	0.0	18.4	0.0	-	1	0
WS03	1	50	2		2.10	1.00 to 2.00	180 secs	991	984	-	0.73	0.4	0.0	18.4	0.0	-	1	0
WS03	1	50	2		2.10	1.00 to 2.00	240 secs	991	984	-	0.73	0.4	0.0	18.4	0.0	-	1	0
WS03	1	50	2		2.10	1.00 to 2.00	300 secs	991	984	-	0.73	0.4	0.0	18.4	0.0	-	1	0
WS04	1	50	1	5.00	---	1.00 to 5.00	08/03/2018 11:00:00	989	986	$1.3_{(I)}$	-	-	-	-	-	-	-	-
WS04	1	50	1		---	1.00 to 5.00	30 secs	989	986	$2.0_{(SS)}$	-	-	-	-	-	-	-	-
WS04	1	50	1	5.00	---	1.00 to 5.00	08/03/2018 11:01:00	-	-	-	-	0.0	0.0	0.9	0.0	2.5	0	0
WS04	1	50	1		---	1.00 to 5.00	15 secs	-	-	-	-	3.9	0.0	10.1	0.0	-	1	0
WS04	1	50	1		---	1.00 to 5.00	30 secs	-	-	-	-	4.1	0.0	5.9	0.0	-	1	0
WS04	1	50	1		---	1.00 to 5.00	60 secs	-	-	-	-	4.5	0.0	4.0	0.0	-	1	0
WS04	1	50	1		---	1.00 to 5.00	90 secs	-	-	-	-	4.9	0.0	2.3	0.0	-	1	0
WS04	1	50	1		---	1.00 to 5.00	120 secs	-	-	-	-	5.2	0.0	1.1	0.0	-	1	0
WS04	1	50	1		---	1.00 to 5.00	180 secs	-	-	-	-	5.3	0.0	0.7	0.0	-	1	0

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RSK Environment Ltd
12 Royal Scot Road
Pride Park
Derby
DE24 8AJ

Compiled By	Date	Checked By	Date	Contract Ref:
	29/03/18			**302001**

Contract: **Land North of Barkby Road, Syston**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS04	1	50	1		---	1.00 to 5.00	240 secs	-	-	-	-	5.3	0.0	0.3	0.0	-	1	0
WS04	1	50	1		4.94	1.00 to 5.00	300 secs	-	-	-	4.87	5.3	0.0	0.1	0.0	-	1	0
WS04	1	50	2	5.00	4.94	1.00 to 5.00	15/03/2018 09:00:00	-	-	-	3.26	0.1	0.0	20.9	0.0	-	0	0
WS05	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 11:12:00	987	987	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS05	1	50	1		---	1.00 to 2.00	30 secs	987	987	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS05	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 11:13:00	-	-	-	-	0.0	0.0	20.9	0.0	34.8	0	0
WS05	1	50	1		---	1.00 to 2.00	15 secs	-	-	-	-	0.6	0.0	19.3	0.0	-	1	0
WS05	1	50	1		---	1.00 to 2.00	30 secs	-	-	-	-	0.5	0.0	19.2	0.0	-	1	0
WS05	1	50	1		---	1.00 to 2.00	60 secs	-	-	-	-	0.5	0.0	19.2	0.0	-	1	0
WS05	1	50	1		---	1.00 to 2.00	90 secs	-	-	-	-	0.5	0.0	19.2	0.0	-	1	0
WS05	1	50	1		---	1.00 to 2.00	120 secs	-	-	-	-	0.5	0.0	19.2	0.0	-	1	0
WS05	1	50	1		---	1.00 to 2.00	180 secs	-	-	-	-	0.5	0.0	19.1	0.0	-	1	0
WS05	1	50	1		---	1.00 to 2.00	240 secs	-	-	-	-	0.5	0.0	19.0	0.0	-	1	0
WS05	1	50	1		2.10	1.00 to 2.00	300 secs	-	-	-	2.10	0.5	0.0	19.0	0.0	-	1	0
WS05	1	50	2	2.00	2.06	1.00 to 2.00	15/03/2018 08:59:00	981	984	$-0.2_{(I)}$	1.76	-	-	-	-	-	-	-
WS05	1	50	2		2.06	1.00 to 2.00	30 secs	981	984	$-0.2_{(SS)}$	1.76	-	-	-	-	-	-	-
WS05	1	50	2	2.00	2.06	1.00 to 2.00	15/03/2018 09:00:00	981	984	-	1.76	0.1	0.0	20.9	0.0	-	0	0
WS05	1	50	2		2.06	1.00 to 2.00	15 secs	981	984	-	1.76	0.4	0.0	20.3	0.0	-	4	0
WS05	1	50	2		2.06	1.00 to 2.00	30 secs	981	984	-	1.76	0.4	0.0	20.2	0.0	-	2	0
WS05	1	50	2		2.06	1.00 to 2.00	60 secs	981	984	-	1.76	0.5	0.0	20.2	0.0	-	1	0
WS05	1	50	2		2.06	1.00 to 2.00	90 secs	981	984	-	1.76	0.5	0.0	20.2	0.0	-	1	0
WS05	1	50	2		2.06	1.00 to 2.00	120 secs	981	984	-	1.76	0.5	0.0	20.2	0.0	-	1	0
WS05	1	50	2		2.06	1.00 to 2.00	180 secs	981	984	-	1.76	0.5	0.0	20.2	0.0	-	1	0
WS05	1	50	2		2.06	1.00 to 2.00	240 secs	981	984	-	1.76	0.5	0.0	20.3	0.0	-	1	0

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RSK Environment Ltd
12 Royal Scot Road
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Derby
DE24 8AJ

Compiled By	Date	Checked By	Date	Contract Ref:
	29/03/18			**302001**

Contract: **Land North of Barkby Road, Syston**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS05	1	50	2		2.06	1.00 to 2.00	300 secs	981	984	-	1.76	0.5	0.0	20.3	0.0	-	1	0
WS06	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 11:21:00	987	987	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS06	1	50	1		---	1.00 to 2.00	30 secs	987	987	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS06	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 11:22:00	-	-	-	-	0.0	0.0	20.9	0.0	23.6	0	0
WS06	1	50	1		---	1.00 to 2.00	15 secs	-	-	-	-	0.4	0.0	20.6	0.0	-	0	0
WS06	1	50	1		---	1.00 to 2.00	30 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
WS06	1	50	1		---	1.00 to 2.00	60 secs	-	-	-	-	0.5	0.0	20.5	0.0	-	0	0
WS06	1	50	1		---	1.00 to 2.00	90 secs	-	-	-	-	0.5	0.0	20.5	0.0	-	0	0
WS06	1	50	1		---	1.00 to 2.00	120 secs	-	-	-	-	0.5	0.0	20.5	0.0	-	0	0
WS06	1	50	1		---	1.00 to 2.00	180 secs	-	-	-	-	0.5	0.0	20.4	0.0	-	0	0
WS06	1	50	1		---	1.00 to 2.00	240 secs	-	-	-	-	0.5	0.0	20.4	0.0	-	0	0
WS06	1	50	1		1.96	1.00 to 2.00	300 secs	-	-	-	1.96	0.5	0.0	20.4	0.0	-	0	0
WS06	1	50	2	2.00	2.07	1.00 to 2.00	15/03/2018 09:00:00	984	984	$0.0_{(I)}$	1.83	-	-	-	-	-	-	-
WS06	1	50	2		2.07	1.00 to 2.00	15 secs	984	984	$0.0_{(SS)}$	1.83	-	-	-	-	-	-	-
WS06	1	50	2	2.00	2.07	1.00 to 2.00	15/03/2018 09:01:00	984	984	-	1.83	0.1	0.0	20.9	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	15 secs	984	984	-	1.83	0.6	0.0	20.0	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	30 secs	984	984	-	1.83	0.6	0.0	19.5	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	60 secs	984	984	-	1.83	0.6	0.0	19.5	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	90 secs	984	984	-	1.83	0.6	0.0	19.5	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	120 secs	984	984	-	1.83	0.6	0.0	19.5	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	180 secs	984	984	-	1.83	0.6	0.0	19.5	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	240 secs	984	984	-	1.83	0.6	0.0	19.5	0.0	-	0	0
WS06	1	50	2		2.07	1.00 to 2.00	300 secs	984	984	-	1.83	0.6	0.0	19.5	0.0	-	0	0

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

RSK Environment Ltd
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Compiled By	Date	Checked By	Date	Contract Ref:
	29/03/18			**302001**

Contract: **Land North of Barkby Road, Syston**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS07	1	50	1	3.00	3.05	1.00 to 3.00	08/03/2018	-	-	-	0.13	-	-	-	-	-	-	-
WS07	1	50	2	3.00	3.02	1.00 to 3.00	15/03/2018 09:00:00	-	-	-	0.00	0.1	0.0	20.9	0.0	-	0	0
	Remarks: Flooded.																	
WS08	1	50	1	4.00	4.02	1.00 to 4.00	08/03/2018	-	-	-	0.14	-	-	-	-	-	-	-
WS08	1	50	2	4.00	3.88	1.00 to 4.00	15/03/2018 09:00:00	-	-	-	0.00	0.1	0.0	20.9	0.0	-	0	0
	Remarks: Flooded.																	
WS09	1	50	1	2.00	1.86	1.00 to 2.00	08/03/2018 11:50:00	-	-	-	0.13	-	-	-	-	-	-	-
WS09	1	50	2	2.00	1.88	1.00 to 2.00	15/03/2018 12:00:00	-	-	-	0.00	0.1	0.0	20.9	0.0	-	0	0
WS10	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 09:55:00	983	983	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS10	1	50	1		---	1.00 to 2.00	30 secs	983	983	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS10	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 09:56:00	-	-	-	-	0.0	0.0	20.9	0.0	1.3	0	0
WS10	1	50	1		---	1.00 to 2.00	15 secs	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
WS10	1	50	1		---	1.00 to 2.00	30 secs	-	-	-	-	0.1	0.0	20.9	0.0	-	0	0
WS10	1	50	1		---	1.00 to 2.00	60 secs	-	-	-	-	0.1	0.0	20.7	0.0	-	0	0
WS10	1	50	1		---	1.00 to 2.00	90 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS10	1	50	1		---	1.00 to 2.00	120 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS10	1	50	1		---	1.00 to 2.00	180 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS10	1	50	1		---	1.00 to 2.00	240 secs	-	-	-	-	0.1	0.0	20.8	0.0	-	0	0
WS10	1	50	1		2.10	1.00 to 2.00	300 secs	-	-	-	0.14	0.1	0.0	20.8	0.0	-	0	0
WS10	1	50	2	2.00	2.13	1.00 to 2.00	15/03/2018 09:00:00	-	-	-	0.00	0.1	0.0	20.9	0.0	-	0	0
	Remarks: Flooded - No gas to monitor.																	
WS11	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 11:40:00	-	-	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS11	1	50	1		---	1.00 to 2.00	30 secs	-	-	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS11	1	50	1	2.00	---	1.00 to 2.00	08/03/2018 11:41:00	-	-	-	-	0.0	0.0	20.9	0.0	14.6	0	0

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Compiled By	Date	Checked By	Date	Contract Ref:
	29/03/18			**302001**

Contract: **Land North of Barkby Road, Syston**

IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS11	1	50	1		---	1.00 to 2.00	15 secs	-	-	-	-	0.7	0.0	20.2	0.0	-	0	0
WS11	1	50	1		---	1.00 to 2.00	30 secs	-	-	-	-	0.7	0.0	19.9	0.0	-	0	0
WS11	1	50	1		---	1.00 to 2.00	60 secs	-	-	-	-	0.7	0.0	19.9	0.0	-	0	0
WS11	1	50	1		---	1.00 to 2.00	90 secs	-	-	-	-	0.7	0.0	19.8	0.0	-	0	0
WS11	1	50	1		---	1.00 to 2.00	120 secs	-	-	-	-	0.7	0.0	19.8	0.0	-	0	0
WS11	1	50	1		---	1.00 to 2.00	180 secs	-	-	-	-	0.7	0.0	19.7	0.0	-	0	0
WS11	1	50	1		---	1.00 to 2.00	240 secs	-	-	-	-	0.7	0.0	19.6	0.0	-	0	0
WS11	1	50	1		2.07	1.00 to 2.00	300 secs	-	-	-	2.07	0.7	0.0	19.6	0.0	-	0	0
WS11	1	50	2	2.00	2.08	1.00 to 2.00	15/03/2018 11:59:00	984	984	$0.0_{(I)}$	1.62	-	-	-	-	-	-	-
WS11	1	50	2		2.08	1.00 to 2.00	30 secs	984	984	$0.0_{(SS)}$	1.62	-	-	-	-	-	-	-
WS11	1	50	2	2.00	2.08	1.00 to 2.00	15/03/2018 12:00:00	984	984	-	1.62	0.1	0.0	20.9	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	15 secs	984	984	-	1.62	0.7	0.0	19.6	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	30 secs	984	984	-	1.62	0.7	0.0	18.9	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	60 secs	984	984	-	1.62	0.7	0.0	19.0	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	90 secs	984	984	-	1.62	0.7	0.0	19.0	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	120 secs	984	984	-	1.62	0.7	0.0	19.1	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	180 secs	984	984	-	1.62	0.7	0.0	19.1	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	240 secs	984	984	-	1.62	0.7	0.0	19.2	0.0	-	0	0
WS11	1	50	2		2.08	1.00 to 2.00	300 secs	984	984	-	1.62	0.7	0.0	19.2	0.0	-	0	0
WS12	1	50	1	3.00	---	1.00 to 3.00	08/03/2018 11:32:00	987	987	$0.0_{(I)}$	-	-	-	-	-	-	-	-
WS12	1	50	1		---	1.00 to 3.00	30 secs	987	987	$0.0_{(SS)}$	-	-	-	-	-	-	-	-
WS12	1	50	1	3.00	---	1.00 to 3.00	08/03/2018 11:33:00	-	-	-	-	0.0	0.0	20.9	0.0	3.4	0	0
WS12	1	50	1		---	1.00 to 3.00	15 secs	-	-	-	-	0.4	0.0	20.5	0.0	-	0	0
WS12	1	50	1		---	1.00 to 3.00	30 secs	-	-	-	-	0.4	0.0	20.3	0.0	-	0	0

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IN-SITU GAS MONITORING RESULTS

Exploratory Position ID	Pipe ref	Pipe diameter (mm)	Monitoring Round	Reported Installation Depth (m)	Measured Installation Depth (mbgl)	Response Zone	Date & Time of Monitoring (elapsed time)	Borehole Pressure (mb)	Atmos Pressure (mb)	Gas Flow (l/hr)	Water Depth (mbgl)	Carbon Dioxide (% / vol)	Methane (% / vol)	Oxygen (% / vol)	LEL (%)	PID (ppm)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)
WS12	1	50	1		---	1.00 to 3.00	60 secs	-	-	-	-	0.4	0.0	20.3	0.0	-	0	0
WS12	1	50	1		---	1.00 to 3.00	90 secs	-	-	-	-	0.5	0.0	20.3	0.0	-	0	0
WS12	1	50	1		---	1.00 to 3.00	120 secs	-	-	-	-	0.5	0.0	20.2	0.0	-	0	0
WS12	1	50	1		---	1.00 to 3.00	180 secs	-	-	-	-	0.5	0.0	20.2	0.0	-	0	0
WS12	1	50	1		---	1.00 to 3.00	240 secs	-	-	-	-	0.5	0.0	20.2	0.0	-	0	0
WS12	1	50	1		3.04	1.00 to 3.00	300 secs	-	-	-	3.04	0.5	0.0	20.2	0.0	-	0	0
WS12	1	50	2	3.00	3.04	1.00 to 3.00	15/03/2018 08:59:00	1017	984	$8.7_{(I)}$	0.40	-	-	-	-	-	-	-
WS12	1	50	2		3.04	1.00 to 3.00	30 secs	1017	984	$0.1_{(SS)}$	0.40	-	-	-	-	-	-	-
WS12	1	50	2	3.00	3.04	1.00 to 3.00	15/03/2018 09:00:00	1017	984	-	0.40	0.1	0.0	20.9	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	15 secs	1017	984	-	0.40	0.5	0.0	20.4	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	30 secs	1017	984	-	0.40	0.5	0.0	20.3	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	60 secs	1017	984	-	0.40	0.5	0.0	20.2	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	90 secs	1017	984	-	0.40	0.5	0.0	20.2	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	120 secs	1017	984	-	0.40	0.5	0.0	20.2	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	180 secs	1017	984	-	0.40	0.5	0.0	20.3	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	240 secs	1017	984	-	0.40	0.5	0.0	20.3	0.0	-	0	0
WS12	1	50	2		3.04	1.00 to 3.00	300 secs	1017	984	-	0.40	0.5	0.0	20.3	0.0	-	0	0

Key: I = Initial, P = Peak, SS = Steady State. Note: LEL = Lower Explosive Limit = 5% v/v.

RSK Environment Ltd
12 Royal Scot Road
Pride Park
Derby
DE24 8AJ

Compiled By	Date	Checked By	Date	Contract Ref:
	29/03/18			**302001**

Contract: **Land North of Barkby Road, Syston**

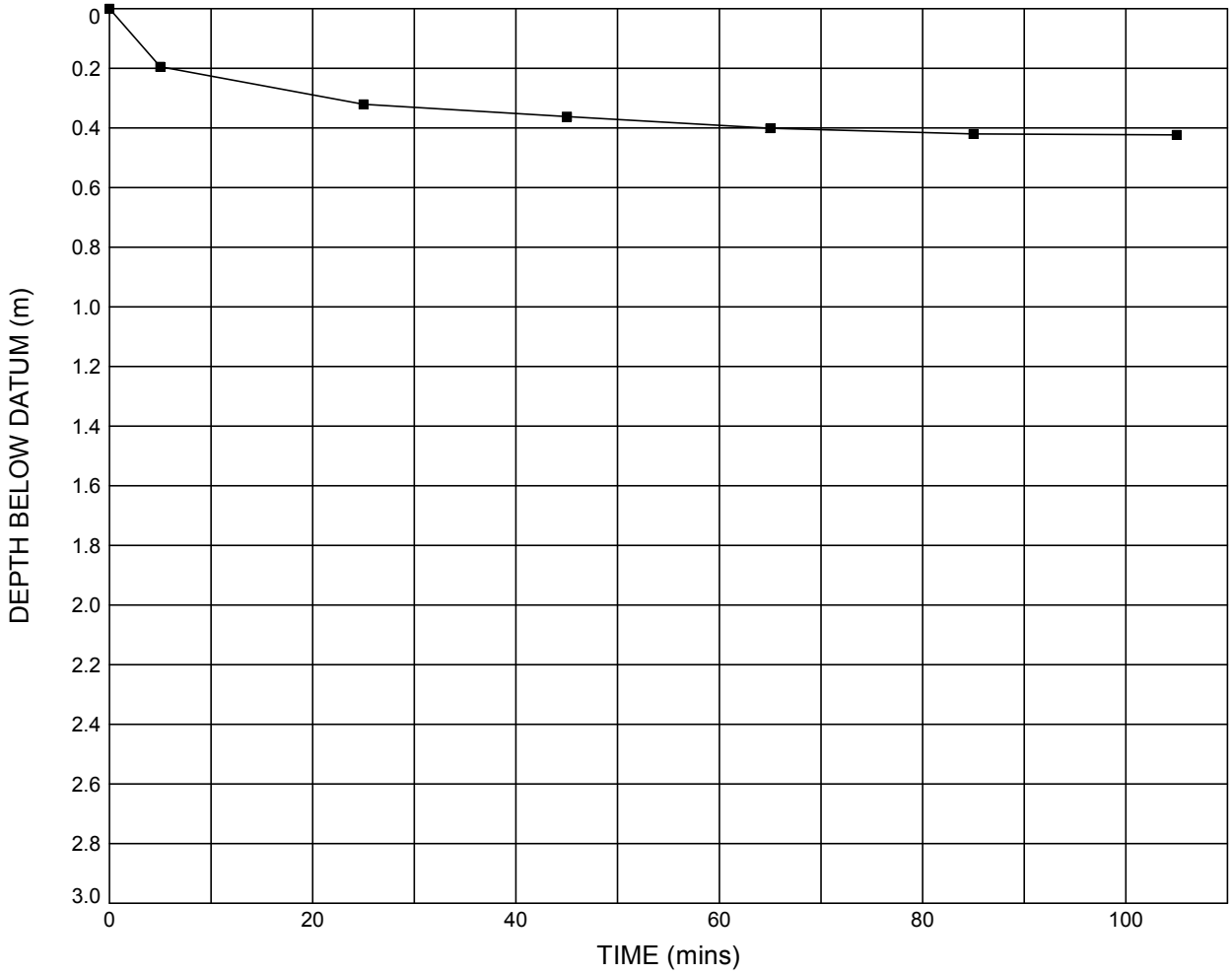
APPENDIX L
INFILTRATION TEST RESULTS

BOREHOLE SOAKAWAY TEST

Test position: WS01

Ground Level: **61.60** National Grid Co-ordinates: **E:463641.0 N:311275.0**

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**3**	m
Effective storage volume, V_{p75-25}	=	**0.002945**	m^3
Surface area, a_{p50}	=	**0.237583**	m^2
Time, t_{p75-25}	=	**39301**	secs
Infiltration coefficient, f	=	**3.15×10^{-7}**	m/s

Test hole details:

Hole depth at start of test: **3.00**m

Window sample hole (average diameter used): **50**mm

Legend:

■ Test 1 (08/03/2018)

RSK Environment Ltd
12 Royal Scot Road
Pride Park
Derby
DE24 8AJ

Compiled By	Date	Checked By	Date
Kevin Hosking	**26/03/18**		**26/03/18**

Contract: **Land North of Barkby Road, Syston**

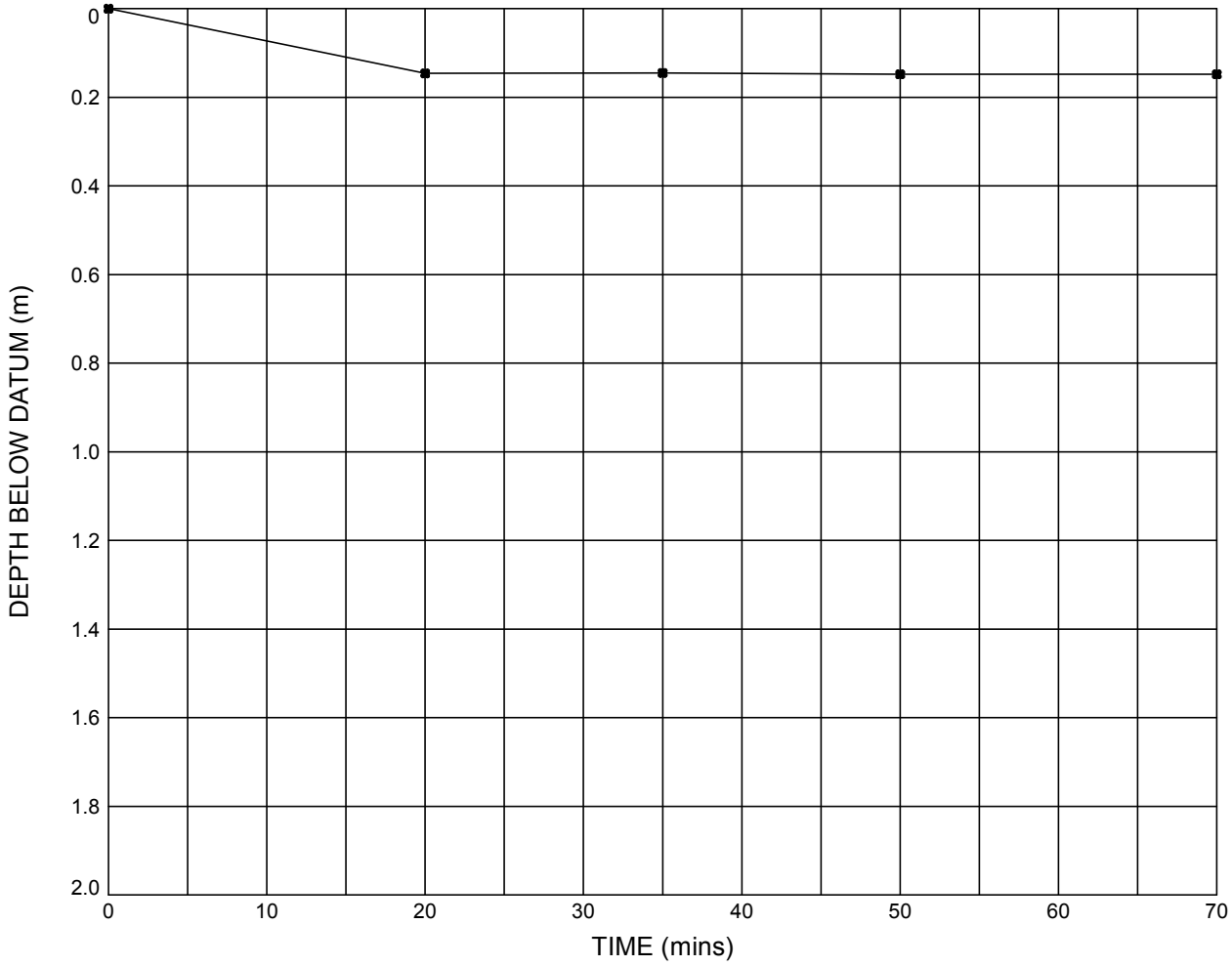
Contract Ref: **302001**

BOREHOLE SOAKAWAY TEST

Test position: WS05

Ground Level: **59.77** National Grid Co-ordinates: **E:463846.0 N:311172.0**

PLOT OF DEPTH OF WATER BELOW DATUM AGAINST TIME



Effective depth, De	=	**2**	m
Effective storage volume, V_{p75-25}	=	**0.001963**	m^3
Surface area, a_{p50}	=	**0.159043**	m^2
Time, t_{p75-25}	=	**1500000**	secs
Infiltration coefficient, f	=	**8.23×10^{-9}**	m/s

Test hole details:

Hole depth at start of test: **2.00**m

Window sample hole (average diameter used): **50**mm

Legend:

✖ Test 1 (08/03/2018)

RSK Environment Ltd
12 Royal Scot Road
Pride Park
Derby
DE24 8AJ

Compiled By	Date	Checked By	Date
	26/03/18		**26/03/18**

Contract: **Land North of Barkby Road, Syston**

Contract Ref: **302001**

APPENDIX M
HUMAN HEALTH GENERIC ASSESSMENT CRITERIA

Generic assessment criteria for human health: residential scenario with home-grown produce

Background

RSK's generic assessment criteria (GAC) were initially prepared following the publication by the Environment Agency (EA) of soil guideline value (SGV) and toxicological (TOX) reports, and associated publications in 2009[1]. RSK GAC were updated following the publication of GAC by LQM/CIEH in 2009[2]. RSK GAC are periodically revised when updated information on toxicological, land use or receptor parameters is published.

Updates to the RSK GAC

In 2014, the publication of Category 4 Screening Levels (C4SL)[3,4], as part of the Defra-funded research project SP1010, included modifications to certain exposure assumptions documented within EA Science Report SC050221/SR3 (herein after referred to as SR3)[5] used in the generation of SGVs.

C4SL were published for six substances (cadmium, arsenic, benzene, benzo(a)pyrene, chromium VI and lead) for a sandy loam soil type with 6% soil organic matter, based on a low level of toxicological concern (LLTC; see Section 2.3 of research project report SP1010[3]). Where a C4SL has been published, the RSK GAC duplicates the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and adopts them as GAC for these six substances.

For all other substances the C4SL exposure modifications, with the exception of the "top two" produce type approach taken in the C4SL, have been applied to the current RSK GAC. These include alterations to daily inhalation rates for residential and commercial scenarios, reducing soil adherence factors in children (age classes 1 to 12 only) for residential land use, reducing exposure frequency for dermal contact outdoors for residential land use, and updated produce type consumption rates (90th percentile) based on recent data from the National Diet and Nutrition Survey.

The RSK GAC have also been revised with updated toxicology published by LQM/CIEH in 2015[7] or by the USEPA[14], where a C4SL has not been published.

RSK GAC derivation for metals and organic compounds

Model selection

Soil assessment criteria (SAC) were calculated using the Contaminated Land Exposure Assessment (CLEA) tool v1.071, supporting EA guidance[5,8,9] and revised exposure scenarios published for the C4SL[3]. The SAC are also termed GAC.

Conceptual model

In accordance with SR3[5], the residential with home-grown produce scenario considers risks to a female child between the ages of 0 and 6 years old as the highest risk scenario. In accordance with Box 3.1 of SR3[5], the pathways considered for production of the SAC in the residential with home-grown produce scenario are

- direct soil and dust ingestion

- consumption of home-grown produce
- consumption of soil attached to home-grown produce
- dermal contact with soil and indoor dust
- inhalation of indoor and outdoor dust and vapours.

Figure 1 is a conceptual model illustrating these linkages.

In line with guidance in the EA SGV report for cadmium[1], the RSK GAC for cadmium has been derived based on estimates representative of lifetime exposure. Although young children are generally more likely to have higher exposures to soil contaminants, the renal toxicity of cadmium, and the derivation of the TDI_{oral} and TDI_{inh}, are based on considerations of the kidney burden accumulated over 50 years or so. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period.

With respect to volatilisation, the CLEA model assumes a simple linear partitioning of a chemical in the soil between the sorbed, dissolved and vapour phase[9]. The upper boundaries of this partitioning are represented by the maximum aqueous solubility and pure saturated vapour concentration of the chemical. The CLEA model estimates saturated soil concentrations where these limits are reached[9]. The CLEA software uses a traffic light system to identify when individual and/or combined assessment criteria exceed the lower of either the aqueous- or vapour-based soil saturation limits. Model output cells are flagged red where the saturated soil concentration has been exceeded and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10%. In this case, further consideration of the following is required[9]:

- Free phase contamination may be present.
- Exposure from the vapour pathways will be over-predicted by the model, as in reality the vapour phase concentration will not increase at concentrations above saturation limits
- Where the vapour pathway contribution is greater than 90%, it is unlikely the relevant health criteria value (HCV) will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Where the vapour pathway is the predominant pathway (contributes greater than 90% of exposure) or the only exposure route considered and the cell is highlighted red (SAC exceeds saturation limit), the risk based on the assumed conceptual model is likely to be negligible as the vapour risk is assumed to be tolerable at maximum possible soil concentrations. In such circumstances, the vapour pathway exposure should be considered based on the presence of free phase or non-aqueous phase liquid sources and the measured concentrations of volatile organic compounds (VOC) in the vapour phase. Screening could be considered based on setting the SAC as the modelled soil saturation limits. However, as stated within the CLEA handbook[9], this is likely to not be practical in many cases because of the very low saturation limits and, in any case, is highly conservative.

It should also be noted that for mixtures of compounds, free phase may be present where soil (or groundwater) concentrations are well below saturation limits for individual compounds.

Where the vapour pathway is only one of the exposure pathways considered, an additional approach can then be utilised as detailed within Section 4.12 of the CLEA model handbook[9], which explains how to calculate an effective assessment criterion manually.

SR3[5] states that, as a general rule of thumb, it is recognised that estimating vapour phase concentrations from dissolved and sorbed phase contamination by petroleum hydrocarbons are

at least a factor of ten higher than those likely to be measured on-site. RSK has therefore applied an empirical subsurface to indoor air correction factor of 10 into the CLEA model chemical database for all petroleum hydrocarbon fractions (including BTEX, trimethylbenzenes and the polycyclic aromatic hydrocarbons (PAH) naphthalene, acenaphthene and acenaphthylene) to reduce this conservatism.

Input selection

The most up-to-date published chemical and toxicological data was obtained from EA Report SC050021/SR7[10], the EA TOX[1] reports, the C4SL SP1010 project report and associated appendices[3,6], the 2015 LQM/CIEH report[7] or the USEPA IRIS database[14]. Where a C4SL has been published, the RSK GAC have duplicated the C4SL published values using all input parameters within the SP1010 final project report[3] and associated appendices[6], and has adopted them as GAC for these six substances. Toxicological and specific chemical parameters for aromatic hydrocarbon C_8–C_9 (styrene), 1,2,4-trimethylbenzene and methyl tertiary-butyl ether (MTBE) were obtained from the CL:AIRE Soil Generic Assessment Criteria report[11].

For TPH, aromatic hydrocarbons C_5–C_8 were not modelled, as this range comprises benzene and toluene, which are modelled separately. The aromatic C_8–C_9 hydrocarbon fraction comprises ethylbenzene, xylene and styrene. As ethylbenzene and xylene are being modelled separately, the physical, chemical and toxicological data for aromatic C_8–C_9 have been taken from styrene.

Physical parameters

For the residential with home-grown produce scenario, the CLEA default building is a small, two-storey terrace house with a concrete ground-bearing slab. The house is assumed to have a 100m^2 private garden consisting of lawn and flowerbeds, incorporating a 20m^2 plot for growing fruit and vegetables consumed by the residents. SR3[5] notes this residential building type to be the most conservative in terms of potential for vapour intrusion. The building parameters used in the production of the RSK GACs are the default CLEA v1.06 inputs presented in Table 3.3 of SR3[3], with a dust loading factor detailed in Section 9.3 of SR3[5]. The parameters for a sandy loam soil type were used in line with Table 4.4 of SR3[5]. This includes a value of 6% for the percentage of soil organic matter (SOM) within the soil. In RSK's experience, this is rather high for many sites. To avoid undertaking site-specific risk assessments for SOM, RSK has produced an additional set of GAC for SOM of 1% and 2.5% for all substances using the CLEA tool.

Summary of modifications to the default CLEA SR3[5] input parameters for residential with home-grown produce land-use scenario

In summary, the RSK GAC were produced using the default input parameters for soil properties, the air dispersion model, building properties and the vapour model detailed in SR3[5]. Modifications to the default SR3[5] exposure scenarios based on the C4SL exposure scenarios[3] are presented in Tables 2 and 3 below.

The final selected GAC are presented by pathway in Table 4 and the combined GAC in Table 5.

Figure 1: Conceptual model for residential scenario with home-grown produce

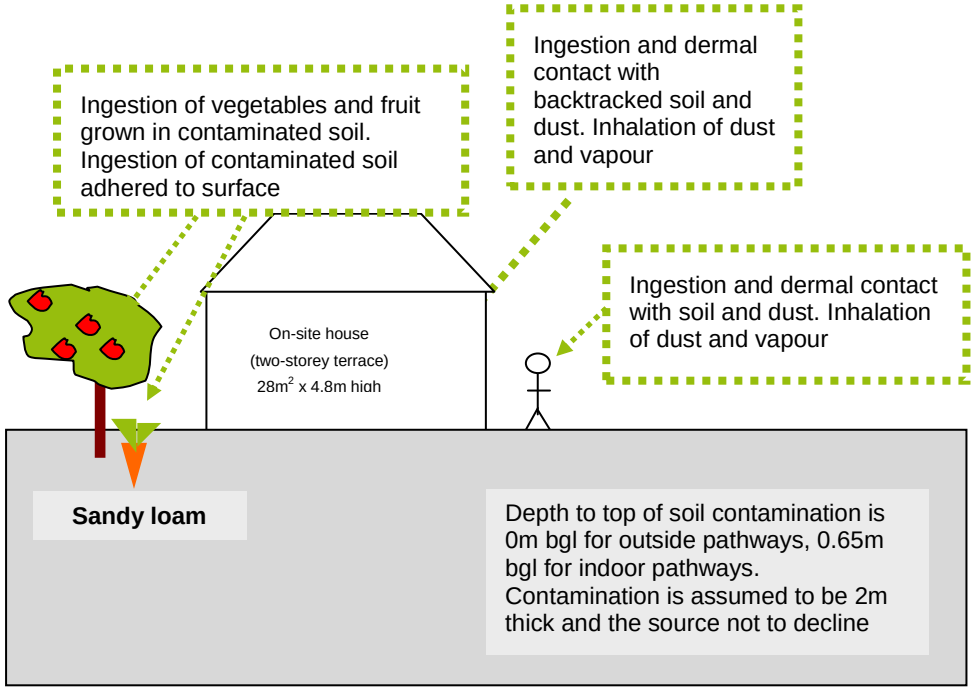


Table 1: Exposure assessment parameters for residential scenario with home-grown produce – inputs for CLEA model

Parameter	Value	Justification
Land use	Residential with homegrown produce	Chosen land use
Receptor	Female child age 1 to 6	Key generic assumption given in Box 3.1, SR3[5]
Building	Small terraced house	Key generic assumption given in Box 3.1, SR3. Small, two-storey terraced house chosen, as it is the most conservative residential building type in terms of protection from vapor intrusion (Section 3.4.6, SR3)[5]
Soil type	Sandy Loam	Most common UK soil type (Section 4.3.1, from Table 3.1, SR3)[5]
Start AC (age class)	1	Range of age classes corresponding to key generic assumption that the critical receptor is a young female child aged 0–6. From Box 3.1, SR3[5]
End AC (age class)	6	
SOM (%)	6	Representative of sandy loamy soil according to EA guidance note dated January 2009 entitled 'Changes We Have Made to the CLEA Framework Documents'[13]
	1	To provide SAC for sites where SOM <6% as often observed by RSK
	2.5	
pH	7	Model default

Table 2: Residential with home-grown produce – modified home-grown produce data

Name	Consumption rate 90th percentile (g FW kg^{-1} BW day^{-1}) by age class						Dry weight conversion factor (g DW g^{-1} FW)	Home-grown fraction (average)	Home-grown fraction (high end)	Soil loading factor (g g^{-1} DW)	Preparation correction factor
	1	2	3	4	5	6					
Green vegetables	7.12	5.87	5.87	5.87	4.53	4.53	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	10.7	2.83	2.83	2.83	2.14	2.14	0.103	0.06	0.4	1.00E-03	1.00E+00
Tuber vegetables	16	6.6	6.6	6.6	4.95	4.95	0.21	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	1.83	3.39	3.39	3.39	2.24	2.24	0.058	0.06	0.4	1.00E-03	6.00E-01
Shrub fruit	2.23	0.46	0.46	0.46	0.19	0.19	0.166	0.09	0.6	1.00E-03	6.00E-01
Tree fruit	3.82	10.3	10.3	10.3	5.16	5.16	0.157	0.04	0.27	1.00E-03	6.00E-01
Justification	Table 3.4, SP1010 (3)						Table 6.3, SR3(5)	Table 4.19, SR3(5)		Table 6.3, SR3(5)	

Table 3: Residential with home-grown produce – modified and use and receptor data

Parameter	Unit	Age class					
		1	2	3	4	5	6
EF (soil and dust ingestion)	day yr^{-1}	180	365	365	365	365	365
EF (consumption of home-grown produce)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, indoor)	day yr^{-1}	180	365	365	365	365	365
EF (skin contact, outdoor)	day yr^{-1}	170	170	170	170	170	170
EF (inhalation of dust and vapour, indoor)	day yr^{-1}	365	365	365	365	365	365
EF (inhalation of dust and vapour, outdoor)	day yr^{-1}	365	365	365	365	365	365
Justification		Table 3.5, SP1010(3); Table 3.1, SR3(5)					
Soil to skin adherence factor (outdoor)	mg cm^{-2} day^{-1}	0.1	0.1	0.1	0.1	0.1	0.1
Justification		Table 3.5, SP1010(3)					
Inhalation rate	m^3 day^{-1}	5.4	8.0	8.9/f	10.1	10.1	10.1
Justification		Mean value USEPA, 2011(12); Table 3.2, SP1010(3)					
Notes: For **cadmium**, the exposure assessment for a residential land use is based on estimates representative of lifetime exposure AC1-18. This is because the TDI_{oral} and TDI_{inh} are based on considerations of the kidney burden accumulated over 50 years. It is therefore reasonable to consider exposure not just in childhood but averaged over a longer period. See the Environment Agency Science Report SC05002/ TOX 3(1), Science Report SC050021/Cadmium SGV(1) and the project report SP1010(3) for more information.							

References

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GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE

Table 4

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Metals													
Arsenic	(a,b)	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR	3.71E+01	5.26E+02	NR	NR
Cadmium	(a)	2.30E+01	4.88E+02	2.21E+01	NR	2.30E+01	4.88E+02	2.21E+01	NR	2.30E+01	4.88E+02	2.21E+01	NR
Chromium (III) - trivalent	(c)	1.84E+04	9.07E+02	NR	NR	1.84E+04	9.07E+02	NR	NR	1.84E+04	9.07E+02	NR	NR
Chromium (VI) - hexavalent	(a,d)	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR	5.85E+01	2.06E+01	NR	NR
Copper		2.72E+03	1.41E+04	2.47E+03	NR	2.72E+03	1.41E+04	2.47E+03	NR	2.72E+03	1.41E+04	2.47E+03	NR
Lead	(a)	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR	2.01E+02	NR	NR	NR
Elemental Mercury (Hg^0)	(d)	NR	2.35E-01	NR	4.31E+00	NR	5.60E-01	NR	1.07E+01	NR	1.22E+00	NR	2.58E+01
Inorganic Mercury (Hg^{2+})		3.95E+01	3.63E+03	3.91E+01	NR	3.95E+01	3.63E+03	3.91E+01	NR	3.95E+01	3.63E+03	3.91E+01	NR
Methyl Mercury (Hg^{4+})		1.26E+01	1.87E+01	7.52E+00	7.33E+01	1.26E+01	3.62E+01	9.34E+00	1.42E+02	1.26E+01	7.68E+01	1.08E+01	3.04E+02
Nickel	(d)	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR	1.27E+02	1.81E+02	NR	NR
Selenium	(b)	2.58E+02	NR	NR	NR	2.58E+02	NR	NR	NR	2.58E+02	NR	NR	NR
Zinc	(b)	3.86E+03	3.63E+07	NR	NR	3.86E+03	3.63E+07	NR	NR	3.86E+03	3.63E+07	NR	NR
Cyanide (free)		1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR	1.37E+00	1.37E+04	1.37E+00	NR
Volatile Organic Compounds													
Benzene	(a)	2.62E-01	9.01E-01	2.03E-01	1.22E+03	5.39E-01	1.68E+00	4.08E-01	2.26E+03	1.16E+00	3.48E+00	8.72E-01	4.71E+03
Toluene		1.53E+02	9.08E+02	1.31E+02	8.69E+02	3.49E+02	2.00E+03	2.97E+02	1.92E+03	7.95E+02	4.55E+03	6.77E+02	4.36E+03
Ethylbenzene		1.10E+02	8.34E+01	4.74E+01	5.18E+02	2.61E+02	1.96E+02	1.12E+02	1.22E+03	6.00E+02	4.58E+02	2.60E+02	2.84E+03
Xylene - m		2.10E+02	8.25E+01	5.92E+01	6.25E+02	5.01E+02	1.95E+02	1.40E+02	1.47E+03	1.15E+03	4.56E+02	3.27E+02	3.46E+03
Xylene - o		1.92E+02	8.87E+01	6.07E+01	4.78E+02	4.56E+02	2.08E+02	1.43E+02	1.12E+03	1.05E+03	4.86E+02	3.32E+02	2.62E+03
Xylene - p		1.98E+02	7.93E+01	5.66E+01	5.76E+02	4.70E+02	1.86E+02	1.33E+02	1.35E+03	1.08E+03	4.36E+02	3.10E+02	3.17E+03
Total xylene		1.92E+02	7.93E+01	5.66E+01	6.25E+02	4.56E+02	1.86E+02	1.33E+02	1.47E+03	1.05E+03	4.36E+02	3.10E+02	3.46E+03
Methyl tertiary-Butyl ether (MTBE)		1.54E+02	1.04E+02	6.22E+01	2.04E+04	2.97E+02	1.69E+02	1.08E+02	3.31E+04	6.03E+02	3.21E+02	2.10E+02	6.27E+04
Trichloroethene		2.83E-01	1.72E-02	1.62E-02	1.54E+03	6.26E-01	3.59E-02	3.40E-02	3.22E+03	1.41E+00	7.98E-02	7.55E-02	7.14E+03
Tetrachloroethene		4.49E+00	1.79E-01	1.76E-01	4.24E+02	1.04E+01	4.02E-01	3.94E-01	9.51E+02	2.38E+01	9.21E-01	9.04E-01	2.18E+03
1,1,1-Trichloroethane		3.33E+02	9.01E+00	8.77E+00	1.43E+03	7.26E+02	1.84E+01	1.80E+01	2.92E+03	1.62E+03	4.04E+01	3.94E+01	6.39E+03
1,1,1,2 Tetrachloroethane		5.39E+00	1.54E+00	1.20E+00	2.60E+03	1.27E+01	3.56E+00	2.78E+00	6.02E+03	2.92E+01	8.29E+00	6.46E+00	1.40E+04
1,1,2,2-Tetrachloroethane		2.81E+00	3.92E+00	1.64E+00	2.67E+03	6.10E+00	8.04E+00	3.47E+00	5.46E+03	1.36E+01	1.76E+01	7.67E+00	1.20E+04
Carbon Tetrachloride		3.10E+00	2.58E-02	2.57E-02	1.52E+03	7.11E+00	5.65E-02	5.62E-02	3.32E+03	1.62E+01	1.28E-01	1.27E-01	7.54E+03
1,2-Dichloroethane		3.17E-02	9.20E-03	7.13E-03	3.41E+03	5.73E-02	1.33E-02	1.08E-02	4.91E+03	1.09E-01	2.28E-02	1.88E-02	8.43E+03
Vinyl Chloride		3.82E-03	7.73E-04	6.43E-04	1.36E+03	6.87E-03	1.00E-03	8.73E-04	1.76E+03	1.25E-02	1.53E-03	1.36E-03	2.69E+03
1,2,4-Trimethylbenzene		NR	1.76E+00	NR	4.74E+02	NR	4.26E+00	NR	1.16E+03	NR	9.72E+00	NR	2.76E+03
1,3,5-Trimethylbenzene	(e)	NR	NR	NR	2.30E+02	NR	NR	NR	5.52E+02	NR	NR	NR	1.30E+03
Semi-Volatile Organic Compounds													
Acenaphthene		2.27E+02	4.86E+04	2.26E+02	5.70E+01	5.41E+02	1.18E+05	5.38E+02	1.41E+02	1.18E+03	2.68E+05	1.17E+03	3.36E+02
Acenaphthylene		1.85E+02	4.59E+04	1.84E+02	8.61E+01	4.42E+02	1.11E+05	4.40E+02	2.12E+02	9.78E+02	2.53E+05	9.74E+02	5.06E+02
Anthracene		2.43E+03	1.53E+05	2.39E+03	1.17E+00	5.53E+03	3.77E+05	5.45E+03	2.91E+00	1.10E+04	8.76E+05	1.09E+04	6.96E+00
Benzo(a)anthracene		1.01E+01	2.47E+01	7.18E+00	1.71E+00	1.42E+01	4.37E+01	1.07E+01	4.28E+00	1.69E+01	6.26E+01	1.33E+01	1.03E+01
Benzo(a)pyrene	(a)	4.96E+00	3.51E+01	NR	9.11E-01	4.96E+00	3.77E+01	NR	2.28E+00	4.96E+00	3.89E+01	NR	5.46E+00
Benzo(b)fluoranthene		2.96E+00	1.93E+01	2.56E+00	1.22E+00	3.89E+00	2.13E+01	3.29E+00	3.04E+00	4.43E+00	2.22E+01	3.69E+00	7.29E+00
Benzo(g,h,i)perylene		3.77E+02	1.87E+03	3.14E+02	1.54E-02	4.09E+02	1.94E+03	3.38E+02	3.85E-02	4.23E+02	1.97E+03	3.48E+02	9.23E-02
Benzo(k)fluoranthene		8.92E+01	5.41E+02	7.66E+01	6.87E-01	1.10E+02	5.76E+02	9.22E+01	1.72E+00	1.21E+02	5.91E+02	1.00E+02	4.12E+00
Chrysene		1.66E+01	1.19E+02	1.46E+01	4.40E-01	2.54E+01	1.49E+02	2.17E+01	1.10E+00	3.19E+01	1.66E+02	2.67E+01	2.64E+00
Dibenzo(a,h)anthracene		2.90E-01	1.45E+00	2.41E-01	3.93E-03	3.43E-01	1.64E+00	2.84E-01	9.82E-03	3.69E-01	1.74E+00	3.04E-01	2.36E-02
Fluoranthene		2.87E+02	3.83E+04	2.85E+02	1.89E+01	5.63E+02	8.87E+04	5.60E+02	4.73E+01	9.00E+02	1.83E+05	8.96E+02	1.13E+02
Fluorene		1.77E+02	6.20E+03	1.72E+02	3.09E+01	4.19E+02	1.53E+04	4.07E+02	7.65E+01	8.98E+02	3.62E+04	8.77E+02	1.83E+02
Indeno(1,2,3-cd)pyrene		3.09E+01	2.12E+02	2.70E+01	6.13E-02	4.22E+01	2.38E+02	3.59E+01	1.53E-01	4.92E+01	2.50E+02	4.11E+01	3.68E-01
Naphthalene		2.78E+01	2.33E+01	1.27E+01	7.64E+01	6.66E+01	5.58E+01	3.04E+01	1.83E+02	1.53E+02	1.31E+02	7.06E+01	4.32E+02
Phenanthrene		9.85E+01	7.17E+03	9.72E+01	3.60E+01	2.24E+02	1.76E+04	2.22E+02	8.96E+01	4.48E+02	4.07E+04	4.43E+02	2.14E+02
Pyrene		6.25E+02	8.79E+04	6.20E+02	2.20E+00	1.25E+03	2.04E+05	1.24E+03	5.49E+00	2.05E+03	4.23E+05	2.04E+03	1.32E+01
Phenol		1.60E+02	4.58E+02	1.20E+02	2.42E+04	2.96E+02	6.95E+02	2.09E+02	3.81E+04	5.86E+02	1.19E+03	3.93E+02	7.03E+04

GENERIC ASSESSMENT CRITERIA FOR HUMAN HEALTH - RESIDENTIAL WITH HOME-GROWN PRODUCE

Table 4

Human Health Generic Assessment Criteria by Pathway for Residential With Home-Grown Produce Scenario

Compound	Notes	SAC Appropriate to Pathway SOM 1% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 2.5% (mg/kg)			Soil Saturation Limit (mg/kg)	SAC Appropriate to Pathway SOM 6% (mg/kg)			Soil Saturation Limit (mg/kg)
		Oral	Inhalation	Combined		Oral	Inhalation	Combined		Oral	Inhalation	Combined	
Total Petroleum Hydrocarbons													
Aliphatic hydrocarbons EC_5-EC_6		4.99E+03	4.24E+01	4.23E+01	3.04E+02	1.13E+04	7.79E+01	7.78E+01	5.58E+02	2.50E+04	1.61E+02	1.60E+02	1.15E+03
Aliphatic hydrocarbons >EC_6-EC_8		1.49E+04	1.04E+02	1.03E+02	1.44E+02	3.43E+04	2.31E+02	2.31E+02	3.22E+02	7.11E+04	5.29E+02	5.28E+02	7.36E+02
Aliphatic hydrocarbons >EC_8-EC_{10}		1.61E+03	2.68E+01	2.67E+01	7.77E+01	2.91E+03	6.55E+01	6.51E+01	1.90E+02	4.26E+03	1.56E+02	1.54E+02	4.51E+02
Aliphatic hydrocarbons >EC_{10}-EC_{12}		4.57E+03	1.33E+02	1.32E+02	4.75E+01	5.51E+03	3.31E+02	3.26E+02	1.18E+02	5.98E+03	7.93E+02	7.65E+02	2.83E+02
Aliphatic hydrocarbons >EC_{12}-EC_{16}		6.27E+03	1.11E+03	1.06E+03	2.37E+01	6.34E+03	2.78E+03	2.41E+03	5.91E+01	6.36E+03	6.67E+03	4.34E+03	1.42E+02
Aliphatic hydrocarbons >EC_{16}-EC_{35}	(b)	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aliphatic hydrocarbons >EC_{35}-EC_{44}	(b)	6.46E+04	NR	NR	8.48E+00	9.17E+04	NR	NR	2.12E+01	1.10E+05	NR	NR	5.09E+01
Aromatic hydrocarbons >EC_8-EC_9 (styrene)		1.08E+01	5.22E+02	1.06E+01	6.26E+02	2.53E+01	1.20E+03	2.48E+01	1.44E+03	5.81E+01	2.79E+03	5.69E+01	3.35E+03
Aromatic hydrocarbons >EC_9-EC_{10}		5.76E+01	4.74E+01	3.45E+01	6.13E+02	1.38E+02	1.16E+02	8.38E+01	1.50E+03	3.07E+02	2.77E+02	1.94E+02	3.58E+02
Aromatic hydrocarbons >EC_{10}-EC_{12}		8.29E+01	2.58E+02	7.52E+01	3.64E+02	1.96E+02	6.39E+02	1.79E+02	8.99E+02	4.25E+02	1.52E+03	3.91E+02	2.15E+03
Aromatic hydrocarbons >EC_{12}-EC_{16}		1.47E+02	2.85E+03	1.45E+02	1.69E+02	3.36E+02	7.07E+03	3.32E+02	4.19E+02	6.81E+02	1.68E+04	6.74E+02	1.00E+03
Aromatic hydrocarbons >EC_{16}-EC_{21}	(b)	2.63E+02	NR	NR	5.37E+01	5.45E+02	NR	NR	1.34E+02	9.34E+02	NR	NR	3.21E+02
Aromatic hydrocarbons >EC_{21}-EC_{35}	(b)	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01
Aromatic hydrocarbons >EC_{35}-EC_{44}	(b)	1.09E+03	NR	NR	4.83E+00	1.47E+03	NR	NR	1.21E+01	1.70E+03	NR	NR	2.90E+01

Notes:

EC - equivalent carbon. SAC - soil assessment criteria.

The CLEA model output is colour coded depending upon whether the soil saturation limit has been exceeded.

Calculated SAC exceeds soil saturation limit and may significantly affect the interpretation of any exceedances as the contribution of the indoor and outdoor vapour pathway to total exposure is >10%.

Calculated SAC exceeds soil saturation limit but the exceedance will not affect the SAC significantly as the contribution of the indoor and outdoor vapour pathway to total exposure is <10%.

Calculated SAC does not exceed the soil saturation limit.

The SAC for organic compounds are dependant upon soil organic matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58. 1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoor air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway (Section 10.1.1, SR3)

(a) SAC for arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead are derived using the C4SL toxicology data.

(b) SAC for selenium should not include the inhalation pathway as no expert group HCV has been derived; aliphatic and aromatic hydrocarbons >EC16 should not include inhalation pathway due to their non-volatile nature and inhalation exposure being minimal (oral, dermal and inhalation exposure is compared to the oral HCV); arsenic should only be based on oral contribution (rather than combined) owing to the relative small contribution from inhalation in accordance with the SGV report. The Oral SAC should be adopted for zinc and benzo(a)pyrene.

(c) SAC for CrIII should be based on the lower of the oral and inhalation SAC (see LQM/CIEH 2015 Section 6.8)

(d) SAC for elemental mercury, chromium VI and nickel should be based on the inhalation pathway only.

(e) SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used.

Table 5
Human Health Generic Assessment Criteria for Residential with home-grown produce

Compound	SAC for Soil SOM 1% (mg/kg)	SAC for Soil SOM 2.5% (mg/kg)	SAC for Soil SOM 6% (mg/kg)
Metals			
Arsenic	37	37	37
Cadmium	22	22	22
Chromium (III) - trivalent	910	910	910
Chromium (VI) - hexavalent	21	21	21
Copper	2,500	2,500	2,500
Lead	200	200	200
Elemental Mercury (Hg^0)	0.2	0.6	1.2
Inorganic Mercury (Hg^{2+})	39	39	39
Methyl Mercury (Hg^{4+})	10	10	10
Nickel	130	130	130
Selenium	258	258	258
Zinc	3,900	3,900	3,900
Cyanide (free)	1.4	1.4	1.4
Volatile Organic Compounds			
Benzene	0.20	0.41	0.87
Toluene	130	300	680
Ethylbenzene	50	110	260
Xylene - m	59	140	327
Xylene - o	61	143	332
Xylene - p	57	133	310
Total xylene	57	133	310
Methyl tertiary-Butyl ether (MTBE)	60	110	210
Trichloroethene	0.02	0.03	0.08
Tetrachloroethene	0.2	0.4	0.9
1,1,1-Trichloroethane	9	18	39
1,1,1,2 Tetrachloroethane	1.2	2.8	6.5
1,1,2,2-Tetrachloroethane	1.6	3.5	7.7
Carbon Tetrachloride	0.026	0.056	0.127
1,2-Dichloroethane	0.007	0.011	0.019
Vinyl Chloride	0.0006	0.0009	0.0014
1,2,4-Trimethylbenzene	1.8	4.3	9.7
1,3,5-Trimethylbenzene	NR	NR	NR
Semi-Volatile Organic Compounds			
Acenaphthene	230	540	1,170
Acenaphthylene	180	440	970
Anthracene	2,400	5,500	10,900
Benzo(a)anthracene	7	11	13
Benzo(a)pyrene	5	5	5
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(g,h,i)perylene	310	340	350
Benzo(k)fluoranthene	77	92	100
Chrysene	15	22	27
Dibenzo(a,h)anthracene	0.24	0.28	0.30
Fluoranthene	290	560	900
Fluorene	170	410	880
Indeno(1,2,3-cd)pyrene	27	36	41
Naphthalene	13	30	71
Phenanthrene	100	220	440
Pyrene	620	1,240	2,040
Phenol	120	210	390
Total Petroleum Hydrocarbons			
Aliphatic hydrocarbons EC_5-EC_6	42	78	160
Aliphatic hydrocarbons >EC_6-EC_8	100	230	530
Aliphatic hydrocarbons >EC_8-EC_{10}	27	65	154
Aliphatic hydrocarbons >EC_{10}-EC_{12}	130 (48)	330 (118)	760 (283)
Aliphatic hydrocarbons >EC_{12}-EC_{16}	1,100 (24)	2,400 (59)	4,300 (142)
Aliphatic hydrocarbons >EC_{16}-EC_{35}	65,000 (8)	92,000 (21)	110,000
Aliphatic hydrocarbons >EC_{35}-EC_{44}	65,000 (8)	92,000 (21)	110,000
Aromatic hydrocarbons >EC_8-EC_9 (styrene)	11	25	57
Aromatic hydrocarbons >EC_9-EC_{10}	30	80	190
Aromatic hydrocarbons >EC_{10}-EC_{12}	80	180	390
Aromatic hydrocarbons >EC_{12}-EC_{16}	140	330	670
Aromatic hydrocarbons >EC_{16}-EC_{21}	260	540	930
Aromatic hydrocarbons >EC_{21}-EC_{35}	1,100	1,500	1,700
Aromatic hydrocarbons >EC_{35}-EC_{44}	1,100	1,500	1,700
Minerals			
Asbestos	No asbestos detected with ID or <0.001% dry weight[1]		

Notes:

'-' Generic assessment criteria not calculated owing to low volatility of substance and therefore no pathway, or an absence of toxicological data.

NR - SAC for 1,3,5-trimethylbenzene is not recorded owing to the lack of toxicological data, SAC for 1,2,4 trimethylbenzene may be used

EC - equivalent carbon. SAC - soil assessment criteria.

[1] LOD for weight of asbestos per unit weight of soil calculated on a dry weight basis using PLM, handpicking and gravimetry.

The SAC for organic compounds are dependent on Soil Organic Matter (SOM) (%) content. To obtain SOM from total organic carbon (TOC) (%) divide by 0.58. 1% SOM is 0.58% TOC. DL Rowell Soil Science: Methods and Applications, Longmans, 1994.

SAC for TPH fractions, PAHs napthalene, acenaphthene and acenaphthylene, BTEX and trimethylbenzene compounds were produced using an attenuation factor for the indoo air inhalation pathway of 10 to reduce conservatism associated with the vapour inhalation pathway, section 10.1.1, SR3.

(VALUE IN BRACKETS)

RSK has adopted an approach for petroleum hydrocarbons in accordance with LQM/CIEH whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the SAC with the corresponding solubility or vapour saturation limits given in brackets.

APPENDIX N
SOIL SUMMARY REPORT - GQRA

Project name	Land North of Barkby Lane, Syston
Project code	302001
Client name	Taylor Wimpey Strategic Land
Address	Newton House 2 Sark Drive Newton Leys Milton Keynes MK3 5SD
NGR	463740, 311130
Land use	Residential with home-grown produce
SOM	1%
GAC version	2017_00

Notes

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects										
Lab sample ID									18/01535/33	18/01535/37	18/01535/39	18/01535/42	18/01535/46	18/01535/47	18/01535/1	18/01535/3	18/01535/4	18/01535/6
Client sample ID									TP02	TP04	TP05	TP08	TP10	TP10	WS01	WS01	WS03	WS04
Depth to top									1.3	0.8	0.7	1	0.2	0.8	0.1	0.9	0.2	0.2
Depth to bottom																		
Date sampled									23/02/18	23/02/18	23/02/18	23/02/18	22/02/18	22/02/18	23/02/18	23/02/18	23/02/18	23/02/18
Metals																		
Arsenic	mg/kg	37		7	2	16	15	1			5		5		3	3	5	3
Cadmium	mg/kg	22		1.6	0.6	16	16	0			1.4		1.5		0.6	0.7	0.7	0.8
Chromium	mg/kg	910	21	49	16	16	16	0			38		37		16	16	17	20
Copper	mg/kg	2500		42	5	16	16	0			18		42		14	7	10	14
Lead	mg/kg	200		37	7	16	16	0			17		37		23	7	27	34
Mercury	mg/kg	39	0.2	0.25	0.18	16	4	12			<0.17		<0.17		<0.17	<0.17	<0.17	<0.17
Nickel	mg/kg	130		42	11	16	16	0			39		34		11	19	17	19
Selenium	mg/kg	258		2	1	16	4	12			<1		1		<1	<1	<1	<1
Zinc	mg/kg	3900		115	33	16	16	0			79		101		45	33	46	54
Asbestos																		
Asbestos in soil						4	0	4							NAD			
Polycyclic aromatic hydrocarbons																		
Acenaphthene	mg/kg	230				16	0	16			<0.01		<0.01		<0.01	<0.01	<0.01	<0.01
Acenaphthylene	mg/kg	180				16	0	16			<0.01		<0.01		<0.01	<0.01	<0.01	<0.01
Anthracene	mg/kg	2400				16	0	16			<0.02		<0.02		<0.02	<0.02	<0.02	<0.02
Benzo(a)anthracene	mg/kg	7		0.06	0.06	16	2	14			<0.04		<0.04		<0.04	<0.04	<0.04	<0.04
Benzo(a)pyrene	mg/kg	5		0.11	0.07	16	3	13			<0.04		<0.04		<0.04	<0.04	0.11	<0.04
Benzo(b)fluoranthene	mg/kg	2.6		0.08	0.06	16	3	13			<0.05		<0.05		<0.05	<0.05	0.08	<0.05
Benzo(ghi)perylene	mg/kg	310		0.07	0.07	16	1	15			<0.05		<0.05		<0.05	<0.05	0.07	<0.05
Benzo(k)fluoranthene	mg/kg	77				16	0	16			<0.07		<0.07		<0.07	<0.07	<0.07	<0.07
Chrysene	mg/kg	15		0.08	0.08	16	2	14			<0.06		<0.06		<0.06	<0.06	<0.06	<0.06
Dibenzo(ah)anthracene	mg/kg	0.24				16	0	16			<0.04		<0.04		<0.04	<0.04	<0.04	<0.04
Fluoranthene	mg/kg	290		0.09	0.09	16	1	15			<0.08		<0.08		<0.08	<0.08	<0.08	<0.08
Fluorene	mg/kg	170				16	0	16			<0.01		<0.01		<0.01	<0.01	<0.01	<0.01
Indeno(123-cd)pyrene	mg/kg	27		0.16	0.07	16	3	13			<0.03		<0.03		<0.03	<0.03	0.16	<0.03
Naphthalene	mg/kg	13				16	0	16			<0.03		<0.03		<0.03	<0.03	<0.03	<0.03
Phenanthrene	mg/kg	100		0.06	0.05	16	2	14			<0.03		<0.03		<0.03	<0.03	<0.03	<0.03
Pyrene	mg/kg	620		0.09	0.08	16	2	14			<0.07		<0.07		<0.07	<0.07	<0.07	<0.07
PAH (total 16)	mg/kg			0.57	0.42	16	3	13			<0.08		<0.08		<0.08	<0.08	0.42	<0.08
Other analytes																		
% Stones >10mm	% w/w			16.6	2.9	22	3	19	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6.7	2.9	<0.1
Aldrin	mg/kg					4	0	4							<0.05			
alpha-Hexachlorocyclohexane (HCH)	mg/kg					4	0	4							<0.05			
Azinphos-methyl	mg/kg					4	0	4							<0.05			
beta-Hexachlorocyclohexane (HCH)	mg/kg					4	0	4							<0.05			
Diazinon	mg/kg					4	0	4							<0.05			
Dichlorvos	mg/kg					4	0	4							<0.05			
Dieldrin	mg/kg					4	0	4							<0.05			
Endosulphan I	mg/kg					4	0	4							<0.05			
Endosulphan II	mg/kg					4	0	4							<0.05			
Endosulphan Sulphate	mg/kg					4	0	4							<0.05			
Endrin	mg/kg					4	0	4							<0.05			
Ethion	mg/kg					4	0	4							<0.05			

Project name	Land North of Barkby Lane, Syston
Project code	302001
Client name	Taylor Wimpey Strategic Land
Address	Newton House 2 Sark Drive Newton Leys Milton Keynes MK3 5SD
NGR	463740, 311130
Land use	Residential with home-grown produce
SOM	1%
GAC version	2017_00

Notes

Lab sample ID	18/01535/8	18/01535/12	18/01535/13	18/01535/14	18/01535/16	18/01535/17	18/01535/21	18/01535/23	18/01535/24	18/01535/25
Client sample ID	WS05	WS06	WS06	WS07	WS09	WS09	WS11	WS12	WS12	WS13
Depth to top	0.2	0.2	1	0.6	0.2	1	0.1	0.2	1.2	0.2
Depth to bottom										
Date sampled	23/02/18	23/02/18	23/02/18	23/02/18	22/02/18	22/02/18	22/02/18	22/02/18	22/02/18	22/02/18

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete										
Metals																		
Arsenic	mg/kg	37		7	2	16	15	1	3	4	2	<1	3	4	6	6		7
Cadmium	mg/kg	22		1.6	0.6	16	16	0	1.6	1.4	1	0.8	1.3	1.5	1	1		0.7
Chromium	mg/kg	910	21	49	16	16	16	0	47	31	28	28	35	49	24	24		20
Copper	mg/kg	2500		42	5	16	16	0	26	14	5	5	38	25	18	19		16
Lead	mg/kg	200		37	7	16	16	0	36	25	14	11	34	17	34	33		26
Mercury	mg/kg	39	0.2	0.25	0.18	16	4	12	<0.17	0.21	0.19	0.25	0.18	<0.17	<0.17	<0.17		<0.17
Nickel	mg/kg	130		42	11	16	16	0	37	32	36	29	27	42	19	20		13
Selenium	mg/kg	258		2	1	16	4	12	<1	1	<1	<1	2	1	<1	<1		<1
Zinc	mg/kg	3900		115	33	16	16	0	115	76	54	47	81	92	66	65		48
Asbestos																		
Asbestos in soil						4	0	4					NAD			NAD		
Polycyclic aromatic hydrocarbons																		
Acenaphthene	mg/kg	230				16	0	16	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01
Acenaphthylene	mg/kg	180				16	0	16	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01
Anthracene	mg/kg	2400				16	0	16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02
Benzo(a)anthracene	mg/kg	7		0.06	0.06	16	2	14	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		0.06
Benzo(a)pyrene	mg/kg	5		0.11	0.07	16	3	13	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		0.08
Benzo(b)fluoranthene	mg/kg	2.6		0.08	0.06	16	3	13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		0.07
Benzo(ghi)perylene	mg/kg	310		0.07	0.07	16	1	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05
Benzo(k)fluoranthene	mg/kg	77				16	0	16	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		<0.07
Chrysene	mg/kg	15		0.08	0.08	16	2	14	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06		0.08
Dibenzo(ah)anthracene	mg/kg	0.24				16	0	16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04		<0.04
Fluoranthene	mg/kg	290		0.09	0.09	16	1	15	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08		<0.08
Fluorene	mg/kg	170				16	0	16	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01
Indeno(123-cd)pyrene	mg/kg	27		0.16	0.07	16	3	13	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		0.07
Naphthalene	mg/kg	13				16	0	16	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		<0.03
Phenanthrene	mg/kg	100		0.06	0.05	16	2	14	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		0.06
Pyrene	mg/kg	620		0.09	0.08	16	2	14	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		0.08
PAH (total 16)	mg/kg			0.57	0.42	16	3	13	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08		0.51
Other analytes																		
% Stones >10mm	% w/w			16.6	2.9	22	3	19	<0.1	<0.1	<0.1	<0.1	16.6	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg					4	0	4					<0.05			<0.05		
alpha-Hexachlorocyclohexane (HCH)	mg/kg					4	0	4					<0.05			<0.05		
Azinphos-methyl	mg/kg					4	0	4					<0.05			<0.05		
beta-Hexachlorocyclohexane (HCH)	mg/kg					4	0	4					<0.05			<0.05		
Diazinon	mg/kg					4	0	4					<0.05			<0.05		
Dichlorvos	mg/kg					4	0	4					<0.05			<0.05		
Dieldrin	mg/kg					4	0	4					<0.05			<0.05		
Endosulphan I	mg/kg					4	0	4					<0.05			<0.05		
Endosulphan II	mg/kg					4	0	4					<0.05			<0.05		
Endosulphan Sulphate	mg/kg					4	0	4					<0.05			<0.05		
Endrin	mg/kg					4	0	4					<0.05			<0.05		
Ethion	mg/kg					4	0	4					<0.05			<0.05		

Project name	Land North of Barkby Lane, Syston
Project code	302001
Client name	Taylor Wimpey Strategic Land
Address	Newton House 2 Sark Drive Newton Leys Milton Keynes MK3 5SD
NGR	463740, 311130
Land use	Residential with home-grown produce
SOM	1%
GAC version	2017_00

Notes

Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete		
Lab sample ID									18/01535/26	18/01535/27
Client sample ID									WS13	WS14
Depth to top									0.8	0.2
Depth to bottom										
Date sampled									22/02/18	22/02/18
Metals										
Arsenic	mg/kg	37		7	2	16	15	1		5
Cadmium	mg/kg	22		1.6	0.6	16	16	0		0.7
Chromium	mg/kg	910	21	49	16	16	16	0		21
Copper	mg/kg	2500		42	5	16	16	0		20
Lead	mg/kg	200		37	7	16	16	0		25
Mercury	mg/kg	39	0.2	0.25	0.18	16	4	12		<0.17
Nickel	mg/kg	130		42	11	16	16	0		12
Selenium	mg/kg	258		2	1	16	4	12		<1
Zinc	mg/kg	3900		115	33	16	16	0		48
Asbestos										
Asbestos in soil						4	0	4		NAD
Polycyclic aromatic hydrocarbons										
Acenaphthene	mg/kg	230				16	0	16		<0.01
Acenaphthylene	mg/kg	180				16	0	16		<0.01
Anthracene	mg/kg	2400				16	0	16		<0.02
Benzo(a)anthracene	mg/kg	7		0.06	0.06	16	2	14		0.06
Benzo(a)pyrene	mg/kg	5		0.11	0.07	16	3	13		0.07
Benzo(b)fluoranthene	mg/kg	2.6		0.08	0.06	16	3	13		0.06
Benzo(ghi)perylene	mg/kg	310		0.07	0.07	16	1	15		<0.05
Benzo(k)fluoranthene	mg/kg	77				16	0	16		<0.07
Chrysene	mg/kg	15		0.08	0.08	16	2	14		0.08
Dibenzo(ah)anthracene	mg/kg	0.24				16	0	16		<0.04
Fluoranthene	mg/kg	290		0.09	0.09	16	1	15		0.09
Fluorene	mg/kg	170				16	0	16		<0.01
Indeno(123-cd)pyrene	mg/kg	27		0.16	0.07	16	3	13		0.07
Naphthalene	mg/kg	13				16	0	16		<0.03
Phenanthrene	mg/kg	100		0.06	0.05	16	2	14		0.05
Pyrene	mg/kg	620		0.09	0.08	16	2	14		0.09
PAH (total 16)	mg/kg			0.57	0.42	16	3	13		0.57
Other analytes										
% Stones >10mm	% w/w			16.6	2.9	22	3	19	<0.1	<0.1
Aldrin	mg/kg					4	0	4		<0.05
alpha-Hexachlorocyclohexane (HCH)	mg/kg					4	0	4		<0.05
Azinphos-methyl	mg/kg					4	0	4		<0.05
beta-Hexachlorocyclohexane (HCH)	mg/kg					4	0	4		<0.05
Diazinon	mg/kg					4	0	4		<0.05
Dichlorvos	mg/kg					4	0	4		<0.05
Dieldrin	mg/kg					4	0	4		<0.05
Endosulphan I	mg/kg					4	0	4		<0.05
Endosulphan II	mg/kg					4	0	4		<0.05
Endosulphan Sulphate	mg/kg					4	0	4		<0.05
Endrin	mg/kg					4	0	4		<0.05
Ethion	mg/kg					4	0	4		<0.05

								Lab sample ID	18/01535/33	18/01535/37	18/01535/39	18/01535/42	18/01535/46	18/01535/47	18/01535/1	18/01535/3	18/01535/4	18/01535/6
								Client sample ID	TP02	TP04	TP05	TP08	TP10	TP10	WS01	WS01	WS03	WS04
								Depth to top	1.3	0.8	0.7	1	0.2	0.8	0.1	0.9	0.2	0.2
								Depth to bottom										
								Date sampled	23/02/18	23/02/18	23/02/18	23/02/18	22/02/18	22/02/18	23/02/18	23/02/18	23/02/18	23/02/18
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-detects										
Fenitrothion	mg/kg					4	0	4							<0.05			
gamma-Hexachlorocyclohexane (HCH / Lindane)	mg/kg					4	0	4							<0.05			
Heptachlor	mg/kg					4	0	4							<0.05			
Heptachlor Epoxide	mg/kg					4	0	4							<0.05			
Malathion	mg/kg					4	0	4							<0.05			
Methyl Parathion	mg/kg					4	0	4							<0.05			
Mevinphos	mg/kg					4	0	4							<0.05			
Organic matter	% w/w			3.1	1.2	6	5	1							1.2	<0.1		
p,p-DDE	mg/kg					4	0	4							<0.05			
p,p-DDT	mg/kg					4	0	4							<0.05			
p,p-Methoxychlor	mg/kg					4	0	4							<0.05			
p,p-TDE (DDD)	mg/kg					4	0	4							<0.05			
Parathion (Ethyl Parathion)	mg/kg					4	0	4							<0.05			
pH	pH			7.71	4.87	16	16	0			7.6		7.52		5.94	6.88	6.44	6.77
pH BRE	pH			7.91	6.35	8	8	0	6.35	7.6	7.6	7.54		7.91				
Sulphate BRE (acid sol)	% w/w			0.05	0.03	8	5	3	<0.02	0.03	0.04	0.04		0.03				
Sulphur BRE (total)	% w/w			0.02	0.01	8	5	3	<0.01	0.01	0.02	0.02		0.01				

								Lab sample ID	18/01535/8	18/01535/12	18/01535/13	18/01535/14	18/01535/16	18/01535/17	18/01535/21	18/01535/23	18/01535/24	18/01535/25
								Client sample ID	WS05	WS06	WS06	WS07	WS09	WS09	WS11	WS12	WS12	WS13
								Depth to top	0.2	0.2	1	0.6	0.2	1	0.1	0.2	1.2	0.2
								Depth to bottom										
								Date sampled	23/02/18	23/02/18	23/02/18	23/02/18	22/02/18	22/02/18	22/02/18	22/02/18	22/02/18	22/02/18
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete										
Fenitrothion	mg/kg					4	0	4					<0.05			<0.05		
gamma-Hexachlorocyclohexane (HCH / Lindane)	mg/kg					4	0	4					<0.05			<0.05		
Heptachlor	mg/kg					4	0	4					<0.05			<0.05		
Heptachlor Epoxide	mg/kg					4	0	4					<0.05			<0.05		
Malathion	mg/kg					4	0	4					<0.05			<0.05		
Methyl Parathion	mg/kg					4	0	4					<0.05			<0.05		
Mevinphos	mg/kg					4	0	4					<0.05			<0.05		
Organic matter	% w/w			3.1	1.2	6	5	1					3	1.3		3.1		
p,p-DDE	mg/kg					4	0	4					<0.05			<0.05		
p,p-DDT	mg/kg					4	0	4					<0.05			<0.05		
p,p-Methoxychlor	mg/kg					4	0	4					<0.05			<0.05		
p,p-TDE (DDD)	mg/kg					4	0	4					<0.05			<0.05		
Parathion (Ethyl Parathion)	mg/kg					4	0	4					<0.05			<0.05		
pH	pH			7.71	4.87	16	16	0	7.49	4.87	7.61	7.71	5.49	7.39	6.84	6.29		5.6
pH BRE	pH			7.91	6.35	8	8	0			7.61						7.44	
Sulphate BRE (acid sol)	% w/w			0.05	0.03	8	5	3			<0.02						0.05	
Sulphur BRE (total)	% w/w			0.02	0.01	8	5	3			<0.01						0.02	

								Lab sample ID	18/01535/26	18/01535/27
								Client sample ID	WS13	WS14
								Depth to top	0.8	0.2
								Depth to bottom		
								Date sampled	22/02/18	22/02/18
Analyte	Unit	GAC	T1	Max	Min	Count	# Detects	# Non-dete		
Fenitrothion	mg/kg					4	0	4		<0.05
gamma-Hexachlorocyclohexane (HCH / Lindane)	mg/kg					4	0	4		<0.05
Heptachlor	mg/kg					4	0	4		<0.05
Heptachlor Epoxide	mg/kg					4	0	4		<0.05
Malathion	mg/kg					4	0	4		<0.05
Methyl Parathion	mg/kg					4	0	4		<0.05
Mevinphos	mg/kg					4	0	4		<0.05
Organic matter	% w/w			3.1	1.2	6	5	1		2.1
p,p-DDE	mg/kg					4	0	4		<0.05
p,p-DDT	mg/kg					4	0	4		<0.05
p,p-Methoxychlor	mg/kg					4	0	4		<0.05
p,p-TDE (DDD)	mg/kg					4	0	4		<0.05
Parathion (Ethyl Parathion)	mg/kg					4	0	4		<0.05
pH	pH			7.71	4.87	16	16	0		5.14
pH BRE	pH			7.91	6.35	8	8	0	6.57	
Sulphate BRE (acid sol)	% w/w			0.05	0.03	8	5	3	<0.02	
Sulphur BRE (total)	% w/w			0.02	0.01	8	5	3	<0.01	

	Notes for GQRA (soil) Screening Tool Output	
1	Details of the **GAC (landuse, SOM and GAC version)** used in the GQRA are displayed at the top of the output screening sheet	
2	Full details of the **GAC derivation** are included in a separate appendix document	
3	The output screening sheet presents the reported Total Organic Carbon and the corresponding calculated Soil Organic Matter, using a conversion of TOC (%) divided by 0.58 to compute the SOM	
4	Any laboratory results that are appended to the reported concentrations (e.g. Tentatively Identified Compounds, PAH Double Ratio Plots etc.) are not included in the output screening sheet.	
	T1	**First level screening threshold, equating to:**
5		Chromium: total Cr concentration compared to Cr VI (conservative assessment)
		Chromium: total Cr concentration compared to Cr III
	Comment	Where Cr VI has been reported, the CrVI results are compared directly to the CrVI GAC
6		Mercury : total Hg concentration compared to elemental Hg (conservative assessment)
		Mercury : total Hg concentration compared to inorganic Hg
	Comment	The tool does not screen against methyl mercury (this parameter is only reported if mercury has been speciated)
7		Petroleum Hydrocarbons: The soil saturation limit has been exceeded
		Petroleum Hydrocarbons: The modelled GAC has been exceeded
	Comment	RSK has adopted an approach for petroleum hydrocarbons whereby the concentration modelled for each petroleum hydrocarbon fraction has been tabulated as the GAC with the corresponding solubility or vapour saturation limits given in brackets on the GAC appendix document. First level (T1) GQRA screening is against the soil saturation limit.
8		Total cyanide: total CN compared to free CN (conservative assessment)
	Comment	There is no GAC for total CN (risks are driven by free CN) therefore the first level GQRA screening is against free CN and no other screening is undertaken. This is a conservative assessment.
9	The GQRA screening for **asbestos** is in relation to presence or absence ('detect'). Presence is reported as asbestos type or quantification >0.001%. Absence is reported as < limit of quantification of 0.001% or No Asbestos Detected (NAD).	
10	Where individual reported concentrations are presented in grey (not black) font, the result was below the laboratory method detection limit.	
11		Where cells are shaded grey, all results for that analyte are below the laboratory method detection limit