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Project:	Land at Blackbird Close. Crowland.
Planning:	Planning conditions.
Date:	22 nd July 2026.

Planning permission reference no:
H02-0128-26
Dated 28 th APRIL 2026

Condition C8:

The development hereby permitted shall not be commenced until a scheme to deal with any contamination of land or pollution of controlled waters has been submitted to and approved in writing by the Local Planning Authority (LPA).

The scheme shall include all of the following measures unless the LPA dispenses with any such requirement in writing:

- i) A preliminary risk assessment (desk study) shall be carried out to identify and evaluate all potential sources of contamination and the impacts on land and/or controlled waters, relevant to the site. The desk-top study shall establish a 'conceptual site model' and identify all plausible pollutant linkages. Furthermore, the assessment shall set objectives for intrusive site investigation works/Quantitative Risk Assessment (or state if none required). A full copy of the desk-top study and a non-technical summary shall be submitted to the LPA without delay upon completion.
- ii) If identified as being required following the completion of the desk-top study, an exploratory site investigation shall be carried out to fully and effectively characterise the nature and extent of any land contamination and/or pollution of controlled waters. It shall specifically include a risk assessment that adopts the Source-Pathway-Receptor principle, in order that any potential risks are adequately assessed taking into account the sites existing status and proposed end use. A full copy of the site investigation and findings shall be forwarded to the LPA without delay upon completion.
- iii) Thereafter, a written method statement detailing the remediation strategy for land contamination and/or pollution of controlled waters affecting the site and a timetable for their completion shall be submitted to and approved in writing by the LPA. This shall include details of the proposed verification plan including compliance criteria and monitoring details.

No deviation shall be made from this scheme without the express written agreement of the LPA. If during redevelopment contamination not previously considered is identified, then the LPA shall be notified immediately and no further work shall be carried out until a method statement detailing a scheme for dealing with the suspected contamination has been submitted to and agreed in writing by the LPA.

Answer.

Please refer to the enclosed SITE INVESTIGATION report by Lucion Ground Engineering Limited.
All requirements of the condition above are met therein.



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SITE INVESTIGATION REPORT
LAND AT BLACKBIRD CLOSE
CROWLAND
LINCOLNSHIRE

Report Reference No. 150562

On behalf of:-

Mr M & Mrs S Blackbird
11 Blackbird Close
Crowland
Lincolnshire
PE6 0BF

July 2026

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MR M & MRS S BLACKBIRD

SITE INVESTIGATION REPORT

FOR A

RESIDENTIAL DEVELOPMENT

AT

LAND OFF BLACKBIRD CLOSE

CROWLAND

LINCOLNSHIRE

Report Reference No. 150562

July 2026

INTRODUCTION

The clients, Mr & Mrs Blackbird, propose to build three new dwellings on land at Blackbird Close, Crowland, Lincolnshire. It is understood that the proposed development will comprise detached and semi-detached houses, a detached garage, associated parking, driveways, gardens and landscaped areas. The layout of the proposed development is presented to the rear of this report.

Lucion Ground Engineering Limited was commissioned by the client to carry out a ground investigation to determine the nature and geotechnical properties of the underlying soils and provide information for the design and construction of the foundations. A desk study and contamination assessment were also to be included within the scope of this report.

LOCATION, TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY OF THE SITE

Location

The site is located on the eastern side of Peterborough Road, Crowland in Lincolnshire. The site is approximately 500m south of the centre of Crowland. The site is centred at National Grid Reference TF 24135 09755 and its location is shown on plans following this report text.

The 0.18 hectare site is on the eastern side of Peterborough Road, on the northern side of an access road to new houses further east. The site is approximately 25m wide fronting Peterborough Road, and extends approximately 80m east. The site is bound by properties off Kennulphs Close to the north; the access road for Blackbird Close to the south; new housing to the east; and Peterborough Road to the west.

At the time of this investigation the site was generally surfaced with concrete hardstanding from its former transport yard use, with areas of scrub. A line of shrubs had been planted along the southern edge of the site with the access road.

Topography

This part of Crowland stands at about 3.0mOD, on low lying land at the margin of the Lincolnshire Fens.

Geology

The 1984 geological map for the area at 1:50,000 scale, sheet 158, 'Peterborough', shows superficial Nordelph Peat beneath the majority of the site, with superficial Abbey Sand and Gravel Member beneath the western edge of the site adjacent Peterborough Road, and superficial Barroway Drove Beds (now named Tidal Flat Deposits) beneath the eastern part of the site, overlying the solid geology of the Oxford Clay Formation.

Hydrogeology

The site is underlain by a 'Secondary A' Aquifer (Abbey Sand and Gravel Member to the west), and 'Unproductive' strata (Nordelph Peat and Tidal Flat Deposits). The solid geology stratum (Oxford Clay Formation) beneath the superficial deposits is also an 'Unproductive' stratum.

Drains are present along field boundaries around the site, the closest is 70m to the north-west. The north-eastwards flowing River Welland is some 1.5km north-east of the site.

HISTORY OF THE SITE

Research into the site history involved reference to historical Ordnance Survey (OS) maps, photographs and information obtained from the internet. The map extracts studied are presented in the desk study map section, Appendix 1, and are described below. Distances are approximate.

<i>OS extract studied</i>	<i>Description</i>
1886-7 OS Sheets: Lincolnshire 148SW & 153NW Scale 1:10,560 Figure A	The site is within a field on the eastern side of a road. A drain is present along the western edge of the site adjacent the road. A second drain is present immediately to the east of the site, with the south-eastward flowing Greenbank Drain 75m east of the site. An irregular shaped pond is present 70m west of the site. A corn mill is present 150m south-west of the site.
1887-88 OS Sheets: Lincolnshire 148.13 & 14, 153.1 & 2 Scale 1:2500 Figure B	The site and immediately surrounding area appear unchanged.
1901-04 OS Sheets: Lincolnshire 148.13 & 14, 153.1 & 2 Scale 1:2500 Figure C	The site and immediately surrounding area appear generally unchanged. A new house has been built 40m north of the site.
1950 OS Sheets: Lincolnshire 148SW & 153NW Scale 1:10,560 Figure D	A small building is denoted in the western part of the site. New buildings are also shown on the adjacent land to the north and south of the site.
1958 OS Sheets: TF20NW & TF21SW Scale 1:10,560 Figure E	The site and immediately surrounding area appear unchanged.
1975 OS Sheets: TF2309 & TF2409 Scale 1:2500 Figure F	The site is undeveloped, however it appears to be associated with a Transport Depot to the south where a new square building is shown. The irregular shaped pond to the west is no longer evident, presumably infilled. The site of the former windmill has been redeveloped with a glue & chemical works, which has an electricity sub-station on its northern side. A pumping station is shown 120m east of the site. A second electricity sub-station is shown 175m north of the site.
1989 OS Sheet: TF2409 Scale 1:2500 Figure G	The site and its immediate surrounding appear generally unchanged. New housing has been built 50m north of the site.

<i>OS extract studied</i>	<i>Description</i>
1996 OS Sheets: TF2309 & TF2409 Scale 1:2500 Figure H	The site is denoted as a ‘works’, with a building present in the eastern part of the site, extended from the building to the south.
1999-2012 Aerial Photographs Pages 12 & 13 Appendix 2	The site appears developed with a building in the east, and yard/storage in the central and western parts of the site. A hedgerow is evident along the field boundary to the east.
2001 OS Sheets: TF20NW & TF21SW Scale 1:10,000 Figure I	The site and its immediate surrounding area appear generally unchanged. A building has been cleared from the adjacent plot to the north.
2003 OS Sheets: T2309NE & TF2409NW Scale 1:1250 Figure J	The site and its immediate surrounding area appear unchanged.
2010 OS Sheets: TF20NW & TF21SW Scale 1:10,000 Figure K	The site and its immediate surrounding area appear unchanged.
2014-2023 Aerial Photographs Pages 9, 10 & 11 Appendix 2	The site has been cleared of buildings, however concrete hardstanding remains evident. A new house has been built to the north of the site by 2014. The 2023 aerial photograph shows Blackbird Close along the southern edge of the site, and new large houses in the former field to the east.
2026 National Grid Plan Originally at scale 1:1250 Figure L	The site is undeveloped, and is crossed by buried electricity cables in the northern and southern parts of the site.

Summary of Historical Information

The site was undeveloped until a small building was shown on the 1950 map, and the site was subsequently part of a transport depot in the 1970s. The site was cleared of the depot building between 2012 and 2014, however the concrete hardstanding has remained to the present day.

The adjacent land to the north and south had been developed with housing by 1950. Blackbird Close roadway had been built by 2023, with new houses in the field to the east. The former site of a windmill 150m to the south-west was redeveloped with a glue and chemical works between 1958 and 1975, and subsequently redeveloped with housing.

SUMMARY OF ENVIRONMENTAL DATA

Appendix 2 contains information derived from Environmental Databases for a radius of up to 2,000m from the site. The information covers datasets held by Groundsure with contributors including the local authority, the Environment Agency (EA), British Geological Survey, Ordnance Survey and the Coal Authority and the results, within a radius of 250m, are summarised below:

1-2. Historical Industrial Sites	On-Site	0 - 250m
Historical Industrial Land Uses	1	6
Historical Tank Database	0	0
Historical Energy Features Database	0	3
Historical Petrol & Fuel Site Database	0	0
Historical Garage & Motor Vehicle Repair Database	0	0
3. Landfill and Other Waste Sites	On-Site	0 - 250m
Landfill Sites	0	0
Historical Landfill and Other Waste Sites	0	0
Waste Exemptions	0	13
4. Current Land Use	On-Site	0 - 250m
Recent Industrial Land Uses	0	2
Records of Petrol and Fuel Sites	0	0
Underground Electricity, High Pressure Oil and Gas Pipelines	0	0
Sites Determined as Contaminated Land under Part IIA EPA 1990	0	0
Records of COMAH and NIHHS Sites	0	0
Environmental permits/pollution incidents/registers	0	1
5-6. Hydrogeology and Hydrology	On-Site	0 - 250m
Productive strata within superficial geology beneath the site	Yes	Yes
Productive strata within solid geology	No	No
Groundwater Abstraction Licences	0	0
Surface Water Abstraction Licences	0	0
Potable Water Abstraction Licences	0	0
Source Protection Zones	0	0
Water Network Entries	0	18
Surface Water Features	0	7
Surface Water Body Catchments	1	-

7-9. Flooding				On-Site	0-250m
Risk of flooding from rivers & the sea (RoFRaS) rating				Medium (within 50m)	
Historical flood events				1	0
Flood defences within 250m of site				No	
Any areas benefitting from flood defences within 250m of site				No	
Flood storage areas within 250m of site				No	
Environment Agency indicative Zone 2 floodplains within 50m of site				Yes (on-site)	
Environment Agency indicative Zone 3 floodplains within 50m of site				Yes (within 50m)	
Surface water flooding on site or within 50m of site				1 in 30 year, 0.1m-0.3m (within 50m)	
Groundwater flooding on site or within 50m of site				Low (on-site)	
10-13. Designated Environmentally Sensitive Sites				On Site	0 - 250m
Sites of Special Scientific Interest (SSSI)				0	0
Green Belt				0	0
Nitrate Vulnerable Zone/SSSI Risk Zone				2	0
14-16. Geology					
Artificial Ground or Made Ground records				0	0
Superficial Ground and Drift Geology records beneath the site				Yes	
17. Natural Hazards (on site)					
Hazard	Negligible	Very Low	Low	Moderate	High
Shrinking or Swelling Clay	-	-	-	Within 50m	-
Running Sand	-	-	-	Within 50m	-
Compressible Ground	-	-	-	-	Within 50m
Collapsible Rocks	-	Within 50m	-	-	-
Landslides	-	Within 50m	-	-	-
Soluble rocks	Within 50m		-	-	-
18. Mining					
BritPits			0	0	
Surface Ground Workings			0	0	
Underground workings			0	0	
Non coal-mining areas within 50m of site			0	0	
Mining cavities			0	0	
Brine affected areas on study site			None (within 0m)		
19. Radon					
The property is not within a Radon Affected Area, as less than 1% of properties are above the action level. No Radon Protective Measures will be required for new properties or extensions.					

Database Summary

A transport depot was recorded on the site. A works was also recognised 65m south-west of the site, a windmill 110m south-west, and electricity sub-stations 117m south-west and 176m north. There are no petrol stations or garages recorded within 250m of the site. There are no historical landfills recorded within 250m of the site. There are thirteen records for waste

exemptions recorded within 250m of the site, including sorting drugs for disposal, and burning/screening/spreading of waste.

Recent industrial uses recorded within 250m of the site, include Crowland Fire Station 132m east, and an electricity sub-station located 180m north of the site.

The site is recorded to be covered by superficial Nordelph Peat, Tidal Flat Deposits, and Abbey Sand and Gravel, which are Unproductive, Unproductive and a Secondary A Aquifer respectively. The underlying solid geology Oxford Clay Formation is Unproductive.

No surface water or groundwater abstractions are recorded within 250m of the site. The site is not within a Source Protection Zone.

The nearest surface water feature is a drain recorded 70m north-east of the site. The site is within the Water Framework Directive (WFD) surface water body catchment of the River Welland.

There is a medium risk of flooding from rivers or the sea. The site flooded in 1947, from the River Welland. The site is within a Zone 2 floodplain, but not a Zone 3 floodplain. There is a low risk of groundwater flooding. The site is within an SSSI impact zone and a nitrate vulnerable zone.

There is a high hazard potential for compressible deposits; a moderate hazard potential from shrink-swell clays and running sand; a very low hazard from collapsible rocks and landslides; and a negligible hazard from soluble rocks.

There are no records for surface ground workings on the site or within 250m of the site.

The site is in an area where no radon protection measures are required for new dwellings.

PRELIMINARY RISK ASSESSMENT

Potential sources of contamination present on or beneath the site would relate primarily to; the historical use of the site; the presence of contaminated soil; and the potential presence of hazardous or ground gas beneath the site.

In order to assess the risks associated with the presence of ground contamination the linkages between the sources and potential receptors to contamination need to be established and evaluated. This is in accordance with the Environmental Protection Act 1990, which provides a statutory definition of Contaminated Land. To fall within this definition it is necessary that, as a result of the condition of the land, substances may be present on or under the land such that;

- *Significant harm is being caused or there is a significant possibility of such harm being caused; or*
- *Pollution of controlled waters is being, or is likely to be, caused.*

There are three principal factors that are assessed whilst undertaking a qualitative risk assessment for any site. These are the presence of a contamination source, the existence of migration pathways and the presence of a sensitive target(s). It should be noted that it is necessary for each element of source, pathway and target to be present in order for exposure of a human or environmental receptor to occur.

UK Government guidance on the assessment of contaminated land, requires risk to human health and the environment to be reviewed using source – pathway – target relationships. If each of these elements is present, the linkage provides a potential risk to the identified targets.

Contaminants or ***potential pollutants*** identified as ***sources*** in relation to the identified previous uses are listed overleaf in Table 1.

Table 1: Identified Potential Contaminant Sources

<i>Contaminant Source</i>	<i>Comments</i>
Drainage	Drains could provide a contaminant source.
Soil Beneath Site	Contamination may be present within any made ground on the site, associated with the former transport yard.
Soil Gas	Potential soil gas generated from made ground or natural soils.
Ground Contamination Outside Site Boundary	Ground contamination migrating from adjoining sites, such as the former adjoining transport yard.

A ***Pathway*** is defined as one or more routes through which a receptor is being, or could be, exposed to, or affected by, a given contaminant.

Potential ***Target or Receptors*** fall within the categories of Human Health, Water Environment, Flora and Fauna, and Building Materials.

There are a number of possible pathways for the contaminants identified on the site to impact human and/or environmental receptors and these are summarised in Tables 2 and 3.

Table 2: Human Receptors and Pathways

<i>Human Receptor-Mechanism</i>	<i>Typical Exposure Pathway</i>
Human Inhalation	Breathing Dust and Fumes Breathing Gas emissions
Human Ingestion	Eating -contaminated soil, for example by small children -produce grown on contaminated soil Ingesting dust or soil on vegetables Drinking contaminated water
Human Contact	Direct skin contact with contamination Direct skin contact with contaminated liquids

Table 3: Water Receptors and Pathways

<i>Receptor-Water Environment</i>	<i>Typical Exposure Pathway</i>
Groundwater The underlying superficial Abbey Sand and Gravel Deposits are classified by the EA as a ‘Secondary A’ Aquifer. The Nordelph Peat and Tidal Flat Deposits are ‘Unproductive’ strata. The underlying solid geology Oxford Clay Formation is classified by the EA as an ‘Unproductive’ aquifer. The site is not within a Source Protection Zone. There are no groundwater abstractions within 250m of the site.	Surface infiltration of atmospheric waters into the soils beneath the site could wash or dissolve potential contaminants and migrate to underlying groundwater. Contamination leads to restriction/prevention of use as a resource, for example, drinking water, and can have secondary impacts on other resources, which depend on it.
Surface Water/Watercourses The nearest water feature is a drain 70m north-east of the site.	Surface infiltration of atmospheric waters into the soils beneath the site could wash or dissolve potential contaminants and laterally migrate. Contamination leads to a restriction/prevention of use: -as drinking water resource -for amenity use Effects on aquatic life.

Preliminary Conceptual Model

Assessment of the potential linkage between ground contamination sources, human and environmental receptors have been assessed based on the desk study research documented in the preceding sections of this report.

A generalised preliminary conceptual model is presented below in Table 4.

Table 4: Preliminary Conceptual Model Relative to Residential Development

Receptors	Pathway	Estimated Potential for Linkage with Contaminant Sources			
		Drainage	Soil Beneath Site	Soil Gas	Ground Contamination Outside Site Boundary
Human Health – ground workers	Ingestion and Inhalation of contaminated Soil, Dust and Vapour	Low likelihood	Low likelihood	Low likelihood	Low likelihood
Human Health – end users	Ingestion and Inhalation of contaminated Soil, Dust and Vapour	Unlikely	Low likelihood	Low likelihood	Low likelihood
Water Environment	Migration through ground into surface water or surrounding groundwater	Low likelihood	Low likelihood	Unlikely	Low likelihood
Flora	Vegetation on site growing on contaminated soil	Unlikely	Low likelihood	Low likelihood	Unlikely
Building Materials	Contact with contaminated soil	Low likelihood	Low likelihood	Low likelihood	Low likelihood
<u>Key to Table 4</u> Estimated Potential for Linkage with Contaminant Source		Definition			
High likelihood		There is a pollution linkage and an event that either 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		There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.			
Low likelihood		There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place, and is less likely in the shorter term.			
Unlikely		There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.			
N/A		Not Applicable.			

SITE WORK

The site work undertaken on 22nd May 2026 comprised two window sample boreholes (WS01 and WS02), and three hand excavated pits (TP01 to TP03). The positions are shown on the exploratory hole location plan following this report text.

Detailed records of the exploratory holes have been produced in accordance with British Standard BS5930:2015+A1:2020 ‘Code of Practice for Site Investigations’. The exploratory hole records, presented following the plans, give the descriptions and depths of the strata encountered, details of all samples taken, results of the in-situ tests, groundwater conditions observed throughout excavation and boring, and on completion.

Public utility service drawings were sourced and consulted prior to determining the exploratory hole positions. A service scan of the exploratory hole positions was made using a CAT (Cable Avoidance Tool) to check for the absence of buried services that may otherwise have been damaged by the investigation.

Window Sample Boreholes

Prior to boring, a starter pit was dug at the borehole positions to 1.20m below ground level using hand tools, in order to ensure the absence of buried services. The boreholes were then advanced from the base of the starter pits and completed at a depth of 5.00m below ground level.

The boreholes were formed by a small track-mounted window sampling and super heavy dynamic probing rig. The window sampling equipment consisted of drive-in sample tubes of specially constructed and strengthened steel, lined with a plastic core-liner. The barrels were initially of 87mm internal diameter and were reduced in diameter with successive barrels with increasing depth. Upon extraction, a continuous ‘undisturbed’ profile of the soil was obtained within the plastic liners.

Representative small disturbed samples of soil were taken from the starter pits at regular intervals throughout their depth. Environmental samples (ES) were also taken in near surface soils pending selection for chemical testing.

The boreholes were backfilled with arisings on completion and the surfaces reinstated.

Hand Excavated Trial Pits

A hand excavated pit was dug at the trial pit positions (TP01 to TP03) to between 0.50m and 1.00m below ground level using hand tools.

Representative small disturbed (D) and environmental (ES) samples of soil were taken from the pits at regular intervals throughout their depth.

LABORATORY WORK

The samples were inspected in the laboratory and assessments of the soil characteristics have been taken into account during preparation of the exploratory hole records. The soil descriptions have been made in accordance with BS5930:2015+A1:2020. The geotechnical test results, undertaken in accordance with BS1377:1990, 2016 & 2022, and BS EN ISO 17892, are presented following the exploratory hole records. The chemical test results follow the geotechnical test results.

The window sample plastic liners were split by a geotechnical engineer who sub-sampled them, with the remaining samples re-sealed within the plastic liners.

The moisture content and index properties of selected soil samples were determined as a guide to soil classification and behaviour. The liquid limit was determined by a cone penetrometer.

An indication of the shear strength of clay soils within the window sample liners was made using a hand shear vane (V), and the readings are presented on the window sample hole records. These tests were not undertaken on the in-situ clay soils, and the results should only be used as a guide to the shear strength.

Selected samples of soil were analysed to determine the concentration of soluble sulphates. The pH values were also determined.

Chemical analysis of five soil samples recovered from the exploratory holes was undertaken, by an independent laboratory, primarily for characterisation purposes. The samples were tested for a suite encompassing a wide range of potential contaminants outlined by the Environment Agency (EA) and National House Building Council (NHBC) document R&D 66; 2008 'Guidance for the Safe Development of Housing on Land Affected by Contamination'. In addition, six samples were screened for the presence of asbestos, and five samples were tested for banded petroleum hydrocarbons (C5-C10, >C10-C24 & >C24-C40).

GROUND CONDITIONS

The ground conditions comprised a surface layer of made ground to between 0.30m and 0.60m depth. Beneath the made ground, the naturally deposited superficial Fenland Formation (Nordelph Peat, Tidal Flat Deposits and Abbey Sand and Gravel), in turn covering glacial Till and Marine Sand was encountered. The solid geology of the Oxford Clay Formation was met beneath the superficial deposits at approximately 3.00m depth, and extended to at least the base of the boreholes at 5.00m depth. Groundwater was recorded at 3.10m and 4.10m depth in the boreholes.

Made Ground

A surface layer of made ground was encountered to depths between 0.30m and 0.60m. A surface layer of light brown, silty, sandy gravel with a gravel fraction of limestone and brick was encountered to between 0.30m and 0.50m depth. Trial pit TP03 was completed within gravel fill at 0.50m depth.

In TP01 and TP02, at 0.30m depth, a firm, brown, grey and black, slightly gravelly, silt/clay fill was encountered to 0.60m depth. The gravel fraction comprised ash and brick fragments.

Fenland Formation

Beneath the made ground at between 0.30m and 0.60m depth, firm, grey, brown and black, silty, slightly organic clay with abundant pockets of peat was encountered to between 0.70m (WS02) and at least 1.00m (TP02) depth. These soils were considered to represent the Nordelph Peat of the Fenland Formation.

Soft and very soft, grey brown, silty, slightly organic clay with occasional partings of peat, which became sandy below 1.70m depth in WS01, was encountered to 1.65m (WS02) and 1.80m (WS01) depth. These soils were considered to represent superficial Tidal Flat Deposits of the Fenland Formation.

At 1.80m depth in WS01, medium dense, brown and orange brown, clayey, silty, sandy gravel was encountered to 2.50m depth. The gravel fraction comprised angular to rounded limestone and flint. These soils were considered to represent the basal superficial sand and gravel deposits of the Fenland Formation.

Glacial Till/Marine Sand

At 1.65m depth in WS02, and 2.50m depth in WS01, initially soft (WS02), firm becoming stiff, brown, grey and orange brown, slightly gravelly, silty clay, with silty sand pockets, and occasional cobbles of limestone, was encountered to 3.00m (WS01) and 3.30m (WS02) depth. A layer of orange brown, silty sand was also encountered in WS02. The gravel fraction comprised angular to rounded chalk, calcareous concretions and flint. These soils were considered to represent superficial glacial Till and Marine Sand deposits.

Oxford Clay Formation

The solid geology of the Oxford Clay Formation was encountered in the window sample holes at 3.00m/3.30m depth, and found to at least the base of the boreholes at 5.00m. The Oxford Clay Formation generally comprised stiff, locally firm, green brown becoming light grey, silty clay with occasional gravel size calcareous concretions. Both boreholes were completed within the Oxford Clay Formation at 5.00m depth.

Groundwater

Groundwater was recorded at 4.10m depth of completion of the boreholes, and was standing at 3.10m depth in WS02 following removal of the casing. The shallow trial pits were dry during and on completion of excavation.

Observations

Shallow roots were observed in the boreholes to 0.20m/0.30m depth, on this site generally covered by hardstanding.

Evidence of Contamination

The made ground encountered during this investigation was not noted to have olfactory or visual evidence of fuel contamination. The made ground contained fragments of brick, concrete and ash. No asbestos containing materials were noted during excavation and boring, or during testing in the laboratory.

COMMENTS ON THE GROUND CONDITIONS IN RELATION TO FOUNDATION DESIGN AND CONSTRUCTION

The proposed development was understood to comprise construction of three new dwellings, a detached garage, associated parking, garden and landscaped areas, and an access drive. The proposed development layout is presented to the rear of this report text.

This investigation found made ground to depths of between 0.30m and 0.60m, covering variable superficial deposits, and the solid geology Oxford Clay Formation below 3.00m/3.30m depth. Groundwater was recorded as shallow as 3.10m below ground level.

Made ground and any very soft and highly compressible organic/peaty clay soils should be avoided as bearing strata. The underlying superficial basal sand and gravel (1.80m depth) and firm/stiff clay Till (2.00m depth) would provide suitable founding strata and would offer support for deepened traditional foundations for the proposed residential development.

Traditional Shallow Foundations

Large scale processes of natural sedimentation allow a certain degree of confidence to be placed in the absence of important variation of the engineering properties of natural soils across sites. The made ground had variable bearing properties and was locally found to a maximum of 0.60m depth. The made ground and organic/peaty clay should be avoided as bearing strata, with foundation excavations extended into naturally deposited sand and gravel and glacial Till clay soils.

Samples of clay had modified plasticity indices of between 29% and 55%, which rates the clay as having a medium to high volume change potential based on NHBC Standards Chapter 4.2 'Building near trees' (2026). A minimum foundation depth of 1.00m in the naturally deposited clay soils beneath this site, where remote from trees, would be considered appropriate in order to penetrate the zone affected by seasonal moisture content and volume change.

No trees were present on the site primarily covered in hardstanding. Only shallow roots were noted in the boreholes.

In summary, foundations for the new dwellings will need to be extended through the made ground and will require deepening to penetrate organic/peaty clay soils to depths in the order of 1.80m to 2.00m.

Bearing Capacity

Based on the findings of this investigation, the firm clay Till, at 2.00m depth, has a maximum safe bearing capacity of 125kN/m² beneath a 0.60m wide strip footing, with a factor of safety of 3.0 applied against shear failure, for settlement within 25mm. The medium dense Abbey Sand and Gravel at 1.80m depth would have an allowable bearing pressure of 125kN/m² beneath a 0.60m wide strip footing, for settlement within 25mm.

Excavations

The underlying soils should be easily removed within excavations on this site. The sides of excavations within any made ground and superficial Fenland Formation are likely to be unstable and should not be relied upon to stand unsupported.

Excavations could encounter shallow ‘perched’ groundwater seepages at wetter times of the year than this investigation. Groundwater was recorded at 3.10m depth in WS02. If excavations encounter groundwater within the made ground and superficial deposits there is likely to be resulting side instability. Care should be taken not to excavate below the water table in the absence of suitable groundwater control, such as dewatering via screened sumps.

Attention should be given where personnel are to enter excavations, when sides should either be safely battered back, or close side support provided, in order to comply with statutory safety requirements and prevent sidewall collapse.

Floor Slabs

A ground bearing floor slab should not be adopted for the new houses and garage in organic/peaty clays, unless such soils are removed and replaced with coarse grained fill in

accordance with NHBC guidelines. Damaging differential heave movements could occur across such slabs.

Suspended floor slabs should avoid any volume change movements within root affected clays, providing that the sub-floor gaps recommended in Table 7 of the NHBC Standards Chapter 4.2 (2026), are adopted.

Hardstanding

The made ground generally comprised gravel fill over clay fill, and underlying peaty clay, were present at sub-grade level.

The shallow clays had plasticity indices of 48% and 55%.

TRRL LR1132, 1984 (as referenced in CD225, 2020), recommends a design CBR value of 2.0% for a clay with plasticity indices of 50% to 60%, both with a thin pavement construction in average construction conditions and low water table. A design CBR value of 2.0%, could be adopted for hardstanding on this site. This assumes that any made ground and inferior soils such as topsoil, very soft, organic or desiccated clays at sub-grade level will be removed and replaced or covered with a geotextile and an adequate thickness of granular fill.

Care should be taken not to allow exposed silty clay soils at sub-grade level to become exposed to inclement weather conditions, since they are prone to rapid softening and deterioration.

Sulphate Conditions

Sulphate analysis of selected samples of soil (undertaken as part of the geotechnical testing and chemical testing) yielded soluble sulphate concentrations within Design Sulphate Classes DS-1, DS-2 and DS-3 of the BRE Special Digest 1, Table C2 (2001), presented in Appendix 3. The DS-3 result was determined in a sample of peaty clay. The pH results of the samples ranged between 5.4 and 11.2 indicating acidic to alkaline conditions.

These results indicate an Aggressive Chemical Environment for Concrete (ACEC) Class of AC-4 for buried concrete. This ACEC Class should be considered when specifying a

Design Chemical Class (DC Class) for buried concrete on this site, as detailed in the above cited BRE document.

COMMENTS ON THE CHEMICAL TEST RESULTS

The results of the laboratory chemical testing on near surface soil samples have primarily been compared to soil screening values (SSVs) produced by Land Quality Management Limited (LQM) and the Chartered Institute for Environmental Health (CIEH) presented in their document ‘The LQM/CIEH S4ULs for Human Health Risk Assessment: 2015 (Publication Number S4UL3608)’. The LQM/CIEH S4ULs are intended for use in assessing the potential risks posed to human health by contaminants in soil and are transparently-derived and cautious ‘trigger values’ above which further assessment of the risks or remedial action may be needed. The S4ULs (Suitable for Use Levels) have been derived, in accordance with UK legislation and Environment Agency policy, using a modified version of the Environment Agency CLEA 1.06 software.

Reference has also been given to AGAC soil screening values produced by Society of Brownfield Risk Assessment (SoBRA) as documented in their July 2020 publication ‘Development of Acute Generic Assessment Criteria for Assessing Risks to Human Health from Contaminants in Soil’. With the absence of a S4UL for cyanide, the SoBRA AGAC has been used as the soil screening criteria within this report because the acute dose toxicity thresholds for free cyanide are very close to the chronic dose toxicity thresholds.

In 2014 the Department for Environment Food and Rural Affairs (DEFRA) published, in their document SP1010, Category 4 Screening Levels (C4SL) for several contaminants including lead. The C4SL represent screening levels below which the land could be considered suitable for a specified use and definitely not contaminated land in respect of those determinands. With the absence of S4UL for lead the C4SL has been used as the soil screening criteria within this report.

For each contaminant the adopted soil screening criteria have been calculated for the following land uses:

- Residential use with home grown produce
- Residential use without home grown produce
- Commercial and industrial usage

The intended purpose of the SSVs are as “intervention values” in the regulatory framework for assessment of human health risks in relation to land use. These values are not binding standards, but are intended to inform judgements about the need for action to ensure that a new use of land does not pose any unacceptable risks to the health of the intended users.

Tables 5 and 6 compare the test results for the made ground with the SSVs in relation to the specified uses. The number of test results, which exceed these values, are also provided.

Residential usage values are considered appropriate screening values for the proposed residential development.

Table 5: Comparison of Chemical Test Results with SSVs for Near Surface Soils

Determinand	Number of Samples	Min Value mg/kg	Max Value mg/kg	Number of Samples Exceeding SSV for			Assessment Method	Soil Screening Criteria 1.0% SOM		
				Residential with home grown produce	Residential without home grown produce	Commercial/Industrial		Residential with home grown produce mg/kg	Residential without home grown produce mg/kg	Commercial/Industrial mg/kg
Organic matter	5	0.9%	14%	-	-	-	-	-	-	-
Arsenic	5	7.4	29	0	0	0	S4UL	37	40	640
Cadmium	5	<0.1	1.0	0	0	0	S4UL	11	85	190
Total Chromium	5	4.7	37	0	0	0	S4UL	910	910	8600
Hexavalent Chromium	5	<1.0	<1.0	0	0	0	S4UL	6	6	33
Lead	5	9.8	180	0	0	0	C4SL	200	310	2330
Mercury	5	<0.05	0.16	0	0	0	S4UL	11	15	320
Selenium	5	<0.5	<0.5	0	0	0	S4UL	250	430	12,000
Nickel	5	3.4	32	0	0	0	S4UL	130	180	980
Phenols	5	<0.3	<0.3	0	0	0	S4UL	120	440	440
Copper	5	7.7	90	0	0	0	S4UL	2400	7100	68,000
Zinc	5	21	570	0	0	0	S4UL	3700	40,000	730,000
Free Cyanide	5	<0.1	0.4	0	0	0	AGAC	24	24	24

Notes

S4UL and C4SL for metals were derived using 6% SOM. These values are not sensitive to SOM and would also be applicable for 1% SOM and 2.5% SOM

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AGAC soil screening values produced by Society of Brownfield Risk Assessment (SoBRA) as documented in their July 2020 publication 'Development of Acute Generic Assessment Criteria for Assessing Risks to Human Health from Contaminants in Soil'.

Table 6: Comparison of PAH Chemical Test Results for Near Surface Soil with Soil Screening Values (SSV)

Determinand	Number of Samples	Min Value (mg/kg)	Max Value (mg/kg)	Number of Samples Exceeding SSV for:			Soil Screening Values (SSV) (1% SOM)			
				Residential with home grown produce	Residential without home grown produce	Commercial/ Industrial	Assessment Method	Residential with home grown produce (mg/kg)	Residential without home grown produce (mg/kg)	Commercial/ Industrial (mg/kg)
Acenaphthene	5	<0.03	<0.03	0	0	0	S4UL	210	3000	84,000
Acenaphthylene	5	<0.03	<0.03	0	0	0	S4UL	170	2900	83,000
Anthracene	5	<0.03	<0.03	0	0	0	S4UL	2400	3100	520,000
Benzo[a]anthracene	5	<0.03	0.10	0	0	0	S4UL	7.2	11	170
Benzo[a]pyrene	5	<0.03	0.11	0	0	0	S4UL	2.2	3.2	35
Benzo[b]fluoranthene	5	<0.03	0.14	0	0	0	S4UL	2.6	3.9	44
Benzo[g,h,i]perylene	5	<0.03	0.08	0	0	0	S4UL	320	360	390
Benzo[k]fluoranthene	5	<0.03	0.06	0	0	0	S4UL	77	110	1200
Chrysene	5	<0.03	0.11	0	0	0	S4UL	15	30	350
Dibenz[a,h]anthracene	5	<0.03	<0.03	0	0	0	S4UL	0.24	0.31	3.5
Fluoranthene	5	<0.03	0.24	0	0	0	S4UL	280	1500	23,000
Fluorene	5	<0.03	<0.03	0	0	0	S4UL	170	2800	63,000
Indeno[1,2,3-cd]pyrene	5	0.03	0.08	0	0	0	S4UL	27	45	500
Naphthalene	5	<0.03	<0.03	0	0	0	S4UL	2.3	2.3	190
Phenanthrene	5	<0.03	0.10	0	0	0	S4UL	95	1300	22,000
Pyrene	5	<0.03	0.20	0	0	0	S4UL	620	3700	54,000

Notes

S4UL and C4SL for metals were derived using 6% SOM. These values are not sensitive to SOM and would also be applicable for 1% SOM and 2.5% SOM
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Discussion of Soil Results

None of the concentrations exceeded the soil screening values for residential with home grown produce end use, for residential without home grown produce end use or commercial/industrial end uses.

The made ground encountered during this investigation was not noted to have olfactory or visual evidence of fuel contamination. The four tested samples had a total petroleum hydrocarbon concentration of less than 20.1mg/kg (below laboratory detection limit), to 31.9mg/kg, which are not considered significant.

No asbestos containing materials (ACM) were observed within the made ground soils during site work, or during screening in the laboratory.

Statistical analysis is not appropriate for this small dataset.

In conclusion, the near surface soil would be considered suitable exposed at the surface in any new garden or landscape areas within a future residential development.

UPDATED CONCEPTUAL MODEL

Assessment of the potential linkage between ground contamination sources, human and environmental receptors have been assessed based on the desk study research and the intrusive ground investigation documented in the preceding sections of this report.

A generalised conceptual model relative to the existing site and proposed residential use of the site is presented in Table 7 below.

Table 7: General Conceptual Model Relative to Future Residential Development

Receptors	Pathway	Estimated Potential for Linkage with Contaminant Sources			
		Drainage	Soil Beneath Site	Soil Gas	Ground Contamination Outside Site Boundary
Human Health – ground workers	Ingestion and Inhalation of contaminated Soil, Dust and Vapour	Very Low	Very Low	Low	Very Low
Human Health – users of completed development	Ingestion and Inhalation of contaminated Soil, Dust and Vapour	N/A	Very Low	Low	Very Low
Water Environment	Migration through ground into surface water or groundwater	Very Low	Very Low	Very Low	Low
Flora	Vegetation on site growing on contaminated soil	Very Low	Very Low	Very Low	Very Low
Building Materials	Contact with contaminated soil	Very Low	Very Low	Very Low	Very Low

<u>Key to Table 7 Risk</u>	Definition
Very High	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, or, there is evidence that severe harm to a designated receptor is currently happening. The risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) and remedial works may be necessary in the short term and likely over the long term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.
N/A	Not Applicable because the proposed development will remove the source.

COMMENTS ON GROUND CONTAMINATION IN RELATION TO PROPOSED DEVELOPMENT

Anticipated exposure scenarios relating to the existing site, the site history and proposed residential end use of the site, in the context of the conceptual model, are discussed as follows.

This investigation may not have revealed the full extent of contamination on the site and appropriate professional advice should be sought if subsequent site work reveals materials that may appear to be contaminated.

Contaminated Soil

The exploratory holes encountered a surface layer of made ground between 0.30m and 0.60m thick. The chemical testing has not identified elevated concentrations of contaminants in the soils tested, with respect to the proposed garden and landscaping areas in the residential development. The levels of contaminants in the made ground indicates that there is a very low risk of contaminants affecting groundworkers during any construction works, and a very low risk of affecting future end users of the site.

The made ground could be considered for re-use beneath proposed buildings and permanent hardstanding, if suitable for engineering purposes, where it is unlikely to affect future users of the site.

Existing Drainage

Redundant drain runs, if present, should be removed where encountered from beneath the site and precautions should ensure that any remaining sediment is directly disposed off-site. The integrity of the existing drains should be checked, and where they are to be retained, any damaged sections should be replaced prior to development.

Soil Gas

According to the environmental database there are no landfills recorded within 250m of the site. There was only a thin surface covering of made ground. The near surface Fenland Deposits contain organic clays and peat layers, which are putrescible.

Consequently, there is a low risk that hazardous gases would affect groundworkers during the construction phase and a low risk of hazardous gases affecting future users of the site.

The site is not in a radon affected area, and no radon protection measures are required for new properties on the site.

Human Health - Construction Workers

Based on the chemical test results, no special precautions would be required during the development of the site by workers who may come into contact with the soil during groundworks, providing standard precautions are adopted which should generally include the procedures given by the Health and Safety Executive (The Blue Book) HS(G)66.

For the protection of workers during groundworks the following is recommended:

- a) Limit repeated or prolonged skin contact with soils by wearing gloves with sleeves rolled down.
- b) Washing facilities should be made available to groundworkers, so as to minimise the potential for inadvertent ingestion of soil.
- c) If any soils are revealed which are different to those encountered by this ground investigation, the advice of a specialist should be sought in view of classifying the material and ascertaining its risk to groundworkers.
- d) Consideration should be given to gas monitoring within deep or confined spaces, particularly where thick made ground and organic soils are present, to ensure safety of personnel entering them, since methane and carbon dioxide could accumulate within any excavations, service chambers, or sub-structures.

Human Health - Users of Completed Development

The results of the chemical analysis indicate that the near surface soil, including made ground, would be considered suitable exposed at the surface in any new garden and landscape areas within a future residential development. Consequently, no remediation is considered necessary.

The made ground could be considered for re-use beneath proposed buildings and permanent hardstanding, if suitable for engineering purposes, where there is a very low risk to affect future users of the site.

Any soil imported to site must be certified as "suitable for use".

Water Environment

The underlying superficial sand and gravel deposits are classified by the EA as a 'Secondary A' aquifer. The Nordelph Peat and Tidal Flat Deposits are 'Unproductive' strata.

The underlying solid geology Oxford Clay Formation is classified by the EA as an 'Unproductive' aquifer.

No surface water or groundwater abstractions are recorded within 250m of the site. The site is not within a Source Protection Zone.

The nearest surface water feature is a drain 70m north-west of the site. There is a medium risk of flooding from rivers or the sea. The site is within a Zone 2 floodplain, but not a Zone 3 floodplain. There is a low risk of groundwater flooding. The site is within an SSSI impact zone and a nitrate vulnerable zone.

Groundwater was recorded at 3.10m depth of completion of the boreholes, and was standing at 3.10m depth in WS02 following removal of the casing. Groundwater was recorded as shallow as 3.10m below ground level, associated with a Marine Sand layer above the practically impervious Oxford Clay Formation.

There is a very low risk that the proposed development and level of contaminants within the made ground would impact the quality of the water environment.

Effects on Buried Services

The local water supply company should be consulted if new buried plastic water pipes are to be installed within the made ground soils on this site.

Off-Site Disposal of Soil Arisings

The results of chemical analysis are provided to the rear of this report and can be used within the information necessary for basic characterisation of the soil destined for landfill. The Environment Agency publication Hazardous Waste, Technical Guidance WM3 outlines the methodology for classifying wastes and should be referenced for guidance. The test results (total metals, hydrocarbons and cyanide) should be compared to the relevant thresholds to determine whether they fall into the primary categories of non-hazardous or hazardous waste and will help indicate the likely European Waste Catalogue (EWC) code which is determined by the waste type.

Excavated material and excess spoil should always be classified prior to removal from site as required by 'Duty of Care' (Environmental Protection Act, 1990) legislation. This means that material has to be given a proper description and waste classification prior to removal. Basic characterisation is the responsibility of the waste producer, whilst compliance checking and on-site verification are generally the responsibility of the landfill operator. The landfill operator will need to liaise with the waste producer, as the approach relies on the information from basic characterisation.

It is expected that arisings of natural soils from the excavations across this site would fall into the inert category under the European Waste Catalogue description 'Soil and Stones', EWC code 17 05 04 with restrictions excluding topsoil and peat.

OUTLINE REMEDIATION STRATEGY

The proposed redevelopment is to comprise the construction of three new dwellings, a detached garage, associated parking, garden and landscaped areas, and an access drive.

A plan showing the layout of the proposed development is presented to the rear of this report.

General Comments

1. In the event that subsequent site works reveal materials that may appear to be contaminated, the works will stop and appropriate professional advice will be sought.
2. Standard Health and Safety precautions should be observed by groundworkers when dealing with soils across the site.
3. Redundant foul or surface water drain runs will be removed from beneath the site and precautions implemented ensuring that any remaining effluent is directly disposed off-site. The integrity of existing drainage will be checked, and where they are to be retained, any damaged sections replaced prior to redevelopment. The latter measures should remove any future risk to human health and to the water environment.
4. All soils removed from site will be disposed of using licensed carriers and taken to appropriately licensed disposal facilities.
5. The local authority will be informed regarding each stage of the works and photographic evidence together with copied waste transfer receipts for all soil and material disposal should be gathered, as they are essential to demonstrate the works.

Buildings and Hardstanding Areas

6. Providing that it is geotechnically suitable, the made ground could be retained or re-used beneath buildings and permanent hardstanding areas.

7. The likelihood of soils affecting future users when present beneath buildings and permanent areas of hardstanding would be considered to be very low. This is because it would be very unlikely that the general site users would normally be able to penetrate the building floors and hardstanding, which would be necessary for them to uncover any contaminated soils beneath the site.

Garden and Landscaped Areas

8. The made ground is considered suitable for retention at the surface within the garden and landscaped areas of residential development and consequently no remediation is considered necessary.
9. All imported soils will be certified 'clean' fill and will be suitable for use in accordance with UK legislation and Environment Agency policy.

Verification

10. The garden and landscaped areas will be inspected during the works to check that the soils exposed are suitable for use.
11. The analysis of any imported soil samples will meet current UK soil levels (DEFRA C4SLs, LQM/CIEH S4ULs for Residential use).
12. If required, any unsuitable soils will be removed and replaced with clean soil in accordance with the remediation plan.

Validation

13. The work will be fully documented and on completion a validation report prepared providing a full descriptive record of the process, quantities of material excavated, stored and removed, and the materials imported and placed, together with chemical test results and photographs.

LUCION GROUND ENGINEERING LIMITED

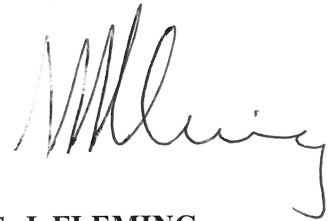


S. WEATHERLEY

B.Eng. (Hons.),

C.Geol., F.G.S.,

Associate



S. J. FLEMING

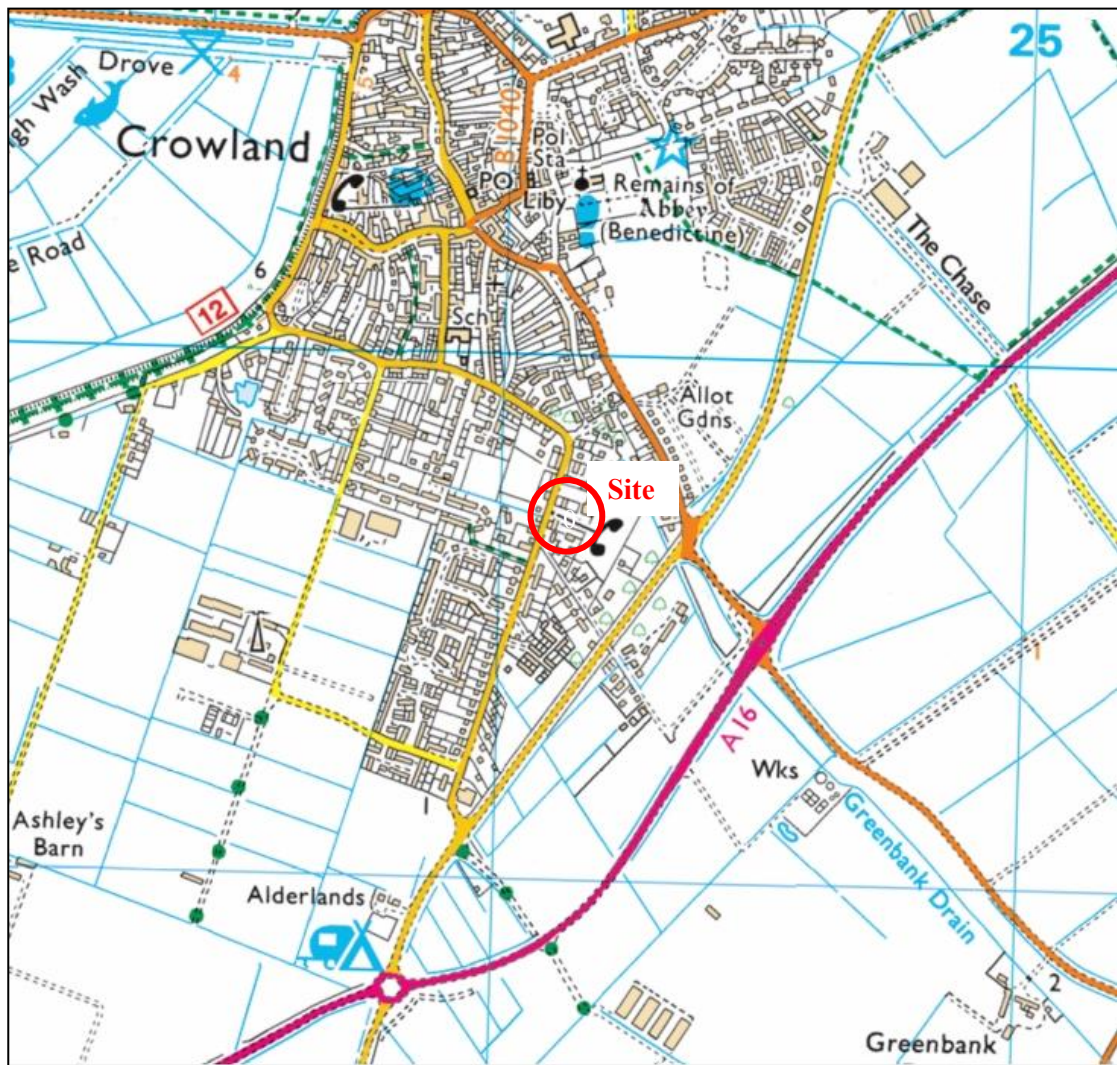
M.Sc., M.C.S.M.,

C.Geol., F.G.S.,

Ground Engineering Director

Site Location Plan

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0m 1000m

Project : Land at Blackbird Close, Lincolnshire

Client : Mr M. & Mrs S. Blackbird

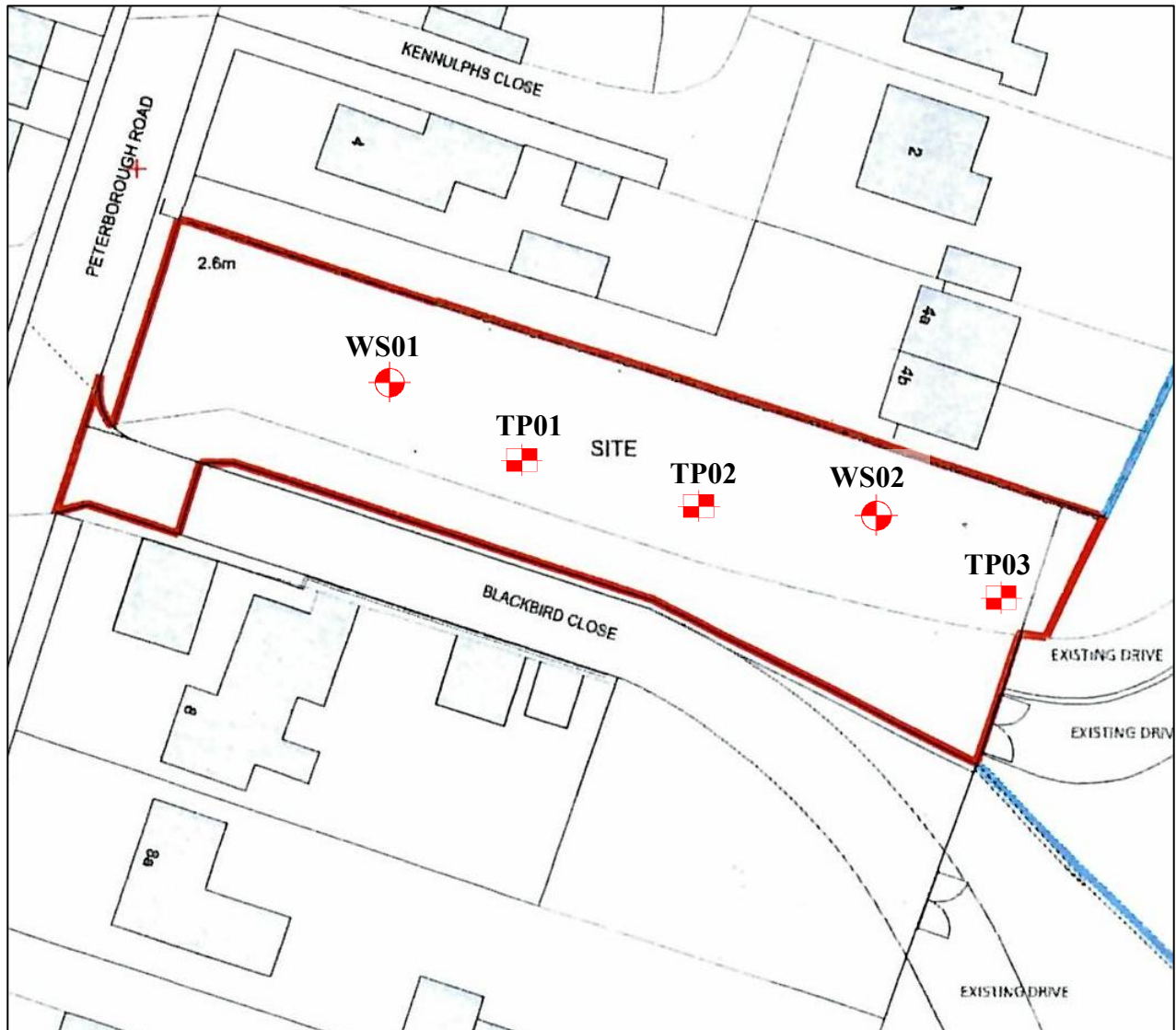


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Peterborough Tel : 01733 566566

Project No.
150562

Exploratory Hole Location Plan

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0m 50m

Key

Boreholes



Trial pits



Project : Land at Blackbird Close, Crowland, Lincolnshire

Client : Mr M. & Mrs S. Blackbird

Proposed Development Plan

Based on a plan provided by the client.

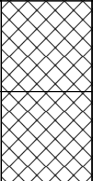


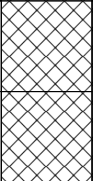
Project : Land at Blackbird Close, Crowland, Lincolnshire

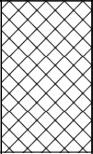
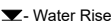
Client : Mr M. & Mrs S. Blackbird

Lucion improving people and planet LUCION GROUND ENGINEERING LTD. Peterborough Tel : 01733 566566			Site: Blackbird Close, Crowland			WINDOW SAMPLE WS01							
22/05/2026			Final Depth 5.00 m	Equipment Dynamic Sampling Rig									
Samples and In Situ Testing			Water Levels (Casing)	Stratum Description		Legend	Depth (m)						
Depth (m)	Type	Results											
0.10	D1	[16kPa] N10 (8/4,3,2,1) [101kPa] [126kPa] [80kPa] [114kPa]	c ▾	MADE GROUND - Light brown, silty, sandy GRAVEL. Gravel is limestone and brick.			0.20						
0.40	D2			MADE GROUND - Brown and dark brown, silty, sandy GRAVEL. Gravel is brick, concrete and ash.			0.50						
0.80	D3			Firm, grey brown SILT/CLAY with abundant pockets of peat.			0.90						
0.80	ES1			(FENLAND FORMATION)									
1.20	D4			Very soft, grey, silty, slightly organic CLAY with occasional partings of peat.			1.80						
1.20-2.00	U1			(FENLAND FORMATION)									
1.60	V1			...Becoming sandy below 1.70m depth.									
2.00-3.00	U2			Medium dense, brown and orange brown, clayey, silty, sandy GRAVEL. Gravel is angular to rounded limestone and flint.									
2.15-2.45	CPT			(FENLAND FORMATION)			2.50						
2.75	V2			Firm, becoming stiff, light grey, light brown and orange brown, slightly gravelly, silty CLAY with red brown, silty sand pockets and cobble of limestone at 2.95m depth. Gravel is fine and medium grained, sub-rounded chalk. (TILL)			3.00						
2.80	D5			Stiff, green brown, becoming grey, silty CLAY with occasional gravel size calcareous concretions.									
2.95	V3												
3.00-4.00	U3			(OXFORD CLAY FORMATION)				5.00					
3.50	V4												
3.90	V5												
													
													
End of Borehole at 5.00m													
Remarks 1. Starter pit excavated to 1.20m depth. 2. Roots observed to 0.20m depth. 3. Borehole cased to 3.00m depth.					Hole Diameter by Depth		Project No. 150562						
					Depth (m)	Diameter (mm)							
					2.00	87	Scale: 1:50	Page 1/1					
					3.00	77							
4.00	67												
KEY D - Disturbed Sample MP - Mackintosh Probe B - Bulk Sample V - Vane Shear Test U - Undisturbed Sample N/* - SPT Blows W - Water Sample ES - Environmental Sample S/C - SPT Spoon/Cone ▽ - Level On Completion ≡ - Water Strike ▽ - Level Casing Withdrawn ⬇ - Water Rise ▽ - Standpipe Level					Groundwater Strike				Groundwater Observations				
					Strike (m)	Rose To (m)	Casing (m)	Sealed	Remarks	Date	Depth (m)	Casing (m)	Water (m)
										22/05/2026	5.00	3.00	4.10

Lucion improving people and planet LUCION GROUND ENGINEERING LTD. Peterborough Tel : 01733 566566			Site: Blackbird Close, Crowland				WINDOW SAMPLE WS02					
22/05/2026			Final Depth 5.00 m		Equipment Dynamic Sampling Rig							
Samples and In Situ Testing			Water Levels (Casing)	Stratum Description			Legend	Depth (m)				
Depth (m)	Type	Results										
0.30	D1	[16kPa]		MADE GROUND - Light brown, silty, sandy GRAVEL. Gravel is limestone.				0.30				
0.60	D2			Firm, grey brown, silty, slightly organic CLAY. (FENLAND FORMATION)								
0.60	ES1			Soft, becoming very soft, grey brown, silty, slightly organic CLAY with partings of peat.				0.70				
0.90	D3			(FENLAND FORMATION)								
1.20	D4			Soft, light grey, light brown and orange brown, slightly gravelly, silty CLAY. Gravel fine fine grained, sub-rounded chalk and calcareous concretions.				1.65				
1.20-2.00	U1			(TILL)								
1.20	V1			Stiff, brown, grey and orange brown, slightly gravelly, silty CLAY. Gravel is angular to rounded chalk and flint.				2.00				
1.50	D5			(MARINE SAND)								
1.50	V2			[12kPa]	Stiff, brown, grey and orange brown, slightly gravelly, silty CLAY. Gravel is fine and medium grained, sub-rounded chalk. (TILL)							
1.80	D6			[39kPa]	Stiff, locally firm, green, brown and orange brown, silty CLAY.				2.70			
1.90	V3	[111kPa]		(OXFORD CLAY FORMATION)								
2.00-3.00	U2	[124kPa]		End of Borehole at 5.00m				3.00				
2.20	D7	[104kPa]										
2.20	V4	[83kPa]						3.30				
2.50	V5	[61kPa]										
3.00-4.00	U3							5.00				
3.20	V6											
3.50	V7											
3.80	V8											
Remarks				Hole Diameter by Depth		Project No.						
1. Starter pit excavated to 1.20m depth.				Depth (m) Diameter (mm)		150562						
2. Roots observed to 0.30m depth.				2.00 87		Scale:	Page					
3. Borehole cased to 3.00m depth.				3.00 77								
				4.00 67		1:50	1/1					
KEY				Groundwater Strike			Groundwater Observations					
D - Disturbed Sample		MP - Mackintosh Probe		Strike (m)	Rose To (m)	Casing (m)	Sealed	Remarks	Date	Depth (m)	Casing (m)	Water (m)
B - Bulk Sample		V - Vane Shear Test							22/05/2026	5.00	3.00	4.10
U - Undisturbed Sample		N/* - SPT Blows							22/05/2026	5.00		3.10
W - Water Sample		ES - Environmental Sample										
S/C - SPT Spoon/Cone		▼ - Level On Completion										
⚡ - Water Strike		▼ - Level Casing Withdrawn										
⬆ - Water Rise		▼ - Standpipe Level										

 LUCION GROUND ENGINEERING LTD. Peterborough Tel : 01733 566566			Site: Blackbird Close, Crowland			TRIAL PIT TP01																											
			22/05/2026	Final Depth 0.90 m	Equipment Hand Tools																												
Samples and In Situ Testing			Water Levels	Stratum Description	Legend	Depth (m)																											
Depth (m)	Type	Results																															
0.20	D1			MADE GROUND - Light brown, silty, sandy GRAVEL. Gravel is limestone.		0.30																											
0.50	D2			MADE GROUND - Firm, brown and black, slightly gravelly, peaty SILT/CLAY. Gravel is ash and brick fragments.		0.60																											
0.80	D3			Firm, brown and black, silty, peaty CLAY. (NORDELPH PEAT)		0.90																											
				End of Trial Pit at 0.90m																													
Remarks 1. Pit sides stable.					<table border="1"> <tr> <th colspan="2">Dimensions</th> <th rowspan="2">Project No. 150562</th> </tr> <tr> <th>Length (m)</th> <th>Width (m)</th> </tr> <tr> <td>0.30</td> <td>0.30</td> <td></td> </tr> </table>		Dimensions		Project No. 150562	Length (m)	Width (m)	0.30	0.30																				
Dimensions		Project No. 150562																															
Length (m)	Width (m)																																
0.30	0.30																																
KEY <table border="0"> <tr> <td>D - Disturbed Sample</td> <td>MP - Mackintosh Probe</td> </tr> <tr> <td>B - Bulk Sample</td> <td>V - Vane Shear Test</td> </tr> <tr> <td>U - Undisturbed Sample</td> <td>N/* - SPT Blows</td> </tr> <tr> <td>W - Water Sample</td> <td>ES - Environmental Sample</td> </tr> <tr> <td>S/C - SPT Spoon/Cone</td> <td>▽ - Level On Completion</td> </tr> <tr> <td> - Water Strike</td> <td>▼ - Level Casing Withdrawn</td> </tr> <tr> <td> - Water Rise</td> <td>▽ - Standpipe Level</td> </tr> </table>					D - Disturbed Sample	MP - Mackintosh Probe	B - Bulk Sample	V - Vane Shear Test	U - Undisturbed Sample	N/* - SPT Blows	W - Water Sample	ES - Environmental Sample	S/C - SPT Spoon/Cone	▽ - Level On Completion	 - Water Strike	▼ - Level Casing Withdrawn	 - Water Rise	▽ - Standpipe Level	<table border="1"> <tr> <th colspan="3">Water Strike</th> <th>Completion</th> </tr> <tr> <th>Strike (m)</th> <th>Rose To (m)</th> <th>Remarks</th> <th>Depth (m)</th> </tr> <tr> <td></td> <td></td> <td></td> <td>Dry</td> </tr> </table>			Water Strike			Completion	Strike (m)	Rose To (m)	Remarks	Depth (m)				Dry
D - Disturbed Sample	MP - Mackintosh Probe																																
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S/C - SPT Spoon/Cone	▽ - Level On Completion																																
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 - Water Rise	▽ - Standpipe Level																																
Water Strike			Completion																														
Strike (m)	Rose To (m)	Remarks	Depth (m)																														
			Dry																														

 LUCION GROUND ENGINEERING LTD. Peterborough Tel : 01733 566566			Site: Blackbird Close, Crowland			TRIAL PIT TP02	
			22/05/2026	Final Depth 1.00 m	Equipment Hand Tools		
Samples and In Situ Testing			Water Levels	Stratum Description	Legend	Depth (m)	
Depth (m)	Type	Results					
0.20	D1			MADE GROUND - Light brown, silty, sandy GRAVEL. Gravel is limestone.		0.30	
0.50	D2			MADE GROUND - Firm, brown and grey, slightly gravelly SILT/CLAY. Gravel is ash and brick fragments.			
0.50	ES1			Firm, grey and black, silty, organic CLAY.	 	0.60	
0.70	D3			(NORDELPH PEAT)			
				End of Trial Pit at 1.00m		1.00	
Remarks 1. Pit sides stable.					Dimensions Length (m) Width (m) 0.30 0.30		Project No. 150562
							Scale: 1:25
KEY D - Disturbed Sample MP - Mackintosh Probe B - Bulk Sample V - Vane Shear Test U - Undisrbed Sample N/* - SPT Blows W - Water Sample ES - Environmental Sample S/C - SPT Spoon/Cone ▽ - Level On Completion  - Water Strike ▽ - Level Casing Withdrawn  - Water Rise ▽ - Standpipe Level				Water Strike Strike (m) Rose To (m) Remarks			Completion Depth (m)

 LUCION GROUND ENGINEERING LTD. Peterborough Tel : 01733 566566			Site: Blackbird Close, Crowland			TRIAL PIT TP03												
			22/05/2026	Final Depth 0.50 m	Equipment Hand Tools													
Samples and In Situ Testing			Water Levels	Stratum Description	Legend	Depth (m)												
Depth (m)	Type	Results																
0.30 0.30	D1 ES1			MADE GROUND - Light brown and brown, silty, sandy GRAVEL. Gravel is limestone and brick.		0.50												
				End of Trial Pit at 0.50m														
Remarks 1. Pit sides stable.							<table border="1"> <tr> <th colspan="2">Dimensions</th> <th rowspan="2">Project No. 150562</th> </tr> <tr> <th>Length (m)</th> <th>Width (m)</th> </tr> <tr> <td>0.30</td> <td>0.30</td> <td></td> </tr> </table>	Dimensions		Project No. 150562	Length (m)	Width (m)	0.30	0.30				
Dimensions		Project No. 150562																
Length (m)	Width (m)																	
0.30	0.30																	
KEY D - Disturbed Sample MP - Mackintosh Probe B - Bulk Sample V - Vane Shear Test U - Undisturbed Sample N/* - SPT Blows W - Water Sample ES - Environmental Sample S/C - SPT Spoon/Cone ▽ - Level On Completion  - Water Strike ▽ - Level Casing Withdrawn  - Water Rise ▽ - Standpipe Level				<table border="1"> <tr> <th colspan="3">Water Strike</th> <th>Completion</th> </tr> <tr> <th>Strike (m)</th> <th>Rose To (m)</th> <th>Remarks</th> <th>Depth (m)</th> </tr> <tr> <td></td> <td></td> <td></td> <td>Dry</td> </tr> </table>			Water Strike			Completion	Strike (m)	Rose To (m)	Remarks	Depth (m)				Dry
Water Strike			Completion															
Strike (m)	Rose To (m)	Remarks	Depth (m)															
			Dry															

Lucion Ground Engineering Limited Summary of Test Results

Project No. 150562	Project Name Blackbird Close, Crowland
------------------------------	--

Sample					Density		Classification												Sulphates (SO4) 2:1				CBR					
Location	Ref	Top	Base	Type	Bulk	Dry	Moisture Content %			Class	LL	PL	PI	Retained on 425µm	Type	Max Deviator Stress	Cell pressure	Shear Strength	Angle of Shear Resistance	Soil	Water	pH	Organic Content	Top	Base	Retained on 20mm	Hand Vane	Remarks
		m	m		Mg/m ³		NMC	TRX	CBR		%	%	%	%		kPa	kPa	kPa	Degrees	mg/l	mg/l		%	%	%	%	kPa	
WS01	D3	0.80		D			99			MEO	137	82	55	0														
WS01	D4	1.20		D																1123		5.4						
WS01	D5	2.80		D																294		7.9						
WS02	D4	1.20		D			52			CV	75	27	48	0														
WS02	D5	1.50		D																527		7.1						
WS02	D6	1.80		D			27			CI	48	18	30	5														
WS02	D7	2.20		D																403		7.8						

Key

U - Undisturbed
D - Disturbed
B - Bulk
C - Core
W - Water

All tests performed in accordance with BS1377-2:2022 and BS EN ISO 17892 unless specified otherwise.

Sheet Reference: LGE Lab/C/1974 Iss 2 Rev 32



Project No.	Project Name
150562	Blackbird Close, Crowland

[illegible]

Key
 U - Undisturbed
 D - Disturbed
 B - Bulk
 C - Core
 W - Water

All tests performed in accordance with BS1377-2:2022 and BS EN ISO 17892 unless specified otherwise.

Sheet Reference: LGE Lab/C/1974 Iss 2 Rev 32

Certificate of Analysis

Certificate Number 26-13022

Issued: 15-Jun-26

Client Lucion Ground Engineering
Newark Road
Peterborough
PE1 5UA

Our Reference 26-13022

Client Reference ~ 150562

Order No ~ 27814

Contract Title ~ Blackbird Close, Crowland

Description 11 Soil samples.

Date Received 01-Jun-26

Date Started 01-Jun-26

Date Completed 15-Jun-26

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "R. Irfan".

Reyhan Irfan
Operations Manager



2139

Sample Deviations present. See Deviation Table Section for details.

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY
Tel: 01207 582333 • email: info-dets@normecgroup.com • normecdets.com

Summary of Chemical Analysis

Soil Samples

Our Ref 26-13022

Client Ref ~ 150562

Contract Title ~ Blackbird Close, Crowland

Lab No	2694809	2694810	2694811	2694812	2694814	2694816	2694817
Sample ID ~	WS01	WS01	WS02	WS02	TP01	TP02	TP02
Depth ~	0.40	0.80	0.30	0.60	0.50	0.50	0.50
Other ID ~	D2	ES1	D1	ES1	D2	D2	ES1
Sample Type ~	D	ES	D	ES	D	D	ES
Sampling Date ~	22/05/2026	22/05/2026	22/05/2026	22/05/2026	22/05/2026	22/05/2026	22/05/2026
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	13	7.4	29	25		
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	0.3	4.0	2.5		
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	< 0.1	0.9	1.0		
Chromium	DETSC 2301#	0.15	mg/kg	20	4.7	37	36		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	14	7.7	70	90		
Lead	DETSC 2301#	0.3	mg/kg	39	9.8	180	120		
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.17	0.16		
Nickel	DETSC 2301#	1	mg/kg	13	3.4	32	31		
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5		
Zinc	DETSC 2301#	1	mg/kg	87	21	510	570		
Inorganics									
pH	DETSC 2008#		pH	11.2	8.6	7.4	7.7		
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.9	0.6		
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.4	0.3		
Organic matter	DETSC 2002#	0.1	%	1.6	0.9	14	11		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076*	0.001	%	0.010	0.002	0.011	0.005		
Sulphide	DETSC 2024*	10	mg/kg	< 10	< 10	16	12		
Petroleum Hydrocarbons									
C5-C10 Gasoline Range Organics (GRO)	DETSC 3321*	0.1	mg/kg		< 0.1	< 0.1			< 0.1
EPH >C10-C24	DETSC 3521#	10	mg/kg		< 10.00	< 10.00			< 10.00
EPH >C24-C40	DETSC 3521#	10	mg/kg		< 10.00	< 10.00			< 10.00
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.10	0.05		
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.23	< 0.03	0.24	0.12		
Pyrene	DETSC 3303#	0.03	mg/kg	0.21	< 0.03	0.20	0.10		
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.07	0.04		
Chrysene	DETSC 3303	0.03	mg/kg	0.11	< 0.03	0.11	0.05		
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.14	< 0.03	0.10	0.05		
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	0.04	< 0.03		
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.11	< 0.03	0.06	< 0.03		
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.08	0.03	0.05	0.03		
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03		
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03	0.04	< 0.03		
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.2	< 0.10	0.93	0.37		

Summary of Chemical Analysis

Soil Samples

Our Ref 26-13022

Client Ref ~ 150562

Contract Title ~ Blackbird Close, Crowland

Lab No	2694809	2694810	2694811	2694812	2694814	2694816	2694817
Sample ID ~	WS01	WS01	WS02	WS02	TP01	TP02	TP02
Depth ~	0.40	0.80	0.30	0.60	0.50	0.50	0.50
Other ID ~	D2	ES1	D1	ES1	D2	D2	ES1
Sample Type ~	D	ES	D	ES	D	D	ES
Sampling Date ~	22/05/2026	22/05/2026	22/05/2026	22/05/2026	22/05/2026	22/05/2026	22/05/2026
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units
Phenols			
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg

< 0.3	< 0.3	< 0.3	< 0.3
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Summary of Chemical Analysis

Soil Samples

Our Ref 26-13022

Client Ref ~ 150562

Contract Title ~ Blackbird Close, Crowland

Lab No	2694818	2694819
Sample ID ~	TP03	TP03
Depth ~	0.30	0.30
Other ID ~	D1	ES1
Sample Type ~	D	ES
Sampling Date ~	22/05/2026	22/05/2026
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units	
Metals				
Arsenic	DETSC 2301#	0.2	mg/kg	13
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.4
Chromium	DETSC 2301#	0.15	mg/kg	30
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26
Lead	DETSC 2301#	0.3	mg/kg	51
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	17
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5
Zinc	DETSC 2301#	1	mg/kg	140
Inorganics				
pH	DETSC 2008#		pH	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1
Organic matter	DETSC 2002#	0.1	%	2.7
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076*	0.001	%	0.002
Sulphide	DETSC 2024*	10	mg/kg	< 10
Petroleum Hydrocarbons				
C5-C10 Gasoline Range Organics (GRO)	DETSC 3321*	0.1	mg/kg	< 0.1
EPH >C10-C24	DETSC 3521#	10	mg/kg	12.09
EPH >C24-C40	DETSC 3521#	10	mg/kg	19.71
PAHs				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.08
Pyrene	DETSC 3303#	0.03	mg/kg	0.07
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.04
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.06
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.36

Summary of Chemical Analysis

Soil Samples

Our Ref 26-13022

Client Ref ~ 150562

Contract Title ~ Blackbird Close, Crowland

Lab No	2694818	2694819
Sample ID ~	TP03	TP03
Depth ~	0.30	0.30
Other ID ~	D1	ES1
Sample Type ~	D	ES
Sampling Date ~	22/05/2026	22/05/2026
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units
Phenols			
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg
			< 0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 26-13022

Client Ref ~ 150562

Contract Title ~ Blackbird Close, Crowland

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2694809	WS01 D2 0.40	SOIL	NAD	none	Michael Kay
2694811	WS02 D1 0.30	SOIL	NAD	none	Michael Kay
2694813	TP01 D1 0.20	SOIL	NAD	none	Michael Kay
2694814	TP01 D2 0.50	SOIL	NAD	none	Michael Kay
2694815	TP02 D1 0.20	SOIL	NAD	none	Michael Kay
2694818	TP03 D1 0.30	SOIL	NAD	none	Michael Kay

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 26-13022
 Client Ref ~ 150562
 Contract ~ Blackbird Close, Crowland

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date		Containers Received	Holding time exceeded for tests	Incorrect container for tests
		Sampled ~				
2694809	WS01 0.40 SOIL	22/05/26		PT 1L	pH + Conductivity (7 days)	Naphthalene, PAH MS
2694810	WS01 0.80 SOIL	22/05/26		GJ 250ml	BTEX / C5-C10 (7 days)	
2694811	WS02 0.30 SOIL	22/05/26		PT 1L	pH + Conductivity (7 days)	Naphthalene, PAH MS
2694812	WS02 0.60 SOIL	22/05/26		GJ 250ml	BTEX / C5-C10 (7 days)	
2694813	TP01 0.20 SOIL	22/05/26		PT 1L		
2694814	TP01 0.50 SOIL	22/05/26		PT 1L	pH + Conductivity (7 days)	Naphthalene, PAH MS
2694815	TP02 0.20 SOIL	22/05/26		PT 1L		
2694816	TP02 0.50 SOIL	22/05/26		PT 1L	pH + Conductivity (7 days)	Naphthalene, PAH MS
2694817	TP02 0.50 SOIL	22/05/26		GJ 250ml	BTEX / C5-C10 (7 days)	
2694818	TP03 0.30 SOIL	22/05/26		PT 1L	pH + Conductivity (7 days)	Naphthalene, PAH MS
2694819	TP03 0.30 SOIL	22/05/26		GJ 250ml	BTEX / C5-C10 (7 days)	

Key: P-Plastic T-Tub G-Glass J-Jar

Normec DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

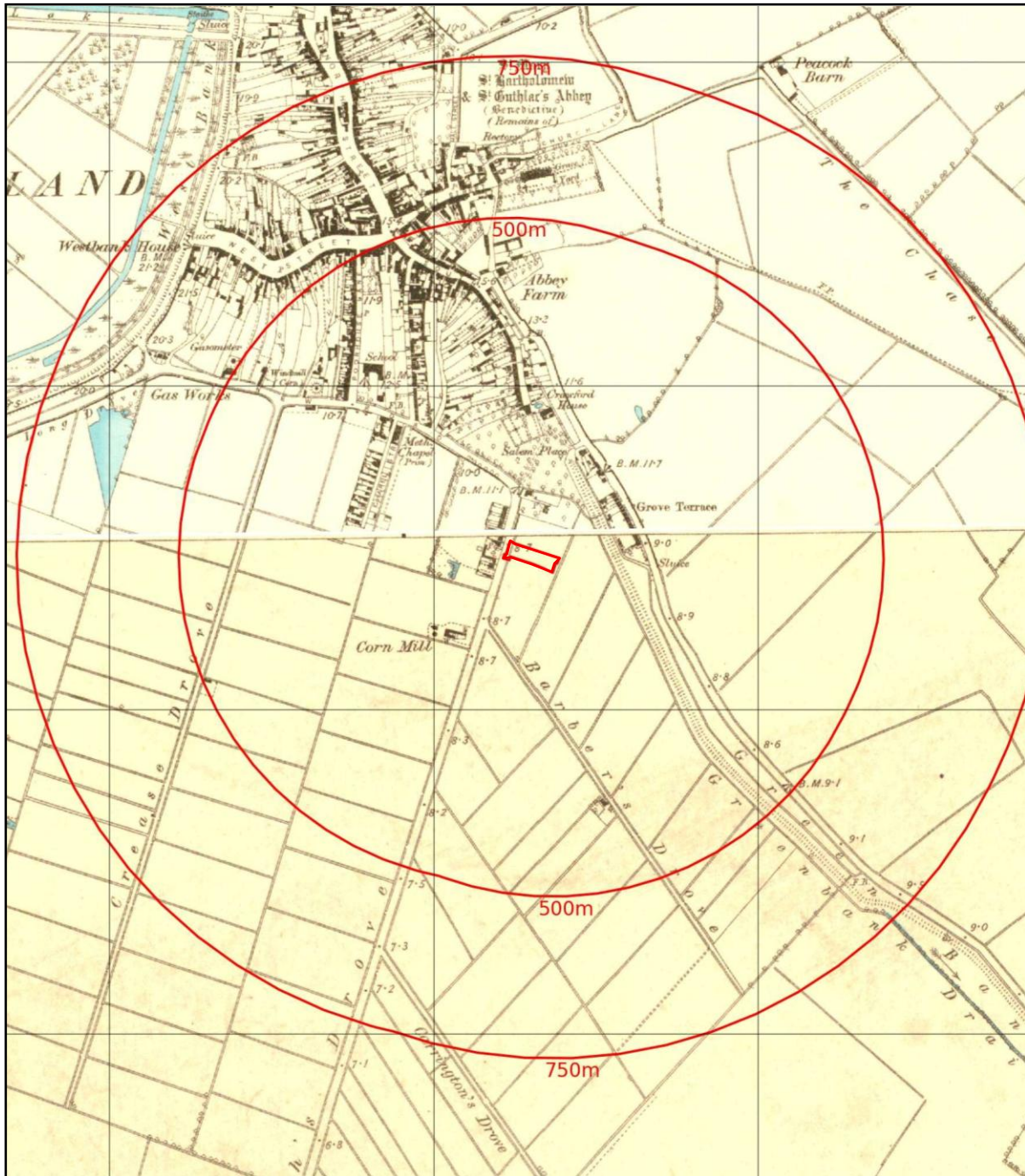
APPENDIX 1

HISTORICAL MAP EXTRACTS

Site History

Figure A

Reproduced from the **1886-87** edition Ordnance Survey sheets **Lincolnshire 148SW & 153NW** at **1:10,560** scale



Project : Land at Blackbird Close, Crowland

Client : Mr & Mrs S Blackbird



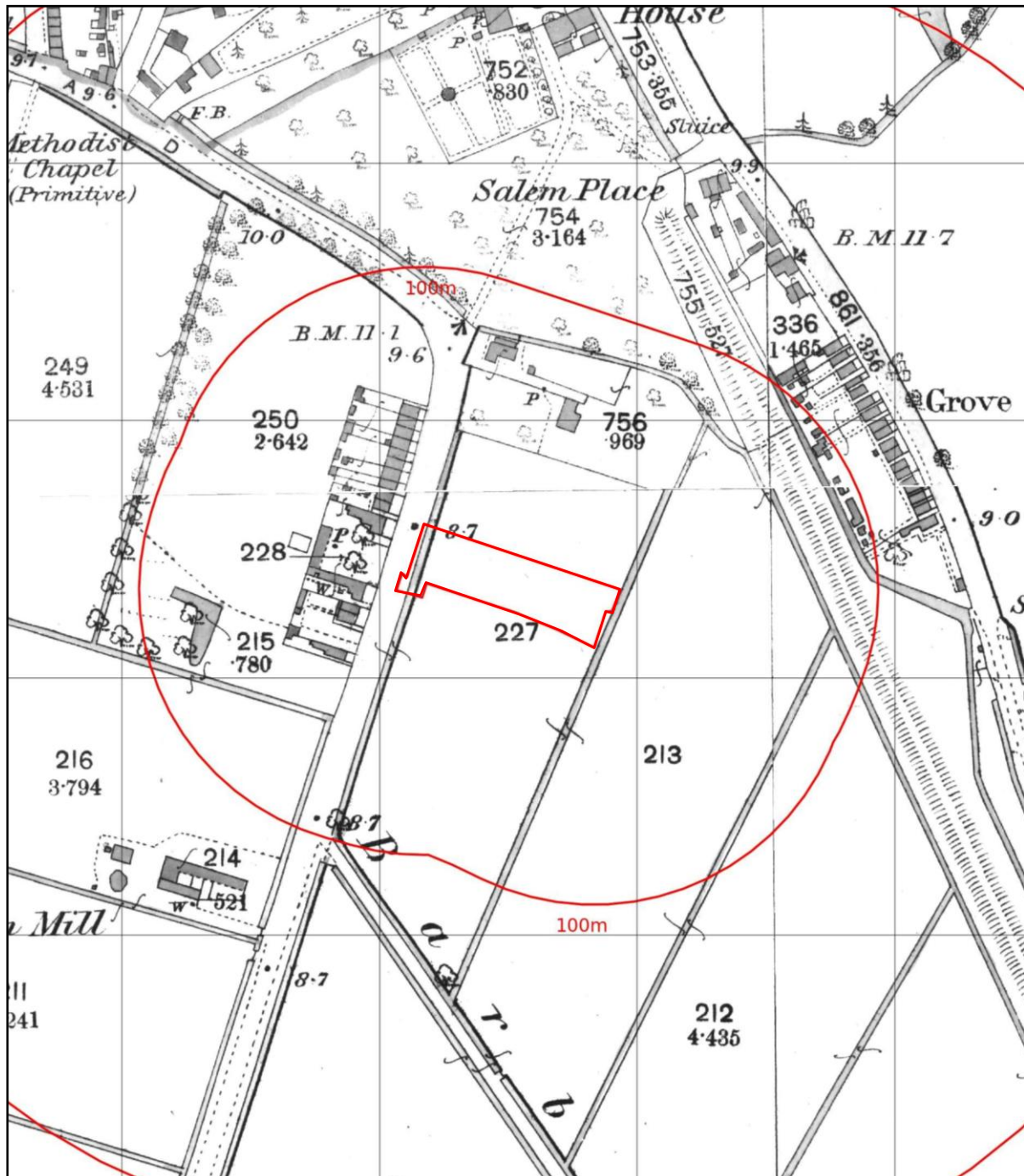
LUCION GROUND ENGINEERING LIMITED
Peterborough Tel : 01733 566566

Project No.
150562

Site History

Figure B

Reproduced from the 1887-88 edition Ordnance Survey sheets Lincolnshire 148.13 & 14, 153.1 & 2 at 1:2500 scale



Project : Land at Blackbird Close, Crowland

Client : Mr & Mrs S Blackbird



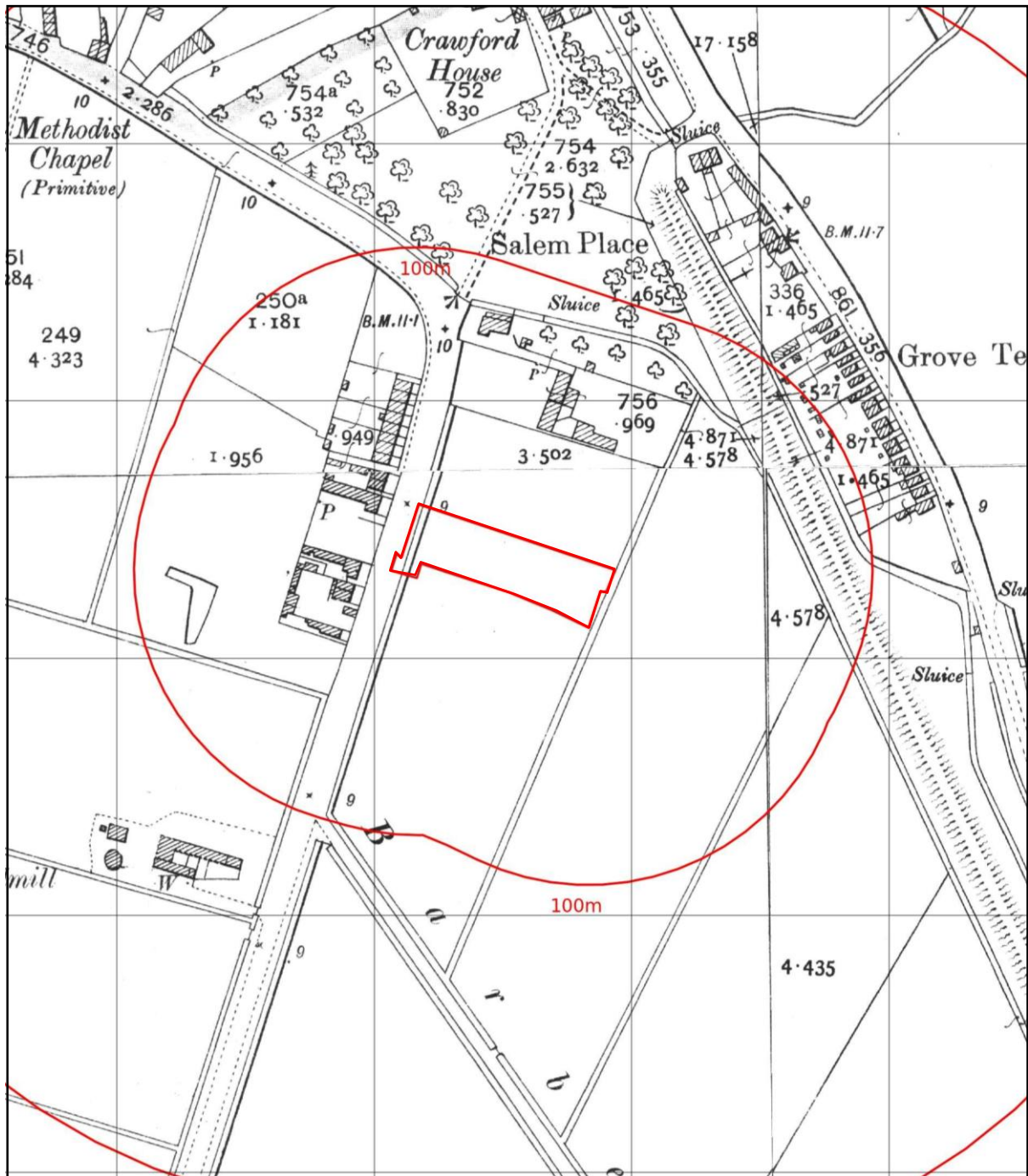
LUCION GROUND ENGINEERING LIMITED
Peterborough Tel : 01733 566566

Project No.
150562

Site History

Figure C

Reproduced from the 1901-04 edition Ordnance Survey sheets Lincolnshire 148.13 & 14, 153.1 & 2 at 1:2500 scale



Project : Land at Blackbird Close, Crowland

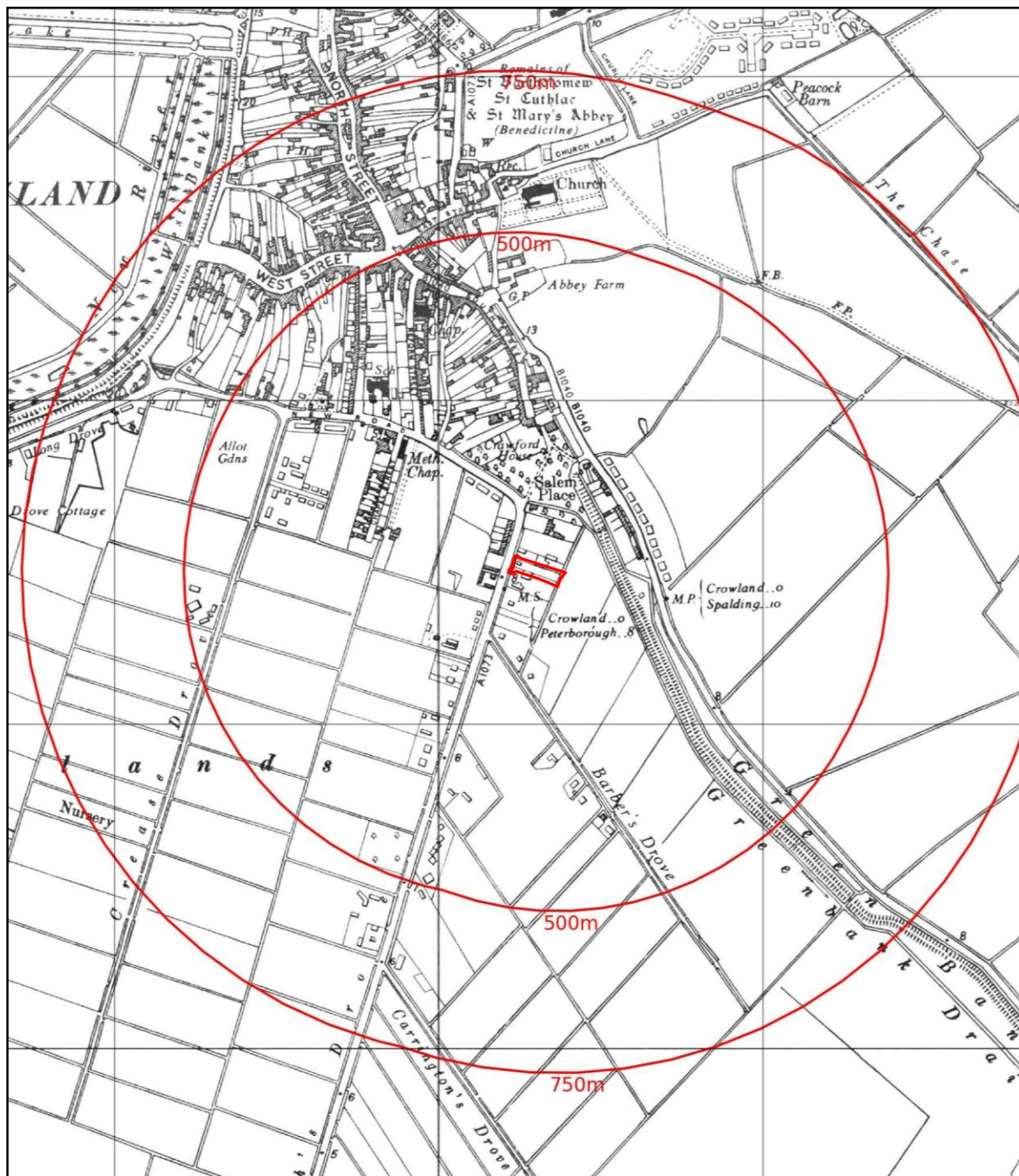
Client : Mr & Mrs S Blackbird



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Project No.
150562

Figure E

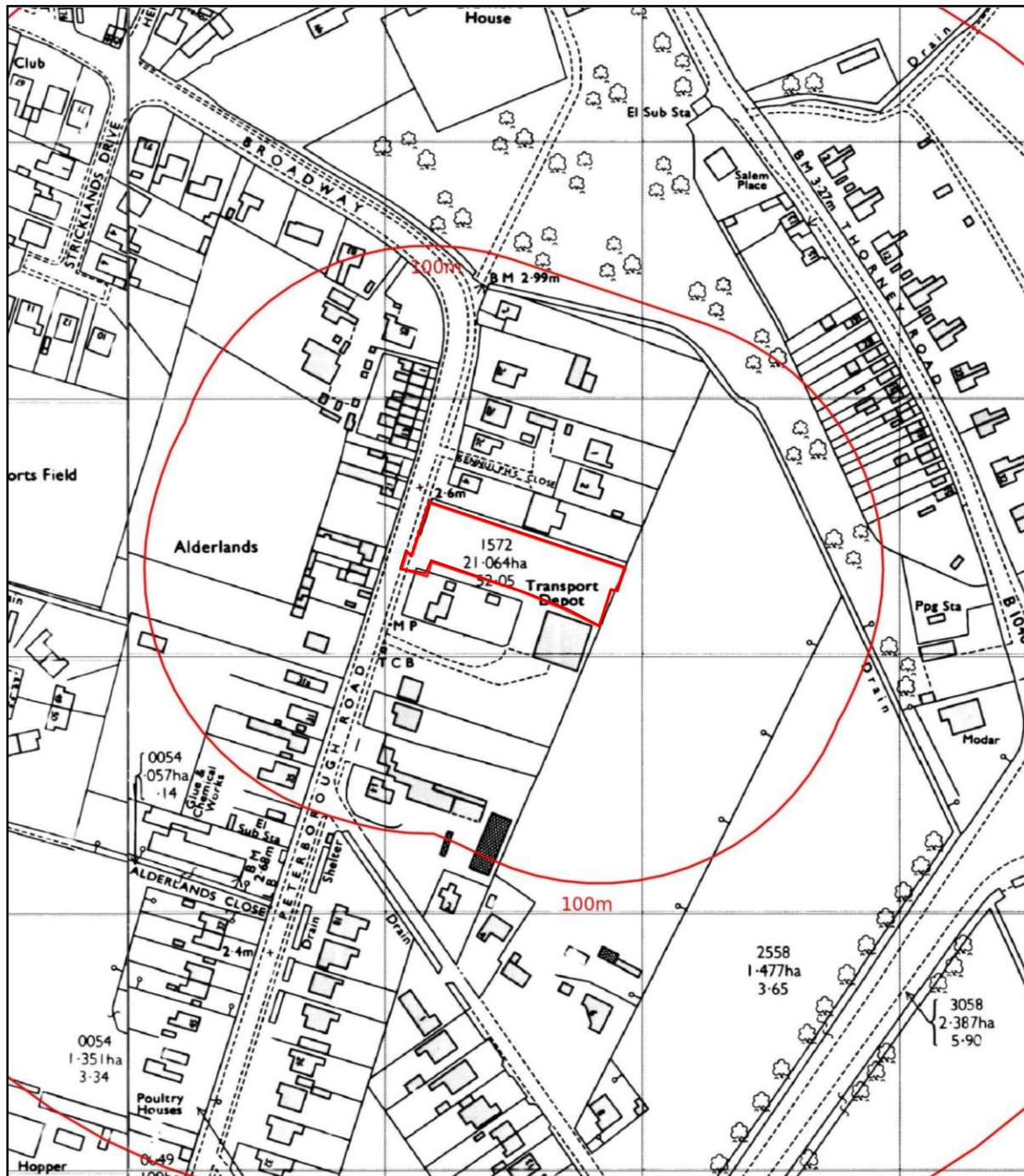


Client : Mr & Mrs S Blackbird

Site History

Figure F

Reproduced from the 1975 edition Ordnance Survey sheets TF2309 & TF2409 at 1:2500 scale



Project : Land at Blackbird Close, Crowland

Client : Mr & Mrs S Blackbird



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150562

Figure G



Client : Mr & Mrs S Blackbird



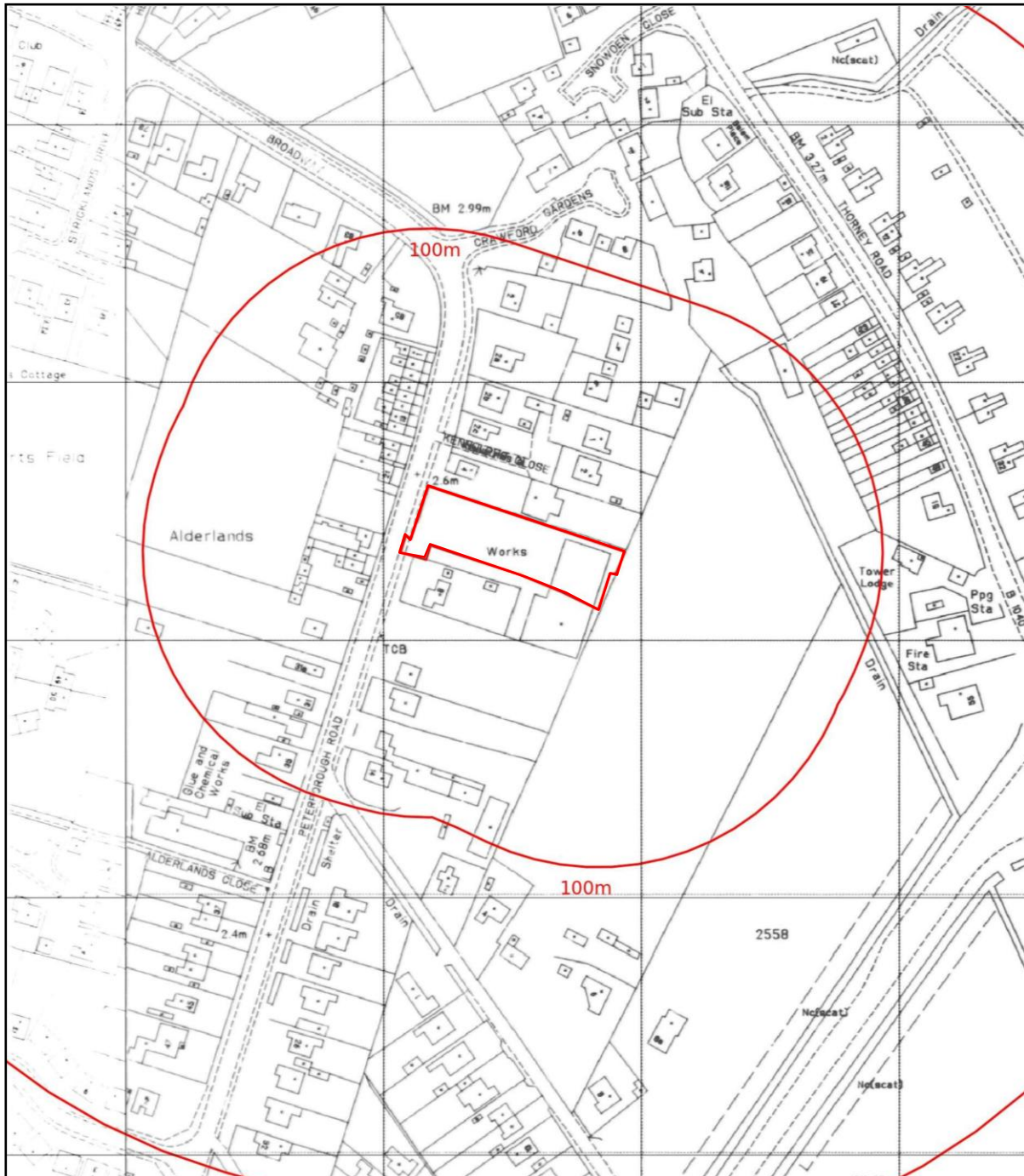
LUCION GROUND ENGINEERING LIMITED
Peterborough Tel : 01733 566566

Project No.	150562
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Site History

Figure H

Reproduced from the 1996 edition Ordnance Survey sheets TF2309 & TF2409 at 1:2500 scale
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Project : Land at Blackbird Close, Crowland

Client : Mr & Mrs S Blackbird



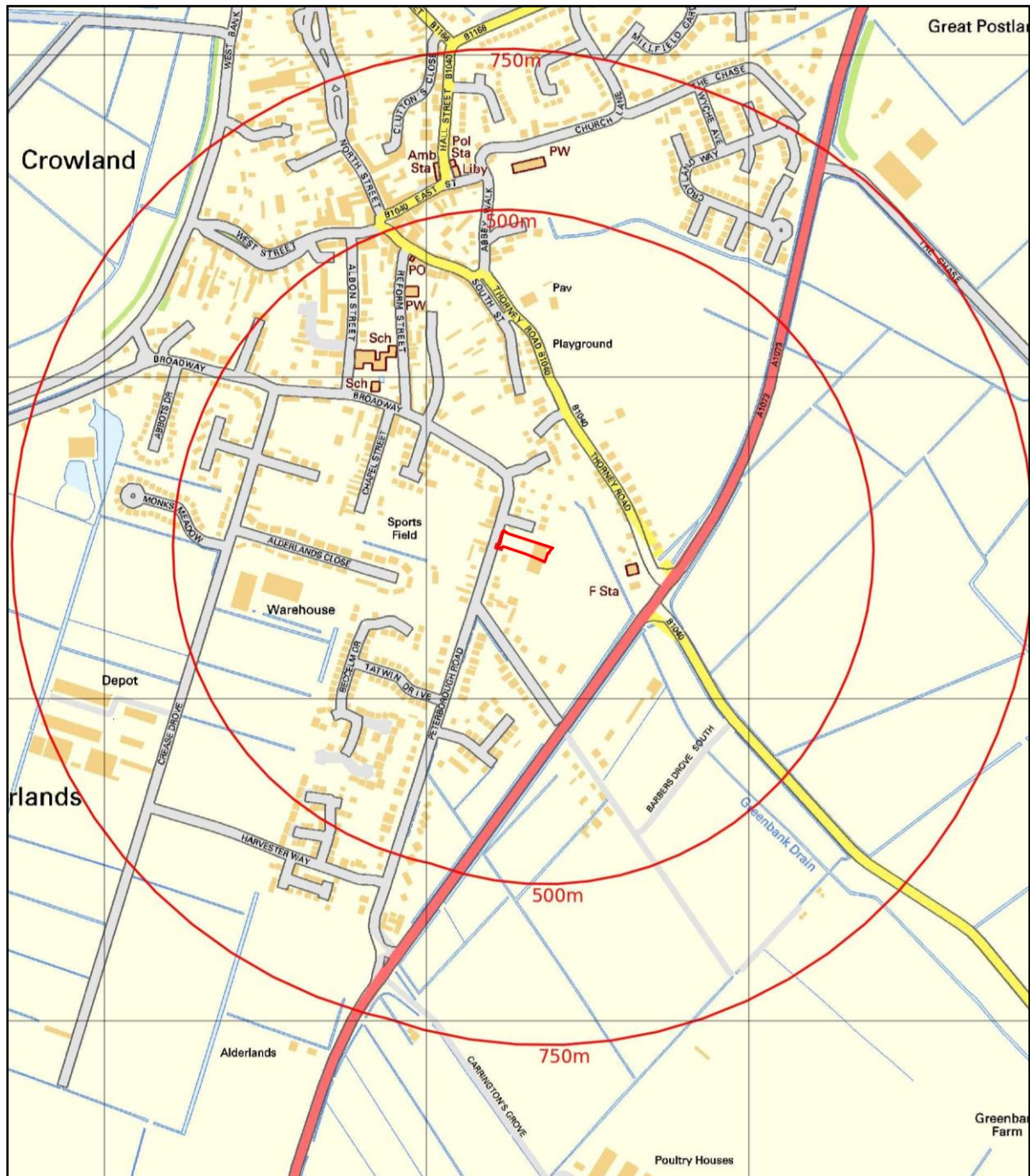
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Site History

Figure I

Reproduced from the **2001** edition Ordnance Survey sheets **TF20NW & TF21SW** at **1:10,000** scale
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Project : Land at Blackbird Close, Crowland

Client : Mr & Mrs S Blackbird



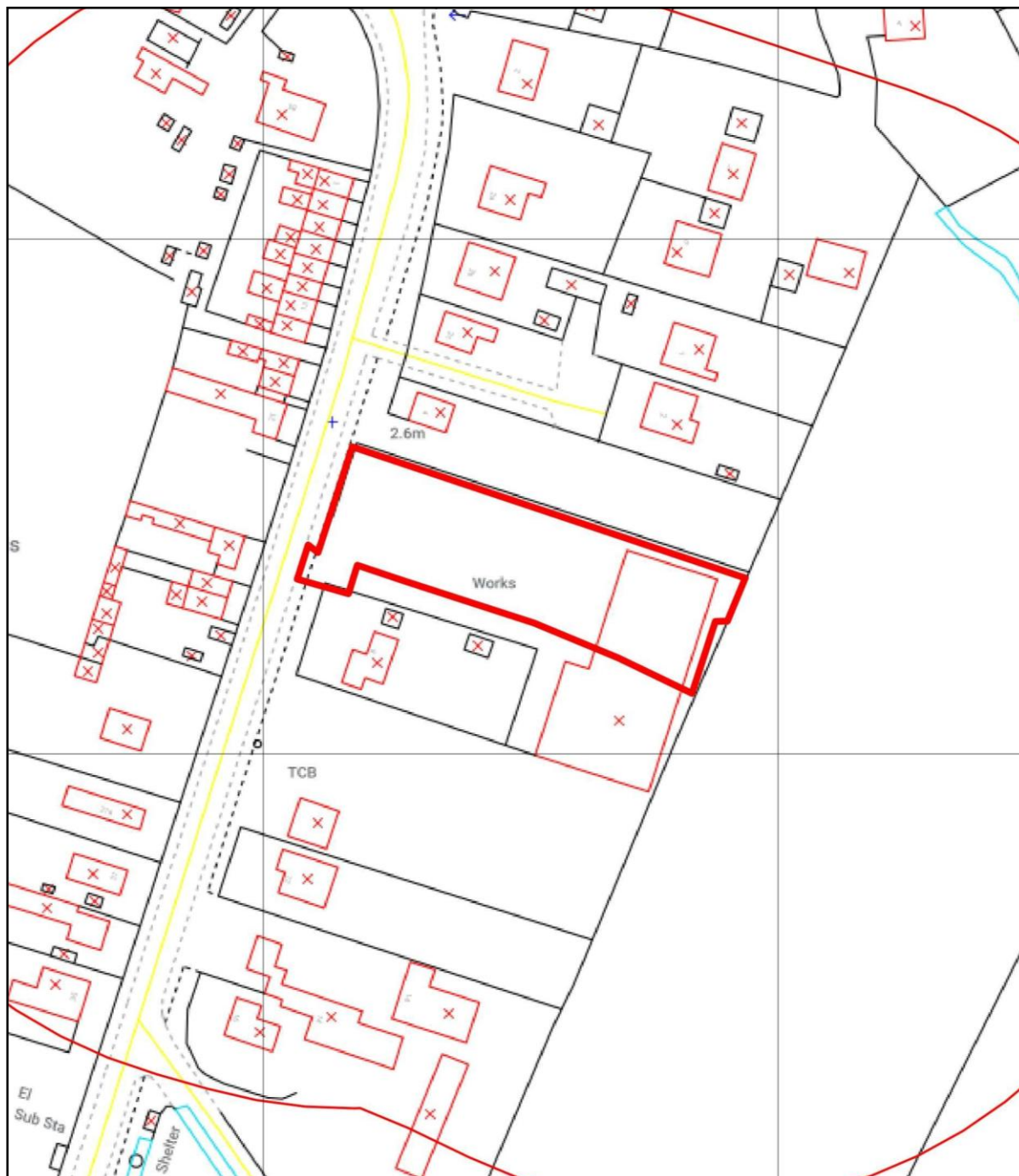
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150562

Site History

Figure J

Reproduced from the **2003** edition Ordnance Survey sheets **TF2309NE & TF2409NW** at **1:1250** scale
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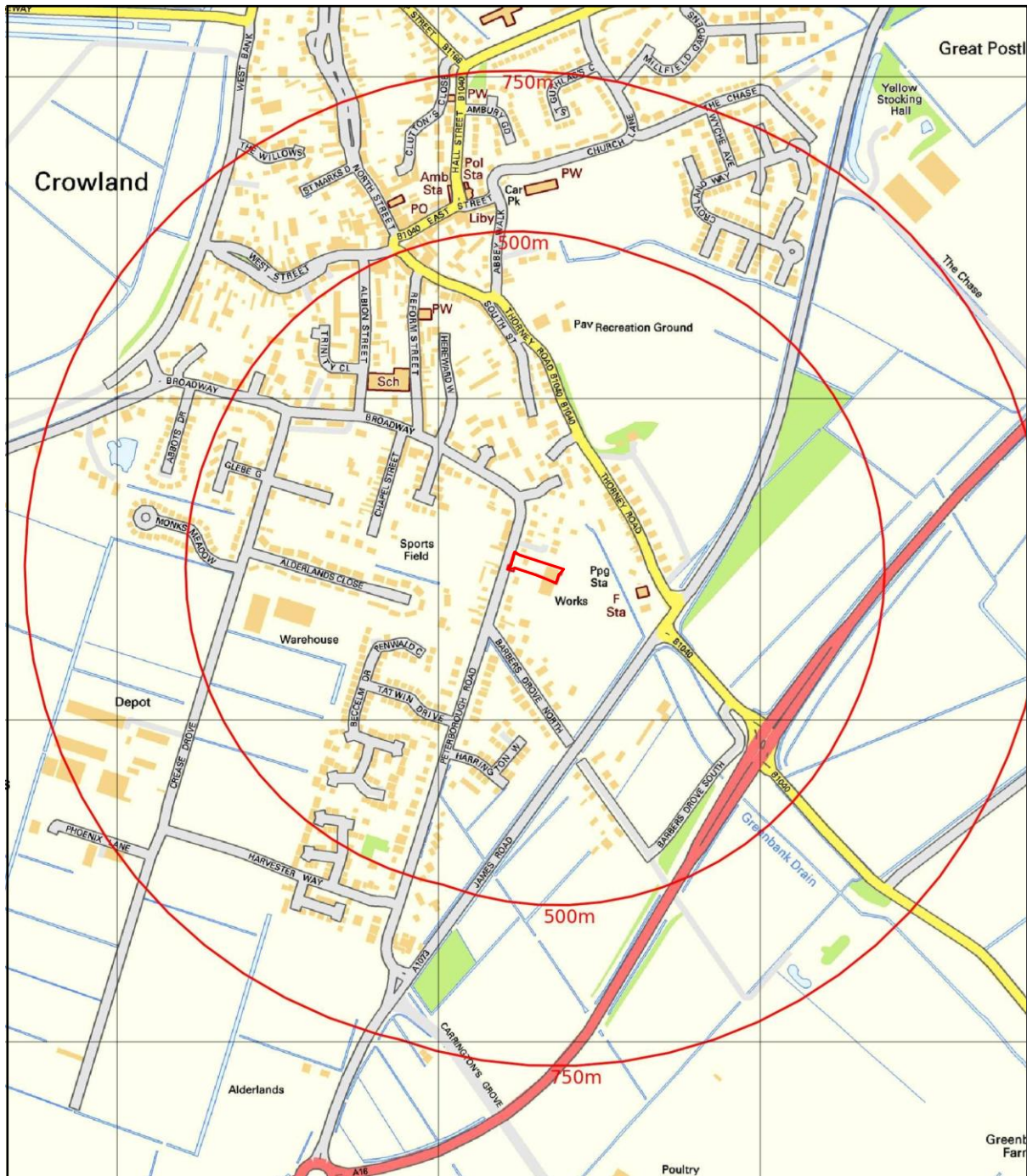
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Project No.
150562

Site History

Figure K

Reproduced from the 2010 edition Ordnance Survey sheets TF20NW & TF21SW at 1:10,000 scale
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Project : Land at Blackbird Close, Crowland

Client : Mr & Mrs S Blackbird



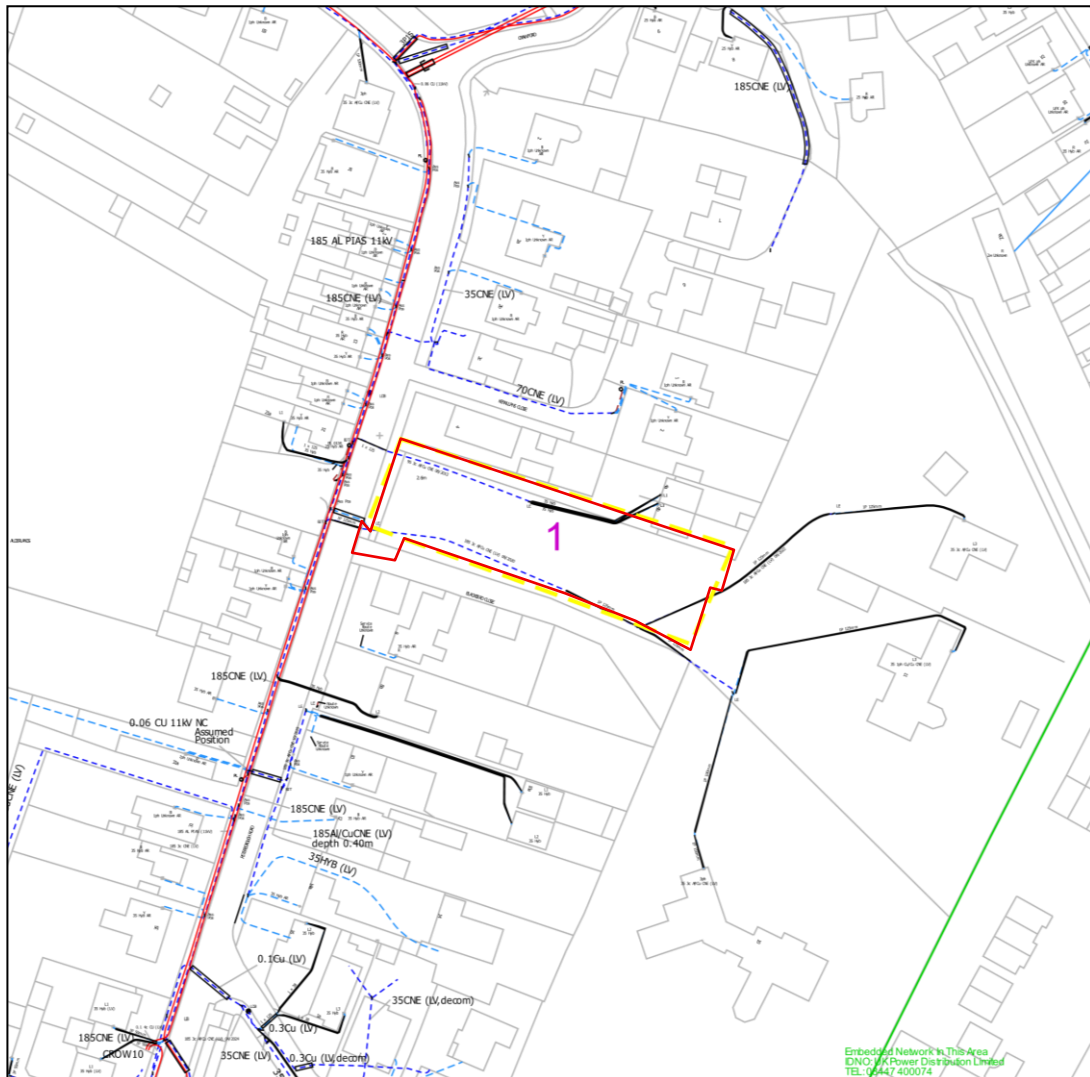
LUCION GROUND ENGINEERING LIMITED
Peterborough Tel : 01733 566566

Project No.
150562

Site History

Figure L

Reproduced from the **2026** edition Ordnance Survey sheets **TF2309 & TF2409 (National Grid)** at not to scale
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Project : Land at Blackbird Close, Crowland

Client : Mr & Mrs S Blackbird



LUCION GROUND ENGINEERING LIMITED
Peterborough Tel : 01733 566566

Project No.
150562

APPENDIX 2

ENVIRONMENTAL DATABASE SEARCH

LAND AT BLACKBIRD CLOSE, CROWLAND, PETERBOROUGH, LINCOLNSHIRE, PE6 0BF

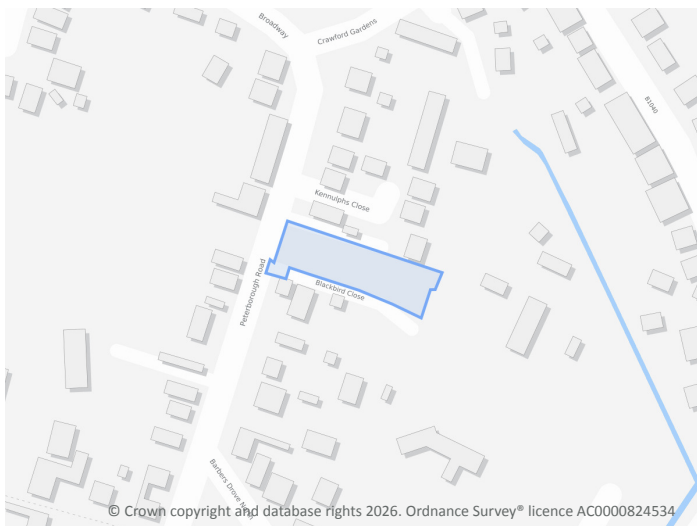
Order Details

Date: 21/05/2026
Your ref: 27769
Our Ref: HMD-1BY-UW6-9AQ-JNL

Site Details

Location: 524150 309736
Area: 0.18 ha
Authority: [South Holland District Council](#) ↗

Site plan



Quick Links

Summary of findings [p. 2](#) >
OS MasterMap site plan [p.14](#) >
Aerial image [p. 9](#) >

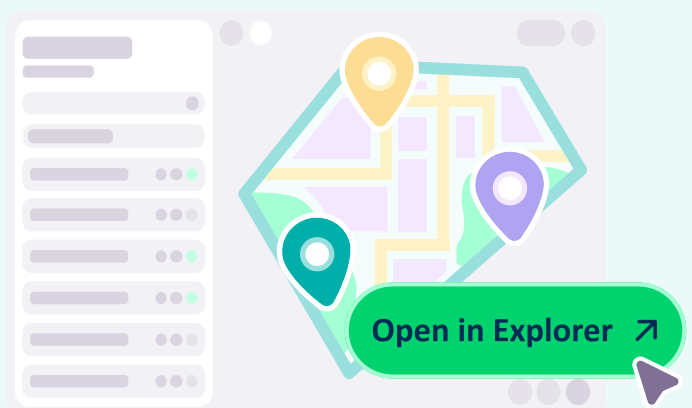
[Insight User Guide](#) ↗

Open this site in Explorer!

Access the data now in our interactive workspace.

- Map and interpret 130+ datasets across 170 years
- Generate insights and visuals quickly
- Revisit and collaborate with your team

Access to Groundsure Explorer requires an Insights account.
12 months access begins at purchase.



Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	0	6	9	-
16	1.2	Historical tanks	0	0	0	0	-
17 >	1.3 >	Historical energy features >	0	0	3	1	-
17	1.4	Historical petrol stations	0	0	0	0	-
17 >	1.5 >	Historical garages >	0	0	0	4	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	1	0	8	10	-
20	2.2	Historical tanks	0	0	0	0	-
20 >	2.3 >	Historical energy features >	0	0	4	1	-
21	2.4	Historical petrol stations	0	0	0	0	-
21 >	2.5 >	Historical garages >	0	0	0	8	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24 >	3.7 >	Waste exemptions >	0	0	13	21	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
28 >	4.1 >	Recent industrial land uses >	0	0	2	-	-
29	4.2	National Geographic Database (NGD) - Current or recent tanks	0	0	0	-	-
29 >	4.3 >	Current or recent petrol stations >	0	0	0	1	-
29	4.4	Electricity cables	0	0	0	0	-
29	4.5	Gas pipelines	0	0	0	0	-



29	4.6	Sites determined as Contaminated Land	0	0	0	0	-
30	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
30	4.8	Regulated explosive sites	0	0	0	0	-
30	4.9	Hazardous substance storage/usage	0	0	0	0	-
30	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
31	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
31	4.13	Radioactive Substance Authorisations	0	0	0	0	-
31 >	4.14 >	<u>Licensed Discharges to controlled waters</u> >	0	0	1	2	-
32	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
32	4.16	Pollutant release to public sewer	0	0	0	0	-
32	4.17	List 1 Dangerous Substances	0	0	0	0	-
32	4.18	List 2 Dangerous Substances	0	0	0	0	-
32 >	4.19 >	<u>Pollution Incidents (EA/NRW)</u> >	0	0	0	3	-
33	4.20	Pollution inventory substances	0	0	0	0	-
33	4.21	Pollution inventory waste transfers	0	0	0	0	-
33	4.22	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology</u> >	On site	0-50m	50-250m	250-500m	500-2000m
35 >	5.1 >	<u>Superficial aquifer</u> >	Identified (within 500m)				
37 >	5.2 >	<u>Bedrock aquifer</u> >	Identified (within 500m)				
38 >	5.3 >	<u>Groundwater vulnerability</u> >	Identified (within 50m)				
39	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
39	5.5	Groundwater vulnerability- local information	None (within 0m)				
40 >	5.6 >	<u>Groundwater abstractions</u> >	0	0	0	0	1
41 >	5.7 >	<u>Surface water abstractions</u> >	0	0	0	0	82
58	5.8	Potable abstractions	0	0	0	0	0
58	5.9	Source Protection Zones	0	0	0	0	-
58	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology</u> >	On site	0-50m	50-250m	250-500m	500-2000m



59 >	6.1 >	Water Network (OS NGD) >	0	0	18	-	-
61 >	6.2 >	Surface water features >	0	0	7	-	-
61 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
62 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
62	6.5	WFD Groundwater bodies	0	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
63 >	7.1 >	Risk of flooding from rivers and the sea >	Medium (within 50m)				
64 >	7.2 >	Historical Flood Events >	1	0	0	-	-
64	7.3	Flood Defences	0	0	0	-	-
64	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
65	7.5	Flood Storage Areas	0	0	0	-	-
66 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
67 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
68 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
70 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
71	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
71	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
71	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
71	10.4	Special Protection Areas (SPA)	0	0	0	0	0
72	10.5	National Nature Reserves (NNR)	0	0	0	0	0
72	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
72	10.7	Designated Ancient Woodland	0	0	0	0	0
72	10.8	Biosphere Reserves	0	0	0	0	0
73	10.9	Forest Parks	0	0	0	0	0
73	10.10	Marine Conservation Zones	0	0	0	0	0
73	10.11	Green Belt	0	0	0	0	0

73	10.12	Proposed Ramsar sites	0	0	0	0	0
73	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
74	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
74	10.15	Nitrate Sensitive Areas	0	0	0	0	0
74 >	10.16 >	Nitrate Vulnerable Zones >	1	1	0	0	1
75 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
76	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
77	11.1	World Heritage Sites	0	0	0	-	-
78	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
78	11.3	National Parks	0	0	0	-	-
78 >	11.4 >	Listed Buildings >	0	0	1	-	-
79 >	11.5 >	Conservation Areas >	0	0	1	-	-
79	11.6	Scheduled Ancient Monuments	0	0	0	-	-
79	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
80 >	12.1 >	Agricultural Land Classification >	Grade 2 (within 250m)				
81	12.2	Open Access Land	0	0	0	-	-
81	12.3	Tree Felling Licences	0	0	0	-	-
81	12.4	Environmental Stewardship Schemes	0	0	0	-	-
82	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
83	13.1	Priority Habitat Inventory	0	0	0	-	-
83	13.2	Habitat Networks	0	0	0	-	-
83	13.3	Open Mosaic Habitat	0	0	0	-	-
83	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
84 >	14.1 >	10k Availability >	Identified (within 500m)				
85	14.2	Artificial and made ground (10k)	0	0	0	0	-

86 >	14.3 >	Superficial geology (10k) >	3	0	2	1	-
87	14.4	Landslip (10k)	0	0	0	0	-
88 >	14.5 >	Bedrock geology (10k) >	1	0	1	0	-
89	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
90 >	15.1 >	50k Availability >	Identified (within 500m)				
91	15.2	Artificial and made ground (50k)	0	0	0	0	-
91	15.3	Artificial ground permeability (50k)	0	0	-	-	-
92 >	15.4 >	Superficial geology (50k) >	3	0	0	0	-
93 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
93	15.6	Landslip (50k)	0	0	0	0	-
93	15.7	Landslip permeability (50k)	None (within 50m)				
94 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
95 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
95	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
96 >	16.1 >	BGS Boreholes >	0	4	12	-	-
Page	Section	Natural ground subsidence >					
98 >	17.1 >	Shrink swell clays >	Moderate (within 50m)				
100 >	17.2 >	Running sands >	Moderate (within 50m)				
102 >	17.3 >	Compressible deposits >	High (within 50m)				
104 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
105 >	17.5 >	Landslides >	Very low (within 50m)				
106 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings	On site	0-50m	50-250m	250-500m	500-2000m
108	18.1	BritPits	0	0	0	0	-
108	18.2	Surface ground workings	0	0	0	-	-
108	18.3	Underground workings	0	0	0	0	0
108	18.4	Underground mining extents	0	0	0	0	-



109	18.5	Historical Mineral Planning Areas	0	0	0	0	-
109	18.6	Non-coal mining	0	0	0	0	0
109	18.7	JPB mining areas	None (within 0m)				
109	18.8	The Coal Authority non-coal mining	0	0	0	0	-
110	18.9	Researched mining	0	0	0	0	-
110	18.10	Mining record office plans	0	0	0	0	-
110	18.11	BGS mine plans	0	0	0	0	-
110	18.12	Coal mining	None (within 0m)				
110	18.13	Brine areas	None (within 0m)				
111	18.14	Gypsum areas	None (within 0m)				
111	18.15	Tin mining	None (within 0m)				
111	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
112	19.1	Natural cavities	0	0	0	0	-
112	19.2	Mining cavities	0	0	0	0	0
112	19.3	Reported recent incidents	0	0	0	0	-
112	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
114 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
116 >	21.1 >	BGS Estimated Background Soil Chemistry >	3	0	-	-	-
116	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
116	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
117	22.1	Underground railways (London)	0	0	0	-	-
117	22.2	Underground railways (Non-London)	0	0	0	-	-
117	22.3	Railway tunnels	0	0	0	-	-
117	22.4	Historical railway and tunnel features	0	0	0	-	-
117	22.5	Royal Mail tunnels	0	0	0	-	-

118	22.6	Historical railways	0	0	0	-	-
118	22.7	Railways	0	0	0	-	-
118	22.8	Crossrail 2	0	0	0	0	-
118	22.9	HS2	0	0	0	0	-



Recent aerial photograph



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Capture Date: 25/04/2023

Site Area: 0.18ha



Recent site history - 2018 aerial photograph



Capture Date: 20/04/2018

Site Area: 0.18ha



Recent site history - 2014 aerial photograph



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Capture Date: 06/06/2014

Site Area: 0.18ha



Recent site history - 2012 aerial photograph



Capture Date: 23/07/2012

Site Area: 0.18ha



Recent site history - 1999 aerial photograph

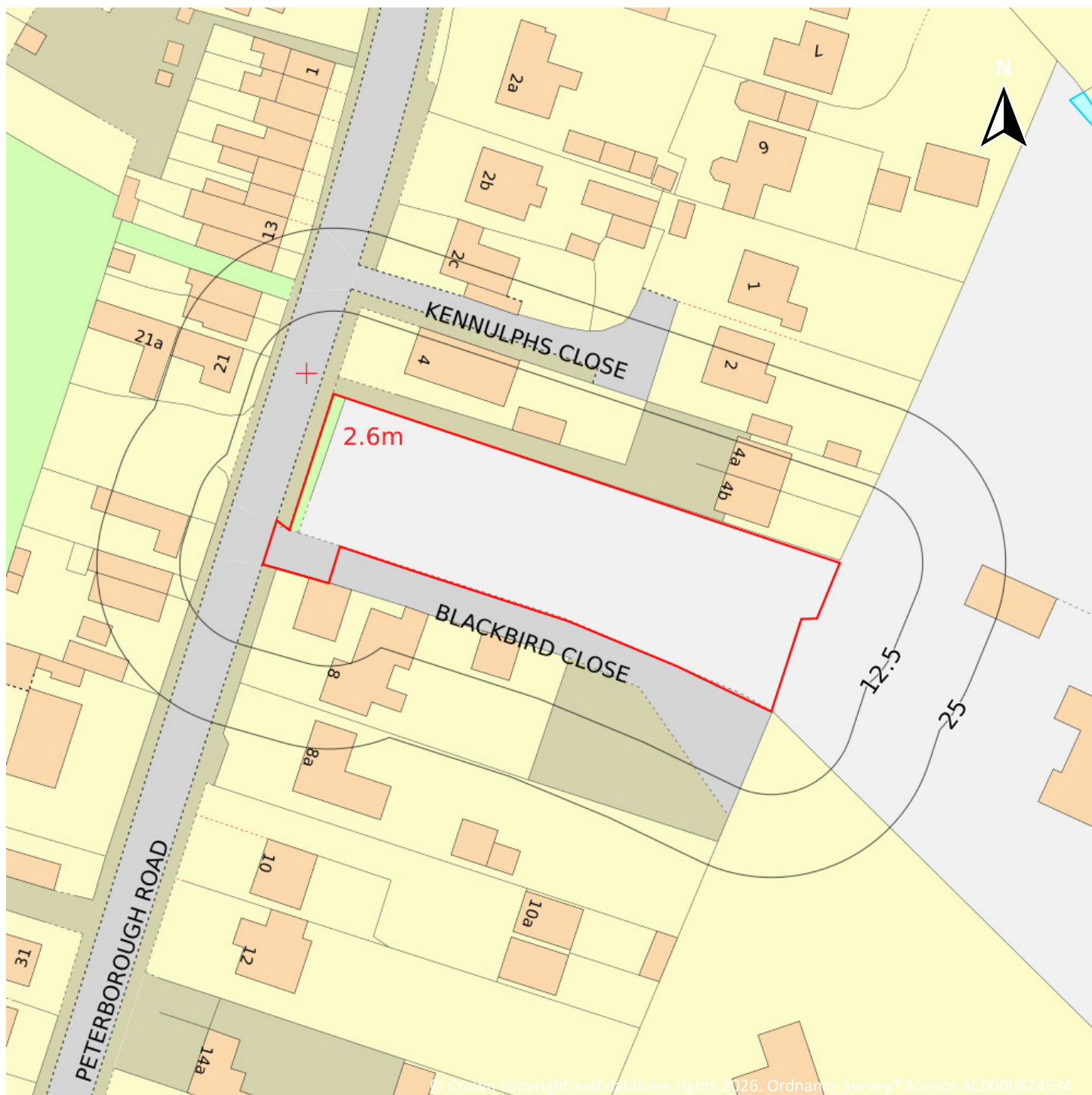


Capture Date: 18/06/1999

Site Area: 0.18ha



OS MasterMap site plan



Site Area: 0.18ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

16

Potentially contaminative land use features digitised from historical Ordnance Survey® mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	On site	Unspecified Depot	1978	2035147



ID	Location	Land use	Dates present	Group ID
A	65m SW	Unspecified Works	1978	2036746
A	110m SW	Unspecified Windmill	1900	2059846
A	113m SW	Corn Mill	1886	2034499
A	113m SW	Windmill	1900 - 1901	2052082
A	152m SW	Unspecified Tank	1886	2037546
3	233m W	Unspecified Warehouse	1978	2043132
4	251m S	Pumping Station	1978	2042802
5	276m S	Unspecified Works	1978	2036745
C	366m NW	Unspecified Heap	1906	2071342
C	366m NW	Unspecified Heap	1903	2056547
C	367m NW	Unspecified Heap	1950	2052863
C	371m NW	Corn Windmill	1887	2035975
C	376m NW	Unspecified Tank	1903	2037548
E	493m NW	Unspecified Commercial/Industrial	1906	2033975
E	493m NW	Gas Works	1887	2042014

This data is sourced from Ordnance Survey® / Groundsure.

1.2 Historical tanks

Records within 500m

0

Tank features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.



1.3 Historical energy features

Records within 500m

4

Energy features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
A	117m SW	Electricity Substation	1989	243601
A	118m S	Electricity Substation	1995	243610
2	176m N	Electricity Substation	1989 - 1995	245856
6	359m NW	Electricity Substation	1975	244026

This data is sourced from Ordnance Survey® / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

1.5 Historical garages

Records within 500m

4

Garages digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)



ID	Location	Land use	Dates present	Group ID
B	255m NW	Garage	1982	76614
B	260m NW	Garage	1996 - 1997	76856
D	476m N	Garage	1975	76052
D	476m N	Garage	1995	76464

This data is sourced from Ordnance Survey® / Groundsure.

1.6 Historical military land

Records within 500m

0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey® / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

19

Potentially contaminative land use features digitised from historical Ordnance Survey® mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 19](#) >

ID	Location	Land Use	Date	Group ID
1	On site	Unspecified Depot	1978	2035147
A	65m SW	Unspecified Works	1978	2036746
A	110m SW	Unspecified Windmill	1900	2059846



ID	Location	Land Use	Date	Group ID
A	110m SW	Unspecified Windmill	1900	2059846
A	113m SW	Windmill	1900	2052082
A	113m SW	Corn Mill	1886	2034499
A	114m SW	Windmill	1901	2052082
A	152m SW	Unspecified Tank	1886	2037546
2	233m W	Unspecified Warehouse	1978	2043132
3	251m S	Pumping Station	1978	2042802
4	276m S	Unspecified Works	1978	2036745
D	366m NW	Unspecified Heap	1906	2071342
D	366m NW	Unspecified Heap	1903	2056547
D	367m NW	Unspecified Heap	1950	2052863
D	367m NW	Unspecified Heap	1950	2052863
D	371m NW	Corn Windmill	1887	2035975
D	376m NW	Unspecified Tank	1903	2037548
F	493m NW	Unspecified Commercial/Industrial	1906	2033975
F	493m NW	Gas Works	1887	2042014

This data is sourced from Ordnance Survey® / Groundsure.

2.2 Historical tanks

Records within 500m

0

Tank features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

2.3 Historical energy features

Records within 500m

5

Energy features digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.



Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

ID	Location	Land Use	Date	Group ID
A	117m SW	Electricity Substation	1989	243601
A	118m S	Electricity Substation	1995	243610
B	176m N	Electricity Substation	1989	245856
B	177m N	Electricity Substation	1995	245856
5	359m NW	Electricity Substation	1975	244026

This data is sourced from Ordnance Survey® / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
----------------------------	----------

Petrol stations digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey® / Groundsure.

2.5 Historical garages

Records within 500m	8
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Garages digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

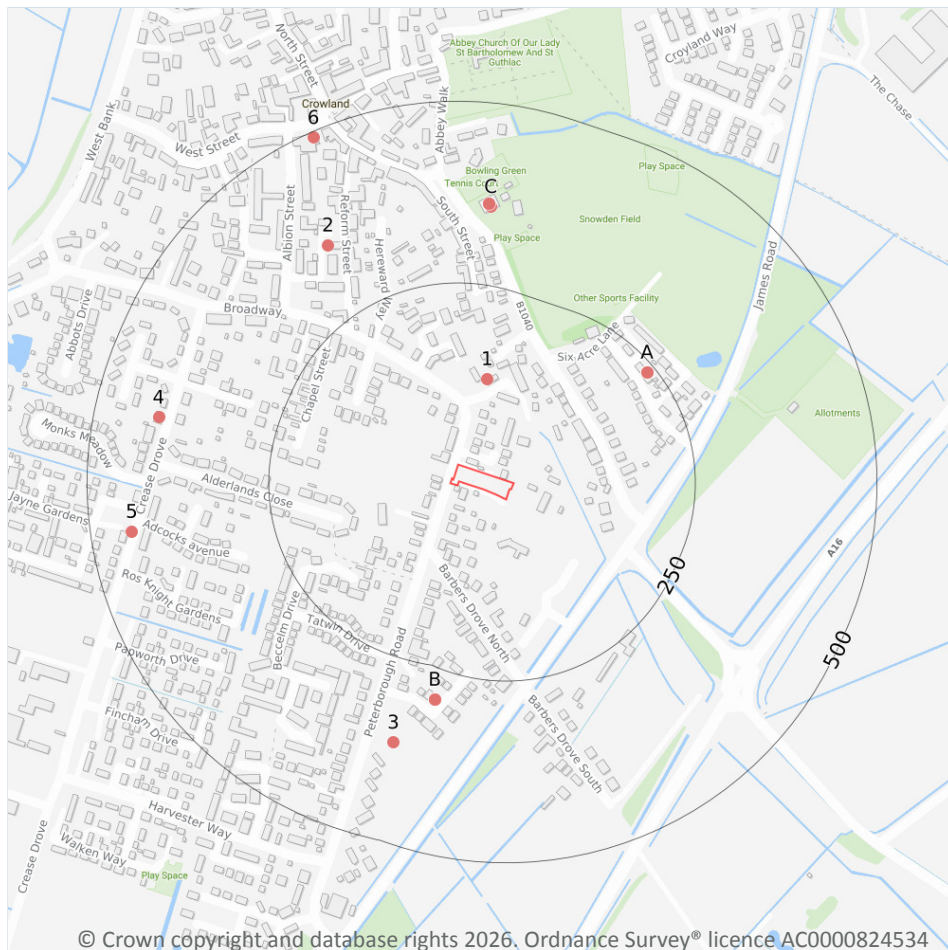
ID	Location	Land Use	Date	Group ID
C	255m NW	Garage	1982	76614
C	260m NW	Garage	1997	76856
C	260m NW	Garage	1997	76856
C	260m NW	Garage	1996	76856
E	476m N	Garage	1975	76052
E	476m N	Garage	1995	76464
E	476m N	Garage	1995	76464

ID	Location	Land Use	Date	Group ID
E	476m N	Garage	1995	76464

This data is sourced from Ordnance Survey® / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey®/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m**0**

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey®/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m**0**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m**34**

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 23 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
1	124m N	-	WEX472859	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal



ID	Location	Site	Reference	Category	Sub-Category	Description
A	238m NE	-	WEX270723	Disposing of waste exemption	Not on a farm	Burning waste in the open
A	238m NE	-	WEX270723	Disposing of waste exemption	Not on a farm	Disposal by incineration
A	238m NE	-	WEX270723	Disposing of waste exemption	Not on a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	238m NE	-	WEX270723	Treating waste exemption	Not on a farm	Screening and blending of waste
A	238m NE	-	WEX270723	Using waste exemption	Not on a farm	Spreading waste on agricultural land to confer benefit
A	238m NE	-	WEX270723	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
A	238m NE	-	WEX270723	Using waste exemption	Not on a farm	Use of waste for a specified purpose
A	238m NE	-	WEX270723	Storing waste exemption	Not on a farm	Storage of waste in a secure place
A	238m NE	-	WEX270723	Storing waste exemption	Not on a farm	Storage of waste in secure containers
A	238m NE	-	WEX270723	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
A	238m NE	-	WEX270723	Disposing of waste exemption	Not on a farm	Deposit of waste from dredging of inland waters
A	238m NE	-	WEX270723	Using waste exemption	Not on a farm	Use of waste in construction
B	293m S	-	WEX432788	Storing waste exemption	Not on a farm	Storage of waste in a secure place
B	293m S	-	WEX432788	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
B	293m S	-	WEX432788	Disposing of waste exemption	Not on a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
B	293m S	-	WEX432788	Disposing of waste exemption	Not on a farm	Deposit of waste from dredging of inland waters



ID	Location	Site	Reference	Category	Sub-Category	Description
B	293m S	-	WEX432788	Treating waste exemption	Not on a farm	Cleaning, washing, spraying or coating relevant waste
B	293m S	-	WEX432788	Storing waste exemption	Not on a farm	Storage of waste in secure containers
B	293m S	-	WEX432788	Using waste exemption	Not on a farm	Use of waste in construction
B	293m S	-	WEX432788	Using waste exemption	Not on a farm	Spreading waste on agricultural land to confer benefit
B	293m S	-	WEX432788	Using waste exemption	Not on a farm	Use of waste for a specified purpose
B	293m S	-	WEX432788	Disposing of waste exemption	Not on a farm	Burning waste in the open
B	293m S	-	WEX432788	Treating waste exemption	Not on a farm	Screening and blending of waste
B	293m S	-	WEX432788	Disposing of waste exemption	Not on a farm	Disposal by incineration
2	351m NW	Crowland South View Community Primary School Reform Street Crowland Pe6 0an	EPR/PH0379P Q/A001	Treating waste exemption	Non-agricultural waste only	Crushing waste fluorescent tubes
C	357m N	Crowland Health Centre Thorney Road Peterborough Lincolnshire Pe6 0al	EPR/QF0801TF /A001	Treating waste exemption	Non-agricultural waste only	Sorting and de-naturing of controlled drugs for disposal
C	361m N	Thorney Road, Crowland, Peterborough, Pe6 0al	WEX134776	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	361m N	Thorney Road, Crowland, Peterborough, Pe6 0al	WEX134783	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
C	361m N	Thorney Road, Crowland, Peterborough, Pe6 0al	WEX274391	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
3	365m S	-	WEX415686	Disposing of waste exemption	Not on a farm	Burning waste in the open
4	412m W	-	WEX292187	Using waste exemption	Not on a farm	Use of waste in construction



ID	Location	Site	Reference	Category	Sub-Category	Description
5	444m W	-	WEX235952	Using waste exemption	Not on a farm	Use of waste in construction
6	492m NW	6, West Street, Crowland, Peterborough, Pe6 0ed	WEX311371	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

This data is sourced from the Environment Agency and Natural Resources Wales.



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- ◆ Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 28](#) >

ID	Location	Company	Address	Activity	Category
1	132m E	Crowland Fire Station	Fire Station, Thorney Road, Crowland, Peterborough, Lincolnshire, PE6 0AL	Fire Brigade Stations	Central and Local Government
2	180m N	Electricity Sub Station	Lincolnshire, PE6	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey®.



4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m**0**

Current or recent tanks identified from the Ordnance Survey® NGD.

This data is sourced from Ordnance Survey®.

4.3 Current or recent petrol stations

Records within 500m**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 28](#) >

ID	Location	Company	Address	LPG	Status
4	276m NW	OBSOLETE	59, Broadway, Crowland, Lincolnshire, PE6 0BH	Not Applicable	Obsolete

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 Sites determined as Contaminated Land

Records within 500m**0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.



4.7 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.8 Regulated explosive sites

Records within 500m**0**

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.9 Hazardous substance storage/usage

Records within 500m**0**

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.10 Historical licensed industrial activities (IPC)

Records within 500m**0**

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed industrial activities (Part A(1))

Records within 500m**0**

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.



4.12 Licensed pollutant release (Part A(2)/B)

Records within 500m

0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.13 Radioactive Substance Authorisations

Records within 500m

0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Licensed Discharges to controlled waters

Records within 500m

3

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on [page 28 >](#)

ID	Location	Address	Details	
3	233m W	CREASE DROVE, CROWLAND, PETERBOROUGH, PE6 0BN	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: PR5NF447 Permit Version: 1 Receiving Water: Unknown Trib	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 12/12/1968 Effective Date: 12/12/1968 Revocation Date: 26/02/1992
5	340m W	PREMISES AT CREASE DROVE, CROWLAND	Effluent Type: UNSPECIFIED Permit Number: PR5LF3154 Permit Version: 1 Receiving Water: Land	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 03/12/1971 Effective Date: 03/12/1971 Revocation Date: 01/10/1996
6	428m W	RES. DEV. TATWIN DRIVE, CROWLAND	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: PR5NF5156 Permit Version: 1 Receiving Water: Fen drain	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 21/05/1986 Effective Date: 21/05/1986 Revocation Date: 11/02/1992

This data is sourced from the Environment Agency and Natural Resources Wales.



4.15 Pollutant release to surface waters (Red List)

Records within 500m**0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 Pollutant release to public sewer

Records within 500m**0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 1 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 List 2 Dangerous Substances

Records within 500m**0**

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution Incidents (EA/NRW)

Records within 500m**3**

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on [page 28 >](#)

ID	Location	Details	
A	304m S	Incident Date: 11/09/2002 Incident Identification: 107152 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
A	304m S	Incident Date: 13/02/2002 Incident Identification: 58119 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Landfill Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
7	475m S	Incident Date: 06/06/2002 Incident Identification: 83160 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Effects on Humans	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.20 Pollution inventory substances

Records within 500m

0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory waste transfers

Records within 500m

0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.22 Pollution inventory radioactive waste

Records within 500m

0

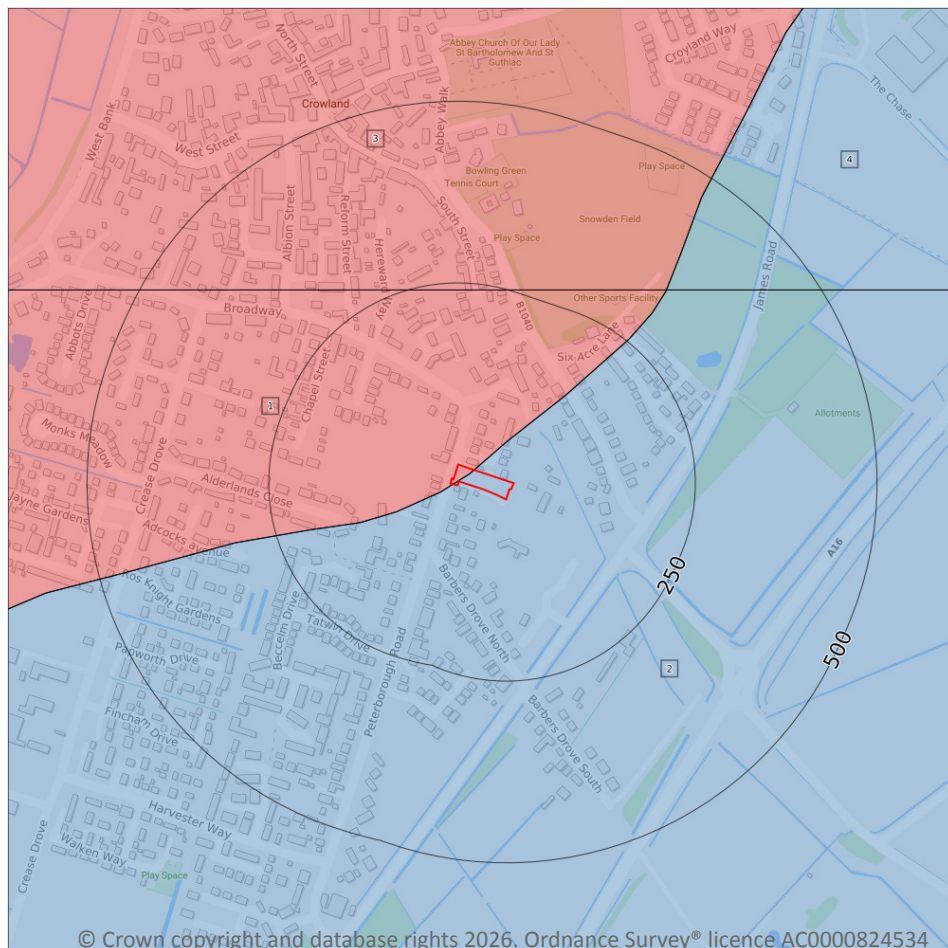
The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.



This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.



5 Hydrogeology - Superficial aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive
 - Unknown

5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 35](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

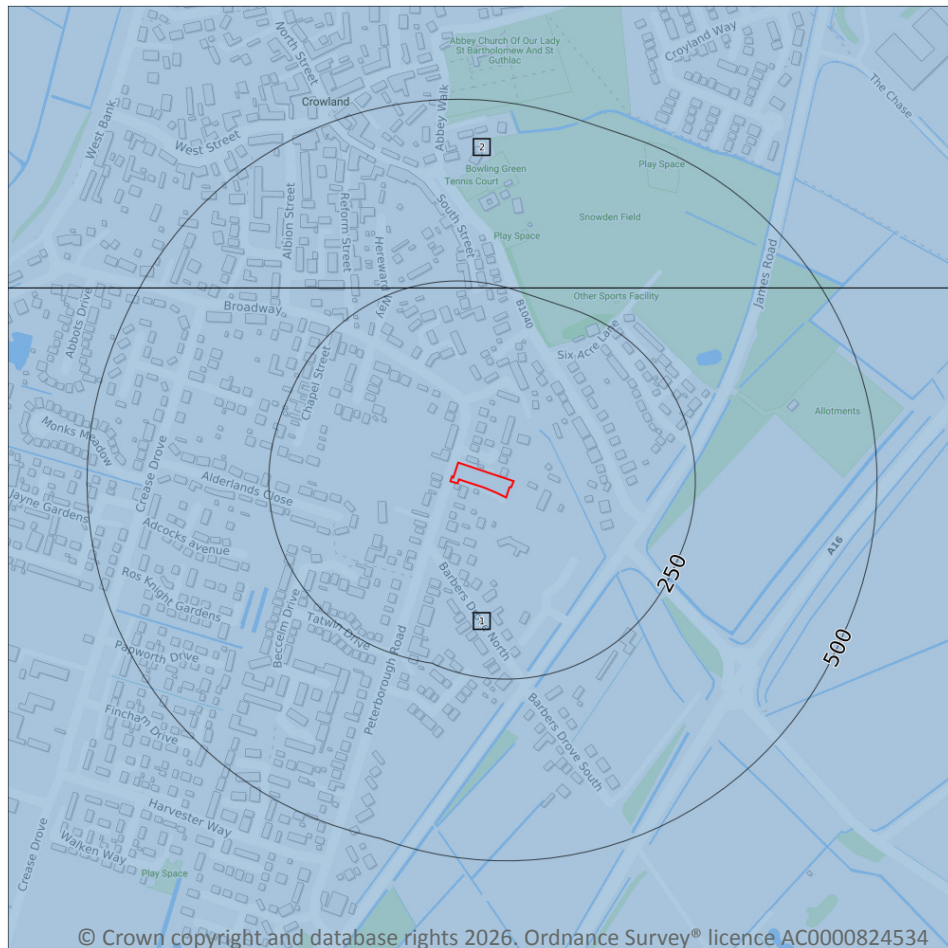


ID	Location	Designation	Description
3	240m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	339m NE	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

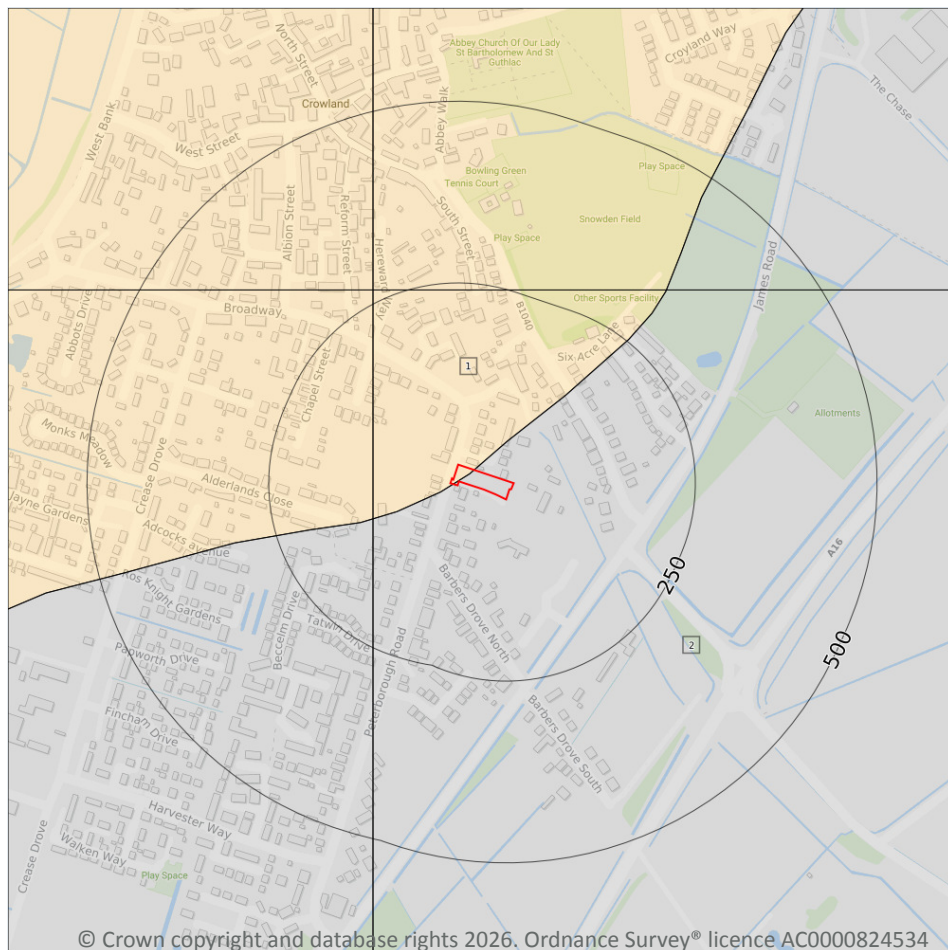
Features are displayed on the Bedrock aquifer map on [page 37](#) >

ID	Location	Designation	Description
1	On site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	240m N	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.



Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

2

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on [page 38](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Unproductive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures
2	On site	Summary Classification: Unproductive aquifer (may have productive aquifer beneath) Combined classification: Unproductive Bedrock Aquifer, Unproductive Superficial Aquifer	Leaching class: Intermediate Infiltration value: >70% Dilution value: <300mm/year	Vulnerability: Unproductive Aquifer type: Unproductive Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Unproductive Aquifer type: Unproductive Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0
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This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



- Site Outline
- Search buffers in metres (m)**
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

1

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 40](#) >

ID	Location	Details	
-	958m N	Status: Historical Licence No: 5/32/11/*G/0024 Details: General Farming & Domestic Direct Source: GROUND WATER SOURCE OF SUPPLY Point: WELL AT 38 POSTLAND ROAD Data Type: Point Name: SMEDLEY Easting: 524300 Northing: 310700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1966 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	82
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on [page 40 >](#)

ID	Location	Details	
-	625m W	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2324108965 Data Type: Line Name: Beeken Bros. Easting: 523241 Northing: 308965	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	625m W	Status: Active Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2324108965 Data Type: Line Name: Beeken Bros. Easting: 523241 Northing: 308965	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
-	625m W	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2324108965 Data Type: Line Name: Beeken Bros. Easting: 523241 Northing: 308965	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	625m W	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2324108965 Data Type: Line Name: Beeken Bros. Easting: 523241 Northing: 308965	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	625m W	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2324108965 Data Type: Line Name: Beeken Bros. Easting: 523241 Northing: 308965	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	625m W	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2324108965 Data Type: Line Name: Beeken Bros. Easting: 523241 Northing: 308965	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
B	664m SE	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: GREEN BANK DRAIN, CROWLAND Data Type: Line Name: J and L D Boor Easting: 524630 Northing: 309220	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: - Original Start Date: 01/06/1986 Expiry Date: - Issue No: 103 Version Start Date: 04/11/2020 Version End Date: -



ID	Location	Details	
B	680m SE	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: POINT B-C (GREEN BANK DRAIN, CROWLAND) Data Type: Line Name: J and L D Boor Easting: 524645 Northing: 309213	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/034628 Original Start Date: 01/06/1986 Expiry Date: - Issue No: 103 Version Start Date: 04/11/2020 Version End Date: -
C	687m SW	Status: Active Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2362508827 Data Type: Line Name: Beeken Bros. Easting: 523625 Northing: 308827	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
C	687m SW	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2362508827 Data Type: Line Name: Beeken Bros. Easting: 523625 Northing: 308827	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
C	687m SW	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2362508827 Data Type: Line Name: Beeken Bros. Easting: 523625 Northing: 308827	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
C	687m SW	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2362508827 Data Type: Line Name: Beeken Bros. Easting: 523625 Northing: 308827	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
C	687m SW	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2362508827 Data Type: Line Name: Beeken Bros. Easting: 523625 Northing: 308827	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
C	687m SW	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2362508827 Data Type: Line Name: Beeken Bros. Easting: 523625 Northing: 308827	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	878m NW	Status: Active Licence No: 5/31/14/*S/0254 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW RIVER DRAIN - CROWLAND Data Type: Line Name: F G TANSLEY & SON Easting: 523258 Northing: 310008	Annual Volume (m ³): 50000 Max Daily Volume (m ³): 4000 Original Application No: NPS/WR/032045 Original Start Date: 01/07/2001 Expiry Date: - Issue No: 2 Version Start Date: 12/01/2021 Version End Date: -
-	878m NW	Status: Active Licence No: 5/31/14/*S/0254 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW RIVER DRAIN - CROWLAND Data Type: Line Name: F G TANSLEY & SON Easting: 523258 Northing: 310008	Annual Volume (m ³): 50000 Max Daily Volume (m ³): 4000 Original Application No: NPS/WR/032045 Original Start Date: 01/07/2001 Expiry Date: - Issue No: 2 Version Start Date: 12/01/2021 Version End Date: -
-	897m W	Status: Historical Licence No: 5/31/14/*S/0254 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW RIVER - CROWLAND Data Type: Line Name: F G TANSLEY & SON Easting: 523250 Northing: 310000	Annual Volume (m ³): 22000 Max Daily Volume (m ³): 4000 Original Application No: - Original Start Date: 01/07/2001 Expiry Date: - Issue No: 1 Version Start Date: 01/07/2001 Version End Date: -



ID	Location	Details	
-	945m W	Status: Historical Licence No: 5/31/14/*S/0178B Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW RIVER AT CROWLAND Data Type: Line Name: F ADAMS & SON Easting: 523200 Northing: 310000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/12/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1993 Version End Date: -
-	965m S	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2418308747 Data Type: Line Name: Beeken Bros. Easting: 523708 Northing: 308355	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	965m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2418308747 Data Type: Line Name: Beeken Bros. Easting: 523708 Northing: 308355	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	965m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2418308747 Data Type: Line Name: Beeken Bros. Easting: 523708 Northing: 308355	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1050m W	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2284809106 Data Type: Line Name: Beeken Bros. Easting: 522848 Northing: 309106	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
-	1050m W	Status: Active Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2284809106 Data Type: Line Name: Beeken Bros. Easting: 522848 Northing: 309106	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1050m W	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2284809106 Data Type: Line Name: Beeken Bros. Easting: 522848 Northing: 309106	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1050m W	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2284809106 Data Type: Line Name: Beeken Bros. Easting: 522848 Northing: 309106	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1050m W	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2284809106 Data Type: Line Name: Beeken Bros. Easting: 522848 Northing: 309106	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1050m W	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2284809106 Data Type: Line Name: Beeken Bros. Easting: 522848 Northing: 309106	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
-	1203m S	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: POINT D-E (FIELD DRAINS, CROWLAND)) Data Type: Line Name: J and L D Boor Easting: 524530 Northing: 308560	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/034628 Original Start Date: 01/06/1986 Expiry Date: - Issue No: 103 Version Start Date: 04/11/2020 Version End Date: -
-	1203m S	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: FIELD DRAINS, CROWLAND Data Type: Line Name: J and L D Boor Easting: 524530 Northing: 308560	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: - Original Start Date: 01/06/1986 Expiry Date: - Issue No: 103 Version Start Date: 04/11/2020 Version End Date: -
-	1217m S	Status: Active Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: GREEN BANK DRAIN (CROWLAND) Data Type: Line Name: Jonathan Boor and Linda Denise Boor Easting: 524523 Northing: 308543	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/038783 Original Start Date: 05/06/1986 Expiry Date: - Issue No: 104 Version Start Date: 02/01/2024 Version End Date: -
-	1217m S	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: GREEN BANK DRAIN (CROWLAND) Data Type: Line Name: J and L D Boor Easting: 524523 Northing: 308543	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/038783 Original Start Date: 02/01/2024 Expiry Date: - Issue No: 104 Version Start Date: 02/01/2024 Version End Date: -
-	1432m SE	Status: Active Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: GREEN BANK DRAIN (CROWLAND) Data Type: Line Name: Jonathan Boor and Linda Denise Boor Easting: 525177 Northing: 308681	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/038783 Original Start Date: 05/06/1986 Expiry Date: - Issue No: 104 Version Start Date: 02/01/2024 Version End Date: -



ID	Location	Details	
-	1432m SE	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: GREEN BANK DRAIN (CROWLAND) Data Type: Line Name: J and L D Boor Easting: 525177 Northing: 308681	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/038783 Original Start Date: 02/01/2024 Expiry Date: - Issue No: 104 Version Start Date: 02/01/2024 Version End Date: -
-	1435m S	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2346608439 Data Type: Line Name: Beeken Bros. Easting: 523466 Northing: 308439	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1435m S	Status: Active Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2346608439 Data Type: Line Name: Beeken Bros. Easting: 523466 Northing: 308439	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1435m S	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2346608439 Data Type: Line Name: Beeken Bros. Easting: 523466 Northing: 308439	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1435m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2346608439 Data Type: Line Name: Beeken Bros. Easting: 523466 Northing: 308439	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
-	1435m S	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2346608439 Data Type: Line Name: Beeken Bros. Easting: 523466 Northing: 308439	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1435m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2346608439 Data Type: Line Name: Beeken Bros. Easting: 523466 Northing: 308439	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1435m S	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2370808355 Data Type: Line Name: Beeken Bros. Easting: 523708 Northing: 308355	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1435m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2370808355 Data Type: Line Name: Beeken Bros. Easting: 523708 Northing: 308355	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1435m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2370808355 Data Type: Line Name: Beeken Bros. Easting: 523708 Northing: 308355	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
-	1490m NW	Status: Historical Licence No: 5/31/14/*S/0254 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: RIVER WELLAND - CROWLAND Data Type: Line Name: F G TANSLEY & SON Easting: 522930 Northing: 310660	Annual Volume (m ³): 22000 Max Daily Volume (m ³): 4000 Original Application No: - Original Start Date: 01/07/2001 Expiry Date: - Issue No: 1 Version Start Date: 01/07/2001 Version End Date: -
-	1538m NW	Status: Historical Licence No: 5/31/14/*S/0178B Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: RIVER WELLAND AT CROWLAND Data Type: Line Name: F ADAMS & SON Easting: 522900 Northing: 310700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/12/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1993 Version End Date: -
-	1551m SE	Status: Active Licence No: 5/32/11/*S/0144/R01 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW SOUTH EAU DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 525264 Northing: 308599	Annual Volume (m ³): 110000 Max Daily Volume (m ³): 6000 Original Application No: NPS/WR/038922 Original Start Date: 01/11/2017 Expiry Date: 31/03/2029 Issue No: 2 Version Start Date: 02/05/2024 Version End Date: -
-	1551m SE	Status: Historical Licence No: 5/32/11/*S/0144/R01 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW SOUTH EAU DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 525264 Northing: 308599	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: NPS/WR/023392 Original Start Date: 01/11/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/11/2017 Version End Date: -
-	1551m SE	Status: Historical Licence No: 5/32/11/*S/0144/R01 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW SOUTH EAU DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 525264 Northing: 308599	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: NPS/WR/023392 Original Start Date: 01/11/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/11/2017 Version End Date: -



ID	Location	Details	
-	1551m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW SOUTH EAU DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 525264 Northing: 308599	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -
-	1551m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW SOUTH EAU DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 525264 Northing: 308599	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -
-	1561m SE	Status: Active Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: GRREN BANK DRAIN (CROWLAND) Data Type: Line Name: Jonathan Boor and Linda Denise Boor Easting: 525256 Northing: 308578	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/038783 Original Start Date: 05/06/1986 Expiry Date: - Issue No: 104 Version Start Date: 02/01/2024 Version End Date: -
-	1561m SE	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: GRREN BANK DRAIN (CROWLAND) Data Type: Line Name: J and L D Boor Easting: 525256 Northing: 308578	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/038783 Original Start Date: 02/01/2024 Expiry Date: - Issue No: 104 Version Start Date: 02/01/2024 Version End Date: -
-	1562m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW SOUTH EAU DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 525270 Northing: 308590	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -



ID	Location	Details	
-	1562m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: NEW SOUTH EAU DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 525270 Northing: 308590	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -
-	1563m SE	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HUNDREDS DRAIN, CROWLAND Data Type: Line Name: J and L D Boor Easting: 525250 Northing: 308570	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: - Original Start Date: 01/06/1986 Expiry Date: - Issue No: 103 Version Start Date: 04/11/2020 Version End Date: -
-	1564m SE	Status: Historical Licence No: 5/32/11/*S/0112 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: POINT F-G - (HUNDREDS DRAIN, CROWLAND) Data Type: Line Name: J and L D Boor Easting: 525244 Northing: 308563	Annual Volume (m ³): 15000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/034628 Original Start Date: 01/06/1986 Expiry Date: - Issue No: 103 Version Start Date: 04/11/2020 Version End Date: -
-	1615m SE	Status: Active Licence No: 5/32/11/*S/0144/R01 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: REACH A AT HUNDREDS DRAIN Data Type: Line Name: N WOODROFFE & SONS Easting: 524972 Northing: 308303	Annual Volume (m ³): 110000 Max Daily Volume (m ³): 6000 Original Application No: NPS/WR/038922 Original Start Date: 01/11/2017 Expiry Date: 31/03/2029 Issue No: 2 Version Start Date: 02/05/2024 Version End Date: -
-	1615m SE	Status: Historical Licence No: 5/32/11/*S/0144/R01 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HUNDREDS DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 523927 Northing: 307228	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: NPS/WR/023392 Original Start Date: 01/11/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/11/2017 Version End Date: -



ID	Location	Details	
-	1615m SE	Status: Historical Licence No: 5/32/11/*S/0144/R01 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HUNDREDS DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 523927 Northing: 307228	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: NPS/WR/023392 Original Start Date: 01/11/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/11/2017 Version End Date: -
-	1615m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HUNDREDS DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 523927 Northing: 307228	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -
-	1615m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HUNDREDS DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 523927 Northing: 307228	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -
-	1620m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HUNDREDS DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 523900 Northing: 307210	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -
-	1620m SE	Status: Historical Licence No: 5/32/11/*S/0144 Details: Transfer Between Sources (Pre Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: HUNDREDS DRAIN AT THORNEY Data Type: Line Name: N WOODROFFE & SONS Easting: 523900 Northing: 307210	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 3000 Original Application No: - Original Start Date: 23/09/1997 Expiry Date: 31/10/2017 Issue No: 102 Version Start Date: 16/07/2008 Version End Date: -



ID	Location	Details	
-	1676m NW	Status: Active Licence No: 5/31/14/*S/0160 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COMMON DRAIN, CROWLAND Data Type: Line Name: WHEAT Easting: 521919 Northing: 312031	Annual Volume (m ³): 30000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/013689 Original Start Date: 01/09/1983 Expiry Date: - Issue No: 101 Version Start Date: 18/10/2013 Version End Date: -
-	1819m NW	Status: Historical Licence No: 5/31/14/*S/0178A Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COMMON DRAIN CROWLAND Data Type: Line Name: F ADAMS & SON Easting: 522700 Northing: 310900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/12/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1992 Version End Date: -
-	1854m NW	Status: Historical Licence No: 5/31/14/*S/0253 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COMMON DRAIN - CROWLAND COMMON Data Type: Line Name: F G TANSLEY & SON Easting: 522680 Northing: 310930	Annual Volume (m ³): 28000 Max Daily Volume (m ³): 4000 Original Application No: - Original Start Date: 01/07/2001 Expiry Date: - Issue No: 1 Version Start Date: 01/07/2001 Version End Date: -
-	1857m NW	Status: Active Licence No: 5/31/14/*S/0253 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COMMON DRAIN CROWLAND COMMON Data Type: Line Name: F G TANSLEY & SON Easting: 522683 Northing: 310939	Annual Volume (m ³): 50000 Max Daily Volume (m ³): 4000 Original Application No: NPS/WR/032035 Original Start Date: 01/07/2001 Expiry Date: - Issue No: 2 Version Start Date: 12/01/2021 Version End Date: -
-	1857m NW	Status: Active Licence No: 5/31/14/*S/0253 Details: Trickle Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: COMMON DRAIN CROWLAND COMMON Data Type: Line Name: F G TANSLEY & SON Easting: 522683 Northing: 310939	Annual Volume (m ³): 50000 Max Daily Volume (m ³): 4000 Original Application No: NPS/WR/032035 Original Start Date: 01/07/2001 Expiry Date: - Issue No: 2 Version Start Date: 12/01/2021 Version End Date: -



ID	Location	Details	
-	1880m S	Status: Active Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2358607928 Data Type: Line Name: Beeken Bros. Easting: 523586 Northing: 307928	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1880m S	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2358607928 Data Type: Line Name: Beeken Bros. Easting: 523586 Northing: 307928	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1880m S	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2358607928 Data Type: Line Name: Beeken Bros. Easting: 523586 Northing: 307928	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1880m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2358607928 Data Type: Line Name: Beeken Bros. Easting: 523586 Northing: 307928	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1880m S	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2358607928 Data Type: Line Name: Beeken Bros. Easting: 523586 Northing: 307928	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
-	1880m S	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2358607928 Data Type: Line Name: Beeken Bros. Easting: 523586 Northing: 307928	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1956m NW	Status: Active Licence No: 5/31/14/*S/0185 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: R WELLAND AT CROWLAND Data Type: Line Name: J and L D Boor Easting: 523018 Northing: 311378	Annual Volume (m ³): 10000 Max Daily Volume (m ³): 2000 Original Application No: NPS/WR/034552 Original Start Date: 01/06/1986 Expiry Date: - Issue No: 103 Version Start Date: 08/12/2020 Version End Date: -
-	1957m NW	Status: Historical Licence No: 5/31/14/*S/0185 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: R WELLAND AT CROWLAND Data Type: Line Name: BOOR Easting: 523020 Northing: 311380	Annual Volume (m ³): 10000 Max Daily Volume (m ³): 2000 Original Application No: - Original Start Date: 01/06/1986 Expiry Date: - Issue No: 101 Version Start Date: 23/02/2005 Version End Date: -
-	1985m NW	Status: Historical Licence No: 5/31/14/*S/0185 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: R WELLAND AT CROWLAND Data Type: Line Name: BOOR Easting: 523000 Northing: 311400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/06/1986 Expiry Date: - Issue No: 100 Version Start Date: 01/06/1986 Version End Date: -
-	1991m SW	Status: Active Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2156409172 Data Type: Line Name: Beeken Bros. Easting: 521564 Northing: 309172	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



ID	Location	Details	
-	1991m SW	Status: Active Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2156409172 Data Type: Line Name: Beeken Bros. Easting: 521564 Northing: 309172	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 2400 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1991m SW	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2156409172 Data Type: Line Name: Beeken Bros. Easting: 521564 Northing: 309172	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1991m SW	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2156409172 Data Type: Line Name: Beeken Bros. Easting: 521564 Northing: 309172	Annual Volume (m ³): 85000 Max Daily Volume (m ³): 1200 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1991m SW	Status: Historical Licence No: AN/032/0011/063 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2156409172 Data Type: Line Name: Beeken Bros. Easting: 521564 Northing: 309172	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -
-	1991m SW	Status: Historical Licence No: AN/032/0011/063 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: TF2156409172 Data Type: Line Name: Beeken Bros. Easting: 521564 Northing: 309172	Annual Volume (m ³): 239544 Max Daily Volume (m ³): 3600 Original Application No: NPS/WR/037254 Original Start Date: 12/05/2023 Expiry Date: 31/03/2038 Issue No: 1 Version Start Date: 12/05/2023 Version End Date: -



This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m

0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m

0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m

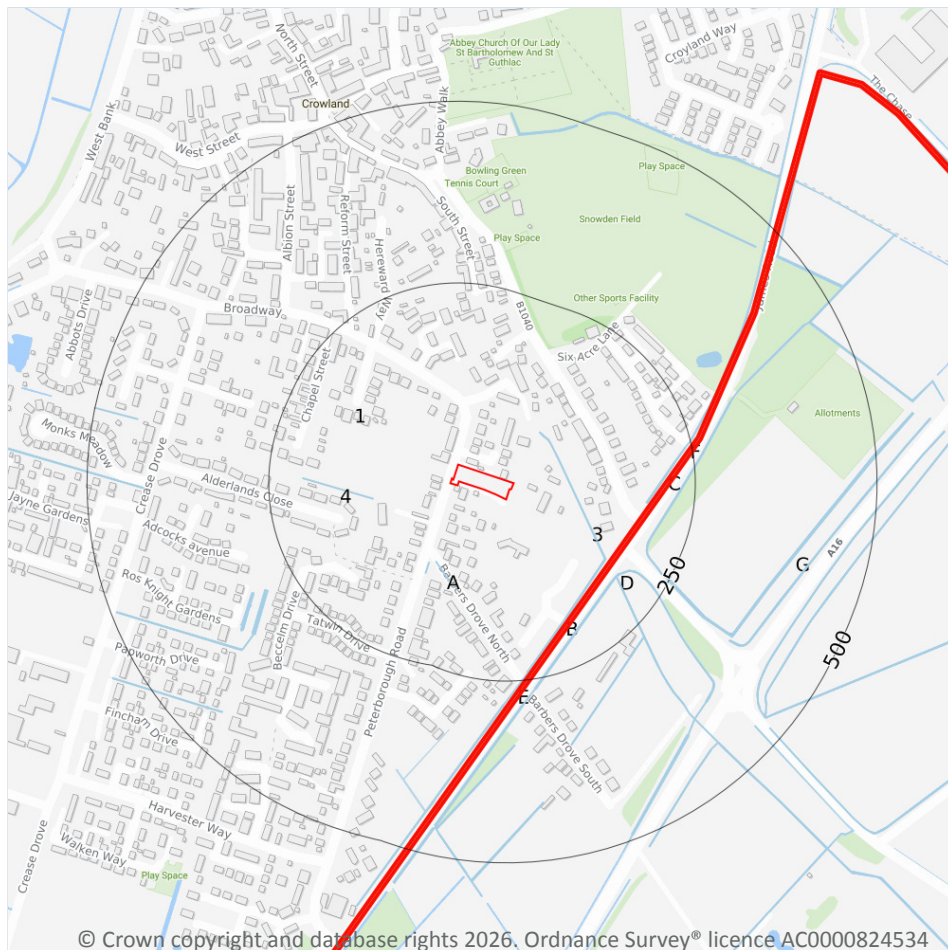
0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.



6 Hydrology



- Site Outline
- Search buffers in metres (m)
- Water Network (OS NGD)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS NGD)

Records within 250m

18

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on [page 59 >](#)

ID	Location	Type of water feature	Ground level	Permanence	Name
3	70m NE	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
4	108m W	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	109m S	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	112m S	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	183m SE	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	185m SE	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	185m SE	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	185m SE	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	185m E	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	186m SE	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	187m SE	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	188m SE	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	202m E	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	238m SE	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
E	241m S	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-
F	242m E	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-
G	247m SE	Drain. A manmade watercourse for the removal of excess water from an area.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	249m SE	Drain. A manmade watercourse for the removal of excess water from an area.	Underground	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey®.

6.2 Surface water features

Records within 250m

7

Covering rivers, streams and lakes (some overlap with OS NGD Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on [page 59 >](#)

This data is sourced from the Ordnance Survey®.

6.3 WFD Surface water body catchments

Records on site

1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on [page 59 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Welland - conf Greatford Cut to tidal	GB205031050685	Welland Lower	Welland

This data is sourced from the Environment Agency and Natural Resources Wales.



6.4 WFD Surface water bodies

Records identified

1

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on [page 59](#) >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1456m NW	River	Welland - conf Greatford Cut to tidal	GB205031050685 ↗	No longer applicable	Does not require assessment	Moderate	2022

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

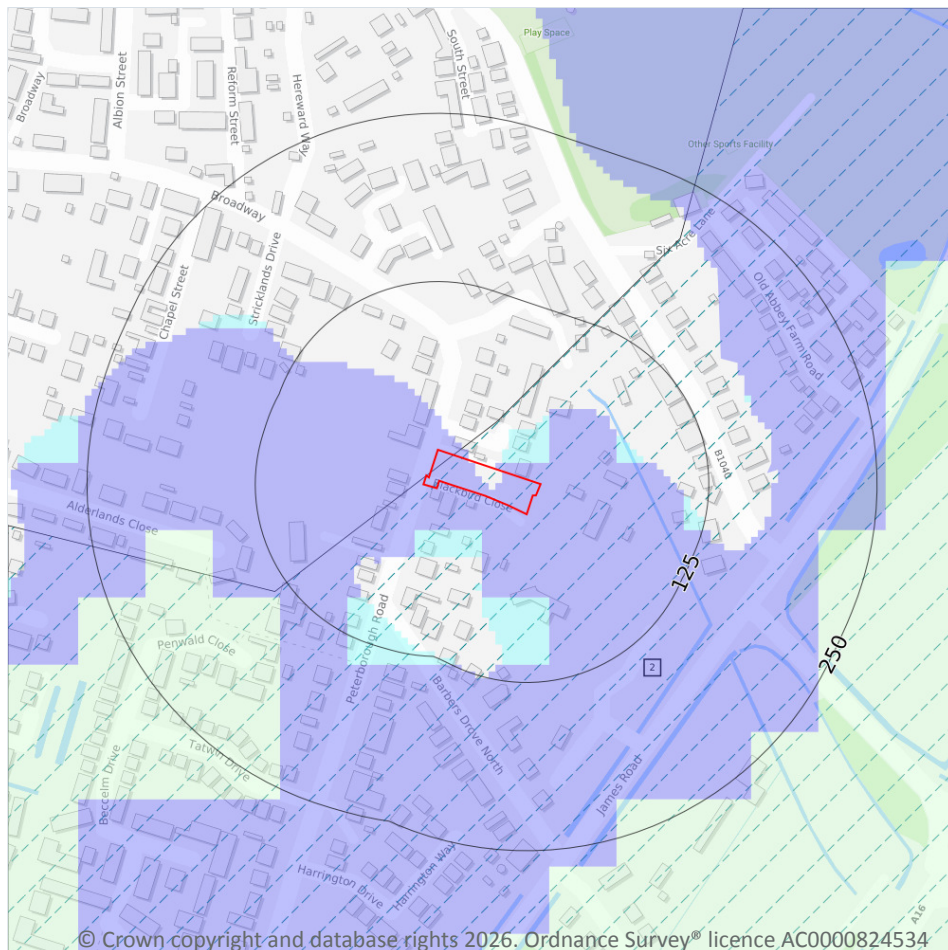
Records on site

0

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
 - High
 - Medium
 - Low
 - Very Low
 - Historical Flood Events
 - Areas Used for Flood Storage
 - Areas Benefiting from Flood Defences
 - Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m

3

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on [page 63](#) >

Distance	Flood risk category
On site	Medium
0 - 50m	Medium

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	1
----------------------------	----------

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

Features are displayed on the River and coastal flooding map on [page 63](#) >

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
2	On site	Lna_1947_March_River Welland_Crowland	1947-03-16 1947-03-18	Main river	Other	Fluvial

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0
----------------------------	----------

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0
----------------------------	----------

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m

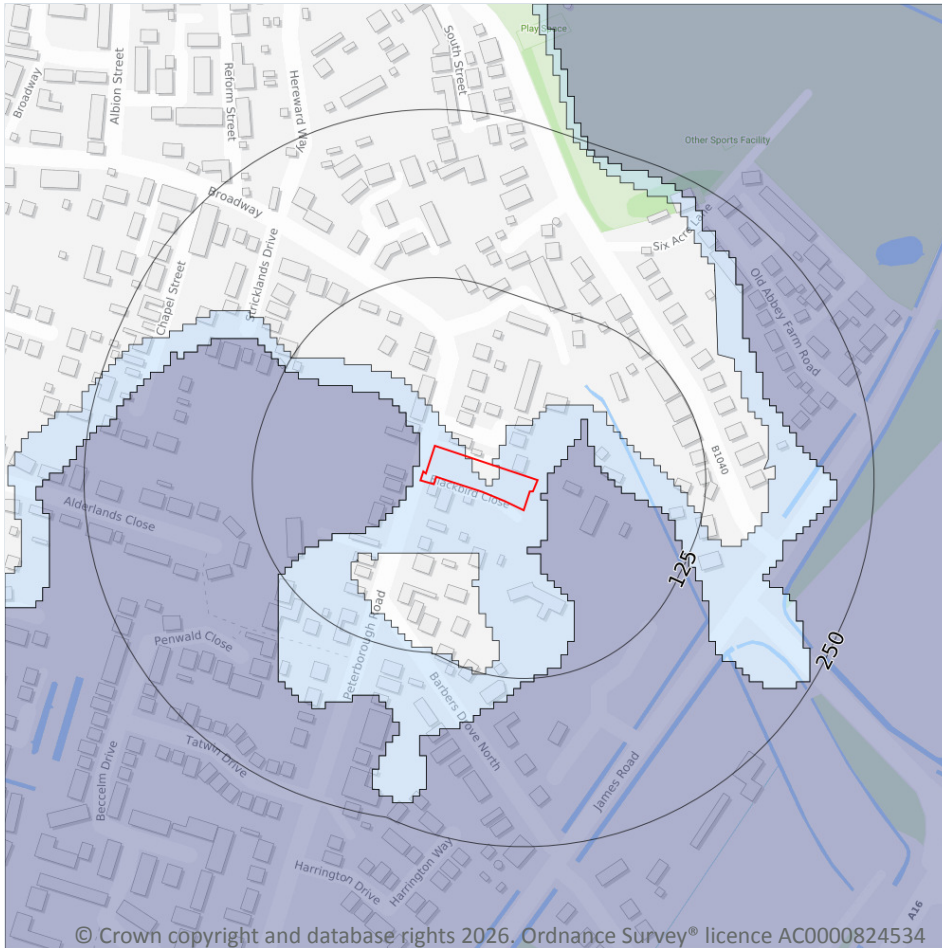
0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.



River and coastal flooding - Flood Zones



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on [page 63](#) >

Location	Type
On site	Zone 2 - (Fluvial /Tidal Models)

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m

1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

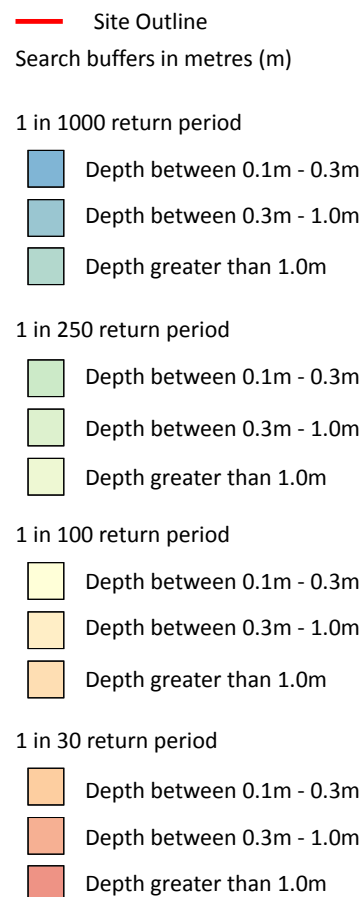
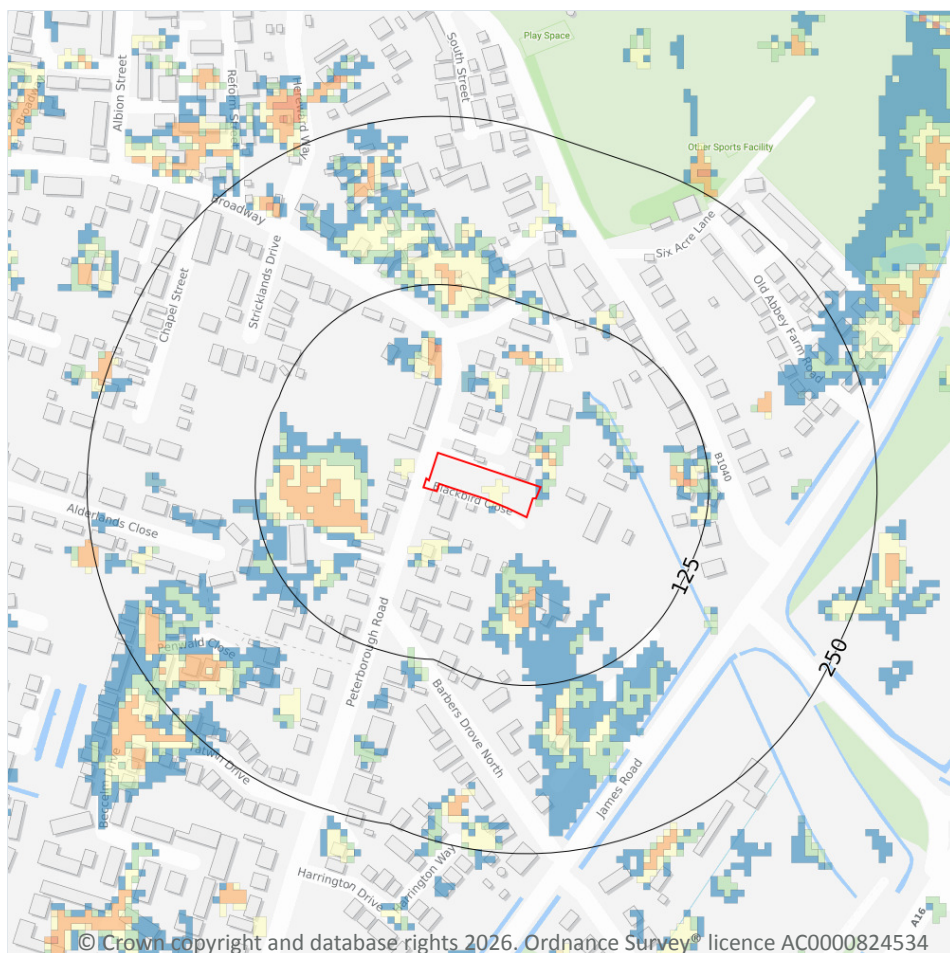
Features are displayed on the River and coastal flooding map on [page 63](#) >

Location	Type
5m NW	Zone 3 - (Fluvial /Tidal Models)

This data is sourced from the Environment Agency and Natural Resources Wales.



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 100 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on [page 68](#) >

The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

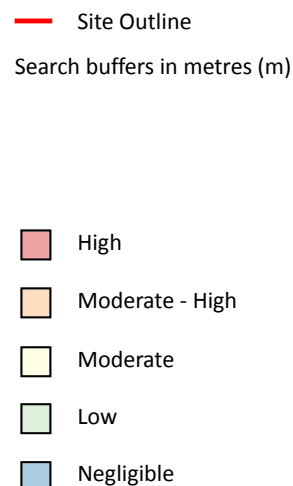
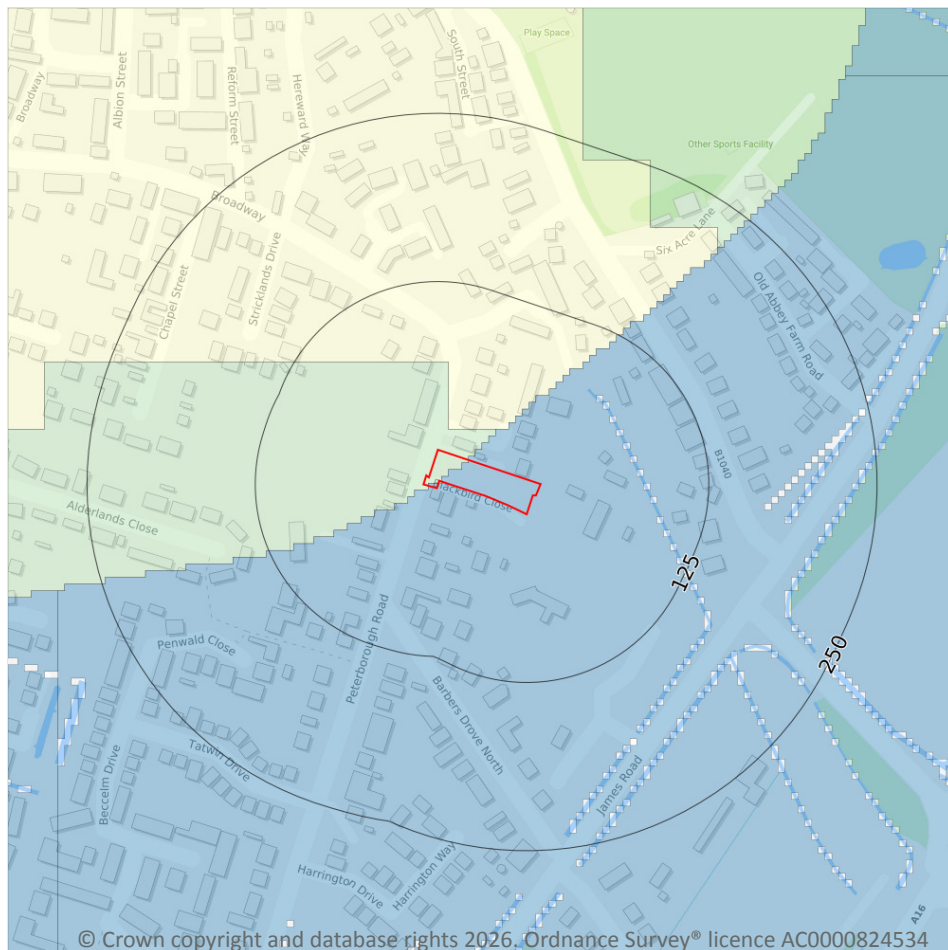
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.1m and 0.3m
1 in 250 year	Between 0.1m and 0.3m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Moderate

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on [page 70 >](#)

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m

0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m

0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.5 National Nature Reserves (NNR)

Records within 2000m**0**

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m**0**

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m**0**

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.



10.9 Forest Parks

Records within 2000m

0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m

0

Areas designated to prevent urban sprawl by keeping land permanently open.

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m

0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m**3**

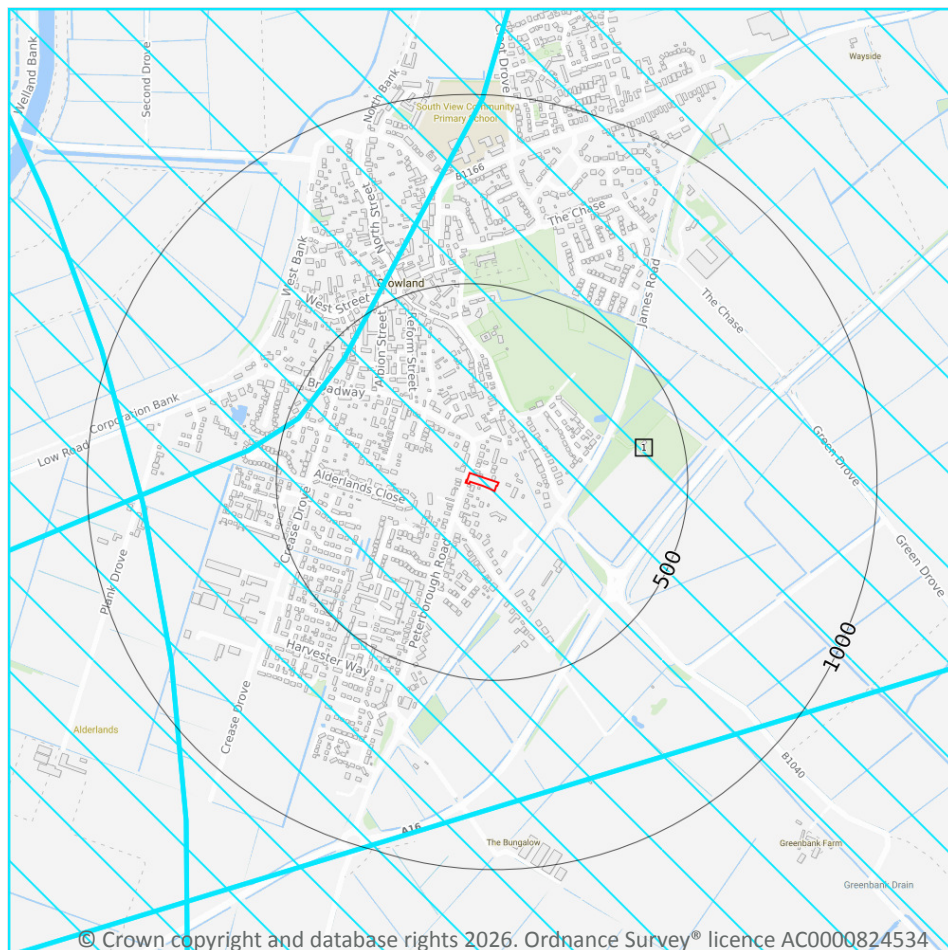
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	River Welland NVZ	Surface Water	832	Existing
15m W	River Welland NVZ	Surface Water	832	Existing
1490m NW	Vernatt's Drain NVZ	Surface Water	379	Existing

This data is sourced from Natural England and Natural Resources Wales.



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on [page 75 >](#)

ID	Location	Type of developments requiring consultation
1	On site	https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0300000000000&notes=&location=525754,311746%20(IRZ%20polygon%20centre)

This data is sourced from Natural England.



10.18 SSSI Units

Records within 2000m

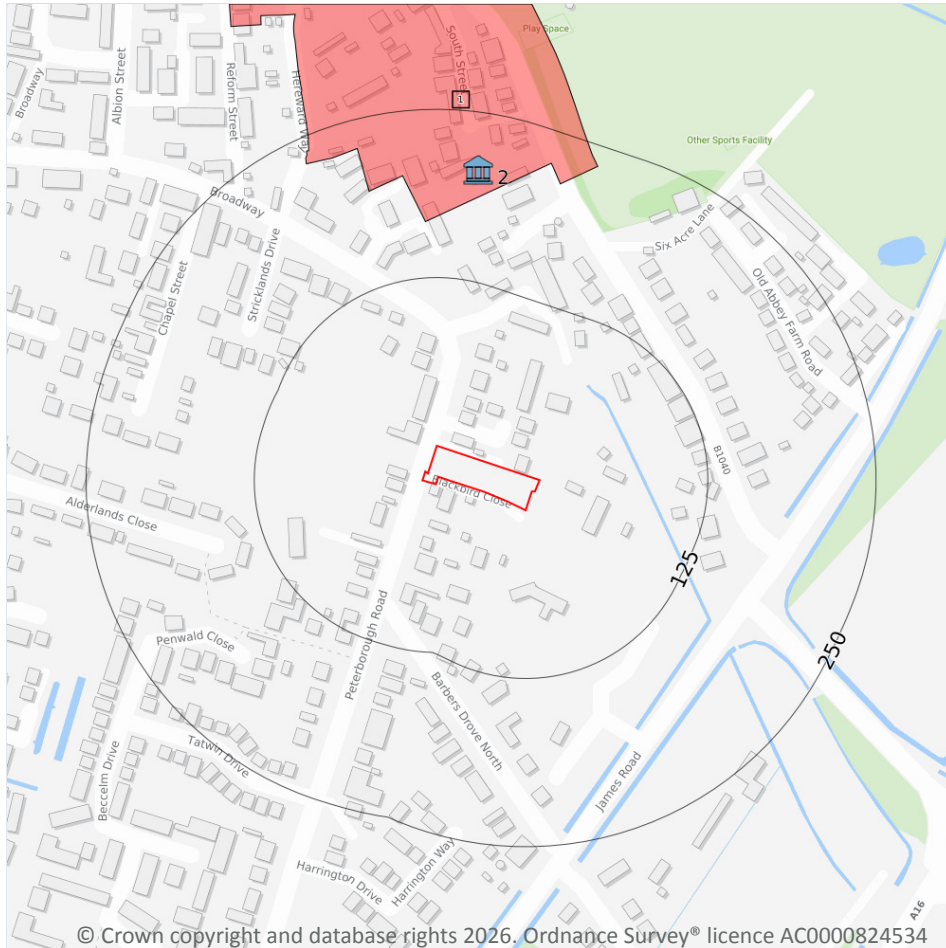
0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.



11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m

0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m**0**

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m**0**

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m**1**

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on [page 77 >](#)

ID	Location	Name	Grade	Reference Number	Listed date
2	208m N	Crawford House	II	1166309	07/12/1987

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



11.5 Conservation Areas

Records within 250m

1

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on [page 77](#) >

ID	Location	Name	District	Date of designation
1	167m N	Crowland	South Holland	1970

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m

0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

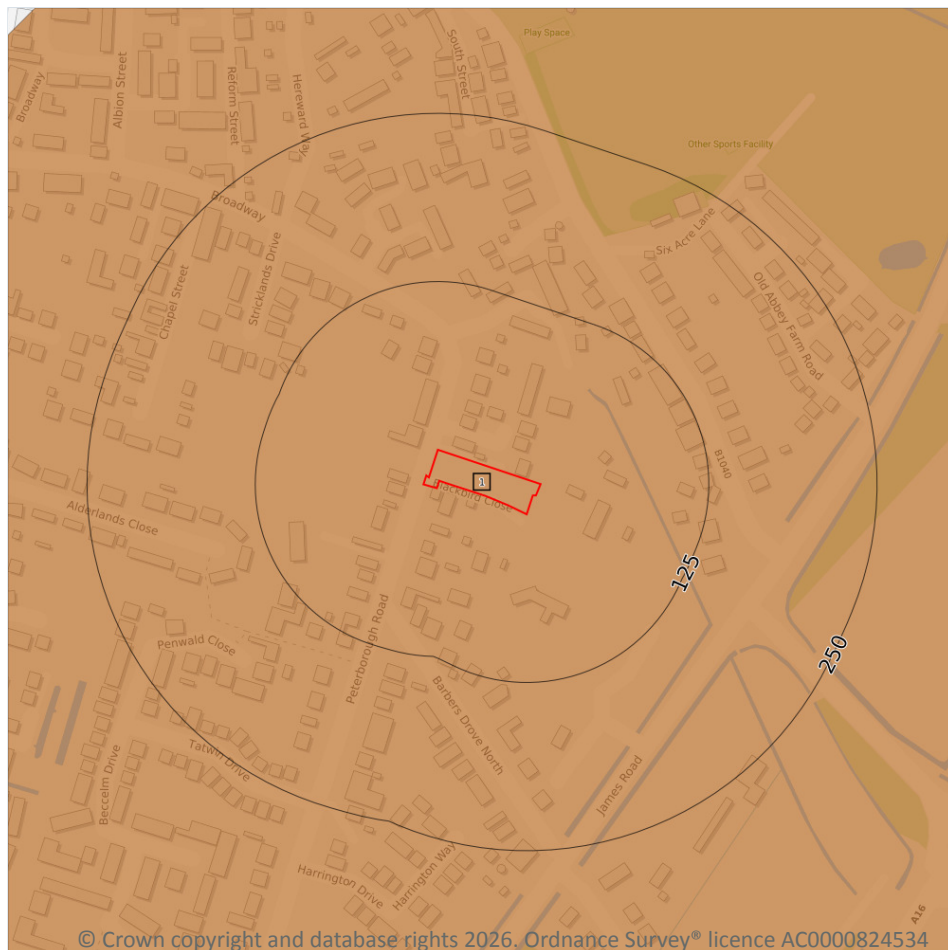
0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on [page 80](#) >

ID	Location	Classification	Description
1	On site	Grade 2	Very good quality agricultural land. Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural and horticultural crops can usually be grown but on some land in the grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1.

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0
---------------------	---

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0
---------------------	---

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0
---------------------	---

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

2

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 84](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	TF20NW
2	240m N	No coverage	Full	Full	No coverage	TF21SW

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m

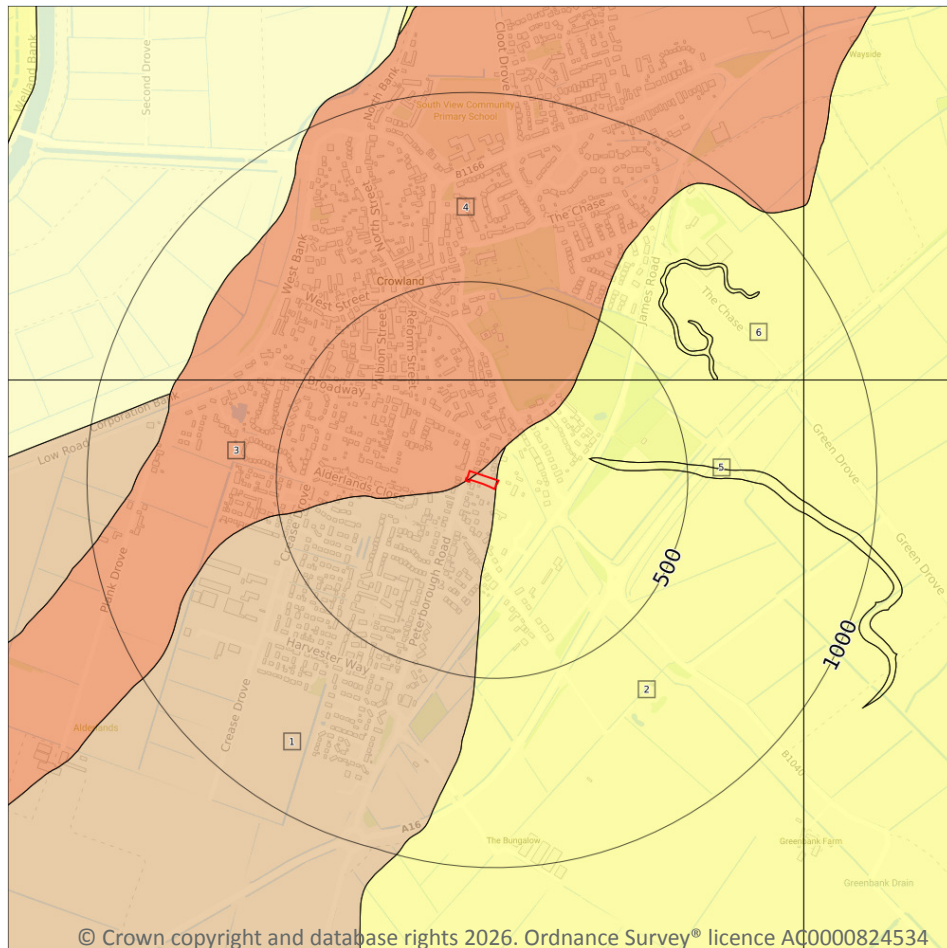
0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

6

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 86](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	NP-P	Nordelph Peat-Peat	Peat
2	On site	BYD-XCZ	Barroway Drove Beds-Clay And Silt	Clay and silt
3	On site	ABSG-XSV	Abbey Sand And Gravel Member-Sand And Gravel	Sand and gravel
4	240m N	ABSG-XSV	Abbey Sand And Gravel Member-Sand And Gravel	Sand and gravel



ID	Location	LEX Code	Description	Rock description
5	248m E	BYD-XSZ	Barroway Drove Beds-Sand And Silt	Sand and silt
6	336m NE	BYD-XCZ	Barroway Drove Beds-Clay And Silt	Clay and silt

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

2

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 88](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	OXC-MDST	Oxford Clay Formation-Mudstone	Callovian
2	240m N	OXC-MDST	Oxford Clay Formation-Mudstone	Callovian

This data is sourced from the British Geological Survey.



14.6 Bedrock faults and other linear features (10k)

Records within 500m

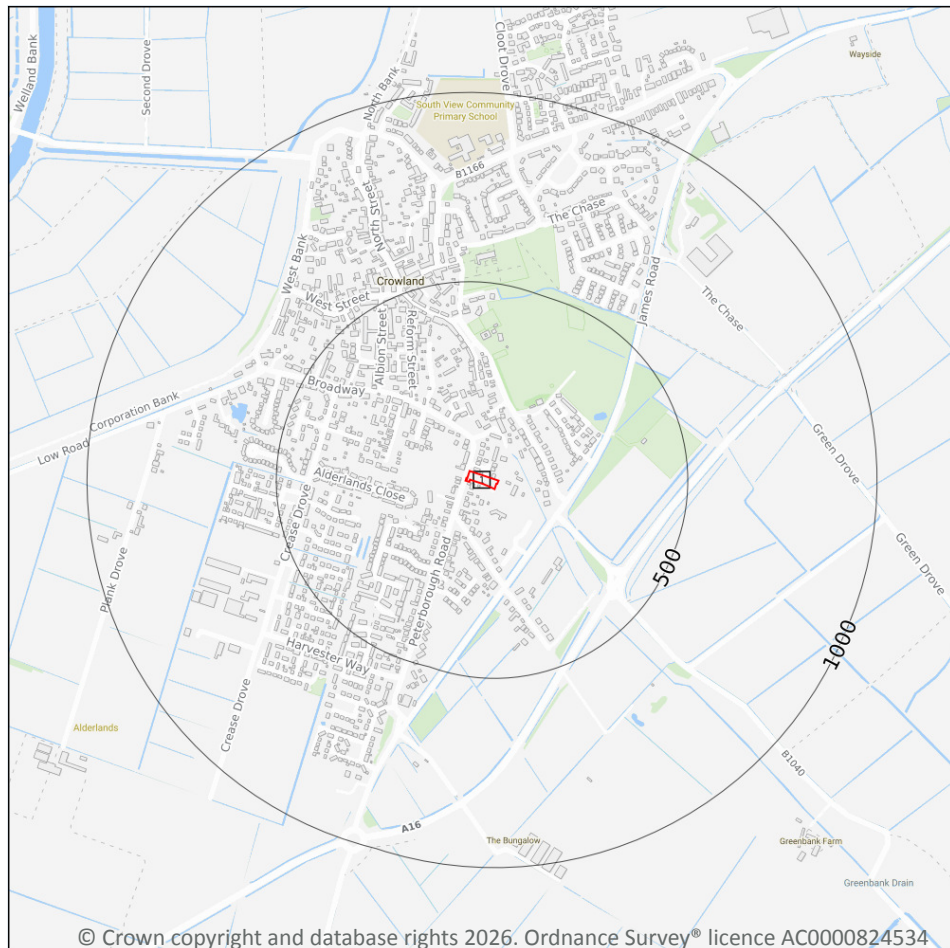
0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 90](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	EW158_peterborough_v4

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m

0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

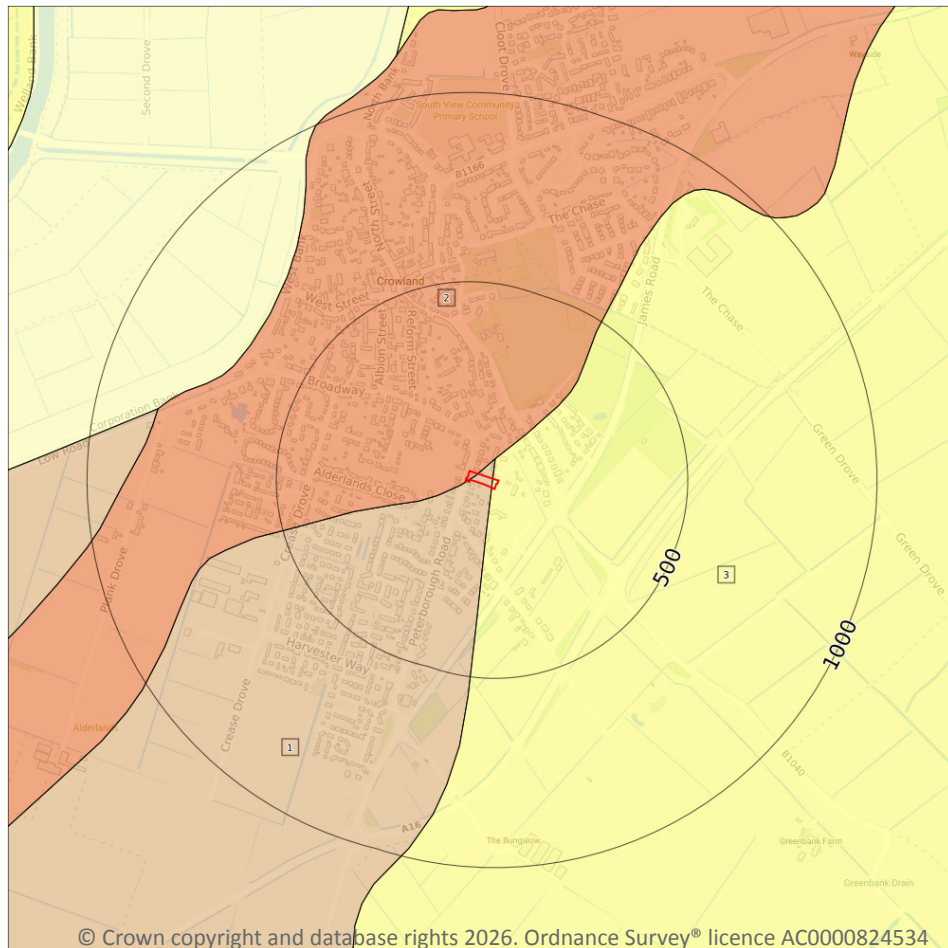
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

3

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 92](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	Peat	Peat
2	On site	ABSG-XSV	Abbey Sand and Gravel Member	Sand and gravel
3	On site	TFD1-XCZ	Tidal flat deposits, 1	Clay and silt

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**3**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Low	Very Low
On site	Intergranular	Very High	High
On site	Mixed	Low	Very Low

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m**0**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m

1

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 94](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	OXC-MDST	Oxford Clay Formation-Mudstone	Callovian

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m**1**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Low	Very Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

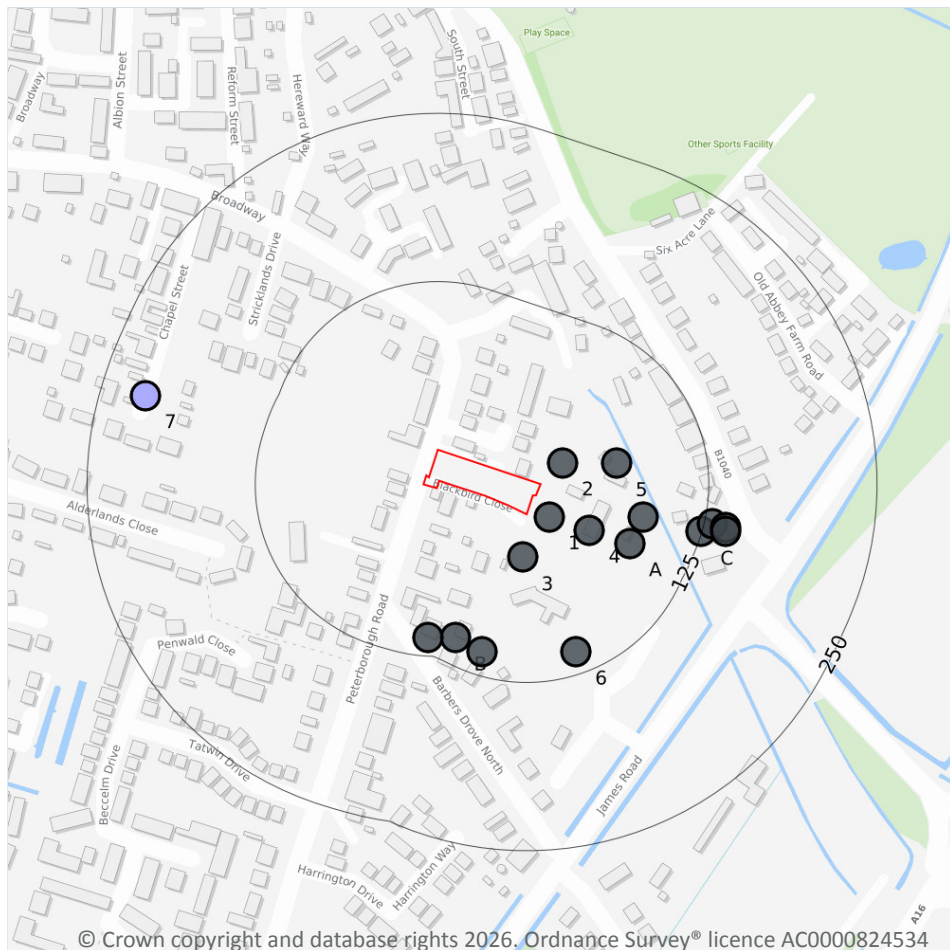
Records within 500m**0**

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.



16 Boreholes



- Site Outline**
- Search buffers in metres (m)**
- Confidential
 - 0 - 10m
 - 10 - 30m
 - 30m+
 - Unknown

16.1 BGS Boreholes

Records within 250m

16

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on [page 96](#) >

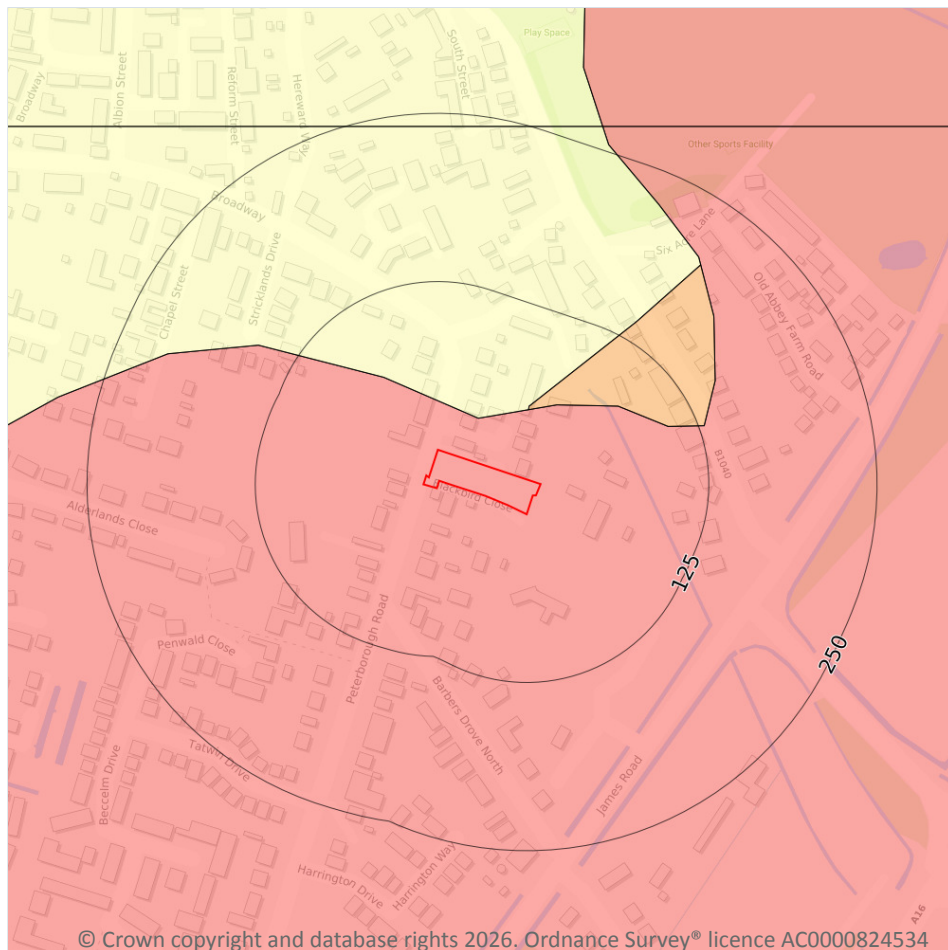
ID	Location	Grid reference	Name	Length	Confidential	Web link
1	17m E	524200 309710	CROWLAND PETERBOROUGH TP3	-	Y	N/A
2	23m NE	524210 309750	CROWLAND PETERBOROUGH TP4	-	Y	N/A
3	32m S	524180 309680	CROWLAND PETERBOROUGH TP2	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
4	48m SE	524230 309700	CROWLAND PETERBOROUGH TP8	-	Y	N/A
5	59m E	524250 309750	CROWLAND PETERBOROUGH TP7	-	Y	N/A
A	79m SE	524260 309690	CROWLAND PETERBOROUGH TP5	-	Y	N/A
A	80m E	524270 309710	CROWLAND PETERBOROUGH TP6	-	Y	N/A
B	106m SW	524130 309620	CROWLAND PETERBOROUGH TP11	-	Y	N/A
B	107m S	524150 309610	CROWLAND PETERBOROUGH TP1	-	Y	N/A
6	108m S	524220 309610	CROWLAND PETERBOROUGH TP9	-	Y	N/A
B	111m S	524110 309620	CROWLAND PETERBOROUGH TP10	-	Y	N/A
C	125m E	524313 309699	CROWLAND FIRE STATION 1	-	Y	N/A
C	131m E	524321 309705	CROWLAND FIRE STATION 2	-	Y	N/A
C	141m E	524331 309702	CROWLAND FIRE STATION 3A	-	Y	N/A
C	142m E	524331 309699	CROWLAND FIRE STATION 3	-	Y	N/A
7	217m W	523900 309800	CHAPEL STREET CROWLAND	2.4	N	473029 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



- Site Outline**
- Search buffers in metres (m)**
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

3

The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 98 >](#)

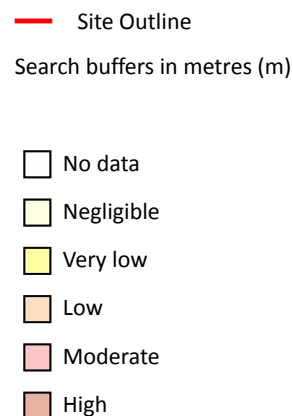
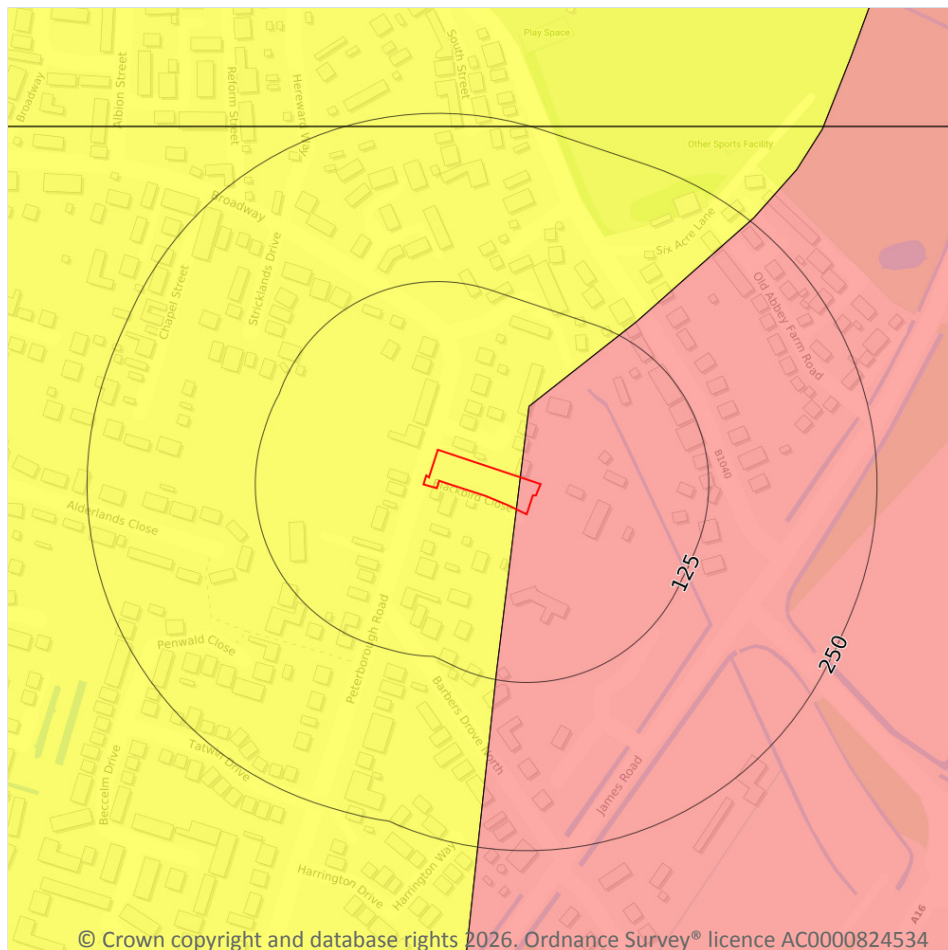
Location	Hazard rating	Details
On site	Moderate	Ground conditions predominantly high plasticity.
32m N	Negligible	Ground conditions predominantly non-plastic.
50m N	Low	Ground conditions predominantly medium plasticity.



This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on [page 100](#) >

Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

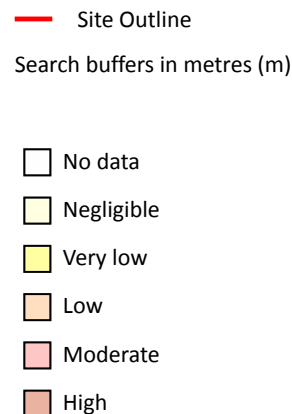
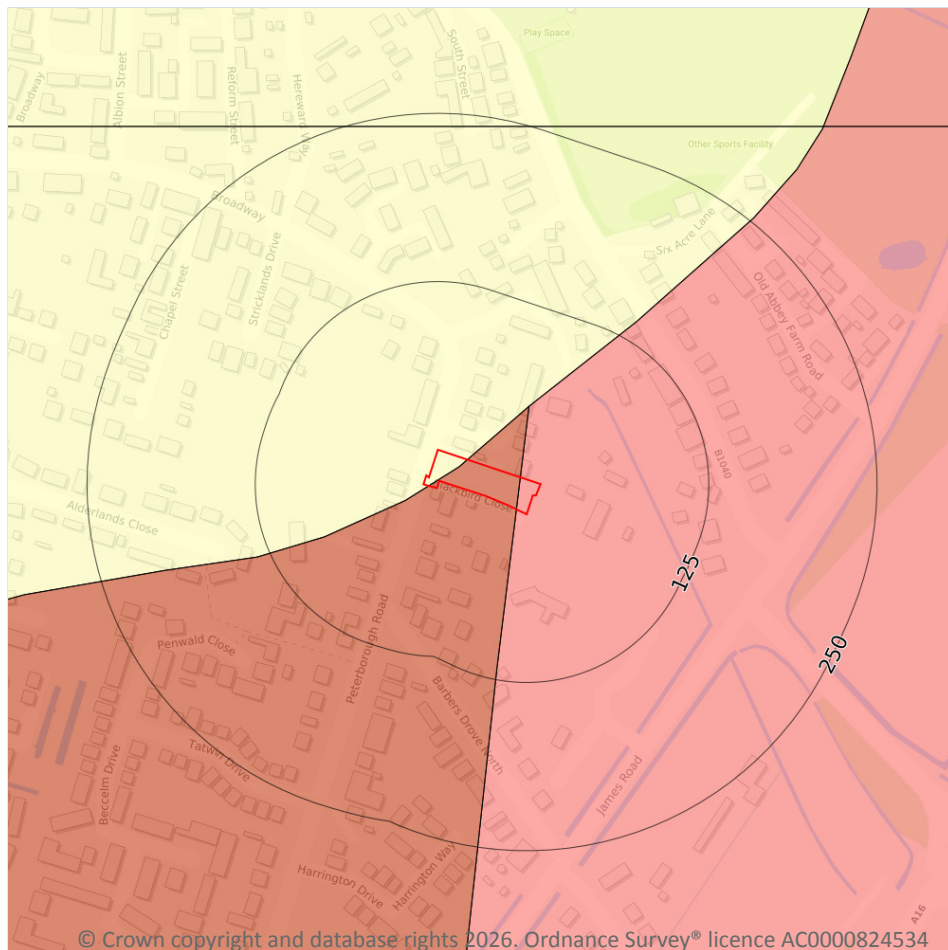


Location	Hazard rating	Details
On site	Moderate	Running sand conditions are probably present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

3

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 102](#) >

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.



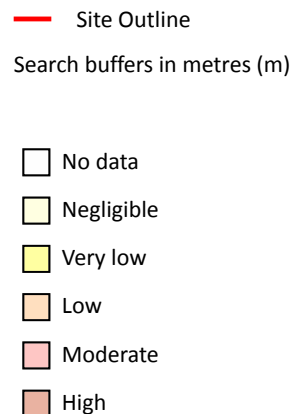
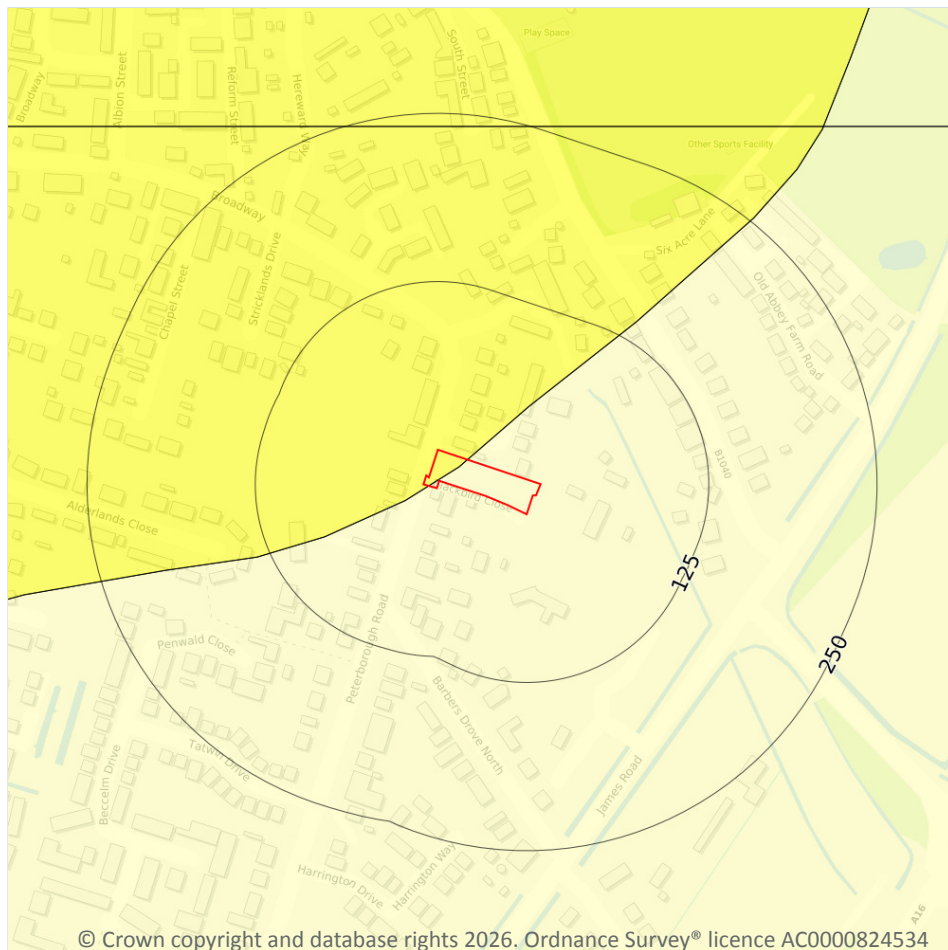
Location	Hazard rating	Details
----------	---------------	---------

On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.
---------	------	--

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m

2

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

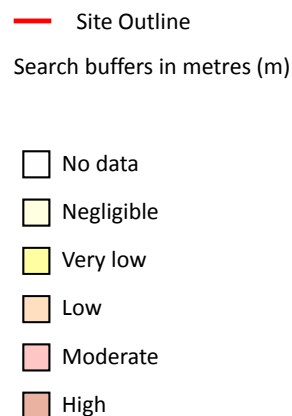
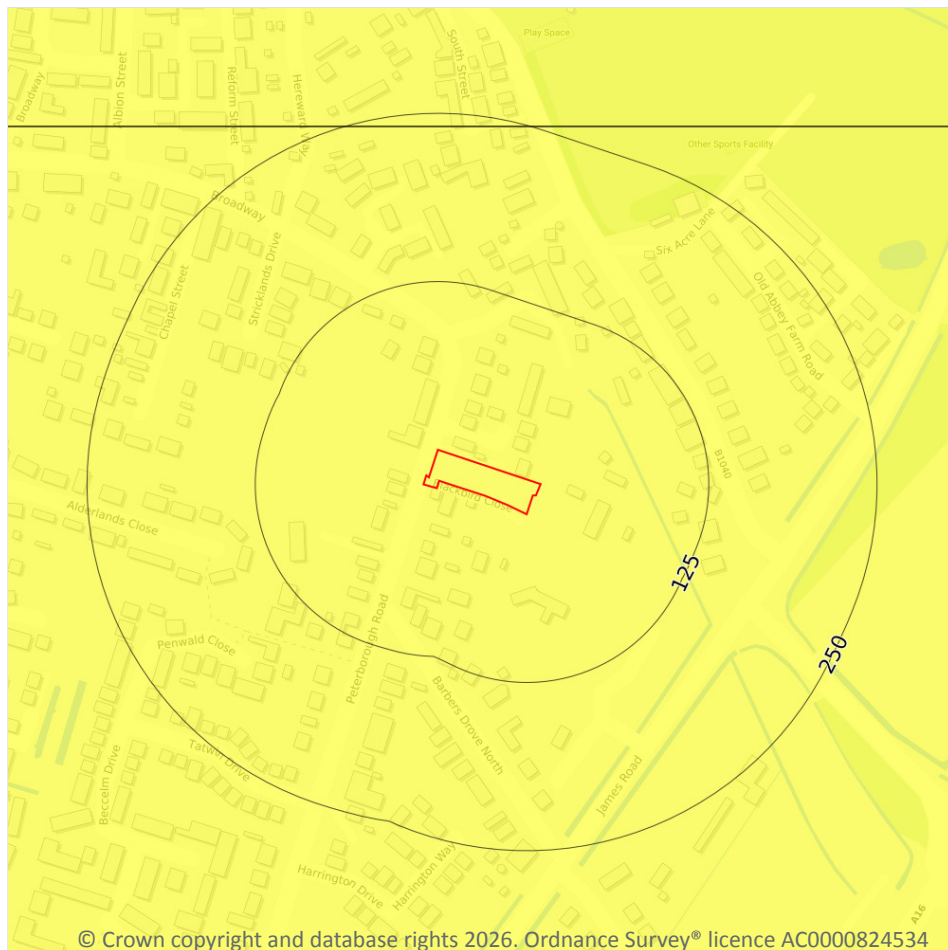
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 104](#) >

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

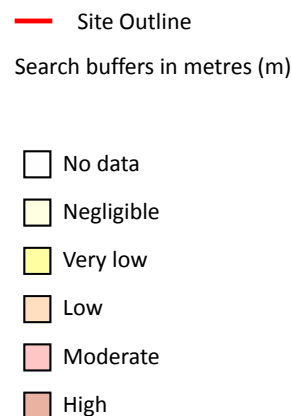
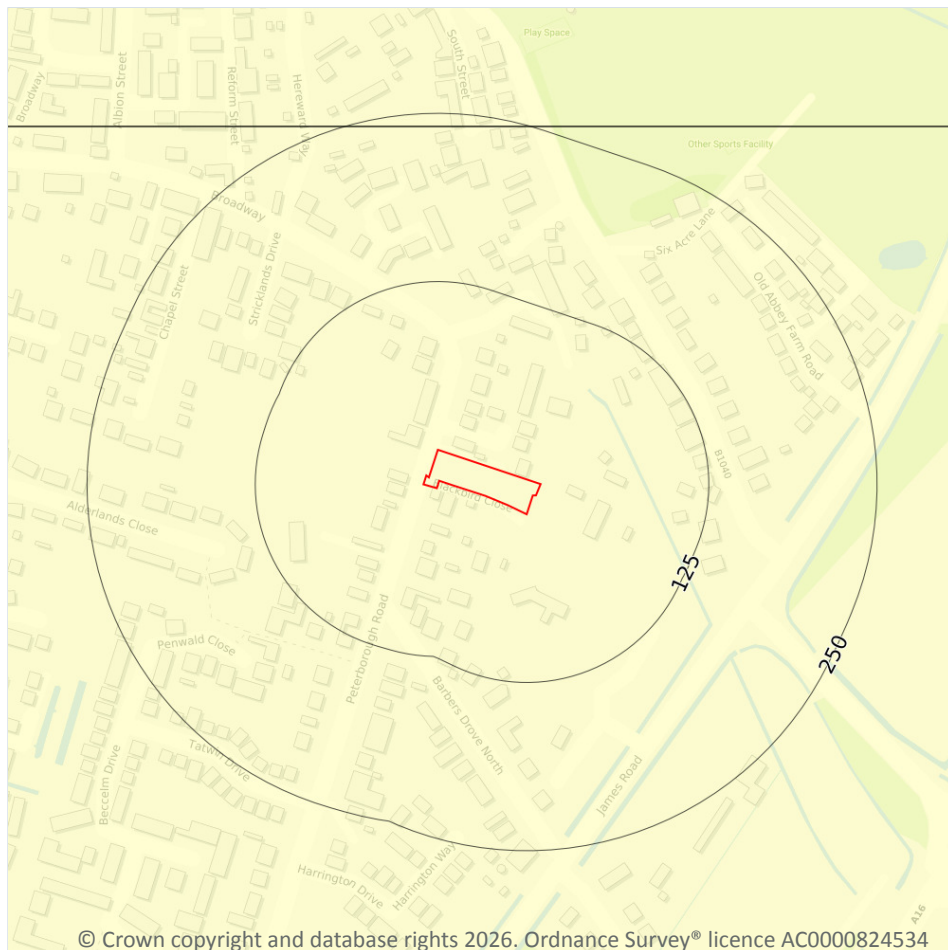
Features are displayed on the Natural ground subsidence - Landslides map on [page 105 >](#)

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 106](#) >

Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings

18.1 BritPits

Records within 500m

0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

0

Historical land uses identified from Ordnance Survey® mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

This data is sourced from Ordnance Survey®/Groundsure.

18.3 Underground workings

Records within 1000m

0

Historical land uses identified from Ordnance Survey® mapping that indicate the presence of underground workings e.g. mine shafts.

This data is sourced from Ordnance Survey®/Groundsure.

18.4 Underground mining extents

Records within 500m

0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m**0**

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m**0**

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m**0**

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site**0**

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site**0**

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.



18.14 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0
-----------------	---

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey® maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

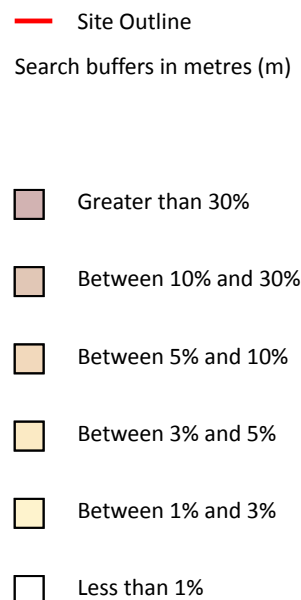
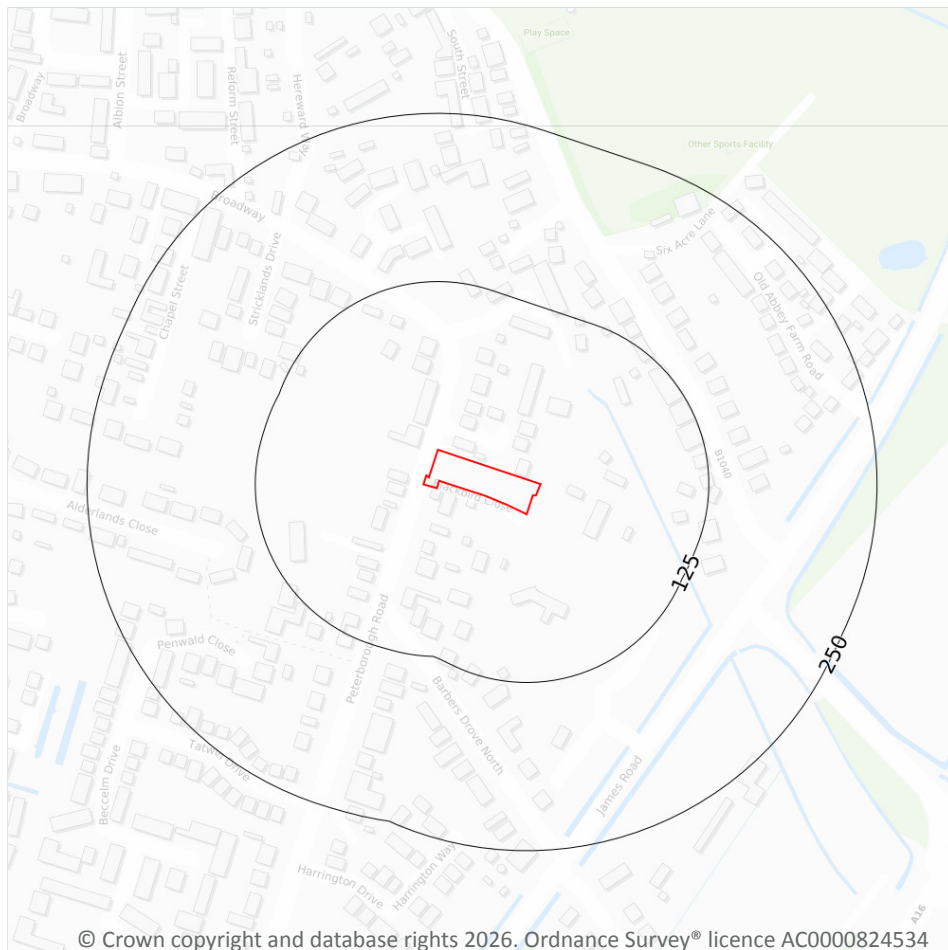
Not all 'holes' noted on Ordnance Survey® mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.



20 Radon



20.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 114](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Less than 1%	None



This data is sourced from the British Geological Survey and UK Health Security Agency.



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	45 - 60 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m**0**

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m**0**

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey® mapping.

This data is sourced from the Ordnance Survey®.

22.4 Historical railway and tunnel features

Records within 250m**0**

Railways and tunnels digitised from historical Ordnance Survey® mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey®/Groundsure.

22.5 Royal Mail tunnels

Records within 250m**0**

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey® and OpenStreetMap.

22.8 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m

0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 Ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-conditions-april-2026/ ↗.



APPENDIX 3

CLASSIFICATION OF AGGRESSIVE CHEMICAL ENVIRONMENT FOR BURIED CONCRETE

TABLE C2 – AGGRESSIVE CHEMICAL ENVIRONMENT FOR CONCRETE

(ACEC) CLASSIFICATION FOR BROWNFIELD LOCATIONS^a

Table C2 Aggressive Chemical Environment for Concrete (ACEC) classification for brownfield locations ^a								
Sulfate and magnesium						Groundwater		ACEC
Design Sulfate Class for location	2:1 water/soil extract ^b		Groundwater		Total potential sulfate ^c	Static water	Mobile water	Class for location
1	2	3	4	5	6	7	8	9
	(SO ₄ mg/l)	(Mg mg/l)	(SO ₄ mg/l)	(Mg mg/l)	(SO ₄ %)	(pH) ^d	(pH) ^d	
DS-1	< 500		< 400		< 0.24	≥ 2.5		AC-1s
							> 6.5 ^d	AC-1
							5.5–6.5	AC-2z
							4.5–5.5	AC-3z
							2.5–4.5	AC-4z
DS-2	500–1500		400–1400		0.24–0.6	> 5.5		AC-1s
							> 6.5	AC-2
							2.5–5.5	AC-2s
							5.5–6.5	AC-3z
							4.5–5.5	AC-4z
DS-3	1600–3000		1500–3000		0.7–1.2	> 5.5		AC-2s
							> 6.5	AC-3
							2.5–5.5	AC-3s
							5.5–6.5	AC-4
							2.5–5.5	AC-5
DS-4	3100–6000	≤ 1200	3100–6000	≤ 1000	1.3–2.4	> 5.5		AC-3s
							> 6.5	AC-4
							2.5–5.5	AC-4s
							2.5–6.5	AC-5
DS-4m	3100–6000	> 1200 ^e	3100–6000	> 1000 ^e	1.3–2.4	> 5.5		AC-3s
							> 6.5	AC-4m
							2.5–5.5	AC-4ms
							2.5–6.5	AC-5m
DS-5	> 6000	≤ 1200	> 6000	≤ 1000	> 2.4	> 5.5		AC-4s
							2.5–5.5	AC-5
DS-5m	> 6000	> 1200 ^e	> 6000	> 1000 ^e	> 2.4	> 5.5		AC-4ms
							2.5–5.5	AC-5m

Notes

- ^a Brownfield locations are those sites, or parts of sites, that might contain chemical residues produced by or associated with industrial production (Section C5.1.3).
- ^b The limits of Design Sulfate Classes based on 2:1 water/soil extracts have been lowered from previous Digests (Box C7).
- ^c Applies only to locations where concrete will be exposed to sulfate ions (SO₄), which may result from the oxidation of sulfides such as pyrite, following ground disturbance (Appendix A1 and Box C8).
- ^d An additional account is taken of hydrochloric and nitric acids by adjustment to sulfate content (Section C5.1.3).
- ^e The limit on water-soluble magnesium does not apply to brackish groundwater (chloride content between 12 000 mg/l and 17 000 mg/l). This allows 'm' to be omitted from the relevant ACEC classification. Seawater (chloride content about 18 000 mg/l) and stronger brines are not covered by this table.

Explanation of suffix symbols to ACEC Class

- Suffix 's' indicates that the water has been classified as static.
- Concrete placed in ACEC Classes that include the suffix 'z' have primarily to resist acid conditions and may be made with any of the cements in Table D2 on page 42.
- Suffix 'm' relates to the higher levels of magnesium in Design Sulfate Classes 4 and 5.

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