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**CIVIL • STRUCTURAL
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**PROPOSED COMMERCIAL DEVELOPMENT
STAKEHILL LANE,
MIDDLETON.
FOR
MILLSON ASSOCIATES**

APRIL 2018

**PHASE I GEO-ENVIRONMENTAL DESK
STUDY REPORT**

18061/GEDS

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DOCUMENT STATUS

Site Reference	Stakehill Lane, Middleton
Title	Phase I Geo-Environmental Desk Study Report
Client	Millson Associates
Project No.	18061/GEDS
Report Version	Phase I Desk Study
Date Issued	26 th April 2018
Issue Notes	Issued for comment/approval.
Report Version	
Date Issued	
Issue Notes	
Report Version	
Date Issued	
Issue Notes	
Report Version	
Date Issued	
Issue Notes	
Report Version	
Date Issued	
Issue Notes	

TABLE OF CONTENTS

1.0 INTRODUCTION

- 1.1 *Instructions*
- 1.2 *Objectives*
- 1.3 *Sources Of Information*
- 1.4 *Development Proposals*
- 1.5 *Limitations of Report*

2.0 THE SITE

- 2.1 *Location*
- 2.2 *Description, Geographic Setting & Topography*
- 2.3 *Site Walkover*

3.0 DESK STUDY

- 3.1 *Historical Industrial Sites*
- 3.2 *Environmental Permits & Incidents*
- 3.3 *Landfill Sites*
- 3.4 *Current Land Uses*
- 3.5 *Hydrogeology & Hydrology*
- 3.6 *Flooding*
- 3.7 *Environmentally Sensitive Sites*
- 3.8 *Geology*
- 3.9 *Ground Workings*
- 3.10 *Mining*
- 3.11 *Background Soil Chemistry*
- 3.12 *Site History*

4.0 REVIEW OF GEO-ENVIRONMENTAL RISK

- 4.1 *Introduction*
- 4.2 *Potential Sources Of Contamination*
- 4.3 *Pathway For Migration*
- 4.4 *Potential Receptors*
- 4.5 *Assessment Of Plausible Pollutant Linkages*

5.0 PRELIMINARY GEOTECHNICAL ASSESSMENT

- 5.1 *Details Of The Site*
- 5.2 *Geotechnical Hazards & Foundation Considerations*
- 5.3 *Stability Assessment*
- 5.4 *Drainage*

6.0 PROPOSED GROUND INVESTIGATIONS

- 6.1 *Ground Investigation*
- 6.2 *Proposed Scope Of Ground Investigations*

LIST OF TABLES

<i>Table 1</i>	<i>Review of Historical Maps</i>
<i>Table 2</i>	<i>Statutory Receptors & Pathways</i>
<i>Table 3</i>	<i>Preliminary Conceptual Model</i>
<i>Table 4</i>	<i>Anticipated Ground Conditions</i>
<i>Table 5</i>	<i>Summary Of Potential Geotechnical Hazards</i>

LIST OF DRAWINGS

<i>18061/01</i>	<i>Walkover Survey Plan</i>
<i>2299-PL-700-01</i>	<i>Proposed Zoning Plan</i>

LIST OF APPENDICES

<i>Appendix A</i>	<i>Enviro-Insight Report</i>
<i>Appendix B</i>	<i>Geo-Insight Report</i>
<i>Appendix C</i>	<i>Old Ordnance Survey Maps</i>
<i>Appendix D</i>	<i>Walkover Survey Plan</i>
<i>Appendix E</i>	<i>Site Walkover Photographs</i>
<i>Appendix F</i>	<i>Proposed Zoning Plan</i>
<i>Appendix G</i>	<i>TACCL Coal Mining Risk Assessment</i>

PHASE I GEO-ENVIRONMENTAL DESK STUDY REPORT

STAKEHILL LANE, MIDDLETON.

1.0 INTRODUCTION

1.1 Instructions

1.1.1 We are instructed by Millson Associates, Byron House, 10 – 12 Kennedy Street, Manchester, M2 4BY to carry out a detailed Phase I Desk Study to examine the geotechnical and geoenvironmental risks associated with the proposed commercial development to an area of land located north of Stakehill Lane, Middleton. This risk assessment has been prepared in support of a planning application to redevelop the site in a commercial manner.

1.2 Objectives

1.2.1 This environmental assessment has been carried out in accordance with the principal recommendations of BS10175: 2011 "Investigation of Potentially Contaminated Sites" with regard to the consideration of potential soil and groundwater contamination along with the generation and migration of toxic and explosive ground gases. It is intended that the report will be submitted to the local planning authority as a preliminary risk assessment in support of a planning application. This report has been prepared to document the following:-

- Review of readily available published data which could provide information on the current status, ground conditions and site history;
- Findings of a walkover survey undertaken on the 10th April 2018;
- Findings of a preliminary contaminated land risk assessment;
- Findings of a preliminary geo-technical risk assessment.

1.3 Sources Of Information

1.3.1 This report has been prepared using information from the following sources:-

- Groundsure Enviro-Insight report dated 10th April 2018;
- Groundsure Geo-Insight report dated 10th April 2018;
- All available old Ordnance Survey maps;
- Environment Agency information;
- Coal Mining Risk Assessment completed by The Arley Consulting Company Ltd.

1.3.2 When ordering the Groundsure desk study information for this site, we were provided with a site boundary that was much larger than the one shown on the zoning layout plan and therefore this desk study has considered a much larger area than the proposed development area.

1.4 Development Proposals

1.4.1 At the time of preparation of this report a proposed zoning plan which indicates that the site would be of mixed land use from commercial to industrial land while retaining areas for designated open/amenity space. The proposed zoning layout is appended to this report for reference (drawing reference 2299-PL-700-01).

- 1.4.2 *It is acknowledged that the development proposals for this site are likely to be amended as a result of local planning requirements. It is however anticipated that the current proposals will be representative of the final development approval. However, if the final development proposals are radically different from the current proposals, then recommendations made within this report may become inappropriate.*

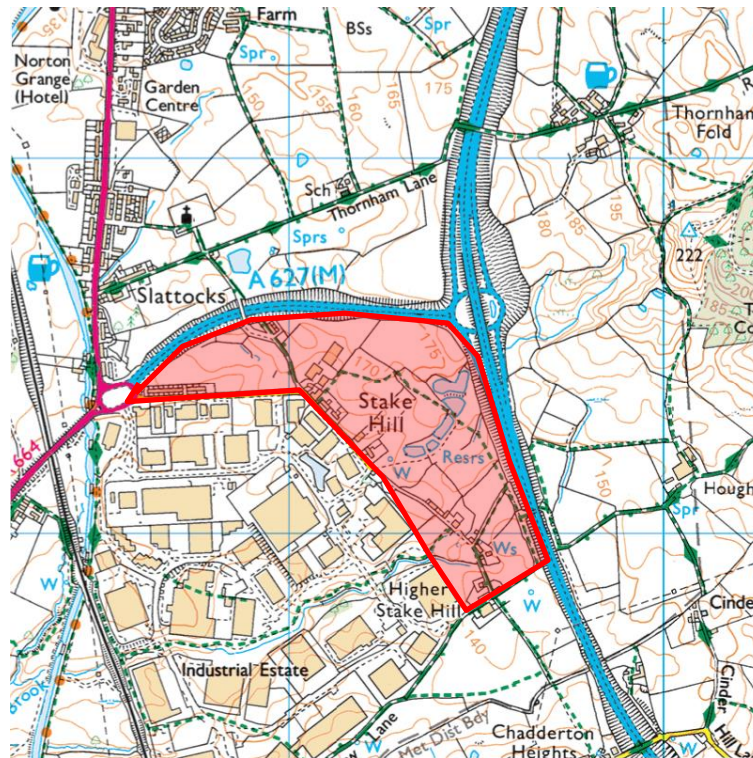
1.5 Limitations Of Report

- 1.5.1 *This report is a desk study report which has been prepared using readily available information in accordance with the project stage requirements, budget and timescales. The opinions expressed in this report and the comments and recommendations given are based upon the information obtained from the desk assessment and an initial site reconnaissance. At this stage intrusive investigations have yet to be undertaken at site to establish actual ground and groundwater conditions and provide data for assessment of the environmental status of the site.*
- 1.5.2 *The information, views and conclusions drawn concerning the site are based in part on information supplied to Robert E Fry & Associates Ltd (REFA) by other parties. REFA has proceeded in good faith on the assumption that this information is accurate. REFA accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to REFA from others.*
- 1.5.3 *The geo-environmental walkover survey consisted of a general externally inspection of the site aimed at identifying any obvious signs of geo-technical hazards affecting the site and potential sources of ground contamination. Any risks identified in this desk study are perceived risks based on the information reviewed and currently available. Actual risks can only be assessed following a physical investigation of the site.*
- 1.5.4 *The copyright of this report (including its electronic form) shall remain vested in (REFA) but the client shall have a license to copy and use the document for the purpose for which it was provided. REFA shall not be liable for the use by any persons of the document for any purpose other than that for which the same was provided by REFA. This document shall not be reproduced in whole or in part or relied upon by third parties for any use whatsoever without the express written authority of REFA.*

2.0 THE SITE

2.1 Location

- 2.1.1 *The site is irregular in shape and is located on the northern and north eastern side of Stakehill Lane Middleton near Manchester and extends to an area of approximately 34.89 hectares. The site is located at a distance of approximately 3.5 km north east of Middleton town centre. The centre of the site is situated at National Grid Reference SD 89321 08436 within an industrial/rural area. Its location is shown in figure 1 overleaf.*

Figure 1 Site Location

2.2 Description, Geographic Setting & Topography

- 2.2.1 The majority of the site comprises of agricultural fields which appear to be utilised for grazing purposes only. The general topography of the site slopes from the A627(M) motorway and its slip road towards Stakehill Lane at variable topographies and the majority of the site has undulating topography within. Fishing ponds are located within the central area of the site.
- 2.2.2 The northern and the eastern boundary are formed by the A627 motorway and its associated slip road and the western, south western and southern boundary is formed by Stakehill Lane and numerous commercial properties and residential properties. The south eastern boundary is formed by further agricultural fields.
- 2.2.3 Access and egress to the site can be made from multiple locations along Stakehill Lane.
- 2.2.4 The site contains a number of mature trees and hedgerows along the main boundaries and within the site itself. The presence of trees and hedgerows may impact upon the foundation requirements for proposed properties within influencing distance.

2.3 Site Walkover

- 2.3.1 A site walkover was undertaken on the 10th April 2018 in an order to determine the condition and overall environmental setting of the site to inform the desk study. At the time of the walkover survey, the weather conditions were overcast and windy following a period of inclement weather.

- 2.3.2 *The walkover survey has revealed that the majority of the site is used as agricultural land for grazing purposes and the conditions underfoot were noted to be extremely soft across the majority of the site with numerous areas of standing water. The walkover survey has also identified a series of fishing ponds located within the central area of the site.*
- 2.3.3 *The general topography of the site slopes generally towards Stakehill Lane however the topography of the site is much more complex and contains numerous undulations and variations in topography. The average gradient across the site varies at approximately 1 : 30 to 1 : 15. The site contains numerous hedgerows, trees and shrubs and it is recommended that all trees, hedgerows and shrubs, regardless as to whether they are to be retained or removed as part of the development process, should be included within the arboriculturist report prior to any further works taking place.*
- 2.3.4 *Within the northern area of the site numerous stockpiles of demolition material, road planings and gravels were identified within a small yard area. Located closely to this area is another area where the surface soil and vegetation appear to be inconsistent with the surrounding areas and evidence of demolition rubble was present at surface. Therefore it is anticipated that this area has been infilled previously and will require targeted investigation.*
- 2.3.5 *A manhole cover was identified adjacent to the eastern boundary which may indicate the potential for an underground culvert or drainage system within this site. A telecommunication mast is present within the northern area of the site.*
- 2.3.6 *The primary details of the initial survey have been indicated by the appended drawing number 18061/01 "Walkover Survey" for reference. The walkover survey plan gives general details of the topographical features along with features noted during the walkover survey.*

3.0 DESK STUDY

- 3.0.1 *As part of our environmental desk studies we have commissioned an Enviro-Insight report by Groundsure which gives details of all recorded environmental features relating to the site and its immediately surrounding area. We have also obtained copies of all available old Ordnance Survey maps for the area and these also give historical guidance regarding the former usage of the site area and its immediate vicinity. A Geo-Insight report has also been commissioned which assess the geological structures within the general area of the site.*

3.1 Historical Industrial Sites

- 3.1.1 *The Enviro-Insight report has identified one hundred and twenty one (121 No.) records potentially contaminative past land uses within 500m of the search boundary. The first record relates to a nursery which is not actually within the development area and is still present today. Numerous records of cuttings are noted within the site and are associated with the motorway and its adjoining slip roads and also within the locality of the existing pond areas. These cuttings are not considered to pose a potential source of deep deposits of made ground the remaining records relate to unspecified dying and bleaching works and unspecified ground workings. These industrial land uses are all considered to be located outside of the site boundary within Stakehill Industrial Estate and are not considered to pose potential sources of contamination within the development site.*

- 3.1.2 *The Enviro-Insight report has identified fifty three (53 No.) records of historical tanks within 500m of the search boundary however all records are located in excess of 47.0m from the site boundary and relate to unspecified tanks and are not considered to pose potential off-site sources of contamination to this development site.*
- 3.1.3 *The environmental report has identified thirty five (35 No.) records of historical energy features with 500m of the search boundary. The first two records are located on site are indicated to be present at the southern end of the fishing ponds. These historical features are noted to be electricity substations, although no evidence of the substation has been identified during the site walkover. Considering the age of the former electricity substation we would recommend targeted investigation within this location to confirm no PCB contamination is present. All remaining records of historical energy features are located outside of the site boundary and are not considered to pose potential source of contamination.*
- 3.1.4 *The Enviro-Insight report has not identified any historical petrol or fuel sites within 500m of the study site.*
- 3.1.5 *The Enviro-Insight report has not identified any historical garage or motor vehicle repair sites within 500m of the study site.*
- 3.1.6 *The Enviro-Insight report has identified numerous records of potentially infilled features within 500m of the study site. Numerous records are located on site that relates to the existing reservoirs which are still present on site and it is not anticipated that deep deposits of made ground are located within these areas. The remaining records relate to cuttings, unspecified ground workings and former ponds. Numerous historical infilled features have been identified within 250m of the site boundary relating to former reservoirs, ponds and therefore we consider that a programme of ground gas monitoring may be required as part of the intrusive works to determine any possible migration of ground gases from off-site sources.*

3.2 Environmental Permits & Incidents

- 3.2.1 *The Enviro-Insight report has identified five (5 No.) records of historic IPC Authorisations, however these are all located in excess of 200m from the site boundary and are not considered to pose potential source of contamination.*
- 3.2.2 *The Enviro-Insight report has identified six (6 No.) records of Part A(1) IPPC Authorised activities, however these are all located in excess of 340m from the site boundary and are considered to be located at a significant distance from the development site.*
- 3.2.3 *The environmental report has identified five (5 No.) records of Part A(2) and Part B activities within 500m of the study site. The first two records are noted to be within 80m of the site boundary and relate to foam manufacturing under Part A and Part B permit types. No enforcements have been notified and therefore they are not considered to pose a potential source of contamination to the development site.*
- 3.2.4 *The environmental report has identified one (1 No.) licensed discharge consent located 218m to the north west which relates to a sewage discharge in to Rochdale Canal. This discharge consent is not considered to pose a potential source of contamination to the development site.*

- 3.2.5 *The environmental report has identified two records of planning hazardous substance consents and enforcements however these are located in excess of 130m from the site boundary.*
- 3.2.6 *The Enviro-Insight report has identified two records of COMAH and NIHHS sites located within 60m of the site boundary. The first record relates to Proseat Llp which is a current COMAH site and it is a COMAH low tier operator where the company must consider the potential for a major accident arising from their work activities and describe their approach to controlling the risks in a major accident prevention policy (MAPP). The second record relates to Bibby Distribution Ltd and this is noted to be a historical NIHHS site. Both these sites are not considered to pose a potential source of contamination to the proposed development site.*
- 3.2.7 *The environmental report has identified three records of National Incidents Recording System List 2 within 500m of the study site. The first record is located on site in close proximity to Lower Stakehill Farm which is actually located outside of the development boundary. No information is provided in to the pollutant type but the incident took place on 26th September 2002. The impact to water was noted as to be category 4 (no impact) and the impact to land and air were noted to be category 3 (minor). It is not anticipated that this pollution event poses a significant source of contamination to the proposed development site. The remaining records are located in excess of 50m from the site boundary.*

3.3 Landfill Sites

- 3.3.1 *The Enviro-Insight report has not identified any Environment Agency historic landfill sites within 440m of the site boundary however records do exist beyond this distance.*
- 3.3.2 *The Enviro-Insight report has identified six (6 No.) records of landfills from local authority and the historical mapping records however these are all located in excess of 1000m from the site boundary.*
- 3.3.3 *The environmental report has identified one (1 No.) waste transfer facility site located 228m to the south. This waste transfer site is not considered to pose a potential off-site source of explosive or toxic gases to this development site.*

3.4 Current Land Uses

- 3.4.1 *The Enviro-Insight report has identified twenty six (26 No.) records of potentially contaminative industrial sites within 250m of the study site. The first two records are noted to be on site however these are actually located outside of the development boundary and are located on Stakehill Lane. Both of these features relate to electricity substations and are not considered to pose potential sources of PCB contamination. All remaining records are located outside of the site boundary and are not considered to pose potential off site sources of contamination to this development.*
- 3.4.2 *The environmental report has identified one (1 No.) petrol or fuel site located 255m north west which relates to Hopwood Self Service Station. Considering its remote locality from the site this service station is not considered to pose an offsite source of hydrocarbon contamination.*
- 3.4.3 *The Enviro-Insight report has not identified any National Grid high voltage underground electricity transmission cables or National Grid high pressure gas transmission pipelines within 500m of the study site boundary.*

3.5 Hydrogeology & Hydrology

- 3.5.1 *The superficial deposits and the underlying bedrock are designated as Secondary (A) aquifers. This is where permeable layers are present capable of supporting water at local rather than strategic scales and in some cases form an important source of base flow to rivers. These are generally aquifers formally classified as minor aquifers. The development of this site is not considered to pose a hazard to the underlying drift and bedrock aquifers.*
- 3.5.2 *The environmental report has identified numerous groundwater abstraction licenses within 2000m of the study site however these are all located in excess of 180m from the site boundary. The development of the site is not considered to pose a hazard to these groundwater abstraction licenses. The environmental report has identified numerous surface water abstraction licenses however these are all located in excess of 1100m from the site boundary.*
- 3.5.3 *The Enviro-Insight report has identified two (2 No.) records of potable water abstraction however these are located in excess of 650m from the site boundary and the development of the site in a commercial manner is not considered to pose a potential hazard to these abstraction licenses.*
- 3.5.4 *The site is not located within a source protection zone and a groundwater vulnerability and soil leaching potential are noted to be minor aquifer/high leaching potential with a soil vulnerability category H2.*
- 3.5.5 *The Enviro-Insight report has identified two river networks that travel through the eastern half of the site. The majority river networks are not present at surface and only one culvert has been identified within the central area of the site. The second river network located further south has not been identified and does not appear to be at surface so it was also assumed that this water course has also been culverted and trends in a direction towards Stakehill Industrial Estate. This has been identified on the appended walkover survey plan.*
- 3.5.6 *Surface water features are noted within the site and relate to the existing fishing ponds which are also indicated to be interconnected and drain in a south westerly direction. The development of this site is not considered to pose a potential hazard to these river networks however consideration must be given to precise location of these river networks and their constraint on the proposed development plan.*

3.6 Flooding

- 3.6.1 *The Enviro-Insight report has confirmed that the site does not lie within Environment Agency Zone 2 or Zone 3 flood plains.*
- 3.6.2 *The BGS has identified that the site lies within 50m of a BGS groundwater flooding susceptibility area. This relates to superficial deposits flooding with potential at surface. Where potential for groundwater flooding to occur at surface is indicated this means that given the geological conditions in the area groundwater flooding hazards should be considered in all land use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type and land drainage information be investigated in order to establish relative but not absolute risk of groundwater flooding. A low confidence rating has been given to this flooding susceptibility.*

3.7 Environmentally Sensitive Sites

- 3.7.1 *The site is noted to be in a Liverpool, Manchester and West Yorkshire greenbelt under the Rochdale local authority and consideration must be given to the restrictions imposed by greenbelt land and consultation with the local authority must be carried out.*
- 3.7.2 *The site is located within a nitrate vulnerable zone however the development of the site is considered to have a positive impact and to reduce the amount of nitrates through the natural soils in to the nearby surface water and river networks.*
- 3.7.3 *All remaining environmentally sensitive sites are located in excess of 100m from the site boundary and are not considered to be at risk from the proposed development.*

3.8 Geology

- 3.8.1 *The Geo-Insight report has identified the presence of artificial made ground within the study site area and appears to be localised adjacent to the eastern boundary associated with the embankment works of the motorway. Therefore there will be a requirement for targeted investigation within this location to determine any potential contaminants associated with made ground deposits.*
- 3.8.2 *The superficial deposits within the site are considered mainly to comprise of glacial till material which is likely to comprise of firm to stiff clays, localised deposits of glacial fluvial deposits are also present within the site which are considered to comprise more of granular sands and gravel deposits.*
- 3.8.3 *The solid geology below the site predominantly comprises of Pennine Lower Coal Measures which are anticipated to comprise of varying mudstones, siltstones, sandstones and potential coal seams. Minor units of the Royley Sandstone Formation mainly within the northern and north eastern area of the site.*
- 3.8.4 *The geological report has not identified any geological faults below the site although it has identified approximate margin of buried superficial deposits (filled channel or valley) that trends in a general north to south direction through the central area of the site and may indicate deep superficial deposits within this location of the site.*
- 3.8.5 *The geological report has identified that the study site area is not within a Radon affected area less than 1% of properties are above the required action level for Radon gases.*

3.9 Ground Workings

- 3.9.1 *The geological report has identified numerous historical surface ground working features within the site itself. These ground workings are mainly associated with the existing fishing ponds and the motorway embankments. A small pond is also identified within the western area of the site that appears to have now been backfilled therefore there is potential for made ground deposits to be present within localised areas of the site and will require targeted investigation.*
- 3.9.2 *The Geo-Insight report has not identified any historical underground working features located within 1000m of the study site.*

- 3.9.3 The geological report has identified four (4 No.) records of current ground working features however these are all located in excess of 415m from the study site boundary and relate to sand and gravel pits which are all noted to have ceased operation.

3.10 Mining

- 3.10.1 The site is located within a Coal Authority reporting area and a separate coal mining risk assessment has been completed by The Arley Consulting Company Ltd in April 2018 which is appended to this report for reference. This risk assessment identified that the presence of any unrecorded shallow coal mine workings at the site is very unlikely based upon the available evidence. They have identified that the Arley Coal Mine Seam is present beneath the site at unknown depth. Therefore they have recommended that given the lack of data within the site it was be prudent to undertake an investigation in the vicinity of the coal seam in order to confirm the depth of drift and depth to rock head to ensure sufficient cover of the Arley Coal Mine Seam.

3.11 Background Soil Chemistry

- 3.11.1 The Geo-Insight report includes an estimated geometric mean soil concentration of various elements. Assessment of this information suggests that the majority of soil concentrations are anticipated to be below the adopted assessment criteria for commercial development.

3.12 Site History

3.12.1 Table 1: Review Of Historical Maps

Date	Site	Adjoining Land
1851	The site is shown to comprise of agricultural fields with Stakehill Lane running through the westerly area of the site. Lower Stakehill Farm is located adjacent to the southern boundary of the site and the reservoirs are still present within the central area of the site.	Further reservoirs are located outside of the site boundary that may connect to the existing reservoirs within the site. Approximately 200m to the south there is the presence of a bleach works and associated reservoirs.
1891	An old sand pit is noted adjacent to the northern boundary although it is not clear what the extents of the sand pit are and it is already assumed to have been backfilled. Hopwood Farm is now located upon the western side of Stakehill Lane within the site and a couple of residential properties are just north of the farm. A spring is noted just north of Lower Stakehill Farm and to the south east of the farm.	A pond is shown to be present just north of Higher Stake Hill Farm
1928	The reservoirs appear to be undergoing groundworks and The Brown Cow Beer House is located within the southern area of the site	Bleach works are now noted to be Stakehill Works with adjacent buildings, filter beds and tanks.
1938	No significant changes.	No significant changes.
1956	Overhead electricity pylons are present within the central area of the site trending in a north to south direction. The Brown Cow is now noted to be The Brown Cow Inn.	Stakehill works is now noted to be disused. A series of residential properties have been constructed along Bentley Avenue adjacent to the southern boundary of the development site.

Date	Site	Adjoining Land
1975	Ground works have taken place along the eastern and northern boundaries associated with the construction of the A627 (M) motorway. The Brown Cow Inn is no longer noted within the southern area of the site and a well is now noted at the base of the reservoirs within the southern area of the site. The overhead electricity pylons are no longer present within the site and the pond within the southern area of the site has now been backfilled.	The reservoirs associated with Stakehill Industrial Estate have now been built over although one reservoir still remains. The pond north of Stake Hill Farm is no longer present and is assumed to have been backfilled.
1982	No significant changes.	Stakehill Industrial Estate has expanded significantly towards the south west.
2002	Issues and springs are noted within the northern area of the site just west of lower Stakehill Farm.	Stakehill Industrial Estate has continued expansion towards the South to meet Boreshore Lane.
2010 - 2014	No significant changes.	No significant changes.

3.12.2 Careful appraisal of the available historical information has confirmed that the site has been utilised for agricultural purposes throughout the majority of its history. A backfilled pond has been identified within the southern area of the site and numerous springs and issues are present within the northern and central areas of the site. A well has been identified within the central area of the site although no evidence of this has been identified during the site walkover. A review of the surrounding land has indicated significant industrial commercial development to the south in the form of Stakehill Industrial Estate with buried reservoirs which may pose a potential off site sources of explosive or toxic gases.

4.0 **REVIEW OF GEO-ENVIRONMENTAL RISK**

4.1 **Introduction**

4.1.1 This element of the report is aimed at identifying possible risks, if any, arising from substances used or deposited on site or from other sources of land contamination. Both past and current potentially contaminative land uses have been considered.

4.1.2 The risk assessment utilises a source-pathway-receptor methodology for assessing whether a source of contamination could potentially lead to harmful consequences. This requires that there be a pollutant linkage from source to receptor for harm to be caused. The source-pathway-receptor methodology relationship allows an assessment of the environmental risk to be determined based upon the nature of the source, the degree of exposure of the receptor of the source and the sensitivity of the receptor.

Table 2 : Statutory Receptors & Pathways

Target (Receptor)	Potential Source – Pathway Linkage
Site Users / Residents	Inhalation of soil gas, odours or dust. Ingestion of, and skin contact with, contaminated soil. Ingestion of contaminants in vegetables etc. or in soils adhering to vegetable etc.
Construction / Maintenance Workers	Inhalation of soil gas, odours or dust. Ingestion of, and skin contact with contaminated soil.
Plants	Adverse effects on growth caused by presence of contaminants in soil.
Buildings & Structures	Flow of ground gas into buildings. Asphyxiation, toxicity, explosion & fire hazards. Sulphate attack of foundations. Hydrocarbons penetration plastic water supply pipes.
Groundwater	Migration of soluble contaminants into groundwater on/off site. Migration of oils into groundwater on/off site.
Surface water	Migration of soluble contaminants and/or direct run off of contaminants. Migration of oils into groundwater on/off site.

4.1.3 A conceptual model of plausible pollutant linkages has been formulated for the site in accordance with the risk assessment approach applied to contaminated land assessment.

4.2 Potential Sources Of Contamination

4.2.1 The historical Ordnance Survey maps indicate that the site has been used for agricultural purposes throughout its entire history.

4.2.2 The likelihood of widespread soil contamination is expected to be very low due to the previous land uses with no other evidence of development.

4.2.3 Potential sources of contamination could be limited to the following:-

- Naturally occurring elevated concentrations of contaminants within the topsoil and natural strata;
- Potential localised made ground associated with reworked pond areas, embankments of the A627(M) motorway and the infilled ponds within the site;
- Migration of ground gas generated from numerous infilled features located off-site and within the site itself.

4.3 Pathway For Migration

4.3.1 It is recognised that the migration pathways could change during the development of the site. These pathways are summarised below:-

- Migration of contamination (if present) via the un/saturated zones;
- Migration of contamination (if present) via buried services and foundations;
- Run-off from adjacent site areas;
- Migration of ground gas via soil pores;
- Direct contact with contaminated materials.

4.3.2 This list recognises that it is plausible that there are pathways associated with the presence of both on site and off site contamination. The above list recognises that the new development may not affect certain migration pathways such as migration in the saturated zone from an offsite source but could create new pathways such as the presence of services and foundations.

- 4.3.3 *It is anticipated that, if a potential risk is identified, it can be reduced to an acceptable level by using a combination of mitigation measures during construction and in the building design. Site workers may be exposed to bare ground and existing building fabrics when clearing and redeveloping this site. Precautions should be taken to reduce the risks associated with these pathways including the adoption of personnel protective equipment (PPE), being rigorous in matters of personnel hygiene and adopting safe practices for workers entering enclosed underground cavities. Environmental management practices should be implemented to prevent potential impact associated with dust generation and dispersion and surface water run-off for example.*

4.4 Potential Receptors

- 4.4.1 *The principal receptors are considered to be as follows:-*

- *Humans – future site users;*
- *Humans – construction and maintenance workers;*
- *Controlled waters;*
- *Building structures and services.*

4.5 Assessment Of Plausible Pollutant Linkages

- 4.5.1 *The overall risk associated with future site users is considered to be moderate to low.*
- 4.5.2 *Contamination is not expected at this site, though nevertheless site workers should adopt a precautionary approach in respect of potential land contamination. On the basis of the current assessment and recommendations the overall risk to site workers is considered to be moderate to low.*
- 4.5.3 *The overall risk associated with the water environment is considered to be low. The presence of impermeable glacial till and glacial fluvial deposits overlying Secondary A aquifer rocks suggests a low potential risk to groundwater. However appropriate measures should be undertaken to protect surface water features within the central area of the site during development works.*
- 4.5.4 *Substances that may be involved in chemical attack upon building materials, structures and services may be present in the ground and there is the potential for ground gas to migrate through permeable deposits and accumulate in enclosed spaces. Currently the overall risk associated with this category of hazard is considered to be low. The building's design and the materials used in its construction should be compliant with the prevailing ground conditions in order to mitigate potential harm from chemical attack where identified.*
- 4.5.5 *Careful assessment of all currently available information has enabled a preliminary conceptual model to be prepared and this is detailed in table 3 overleaf:*

Table 3 : Preliminary Conceptual Model

Potential Source	Potential Receptor	Possible Pathway	Probability	Consequence	Risk	Mitigation / Investigation
Contaminated Soils	Site personnel during construction	Direct contact of soils Inhalation or ingestion of soil / dust	Li	Mi	Moderate/Low	Soil sampling during intrusive investigations. Laboratory analysis of samples
	Future site users	Direct contact of soils Inhalation or ingestion of soil / dust	Lw	Md	Moderate/low	
	Surface water in the vicinity of the site	Leaching of contaminants through drainage system	Lw	Md	Moderate/Low	
	Ground water in aquifer	Leaching of contaminants to ground water	UI	Md	Low	
	Future site users	Vapour migration from soils	Lw	Mr	Very Low	
	Proposed buildings and services	Direct contact with contaminated soils	Lw	Mi	Low	
	Plants in gardens and soft landscaping	Direct contact	Lw	Mi	Low	
Contaminated ground water	Site personnel during construction	Water entering excavations	Lw	Mi	Low	Sampling of ground water (where encountered)
	Future site Users	Retained surface water	Lw	Mi	Low	
Toxic and explosive gasses	Proposed buildings and occupiers	Ground gas migration into buildings	Lw	Md	Moderate	Program of ground gas monitoring required
Radon Gases	Proposed buildings and occupiers	Ground gas migration into buildings	UI	Md	Low	No requirement for Radon protection
Key: Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor Hi = High, Li = Likely, Lw = Low Likelihood, UI = Unlikely						

4.5.6 In this qualitative risk assessment a low risk implies that remedial action is unlikely to be necessary at the site, although until a full intrusive investigation is to be carried out, this cannot be positively confirmed. Targeted investigation is required in relation to areas of former pond, motorway embankments and further areas that may have been backfilled.

5.0 PRELIMINARY GEOTECHNICAL ASSESSMENT

5.1 Details Of The Site

5.1.1 The majority of the site comprises of open agricultural fields and it is anticipated that the majority of the site natural strata will immediately underlie the surface topsoil layer however localised deposits of made ground may be present in areas of previous ground workings.

5.1.2 It is likely that the development of the site will require the following stages:-

- Provision of foundations typically extending to depths of some 0.9m below ground level;
- Construction of drainage;
- Construction of commercial properties;
- Preparation of soft landscaped areas and hard standings.

5.2 Geotechnical Hazards & Foundation Considerations

5.2.1 Based upon the information available to this desk study the anticipated ground conditions present within this site are outlined in table 4 below:-

Table 4: Anticipated Ground Conditions

Ground Material	Anticipated Condition
Topsoil	Anticipated to be present over the majority of the site.
Made Ground	Localised areas of made ground within the former infilled pond areas and embankments of the nearby motorway.
Glacial Till Deposits	Deposits comprising of stiff clays with localised beds of silt, sands and gravels.
Glacial Fluvial Deposits	Deposits comprising of varying clays, sands and gravels.
Bedrock	The majority of the site is underlain by the Pennine Lower Coal Measures formation which comprises of alternating mudstones, siltstones and sandstone. However Royley Sandstone was located mainly within the norther area of the site with comprises mainly of sandstones.
Groundwater	Natural groundwater is expected to lie at depth within the bedrock. Excavations and low lying areas are likely to be subject to surface water retention due to the possible low permeability of soils.

Of course it will be essential for intrusive ground investigation works to be undertaken to confirm that the anticipated ground conditions are an accurate appraisal of the true ground conditions.

5.2.2 A summary of potential geo-technical hazards is detailed within table 5 overleaf:-

Table 5 : Summary Of Potential Geotechnical Hazards

Hazard Category (excluding contamination issues)	Hazard Status	Engineering Considerations
<i>Highly compressible / low bearing capacity soils (including peat / soft clays)</i>	<i>Unlikely</i>	• <i>Glacial Till and Glacial Fluvial deposits</i> • <i>Localised made ground deposits in areas of former ground workings</i>
<i>Loose granular soils at risk of collapse</i>	<i>Possible</i>	• <i>Glacial Fluvial which may include pockets of sand and gravel</i>
<i>Ground subject to or at risk of landslides</i>	<i>Unlikely</i>	• <i>Gradual sloping topography</i> • <i>Stable bedrock and stiff superficial deposits</i> • <i>No previous record of landslips within 500m of the site boundary</i>
<i>High ground water table</i>	<i>Unlikely</i>	• <i>Secondary A aquifer superficial deposits</i> • <i>Secondary A aquifer and bedrock</i>
<i>Surface water retention</i>	<i>Likely</i>	• <i>Impermeable superficial deposits</i>
<i>Surface water run off</i>	<i>Likely</i>	• <i>Impermeable superficial deposits</i>
<i>Mining</i>	<i>Unlikely</i>	• <i>No recorded history of mining</i> • <i>Arley Coal Seams consider to lie at significant depth below the site</i>
<i>Volume change potential of soils</i>	<i>Possible</i>	• <i>Cohesive superficial deposits</i>
<i>Adverse ground chemistry</i>	<i>Possible</i>	• <i>Localised made ground</i>
<i>Live services</i>	<i>Likely</i>	• <i>Overhead Power Lines present on site</i> • <i>Possible culverted river networks within the eastern area of the site.</i>

5.2.3 It is anticipated that the ground conditions present within this site will consist mainly of over consolidated glacial till deposits which may be conducive to the adoption of shallow spread type foundations to commercial structures constructed within this area of the site. However, these glacial till deposits may also comprise of sand and gravel lenses and large boulders.

5.2.4 The site has a gradual sloping topography towards the south towards Stakehill Lane undulating topography across the whole site therefore there may be a requirement for retaining structures within the proposed development plan.

5.3 Stability Assessment

5.3.1 As part of this desk study we have carried out a stability assessment of the site to determine any potential issues in relation to the slope stability of the existing site.

5.3.2 BGS maps indicate that the superficial deposits within the site comprise mainly of glacial till material which is likely to comprise of firm to stiff clays. However, localised areas of glaciofluvial deposits are present within the site. These glaciofluvial deposits are likely to comprise of granular silts, sands and gravels. The underlying bedrock comprises of the Pennine Lower Coal Measures which are anticipated to lie at significant depth below the site. The BGS do not have any deep borehole information within 200m of the site, however a borehole record located 210m to the west labelled Slattocks 2 Thornham Estate indicates that superficial deposits within the local area are indicated to extend to depths in excess of 30m – 60m indicating a significant thickness of drift deposits above the underlying bedrock.

- 5.3.3 *The Geo-Insight report has indicated that the site is located within an area where the hazard rating for landslides is very low and that slope instability problems are unlikely to be present. No special action is required to avoid problems due to landslides. No special investigation required and increased construction costs will increase financial risks are unlikely due to potential problems with landslides.*
- 5.3.4 *The Geo-Insight report has also indicated that hazard rating for “running sands” is very low. Very low potential for “running sand” problems at water table rises or if in sandy strata exposed to water. No special action is required to avoid problems due to “running sand”. No special ground investigation required in increased construction costs or increased financial risks are unlikely due to potential problems with “running sands”.*
- 5.3.5 *The site has got a highly variable topography but generally the site slopes towards Stakehill Lane at varying gradients between 1:30 to 1:15 therefore the shallow gradients are not considered to increase the risk of slope movement or instability within the site. We do however note that the undulating topography of the site may mean that there may be a requirement for potential retaining structures within areas of the development site.*
- 5.3.6 *During the site visit no visual evidence of slope movement has been identified e.g., in the form of soil “creep” terracettes etc.*
- 5.3.7 *Based upon the above information we consider that the site is considered to be at very low risk of slope stability issues and it is not considered any specific investigation is into slope stability is required.*

5.4 Drainage

- 5.4.1 *The geological information relating to this site suggests that the majority of the superficial strata is likely to consist of impermeable glacial till deposits, glacial fluvial deposits may be present within the site but comprise of permeable sands and gravels however these are considered to be localised and discontinuous and therefore it is unlikely that the adoption of a sustainable urban drainage system will be feasible on this site.*

6.0 PROPOSED GROUND INVESTIGATIONS

6.1 Ground Investigation

- 6.1.1 *By undertaking an intrusive ground investigation an assessment of the ground and groundwater profiles may be carried out and the geo-technical and geo-environmental risks associated with this site identified. The investigation will allow a quantitative assessment as to whether any of the potential risks identified in this study are present and are of material concern to the proposed development. The works should be undertaken in accordance with the recommendations laid down in BS 10175 : 2011 “Investigation of Potentially Contaminated Sites”.*

6.2 Proposed Scope Of Ground Investigations

6.2.1 *On the basis of the currently available information regarding the geo-environmental setting of the site and to confirm the assumptions made, an intrusive ground investigation should be carried out. This should be utilised to confirm the geological succession and engineering properties of the sub surface materials. Intrusive investigations are required and may require the provision of appropriate gas monitoring points to assess the presence of any potential landfill gas generation from unrecorded buried materials. The scope of works for the ground investigation should comprise of the following:-*

- *Program of ground investigations to identify the strata sequence and assess engineering properties;*
- *Sampling of the existing strata for chemical and civil engineering laboratory test purposes;*
- *Program of chemical analyses upon representative samples of the strata to determine their suitability for reuse within a commercial environment;*
- *Reinstatement;*
- *Commission an arboriculturists report on all trees within and adjacent to the site;*
- *Preparation of factual and interpretative report;*
- *Programme of ground gas monitoring due to infilled features;*
- *Full survey of potential culverts located within the eastern area of the site.*

6.2.2 *These ground investigation proposals are intended to represent a preliminary assessment only and it is important that where unusual or suspicious ground conditions are identified, the design of the intrusive investigations should be amended to assess these areas.*

Signed for and on behalf of
R E FRY & ASSOCIATES LIMITED



Mark Davies B.Sc. (Hons)
R E FRY & ASSOCIATES LTD

APPENDIX A



CENTREMAPS

Open Space, Upper Interfields,
Worcester, WR14 1UT

Groundsure Reference: CMAPS-CM-703611-30974-100418EDR

Your Reference: 30974

Report Date 10 Apr 2018

Report Delivery Method: Email - pdf

Enviro Insight

Address: Stakehill Ln, Middleton, M24 24x

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.
Groundsure Enviroinsight

Address: Stakehill Ln, Middleton, M24 24x
Date: 10 Apr 2018
Reference: CMAPS-CM-703611-30974-100418EDR
Client: CENTREMAPS

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 11-Jun-2015
Grid Reference: 389145,408206
Site Size: 34.89ha

Report Reference: CMAPS-CM-703611-30974-100418EDR
Client Reference: 30974

Contents Page

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	12
1.2 Additional Information – Historical Tank Database	15
1.3 Additional Information – Historical Energy Features Database	16
1.4 Additional Information – Historical Petrol and Fuel Site Database	17
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	17
1.6 Potentially Infilled Land	18
2. Environmental Permits, Incidents and Registers Map	23
2. Environmental Permits, Incidents and Registers	24
2.1 Industrial Sites Holding Licences and/or Authorisations	24
2.1.1 Records of historic IPC Authorisations within 500m of the study site	24
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	25
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	26
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	26
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	26
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	26
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	27
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	27
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	27
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	28
2.2 Dangerous or Hazardous Sites	28
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents	29
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	29
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	29
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	29
3. Landfill and Other Waste Sites Map	30
3. Landfill and Other Waste Sites	31
3.1 Landfill Sites	31
3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site	31
3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site	31
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	32
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	33
3.2 Other Waste Sites	33
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	33
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site	33
4. Current Land Use Map	34
4. Current Land Uses	35
4.1 Current Industrial Data	35
4.2 Petrol and Fuel Sites	36
4.3 National Grid High Voltage Underground Electricity Transmission Cables	37
4.4 National Grid High Pressure Gas Transmission Pipelines	37

5. Geology	38
5.1 Artificial Ground and Made Ground.....	38
5.2 Superficial Ground and Drift Geology	38
5.3 Bedrock and Solid Geology	38
6 Hydrogeology and Hydrology	39
6a. Aquifer Within Superficial Geology	39
6b. Aquifer Within Bedrock Geology and Abstraction Licenses	40
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses	41
6d. Hydrogeology – Source Protection Zones within confined aquifer	42
6e. Hydrology – Watercourse Network and River Quality	43
6.Hydrogeology and Hydrology	44
6.1 Aquifer within Superficial Deposits.....	44
6.2 Aquifer within Bedrock Deposits.....	44
6.3 Groundwater Abstraction Licences.....	45
6.4 Surface Water Abstraction Licences.....	49
6.5 Potable Water Abstraction Licences.....	50
6.6 Source Protection Zones.....	51
6.7 Source Protection Zones within Confined Aquifer.....	51
6.8 Groundwater Vulnerability and Soil Leaching Potential.....	51
6.9 River Quality.....	51
6.9.1 Biological Quality:.....	52
6.9.2 Chemical Quality:.....	52
6.10 Ordnance Survey MasterMap Water Network.....	53
6.11 Surface Water Features.....	67
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)	68
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS)	69
Map	69
7 Flooding	70
7.1 River and Coastal Zone 2 Flooding.....	70
7.2 River and Coastal Zone 3 Flooding.....	70
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating.....	70
7.4 Flood Defences.....	70
7.5 Areas benefiting from Flood Defences.....	70
7.6 Areas benefiting from Flood Storage.....	71
7.7 Groundwater Flooding Susceptibility Areas.....	71
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Identified.....	71
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?.....	71
7.8 Groundwater Flooding Confidence Areas.....	71
8. Designated Environmentally Sensitive Sites Map	72
8. Designated Environmentally Sensitive Sites	73
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:.....	73
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:.....	73
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:.....	73
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:.....	74
8.5 Records of Ramsar sites within 2000m of the study site:.....	74
8.6 Records of Ancient Woodland within 2000m of the study site:	74
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:.....	74
8.8 Records of World Heritage Sites within 2000m of the study site:.....	75
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:	75

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:	75
8.11 Records of National Parks (NP) within 2000m of the study site:	75
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....	75
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....	75
8.14 Records of Green Belt land within 2000m of the study site:.....	76
9. Natural Hazards Findings	77
9.1 Detailed BGS GeoSure Data.....	77
9.1.1 Shrink Swell.....	77
9.1.2 Landslides.....	77
9.1.3 Soluble Rocks.....	77
9.1.4 Compressible Ground.....	78
9.1.5 Collapsible Rocks.....	78
9.1.6 Running Sand.....	78
9.2 Radon.....	79
9.2.1 Radon Affected Areas.....	79
9.2.2 Radon Protection.....	79
10. Mining	80
10.1 Coal Mining.....	80
10.2 Non-Coal Mining.....	80
10.3 Brine Affected Areas	80
Contact Details	81
Standard Terms and Conditions	83

Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	15	11	35	60
1.2 Additional Information – Historical Tank Database	0	1	31	21
1.3 Additional Information – Historical Energy Features Database	2	3	17	13
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Potentially Infilled Land	31	10	60	87

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	5	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	6
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	2	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	1	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	2	0
2.2 Records of COMAH and NIHHS sites	0	1	1	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	1	1	0	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	3	4
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	6
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	1	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	2	8	16	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	Identified
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology				0-500m		
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?				Identified		
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?				Identified		
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	2	12	6	4
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	7
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	2	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	2	Not searched	Not searched

Section 6: Hydrogeology and Hydrology		0-500m				
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	Yes	No	No	No	Yes	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	26	6	62	60	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding	
7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	None identified
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low
7.4 Are there any Flood Defences within 250m of the study site?	None identified
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	None identified
7.6 Are there any areas used for Flood Storage within 250m of the study site?	None identified
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Potential at Surface
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	1	0	0	2
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	1	0	0	2
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	3	2	2
8.7 Records of Local Nature Reserves (LNR)	0	0	0	1	1	2
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	1	0	3
8.14 Records of Green Belt land	1	0	1	2	3	4

Section 9: Natural Hazards	
9.1 What is the maximum risk of natural ground subsidence?	Low
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Low
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Very Low
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Very Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Are there any coal mining areas within 75m of the study site?	Identified
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	None identified
10.3 Are there any brine affected areas within 75m of the study site?	None identified

Using this report

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

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

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

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

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

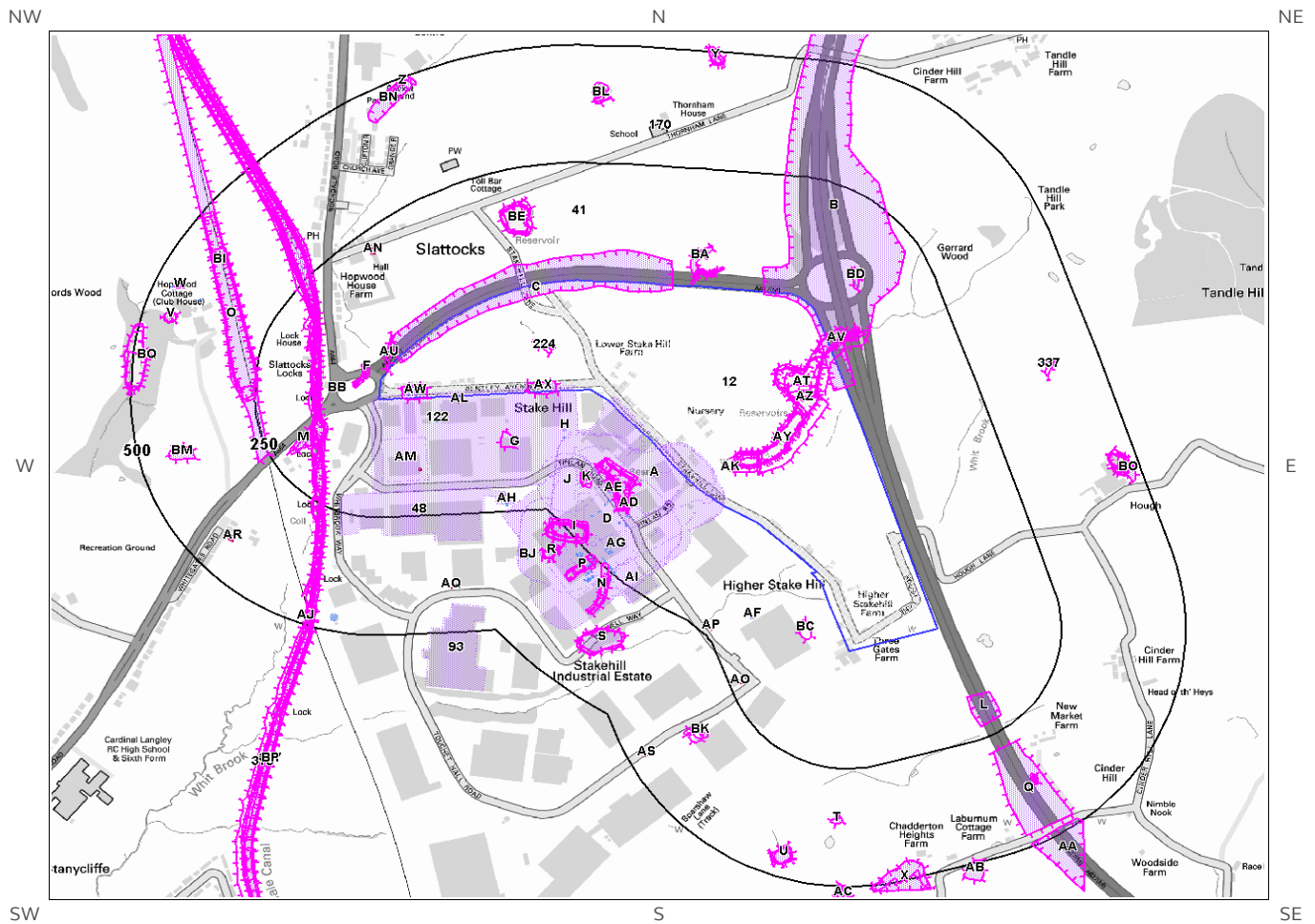
Note: Maps

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

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

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

1. Historical Land Use



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Historical 1:10,000 and 1:10,560 scale mapping



Site Outline

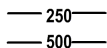


Industrial Land Use



Potentially Infilled Land

Historical 1:2,500, 1:1,250 and 1:500 scale mapping



Search Buffers (m)



Energy Features



Petrol Stations



Tanks



Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 121

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Nursery	1955
2A	0	On Site	Nursery	1965
3G	0	On Site	Industrial Estate	1982
4AW	0	On Site	Cuttings	1928
5AX	0	On Site	Cuttings	1928
6B	0	On Site	Cuttings	1982
7B	0	On Site	Cuttings	1975
8C	0	On Site	Cuttings	1982
9C	0	On Site	Cuttings	1975
10D	0	On Site	Unspecified Works	1928
11D	0	On Site	Bleach Works	1890
12	0	On Site	Shed	1851
13AU	0	On Site	Unspecified Ground Workings	1938
14AD	0	On Site	Unspecified Works	1938
15D	0	On Site	Dyeing and Bleaching Works	1909
16D	1	SW	Bleach Works	1851
17E	4	N	Old Sand Pit	1890
18E	17	N	Unspecified Ground Workings	1909
19E	17	N	Unspecified Ground Workings	1928
20E	19	N	Unspecified Ground Workings	1938
21F	26	W	Unspecified Ground Workings	1965
22F	26	W	Unspecified Ground Workings	1955
23BA	27	N	Sand Pit	1955
24F	30	W	Unspecified Ground Workings	1928
25F	30	W	Unspecified Ground Workings	1909
26F	32	W	Unspecified Ground Workings	1938
27D	62	SW	Unspecified Works	1965
28H	76	S	Unspecified Tank	1938

29G	80	S	Old Sand Pit	1890
30H	80	S	Unspecified Tank	1928
31AM	85	S	Unspecified Works	1982
32BB	85	W	Smithy	1851
33D	112	SW	Unspecified Disused Mill	1955
34BF	118	SW	Disused Canal	1982
35J	119	SW	Chimney	1955
36I	136	SW	Unspecified Commercial/Industrial	1982
37I	136	SW	Unspecified Commercial/Industrial	1975
38J	137	SW	Unspecified Heap	1938
39K	139	SW	Unspecified Heap	1928
40K	139	SW	Unspecified Heap	1909
41	140	N	Shed	1851
42M	146	W	Unspecified Ground Workings	1955
43L	157	SE	Cuttings	1975
44L	157	SE	Cuttings	1982
45M	157	SW	Unspecified Pit	1909
46M	157	SW	Unspecified Pit	1928
47J	164	SW	Chimney	1851
48	196	S	Unspecified Works	1982
49AI	197	SW	Unspecified Warehouse	1982
50BI	240	W	Cuttings	1851
51N	242	SW	Unspecified Ground Workings	1955
52N	242	SW	Unspecified Ground Workings	1965
53P	248	SW	Filter Beds	1938
54O	248	W	Cuttings	1909
55O	248	W	Cuttings	1928
56P	249	SW	Filter Beds	1928
57P	249	SW	Filter Beds	1909
58O	250	W	Cuttings	1965
59O	250	W	Cuttings	1955
60O	250	W	Cuttings	1982
61O	250	W	Cuttings	1975
62O	251	W	Cuttings	1890
63O	251	W	Cuttings	1938
64N	264	SW	Unspecified Ground Workings	1975
65P	274	SW	Unspecified Tanks	1938
66P	276	SW	Unspecified Tanks	1928
67R	283	SW	Refuse Heap	1890
68Q	284	SE	Cuttings	1982
69Q	284	SE	Cuttings	1975
70R	284	SW	Unspecified Heap	1938

71R	290	SW	Unspecified Heap	1928
72R	290	SW	Unspecified Heap	1909
73S	337	SW	Unspecified Heap	1955
74S	337	SW	Unspecified Heap	1965
75S	337	SW	Unspecified Heap	1975
76S	339	SW	Refuse Heap	1938
77S	339	SW	Unspecified Heap	1932
78T	354	S	Unspecified Ground Workings	1965
79T	354	S	Unspecified Ground Workings	1975
80T	354	S	Unspecified Ground Workings	1982
81Q	360	SE	Unspecified Pit	1932
82Q	365	SE	Unspecified Pit	1923
83BM	390	W	Sand Pit	1851
84V	430	W	Unspecified Heap	1938
85U	430	S	Unspecified Pit	1955
86U	430	S	Unspecified Pit	1965
87U	430	S	Unspecified Disused Pit	1975
88U	430	S	Unspecified Disused Pit	1982
89V	431	W	Unspecified Heap	1928
90BN	435	NW	Unspecified Pit	1928
91U	436	S	Unspecified Pit	1938
92U	436	S	Unspecified Pit	1932
93	439	S	Unspecified Warehouse	1982
94W	448	NW	Filter Bed	1909
95W	448	NW	Filter Bed	1928
96W	449	NW	Filter Bed	1938
97W	455	NW	Unspecified Tank	1909
98BO	460	E	Sand Pit	1851
99X	461	S	Unspecified Pit	1965
100X	461	S	Unspecified Pit	1975
101X	461	S	Unspecified Pit	1982
102X	462	S	Unspecified Pit	1955
103BQ	471	W	Boat House	1909
104Y	471	N	Unspecified Pit	1928
105Y	472	N	Unspecified Pit	1938
106Y	472	N	Unspecified Pit	1890
107Y	476	N	Unspecified Pit	1955
108Z	477	N	Unspecified Pit	1975
109Z	477	N	Unspecified Pit	1965
110Z	477	N	Unspecified Pit	1955
111Z	477	N	Unspecified Pit	1982
112AJ	483	S	Railway Building	1938
113AA	488	SE	Cuttings	1982
114AA	488	SE	Cuttings	1975

115AB	494	S	Unspecified Pit	1955
116AB	494	S	Unspecified Pit	1965
117AB	494	S	Unspecified Pit	1975
118AB	494	S	Unspecified Pit	1982
119AC	495	S	Unspecified Pit	1938
120AC	496	S	Unspecified Pit	1932
121AC	498	S	Unspecified Ground Workings	1955

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

53

ID	Distance (m)	Direction	Use	Date
122	47	S	Unspecified Tank	1992
123H	82	S	Unspecified Tank	1939
124H	97	S	Unspecified Tank	1929
125AD	123	SW	Unspecified Tank	1939
126AE	124	SW	Unspecified Tank	1953
127AE	124	SW	Unspecified Tank	1953
128AD	129	SW	Unspecified Tank	1939
129D	139	SW	Unspecified Tank	1929
130AD	139	SW	Tanks	1939
131AD	143	SW	Unspecified Tank	1929
132AF	146	SW	Unspecified Tank	1995
133AF	146	SW	Unspecified Tank	1994
134AF	146	SW	Unspecified Tank	1995
135D	154	SW	Tanks	1929
136AD	157	SW	Unspecified Tank	1939
137D	159	SW	Tanks	1929
138J	160	SW	Unspecified Tank	1890
139D	173	SW	Tanks	1939
140I	192	SW	Unspecified Tank	1939
141AG	202	SW	Tanks	1910
142AG	215	SW	Tanks	1910
143AG	216	SW	Unspecified Tank	1953
144AG	217	SW	Unspecified Tank	1953
145AG	222	SW	Tanks	1939
146AH	224	S	Unspecified Tank	1982
147AH	224	S	Unspecified Tank	1979
148AH	224	S	Unspecified Tank	1992

149AH	225	S	Unspecified Tank	1992
150AG	238	SW	Tanks	1929
151AI	241	SW	Tanks	1929
152P	249	SW	Tanks	1939
153P	249	SW	Tanks	1929
154P	259	SW	Tanks	1939
155AI	260	SW	Unspecified Tank	1994
156AI	260	SW	Unspecified Tank	1993
157AI	260	SW	Unspecified Tank	1995
158AI	260	SW	Unspecified Tank	1995
159AI	260	SW	Unspecified Tank	1992
160P	263	SW	Tanks	1929
161N	274	SW	Tanks	1939
162N	281	SW	Tanks	1995
163N	281	SW	Tanks	1994
164N	281	SW	Tanks	1995
165N	281	SW	Tanks	1993
166N	281	SW	Tanks	1992
167N	281	SW	Unspecified Tank	1985
168N	290	SW	Unspecified Tank	1985
169N	290	SW	Tanks	1929
170	328	N	Unspecified Tank	1978
171BJ	345	S	Tanks	1992
172W	399	NW	Unspecified Tank	1992
173W	461	NW	Unspecified Tank	1910
174AJ	463	S	Unspecified Tank	1992

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

35

ID	Distance (m)	Direction	Use	Date
175AK	0	On Site	Electricity Substation	1953
176AK	0	On Site	Electricity Substation	1953
177AL	10	S	Electricity Substation	1979
178AL	10	S	Electricity Substation	1982
179AL	10	S	Electricity Substation	1992
180AM	148	S	Electricity Substation	1982
181AM	148	S	Electricity Substation	1979
182AM	148	S	Electricity Substation	1992
183AN	200	NW	Electricity Substation	1992

184AN	200	NW	Electricity Substation	1981
185AH	217	S	Electricity Substation	1982
186AH	217	S	Electricity Substation	1979
187AH	218	S	Electricity Substation	1992
188AO	227	W	Electricity Substation	1995
189AO	227	W	Electricity Substation	1994
190AO	227	W	Electricity Substation	1993
191AO	227	W	Electricity Substation	1995
192AO	228	W	Electricity Substation	1992
193AO	228	W	Electricity Substation	1985
194AP	228	SW	Electricity Substation	1995
195AP	228	SW	Electricity Substation	1995
196AP	228	SW	Electricity Substation	1994
197AQ	401	S	Electricity Substation	1990
198AQ	401	S	Electricity Substation	1990
199AQ	401	S	Electricity Substation	1983
200AQ	401	S	Electricity Substation	1990
201AR	412	SW	Electricity Substation	1953
202AR	412	SW	Electricity Substation	1953
203AR	413	SW	Electricity Substation	1984
204AR	413	SW	Electricity Substation	1992
205AS	462	SW	Electricity Substation	1995
206AS	462	SW	Electricity Substation	1995
207AS	462	SW	Electricity Substation	1993
208AS	462	SW	Electricity Substation	1994
209AS	462	SW	Electricity Substation	1992

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 188

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
210AZ	0	On Site	Reservoirs	1891
211AT	0	On Site	Reservoirs	1907
212AT	0	On Site	Reservoirs	1928
213AT	0	On Site	Reservoirs	1938
214AT	0	On Site	Reservoirs	1891
215AU	0	On Site	Unspecified Ground Workings	1938
216AV	0	On Site	Reservoirs	1928
217AV	0	On Site	Reservoirs	1907
218AV	0	On Site	Reservoirs	1938
219AV	0	On Site	Reservoirs	1891
220AW	0	On Site	Cuttings	1928
221AX	0	On Site	Cuttings	1928
222AY	0	On Site	Reservoirs	1907
223AY	0	On Site	Reservoirs	1928
224	0	On Site	Pond	1890
225B	0	On Site	Cuttings	1982
226AY	0	On Site	Reservoirs	1938
227AK	0	On Site	Reservoir	1938
228AK	0	On Site	Reservoir	1928
229AK	0	On Site	Reservoir	1909
230AK	0	On Site	Pond	1890
231AZ	0	On Site	Reservoirs	1982
232AK	0	On Site	Pond	1851
233AY	0	On Site	Reservoirs	1891
234AZ	0	On Site	Reservoirs	1975
235AZ	0	On Site	Ponds	1851
236AZ	0	On Site	Reservoirs	1955
237AZ	0	On Site	Ponds	1965
238C	0	On Site	Cuttings	1975
239C	0	On Site	Cuttings	1982
240B	0	On Site	Cuttings	1975
241E	4	N	Old Sand Pit	1890
242E	17	N	Unspecified Ground Workings	1928
243E	17	N	Unspecified Ground Workings	1909
244E	19	N	Unspecified Ground Workings	1938

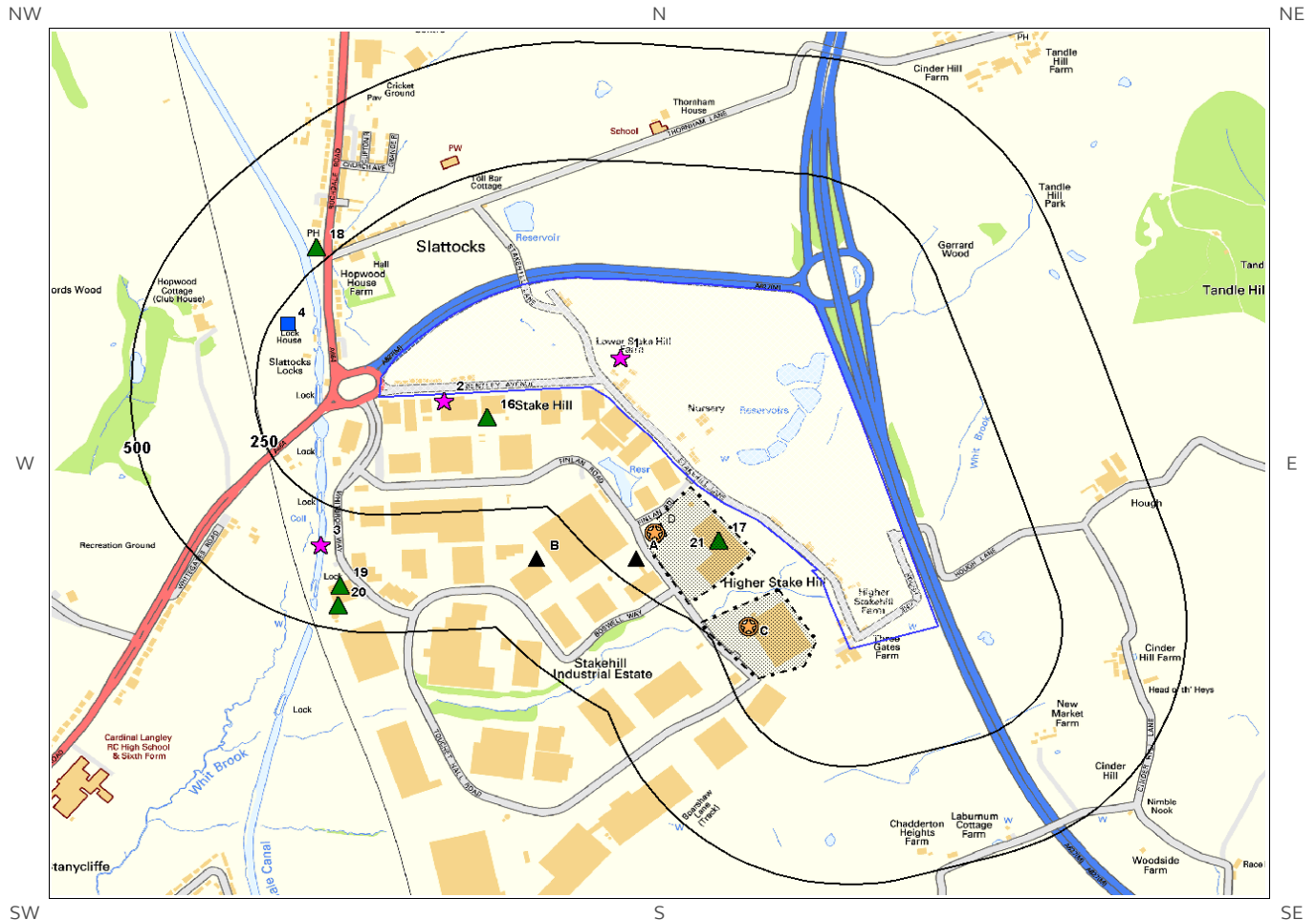
245F	26	W	Unspecified Ground Workings	1955
246F	26	W	Unspecified Ground Workings	1965
247BA	27	N	Sand Pit	1955
248BB	30	W	Unspecified Ground Workings	1909
249BB	30	W	Unspecified Ground Workings	1928
250F	32	W	Unspecified Ground Workings	1938
251BC	56	W	Pond	1916
252BC	56	W	Pond	1907
253BC	56	W	Pond	1923
254AE	71	SW	Reservoir	1955
255G	80	S	Old Sand Pit	1890
256AE	81	SW	Reservoir	1982
257AE	81	SW	Reservoir	1975
258AE	81	SW	Pond	1965
259AE	82	SW	Reservoir	1938
260AE	82	SW	Reservoir	1890
261AE	83	SW	Reservoir	1928
262AE	83	SW	Reservoir	1909
263BD	93	NE	Pond	1982
264BD	93	NE	Pond	1975
265AD	96	SW	Pond	1851
266BE	105	N	Reservoir	1928
267BE	105	N	Reservoir	1909
268BE	107	N	Reservoir	1938
269BE	107	N	Reservoir	1890
270BE	112	N	Reservoir	1982
271BE	112	N	Reservoir	1975
272BE	112	N	Pond	1965
273BE	112	N	Reservoir	1955
274BE	112	N	Pond	1851
275BF	118	SW	Disused Canal	1982
276BF	118	SW	Canal	1975
277BG	118	W	Canal	1955
278BG	118	W	Canal	1965
279	121	W	Canal	1938
280BH	121	W	Canal	1928
281BH	121	W	Canal	1909
282	121	W	Canal	1851
283	123	W	Canal	1890
284K	137	SW	Unspecified Heap	1938
285K	139	SW	Unspecified Heap	1909
286K	139	SW	Unspecified Heap	1928

287M	146	W	Unspecified Ground Workings	1955
288L	157	SE	Cuttings	1975
289L	157	SE	Cuttings	1982
290M	157	SW	Unspecified Pit	1909
291M	157	SW	Unspecified Pit	1928
292I	211	SW	Reservoir	1955
293I	215	SW	Pond	1965
294I	217	SW	Reservoir	1890
295I	217	SW	Reservoir	1938
296I	218	SW	Reservoir	1928
297I	218	SW	Reservoir	1909
298I	222	SW	Pond	1851
299BI	240	W	Cuttings	1851
300N	242	SW	Unspecified Ground Workings	1965
301N	242	SW	Unspecified Ground Workings	1955
302P	248	SW	Filter Beds	1938
303O	248	W	Cuttings	1909
304O	248	W	Cuttings	1928
305P	249	SW	Filter Beds	1928
306P	249	SW	Filter Beds	1909
307O	250	W	Cuttings	1955
308O	250	W	Cuttings	1975
309O	250	W	Cuttings	1965
310O	250	W	Cuttings	1982
311O	251	W	Cuttings	1890
312O	251	W	Cuttings	1938
313N	264	SW	Unspecified Ground Workings	1975
314BJ	283	SW	Refuse Heap	1890
315Q	284	SE	Cuttings	1975
316Q	284	SE	Cuttings	1982
317BJ	284	SW	Unspecified Heap	1938
318BJ	290	SW	Unspecified Heap	1928
319BJ	290	SW	Unspecified Heap	1909
320BK	332	SW	Pond	1915
321BK	332	SW	Pond	1907
322BK	332	SW	Pond	1923
323S	337	SW	Unspecified Heap	1955
324S	337	SW	Unspecified Heap	1975
325S	337	SW	Unspecified Heap	1965
326S	339	SW	Refuse Heap	1938
327S	339	SW	Unspecified Heap	1932
328BK	344	SW	Pond	1851

329T	354	S	Unspecified Ground Workings	1965
330T	354	S	Unspecified Ground Workings	1982
331T	354	S	Unspecified Ground Workings	1975
332Q	360	SE	Unspecified Pit	1932
333Q	365	SE	Unspecified Pit	1923
334BL	375	N	Pond	1938
335BL	376	N	Pond	1909
336BL	376	N	Pond	1928
337	386	E	Pond	1891
338BL	387	N	Pond	1982
339BL	387	N	Pond	1975
340BL	387	N	Pond	1965
341BM	390	W	Sand Pit	1851
342V	430	W	Unspecified Heap	1938
343U	430	S	Unspecified Disused Pit	1975
344U	430	S	Unspecified Disused Pit	1982
345U	430	S	Unspecified Pit	1965
346U	430	S	Unspecified Pit	1955
347V	431	W	Unspecified Heap	1928
348BN	435	NW	Unspecified Pit	1928
349U	436	S	Unspecified Pit	1938
350U	436	S	Pond	1923
351U	436	S	Pond	1891
352U	436	S	Pond	1916
353U	436	S	Pond	1907
354U	436	S	Unspecified Pit	1932
355BO	444	E	Pond	1956
356BO	444	E	Pond	1938
357BO	444	E	Pond	1928
358BO	445	E	Pond	1974
359BO	445	E	Pond	1966
360BO	445	E	Pond	1980
361BO	445	E	Pond	1988
362BO	445	E	Pond	1907
363W	448	NW	Filter Bed	1909
364W	448	NW	Filter Bed	1928
365W	449	NW	Filter Bed	1938
366BP	455	S	Canal	1932
367	455	S	Canal	1923
368BP	455	S	Canal	1915
369BP	455	S	Canal	1907
370BO	460	E	Sand Pit	1851
371X	461	S	Unspecified Pit	1975
372X	461	S	Unspecified Pit	1982

373X	461	S	Unspecified Pit	1965
374X	462	S	Unspecified Pit	1955
375	466	S	Canal	1891
376BQ	471	W	Pond	1851
377Y	471	N	Unspecified Pit	1928
378Y	472	N	Unspecified Pit	1938
379Y	472	N	Unspecified Pit	1890
380BQ	473	W	Pond	1938
381BQ	473	W	Pond	1890
382BQ	474	W	Water Body	1909
383BQ	474	W	Water Body	1928
384Y	476	N	Unspecified Pit	1955
385Z	477	N	Unspecified Pit	1975
386Z	477	N	Unspecified Pit	1965
387Z	477	N	Unspecified Pit	1955
388Z	477	N	Unspecified Pit	1982
389AA	488	SE	Cuttings	1982
390AA	488	SE	Cuttings	1975
391AB	494	S	Unspecified Pit	1955
392AB	494	S	Unspecified Pit	1975
393AB	494	S	Unspecified Pit	1965
394AB	494	S	Unspecified Pit	1982
395AC	495	S	Unspecified Pit	1938
396AC	496	S	Unspecified Pit	1932
397AC	498	S	Unspecified Ground Workings	1955

2. Environmental Permits, Incidents and Registers Map



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

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

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

5

The following IPC Authorisations are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
31A	201	SW	389100 408000	Operator: Woodbridge Foam (UK) Ltd Address: Unit 65 Finlan Road, Stakehill Industrial Estate, Middleton, Manchester, M24 2FL Process: Di-isocyanate Processes Permit Number: BE3324 Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
32A	201	SW	389100 408000	Operator: Woodbridge Foam (UK) Ltd Address: Unit 65 Finlan Road, Stakehill Industrial Estate, Middleton, Manchester, M24 2FL Process: Di-isocyanate Processes Permit Number: BA7026 Original Permit Number: IPCAPP Date Approved: 11-5-1998 Effective Date: 15-5-1998 Status: Superseded By Variation
33A	201	SW	389100 408000	Operator: Woodbridge Foam (UK) Ltd Address: Unit 65 Finlan Road, Stakehill Industrial Estate, Middleton, Manchester, M24 2FL Process: Di-isocyanate Processes Permit Number: BM5194 Original Permit Number: IPCMINVAR Date Approved: 7-3-2002 Effective Date: 7-3-2002 Status: Superseded By Variation
34A	201	SW	389100 408000	Operator: Woodbridge Foam (UK) Ltd Address: Unit 65 Finlan Road, Stakehill Industrial Estate, Middleton, Manchester, M24 2FL Process: Di-isocyanate Processes Permit Number: BX0601 Original Permit Number: IPCMINVAR Date Approved: 12-1-2004 Effective Date: 14-1-2004 Status: Superseded By Variation
35A	201	SW	389100 408000	Operator: Woodbridge Foam (UK) Ltd Address: Unit 65 Finlan Road, Stakehill Industrial Estate, Middleton, Manchester, M24 2FL Process: Di-isocyanate Processes Permit Number: CA3106 Original Permit Number: IPCMINVAR Date Approved: 11-4-2006 Effective Date: 13-4-2006 Status: Revoked - Now Ippc

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

6

The following Part A(1) and IPPC Authorised Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
25B	344	SW	388900 408000	Operator: Proseat Limited Liability Partnership Installation Name: Stakehill Moulded Foam Plant Process: ORGANIC CHEMICALS; TOLUENE DI-ISOCYANATE ETC USE >1 T/12 MONTHS IF RELEASE TO AIR Permit Number: HP3635UT Original Permit Number: HP3635UT EPR Reference: - Issue Date: 21/3/2007 Effective Date: 21/3/2007 00:00:00 Last date noted as effective: 2018-03-01 Status: Superseded
26B	344	SW	388900 408000	Operator: Woodbridge Foam (uk) Ltd Installation Name: Stakehill Moulded Foam Plant Process: ORGANIC CHEMICALS; TOLUENE DI-ISOCYANATE ETC USE >1 T/12 MONTHS IF RELEASE TO AIR Permit Number: BS3255IE Original Permit Number: BS3255IE EPR Reference: - Issue Date: 28/9/2006 Effective Date: 28/9/2006 00:00:00 Last date noted as effective: 2018-03-01 Status: Superseded
27B	344	SW	388900 408000	Operator: Woodbridge Foam (uk) Ltd Installation Name: Stakehill Moulded Foam Plant Process: ORGANIC CHEMICALS: USE OF >5T OF DIPHENYL MDI/OTHER DI-ISOCYANATE/PARTLY POLYMERISED DI-ISOCYANATES/PREPOLYMERS CONTAINING >5T OF THESE MONOMERS IN ANY 12MTH PERIOD RELEASE TO AIR OF DI-ISOCYANATE Permit Number: BS3255IE Original Permit Number: BS3255IE EPR Reference: - Issue Date: 28/9/2006 Effective Date: 28/9/2006 00:00:00 Last date noted as effective: 2018-03-01 Status: Superseded
28B	344	SW	388900 408000	Operator: Proseat Limited Liability Partnership Installation Name: Stakehill Moulded Foam Plant Process: ORGANIC CHEMICALS: USE OF >5T OF DIPHENYL MDI/OTHER DI-ISOCYANATE/PARTLY POLYMERISED DI-ISOCYANATES/PREPOLYMERS CONTAINING >5T OF THESE MONOMERS IN ANY 12MTH PERIOD RELEASE TO AIR OF DI-ISOCYANATE Permit Number: XP3638HA Original Permit Number: HP3635UT EPR Reference: - Issue Date: 27/1/2011 Effective Date: 27/1/2011 00:00:00 Last date noted as effective: 2013-04-01 Status: Effective
29B	344	SW	388900 408000	Operator: Proseat Limited Liability Partnership Installation Name: Stakehill Moulded Foam Plant Process: ORGANIC CHEMICALS; TOLUENE DI-ISOCYANATE ETC USE >1 T/12 MONTHS IF RELEASE TO AIR Permit Number: XP3638HA Original Permit Number: HP3635UT EPR Reference: - Issue Date: 27/1/2011 Effective Date: 27/1/2011 00:00:00 Last date noted as effective: 2013-04-01 Status: Effective
30B	344	SW	388900 408000	Operator: Proseat Limited Liability Partnership Installation Name: Stakehill Moulded Foam Plant Process: ORGANIC CHEMICALS: USE OF >5T OF DIPHENYL MDI/OTHER DI-ISOCYANATE/PARTLY POLYMERISED DI-ISOCYANATES/PREPOLYMERS CONTAINING >5T OF THESE MONOMERS IN ANY 12MTH PERIOD RELEASE TO AIR OF DI-ISOCYANATE Permit Number: HP3635UT Original Permit Number: HP3635UT EPR Reference: - Issue Date: 21/3/2007 Effective Date: 21/3/2007 00:00:00 Last date noted as effective: 2018-03-01 Status: Superseded

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

5

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
16	57	S	388800 408300	Address: Woodbridge Foam Ltd, Stakehill Indl Est, Slattocks, Middleton Process: Di-isocyanate, Foam Manufacture Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
17	78	SW	389266 408037	Address: Proseat LLP, Site A, Finlan Road, Middleton, Manchester, M24 2SJ Process: Foam Manuf. Status: Historical Permit Permit Type: Part A Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
18	278	NW	388458 408661	Address: Hopwood Service Station, Rochdale Road, Middleton, Manchester, M24 2RA Process: Petrol Filling Station Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
19	411	S	388505 407942	Address: Thomas Glover & Co, Unit 70, Stakehill Industrial Estate, Middleton, Manchester, M24 2RW Process: Fire extinguisher refurb Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

ID	Distance (m)	Direction	NGR	Details
20	454	S	388500 407900	Address: The Pyrene Co Ltd Whitbrook Way, Slattocks Ind Est, M24 7RW Process: Vehicle Re-spray Process Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

1

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
4	218	NW	388400 408500	Address: CANAL LOCKHOUSE STP SLATTOCKS, SLATTOCKS, MIDDLETON, MANCHESTER, GREATER MANCHESTER, M24 Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 016993265 Permit Version: 1 Receiving Water: ROCHDALE CANAL Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 08/07/1998 Effective Date: 08-Jul-1998 Revocation Date: -

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

0

Database searched and no data found.

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

2

The following records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Application Reference Number	NGR	Application Status	Application Date	Address	Details	Details of Enforcement Action
36D	134	SW	01/D38536	389136 408057	Approved	23/01/2001	Proseat pka Woodbridge Foam (UK) Ltd, Site A, Stakehill Industrial Estate, Finlan Road, Middleton, M24 2SJ	Application for consent to store hazardous substances.	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
37C	172	W	09/D52392	389325 407859	Approved	25/08/2009	Bibby Distribution Ltd, formerly SSL International PLC, Stakehill Industrial Estate, Finlan Road, Middleton, M24 2SJ	Application for consent to store hazardous substances.	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.2 Dangerous or Hazardous Sites

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

2

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
21	12	SW	Proseat Llp	Proseat Llp, Stakehill Industrial Estate, Unit A, Stakehill Industrial Estate, Touchet Hall Road, Manchester, Greater Manchester, M24 2SJ	Current COMAH Site	COMAH Lower Tier Operator
22C	56	W	Bibby Distribution Limited	Bibby Distribution Limited, Middleton, Unit S1, Stakehill Industrial Estate, Middleton, Manchester, Greater Manchester, M24 2RW	Historical NIHHS Site	-

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

3

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1	0	On Site	389067 408430	Incident Date: 26-Sep-2002 Incident Identification: 110642 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
2	15	S	388713 408338	Incident Date: 27-Jul-2003 Incident Identification: 177161 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Fumes Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
3	335	S	388465 408033	Incident Date: 01-May-2011 Incident Identification: 881040 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

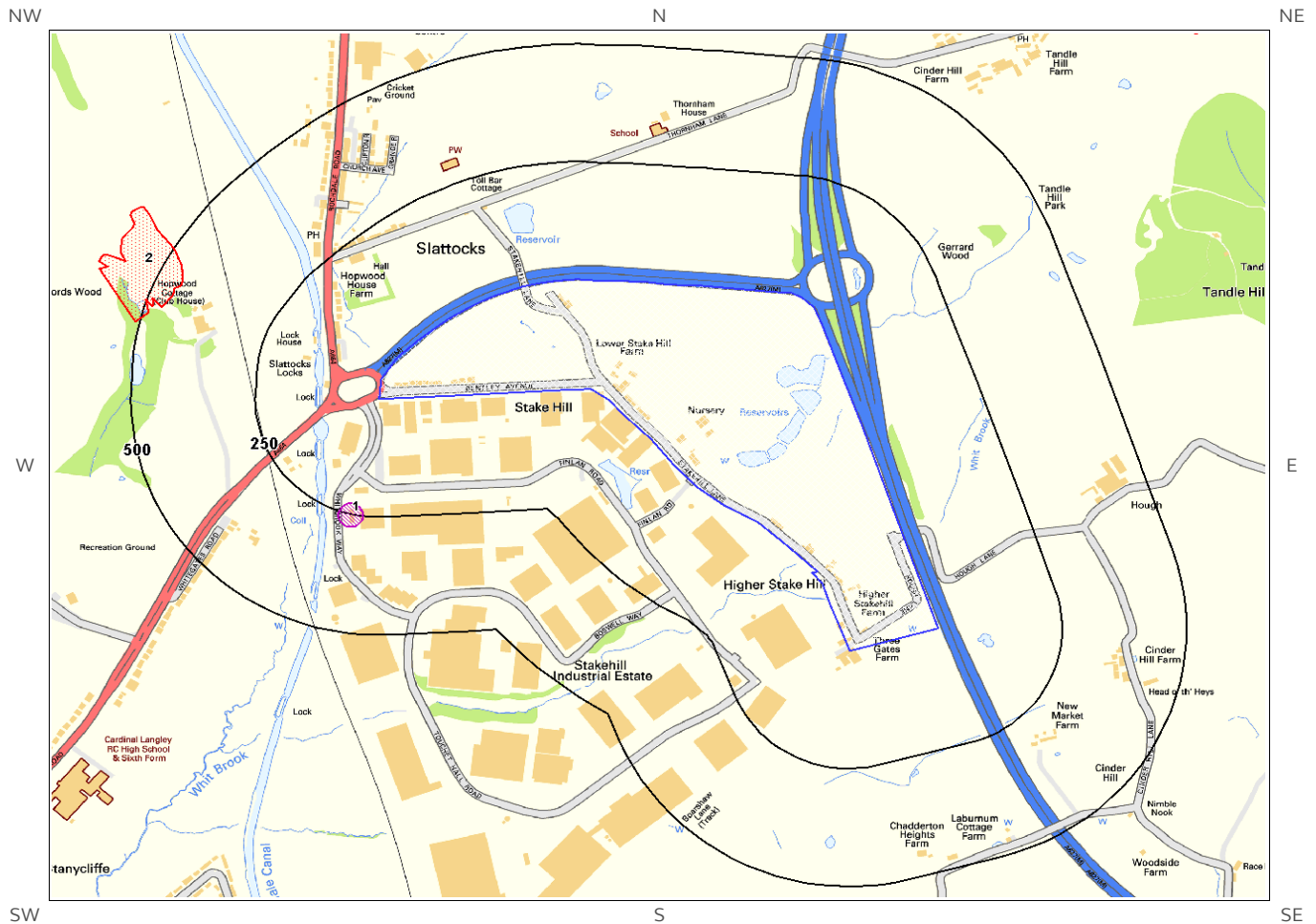
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

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

0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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- | | | | | | |
|---|---------------------------|---|----------------------------|---|---|
|  | Site Outline |  | EA/NRW Active Landfill |  | Historic and Planned Waste Sites |
|  | EA/NRW Historic Landfill |  | EA/NRW Licensed Waste Site |  | Local Authority/Historical Mapping Landfill Records |
|  | BGS / DoE Survey Landfill | | | | |

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

8

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

ID	Distance (m)	Direction	NGR	Details
2	447	NW	388100 408600	Site Address: Land at Manchester Golf Club, Rochdale Road, Stannycliffe, Middleton, Greater Manchester Waste Licence: Yes Site Reference: D116, RD/LIC/755/92 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 05-Jun-1992 Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: W Maher and Sons Limited First Recorded: 01-Jul-1992 Last Recorded: 31-Dec-1992
Not shown	590	N	388800 409200	Site Address: Land At Newhey Farm, Chesham Avenue, Castleton, Rochdale, Greater Manchester Waste Licence: Yes Site Reference: RD/LIC/305/83, D051 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 03-Apr-1984 Licence Surrendered: 04-Nov-1985 Licence Holder Address: - Operator: - Licence Holder: Drake Brothers First Recorded: 31-Dec-1984 Last Recorded: 28-Feb-1985
Not shown	891	SW	389000 406900	Site Address: Land at Acres Farm, Kiln Hill Lane, Chadderton Fold, Oldham, Greater Manchester Waste Licence: - Site Reference: G144 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -

ID	Distance (m)	Direction	NGR	Details	
5	961	NE	390200 409200	Site Address: Land at Thornham Old Road, Royton, Oldham, Greater Manchester Waste Licence: - Site Reference: G397 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1071	SE	390700 407300	Site Address: Land adjacent to Streetbridge Works, Middleton Road, Oldham, Greater Manchester Waste Licence: Yes Site Reference: G018, RD/LIC/247/82 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 26-Aug-1982 Licence Surrendered: 31-Dec-1985 Licence Holder Address: Streetbridge Works, Middleton Road, Royton, Oldham Operator: - Licence Holder: W H and E A Holt Limited First Recorded: 31-Dec-1981 Last Recorded: 31-Dec-1982
Not shown	1329	SW	387700 407200	Site Address: Land at Stanycliffe Bridge, Rochdale Road, Middleton, Manchester, Greater Manchester Waste Licence: - Site Reference: D067 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1411	SE	390900 406800	Site Address: Elk Mill, Off Broadway, Oldham, Greater Manchester Waste Licence: Yes Site Reference: RD/LIC/114/77,G016 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 13-Jun-1978 Licence Surrendered: 04-May-1983 Licence Holder Address: Elk Mill, Broadway, Oldham Operator: - Licence Holder: Shiloh Spinners Limited First Recorded: 31-Dec-1926 Last Recorded: 31-Dec-1981
Not shown	1489	S	388900 406200	Site Address: Land at Mills Hill, Oldham Road, Mills Hill, Oldham, Greater Manchester Waste Licence: - Site Reference: G072 Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Chadderton Urban District Council Licence Holder: - First Recorded: 31-Dec-1967 Last Recorded: 31-Dec-1972

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

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

6

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1087	SE	390285 406916	Refuse Tip	1969 mapping	Polygon
Not shown	1352	SW	387708 407225	Refuse Tip	1954 mapping	Polygon
Not shown	1369	SW	387339 407768	Refuse Tip	1954 mapping	Polygon
Not shown	1370	SW	387311 407792	Refuse Tip	1964 mapping	Polygon
Not shown	1499	E	391184 407576	Refuse Tip	1967 mapping	Polygon
Not shown	1499	E	391185 407576	Refuse Tip	1969 mapping	Polygon

3.2 Other Waste Sites

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

1

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

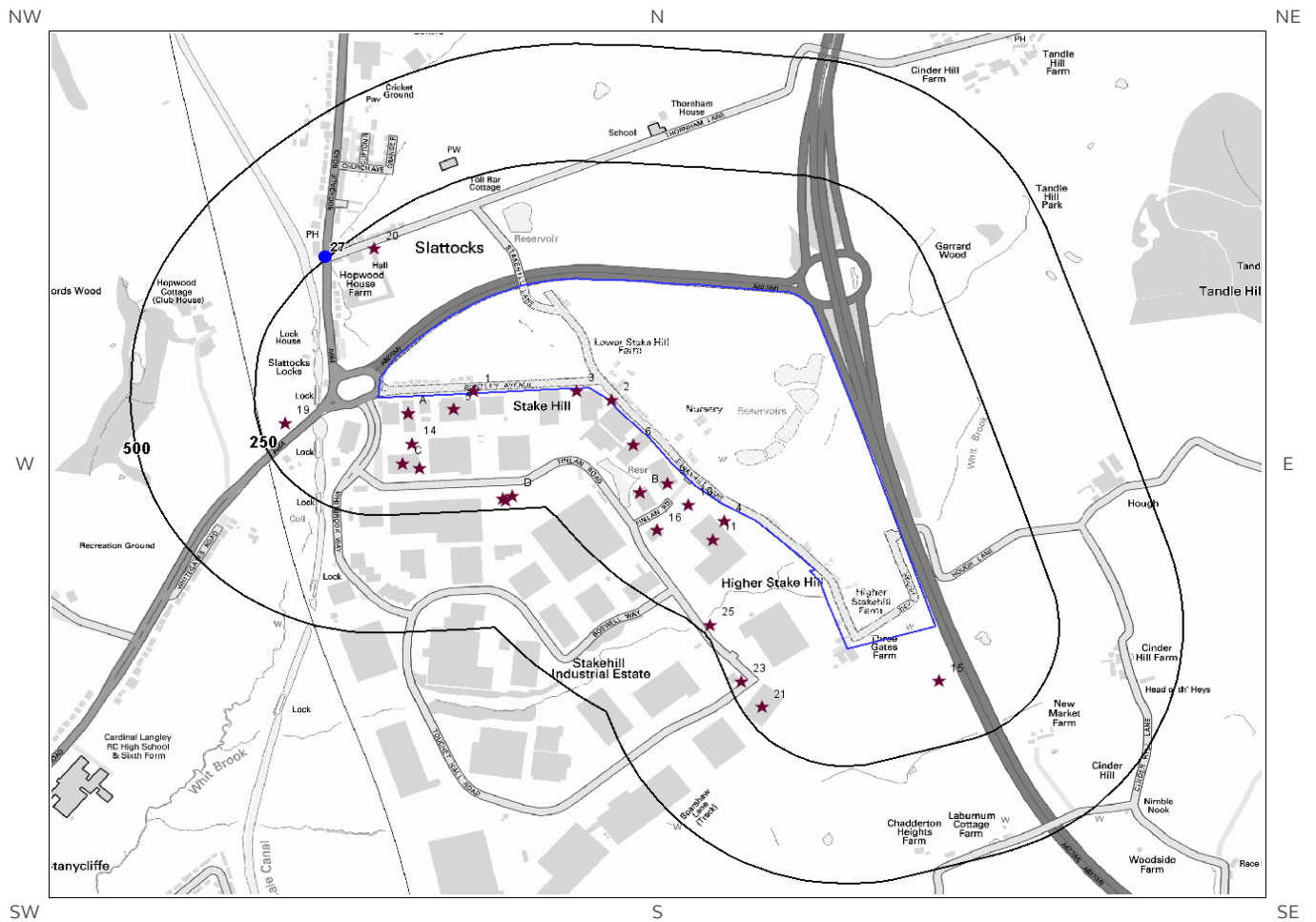
ID	Distance (m)	Direction	NGR	Details
1	228	S	388525 408099	Type of Site: Waste Transfer Facility Site Address: Unit 38, Whitbrook Way, Middleton, MANCHESTER, Greater Manchester, M24 2SS Planning Application Reference: D32317 Date: - Further Details: Convert part of industrial unit into solvent storage area. An application (ref: D32317) for Detailed Planning permission was submitted to Rochdale B.C. on 29th July 1995. Data Source: Historic Planning Application Data Type: Point

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

4. Current Land Use Map



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Site Outline

★ Current Industrial Sites

— Electricity Transmission Cables

— 250 — Search Buffers (m)
— 500 —

● Petrol & Fuel Sites

— Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

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

26

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Electricity Sub Station	388776 408361	M24	Electrical Features	Infrastructure and Facilities
2	0	On Site	Electricity Sub Station	389053 408343	M24	Electrical Features	Infrastructure and Facilities
3	5	S	Electricity Sub Station	388983 408362	M24	Electrical Features	Infrastructure and Facilities
4	30	SW	Electricity Sub Station	389281 408085	M24	Electrical Features	Infrastructure and Facilities
5	31	S	J L G Industries UK Ltd	388735 408322	Unit 4-5, Bentley Avenue, Middleton, Manchester, M24 2GP	Access Equipment	Industrial Products
6	32	SW	R D M Industrial Services Ltd	389096 408247	Unit 10, Stakehill Industrial Estate, Middleton, Manchester, M24 2RW	Special Purpose Machinery and Equipment	Industrial Products
7A	34	S	Dunlop Extrusions	388644 408314	Unit 1, Bentley Avenue, Middleton, Manchester, M24 2GP	Rubber, Silicones and Plastics	Industrial Products
8A	34	S	Simkiss	388644 408314	Bentley Avenue, Middleton, Manchester, M24 2GP	Electrical Components	Industrial Products
9	35	SW	P H S Teacrate	389166 408165	Unit 9, Stakehill Industrial Estate, Middleton, Manchester, M24 2RW	Shelving, Storage, Safes and Vaults	Industrial Products
10	41	SW	Tank	389208 408120	M24	Tanks (Generic)	Industrial Features
11	76	SW	Proseat	389258 408045	Proseat Llp Stakehill Industrial Estate, Touchet Hall Road, Middleton, M24 2SJ	Rubber, Silicones and Plastics	Industrial Products
12B	88	SW	Ace Polishing Services Ltd	389111 408146	Unit 3, Stakehill Industrial Estate, Middleton, Manchester, M24 2RW	Industrial Coatings and Finishings	Industrial Products
13B	89	SW	Sitraben	389111 408145	Unit 3, Stakehill Industrial Estate, Middleton, Manchester, M24 2RW	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
14	100	S	Travelling Crane	388651 408249	M24	Travelling Cranes and Gantry	Industrial Features
15	112	S	Pylon	389714 407745	M24	Electrical Features	Infrastructure and Facilities

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
16	122	SW	Middleton Car & Commercial Ltd	389144 408065	Unit 2, Stakehill Industrial Estate, Middleton, Manchester, M24 2RW	Vehicle Repair, Testing and Servicing	Repair and Servicing
17C	141	S	West Pennine Trucks Ltd	388631 408207	Unit 32, Stakehill Industrial Estate, Middleton, Manchester, M24 2RW	Vehicle Bodybuilders	Industrial Products
18C	152	S	Electricity Sub Station	388667 408198	M24	Electrical Features	Infrastructure and Facilities
19	196	W	Pylon	388395 408293	M24	Electrical Features	Infrastructure and Facilities
20	208	NW	Electricity Sub Station	388574 408664	M24	Electrical Features	Infrastructure and Facilities
21	212	SW	P S V Glass	389356 407690	Unit S2 Stakehill Industrial Estate, Touchet Hall Road, Middleton, Manchester, M24 2SJ	Vehicle Repair, Testing and Servicing	Repair and Servicing
22D	221	S	Electricity Sub Station	388854 408139	M24	Electrical Features	Infrastructure and Facilities
23	225	W	Electricity Sub Station	389314 407744	M24	Electrical Features	Infrastructure and Facilities
24D	226	S	Tank	388835 408133	M24	Tanks (Generic)	Industrial Features
25	230	SW	Electricity Sub Station	389251 407864	M24	Electrical Features	Infrastructure and Facilities
26D	230	S	Tank	388840 408129	M24	Tanks (Generic)	Industrial Features

4.2 Petrol and Fuel Sites

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

1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
27	255	NW	388476 408646	BP	Hopwood Self Service Station, Rochdale Road, Rochdale Road, Slattocks, Manchester, Greater Manchester, M24 2RA	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site:

0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

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

Lex Code	Description	Rock Type
MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
HMGDD-DMTN	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON

5.3 Bedrock and Solid Geology

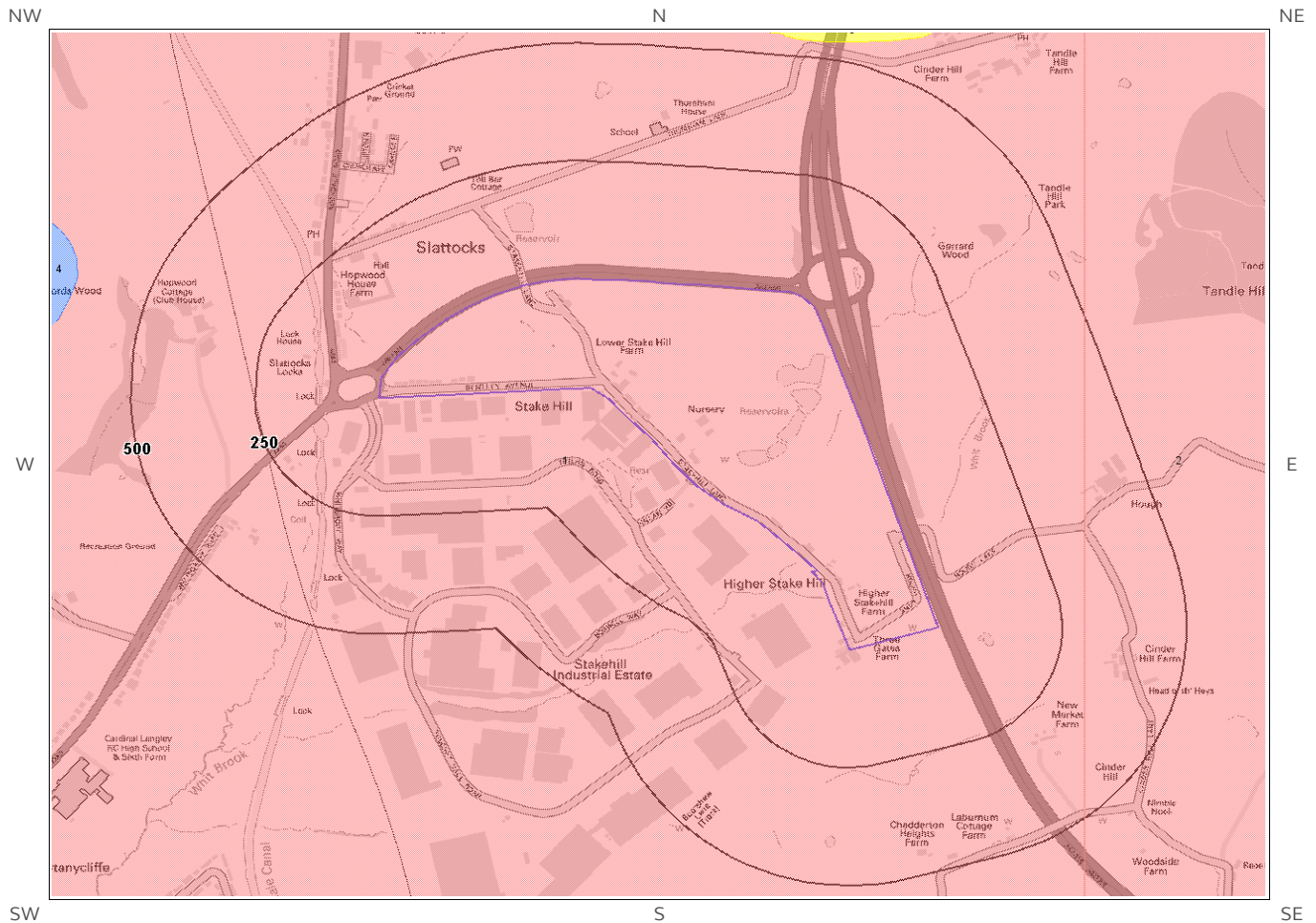
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
RYSA-SDST	ROYLEY SANDSTONE	SANDSTONE

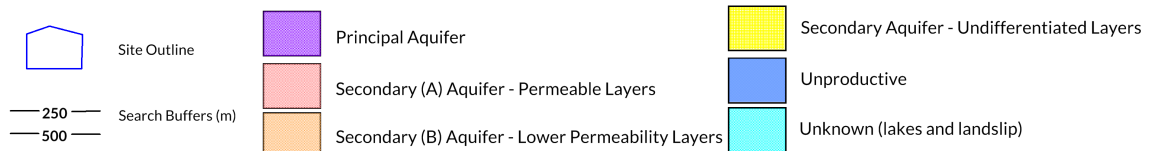
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

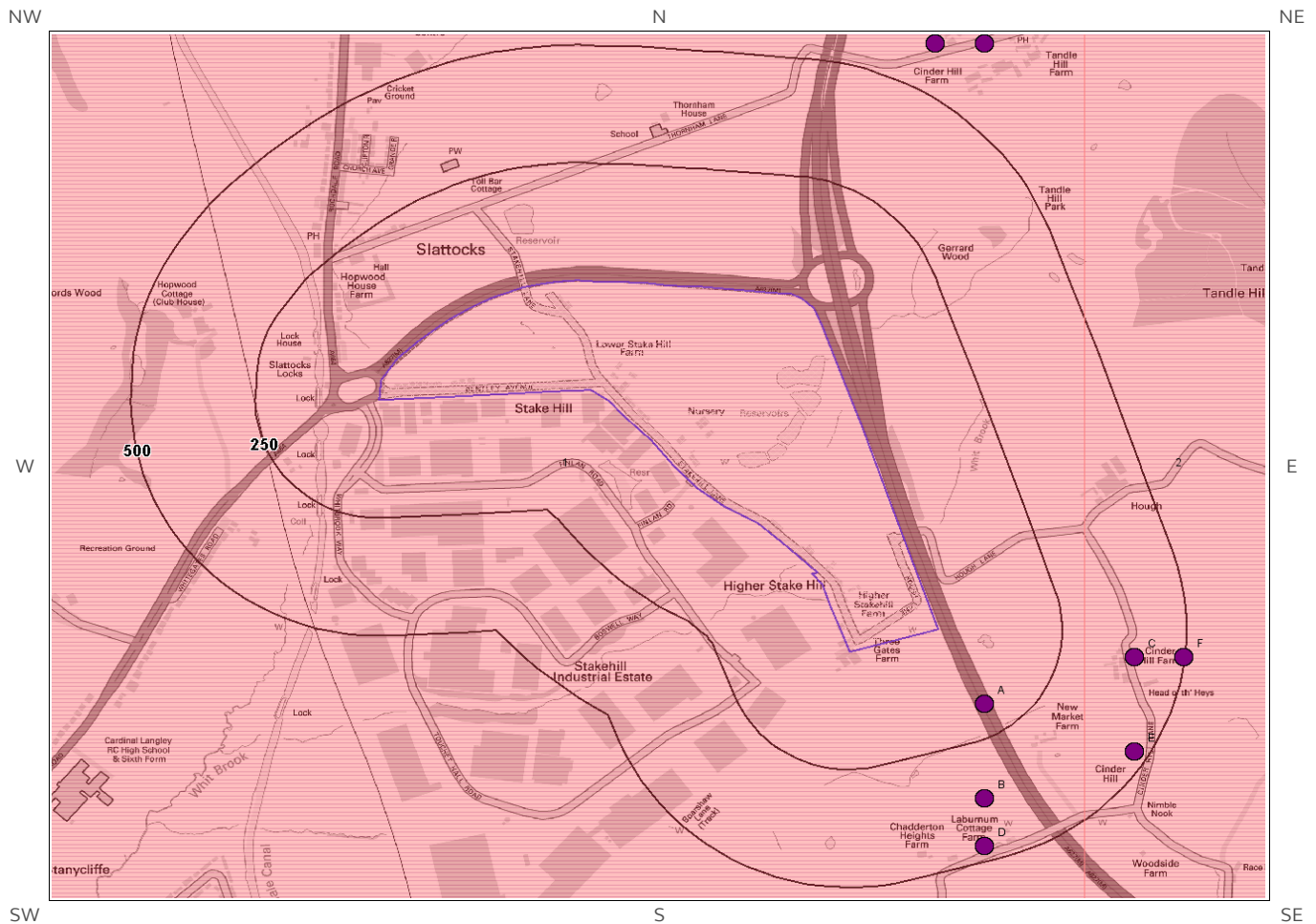
6a. Aquifer Within Superficial Geology



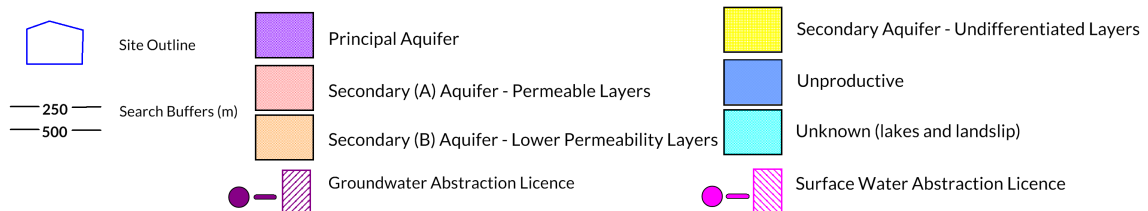
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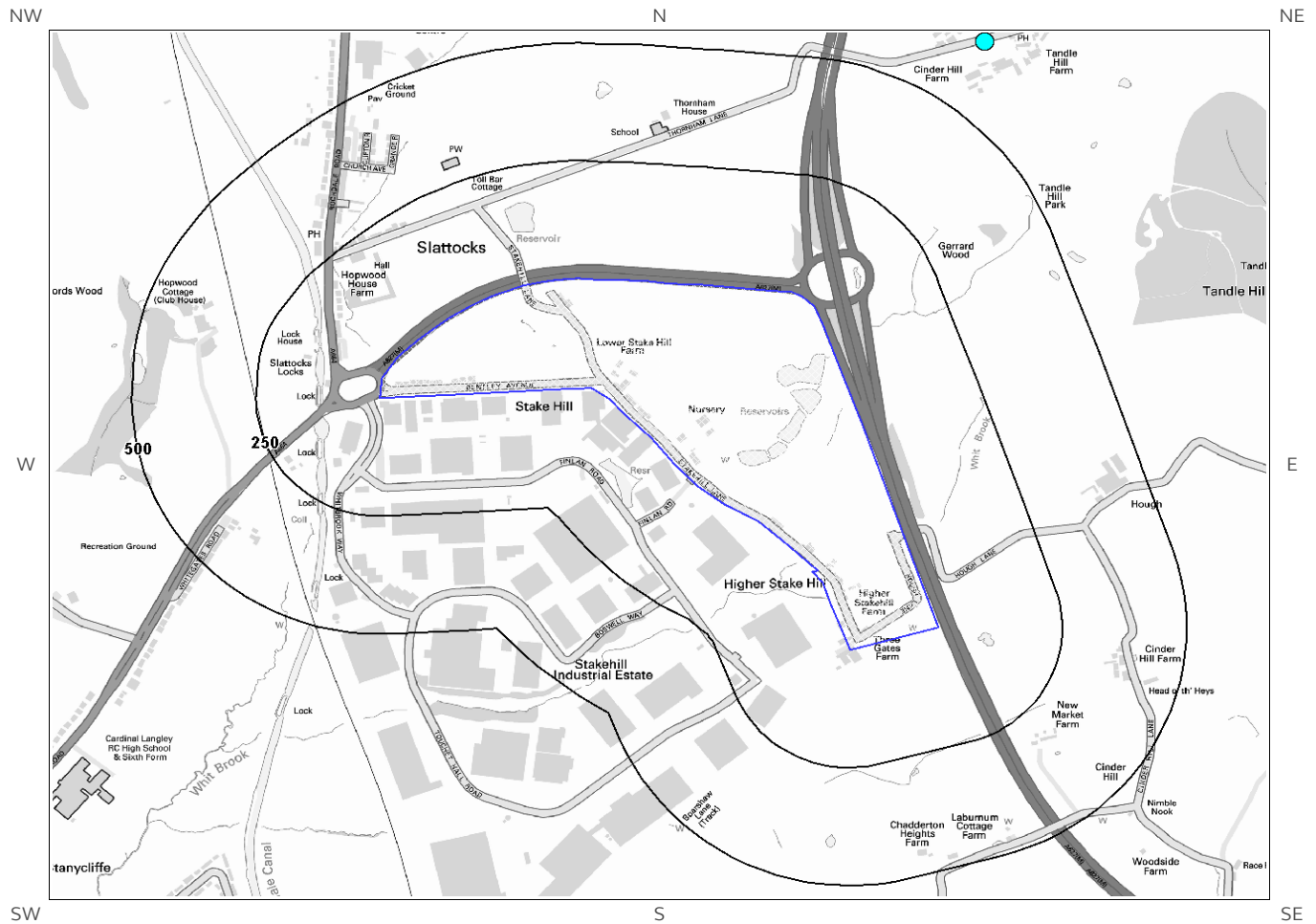
6b. Aquifer Within Bedrock Geology and Abstraction Licenses



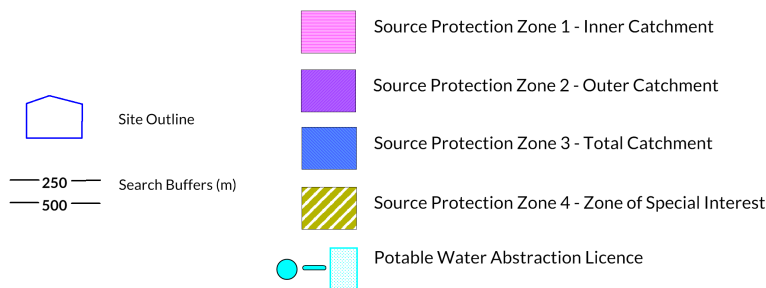
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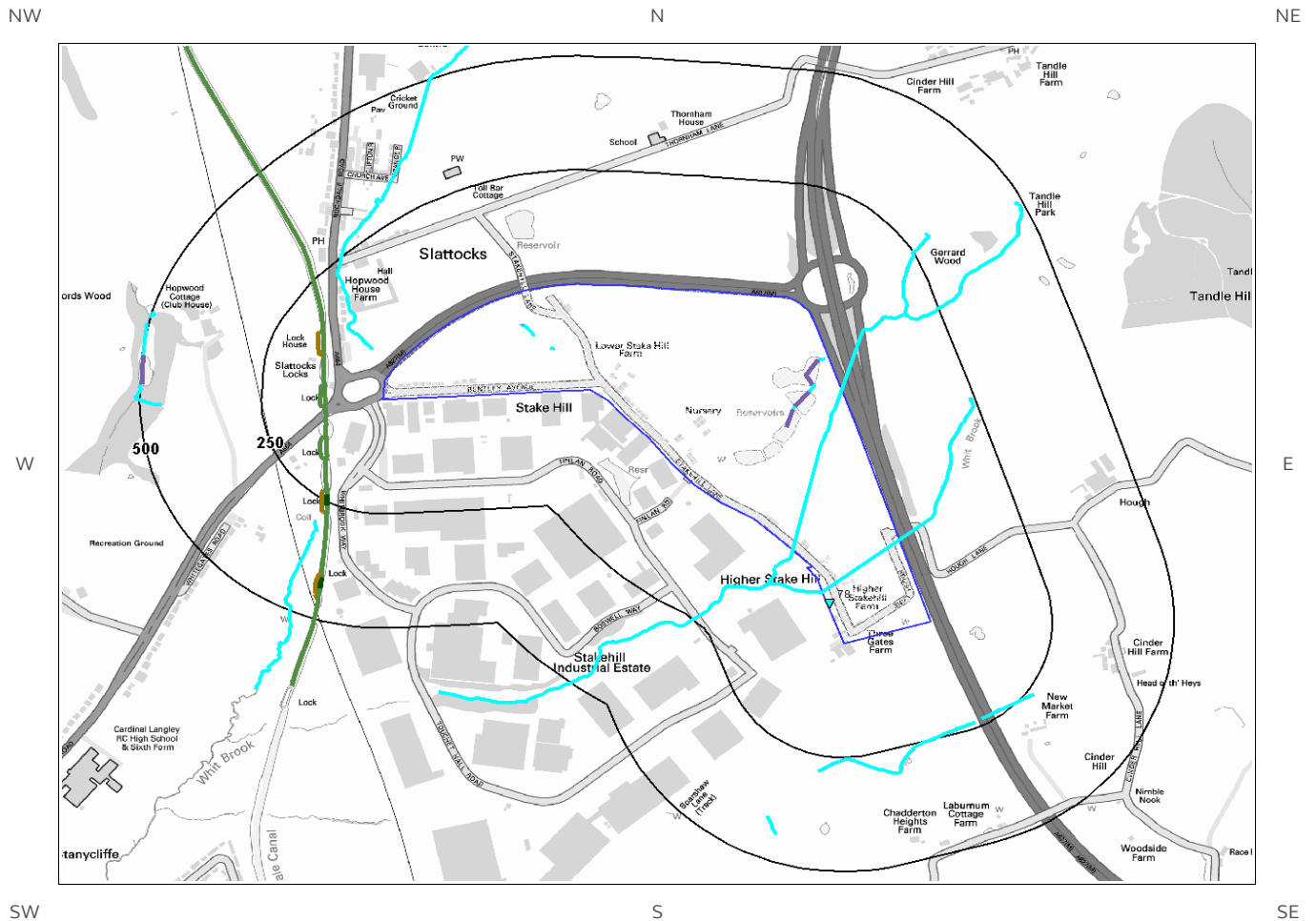
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



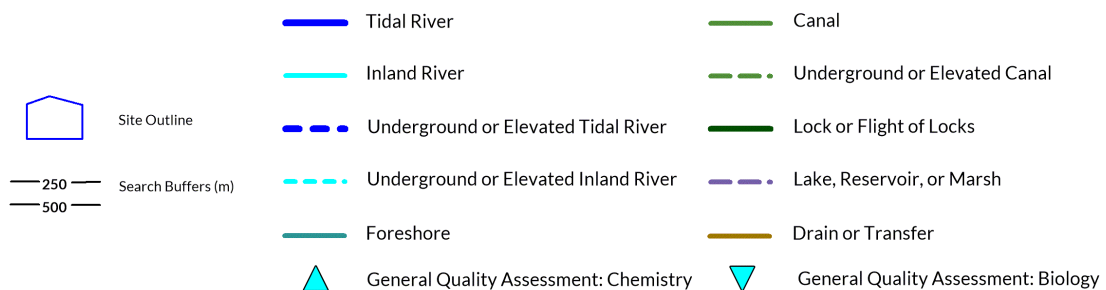
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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

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

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

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	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	294	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

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

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

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	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	294	E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
3A	185	SE	389800 407700	Status: Historical Licence No: 2569005029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "well At Newmarket Farm, Chadderton, Nr Oldham" Data Type: Point Name: BESWICK Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1986 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
4A	185	SE	389800 407700	Status: Historical Licence No: 2569005029 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Well At Newmarket Farm, Chadderton, Nr Oldham Data Type: Point Name: BESWICK Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1986 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
5B	371	S	389800 407500	Status: Historical Licence No: 2569005026 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Wells (2) At Chadderton, Nr Oldham Data Type: Point Name: BARROT Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1985 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
6B	371	S	389800 407500	Status: Historical Licence No: 2569005026 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "wells (2) At Chadderton, Nr Oldham" Data Type: Point Name: BARROT Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1985 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
7C	398	E	390100 407800	Status: Historical Licence No: 2569005032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Wells (2) At Cinder Hall Farm, Chadderton, Lancashire Data Type: Point Name: WILSON Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1992 Original Start Date: 12/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 12/2/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
8C	398	E	390100 407800	Status: Historical Licence No: 2569005032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "wells (2) At Cinder Hall Farm, Chadderton, Lancashire" Data Type: Point Name: WILSON	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1992 Original Start Date: 12/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 12/2/1966 Version End Date:
9D	468	S	389800 407400	Status: Historical Licence No: 2569005026 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "wells (2) At Chadderton, Nr Oldham \$119" Data Type: Point Name: BARROT	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1985 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
10D	468	S	389800 407400	Status: Historical Licence No: 2569005026 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Wells (2) At Chadderton, Nr Oldham Data Type: Point Name: BARROT	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1985 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
11D	468	S	389800 407400	Status: Historical Licence No: 2569005026 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Wells (2) At Chadderton, Nr Oldham \$119 Data Type: Point Name: BARROT	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1985 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
12E	472	SE	390100 407600	Status: Historical Licence No: 2569005032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "wells (2) At Cinder Hall Farm, Chadderton, Lancash\$120" Data Type: Point Name: WILSON	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1992 Original Start Date: 12/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 12/2/1966 Version End Date:
13E	472	SE	390100 407600	Status: Historical Licence No: 2569005032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Wells (2) At Cinder Hall Farm, Chadderton, Lancash Data Type: Point Name: WILSON	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1992 Original Start Date: 12/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 12/2/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details
14E	472	SE	390100 407600	Status: Historical Licence No: 2569005032 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Wells (2) At Cinder Hall Farm, Chadderton, Lancashire Data Type: Point Name: WILSON Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1992 Original Start Date: 12/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 12/2/1966 Version End Date:
15F	497	E	390200 407800	Status: Historical Licence No: 2569005030 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "well At Head O'th'heys Farm, Chadderton, Oldham" Data Type: Point Name: JINKS Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1987 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
16F	497	E	390200 407800	Status: Historical Licence No: 2569005030 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Well At Head O'th'heys Farm, Chadderton, Oldham Data Type: Point Name: JINKS Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1987 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
17G	600	NE	389700 409100	Status: Historical Licence No: 2569005017 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Spring Fed Well At Thornham Fold Farm, Slattocks, Middleton Data Type: Point Name: GREENWOOD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1871 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/2/1966 Version End Date:
18G	600	NE	389700 409100	Status: Historical Licence No: 2569005017 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "spring Fed Well At Thornham Fold Farm, Slattocks, Middleton" Data Type: Point Name: GREENWOOD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1871 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/2/1966 Version End Date:
19H	651	NE	389800 409100	Status: Historical Licence No: 2569005028 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Spring Fed Well At Cinder Hill Farm, Slattocks, Middleton, M Data Type: Point Name: H DH MD AND MW TETLOW Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1968 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
20H	651	NE	389800 409100	Status: Historical Licence No: 2569005028 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "spring Fed Well At Cinder Hill Farm, Slattocks, Middleton, M" Data Type: Point Name: H DH MD AND MW TETLOW	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1968 Original Start Date: 20/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/1/1966 Version End Date:
21H	651	NE	389800 409100	Status: Historical Licence No: 2569005021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Spring Fed Well At Tandle Hill Tavern, Thornham Fold, N Data Type: Point Name: J W LEES & CO BREWERS LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1880 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/2/1966 Version End Date:
22H	651	NE	389800 409100	Status: Historical Licence No: 2569005021 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "spring Fed Well At Tandle Hill Tavern, Thornham Fold, N" Data Type: Point Name: J W LEES & CO BREWERS LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1880 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/2/1966 Version End Date:
Not shown	1984	SW	388320 406240	Status: Historical Licence No: 2569005001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At Premises, Don Mill, Don Street, Middleton Data Type: Point Name: EASTLAND COMPOUNDING LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 0094 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 101 Version Start Date: 31/3/2004 Version End Date:
Not shown	1984	SW	388320 406240	Status: Historical Licence No: 2569005001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "borehole At Premises, Don Mill, Don Street, Middleton" Data Type: Point Name: VITACOM LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 94 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 18/1/1966 Version End Date:
Not shown	1984	SW	388320 406240	Status: Historical Licence No: 2569005001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At Premises Don Mill Don Street Middleton Data Type: Point Name: VITAFOAM LTD	Annual Volume (m³): 545520 Max Daily Volume (m³): 2182.08 Original Application No: 0094 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2007 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1987	SW	388312 406242	Status: Active Licence No: 2569005001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Borehole At Premises Don Mill, Don Street, Middleton Data Type: Point Name: Vita Cellular Foams (UK) Limited trading as Vitafoam Limited Annual Volume (m³): 545520 Max Daily Volume (m³): 2182.08 Original Application No: NPS/WR/003879 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 103 Version Start Date: 29/4/2010 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1112	NW	387600 408900	Status: Active Licence No: 2569005053 Details: Spray Irrigation - Direct Direct Source: Surface, Non-tidal - North West Region Point: Trub Brk At Rochdale Data Type: Point Name: THE MANCHESTER GOLF CLUB LTD Annual Volume (m³): 1473 Max Daily Volume (m³): 26.2 Application No: 1704 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:
Not shown	1112	NW	387600 408900	Status: Historical Licence No: 2569005053 Details: Spray Irrigation - Direct Direct Source: Surface, Non-tidal - North West Region Point: Trub Brk At Rochdale *34 Data Type: Point Name: THE MANCHESTER GOLF CLUB LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 1704 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/3/1997 Version End Date:
Not shown	1217	NW	387600 409100	Status: Historical Licence No: 2569005053 Details: Spray Irrigation - Direct Direct Source: Surface, Non-tidal - North West Region Point: Trub Brk At Rochdale \$122 Data Type: Point Name: THE MANCHESTER GOLF CLUB LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 1704 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/3/1997 Version End Date:
Not shown	1217	NW	387600 409100	Status: Active Licence No: 2569005053 Details: Spray Irrigation - Direct Direct Source: Surface, Non-tidal - North West Region Point: Trub Brk At Rochdale Data Type: Point Name: THE MANCHESTER GOLF CLUB LTD Annual Volume (m³): 1473 Max Daily Volume (m³): 26.2 Application No: 1704 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:
Not shown	1343	NW	387800 409500	Status: Active Licence No: 2569005053 Details: Spray Irrigation - Direct Direct Source: Surface, Non-tidal - North West Region Point: Trub Brk At Rochdale Data Type: Point Name: THE MANCHESTER GOLF CLUB LTD Annual Volume (m³): 1473 Max Daily Volume (m³): 26.2 Application No: 1704 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2008 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1902	SW	388460 406240	Status: Historical Licence No: 2569005006 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-tidal - North West Region Point: R Irk At Premises, Don Mill, Don Street, Middleton Data Type: Point Name: EASTLAND COMPOUNDING LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: 0311 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 101 Version Start Date: 31/3/2004 Version End Date:
Not shown	1902	SW	388460 406240	Status: Historical Licence No: 2569005006 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "surface, Non-tidal - North West Region" Point: "r Irk At Premises, Don Mill, Don Street, Middleton" Data Type: Point Name: VITACOM LTD	Annual Volume (m³): - Max Daily Volume (m³): - Application No: 311 Original Start Date: 18/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 23/11/1998 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site?

Identified

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details	
1A	651	NE	389800 409100	Status: Historical Licence No: 2569005021 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "spring Fed Well At Tandle Hill Tavern, Thornham Fold, N" Data Type: Point Name: J W LEES & CO BREWERS LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1880 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:
2A	651	NE	389800 409100	Status: Historical Licence No: 2569005021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Spring Fed Well At Tandle Hill Tavern, Thornham Fold, N Data Type: Point Name: J W LEES & CO BREWERS LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1880 Original Start Date: 16/2/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	H2	Deep, permeable, coarse textured soils which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential.
261	SW	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
294	E	Minor Aquifer/High Leaching Potential	H2	Deep, permeable, coarse textured soils which readily transmit a wide range of pollutants because of their rapid drainage and low attenuation potential.

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Identified

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
78	0	On Site	389500 407900	River Name: Whit Bk (irk) Reach: Qsl At Stake Hill To Trub Bk. End/Start of Stretch: Start of Stretch NGR	E	E	E	E	E
Not shown	1080	E	390600 408570	River Name: Irk Reach: Cedar Grove Sso To Royton Stw End/Start of Stretch: End of Stretch NGR	D	D	D	D	D
Not shown	1111	SE	390600 407200	River Name: Irk Reach: Royton Stw To Wince Brook End/Start of Stretch: Start of Stretch NGR	E	E	E	E	E
Not shown	1303	NW	388000 409600	River Name: Wince Bk Reach: Qsl At Castleton Stw To Irk End/Start of Stretch: Start of Stretch NGR	E	E	E	E	E

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	856	SW	388890 407243	River Name: Stonesdale Beck Reach: Standing Stones River Swale End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A

6.10 Ordnance Survey MasterMap Water Network

Are there any Ordnance Survey MasterMap Water Network entries within 500m of the study site?

#DRN_Count#

#NDF_DRN_tag#

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
2	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 1.2
3	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
4	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 22.0
5	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
6	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
7	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 33.8
8	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 20.4
9	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
10	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
11	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
12	0 On Site	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
13	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
28	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
29	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 1.2
30	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
31	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 22.0
32	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
33	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
34	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 33.8
35	0 On Site	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 20.4

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
36	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
37	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
38	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
39	0 On Site	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
40	0 On Site	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
14	2 W	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
41	2 W	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
15	17 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
42	17 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
16	46 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
43	46 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
17	53 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
44	53 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
18	61 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
45	61 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
19	78 E	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
46	78 E	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
20	87 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
47	87 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
21	90 SW	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
48	90 SW	Whit Brook	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
22	120 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.8
23	120 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 5.0
49	120 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.8

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
50	120 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 5.0
24	121 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 14.0
51	121 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 14.0
25	122 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.1
26	122 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 14.3
52	122 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.1
53	122 W	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 14.3
27	136 NW	Rochdale Canal	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 2.6
28	136 NW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 5.6
54	136 NW	Rochdale Canal	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 2.6
55	136 NW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 5.6
29	141 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.3

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
30	141 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 6.1
56	141 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.3
57	141 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 6.1
31	162 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
58	162 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
32	166 NW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 15.3
33	166 NW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 15.3
59	166 NW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 15.3
60	166 NW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 15.3
34	169 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
61	169 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
35	175 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 17.4

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
62	175 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 17.4
36	180 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
37	180 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
63	180 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
64	180 E	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
38	199 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
65	199 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
39	211 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
66	211 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
40	228 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 14.0
41	228 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.9
67	228 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 14.0

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
68	228 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.9
42	229 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
69	229 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
43	233 SW	Rochdale Canal	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse may not contain water year round. Average Width in Watercourse Section: 11.1
70	233 SW	Rochdale Canal	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse may not contain water year round. Average Width in Watercourse Section: 11.1
44	237 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
45	237 SW	Rochdale Canal	Lock or flight of locks. An enclosure in a canal or navigable river with gates and sluices at either end.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.8
71	237 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
72	237 SW	Rochdale Canal	Lock or flight of locks. An enclosure in a canal or navigable river with gates and sluices at either end.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.8
46	238 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
47	238 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
73	238 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
74	238 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
48	251 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
49	251 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
75	251 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
76	251 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
50	259 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.1
77	259 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.1
51	269 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
78	269 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
52	273 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.6
53	273 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.6
79	273 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.6

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
80	273 SW	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.6
54	292 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
81	292 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
55	295 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
82	295 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
56	302 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
83	302 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
57	315 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
84	315 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
58	318 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
85	318 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
59	363 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
86	363 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
60	371 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
Not shown	371 NW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
61	399 S	-	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.1
62	399 S	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.6
88	399 S	-	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.1
89	399 S	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.6
63	409 S	Rochdale Canal	Lock or flight of locks. An enclosure in a canal or navigable river with gates and sluices at either end.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.6
90	409 S	Rochdale Canal	Lock or flight of locks. An enclosure in a canal or navigable river with gates and sluices at either end.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 3.6
64	410 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
Not shown	410 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
65	431 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
92	431 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
66	432 S	-	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
93	432 S	-	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
67	434 S	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 5.3
94	434 S	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 5.3
68	448 S	-	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 6.1
95	448 S	-	Manmade watercourse for water transfer.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 6.1
69	455 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
Not shown	455 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
70	457 S	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.7
97	457 S	Rochdale Canal	Canal. A manmade watercourse for inland navigation.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 11.7
71	491 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
Not shown	491 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
72	495 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
Not shown	495 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
73	497 W	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 17.3
74	497 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
75	497 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
76	497 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
77	497 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
Not shown	497 W	-	Lake, loch or reservoir.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: 17.3
Not shown	497 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
Not shown	497 N	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided
Not shown	497 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
Not shown	497 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section: Not Provided

6.11 Surface Water Features

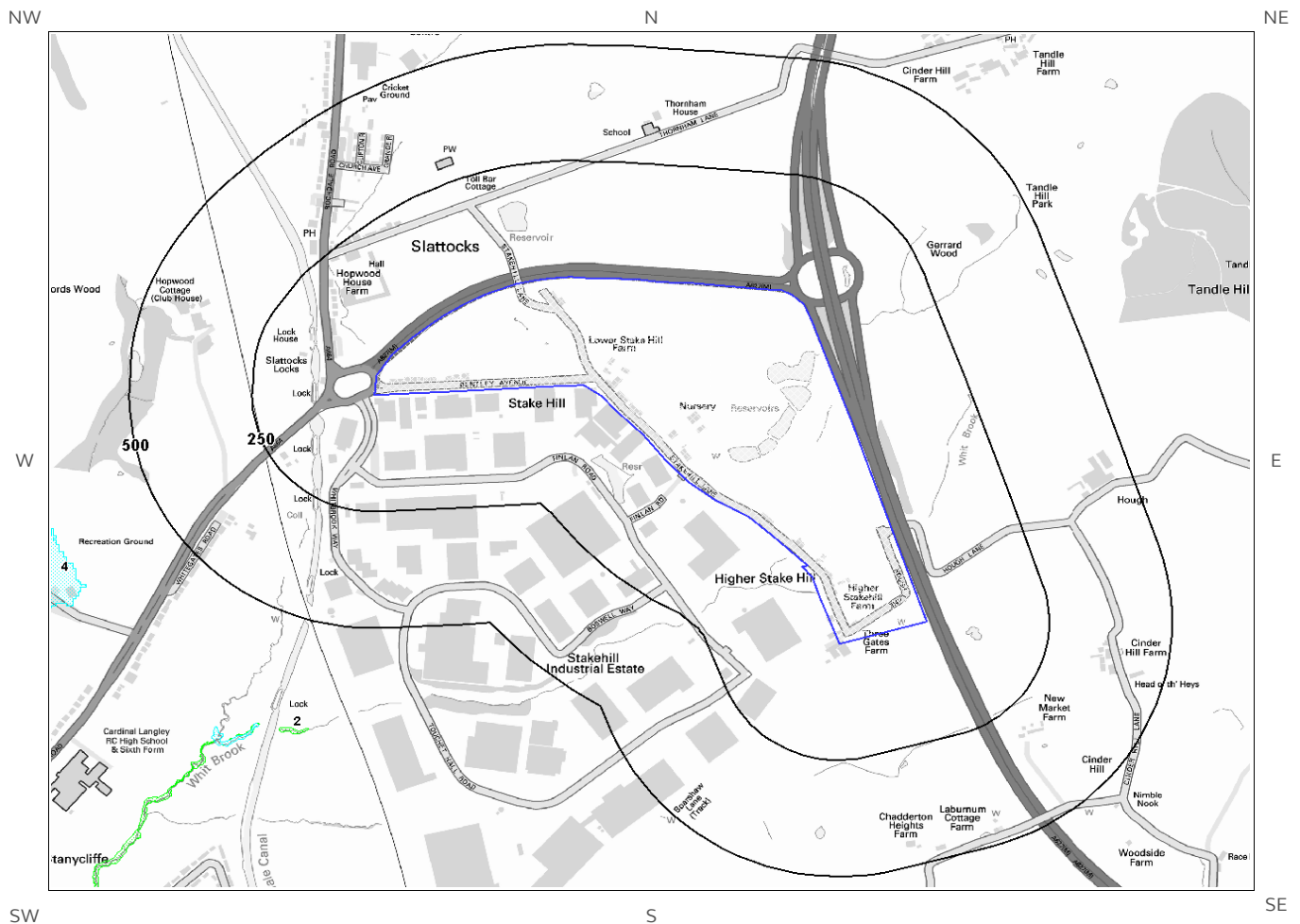
Are there any surface water features within 250m of the study site?

Identified

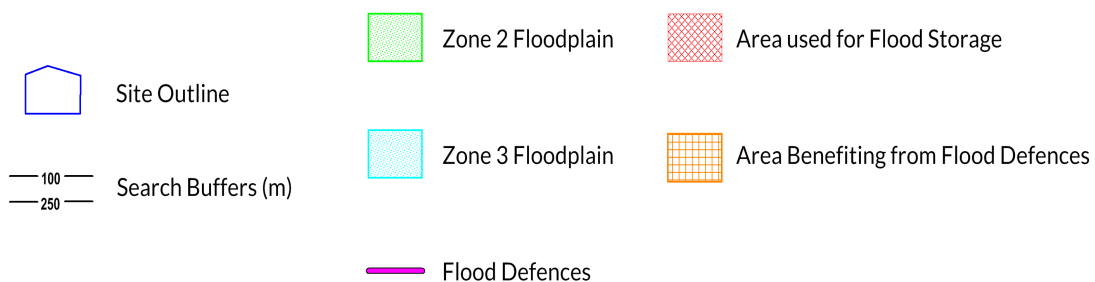
The following surface water records are not represented on mapping:

Distance (m)	Direction
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
0	On Site
2	W
17	SW
40	SW
61	NW
70	SW
78	E
87	E
90	SW
103	E
110	N
117	W
119	SW
130	NW
142	NW
165	E
180	E
180	E
183	NW
208	NW
238	SE
239	S
241	E

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? None identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? None identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

What is the highest risk of flooding onsite? Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? None identified
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? None identified

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Identified

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

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

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

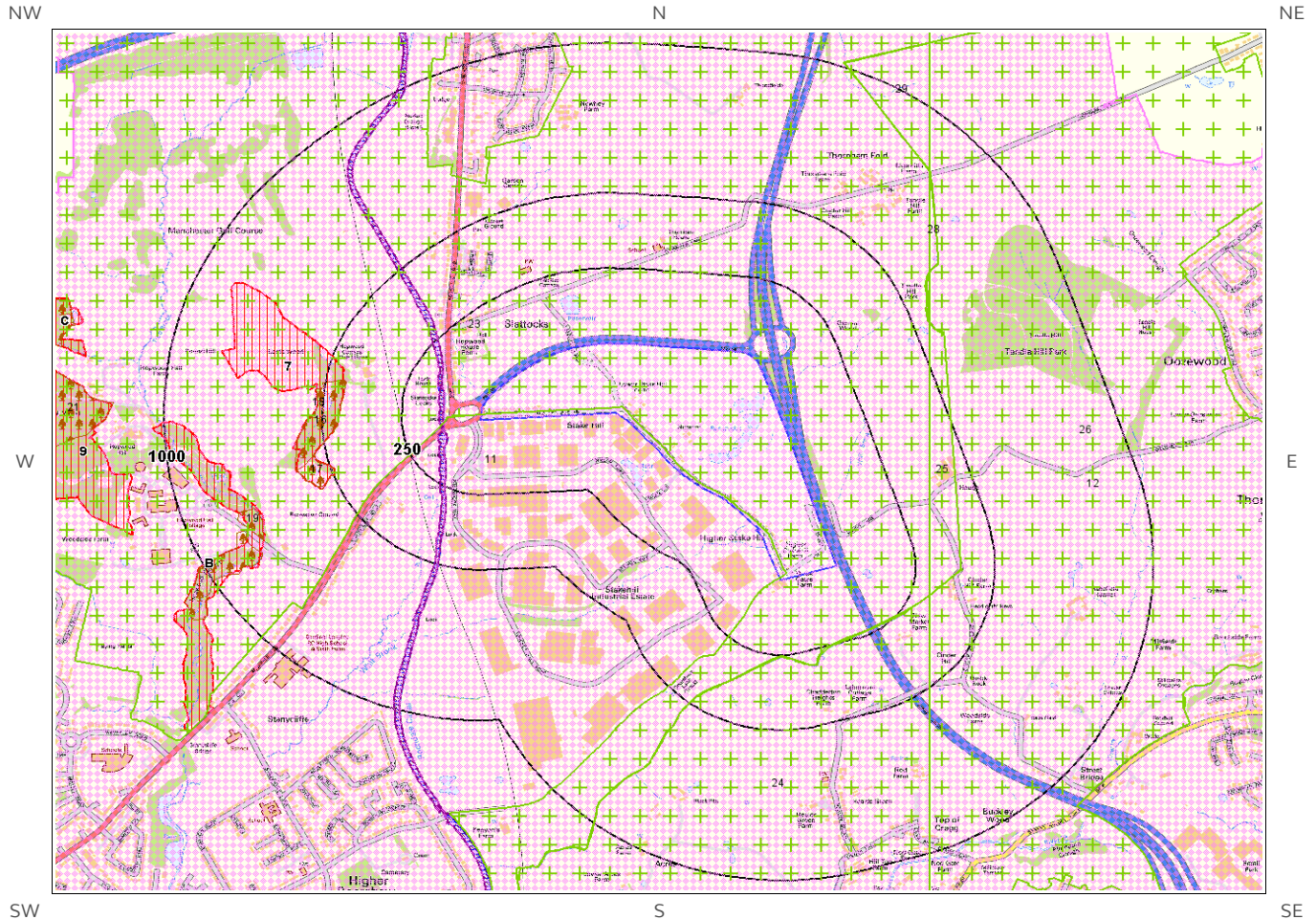
What is the British Geological Survey confidence rating in this result?

Low

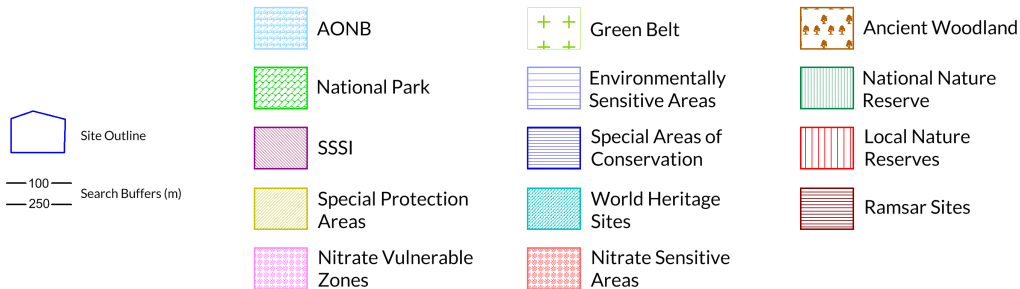
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site?

Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

3

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
4A	117	W	Rochdale Canal	Natural England
Not shown	1394	NW	Rochdale Canal	Natural England
Not shown	1527	N	Rochdale Canal	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

3

The following Special Area of Conservation (SAC) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SAC Name	Data Source
1A	117	W	Rochdale Canal	Natural England
Not shown	1394	NW	Rochdale Canal	Natural England
Not shown	1527	N	Rochdale Canal	Natural England

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

7

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
16	437	W	UNKNOWN	Ancient and Semi-Natural Woodland
17	489	W	UNKNOWN	Ancient and Semi-Natural Woodland
18	497	W	UNKNOWN	Ancient and Semi-Natural Woodland
19	767	SW	UNKNOWN	Ancient and Semi-Natural Woodland
20B	818	SW	UNKNOWN	Ancient and Semi-Natural Woodland
21	1161	W	UNKNOWN	Ancient and Semi-Natural Woodland
22C	1314	W	UNKNOWN	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

4

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
7	437	W	Hopwood Woodlands	Natural England
8B	759	SW	Hopwood Woodlands	Natural England
9	1119	W	Hopwood Woodlands	Natural England
10C	1261	W	Hopwood Woodlands	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

5

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
11	0	On Site	Existing	DEFRA
12	294	E	Existing	DEFRA
Not shown	1401	N	Existing	DEFRA

ID	Distance (m)	Direction	NVZ Name	Data Source
Not shown	1545	N	Existing	DEFRA
Not shown	1742	NE	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

11

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ID	Distance	Direction	Green Belt Name	Local Authority Name
23	0	On Site	Liverpool, Manchester and West Yorks Greenbelt	Rochdale
24	235	SE	Liverpool, Manchester and West Yorks Greenbelt	Oldham District (B)
25	294	E	Liverpool, Manchester and West Yorks Greenbelt	Rochdale
26	310	E	Liverpool, Manchester and West Yorks Greenbelt	Oldham District (B)
27	553	E	Liverpool, Manchester and West Yorks Greenbelt	Oldham District (B)
28	620	NE	Liverpool, Manchester and West Yorks Greenbelt	Rochdale
29	833	NE	Liverpool, Manchester and West Yorks Greenbelt	Oldham District (B)
30	1183	NE	Liverpool, Manchester and West Yorks Greenbelt	Rochdale
Not shown	1442	N	Liverpool, Manchester and West Yorks Greenbelt	Rochdale
Not shown	1545	N	Liverpool, Manchester and West Yorks Greenbelt	Rochdale
Not shown	1591	NW	Liverpool, Manchester and West Yorks Greenbelt	Rochdale

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

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

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

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

9.1.2 Landslides

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

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

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

9.1.3 Soluble Rocks

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

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

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

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

9.1.4 Compressible Ground

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

Very Low

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

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

9.1.5 Collapsible Rocks

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

Very Low

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

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

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

Very Low

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

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

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

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site?

Identified

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary?

None identified

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site?

None identified

Guidance: No Guidance Required.

Contact Details

CENTREMAPS

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Groundsure@centremaps.co.uk
Open Space, Upper Interfields, Malvern, Worcester, WR14 1UT



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Fax: 0115 936 3276.
Email:

Web: www.bgs.ac.uk

BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk



**British
Geological Survey**

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133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe

Email: enquiries@phe.gov.uk
Main switchboard: 020 7654 8000



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**The Coal
Authority**

Ordnance Survey

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SO16 0AS
Tel: 08456 050505



Local Authority

Authority: Rochdale Metropolitan Borough Council
Phone: 01706 647 474

Web: <http://www.rochdale.gov.uk/>

Address: Number One Riverside, Smith Street, Rochdale, Lancashire,

Gemapping PLC

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



Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.

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Standard Terms and Conditions

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<https://www.groundsure.com/terms-and-conditions-sept-2016>

APPENDIX B



CENTREMAPS

Open Space, Upper Interfields,
Worcester, WR14 1UT

Report Reference: CMAPS-CM-703611-30974-
100418GEO

Your Reference: 30974

Report Date 10 Apr 2018

Report Delivery Email - pdf
Method:

Geo Insight

Address: Stakehill Ln, Middleton, M24 24x

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 01886 832972 quoting the above CENTREMAPS reference number.

Yours faithfully,

CENTREMAPS

Enc.
Groundsure Geo Insight

Address: Stakehill Ln, Middleton, M24 24x
Date: 10 Apr 2018
Reference: CMAPS-CM-703611-30974-100418GEO
Client: CENTREMAPS



Aerial Photograph Capture date: 11-Jun-2015
Grid Reference: 389145,408206
Site Size: 34.89ha

Contents Page

Contents Page.....	3
Overview of Findings.....	5
1:10,000 Scale Availability.....	8
Availability of 1:10,000 Scale Geology Mapping.....	9
1 Geology (1:10,000 scale).....	10
1.1 Artificial Ground map (1:10,000 scale).....	10
1. Geology 1:10,000 scale.....	11
1.1 Artificial Ground.....	11
1.2 Superficial Deposits and Landslips map (1:10,000 scale).....	12
1.2 Superficial Deposits and Landslips.....	13
1.2.1 Superficial Deposits/ Drift Geology.....	13
1.2.2 Landslip.....	14
1.3 Bedrock and linear features map (1:10,000 scale).....	15
1.3 Bedrock and linear features.....	16
1.3.1 Bedrock/ Solid Geology.....	16
1.3.2 Linear features.....	16
2 Geology 1:50,000 Scale.....	18
2.1 Artificial Ground map.....	18
2. Geology 1:50,000 scale.....	19
2.1 Artificial Ground.....	19
2.1.1 Artificial/ Made Ground	19
2.1.2 Permeability of Artificial Ground.....	19
2.2 Superficial Deposits and Landslips map (1:50,000 scale).....	20
2.2 Superficial Deposits and Landslips.....	21
2.2.1 Superficial Deposits/ Drift Geology.....	21
2.2.2 Permeability of Superficial Ground	22
2.2.3 Landslip.....	22
2.2.4 Landslip Permeability.....	22
2.3 Bedrock and linear features map (1:50,000 scale).....	23
2.3 Bedrock, Solid Geology & linear features.....	24
2.3.1 Bedrock/Solid Geology.....	24
2.3.2 Permeability of Bedrock Ground.....	24
2.3.3 Linear features.....	24
3 Radon Data.....	26
3.1 Radon Affected Areas.....	26
3.2 Radon Protection.....	26
4 Ground Workings map.....	27
4 Ground Workings.....	28
4.1 Historical Surface Ground Working Features derived from Historical Mapping.....	28
4.2 Historical Underground Working Features derived from Historical Mapping.....	31
4.3 Current Ground Workings.....	32
5 Mining, Extraction & Natural Cavities.....	34
5.1 Historical Mining.....	34
5.2 Coal Mining.....	34
5.3 Johnson Poole and Bloomer.....	34
5.4 Non-Coal Mining.....	34
5.5 Non-Coal Mining Cavities.....	35
5.6 Natural Cavities.....	35
5.7 Brine Extraction.....	35
5.8 Gypsum Extraction.....	35
5.9 Tin Mining.....	35
5.10 Clay Mining.....	36
6 Natural Ground Subsidence.....	37
6.1 Shrink-Swell Clay map.....	37
6.2 Landslides map.....	38
6.3 Ground Dissolution of Soluble Rocks map.....	39
6.4 Compressible Deposits map.....	40
6.5 Collapsible Deposits map.....	41
6.6 Running Sand map.....	42

6 Natural Ground Subsidence.....	43
6.1 Shrink-Swell Clays.....	43
6.2 Landslides.....	44
6.3 Ground Dissolution of Soluble Rocks.....	44
6.4 Compressible Deposits.....	44
6.5 Collapsible Deposits.....	44
6.6 Running Sands.....	45
7 Borehole Records.....	47
8 Estimated Background Soil Chemistry.....	48
9 Railways and Tunnels map.....	49
9 Railways and Tunnels.....	50
9.1 Tunnels	50
9.2 Historical Railway and Tunnel Features	50
9.3 Historical Railways.....	51
9.4 Active Railways.....	51
9.5 Railway Projects.....	51

Overview of Findings

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

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

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

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	Yes
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes

Section 2: Geology 1:50,000 Scale

2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	Yes
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	Yes
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslide within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.

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

Yes

2.3.3 Are there any records of linear features within 500m of the study site boundary?

Yes

Section 3: Radon

3. Radon

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

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

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

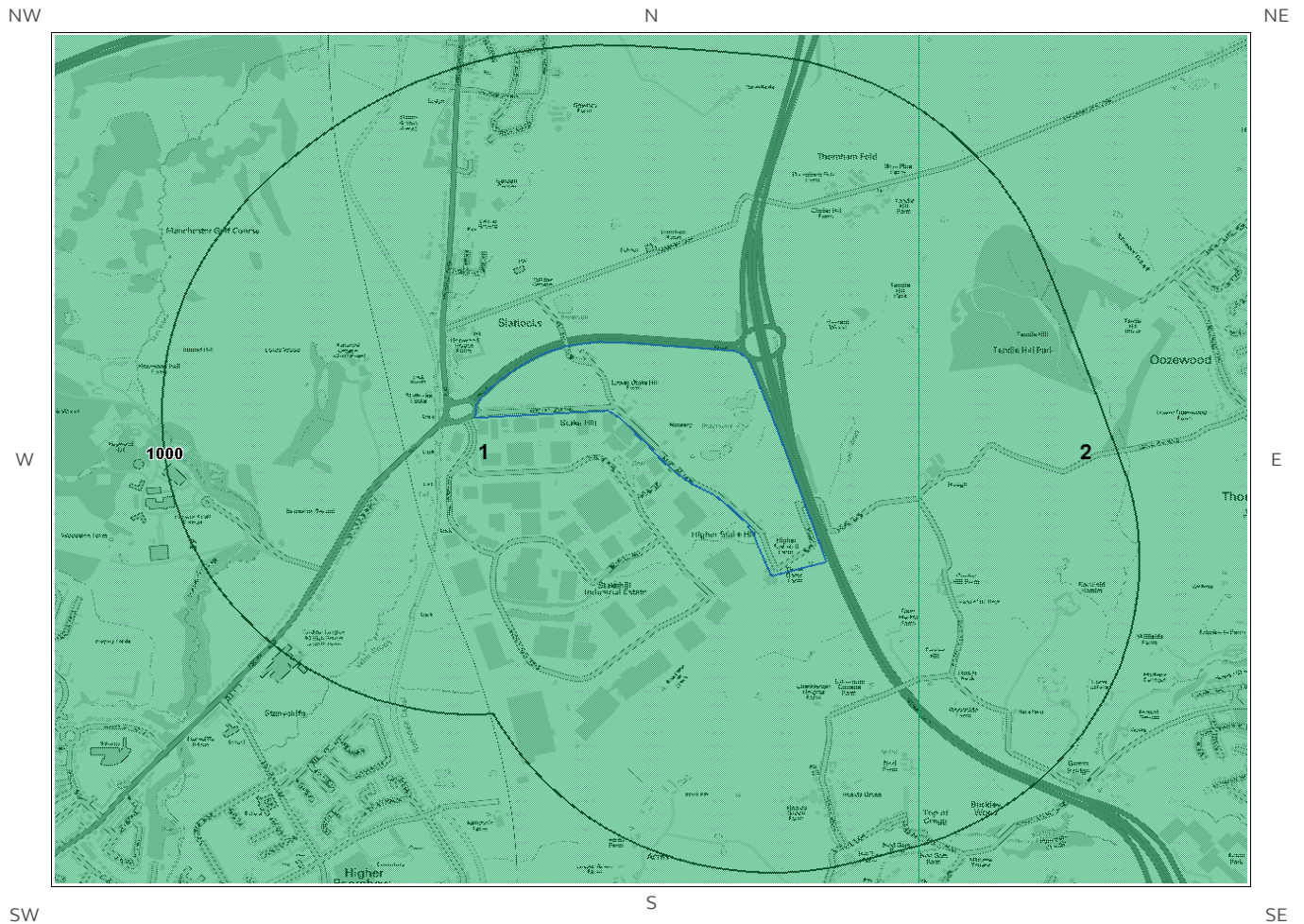
	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	29	10	55	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	2	2

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	2	2
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

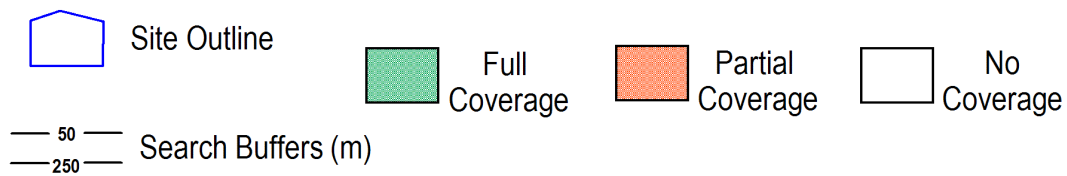
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Low				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Very Low				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	0	6		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	11	1	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	2	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	4	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	Some deposits are mapped
2	294.0	Some deposits are mapped	Full	Full	Some deposits are mapped
N3	1401.0	Some deposits are mapped	Full	Full	Some deposits are mapped
N4	1545.0	Some deposits are mapped	Full	Full	Some deposits are mapped

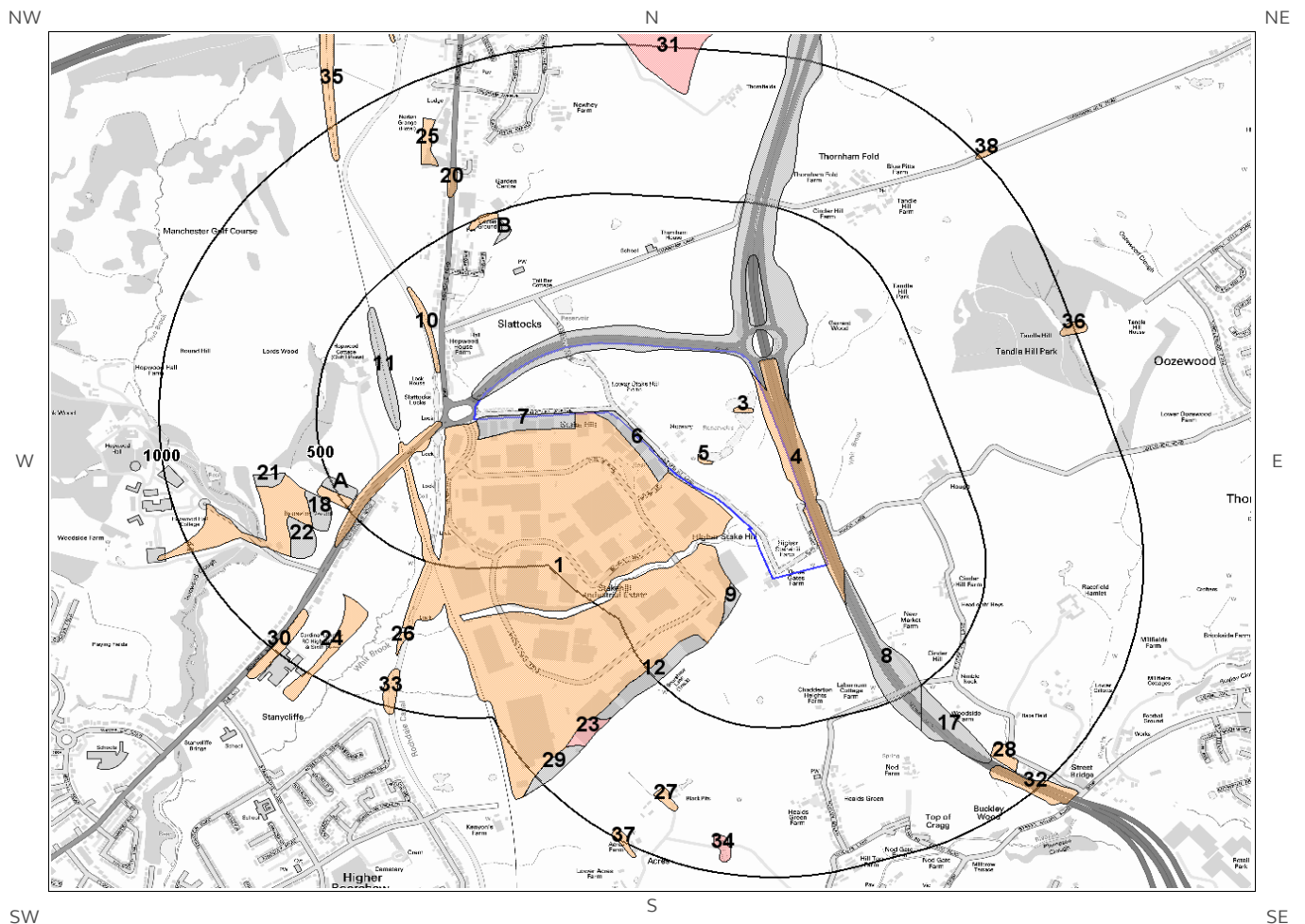
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

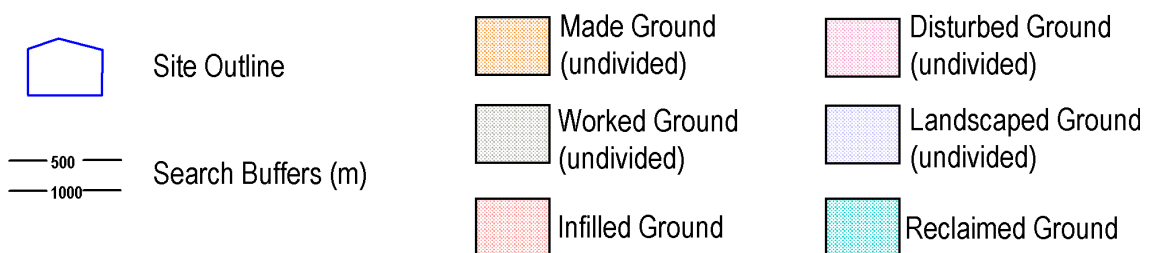
1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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1. Geology 1:10,000 scale

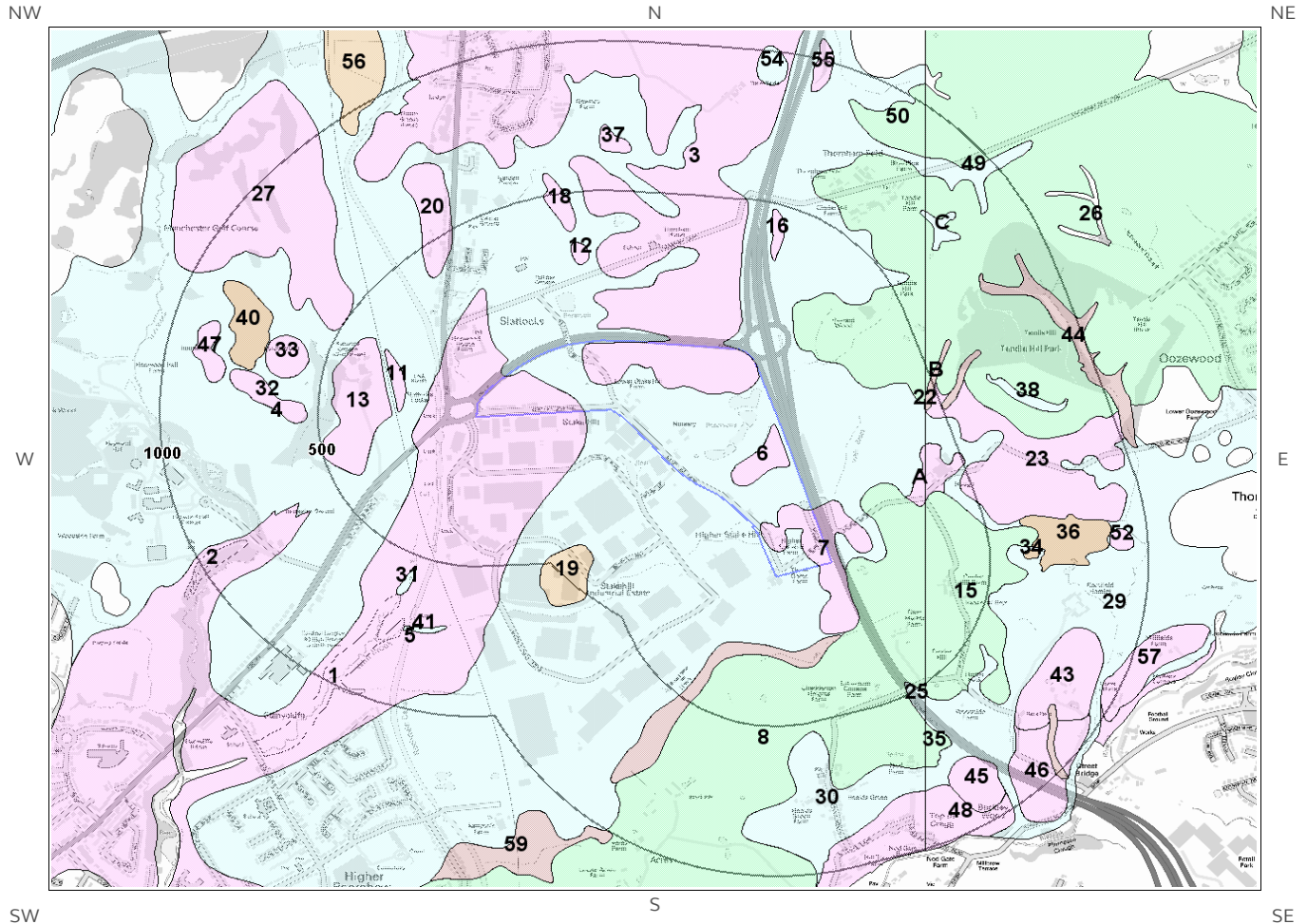
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

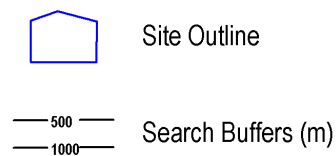
ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
3	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
5	0.0	On Site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
7	0.0	On Site	WGR-VOID	Worked Ground (Undivided)	Void
8	53.0	E	WGR-VOID	Worked Ground (Undivided)	Void
9	113.0	SW	WGR-VOID	Worked Ground (Undivided)	Void
10	160.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
11	236.0	W	WGR-VOID	Worked Ground (Undivided)	Void
12	299.0	SW	WGR-VOID	Worked Ground (Undivided)	Void
13B	400.0	NW	WGR-VOID	Worked Ground (Undivided)	Void
14A	440.0	SW	WGR-VOID	Worked Ground (Undivided)	Void
15A	469.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
16B	475.0	NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
17	498.0	SE	WGR-VOID	Worked Ground (Undivided)	Void

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
3	0.0	On Site	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
4	0.0	On Site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
5	0.0	On Site	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
6	0.0	On Site	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
7	0.0	On Site	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
8	49.0	E	HMGDD-DMTN	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton	Diamicton
9	145.0	NE	HMGDD-DMTN	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton	Diamicton
10	229.0	S	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
11	230.0	W	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
12	259.0	N	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
13	267.0	W	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
14A	289.0	E	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
15	294.0	E	HMGDD-DMTN	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton	Diamicton
16	316.0	N	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
17A	345.0	E	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
18	372.0	N	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
19	382.0	SW	LDE-XSV	Lacustrine Deposits - Sand And Gravel	Sand And Gravel
20	395.0	NW	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
21	408.0	E	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
22	445.0	E	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
23	447.0	E	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel
24B	447.0	E	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
25	459.0	SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
26	461.0	E	HMGDD-DMTN	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton	Diamicton
27	500.0	NW	GFICD-XSV	Glaciofluvial Ice Contact Deposits, Devensian - Sand And Gravel	Sand And Gravel

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
28B	500.0	E	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

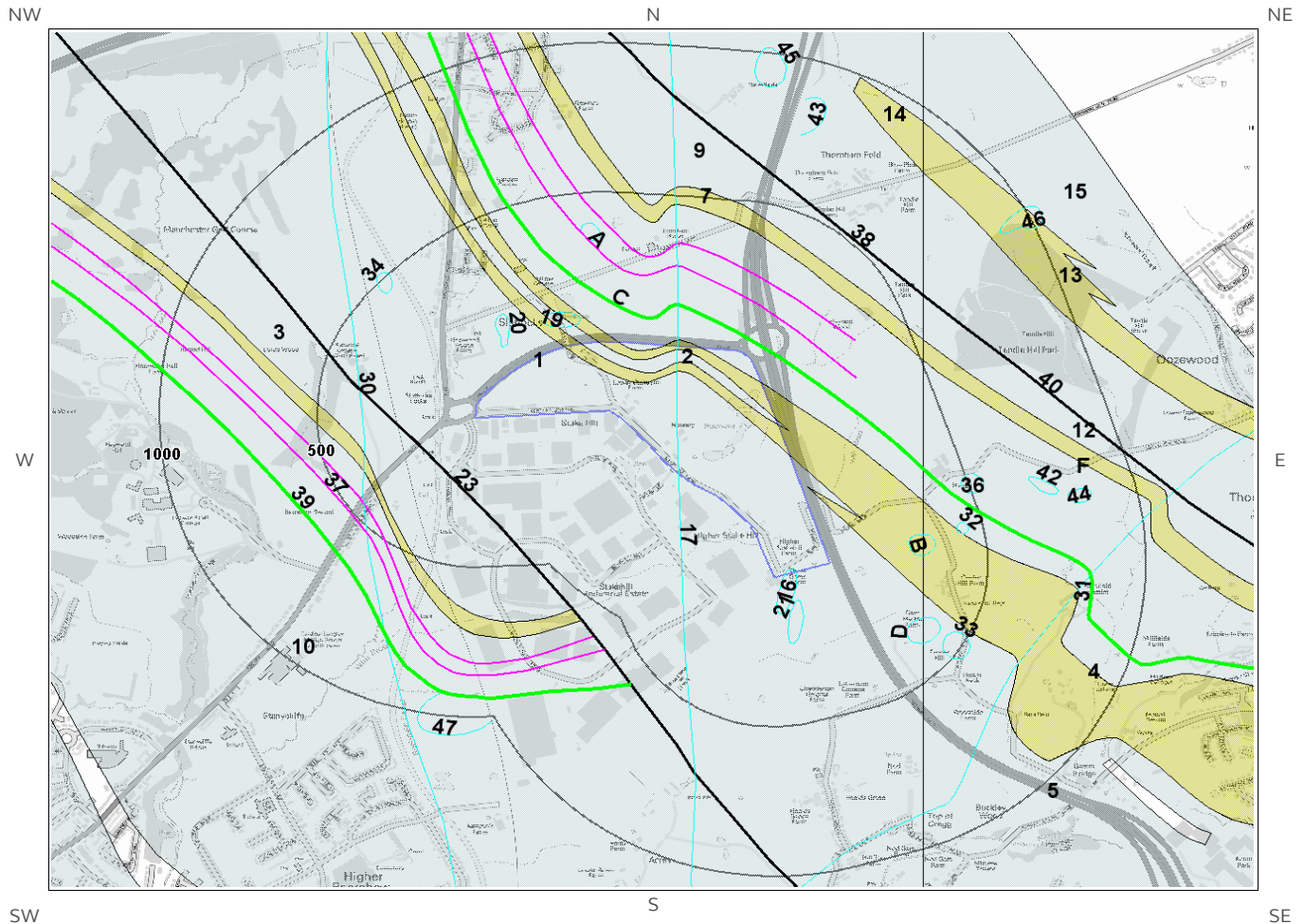
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

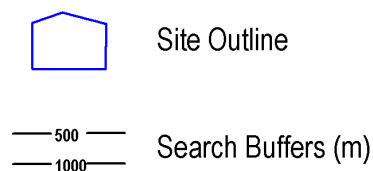
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
2	0.0	On Site	RYSA-SDST	Royley Sandstone - Sandstone	Langsettian Sub-age
3	191.0	SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
4	294.0	E	RYSA-SDST	Royley Sandstone - Sandstone	Langsettian Sub-age
5	311.0	E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
6F	346.0	E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
7	347.0	NE	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age
8E	370.0	SW	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age
9	394.0	NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
10	395.0	SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? ☒ Yes

ID	Distance (m)	Direction	Category Description	Feature Description
16	0.0	On Site	LANDFORM	Drumlin, form-line at base of mound
17	0.0	On Site	LANDFORM	Buried channel or valley margin
18C	47.0	NE	ROCK	Coal seam, inferred
19	63.0	N	LANDFORM	Drumlin, form-line at base of mound
20	82.0	NW	LANDFORM	Drumlin, form-line at base of mound
21	93.0	S	LANDFORM	Drumlin, form-line at base of mound
22A	159.0	NE	FOSSIL_HORIZON	Fossil horizon, mussel band
23	191.0	SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
24A	241.0	NE	FOSSIL_HORIZON	Fossil horizon, mussel band
25B	258.0	E	LANDFORM	Kettle hole; closed hollow
26B	295.0	E	LANDFORM	Kettle hole; closed hollow
27D	325.0	SE	LANDFORM	Kettle hole; closed hollow
28C	341.0	N	LANDFORM	Drumlin, form-line at base of mound
29D	346.0	SE	LANDFORM	Kettle hole; closed hollow

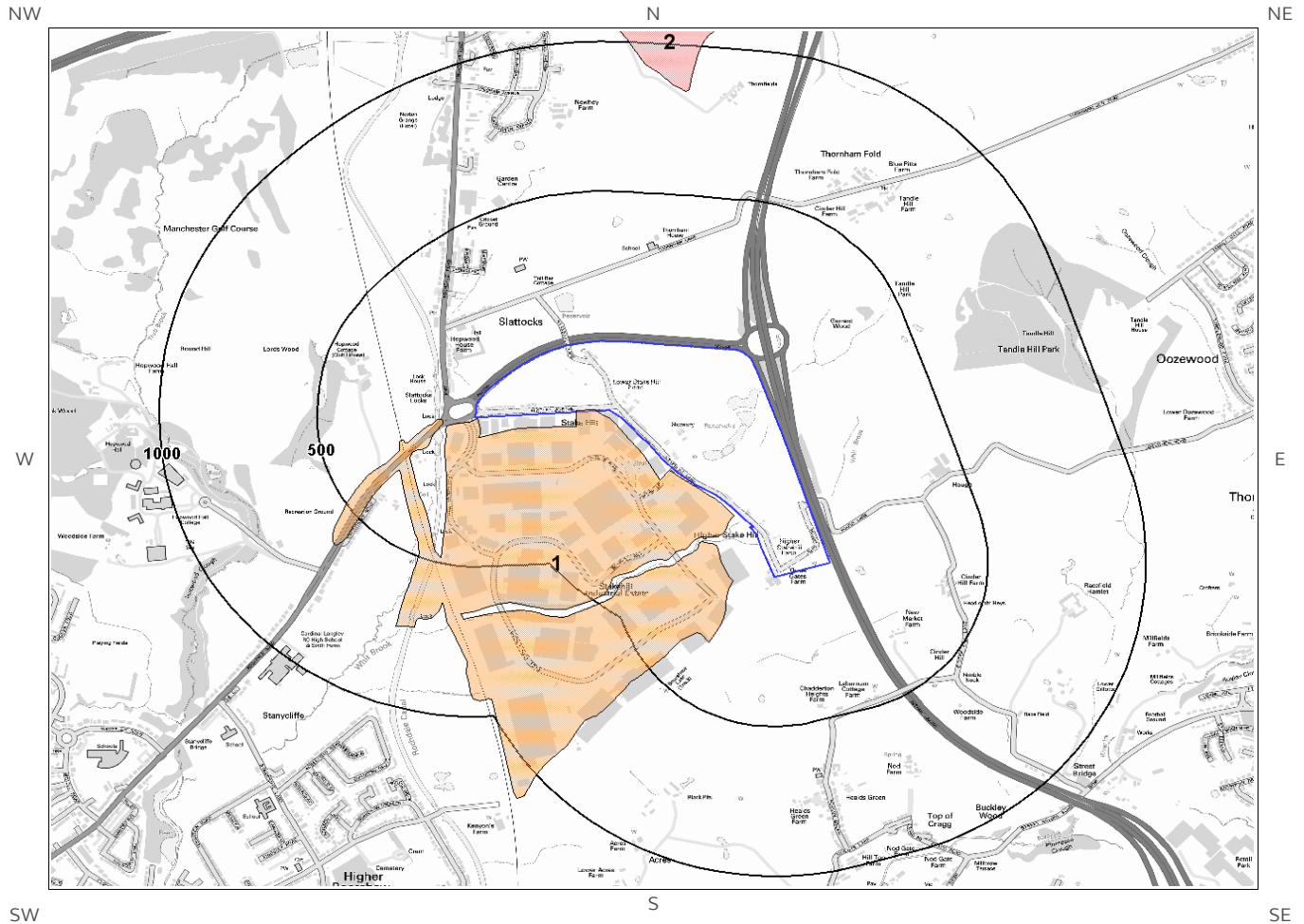
ID	Distance (m)	Direction	Category Description	Feature Description
30	356.0	W	LANDFORM	Buried channel or valley margin
31	382.0	E	ROCK	Coal seam, inferred
32	415.0	E	LANDFORM	Kettle hole; closed hollow
33	439.0	SE	LANDFORM	Drumlin, form-line at base of mound
34	454.0	NW	LANDFORM	Kettle hole; closed hollow
35E	454.0	SW	FOSSIL_HORIZON	Fossil horizon, mussel band
36	478.0	E	LANDFORM	Drumlin, form-line at base of mound

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

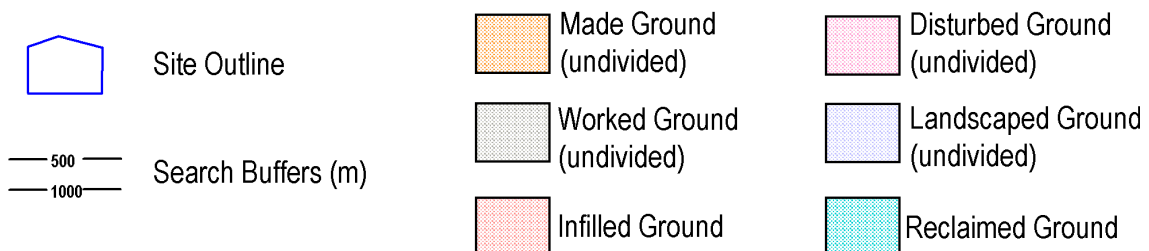
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 085

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

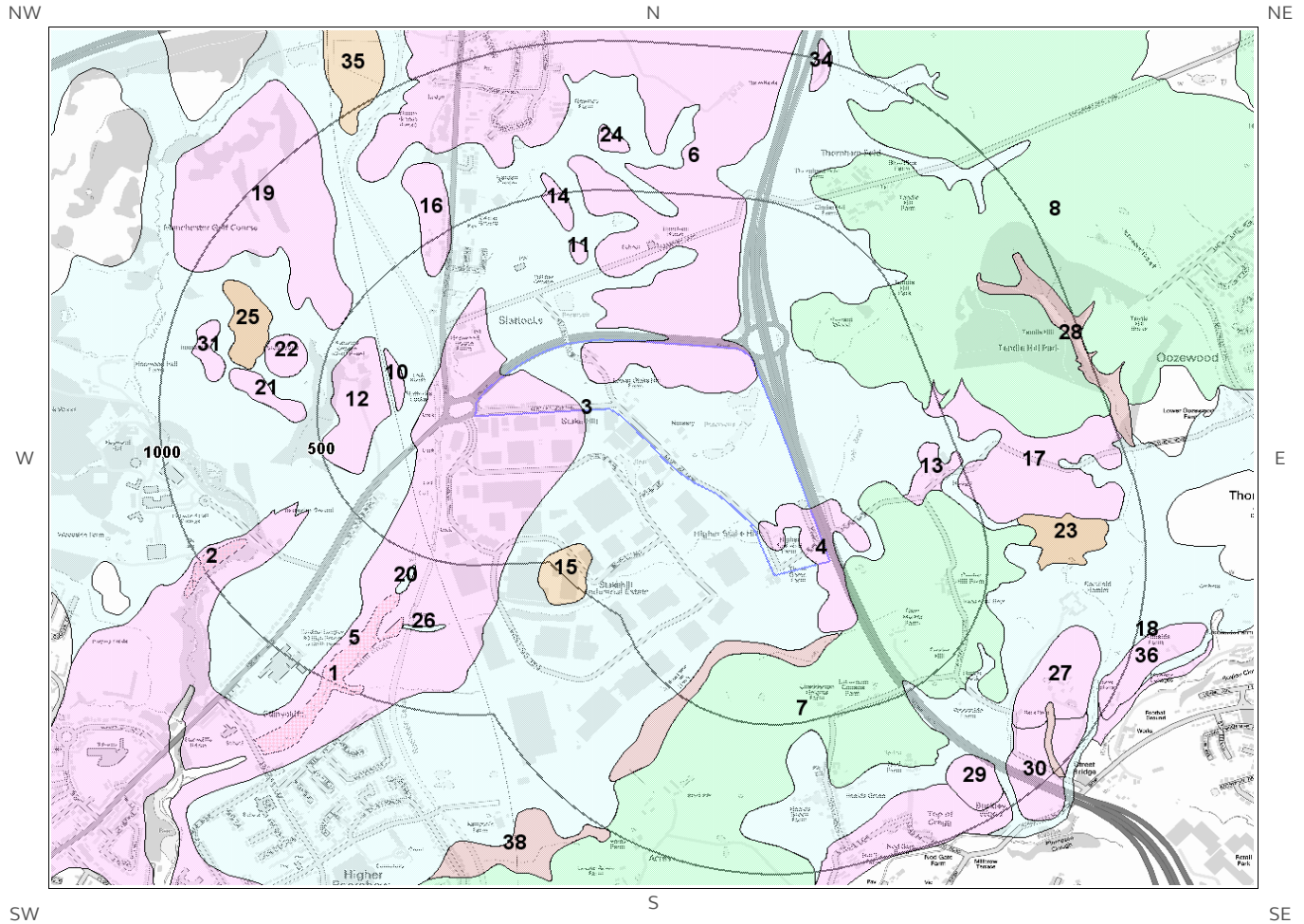
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

2.1.2 Permeability of Artificial Ground

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

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Very High	Low

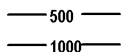
2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
3	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
4	0.0	On Site	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
5	0.0	On Site	GFSDDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
6	0.0	On Site	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
7	48.0	E	HMGDD-DMTN	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON
8	145.0	NE	HMGDD-DMTN	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON
9	229.0	S	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
10	230.0	W	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
11	259.0	N	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
12	267.0	W	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
13	289.0	E	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
14	372.0	N	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
15	383.0	SW	LDE-XSV	LACUSTRINE DEPOSITS	SAND AND GRAVEL
16	395.0	NW	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL

ID	Distance	Direction	LEX Code	Description	Rock Description
17	447.0	E	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL
18	459.0	SE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
19	500.0	NW	GFICD-XSV	GLACIOFLUVIAL ICE CONTACT DEPOSITS, DEVENSIAN	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

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

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Intergranular	Very High	High
0.0	On Site	Mixed	High	Low
48.0	E	Mixed	High	Low

2.2.3 Landslip

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

Database searched and no data found.

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

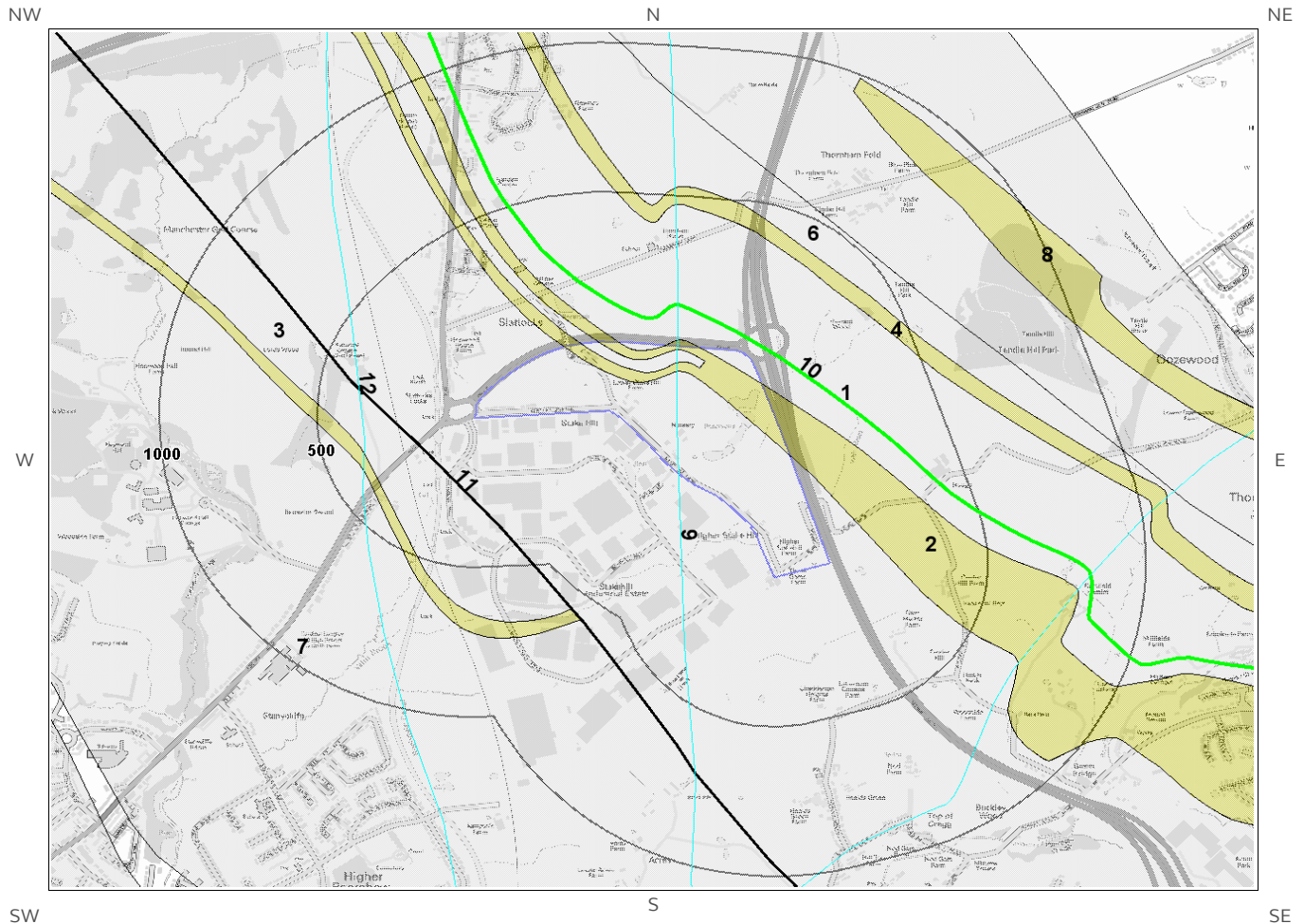
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

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

Database searched and no data found.

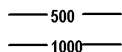
2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline



Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 085

2.3.1 Bedrock/Solid Geology

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

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	0.0	On Site	RYSA-SDST	ROYLEY SANDSTONE - SANDSTONE	WESTPHALIAN
3	191.0	SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	347.0	NE	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN
5	368.0	SW	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN
6	394.0	NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	395.0	SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

2.3.2 Permeability of Bedrock Ground

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

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	High	Moderate
0.0	On Site	Fracture	High	Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
9	0.0	On Site	LANDFORM	Approximate margin of buried (superficial deposit-filled) channel or valley
10	47.0	NE	ROCK	Coal seam, inferred
11	191.0	SW	FAULT	Fault, inferred

ID	Distance	Direction	Category Description	Feature Description
12	356.0	W	LANDFORM	Approximate margin of buried (superficial deposit-filled) channel or valley

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

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

3 Radon Data

3.1 Radon Affected Areas

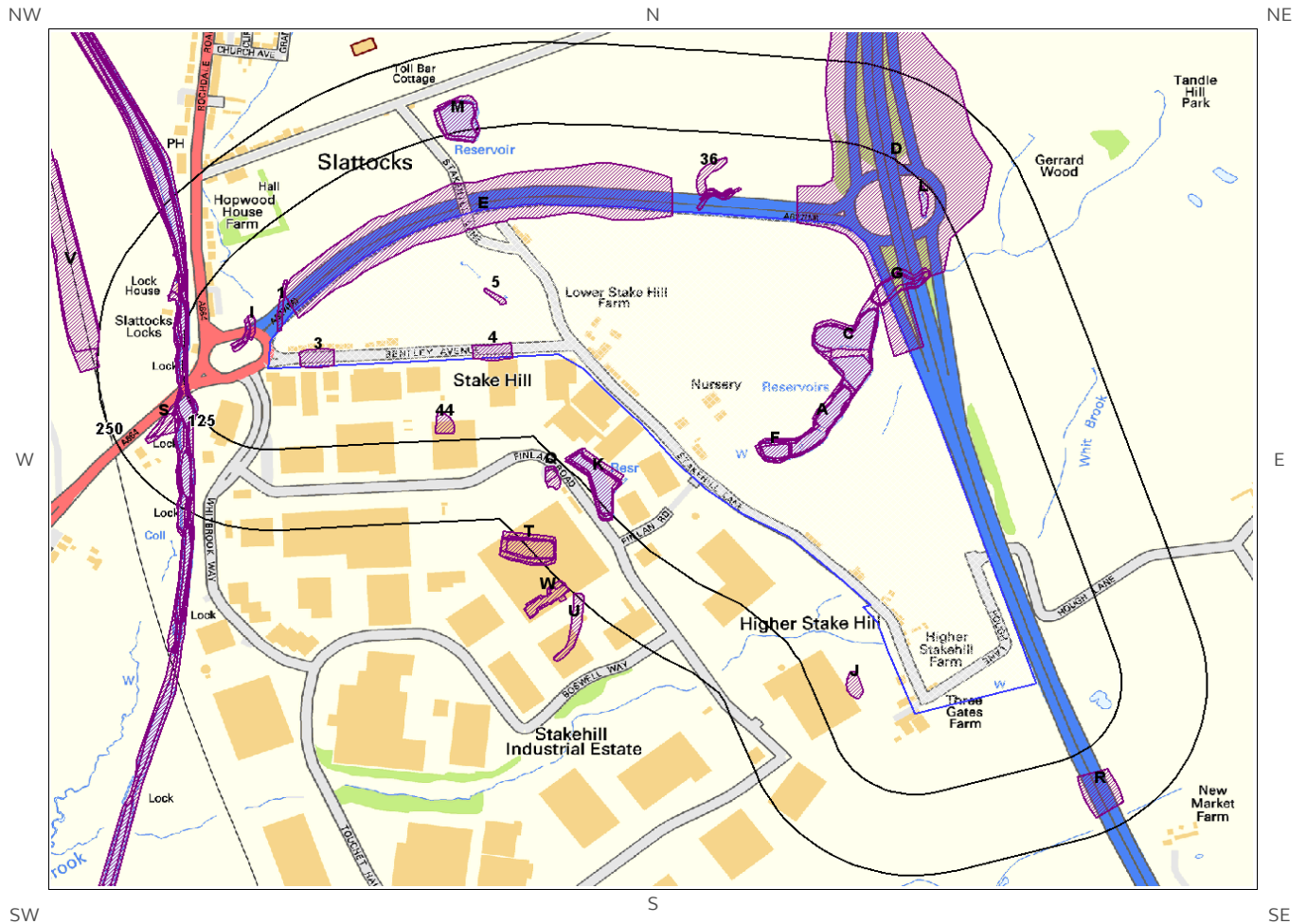
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

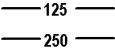
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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- | | | | |
|---|--------------------|---|----------------------------------|
|  | Site Outline |  | Historic Surface Ground Workings |
|  | Search Buffers (m) |  | Historic Underground Workings |
| | |  | Current Ground Workings |

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

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

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

ID	Distance (m)	Direction	NGR	Use	Date
1	0.0	On Site	388604 408443	Unspecified Ground Workings	1938
2E	0.0	On Site	388758 408543	Cuttings	1975
3	0.0	On Site	388655 408361	Cuttings	1928
4	0.0	On Site	388911 408372	Cuttings	1928
5	0.0	On Site	388915 408457	Pond	1890
6D	0.0	On Site	389521 409014	Cuttings	1975
7A	0.0	On Site	389392 408263	Reservoirs	1938
8A	0.0	On Site	389392 408265	Reservoirs	1891
9B	0.0	On Site	389438 408322	Reservoirs	1975
10B	0.0	On Site	389424 408353	Ponds	1965
11B	0.0	On Site	389424 408353	Reservoirs	1949
12B	0.0	On Site	389435 408339	Reservoirs	1891
13C	0.0	On Site	389427 408374	Reservoirs	1907
14C	0.0	On Site	389427 408374	Reservoirs	1928
15C	0.0	On Site	389428 408404	Reservoirs	1891
16B	0.0	On Site	389438 408322	Reservoirs	1982
17D	0.0	On Site	389521 409014	Cuttings	1982
18E	0.0	On Site	388758 408543	Cuttings	1982
19F	0.0	On Site	389322 408215	Reservoir	1909
20F	0.0	On Site	389322 408215	Reservoir	1928
21F	0.0	On Site	389320 408218	Pond	1890

ID	Distance (m)	Direction	NGR	Use	Date
22F	0.0	On Site	389320 408218	Reservoir	1938
23G	0.0	On Site	389508 408469	Reservoirs	1928
24G	0.0	On Site	389508 408469	Reservoirs	1907
25G	0.0	On Site	389508 408469	Reservoirs	1938
26G	0.0	On Site	389508 408470	Reservoirs	1891
27A	0.0	On Site	389392 408263	Reservoirs	1907
28A	0.0	On Site	389392 408263	Reservoirs	1928
29C	0.0	On Site	389427 408374	Reservoirs	1938
30H	4.0	N	389223 408607	Old Sand Pit	1890
31H	17.0	N	389241 408612	Unspecified Ground Workings	1909
32H	17.0	N	389241 408612	Unspecified Ground Workings	1928
33H	19.0	N	389238 408615	Unspecified Ground Workings	1938
34I	26.0	W	388558 408409	Unspecified Ground Workings	1965
35I	26.0	W	388558 408409	Unspecified Ground Workings	1949
36	27.0	N	389219 408643	Sand Pit	1949
37I	30.0	W	388552 408394	Unspecified Ground Workings	1909
38I	30.0	W	388552 408394	Unspecified Ground Workings	1928
39I	32.0	W	388554 408401	Unspecified Ground Workings	1938
40J	56.0	W	389441 407857	Pond	1916
41J	56.0	W	389441 407857	Pond	1907
42J	56.0	W	389441 407857	Pond	1923
43K	71.0	SW	389062 408170	Reservoir	1949
44	80.0	S	388842 408262	Old Sand Pit	1890
45K	81.0	SW	389060 408169	Pond	1965
46K	81.0	SW	389060 408169	Reservoir	1975
47K	81.0	SW	389060 408169	Reservoir	1982
48K	82.0	SW	389059 408167	Reservoir	1890
49K	82.0	SW	389059 408167	Reservoir	1938
50K	83.0	SW	389060 408164	Reservoir	1928

ID	Distance (m)	Direction	NGR	Use	Date
51K	83.0	SW	389060 408164	Reservoir	1909
52L	93.0	NE	389542 408604	Pond	1975
53L	93.0	NE	389542 408604	Pond	1982
54M	105.0	N	388858 408726	Reservoir	1928
55M	105.0	N	388858 408726	Reservoir	1909
56M	107.0	N	388857 408728	Reservoir	1938
57M	107.0	N	388857 408728	Reservoir	1890
58M	112.0	N	388862 408735	Reservoir	1975
59M	112.0	N	388862 408735	Reservoir	1949
60M	112.0	N	388862 408735	Pond	1965
61M	112.0	N	388862 408735	Reservoir	1982
62N	118.0	SW	388324 407371	Canal	1975
63N	118.0	SW	388324 407371	Disused Canal	1982
64O	118.0	W	388334 407500	Canal	1965
65O	118.0	W	388334 407500	Canal	1949
66	121.0	W	386817 409520	Canal	1938
67P	121.0	W	386812 409522	Canal	1909
68P	121.0	W	386812 409522	Canal	1928
69	123.0	W	386808 409519	Canal	1890
70Q	137.0	SW	388998 408183	Unspecified Heap	1938
71Q	139.0	SW	389000 408174	Unspecified Heap	1928
72Q	139.0	SW	389000 408174	Unspecified Heap	1909
73S	146.0	W	388433 408259	Unspecified Ground Workings	1949
74R	157.0	SE	389800 407689	Cuttings	1982
75R	157.0	SE	389800 407689	Cuttings	1975
76S	157.0	SW	388427 408257	Unspecified Pit	1928
77S	157.0	SW	388427 408257	Unspecified Pit	1909
78T	211.0	SW	388964 408073	Reservoir	1949
79T	215.0	SW	388967 408070	Pond	1965

ID	Distance (m)	Direction	NGR	Use	Date
80T	217.0	SW	388962 408065	Reservoir	1938
81T	217.0	SW	388962 408065	Reservoir	1890
82T	218.0	SW	388967 408058	Reservoir	1928
83T	218.0	SW	388967 408058	Reservoir	1909
84U	242.0	SW	389033 407946	Unspecified Ground Workings	1949
85U	242.0	SW	389033 407946	Unspecified Ground Workings	1965
86W	248.0	SW	388991 407989	Filter Beds	1938
87V	248.0	W	388283 408539	Cuttings	1909
88V	248.0	W	388283 408539	Cuttings	1928
89W	249.0	SW	388991 407987	Filter Beds	1909
90W	249.0	SW	388991 407987	Filter Beds	1928
91V	250.0	W	388291 408520	Cuttings	1949
92V	250.0	W	388291 408520	Cuttings	1965
93V	250.0	W	388291 408520	Cuttings	1975
94V	250.0	W	388291 408520	Cuttings	1982

4.2 Historical Underground Working Features derived from Historical Mapping

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

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

Database searched and no data found.

4.3 Current Ground Workings

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

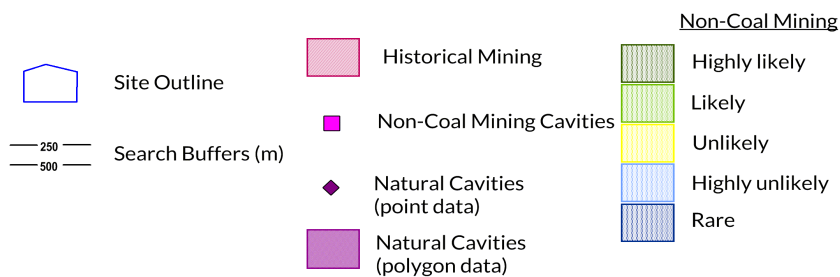
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	415.0	W	388184 408236	Sand	Hopwood Hall Sand Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	470.0	E	390083 408205	Sand	Hough Sand Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	757.0	E	390463 407862	Sand & Gravel	Cinder Hill Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	862.0	SW	387883 407844	Sand	Hopwood Clough Sand Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

This map shows the Stoke Newington area in London, bounded by the River Thames to the south and White Brook to the east. Key landmarks include Slattocks, Stake Hill, and Higher Stake Hill. The map features a compass rose and a scale bar indicating distances up to 500 meters. Various streets and landmarks are labeled, including Slattocks, Stake Hill, Higher Stake Hill, and the Stoke Newington Industrial Estate. The map also shows the River Thames, White Brook, and several parks and green spaces.

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

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

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

Database searched and no data found.

5.2 Coal Mining

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

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

The following Coal Mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

5.3 Johnson Poole and Bloomer

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

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

The following information provided by JPB is not represented on mapping: In addition to being located inside an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property which may supplement this information. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

5.4 Non-Coal Mining

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

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

Database searched and no data found.

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

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

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

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

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

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

Database searched and no data found.

5.8 Gypsum Extraction

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

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

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

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

Database searched and no data found.

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

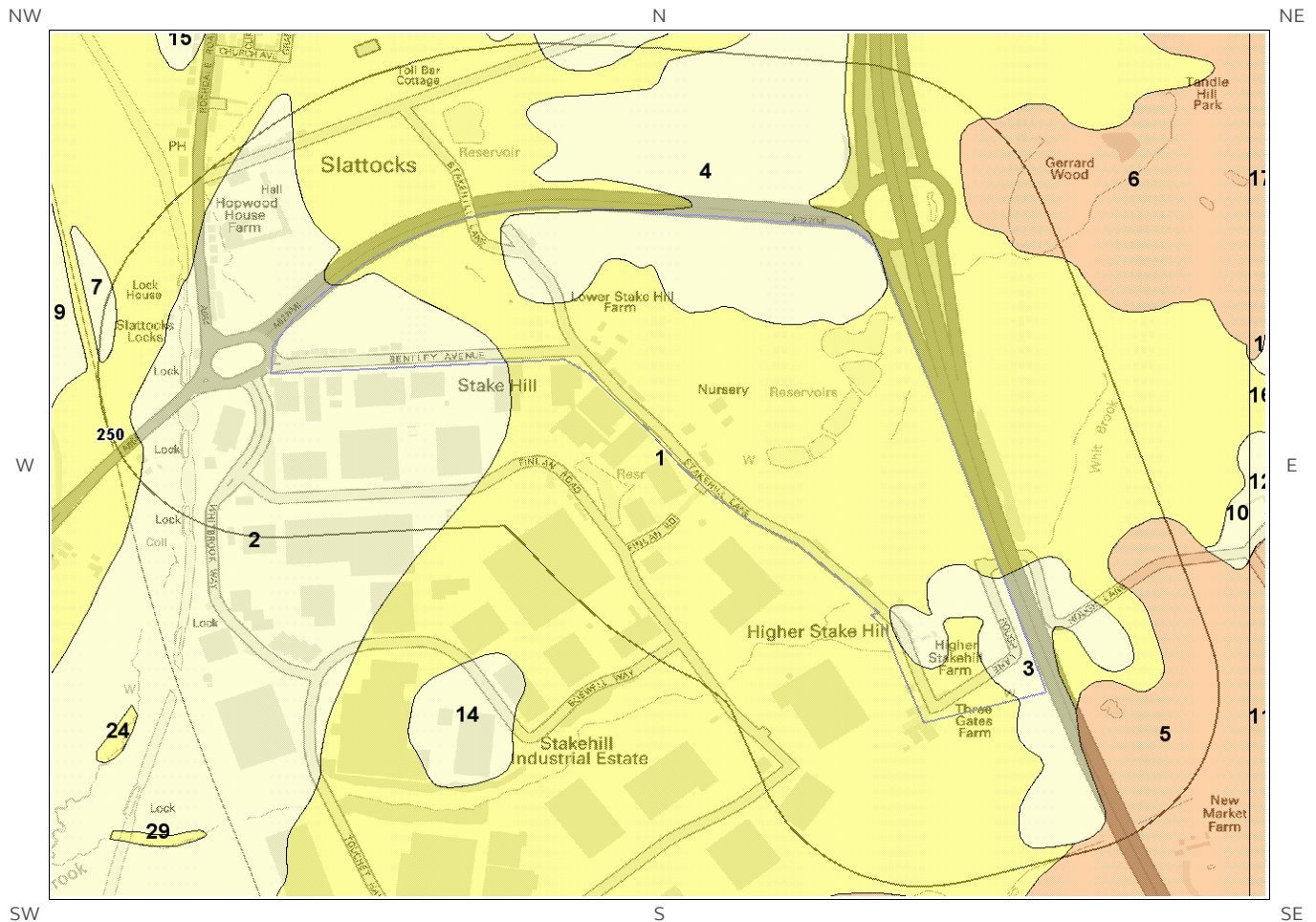
Are there any Clay Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

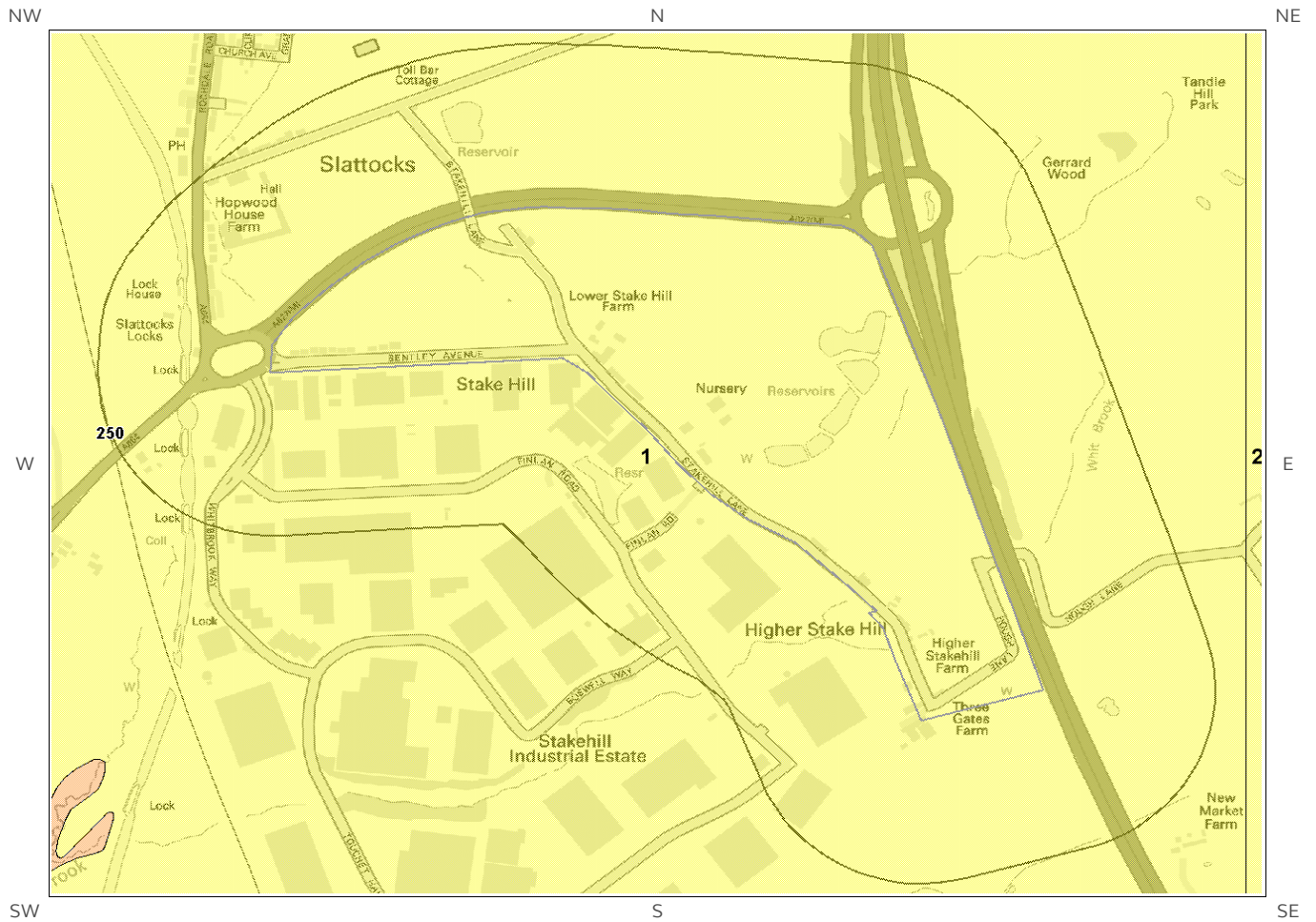


Shrink Swell Clay Legend

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6.2 Landslides map

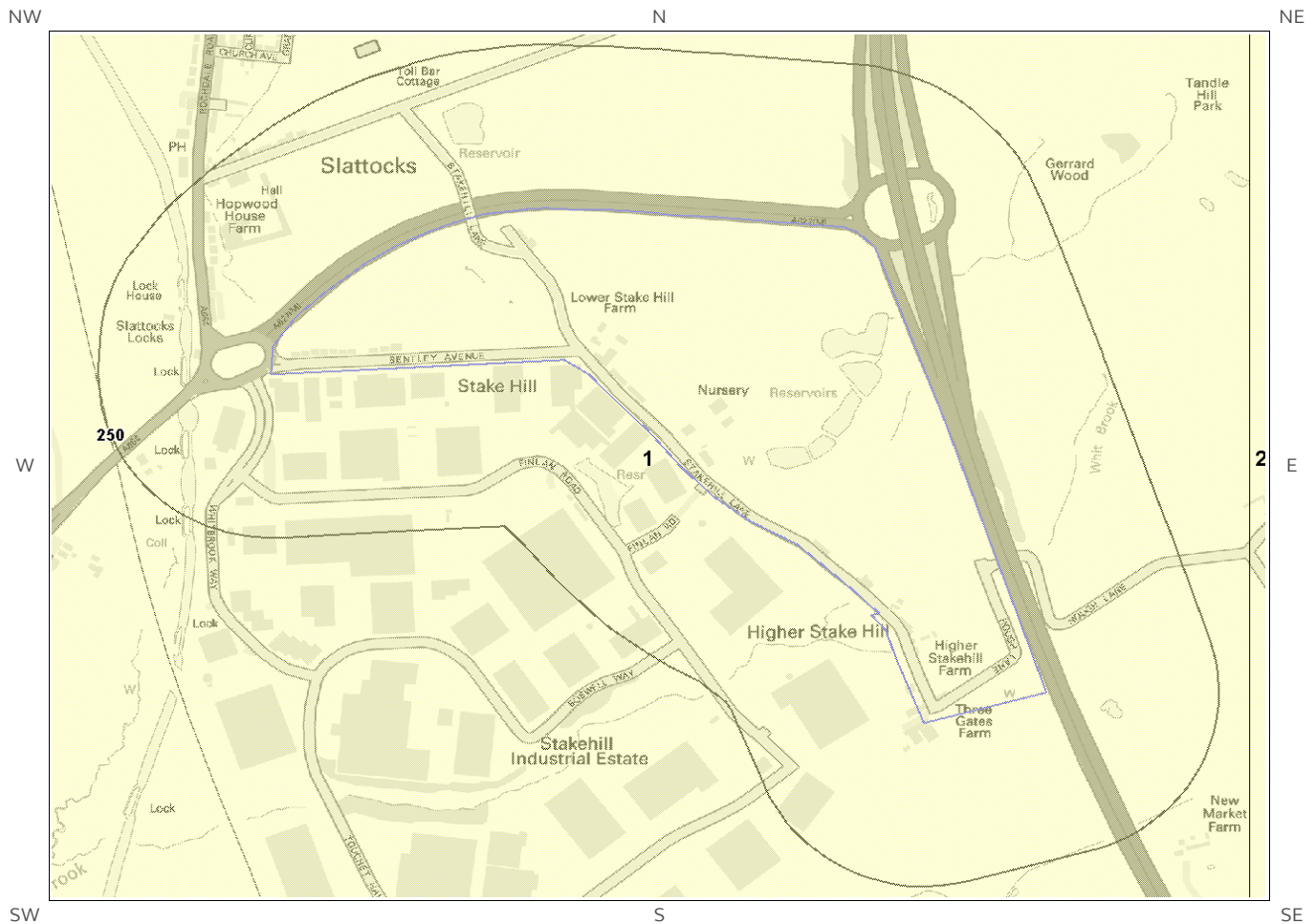


Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map

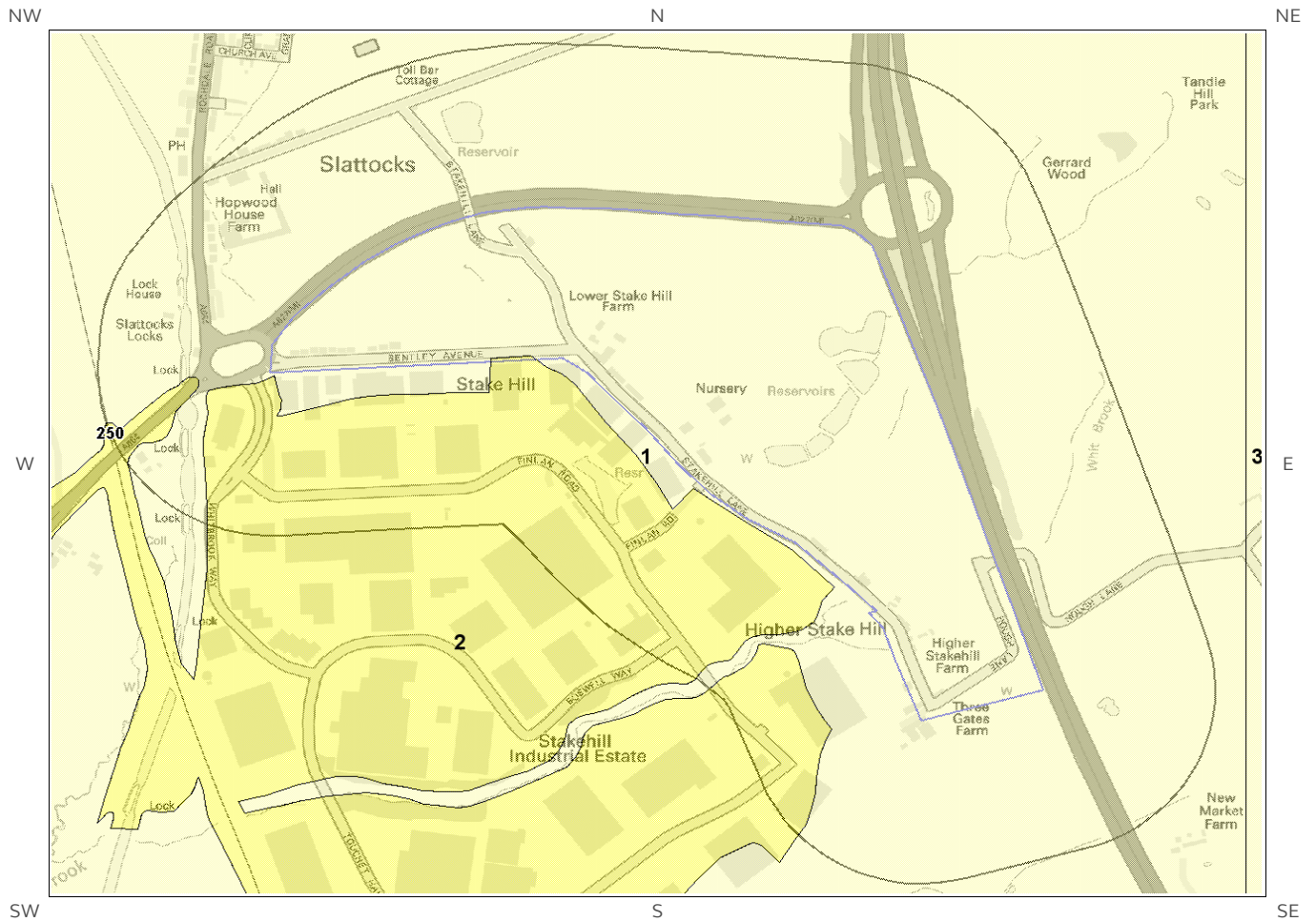


**Ground Dissolution
Soluble Rocks Legend**

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6.4 Compressible Deposits map

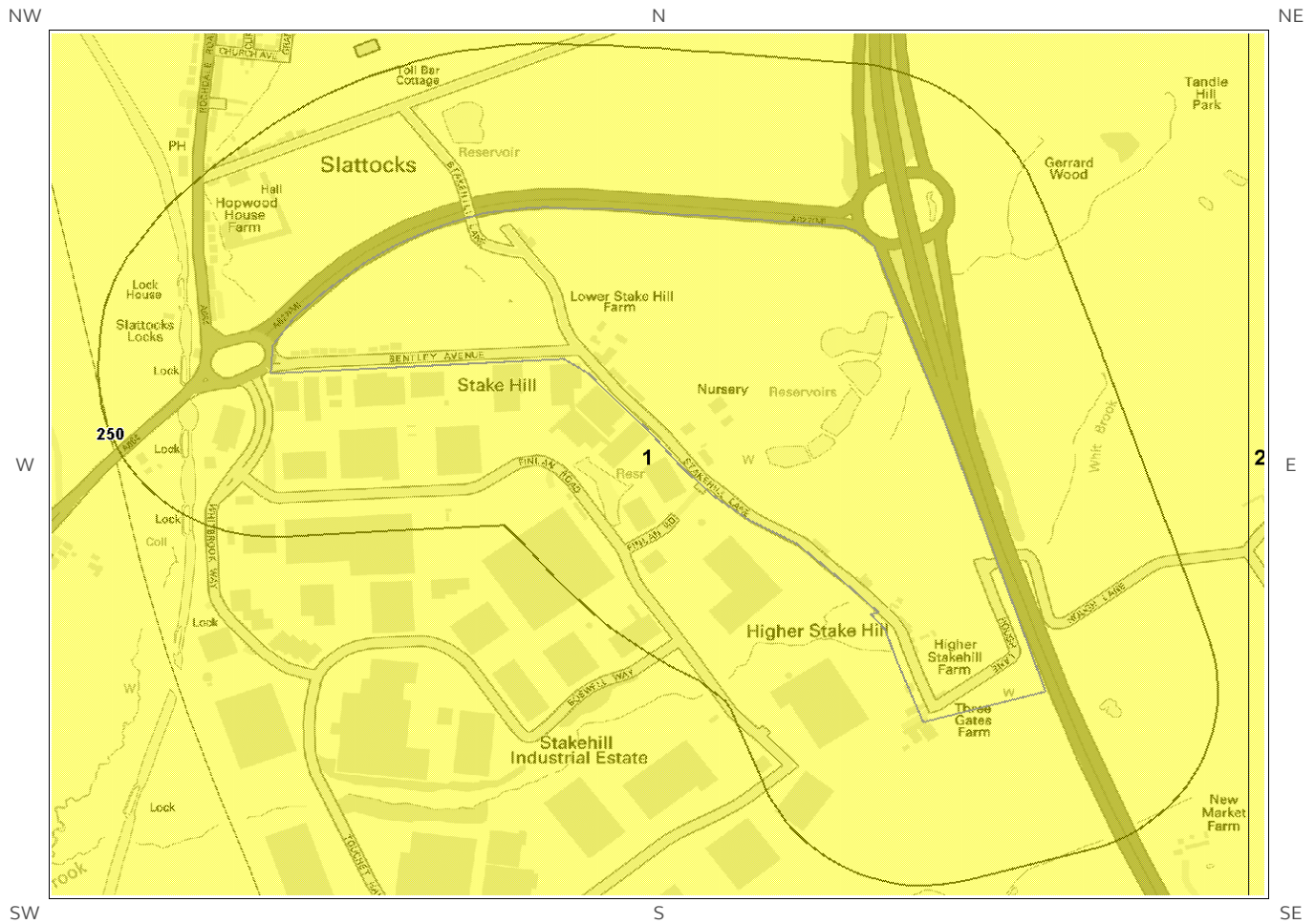


Compressible Deposits Legend

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6.5 Collapsible Deposits map

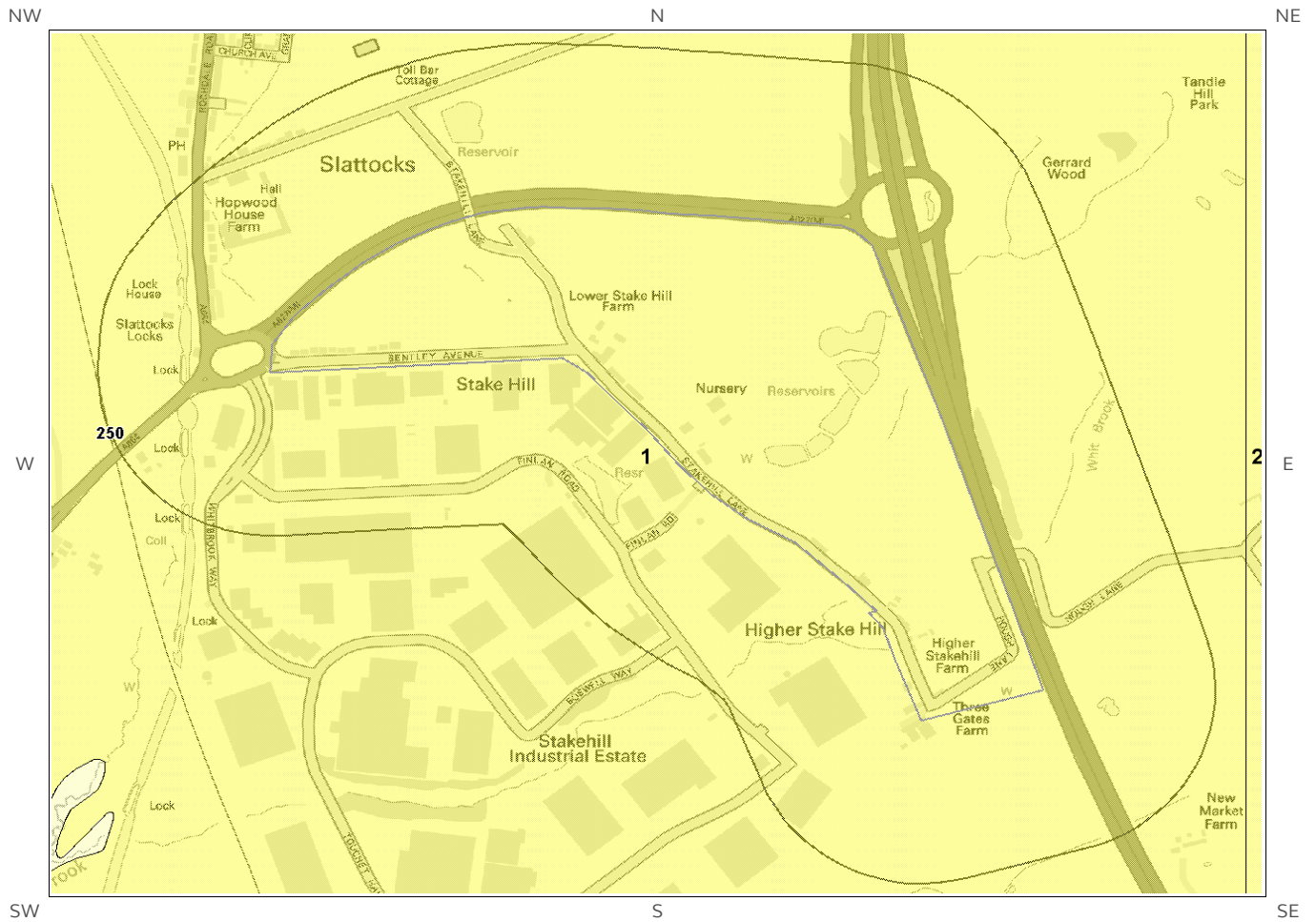


Collapsible Deposits Legend

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6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
2	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
3	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
4	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
5	48.0	E	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

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

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

6.3 Ground Dissolution of Soluble Rocks

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
2	0.0	On Site	Very Low	Very low potential for compressible deposits to be present. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

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

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

This map shows the area around Slacks and Stake Hill. The River Great Ouse flows through the center, with several locks marked. Key locations include Slacks, Stake Hill, Higher Stake Hill, and Stakehill Industrial Estate. The map also shows the River Great Ouse, various roads, and landmarks such as the Slacks Reservoir, Stake Hill Reservoir, and Higher Stake Hill Reservoir. The map is oriented with North at the top.

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7 Borehole Records

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

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

6

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	68.0	W	389422 407897	SD80NE288	-1.0	STAKEHILL INDUSTRIAL ESTATE MIDDLETON SITE B 6
2	105.0	W	389421 407800	SD80NE289	-1.0	STAKEHILL INDUSTRIAL ESTATE MIDDLETON SITE B 7
3	137.0	W	389361 407861	SD80NE290	-1.0	STAKEHILL INDUSTRIAL ESTATE MIDDLETON SITE B 8
4	173.0	SW	389300 407896	SD80NE291	-1.0	STAKEHILL INDUSTRIAL ESTATE MIDDLETON SITE B 9
5	208.0	W	389300 407823	SD80NE292	-1.0	STAKEHILL INDUSTRIAL ESTATE MIDDLETON SITE B 10
6	210.0	W	388377 408397	SD80NE4	64.01	SLATTOCKS 2 THORNHAM ESTATE

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#6: scans.bgs.ac.uk/sobi_scans/boreholes/26959

8 Estimated Background Soil Chemistry

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

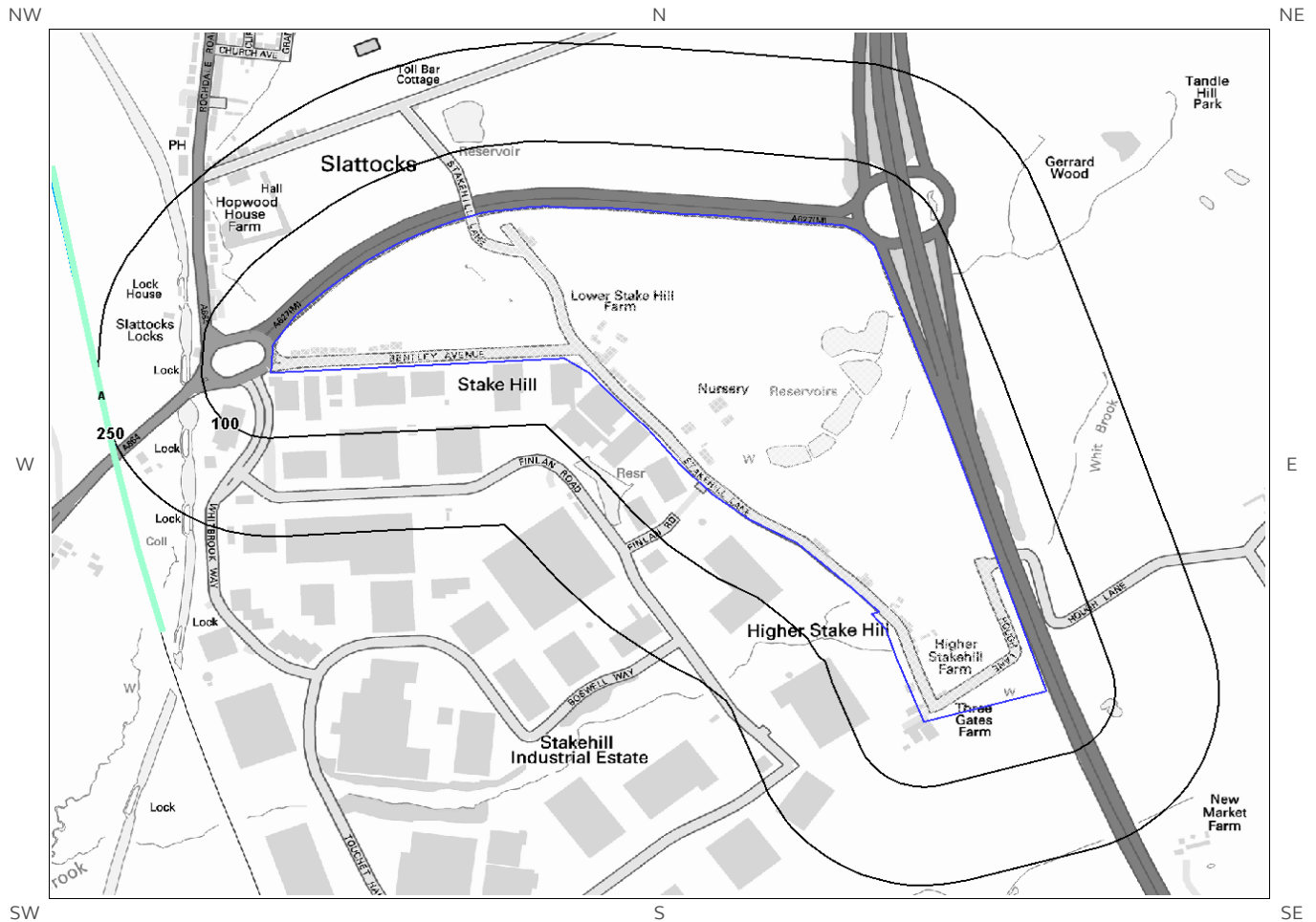
12

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

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	300 - 600 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	300 - 600 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	300 - 600 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	300 - 600 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	RuSoilExAs	25 - 35 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
24.0	E	RuSoilExAs	25 - 35 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

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

9 Railways and Tunnels map



Railways and Tunnels Legend

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	Underground or Partially Underground Railway / Subway System		Railway Track (OpenStreetMap)
	Railway Tunnel (OS Mapping)		High Speed 2
	Abandoned or Dismantled Railway (OpenStreetMap)		High Speed 2 Revised Proposed Route
	Railway Track (OS Mapping)		Railway and/or Tunnel Feature from Historical Mapping
	Site Outline		
	Search Buffers (m)		
			Crossrail 1

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1A	247	W	388339 408305	Railway Sidings	1953
2A	248	W	388337 408305	Railway Sidings	1984

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
247	W	Not given	Multi Track
247	W	Not given	Multi Track
248	W	Caldervale Line	Rail
248	W	Caldervale Line	Rail

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

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<https://www.gov.uk/government/organisations/public-health-england>
Email: enquiries@phe.gov.uk
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