

ENVIRONMENT

Wilson Bowden Developments Ltd
Plot P, Kingsway Business Park
Rochdale
Phase 1 Geo-Environmental Assessment

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EXECUTIVE SUMMARY

Executive Summary	
Site Address	The site is located on a collection of fields, immediately south of Kingsway Business Park tram station in Rochdale, OL16 4JN.
Proposed Development	The proposed development is anticipated to comprise a commercial and/or warehouse use with associated infrastructure.
Current Site Use	At the time of the walkover the site was disused and comprised overgrown grassland, with a path leading to the loop road in the south from the tram station to the north
Site History	Historically, the site largely comprised of numerous fence enclosed fields, with a persistent body of water to the immediate southeast. The site remained largely unchanged throughout its history. The only onsite activity present between 2012 and 2018, was related to the loop road construction to the south in which material was placed on site and a path being constructed north south through the area. From 1851, the site has been immediately bordered to the north by a rail line, expanded with sidings during 1891-1908 period but was since developed into a tram line, remaining largely unchanged. Off-site, the area was largely agricultural fields bounded by residential developments of Rochdale and Milnrow. Industrial developments were primarily over 650m from site.
Ground Conditions	Information published by the BGS indicates that the site is directly underlain by Glaciofluvial (Sand and Gravel) in the western part of the site and Till deposits in the eastern part, these are underlain by Pennine Lower Coal Measures bedrock. The bedrock is inferred as faulted to the southwest and northeast of the site at 52m and 130m respectively (NW-SE trending).
Geotechnical Review	Based on the proposed commercial and/or warehouse use on the site, shallow strip foundations bearing onto the Glaciofluvial & Till superficial deposits are likely to be suitable at the site. However, for heavier loadings, ground improvement may be required. The proposed development is expected to include changes to site levels and so shallow soil properties should be assessed.
Environmental Review	When considered in the context of the conceptual site model and the historical activities that have taken place (agricultural work and potential landfill), the proposed development is considered to pose a moderate/low risk to human health. It is considered that the main driver for the risk rating for human health is migration and accumulation of ground gases in association with the potential Made Ground and potential organic rich soils on the site. The risk posed to controlled waters is predominantly considered to be low due to potential of contaminants from soil left on site as part of the loop road construction.
Recommendations	It is recommended that an intrusive ground investigation be completed to assess the ground conditions on site, the extent of any potential contamination, assess the ground gas regime at the site and to quantify the identified pollutant linkages and assess likely mitigation measures.
This summary should be read in conjunction with BWB's full report (ref. KYP-BWB-ZZ-XX-RP-YE-0001_Ph1) and reflects an assessment of the site based on information received by BWB at the time of production.	

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1. INTRODUCTION

Instruction

- 1.1 BWB Consulting (BWB) was instructed by Wilson Bowden Developments Ltd (the Client) to carry out a Phase 1 Geo-Environmental Assessment for the site at Plot P, Kingsway Business Park, Rochdale. Details of the project brief are included in BWB proposal reference 211215/P01/01/210939/KES/RTR, dated 15/12/2021.
- 1.2 The proposed development is anticipated to comprise commercial and/or warehouse use with associated infrastructure.
- 1.3 The proposed development site layout, 7675-FDG-XX-XX-M3-A-0001_RIWA8AJN, dated 31/05/2022, is provided as **Appendix 1**.

Objectives

- 1.4 This report has been completed to present pertinent information into the environmental risks and liabilities associated with the site. It has been completed to fulfil the requirements of a preliminary risk assessment in accordance with BS 10175:2011+A2:2017 'Investigation of potentially contaminated sites, code of practice' and EA Guidance on Risk Management of Land Contamination <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>.
- 1.5 The report has also been prepared with reference to land contamination technical guidance available through <https://www.gov.uk/government/collections/land-contamination-technical-guidance>.
- 1.6 The objectives of this report are to:
 - Assess historical activities at the site with respect to their potential impact on the site environment;
 - Characterise the environmental setting of the site, identify migration pathways and vulnerable receptors for contamination originating at the site, focusing on potential soil and groundwater liabilities;
 - Assess historical and current surrounding land use in relation to known or potential off-site contamination issues that may impact the site;
 - Review existing site investigation and remediation information for the site, where available;
 - Develop a preliminary Conceptual Site Model (CSM); and
 - Assess potential environmental liabilities associated with the site.

Scope of Work

- 1.7 The Scope of Work included:

- A site visit to inspect the current site and immediate surroundings, identify potential hazards associated with ground conditions or contamination and to determine potential constraints with regards to ground investigation (photographs presented as **Appendix 2**);
- A review of the following information:
 - Groundsure report, reference HMD-214-8800198 (**Appendix 3**);
 - Historical Ordnance Survey Mapping (**Appendix 4**);
 - Historical aerial photographs (Google Earth) and other imagery (Groundsure);
 - BGS online geological maps and exploratory hole records (www.bgs.ac.uk);
 - Coal Authority Interactive Map Viewer (<http://mapapps2.bgs.ac.uk/coalauthority/home.html>);
 - Coal Authority Consultants Coal Mining Report, reference HMD-214-8800197 (**Appendix 6**);
 - Regional unexploded bomb risk maps;.
- A summary of the key hazards or uncertainties that require additional investigation in order to further characterise the associated risks; and
- Production of a Geo-Environmental Assessment (this report), concluding in a qualitative assessment of the risks from contamination and ground-related constraints which may impact on the site.

2. THE SITE

Site Location

- 2.1 The site is located at Plot P, Kingsway Business Park, in Rochdale, centred at National Grid reference 391907 412651, nearest postcode OL16 4JN. The approximate location of the site is shown below in **Figure 2:1**.

Figure 2:1: Site Location Plan



Site Description

- 2.2 The site comprises of an irregularly shaped parcel of land to the east of Rochdale centre, covering approximately 2.6 hectares. The site is undulating, 149m above Ordnance Datum.

Site Walkover

- 2.3 A site walkover of accessible areas was completed on 16/06/2022 by a representative of BWB. Photographs from the walkover are presented in **Appendix 2**
- 2.4 At the time of the walkover, the site comprised of slightly overgrown fields divided down the site by a footpath. Old stone walls that follow old field divisions are still present in a ruined state. The north of the site was bordered by a tram station and associated tram line and infrastructure, separated by a wooden post, wired with barbed wire topped fence. The east of the site comprises farmland with livestock and bodies of standing water (used for livestock drinking water). To the south and west borders are uninhabited, wild grass fields, except for the asphalt loop road that comprises the southern boundary of the site.
- 2.5 Site access on foot was possible utilising the loop road to the south of site and the footpath through the centre of the site. This route was used to bypass a ditch that borders most of the sites southern boundary. The eastern field containing livestock was not accessed during walkover. For ground investigation, the wire fence will need to be partially dismantled to allow access.
- 2.6 Approximately 80% of the site was covered in grass or overgrown vegetation, with a small amount of tree cover along the northern boundary. Approximately 10% of the site was comprised of a narrow footpath connecting the loop road to the south of the site and the northern tram station. Approximately 10% of the site comprised standing water, or dry/seasonal wet areas primarily in the eastern portion of the site.
- 2.7 The site topography was largely undulating across the entire site, with depressions and a mound noted in the western portion. The site gently slopes down towards the western and eastern boundaries of the site. The footpath through the site is lower than the surrounding topography to the east and west.
- 2.8 Trees on northern boundary were generally semi-mature. Vegetation across the site was largely overgrown but traversable, with seasonal wet areas identifiable by collections of bulrushes.
- 2.9 There are three bodies of standing water to the east of the site, two located within the site boundaries and one 15m east within the livestock fields. Previously wet ground identified by soft ground conditions and bulrushes located 25m west of the standing water.
- 2.10 The site had foul and surface water utilities marker posts immediately west of the footpath, running parallel between the loop road and tram station.

Potential Constraints to Ground Investigation

- 2.11 Site access into the eastern field would require negotiation with landowner/tenant farmer for partial temporary dismantling of the barbed wire fence and moving of livestock to allow for access and safe work conditions.

- 2.12 The site is open and visited by members of the public utilising the tram station, as well as dog walkers or recreational users indicated by trodden footpath through vegetation in the west of site. Additional safety precautions will need to be considered for any further works on site.

Site Surroundings

- 2.13 The surrounding land uses at the time of the walkover survey are summarised in **Table 2:1**.

Table 2:1: Surrounding Land Use

Surrounding Land Use	
North	Tram line with residential properties beyond.
East	Fields used for livestock.
South	Loop road followed by empty fields similar to site.
West	Fields similar to site with large stand of mature trees.

- 2.14 An aerial photograph representative of the site and surroundings, dated 23/05/2019, is presented as **Figure 2:2**.

Figure 2:2: Aerial Photograph



3. ANTICIPATED GROUND CONDITIONS

- 3.1 The anticipated ground conditions for the site and controlled waters vulnerability is discussed within **Table 3:1**.

Table 3:1: Summary of Anticipated Ground Conditions

Anticipated Ground Conditions	
Geology	Information published by the BGS indicates that the site is directly underlain by Glaciofluvial (Sand and Gravel) to the west and Till deposits to the east, these are underlain by Pennine Lower Coal Measures bedrock. The bedrock is inferred as faulted to the southwest and northeast of the site at 52m and 130m respectively (NW-SE trending). The BGS Lexicon database describes the bedrock as interbedded mudstone, siltstone and sandstone containing thicker coal seams towards the upper boundary. Topsoil is likely to be present across a majority of the site. There are areas of worked and Made Ground within 50m of the site, primarily around tram infrastructure and the loop road to the south. On site, located in the southeast, worked ground comprised of void rock. Information from aerial photographs suggest Made Ground is present on site, likely originating from the loop road construction. Made Ground also borders the body of standing water to the east of the site. The closest BGS borehole to the site is SD91SW156, approximately 380 m west. The borehole recorded 1.4m of Made Ground, comprising of 200mm of topsoil over dark brown sandy topsoil with a small amount of gravel content. This is underlain by 4.6m of medium dense, brown silty fine to medium sand with loosening occurring at 5.2m to the borehole's termination at 6.0m bgl (below ground level). The Till deposits on site are not present at this borehole location, but the underlying glaciofluvial and Lower Coal Measures bedrock, which are present on site, are present in this record.
Hydrogeology	The Environment Agency (EA) classifies the Till as a Secondary Undifferentiated Aquifer, the Glaciofluvial deposits as a Secondary A Aquifer and the bedrock as a Secondary A Aquifer. There are no active or historical abstractions within 1km of the site. There has been one Category 3 (minor) pollution incident impacting on land located 460m north of the site relating to construction and demolition materials and waste. The site is indicated to be within an EA groundwater Source Protection Zone 2, outer catchment.
Surface Waters	There are three bodies of standing water located within the site boundary wider than 5m with no clear drainage. At the time of the site walkover, the preceding weather was especially dry. Areas of the site displayed evidence of previous water logging/standing water. The closest flowing surface water feature to the site is the Stanney Brook, approximately 150m to the South and West of the site. This flows to the nearby Rochdale Canal, approximately 380m to the northwest. The closest active surface water abstraction is located 692m east of the site and is utilised for general cooling purposes. There is one active licensed discharge located within 500m of the site. This is located approximately 176m northwest of the site, relating to pumping station sewage discharge with Stanney Brook as the receiving water. There have been five Category 3 (minor) pollution incidents impacting on controlled waters within 500m of the site. Two located 181m northwest of the

Anticipated Ground Conditions	
	site related to crude sewage, two located 382m west of the site related to oils and fuel and one located 421m southeast relating to crude sewage There is a high risk of surface water flooding on site, primarily related to the observed surface water on site, and within 50m. There is a maximum flood depth of 0.3m to 1m from surface water flooding on site for a 1 in 30-year event. There is a low to moderate risk of groundwater flooding on site. The site is not located in an EA flood zone 2 or 3 designation.
Ground Gas & Radon	The site is located within an area with a less than 1% risk of radon present. The Groundsure Report indicates a historical local authority landfill is present on site. Clarification with Rochdale Council confirmed that this is not present (Appendix 5). Organic material built up within the surface water bodies present on site currently and historically may pose a potential source of hazardous ground gas.
Mining and Mineral Extraction	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is presented as Appendix 6. The report indicated the following information: - Three Lower Mountain coal seams are reported as worked. Two are beneath the site and one is to the west, with the latest mining activity terminating in 1915 at depths between 97m to 107m. - No shallow or opencast coal workings are recorded within 500m of the site. - No outcrops have been recorded on site. There are faults near to the site, located 52m SW and 130m NE, placing the site in a slight graben structure. - There are no mine entries within 100m of the site. - There have been no reports of subsidence or related damage within 50m of the site. - There has been no mine gas or mine water treatments within 500m of the site Present on the site may be features related to the railway cutting along the northern boundary of the site that may have been backfilled since operation. There have been no other mining or extractions within 1000m of the site.
Environmental Sensitivity	The Merseyside and Greater Manchester area of Green Belt is 726m NE of the site. There nearby Rochdale Canal is a designated SSSI, located 314m northwest of the site. The Canal is also listed as special areas of conservation. The site is within two SSSI impact risk zones and developments requiring consultation include infrastructure, minerals oil and gas, residential, rural residential & non-residential, combustion, waste, composting, discharges, water supply in addition to air pollution. Within 125m of the site, priority habitat for lowland fens is present, with the site being designated as Network Enhancement Zone 1 & 2.

4. SITE HISTORY

- 4.1 Historical Ordnance Survey (OS) mapping for the site area has been reviewed. These maps and plans date from 1851 to 2022. The historical plans reviewed are provided in **Appendix 4**. The key points of the historical development of the site and surrounding area are summarised in **Table 4:1**. All distances quoted are approximate and potential SOURCES and receptors are highlighted through their formatting.

Table 4:1: Key Points of Development History

Dates	On Site	Off-Site
1851 Country Series 1:10,560	Site comprised of open fields with no development present. Bordered by rail workings to the immediate north of site. A body of standing water was present at the tip of the southern extrusion.	The surrounding area was primarily AGRICULTURAL with sporadic residences . Milnrow village was 700m east of site SANDSTONE QUARRIES were located approximately 550m north east and 730m east of site. BELFIELD COLLIERY located 710m to the northeast of site.
1891 County Series 1:2,500 1:10,560	No significant changes on site.	Belfield Colliery activity ceased, marked as OLD SHAFTS . Sandstone quarries activity ceased. GAS WORKS 750m east of site
1908-1910 County Series 1:10,560 and 1:2,500	No significant changes on site.	RAIL SIDINGS constructed within 50m of site. TANK present 450m southwest of the site. SEWAGE WORKS with filler tanks developed on site of old Belfield Colliery.
1928 County Series 1:10,560	No significant changes on site.	TANK present 625m southeast of site. Residential development 625m west of site across the canal.
1930 County Series 1:2,500	Small terrain marking change in the west of site.	No significant changes off site.
1938 County Series 1:10,560	No significant changes on site.	Residential areas developed between 125 and 500m to the north of site. Kingsway road developed 500m west of site.
1954 Provisional 1:10,560	No significant changes on site.	Residential area developed 750m west of the site.

Dates	On Site	Off-Site
1955 – 56 National Grid 1:1,250 1:2,500	No significant changes on site.	Residential area developed within 150m of site to the north between 1955 and 1956.
1967 National Grid 1:1,250 Provisional 1:10,560	No significant changes on site.	Drain emplaced in Stanney brook 250m west of site. Large residential development occurred west of site across canal. Tank 625m southeast ceased operation.
1976 National Grid 1:1,250 and 1:10,000	No significant changes on site.	Large residential development occurred in Milnrow, bringing residences to the other side of the rail track.
1984-2003 National Grid 1:1,250 and 1:10,000	Residential development occurred north of rail tracks, within 100m of site (1984).	No significant changes off site.
2010 National Grid 1:10,000	No significant changes on site.	Farms located within 500m to the southwest and southeast of site disused and removed, MAIN ROAD constructed between 500m and 750m south.
2022 National Grid 1:10,000	No significant changes on site.	Residential areas developed within 500m of site to the west, joined to ROAD developed to immediate southern site boundary. Largescale WAREHOUSE development within 500m of site to the south.

Historical Aerial Photography and Imagery

- 4.2 Aerial photographs/imagery available through Google Earth and included within the Groundsure report are summarised in **Table 4:2**.

Table 4:2: Summary of Aerial Photography

Date (Source)	Description
2000 (Groundsure)	The site is shown as agricultural land with a railway line immediately to the north of the site running east-west. Bodies of water were present on the site to the east.
2012 (Groundsure)	Larger scale works carried out along the southern boundary of the site, associated with the loop road, with works and material

Date (Source)	Description
	stockpiles spread out over the entirety of the site. Bodies of water expanded and conjoined in the east of the site.
2018 (Groundsure)	Site returned to being largely grassland, road now constructed on southern boundary. Water bodies reduced in size. Path to tram station present through the site, running north to south.
2019 (Groundsure)	No significant changes when compared to 2018 aerial photograph.

Planning History

- 4.3 The Rochdale Council Planning Portal was accessed on 13/06/2022 and indicated that no planning applications have been submitted for the site.

Summary of Site History

- 4.4 The site largely comprised of numerous fenced enclosed fields, with a persistent body of water to the immediate southeast. The site remained largely unchanged throughout its history, with the only onsite activity being between 2012 and 2018, with southern road construction material being placed on site and a path constructed north to south through the area. From circa 1851, the site has been immediately bordered to the north by a rail line, expanded with sidings during 1891-1908 period but has since been developed into a tramline, remaining largely unchanged.
- 4.5 Off-site, the area was largely agricultural fields bounded by residential developments of Rochdale and Milnrow. Industrial developments, including Belfield Colliery, were primarily over 650m from the site. Residential developments from 1976 and recent development of Kingsway Business park to the south has brought residences to within 300m of the site.

5. REGULATORY SETTING

Permits Consents and Authorisations

- 5.1 A full listing of permits, consents and authorisations including discharge consents, pollution incidences and other environmental information, is included in the Groundsure report, presented in **Appendix 3**.
- 5.2 No significant features have been identified which are considered likely to have had a detrimental impact on the site.

Landfilling and Waste Management

- 5.3 A full listing of EA, BGS and Local Authority recorded landfills are provided in the Groundsure report presented in **Appendix 3**.
- 5.4 The following facilities have been identified which have the potential to have a detrimental impact on site.
- 5.5 Two historical landfill sites were identified within 500m of the site, as detailed in **Table 5:1**.

Table 5:1: Historical Landfill Sites

Name	Distance from Site	Details
Little Lane	425m southeast	No information provided.
Ex Universal Laundry	471m east	Accepted inert waste in 1988.

- 5.6 The historical local authority landfill identified on site in the Groundsure report has been discounted as a potential source of contamination. Clarification on the presence of this landfill was requested from Rochdale Council. Their records indicate no landfill is present on site. Council correspondence is presented in **Appendix 5**.

6. GEOTECHNICAL APPRAISAL

- 6.1 The Groundsure report, site history, current site setting and geology setting have all been considered in order to provide an indication of the potential ground related constraints and opportunities in the context of the proposed development as set out in **Table 6:1**.

Table 6:1: Ground Related Constraints & Opportunities

Potential Constraint / Opportunity	Explanation	Potential Mitigation Options
Topsoil / Made Ground	Topsoil is expected to be present across the majority of the site. Made Ground is expected to be present across the site as a result of material placed during the loop road construction, along the footpath and in potentially infilled ground on-site.	Topsoil and Made Ground may be suitable for reuse on site, subject to confirmation of chemical status and engineering properties via ground investigation, and confirmation of potential restrictions on reuse associated with waste management licencing.
Preliminary Foundation Solution	Based on the proposed commercial and/or warehouse use on the site, shallow strip foundations bearing onto the Glaciofluvial & Till superficial deposits may be suitable at the site. For heavier loadings, ground improvement may be required.	Ground investigation should be undertaken to confirm ground conditions at the site and allow for in-situ and laboratory testing to inform foundation design.
Buried Obstructions	Given the historical uses of the site there is limited potential for buried obstructions such as former foundations. Foul and surface water services are indicated to be present in the west of the site.	Buried obstructions may require removal from site within areas of proposed development. Services may need to be diverted away from proposed building footprints.
Trees	Juvenile and semi-mature trees were noted as scattered around the site.	Foundations in close proximity to new or existing trees may need to be locally deepened beyond the zone of influence of tree roots and/or heave precautions adopted.
Pyritic Geology	Ground conditions have limited potential to be pyritic based on the geology.	No further assessment is required.
Shrinking and Swelling Clays and Running Sands	The Groundsure report indicates a very low to negligible risk on site. There is very low risk of running sands.	Ground conditions are predominantly low plasticity therefore no further assessment required. Although the running sands risk is indicated to be very low, BWB have encountered running sands often across the wider Kingsway Business Park within the same geology so running sands are considered to be a likely issue that needs further consideration.

Potential Constraint / Opportunity	Explanation	Potential Mitigation Options
Coal Mining	Coal is not expected to be present at the surface or at shallow depth across the site. The Coal Authority Report indicates deeper mining at the site at depths of 97-107m.	No further assessment is required.
Mineral Extraction	No mineral extraction has been identified as taking place on the site	No further assessment is required.
Earthworks	The proposed development is expected to include a change to site levels.	Further assessment is required of materials on site and their potential for re-use/re-engineering.
Slope Stability	The Groundsure report indicates a very low risk on site.	It is indicated that slope instability problems are unlikely to be present on-site therefore no further assessment required.
Retaining Walls	No retaining walls were noted during the walkover.	No further assessment required.
Shallow Groundwater	Shallow groundwater and seasonal high groundwater table are common across the local area based on BWBs history of working on nearby sites.	The groundwater levels should be assessed through intrusive investigation and monitoring. The effects of the foundation solution, earthworks strategy, and construction methodologies will need to be considered.
Drainage and Soakaways	Soakaways may be a viable option in the west of the site, within Sand and Gravel deposits. Depending upon groundwater levels and drainage properties.	Should soakaways be considered as part of the drainage strategy, it is recommended that infiltration testing in accordance with current guidance is undertaken.
Roads and Pavements	California Bearing Ratio (CBR) values should be sought for road, car park and pavement design.	In-situ testing should be undertaken to infer CBR values. Furthermore, geotechnical testing should be undertaken to provide consistency of results.
Ground Dissolution Hazards	The Groundsure report indicates a negligible risk based on location.	Soluble rocks are indicated to potentially be present but are unlikely to cause problems except under exceptional conditions. No further action is required.
UXO	Review of the unexploded ordnance risk maps available online indicates the site to be in an area of low risk from UXO.	No further assessment required.

7. PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

Introduction

- 7.1 The risk posed by any contaminants in soil or groundwater will depend on the nature of the hazard, the probability of exposure, the pathway by which exposure occurs, and the likely effects on the receptors. A contaminant is defined as a substance that has the potential to cause harm, while a risk is considered to exist if such a substance is present in sufficient concentration to cause harm and a pathway exists for a receptor to be exposed to the substance.
- 7.2 Three impact potentials exist for any given site, all of which need to be considered in a risk assessment, which are:
- The site impacting upon itself;
 - The site impacting on its surroundings; and
 - The surroundings impacting on the site.
- 7.3 The following sections discuss all the identified potential on and off-site sources, pathways and receptors in the context of the proposed development and plausible pollutant linkages which may represent a risk to identified receptors such as human health and/or controlled waters from the data gained from the desk study.
- 7.4 The assessment is qualitative and aimed to determine all likely pollutant linkages, with consideration of significance and allowing for uncertainties.
- 7.5 **Sources (S):** These are potential or known sources of contamination that may relate to a former land use or present site feature or process (e.g. fuel storage tanks).
- 7.6 **Pathways (P):** A pathway is defined as a mechanism or route by which a contaminant comes into contact with, or otherwise affects a receptor. Pathways by which the identified receptors may be impacted upon in the context of the proposed development.
- 7.7 **Receptors (R):** Receptors are defined as people, living organisms, ecological systems, controlled waters, atmosphere, structures and utilities that could be adversely affected by contaminant(s).

Conceptual Site Model

- 7.8 Consideration has been given to the likely sources, pathways and receptors which may be present, based on the information in the previous sections. These are presented in **Table 7:1** and **Table 7:2** and further information about the risk classification scheme is included within **Appendix 7**, with reference to CIRIA C552 '*Contaminated land risk assessment - a guide to good practice*'.
- 7.9 A tabulated version of the Preliminary CSM based on the desk study and site observations is presented in **Table 7:3**.

Table 7:1: Potential Sources of Contamination

Location	Potential Source	Contaminants of Potential Concern (CoPC)
On-site	MADE GROUND associated with previous infrastructure developments such as RAILWAY SIDINGS and ROAD DEVELOPMENT	- Heavy metals - Inorganics, such as cyanides, sulphates and nitrates - Arsenic - Methane, carbon dioxide
	Former/current surface water/pond features on site.	- Organic material - Methane, carbon dioxide
	Contamination associated with AGRICULTURAL activities	- Semi-volatile organic compounds (SVOCs) including phenols and polycyclic aromatic hydrocarbons (PAHs) - Inorganics, such as cyanides, sulphates and nitrates - Methane, carbon dioxide
	Gas accumulation in DEEP MINING WORKS	Methane, carbon dioxide
Off-site	Contamination associated with neighbouring activities including RAILWAY CUTTING and QUARRIES	- Heavy metals - Semi-volatile organic compounds (SVOCs) including phenols and polycyclic aromatic hydrocarbons (PAHs) - Petroleum hydrocarbons - Inorganics, such as cyanides, sulphates and nitrates - pH

Table 7:2: Relevant Potential Pathways and Receptors

Receptors	Pathways
Human Health: - Future site users (commercial) - Neighbouring public (residential/commercial) - Intrusive maintenance workers	- Dermal contact with soil or dust - Incidental ingestion of soil and/or dust - Inhalation of dust and/or fibres - Inhalation of vapours - Migration and accumulation of ground gas in enclosed spaces leading to inhalation or explosion
Controlled Waters: - Groundwater (aquifers) - Surface water (Rochdale Canal, Stanney Brook)	- Leaching of soil contaminants - Vertical and lateral migration - Surface run-off
Ecology: Flora and Fauna	- Lateral migration - Uptake and accumulation
Property: - Underground utilities - Building structures	- Direct Contact - Accumulation and explosion of gas

- 7.10 A number of potential sources of contamination, identified during the review, are not considered likely to impact on the site. These are detailed below, along with the appropriate justification for their exclusion from the preliminary CSM:
- 7.11 Due to the depth of recorded mining beneath the site, >90m, ground gas associated with coal mining is unlikely to have an influence on the site.
- 7.12 Potentially infilled sandstone quarries, with a distance from the site exceeding 500m, are unlikely to impact receptors on site.
- 7.13 Both Little Lane and the Ex Universal Laundry historical landfill sites have been discounted as a potential source of contamination. This is due to their distance from the site (>400m) and the superficial geology (Till), leaving it unlikely that a pathway would be viable to any receptors on site.

Table 7:3: Preliminary Conceptual Site Model

Source	Pathway	Receptor	Con	Prob	Risk	Potential Mitigation/Investigation Requirements
On-site sources as detailed in Table 7:1 .	Dermal contact with, and incidental ingestion of soil and/or dust. Inhalation of dust and/or fibres.	Future site users (commercial)	Md	UI	L	Limit potential for on-site contamination has been identified. As part of the proposed development, it is anticipated that hardstanding will be present across the majority of the site. This will limit the potential for direct contact with and minimise dust generation from potentially contaminated soils at the site post construction. In public open space, the provision of a clean soil cover layer would restrict direct exposure to potentially contaminated soils. It is recommended that an intrusive ground investigation be completed in order to assess the extent of any potential contamination at the site.
		Intrusive maintenance workers	Md	Lw	M/L	The exposure of intrusive maintenance workers can be mitigated by the adoption of suitable working methods, utilising appropriate personal protective equipment (PPE) and maintaining good hygiene. If significant asbestos is recorded, the requirements of the Control of Asbestos Regulations (CAR) 2012 should be complied with.
	Inhalation of vapours.	Future site users (commercial)	Md	UI	L	If elevated concentrations of volatile contaminants are identified during ground investigation works, potential vapour sources such as Made Ground and contaminated soils/groundwater could potentially be mitigated through removal or treatment prior to construction or the installation of protection measures may be required during construction to mitigate the potential risk to future site users from vapours.
		Neighbouring public	Md	UI	L	

Source	Pathway	Receptor	Con	Prob	Risk	Potential Mitigation/Investigation Requirements
		Intrusive maintenance workers	Md	Lw	M/L	If elevated concentrations of volatile contaminants are identified during ground investigation works and where entry into confined spaces/excavations is required by intrusive maintenance workers, it is recommended that a combination of the following may be required to mitigate the potential risk of exposure to vapours: - appropriate PPE and/or Respiratory Protective Equipment (RPE); - monitoring equipment (such as explosive level meters); and - safe entry procedures.
	Migration and accumulation of ground gases in enclosed spaces leading to asphyxiation (carbon dioxide) or explosion (methane).	Future site users (commercial)	Md	Lw	M/L	Made Ground is expected across the site, with organic material related to surface water pond features likely to be present in the north west and east of the site. The presence of the above indicates a potential risk from ground gases. Ground investigation should include the installation of ground gas monitoring wells in order to determine the risk posed from ground gases.
	Leaching and permeation through soil profile.	Groundwater: Underlying Secondary Superficial & Bedrock Aquifers	Md	UI	L	Ground investigation should include the installation of groundwater monitoring wells to allow for sampling of groundwater for chemical analysis, in order to assess whether potentially unacceptable levels of contaminants of potential concern are present. The recommendations of DEFRA and EA guidance document 'Pollution prevention for businesses' should be considered during construction.
	Vertical and lateral migration of contaminants.		Md	UI	L	
	Surface run-off.	Stanney Brook Rochdale Canal	Md	UI	L	
	Direct contact.	Water utility pipes	Md	Lw	M/L	

Source	Pathway	Receptor	Con	Prob	Risk	Potential Mitigation/Investigation Requirements
		Buried structures/ foundations.	Mi	Lw	L	Sulphates and low pH in the ground could accelerate the degradation of buried concrete structures (e.g. foundations). Ground investigation should include an assessment of the concrete design class.
Off-site sources as detailed in Table 7:1 .	Dermal contact with, and incidental ingestion of soil and/or dust.	Future site users (commercial)	Md	UI	L	As part of the proposed development, it is anticipated that hardstanding will be present across the majority of the site. This will limit the potential for direct contact with and minimise dust generation from potentially contaminated soils at the site post construction. In public open space, the provision of a clean capping layer would restrict direct access to potentially contaminated soils.
		Future site users (commercial)	Md	UI	L	It is recommended that an intrusive ground investigation be completed in order to assess the extent of any potential contamination at the site.
	Leaching and permeation through soil profile.	Groundwater: Underlying Secondary Superficial & Bedrock Aquifers	Md	UI	L	Ground investigation should include the installation of groundwater monitoring wells to allow for sampling of groundwater for chemical analysis, in order to assess whether potentially unacceptable levels of CoPC are present.
	Vertical and lateral migration of contaminants.		Md	UI	L	The recommendations of DEFRA and EA guidance document 'Pollution prevention for businesses' should be considered during construction.
VH = Very High, H = High, M = Moderate, M/L = Moderate/Low, L = Low, VL = Very Low KEY: Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor, Hi = High, Li = Likely, Lw = Low Likelihood, UI = Unlikely						
Pollutant Linkage Assessment Summary When considered in the context of the conceptual site model and the historical activities that have taken place (agricultural work and potential landfill), the proposed development is considered to pose a MODERATE/LOW risk to human health. It is considered that the main driver for the risk rating for human health is Migration and accumulation of ground gases related to potential Made Ground and organic rich soils on the site. The risk posed to controlled waters is predominantly considered to be LOW due to the limited contaminative sources identified on site. It is recommended that a ground investigation be undertaken to quantify the identified pollutant linkages and assess likely mitigation measures.						

8. ENVIRONMENTAL LIABILITY ASSESSMENT AND DEVELOPMENT IMPLICATIONS

Statutory Liability

- 8.1 The contaminated land regime has implications for those who cause or knowingly permit land to be contaminated, or who own or occupy land that is contaminated. Contaminated land is defined in Section 78A(2) of Part IIA of the Environmental Protection Act 1990 as:

"Any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that:

- i. Significant harm is being caused or there is a significant possibility of such harm being caused; or*
- ii. Significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused."*

- 8.2 Harm is defined in Section 78A(4) of the Environmental Protection Act 1990 as:

"Harm to the health of living organisms or other interference with ecological systems of which they form part and, in the case of man, includes harm to his property."

- 8.3 Once an area of land has been identified as contaminated land, appropriate persons will be identified as being responsible for the cost of cleaning up the land by the enforcing authority. The appropriate person will be liable for all or part of the remediation of the land. Two classes of appropriate person have been identified:

- Class A appropriate persons are those who cause or knowingly permit the pollutants to be in, on or under the land.
- Class B appropriate persons are the owners(s) or occupier(s) of the land.

- 8.4 Where no Class A appropriate persons can be identified, then Class B appropriate persons may become liable.

- 8.5 Based on the information available regarding the site, the potential for Statutory Authority action based on "pollution of controlled water" or "significant harm" as defined by Part IIA of the Environmental Protection Act 1990 is considered to be **LOW**.

Third Party Liability

- 8.6 Based on the information contained in this report, it is the opinion of BWB that the potential for legal action by surrounding landowners, based on the potential for contamination to migrate off-site, is considered to be **LOW** when considering the former agricultural use of the surrounding land

Public Relations

- 8.7 The likelihood of public relations being tarnished due to contamination issues at the site are considered to be **LOW**.

Development Implications

- 8.8 Intrusive ground investigation should be undertaken to confirm the ground conditions at the site, primarily in regard to suitability of superficial deposits and the potential for running sands in the glaciofluvial deposits in the west of the site and the potential for differential settlement if the proposed development spans differing geology.
- 8.9 It is recommended that the requirement for earthworks and potential for re-use of or disposal of waste is established at an early stage in the project. The site is raised and undulating, primarily relating to the deposition of material associated with the construction of the loop road to the south of the site.

9. CONCLUSION AND RECOMMENDATIONS

Conclusions

- 9.1 Historically, the site largely comprised of numerous fence enclosed fields, with a persistent body of water to the immediate southeast. The site remained largely unchanged throughout its history. The only onsite activity identified was between 2012 and 2018, with the southern loop road construction material being placed on site and a path constructed north south through the area. From 1851, the site has been immediately bordered to the north by a rail line, expanded with sidings during 1891-1908 period but has since been developed into a tramline, remaining largely unchanged.
- 9.2 Off-site, the area was largely agricultural fields bounded by residential developments of Rochdale and Milnrow. Industrial developments were primarily over 650m from site, with Belfield Colliery located 710m to the northeast of the site.
- 9.3 The site is situated on Glaciofluvial (Sand and Gravel) and Till superficial deposits. These deposits are underlain by the Pennine Lower Coal Measures bedrock. Both superficial and bedrock are classed as Secondary A Aquifers. Made Ground associated with the loop road construction and organic rich deposits associated with bodies of surface water are likely to be present on site.
- 9.4 The Coal Authority report places the site in a coal mining area, with mining operations being carried out at a depth of 97m to 107m that terminated in 1915.
- 9.5 Based on the predicted geology of the area, a shallow strip foundation may be viable dependent on the load of the development; ground investigation will be required to confirm ground conditions and check suitability of Sand and Gravel deposits.
- 9.6 The proposed development is considered to pose a moderate/low risk to human health with the main driver for the risk rating for human health is the migration and accumulation of ground gases related to Made Ground and the potential for organic rich soils on the site. The risk posed to controlled waters is predominantly considered to be low due to the lack of a significant contaminant source.

Recommendations

- 9.7 A ground investigation should be undertaken at the site to:
- Confirm ground conditions presence at the site;
 - Assess the ground gas regime;
 - Allow for in-situ and laboratory testing to inform:
 - foundation design; and
 - an earthworks specification, if required.
- 9.8 Whilst the risk from contamination at the site has been assessed as low, it is considered best practice to allow for testing of soils as part of any ground investigation to confirm

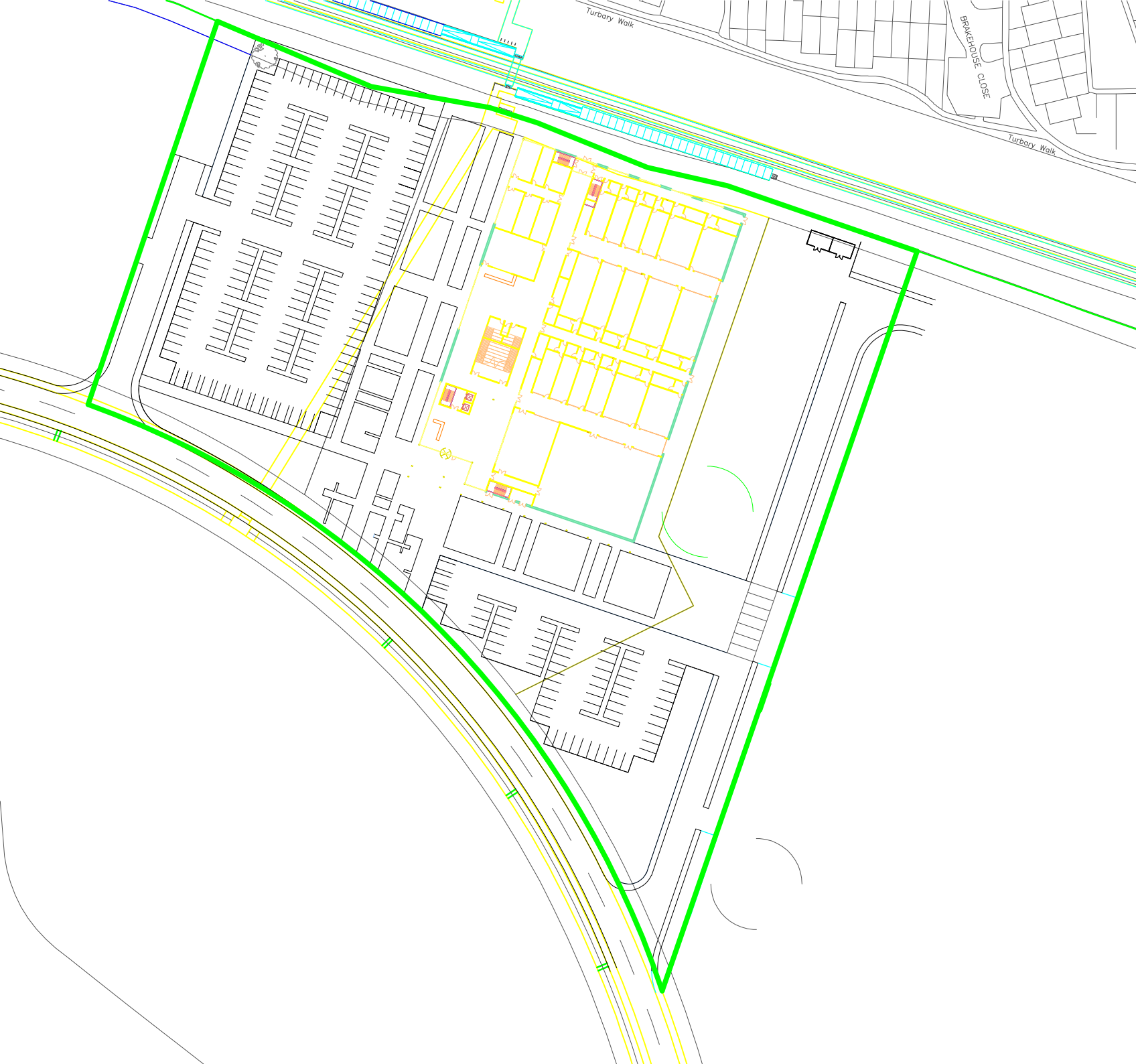
the absence of any contamination, as well as to determine the suitability of soils for reuse as part of the proposed development.

10. REFERENCES

1. BS 10175:2011+A2:2017 Investigation of potentially contaminated sites. Code of practice. British Standards Institute, 2017.
2. CIRIA C552 *Contaminated land risk assessment. A guide to good practice*. Rudland, D J, Lancefield, R M, Mayell, P N, 2001.
3. Environmental Protection Act 1990: Part 2A, Contaminated Land Statutory Guidance. Department for Environment Food and Rural Affairs (DEFRA), 2012.
4. Land Contamination Risk Management. Environment Agency, 2020.
5. <https://www.gov.uk/government/collections/land-contamination-technical-guidance>.
6. The Control of Asbestos Regulations. Health and Safety Executive, 2012.

APPENDICES

Appendix 1: Proposed Site Layout



Appendix 2: Site Photographs



Photo 1—View of southern tarmac road taken from point of access, facing west



Photo 2—View of southern tarmac road taken from point of access, facing east



Photo 3—Opposite footpath towards the south, open utilities excavation across the road



Photo 4—Facing north towards tram station, highlighting likely point of access into site



Photo 5—Facing north just west of point of access, surface and foul water markers present in the vegetation



Photo 6—Facing north taken from tarmac road, looking along the western boundary of site



Photo 7—Facing west along footpath, two areas of burnt ground and litter



Photo 8—Facing south from tram station along the footpath, small bicycle storage



Photo 9—Broken glass alongside bicycle storage



Photo 10—Western section of site, old drystone wall that runs across the site from west to east.



Photo 11—In western section of site a mound of earth approximately 2.5m high is present



Photo 12—North of the mound is a depression of approximately 2m at the northern boundary of the site



Photo 13—East of the cycle storage, the northern boundary is marked by a barbed wire fence immediately before the tramline



Photo 14— Dry area that would normally be wet, containing bullrushes and soft ground located in eastern section of site



Photo 15—Facing eastern boundary, two bodies of water and livestock separated from site by barbed wire fence



Photo 16— On northern pavement of tarmac road are utilities accessible for site work

Project Number: 210939

Project Name: Plot P Kingsway Business Park

Site Photographs



Photo 17—Facing north from tarmac road on eastern section of site, ditch creates a steep slope that creates a side profile of the natural material.

Appendix 3: Groundsure Report

PLOT P, KINGSWAY BUSINESS PARK, MICHAEL FARADAY AVENUE, ROCHDALE, OL16 4FW

Order Details

Date: 07/06/2022
Your ref: 210939_PO_1762
Our Ref: HMD-214-8800198

Site Details

Location: 391907 412651
Area: 2.63 ha
Authority: [Rochdale Metropolitan Borough Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.12

groundsure.com/insightuserguide

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	3	2	7	22	-
15	1.2	Historical tanks	0	0	0	8	-
16	1.3	Historical energy features	0	0	3	9	-
16	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	3	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	Historical industrial land uses	5	5	9	28	-
20	2.2	Historical tanks	0	0	0	20	-
21	2.3	Historical energy features	0	0	7	26	-
23	2.4	Historical petrol stations	0	0	0	0	-
23	2.5	Historical garages	0	0	0	4	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	1	0	0	2	-
25	3.4	Historical landfill (EA/NRW records)	0	0	0	2	-
26	3.5	Historical waste sites	0	0	0	0	-
26	3.6	Licensed waste sites	0	0	0	0	-
26	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
27	4.1	Recent industrial land uses	1	1	2	-	-
28	4.2	Current or recent petrol stations	0	0	0	2	-
28	4.3	Electricity cables	0	0	0	0	-
28	4.4	Gas pipelines	0	0	0	0	-
29	4.5	Sites determined as Contaminated Land	0	0	0	0	-



29	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
29	4.8	Hazardous substance storage/usage	0	0	0	0	-
29	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
30	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.12	Radioactive Substance Authorisations	0	0	0	0	-
30	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	2	1	-
31	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.15	Pollutant release to public sewer	0	0	0	0	-
31	4.16	List 1 Dangerous Substances	0	0	0	0	-
32	4.17	<u>List 2 Dangerous Substances</u>	0	0	1	0	-
32	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	2	4	-
33	4.19	Pollution inventory substances	0	0	0	0	-
33	4.20	Pollution inventory waste transfers	0	0	0	0	-
33	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
34	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
36	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
37	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
38	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
38	5.5	Groundwater vulnerability- local information	None (within 0m)				
39	5.6	<u>Groundwater abstractions</u>	0	0	0	0	13
43	5.7	<u>Surface water abstractions</u>	0	0	0	0	21
48	5.8	<u>Potable abstractions</u>	0	0	0	0	3
49	5.9	<u>Source Protection Zones</u>	1	0	0	0	-
50	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
51	6.1	<u>Water Network (OS MasterMap)</u>	0	0	29	-	-



54	6.2	<u>Surface water features</u>	1	0	16	-	-
54	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
55	6.4	<u>WFD Surface water bodies</u>	0	0	1	-	-
55	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
56	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
56	7.2	Historical Flood Events	0	0	0	-	-
56	7.3	Flood Defences	0	0	0	-	-
57	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
57	7.5	Flood Storage Areas	0	0	0	-	-
58	7.6	Flood Zone 2	None (within 50m)				
58	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
59	8.1	<u>Surface water flooding</u>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding					
61	9.1	<u>Groundwater flooding</u>	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
62	10.1	<u>Sites of Special Scientific Interest (SSSI)</u>	0	0	0	1	1
63	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
63	10.3	<u>Special Areas of Conservation (SAC)</u>	0	0	0	1	1
64	10.4	Special Protection Areas (SPA)	0	0	0	0	0
64	10.5	National Nature Reserves (NNR)	0	0	0	0	0
64	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
64	10.7	Designated Ancient Woodland	0	0	0	0	0
64	10.8	Biosphere Reserves	0	0	0	0	0
65	10.9	Forest Parks	0	0	0	0	0
65	10.10	Marine Conservation Zones	0	0	0	0	0
65	10.11	<u>Green Belt</u>	0	0	0	0	4
65	10.12	Proposed Ramsar sites	0	0	0	0	0



66	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
66	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
66	10.15	Nitrate Sensitive Areas	0	0	0	0	0
66	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
67	<u>10.17</u>	<u>SSSI Impact Risk Zones</u>	2	-	-	-	-
69	<u>10.18</u>	<u>SSSI Units</u>	0	0	0	1	1
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
70	11.1	World Heritage Sites	0	0	0	-	-
70	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
70	11.3	National Parks	0	0	0	-	-
70	11.4	Listed Buildings	0	0	0	-	-
71	11.5	Conservation Areas	0	0	0	-	-
71	11.6	Scheduled Ancient Monuments	0	0	0	-	-
71	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
72	<u>12.1</u>	<u>Agricultural Land Classification</u>	Urban (within 250m)				
73	12.2	Open Access Land	0	0	0	-	-
73	12.3	Tree Felling Licences	0	0	0	-	-
73	12.4	Environmental Stewardship Schemes	0	0	0	-	-
73	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
74	<u>13.1</u>	<u>Priority Habitat Inventory</u>	0	0	4	-	-
75	<u>13.2</u>	<u>Habitat Networks</u>	2	0	2	-	-
75	13.3	Open Mosaic Habitat	0	0	0	-	-
75	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
76	<u>14.1</u>	<u>10k Availability</u>	Identified (within 500m)				
77	<u>14.2</u>	<u>Artificial and made ground (10k)</u>	1	2	3	3	-
79	<u>14.3</u>	<u>Superficial geology (10k)</u>	3	0	6	2	-

80	14.4	Landslip (10k)	0	0	0	0	-
81	14.5	<u>Bedrock geology (10k)</u>	1	0	2	0	-
82	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	0	3	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
83	15.1	<u>50k Availability</u>	Identified (within 500m)				
84	15.2	Artificial and made ground (50k)	0	0	0	0	-
84	15.3	Artificial ground permeability (50k)	0	0	-	-	-
85	15.4	<u>Superficial geology (50k)</u>	3	0	5	5	-
86	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
86	15.6	Landslip (50k)	0	0	0	0	-
87	15.7	Landslip permeability (50k)	None (within 50m)				
88	15.8	<u>Bedrock geology (50k)</u>	1	0	3	2	-
89	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
89	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	0	3	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
90	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
91	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
92	17.2	<u>Running sands</u>	Very low (within 50m)				
93	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
94	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
95	17.5	<u>Landslides</u>	Low (within 50m)				
97	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
98	18.1	Natural cavities	0	0	0	0	-
99	18.2	BritPits	0	0	0	0	-
99	18.3	<u>Surface ground workings</u>	1	4	8	-	-
100	18.4	<u>Underground workings</u>	0	0	0	0	25
101	18.5	Historical Mineral Planning Areas	0	0	0	0	-



101	18.6	Non-coal mining	0	0	0	0	0
101	18.7	Mining cavities	0	0	0	0	0
101	18.8	JPB mining areas	None (within 0m)				
102	18.9	<u>Coal mining</u>	Identified (within 0m)				
102	18.10	Brine areas	None (within 0m)				
102	18.11	Gypsum areas	None (within 0m)				
102	18.12	Tin mining	None (within 0m)				
102	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
103	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
104	20.1	<u>BGS Estimated Background Soil Chemistry</u>	5	8	-	-	-
105	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
105	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
106	21.1	Underground railways (London)	0	0	0	-	-
106	21.2	Underground railways (Non-London)	0	0	0	-	-
107	21.3	Railway tunnels	0	0	0	-	-
107	21.4	<u>Historical railway and tunnel features</u>	4	4	0	-	-
107	21.5	Royal Mail tunnels	0	0	0	-	-
108	21.6	Historical railways	0	0	0	-	-
108	21.7	<u>Railways</u>	0	7	1	-	-
108	21.8	Crossrail 1	0	0	0	0	-
109	21.9	Crossrail 2	0	0	0	0	-
109	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 23/05/2019

Site Area: 2.63ha

Recent site history - 2018 aerial photograph



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Capture Date: 01/07/2018

Site Area: 2.63ha



Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 2.63ha



Recent site history - 2000 aerial photograph



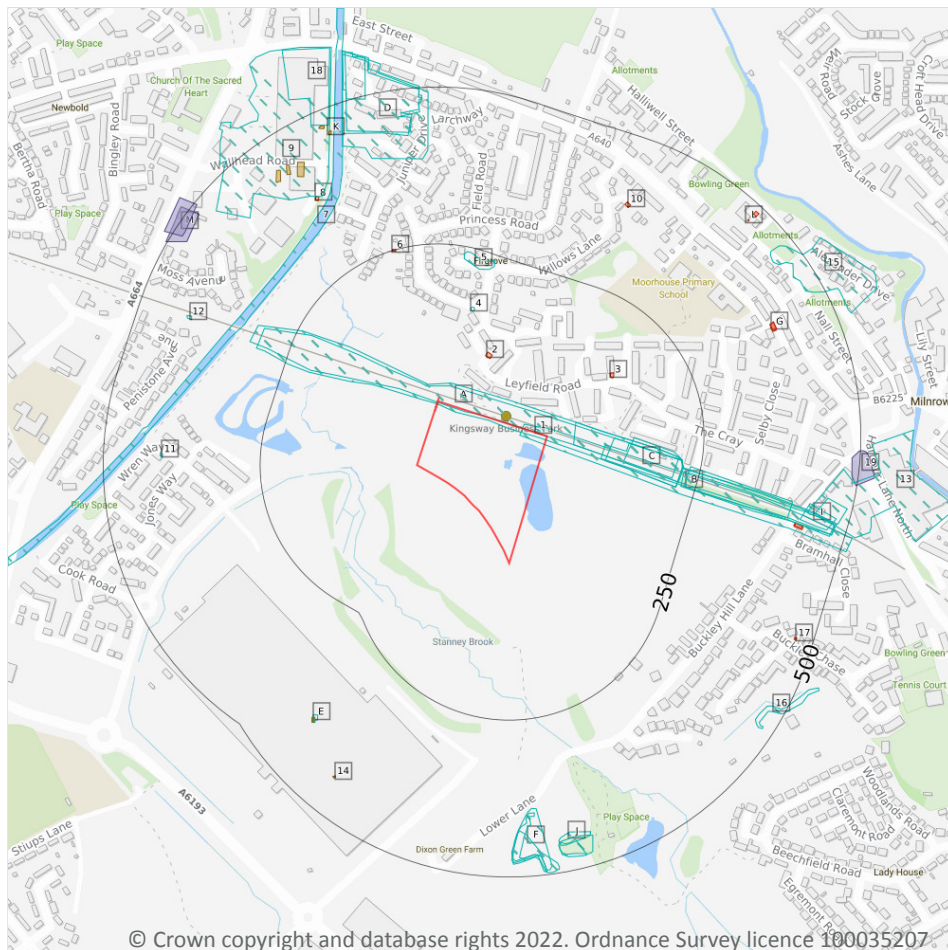
Capture Date: 19/06/2000

Site Area: 2.63ha

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1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

34

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
A	On site	Railway Sidings	1954	724759



ID	Location	Land use	Dates present	Group ID
A	On site	Railway Sidings	1908 - 1938	751687
B	On site	Cuttings	1851	786262
1	1m N	Railway Building	1908 - 1938	783697
B	43m E	Cuttings	1928 - 1938	765393
B	93m E	Cuttings	1891 - 1908	779322
C	100m E	Cuttings	1954	734088
C	129m E	Cuttings	1976	739294
4	153m N	Pump	1851	675559
5	220m N	Gravel Pit	1928	652793
B	225m E	Cuttings	1954	755622
B	231m E	Cuttings	1967 - 1976	694503
7	317m NW	Disused Canal	1976	754144
9	374m NW	Unspecified Works	1976	678989
D	386m N	Unspecified Mill	1967 - 1976	695566
E	389m SW	Unspecified Tank	1976	734152
F	392m S	Unspecified Heap	1928 - 1938	756700
E	395m SW	Unspecified Tank	1908	751839
F	399m S	Unspecified Ground Workings	1954	790979
11	406m W	Pump	1851	675561
12	413m W	Railway Building	1938	670151
I	424m E	Cuttings	1976	773256
D	425m N	Unspecified Mill	1954	699075
F	427m S	Unspecified Ground Workings	1908	734223
D	430m N	Unspecified Mill	1908 - 1938	733595
13	432m E	Unspecified Commercial/Industrial	1954	712244
J	439m S	Unspecified Heap	1908 - 1938	731546
I	444m E	Unspecified Works	1908	678987
J	448m S	Unspecified Pit	1967	690648



ID	Location	Land use	Dates present	Group ID
J	451m S	Unspecified Heap	1954	710976
15	455m NE	Sandstone Quarry	1851	687572
16	465m SE	Unspecified Ground Workings	1954	647991
18	473m N	Unspecified Mill	1967	745503
D	495m N	Unspecified Mill	1891	775083

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

8

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
E	396m SW	Unspecified Tank	1955	88604
E	398m SW	Unspecified Tank	1910	92886
H	416m NW	Tanks	1988	87640
H	430m NW	Tanks	1988	87641
H	430m NW	Tanks	1988	87639
14	438m SW	Tanks	1955	98986
K	457m N	Tanks	1988 - 1997	100658
K	470m NW	Unspecified Tank	1988 - 1997	94216

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m

12

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
2	90m N	Electricity Substation	1984	59344
3	139m NE	Electricity Substation	1983 - 1996	52949
6	247m N	Electricity Substation	1984	58271
8	372m NW	Electricity Substation	1988 - 1997	54991
10	387m N	Electricity Substation	1955 - 1989	54904
G	397m NE	Electricity Substation	1996	48183
G	397m NE	Electricity Substation	1975 - 1989	54152
I	417m E	Electricity Substation	1983	54013
I	418m E	Electricity Substation	1975 - 1996	53917
L	469m NE	Electricity Substation	1973	45419
17	470m E	Electricity Substation	1995	45544
L	483m NE	Electricity Substation	1982 - 1989	52765

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



1.5 Historical garages

Records within 500m**3**

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
M	474m NW	Garage	1979 - 1985	19493
M	485m NW	Garage	1979	15479
19	487m E	Garage	1968	14602

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

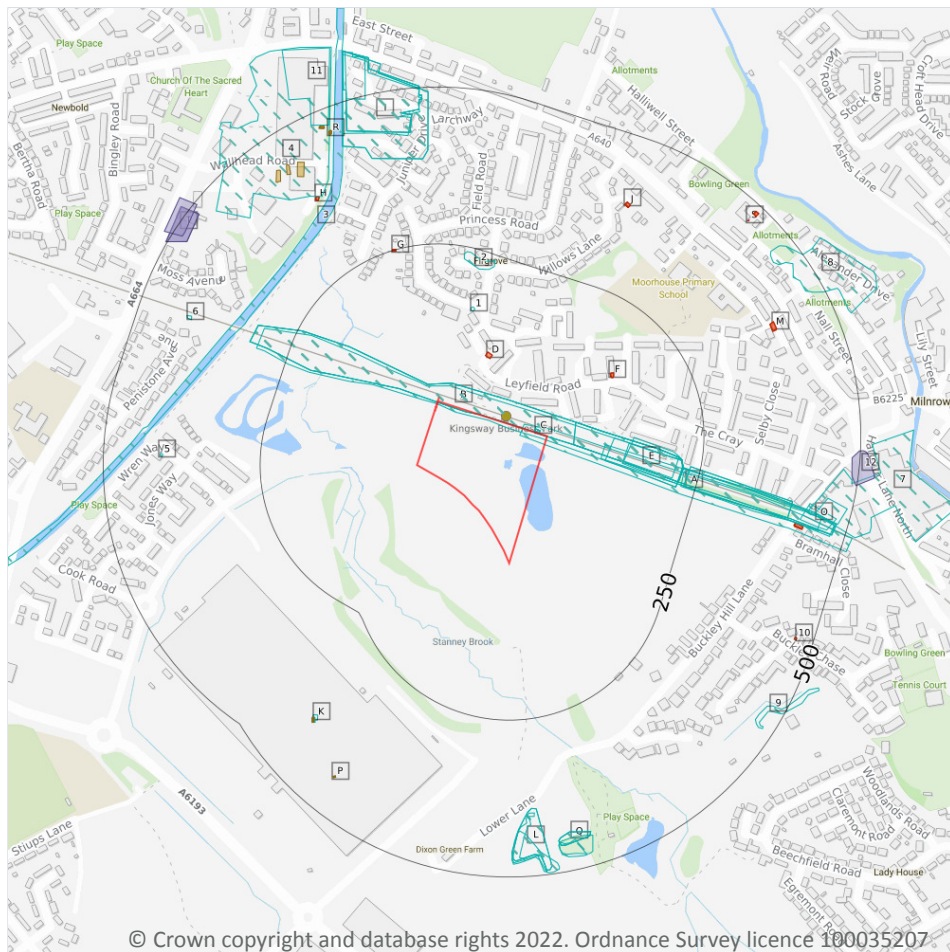
Records within 500m**0**

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

47

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
A	On site	Cuttings	1851	786262
B	On site	Railway Sidings	1954	724759
B	On site	Railway Sidings	1938	751687



ID	Location	Land Use	Date	Group ID
B	On site	Railway Sidings	1928	751687
B	On site	Railway Sidings	1908	751687
C	1m N	Railway Building	1938	783697
C	1m N	Railway Building	1928	783697
C	1m N	Railway Building	1908	783697
A	43m E	Cuttings	1938	765393
A	43m E	Cuttings	1928	765393
A	93m E	Cuttings	1891	779322
E	100m E	Cuttings	1954	734088
A	127m E	Cuttings	1908	779322
E	129m E	Cuttings	1976	739294
1	153m N	Pump	1851	675559
2	220m N	Gravel Pit	1928	652793
A	225m E	Cuttings	1954	755622
A	231m E	Cuttings	1976	694503
A	231m E	Cuttings	1967	694503
3	317m NW	Disused Canal	1976	754144
4	374m NW	Unspecified Works	1976	678989
I	386m N	Unspecified Mill	1976	695566
I	386m N	Unspecified Mill	1967	695566
K	389m SW	Unspecified Tank	1976	734152
L	392m S	Unspecified Heap	1938	756700
L	392m S	Unspecified Heap	1928	756700
K	395m SW	Unspecified Tank	1908	751839
L	399m S	Unspecified Ground Workings	1954	790979
5	406m W	Pump	1851	675561
6	413m W	Railway Building	1938	670151
O	424m E	Cuttings	1976	773256



ID	Location	Land Use	Date	Group ID
I	425m N	Unspecified Mill	1954	699075
L	427m S	Unspecified Ground Workings	1908	734223
I	430m N	Unspecified Mill	1938	733595
I	430m N	Unspecified Mill	1928	733595
I	430m N	Unspecified Mill	1908	733595
7	432m E	Unspecified Commercial/Industrial	1954	712244
Q	439m S	Unspecified Heap	1938	731546
Q	439m S	Unspecified Heap	1928	731546
Q	439m S	Unspecified Heap	1908	731546
O	444m E	Unspecified Works	1908	678987
Q	448m S	Unspecified Pit	1967	690648
Q	451m S	Unspecified Heap	1954	710976
8	455m NE	Sandstone Quarry	1851	687572
9	465m SE	Unspecified Ground Workings	1954	647991
11	473m N	Unspecified Mill	1967	745503
I	495m N	Unspecified Mill	1891	775083

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

20

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
K	396m SW	Unspecified Tank	1955	88604
K	396m SW	Unspecified Tank	1955	88604
K	398m SW	Unspecified Tank	1910	92886
N	416m NW	Tanks	1988	87640



ID	Location	Land Use	Date	Group ID
N	430m NW	Tanks	1988	87641
N	430m NW	Tanks	1988	87639
P	438m SW	Tanks	1955	98986
P	438m SW	Tanks	1955	98986
R	457m N	Tanks	1988	100658
R	458m N	Tanks	1995	100658
R	458m N	Tanks	1997	100658
R	458m N	Tanks	1995	100658
R	458m N	Tanks	1996	100658
R	458m N	Tanks	1995	100658
R	470m NW	Unspecified Tank	1988	94216
R	471m NW	Unspecified Tank	1997	94216
R	471m NW	Unspecified Tank	1995	94216
R	471m NW	Unspecified Tank	1996	94216
R	471m NW	Unspecified Tank	1995	94216
R	471m NW	Unspecified Tank	1995	94216

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

33

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

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
D	90m N	Electricity Substation	1984	59344
D	90m N	Electricity Substation	1984	59344
F	139m NE	Electricity Substation	1983	52949
F	139m NE	Electricity Substation	1996	52949



ID	Location	Land Use	Date	Group ID
F	140m NE	Electricity Substation	1989	52949
G	247m N	Electricity Substation	1984	58271
G	247m N	Electricity Substation	1984	58271
H	372m NW	Electricity Substation	1988	54991
H	372m NW	Electricity Substation	1997	54991
H	372m NW	Electricity Substation	1995	54991
H	372m NW	Electricity Substation	1996	54991
H	372m NW	Electricity Substation	1995	54991
H	372m NW	Electricity Substation	1995	54991
J	387m N	Electricity Substation	1955	54904
J	387m N	Electricity Substation	1989	54904
J	387m N	Electricity Substation	1973	54904
J	387m N	Electricity Substation	1982	54904
J	387m N	Electricity Substation	1982	54904
J	387m N	Electricity Substation	1987	54904
J	387m N	Electricity Substation	1955	54904
M	397m NE	Electricity Substation	1996	48183
M	397m NE	Electricity Substation	1989	54152
M	397m NE	Electricity Substation	1975	54152
O	417m E	Electricity Substation	1983	54013
O	418m E	Electricity Substation	1996	53917
O	419m E	Electricity Substation	1989	53917
O	419m E	Electricity Substation	1975	53917
S	469m NE	Electricity Substation	1973	45419
10	470m E	Electricity Substation	1995	45544
S	483m NE	Electricity Substation	1982	52765
S	483m NE	Electricity Substation	1982	52765
S	483m NE	Electricity Substation	1987	52765



ID	Location	Land Use	Date	Group ID
S	483m NE	Electricity Substation	1989	52765

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

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

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	4
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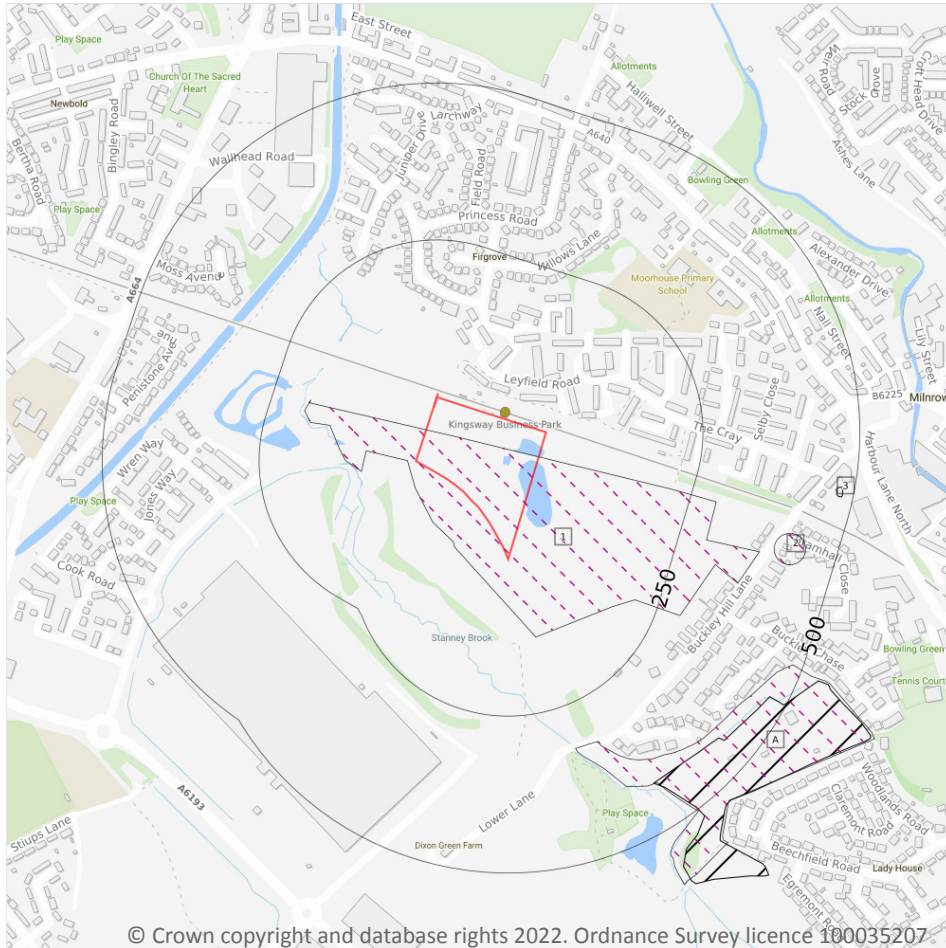
Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
T	474m NW	Garage	1979	19493
T	474m NW	Garage	1985	19493
T	485m NW	Garage	1979	15479
12	487m E	Garage	1968	14602

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Historical landfill (LA/OS)

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3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

3

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

Features are displayed on the Waste and landfill map on **page 24**

ID	Location	Site address	Source	Data type
1	On site	Buckley hill lane,Rochdale	Rochdale	Polygon
A	320m S	Little Lane, Off Harbour Lane, Milnrow	Rochdale Council	Polygon
2	401m E	Ex Universal Laundry Lodge	Rochdale Council	Point

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

2

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

Features are displayed on the Waste and landfill map on **page 24**

ID	Location	Details		
A	425m SE	Site Address: Little Lane, Off Harbour Lane, Milnrow, Greater Manchester Licence Holder Address: -	Waste Licence: - Site Reference: D073 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -
3	471m E	Site Address: Ex Universal Laundry Lodge, Buckley Hill Lane, Milnrow, Rochdale Licence Holder Address: Lane Bottom, Newhey, Rochdale	Waste Licence: Yes Site Reference: RD/LIC/493/87 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/07/1988 Licence Surrender: -	Operator: - Licence Holder: Lane Bottom Industrial Equitables Pioneers First Recorded 01/08/1988 Last Recorded: 31/12/1988

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



3.5 Historical waste sites

Records within 500m

0

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

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

3.6 Licensed waste sites

Records within 500m

0

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

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

3.7 Waste exemptions

Records within 500m

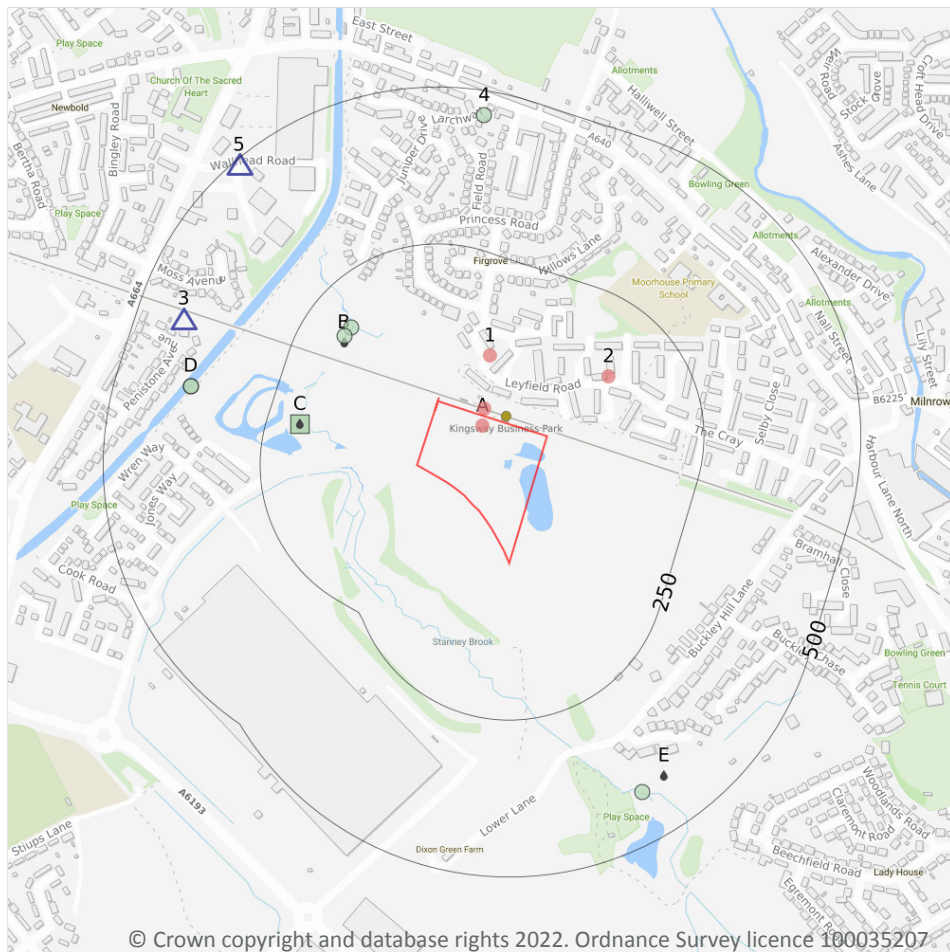
0

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

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- Licensed Discharges to controlled waters
- List 2 Dangerous Substances
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

4

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Company	Address	Activity	Category
A	On site	Kingsway Business Park	Greater Manchester, OL16	Business Parks and Industrial Estates	Industrial Features



ID	Location	Company	Address	Activity	Category
A	12m N	Kingsway Business Park (Manchester Metrolink)	Greater Manchester, OL16	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure
1	95m N	Electricity Sub Station	Greater Manchester, OL16	Electrical Features	Infrastructure and Facilities
2	137m NE	Electricity Sub Station	Greater Manchester, OL16	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

2

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Company	Address	LPG	Status
3	426m W	OBSOLETE	Kingsway, Rochdale, Greater Manchester, OL16 4AP	Not Applicable	Obsolete
5	492m NW	OBSOLETE	301, Kingsway, Rochdale, Greater Manchester, OL16 5BX	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.



4.5 Sites determined as Contaminated Land

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m**0**

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m**0**

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

0

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

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

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

Records within 500m

0

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

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

3

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

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Address	Details	
B	176m NW	THE CRAY PS, MILNROW, ROCHDALE, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 016982941 Permit Version: 1 Receiving Water: STANNEY BROOK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 17/11/1995 Revocation Date: -

ID	Location	Address	Details	
C	197m W	KINGSWAY BUSINESS PARK, OPPOSITE KINGSWAY HOTEL, KINGSWAY, ROCHDALE, OL16 5HS	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE (CONTAM SURFACE WATER, NOT WASTE SIT Permit Number: 016993832 Permit Version: 1 Receiving Water: STANNEY BROOK TRIB RIVER ROCH	Status: REVOKED - UNSPECIFIED Issue date: 11/04/2006 Effective Date: 11/04/2006 Revocation Date: 28/04/2007
E	418m SE	WHITFIELD DR SPS, WHITFIELD DRIVE, MILNROW, ROCHDALE, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 016993214 Permit Version: 1 Receiving Water: STANNEY BROOK	Status: SURRENDERED UNDER EPR 2010 Issue date: - Effective Date: 30/09/1997 Revocation Date: 07/06/2016

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

4.14 Pollutant release to surface waters (Red List)

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

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

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

4.15 Pollutant release to public sewer

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

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

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

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

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

4.17 List 2 Dangerous Substances

Records within 500m

1

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

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Name	Status	Receiving Water	Authorised Substances
C	198m W	Kingsway Business Park	Active	River Roch	Iron, pH

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

6

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

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Details	
B	181m NW	Incident Date: 20/02/2003 Incident Identification: 138259 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
B	181m NW	Incident Date: 12/04/2003 Incident Identification: 150636 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
D	382m W	Incident Date: 04/07/2002 Incident Identification: 89401 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
D	382m W	Incident Date: 04/07/2002 Incident Identification: 89401 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
E	421m SE	Incident Date: 19/04/2002 Incident Identification: 73135 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



ID	Location	Details	
4	460m N	Incident Date: 01/04/2002 Incident Identification: 67928 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0
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The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

4.20 Pollution inventory waste transfers

Records within 500m	0
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The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

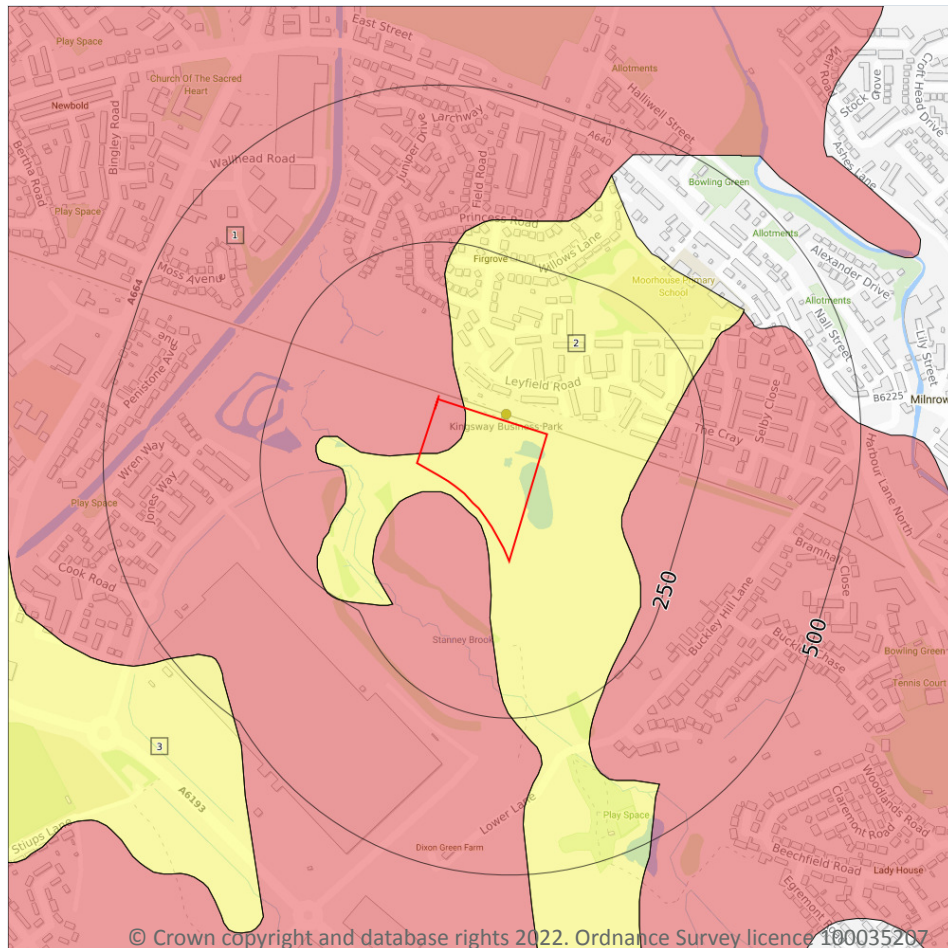
4.21 Pollution inventory radioactive waste

Records within 500m	0
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The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 34**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

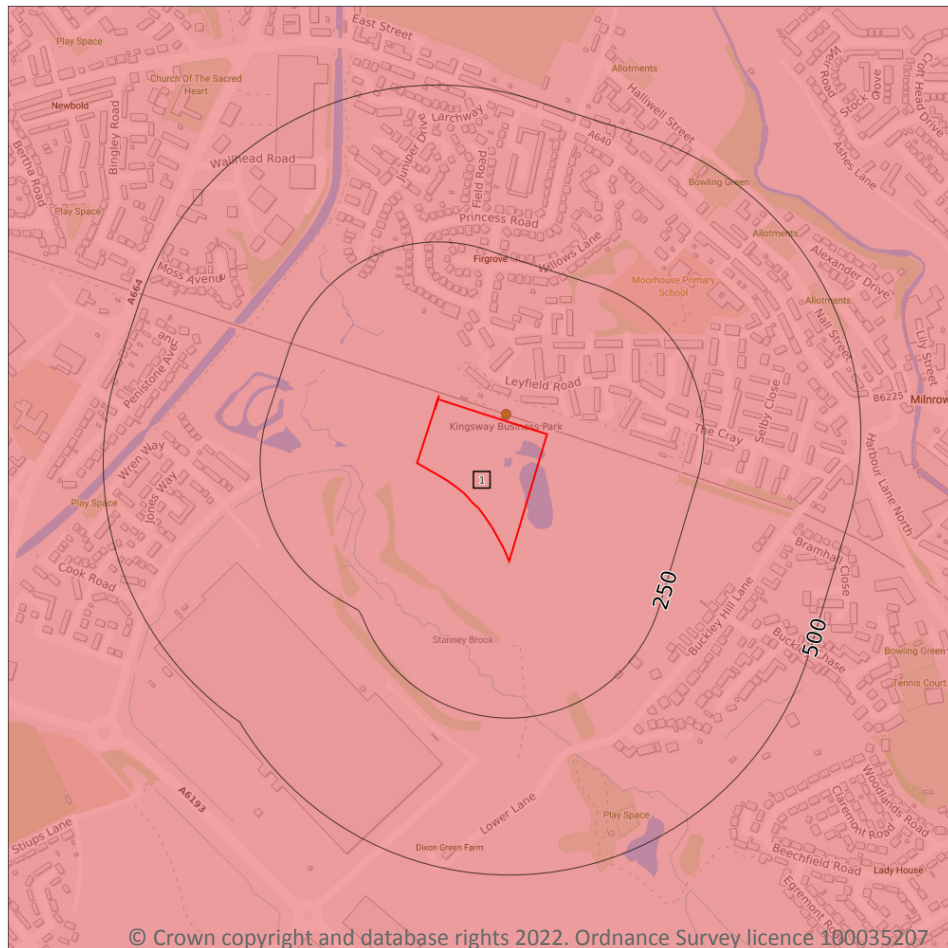


ID	Location	Designation	Description
3	448m SW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

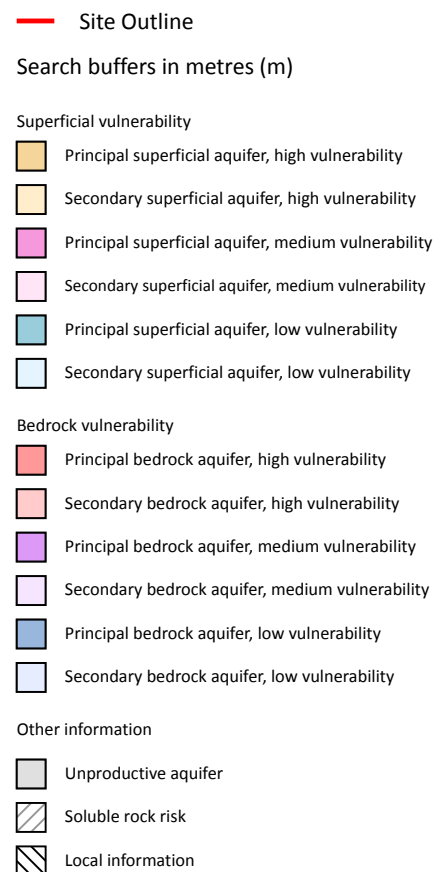
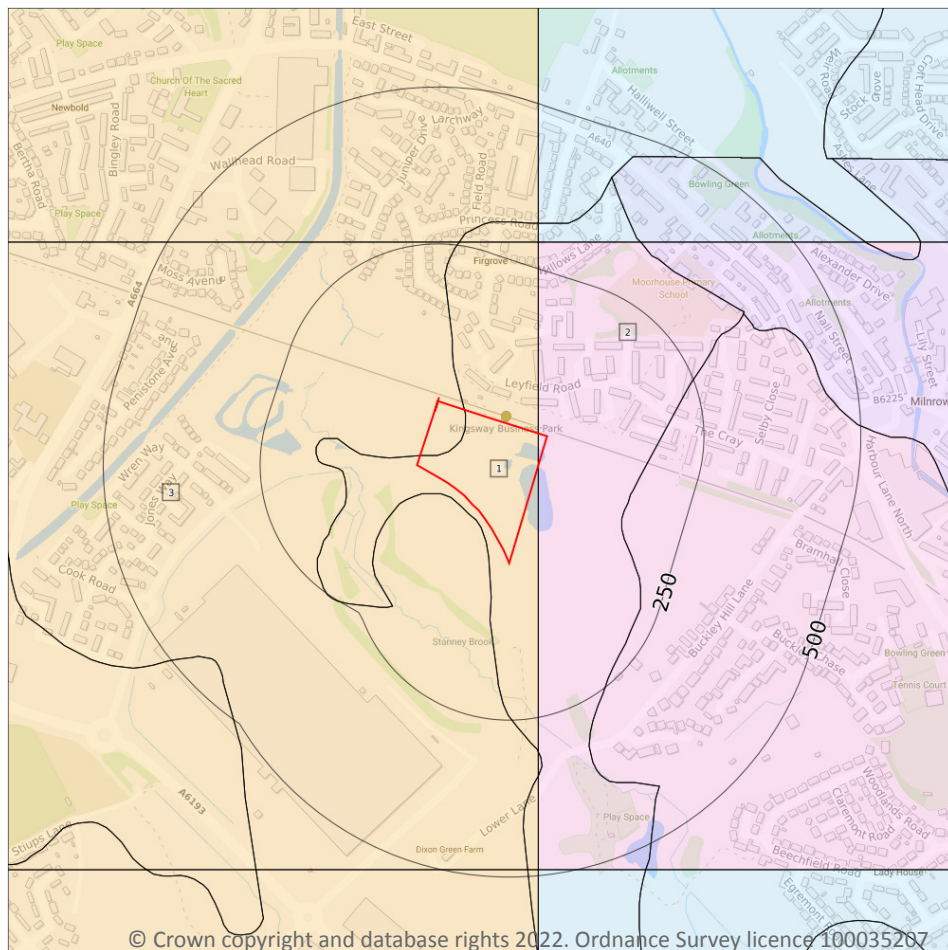
Features are displayed on the Bedrock aquifer map on **page 36**

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

3

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

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

Features are displayed on the Groundwater vulnerability map on **page 37**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: <90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: >550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

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

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

5.5 Groundwater vulnerability- local information

Records on site

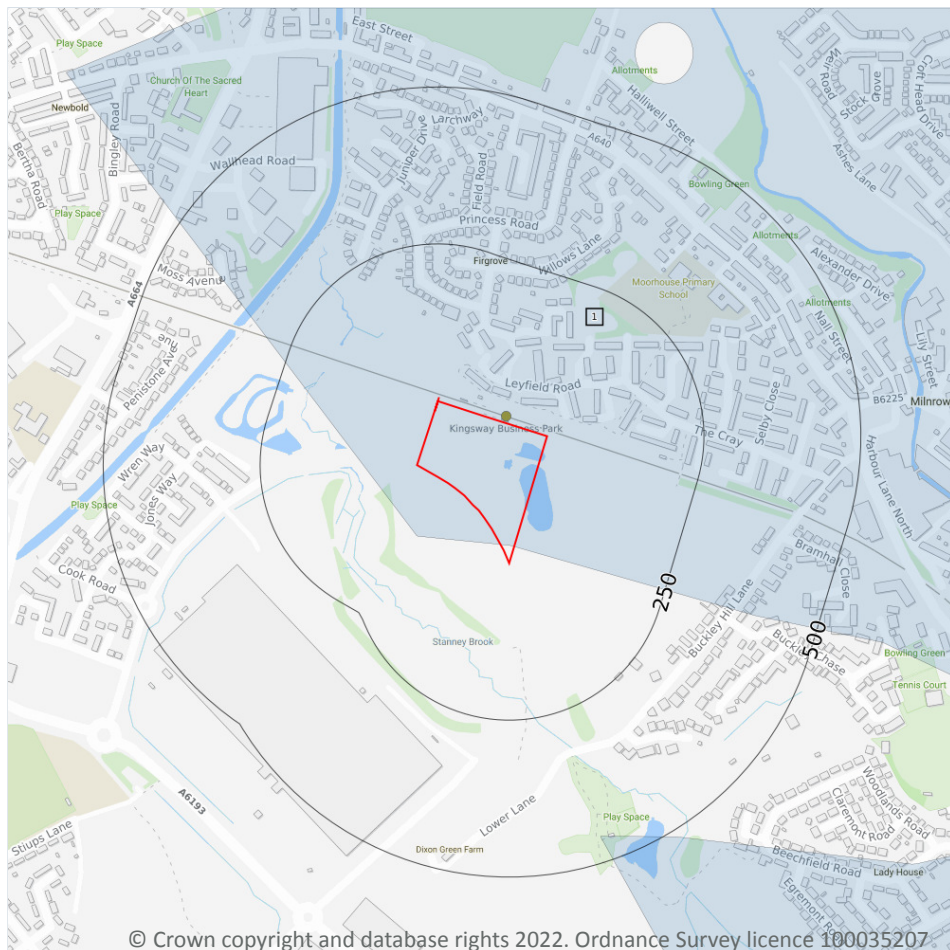
0

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

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



Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

13

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 39**



ID	Location	Details	
-	1046m SW	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE" Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date: -
-	1046m SW	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date: -
-	1046m SW	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: WELL AT FARM LOWER LANE MILNROW ROCHDALE Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): 5123.34 Max Daily Volume (m ³): 31.822 Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -
-	1132m SW	Status: Historical Licence No: 2569002060 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "WELL AT CASTLE FARM, LOWER LANE, MILNROW" Data Type: Point Name: SANDERSON Easting: 391400 Northing: 411500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -



ID	Location	Details	
-	1132m SW	Status: Historical Licence No: 2569002060 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: WELL AT CASTLE FARM, LOWER LANE, MILNROW Data Type: Point Name: SANDERSON Easting: 391400 Northing: 411500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -
-	1221m E	Status: Historical Licence No: 2569002206 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "COLLIERY SHAFT @ PREMISES, BUTTERWORTH HALL, MILNROW" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 393200 Northing: 412400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1221m E	Status: Active Licence No: 2569002206 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: COLLIERY SHAFT @ PREMISES, BUTTERWORTH HALL, MILNROW Data Type: Point Name: United Utilities Water Ltd Easting: 393200 Northing: 412400	Annual Volume (m ³): 3,982,296 Max Daily Volume (m ³): 13,638 Original Application No: 1567 Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1239m N	Status: Historical Licence No: 2569002216 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "SPRING FED TANK AT PREMISES, MILNROW" Data Type: Point Name: HEGINBOTTOMS FARM LTD Easting: 392300 Northing: 413900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 25/11/1975 Expiry Date: - Issue No: 100 Version Start Date: 25/11/1975 Version End Date: -

ID	Location	Details	
-	1239m N	Status: Historical Licence No: 2569002216 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: SPRING FED TANK AT PREMISES, MILNROW Data Type: Point Name: HEGINBOTTOMS FARM LTD Easting: 392300 Northing: 413900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 25/11/1975 Expiry Date: - Issue No: 100 Version Start Date: 25/11/1975 Version End Date: -
-	1396m S	Status: Historical Licence No: 2569002086 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "WELL AT BROADSHAW FARM, MILNROW, ROCHDALE" Data Type: Point Name: CROSTON Easting: 391800 Northing: 411100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 02/02/1966 Version End Date: -
-	1396m S	Status: Historical Licence No: 2569002086 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: WELL AT BROADSHAW FARM, MILNROW, ROCHDALE Data Type: Point Name: CROSTON Easting: 391800 Northing: 411100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 02/02/1966 Version End Date: -
-	1904m S	Status: Historical Licence No: 2569002204 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, OLD BARN FARM,BURNEDGE, ROCHDALE" Data Type: Point Name: CRYER Easting: 392200 Northing: 410600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 24/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 24/04/1969 Version End Date: -

ID	Location	Details	
-	1904m S	Status: Historical Licence No: 2569002204 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, OLD BARN FARM,BURNEDGE, ROCHDALE Data Type: Point Name: CRYER Easting: 392200 Northing: 410600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 24/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 24/04/1969 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	21
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Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 39**

ID	Location	Details	
-	692m E	Status: Historical Licence No: 2569002175 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY SPRINGS AT PREMISESMILNROW Data Type: Point Name: HOLROYD MACHINES TOOLS & ROTORS Easting: 392700 Northing: 412600	Annual Volume (m ³): 16365.6 Max Daily Volume (m ³): 54.552 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -
-	692m E	Status: Active Licence No: 2569002175 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY SPRINGS AT PREMISESMILNROW Data Type: Point Name: Precision Components Limited Easting: 392700 Northing: 412600	Annual Volume (m ³): 16,365 Max Daily Volume (m ³): 54.55 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 30/11/2009 Version End Date: -

ID	Location	Details	
-	1310m SE	Status: Historical Licence No: 2569002064 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "R BEAL AT NEWHEY, MILNROW, ROCHDALE" Data Type: Point Name: THE SECRETARY Easting: 393000 Northing: 411700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/06/1993 Version End Date: -
-	1310m SE	Status: Historical Licence No: 2569002064 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "R BEAL AT NEWHEY, MILNROW, ROCHDALE" Data Type: Point Name: THE SECRETARY Easting: 393000 Northing: 411700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/06/1993 Version End Date: -
-	1310m SE	Status: Historical Licence No: 2569002064 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: R BEAL AT NEWHEY, MILNROW, ROCHDALE Data Type: Point Name: THE SECRETARY Easting: 393000 Northing: 411700	Annual Volume (m ³): 327312 Max Daily Volume (m ³): 2954.9 Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/06/1993 Version End Date: -
-	1310m SE	Status: Historical Licence No: 2569002064 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R BEAL AT NEWHEY, MILNROW, ROCHDALE Data Type: Point Name: ELLENROAD TRUST LTD Easting: 393000 Northing: 411700	Annual Volume (m ³): 327312 Max Daily Volume (m ³): 2954.9 Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 11/09/2008 Version End Date: -



ID	Location	Details	
-	1310m SE	Status: Active Licence No: 2569002064 Details: Non-Evaporative Cooling Direct Source: Surface, Non-Tidal - North West Region Point: R BEAL AT NEWHEY, MILNROW, ROCHDALE Data Type: Point Name: ELLENROAD TRUST LTD Easting: 393000 Northing: 411700	Annual Volume (m ³): 3,520 Max Daily Volume (m ³): 350 Original Application No: NPS/WR/015275 Original Start Date: 18/01/1966 Expiry Date: - Issue No: 103 Version Start Date: 30/01/2014 Version End Date: -
-	1310m SE	Status: Active Licence No: 2569002233 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R BEAL AT MILNROW Data Type: Point Name: SUN CHEMICAL LTD Easting: 393000 Northing: 411700	Annual Volume (m ³): 66,370 Max Daily Volume (m ³): 181.80 Original Application No: 2725 Original Start Date: 13/08/1986 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2005 Version End Date: -
-	1468m E	Status: Historical Licence No: 2569002207 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY UNNAMED TRIB OF BUTTERWORTH HALL BRK AT Data Type: Point Name: SONOCO INDUSTRIAL PACKAGING Easting: 393400 Northing: 412200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/06/1970 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1990 Version End Date: -
-	1468m E	Status: Historical Licence No: 2569002207 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY UNNAMED TRIB OF BUTTERWORTH HALL BRK AT Data Type: Point Name: SONOCO INDUSTRIAL PACKAGING Easting: 393400 Northing: 412200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/06/1970 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1990 Version End Date: -

ID	Location	Details	
-	1468m E	Status: Historical Licence No: 2569002207 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY UNNAMED TRIB OF BUTTERWORTH HALL BRK AT Data Type: Point Name: SONOCO INDUSTRIAL PACKAGING Easting: 393400 Northing: 412200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/06/1970 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1990 Version End Date: -
-	1480m NW	Status: Historical Licence No: 2569002249 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER ROCH AT MELLOROID WORKS, BELFIELD ROAD" Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -
-	1480m NW	Status: Historical Licence No: 2569002249 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT MELLOROID WORKS, BELFIELD ROAD Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -
-	1480m NW	Status: Historical Licence No: 2569002249 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT MELLOROID WORKS BELFIELD ROAD Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): 213662 Max Daily Volume (m ³): 1136.49 Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -

ID	Location	Details	
-	1545m W	Status: Historical Licence No: 2569002076 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT ROCHDALE, LANCS Data Type: Point Name: J & J MAKIN CONVERTORS LTD Easting: 390300 Northing: 412300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1815m SW	Status: Historical Licence No: 2569002178 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "CATCHPIT FED BY SURFACE DRAINAGE AT PREMISES, ROCHDALE" Data Type: Point Name: DUNPHY COMBUSTION LTD. Easting: 390200 Northing: 411800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/02/1991 Version End Date: -
-	1815m SW	Status: Active Licence No: 2569002178 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: CATCHPIT FED BY SURFACE DRAINAGE AT PREMISES, ROCHDALE Data Type: Point Name: DUNPHY COMBUSTION LTD Easting: 390200 Northing: 411800	Annual Volume (m ³): 2,318.46 Max Daily Volume (m ³): 34.09 Original Application No: CW 1093 Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/02/1991 Version End Date: -
-	1866m W	Status: Historical Licence No: 2569002107 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT QUEENSWAY,ROCHDALE" Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/12/1993 Version End Date: -

ID	Location	Details	
-	1866m W	Status: Historical Licence No: 2569002107 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT QUEENSWAY,ROCHDALE" Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/12/1993 Version End Date: -
-	1866m W	Status: Historical Licence No: 2569002107 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT QUEENSWAY,ROCHDALE Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): 10455.8 Max Daily Volume (m ³): 45.46 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1866m W	Status: Historical Licence No: 2569002107 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT QUEENSWAY,ROCHDALE Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): 10455.8 Max Daily Volume (m ³): 45.46 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

3

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 39**



ID	Location	Details	
-	1221m E	Status: Historical Licence No: 2569002206 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "COLLIERY SHAFT @ PREMISES, BUTTERWORTH HALL, MILNROW" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 393200 Northing: 412400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1221m E	Status: Active Licence No: 2569002206 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: COLLIERY SHAFT @ PREMISES, BUTTERWORTH HALL, MILNROW Data Type: Point Name: United Utilities Water Ltd Easting: 393200 Northing: 412400	Annual Volume (m ³): 3,982,296 Max Daily Volume (m ³): 13,638 Original Application No: 1567 Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1994 Version End Date: -
-	1468m E	Status: Historical Licence No: 2569002207 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY UNNAMED TRIB OF BUTTERWORTH HALL BRK AT Data Type: Point Name: SONOCO INDUSTRIAL PACKAGING Easting: 393400 Northing: 412200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 26/06/1970 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1990 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	1
----------------------------	----------

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination. Features are displayed on the Abstractions and Source Protection Zones map on **page 39**

ID	Location	Type	Description
1	On site	2	Outer catchment

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



5.10 Source Protection Zones (confined aquifer)

Records within 500m

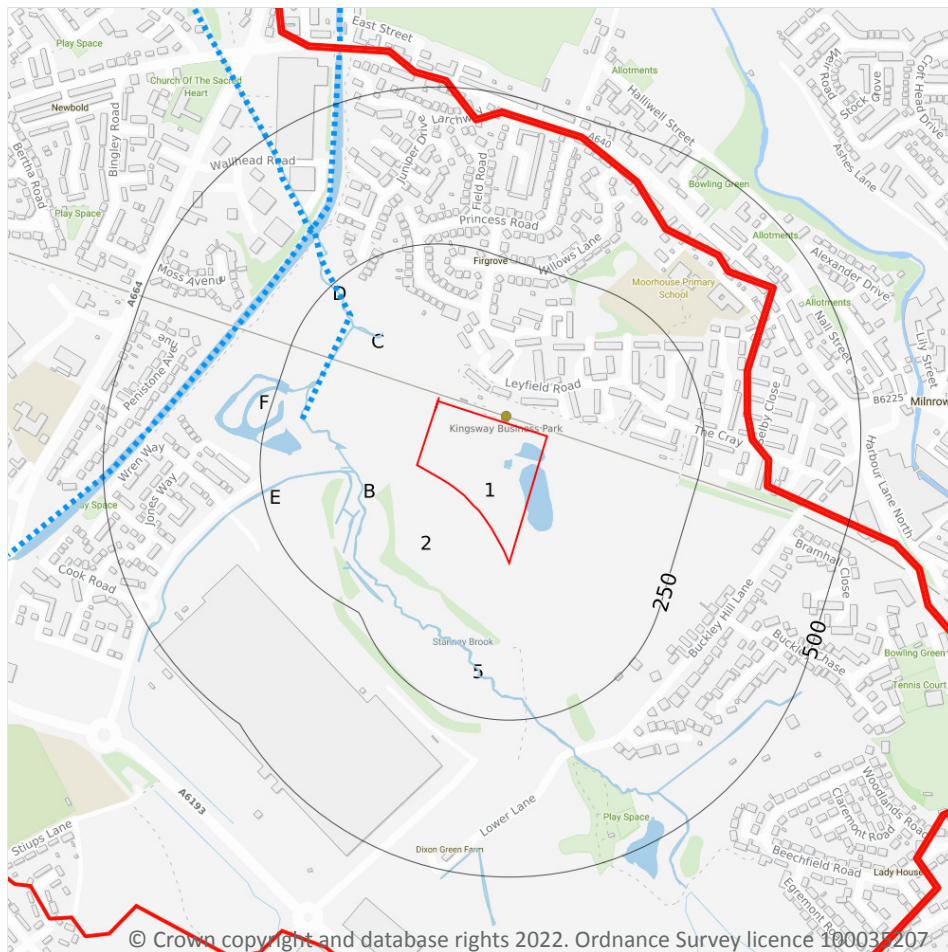
0

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

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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

29

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

Features are displayed on the Hydrology map on **page 51**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	93m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook



ID	Location	Type of water feature	Ground level	Permanence	Name
B	99m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
B	99m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	102m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
B	106m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Stanney Brook
B	107m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	116m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	116m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	128m W	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
B	130m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	130m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	131m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
B	136m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	137m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
C	171m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
B	172m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	176m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	178m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
C	178m NW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Stanney Brook
C	178m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
D	179m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
E	182m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	186m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Stanney Brook
B	190m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	192m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	194m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	194m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-



ID	Location	Type of water feature	Ground level	Permanence	Name
C	208m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
F	223m W	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

17

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

Features are displayed on the Hydrology map on **page 51**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

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

Features are displayed on the Hydrology map on **page 51**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	On site	River	Roch (Source to Spodden)	GB112069064720	Roch Irk Medlock	Irwell

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



6.4 WFD Surface water bodies

Records identified

1

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

Features are displayed on the Hydrology map on **page 51**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
6	184m NW	River	Roch (Source to Spodden)	GB112069064720	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site

1

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

Features are displayed on the Hydrology map on **page 51**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	On site	Northern Manchester Carboniferous Aquifers	GB41202G101800	Poor	Poor	Good	2019

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m**0**

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

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

7.2 Historical Flood Events

Records within 250m**0**

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

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

7.3 Flood Defences

Records within 250m**0**

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

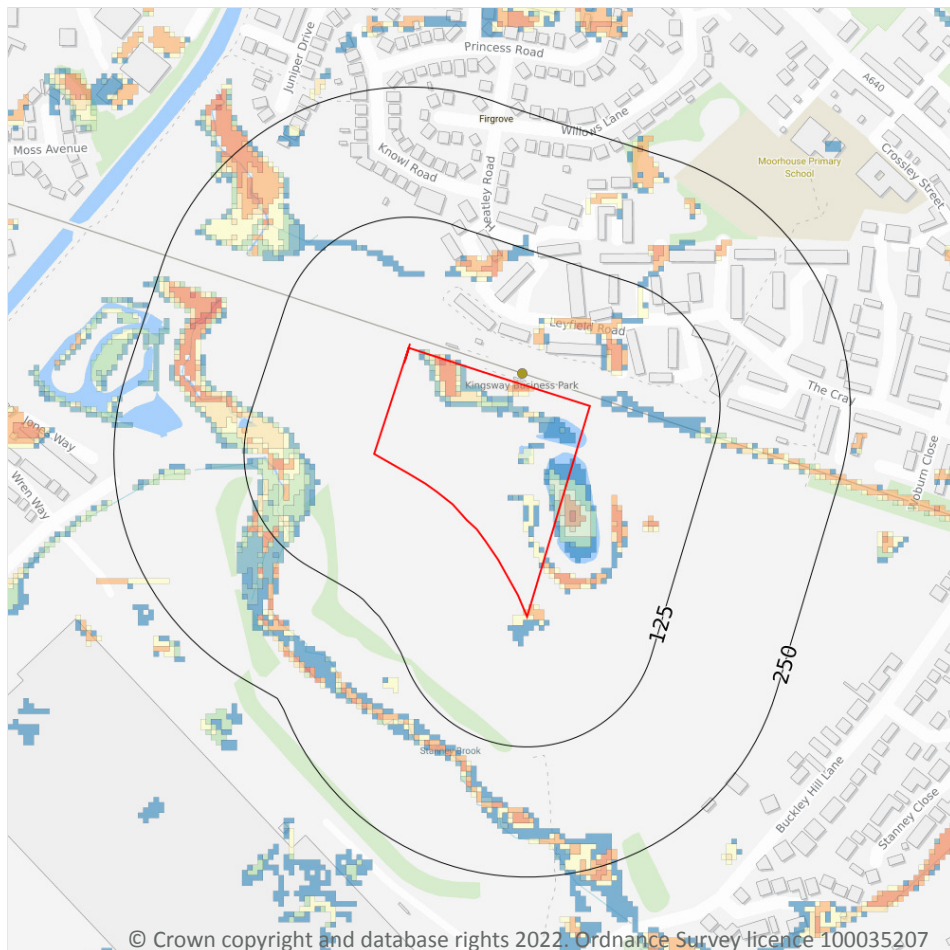
0

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

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



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 30 year, Greater than 1.0m

Highest risk within 50m

1 in 30 year, Greater than 1.0m

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

Features are displayed on the Surface water flooding map on **page 59**

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

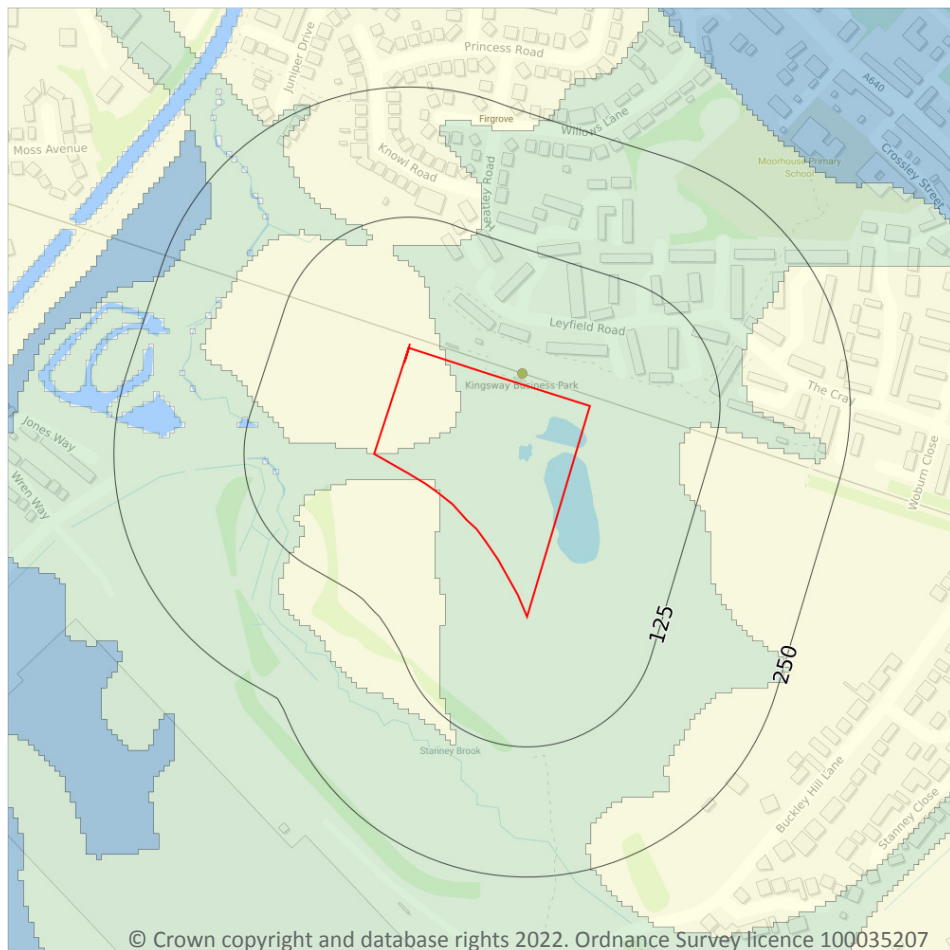
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

Moderate

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

Features are displayed on the Groundwater flooding map on **page 61**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

2

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

Features are displayed on the Environmental designations map on **page 62**

ID	Location	Name	Data source
A	314m NW	Rochdale Canal	Natural England



ID	Location	Name	Data source
B	596m N	Rochdale Canal	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0
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Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	2
-----------------------------	----------

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

Features are displayed on the Environmental designations map on **page 62**

ID	Location	Name	Features of interest	Habitat description	Data source
A	314m NW	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England
B	596m N	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

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

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

10.7 Designated Ancient Woodland

Records within 2000m**0**

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

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

10.8 Biosphere Reserves

Records within 2000m**0**

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



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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

4

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

Features are displayed on the Environmental designations map on **page 62**

ID	Location	Name	Local Authority name
1	726m NE	Merseyside and Greater Manchester	Rochdale
2	1120m SE	Merseyside and Greater Manchester	Rochdale
3	1314m SE	Merseyside and Greater Manchester	Oldham
-	1978m SE	Merseyside and Greater Manchester	Rochdale

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.



10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m**0**

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m**0**

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

This data is sourced from Natural England.

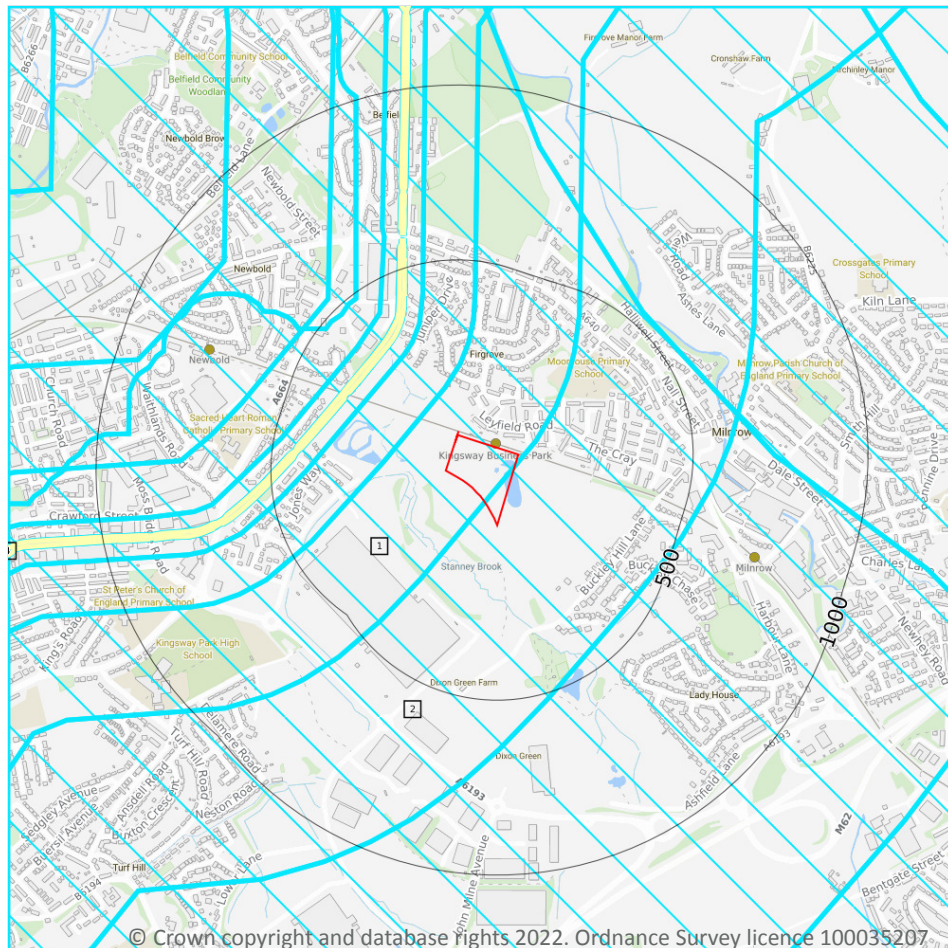
10.16 Nitrate Vulnerable Zones

Records within 2000m**0**

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

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

SSSI Impact Zones and Units



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

10.17 SSSI Impact Risk Zones

Records on site

2

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

Features are displayed on the SSSI Impact Zones and Units map on **page 67**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any development that could cause air pollution (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons & digestate stores, manure stores). Combustion - All general combustion processes. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management. Composting - Any composting proposal. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste that is discharged to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .
2	On site	Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Discharges - Any discharge of water or liquid waste of more than 2m³/day to ground (ie to seep away) or to surface water, such as a beck or stream. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .

This data is sourced from Natural England.



10.18 SSSI Units

Records within 2000m

2

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

Features are displayed on the SSSI Impact Zones and Units map on **page 67**

ID: 4
 Location: 314m NW
 SSSI name: Rochdale Canal
 Unit name: Failsworth
 Broad habitat: Standing Open Water And Canals
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

ID: 11
 Location: 596m N
 SSSI name: Rochdale Canal
 Unit name: Failsworth
 Broad habitat: Standing Open Water And Canals
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

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



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

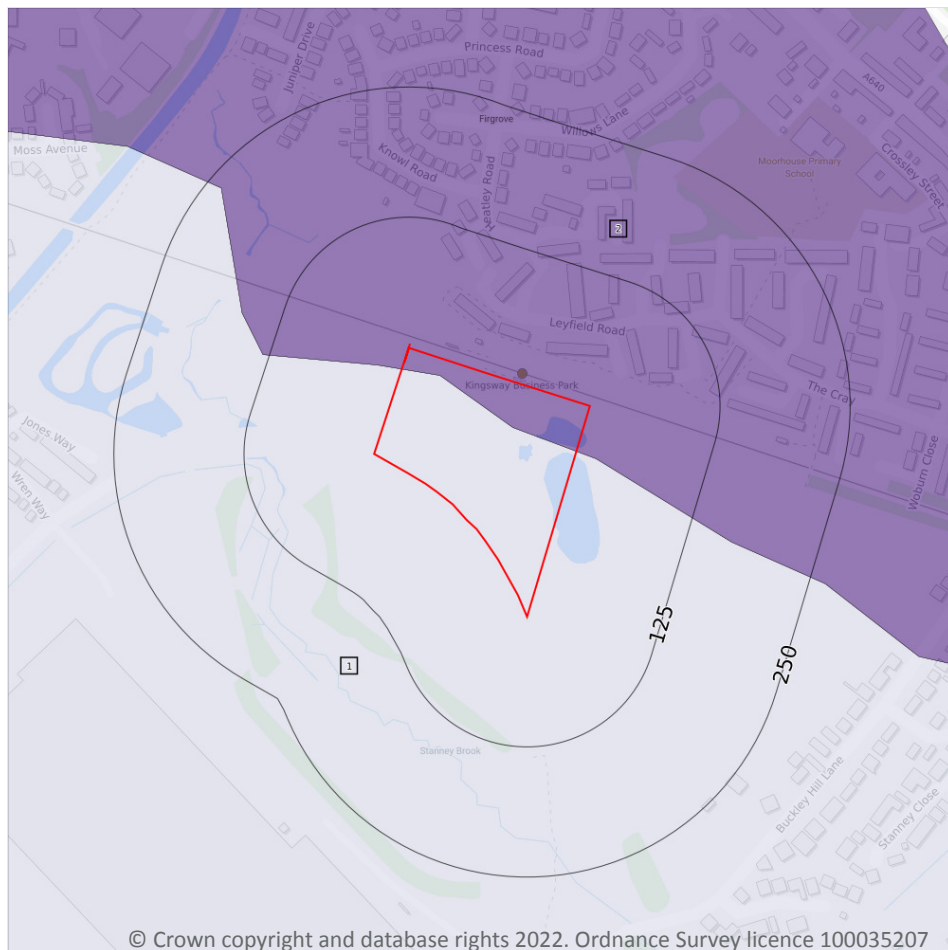
0

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

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



12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

2

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

Features are displayed on the Agricultural designations map on **page 72**

ID	Location	Classification	Description
1	On site	Grade 4	Poor quality agricultural land. Land with severe limitations which significantly restrict the range of crops and/or level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.



ID	Location	Classification	Description
2	On site	Urban	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

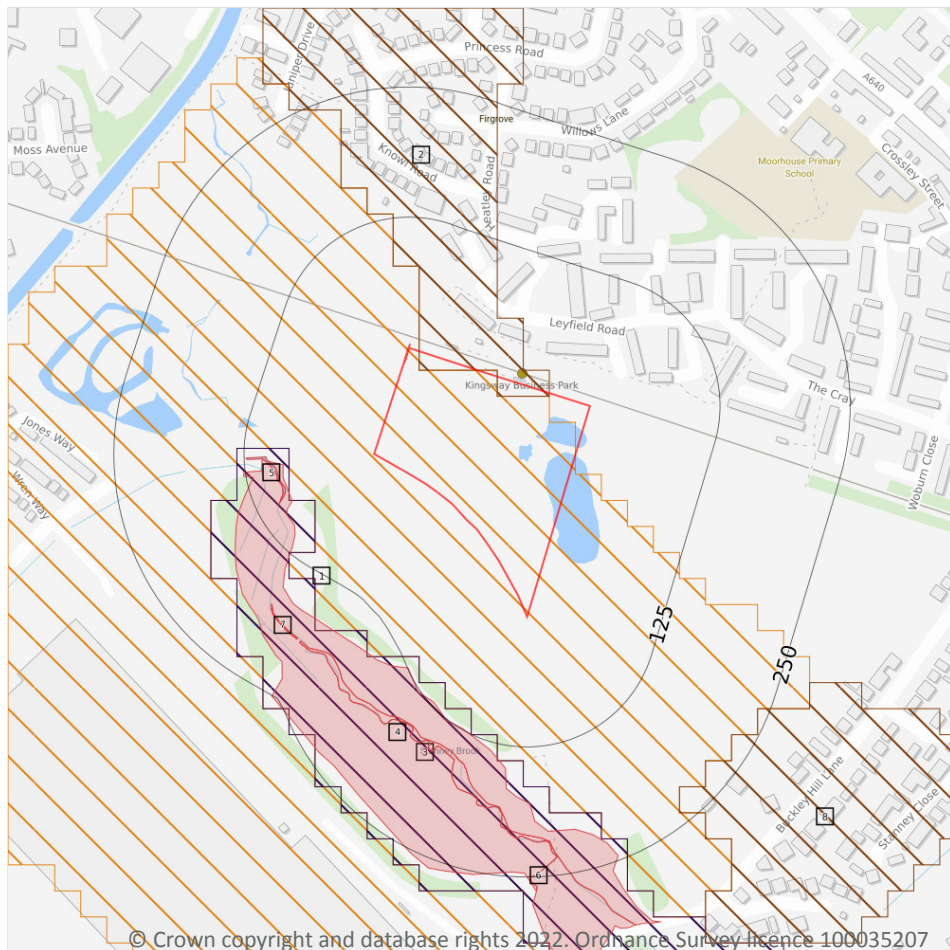
0

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

This data is sourced from Natural England.



13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

4

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

Features are displayed on the Habitat designations map on **page 74**

ID	Location	Main Habitat	Other habitats
4	88m W	Lowland fens	Main habitat: LFENS (INV > 50%)
5	92m W	Lowland fens	Main habitat: LFENS (INV > 50%)
6	148m SW	Lowland fens	Main habitat: LFENS (INV > 50%)
7	175m SW	Lowland fens	Main habitat: LFENS (INV > 50%)



This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

4

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

Features are displayed on the Habitat designations map on **page 74**

ID	Location	Type	Habitat
1	On site	Network Enhancement Zone 1	Not specified
2	On site	Network Enhancement Zone 2	Not specified
3	72m SW	Primary Habitat	Lowland fens
8	219m SE	Network Enhancement Zone 2	Not specified

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

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

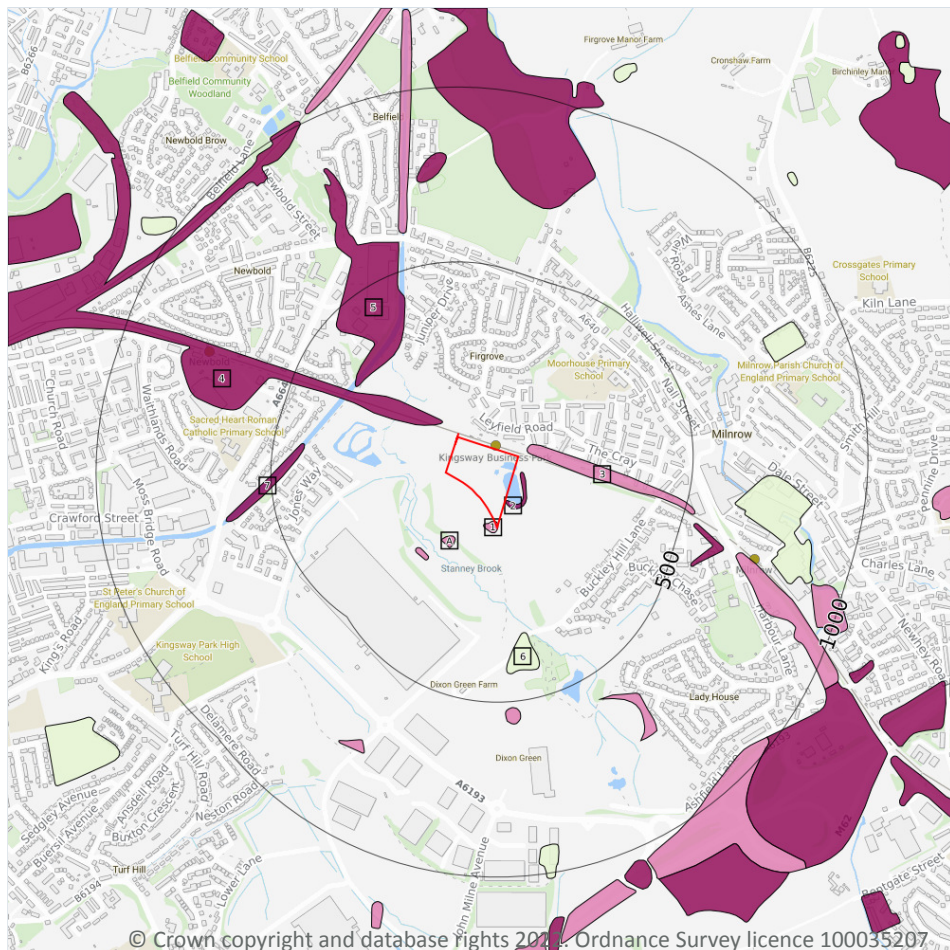
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 76**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD91SW

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m

9

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 77**

ID	Location	LEX Code	Description	Rock description
1	On site	WGR-VOID	Worked Ground (Undivided)	Void
2	2m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	30m NE	WGR-VOID	Worked Ground (Undivided)	Void
4	59m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

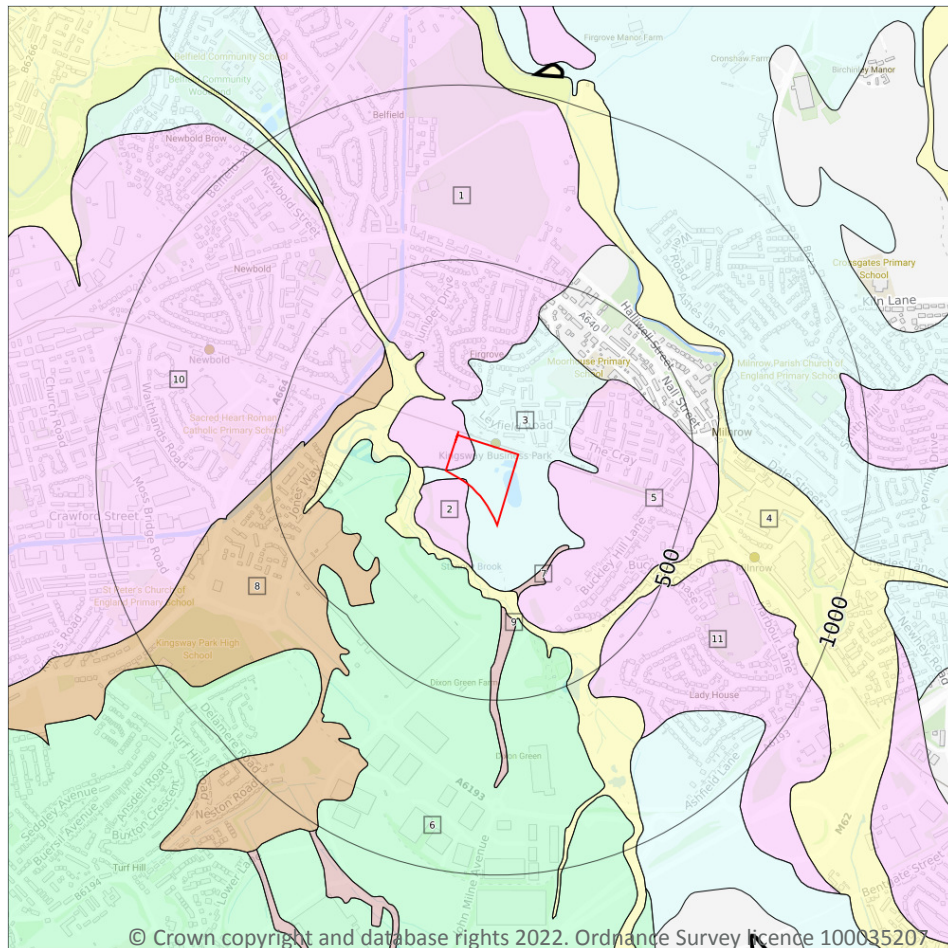


ID	Location	LEX Code	Description	Rock description
A	123m SW	WGR-VOID	Worked Ground (Undivided)	Void
A	213m SW	WGR-VOID	Worked Ground (Undivided)	Void
5	295m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	311m S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
7	411m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

11

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 79**

ID	Location	LEX Code	Description	Rock description
1	On site	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	On site	GFSDDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
3	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton



ID	Location	LEX Code	Description	Rock description
4	63m W	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
5	95m E	GFSDDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
6	102m W	HMGDD-DMTN	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton	Diamicton
7	177m SE	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
8	230m NW	PEAT-P	Peat - Peat	Peat
9	233m S	HEAD-XCZSV	Head - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
10	295m NW	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
11	436m SE	GFSDDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

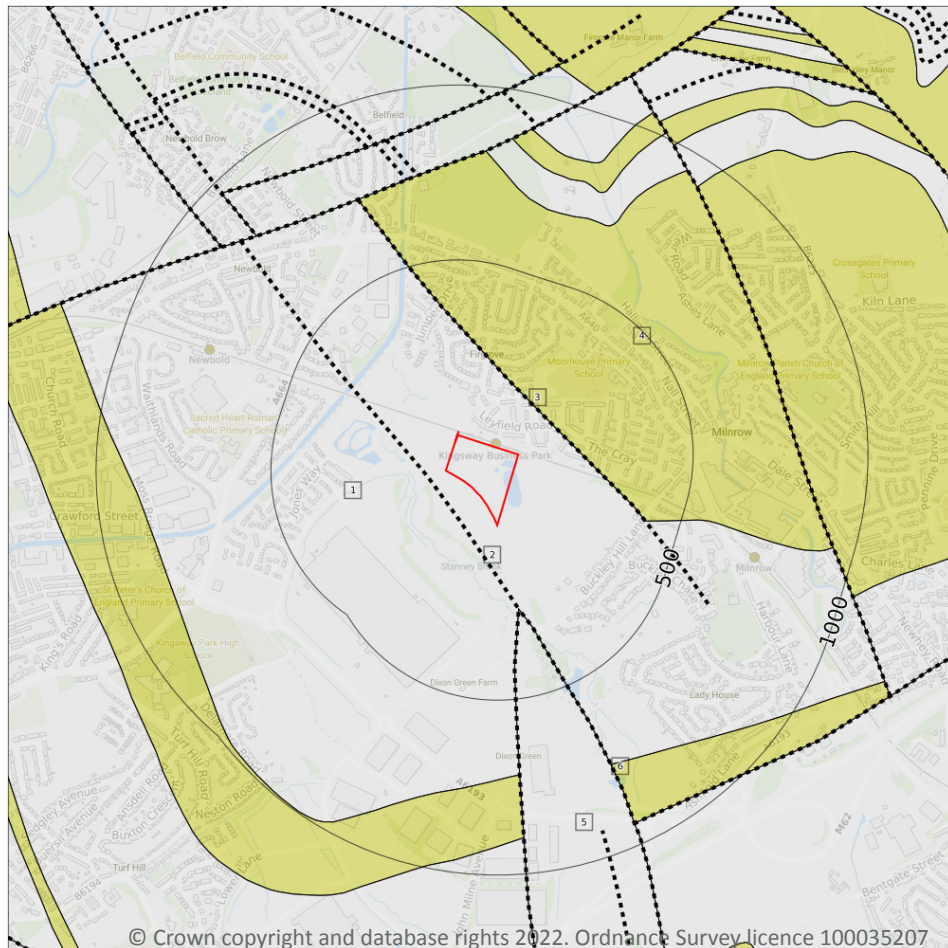
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

3

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 81**

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
4	130m NE	MLRS-SDST	Milnrow Sandstone - Sandstone	Langsettian Sub-age
5	247m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age



This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

3

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

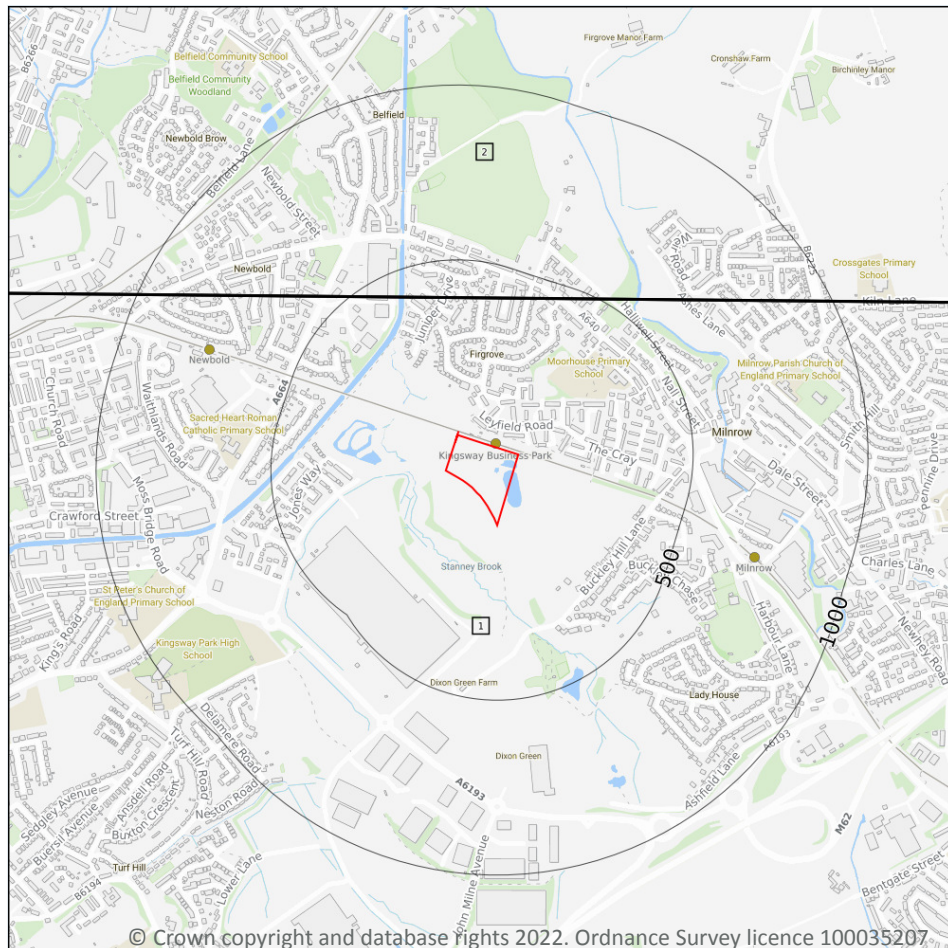
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 81**

ID	Location	Category	Description
2	52m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
3	130m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
6	247m S	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 83**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW085_manchester_v4
2	392m N	No coverage	Full	Full	Full	EW076_rochdale_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

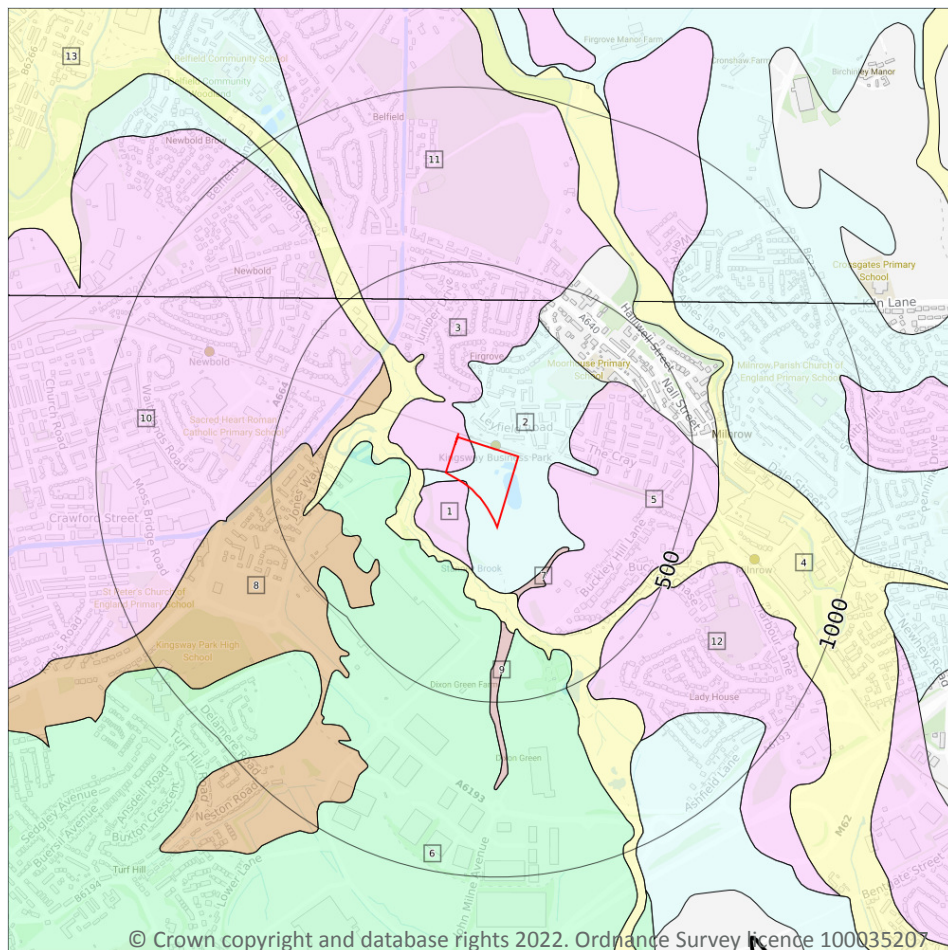
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

13

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 85**

ID	Location	LEX Code	Description	Rock description
1	On site	GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	On site	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL



ID	Location	LEX Code	Description	Rock description
4	63m W	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
5	95m E	GFSD- XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
6	102m W	HMGDD-DMTN	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON
7	177m SE	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
8	229m NW	PEAT-P	PEAT	PEAT
9	270m S	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
10	289m NW	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
11	392m N	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
12	436m SE	GFSD- XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
13	479m NW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	3
---------------------------	----------

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

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

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



This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

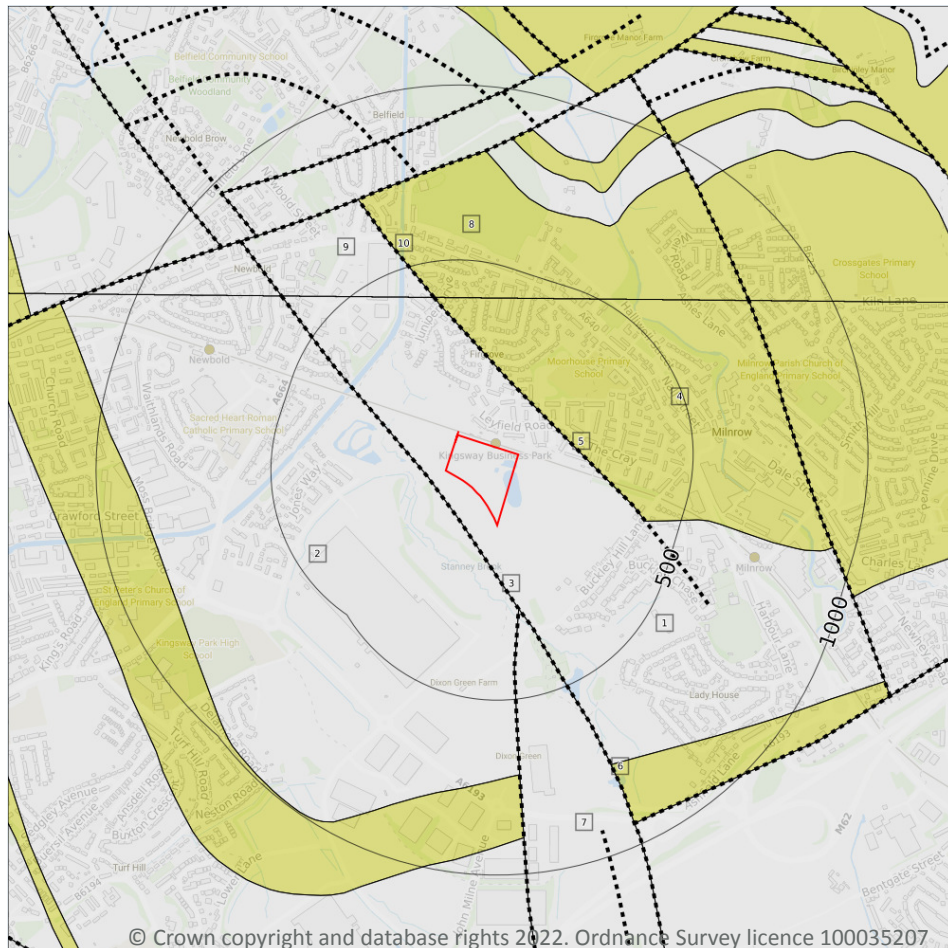
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

15.8 Bedrock geology (50k)

Records within 500m

6

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 88**

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	52m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	130m NE	MLRS-SDST	MILNROW SANDSTONE - SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
7	247m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	392m N	MLRS-SDST	MILNROW SANDSTONE - SANDSTONE	WESTPHALIAN
9	399m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m **1**

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **4**

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 88**

ID	Location	Category	Description
3	52m SW	FAULT	Fault, inferred
5	130m NE	FAULT	Fault, inferred
6	247m S	FAULT	Fault, inferred
10	399m N	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

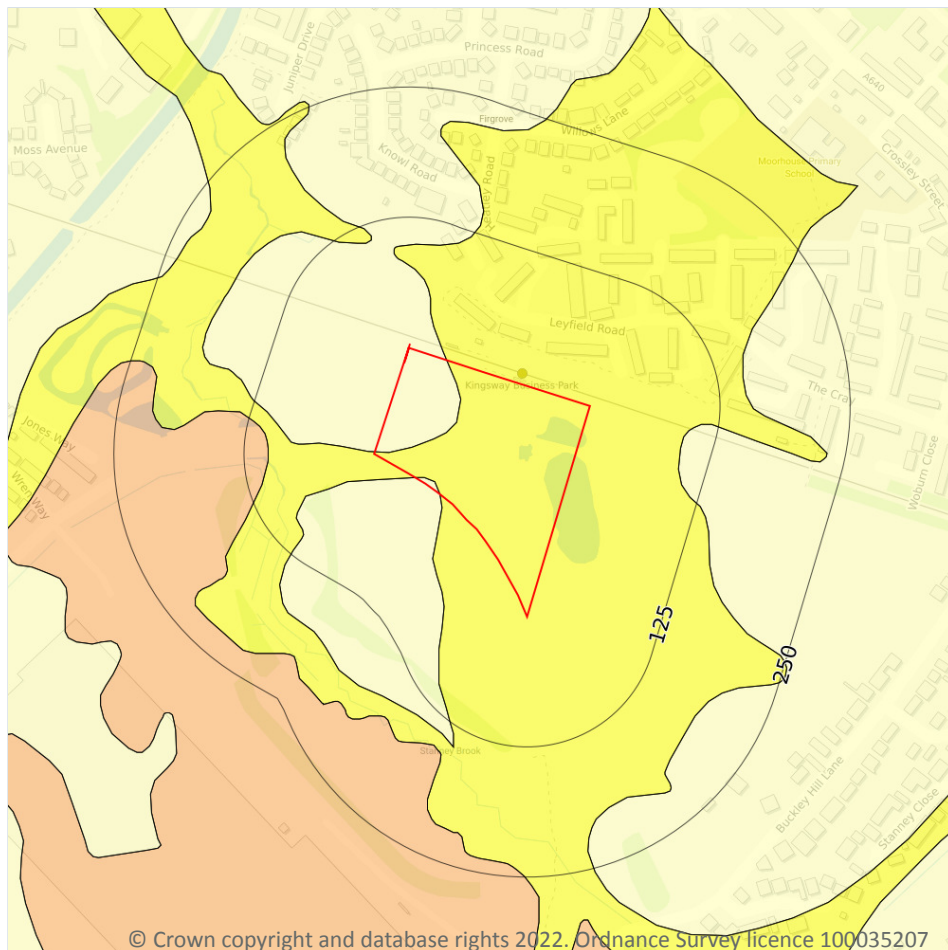
0

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

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

2

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

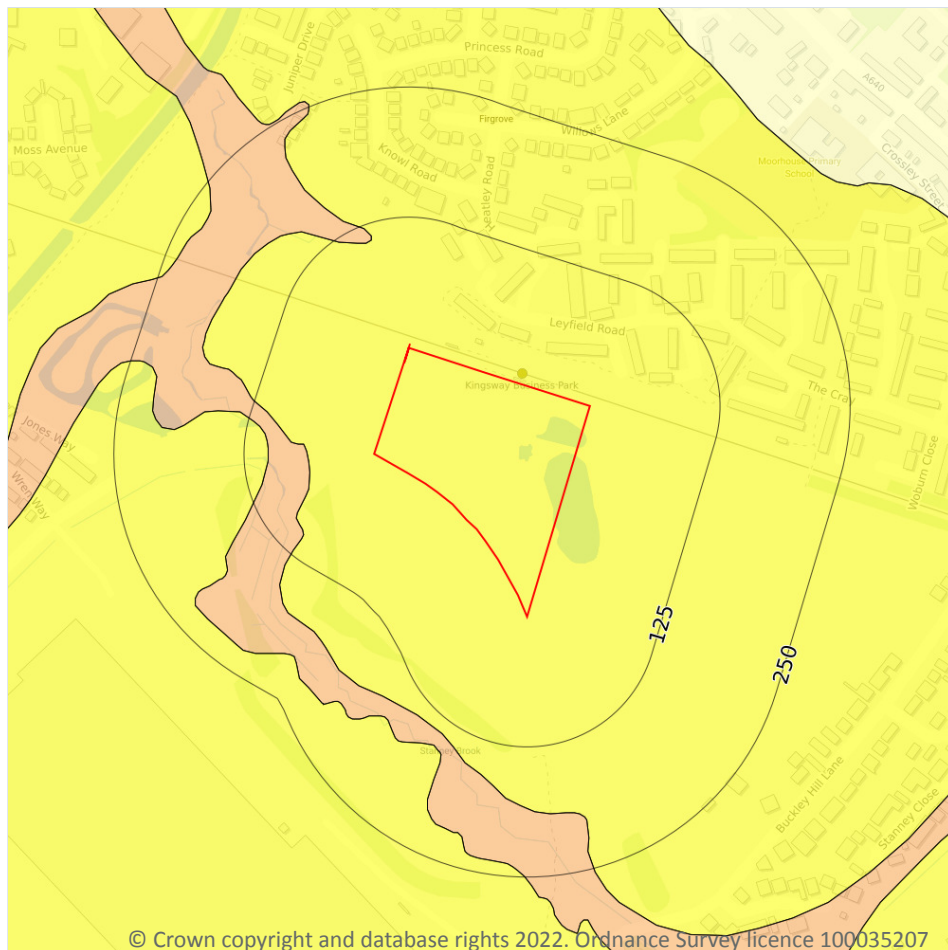
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 91**

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

1

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

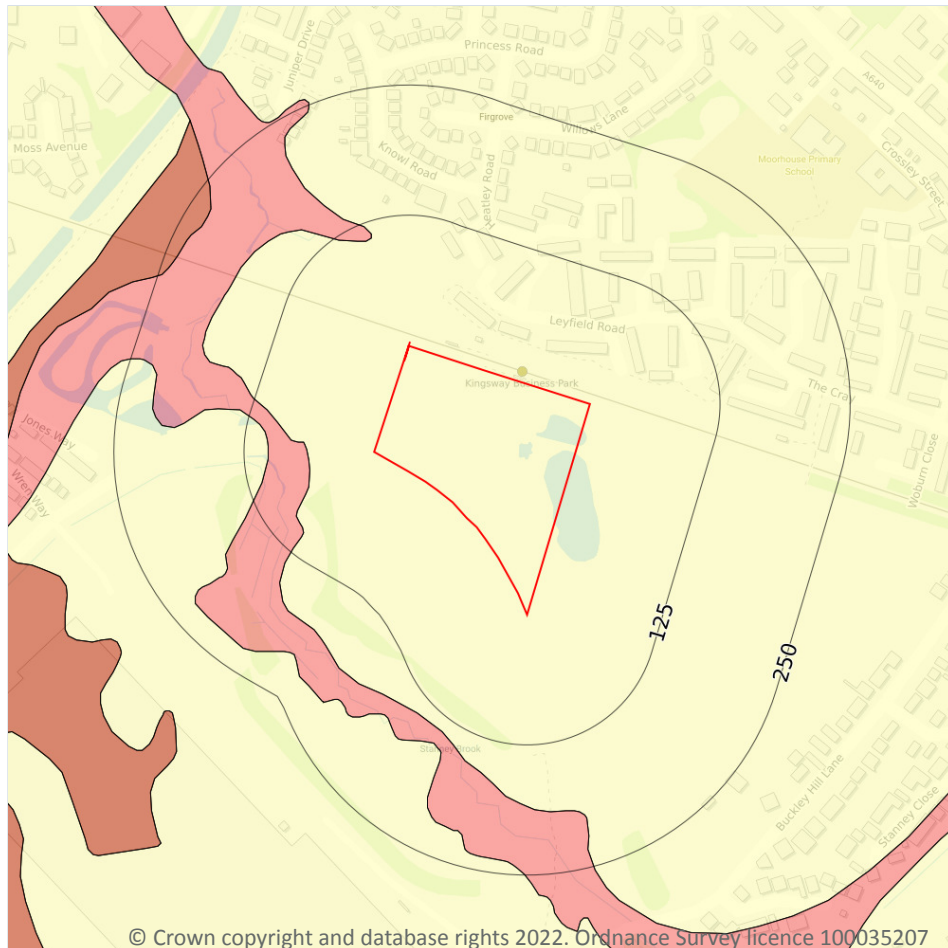
Features are displayed on the Natural ground subsidence - Running sands map on **page 92**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

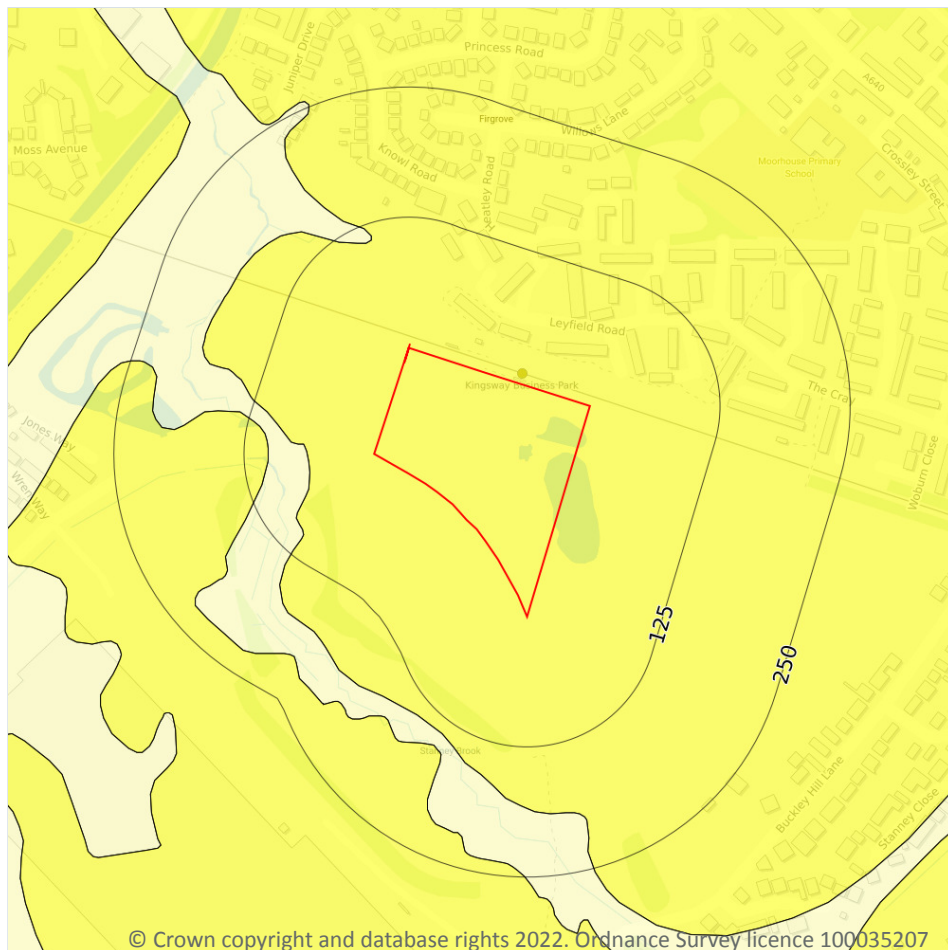
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 93**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

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

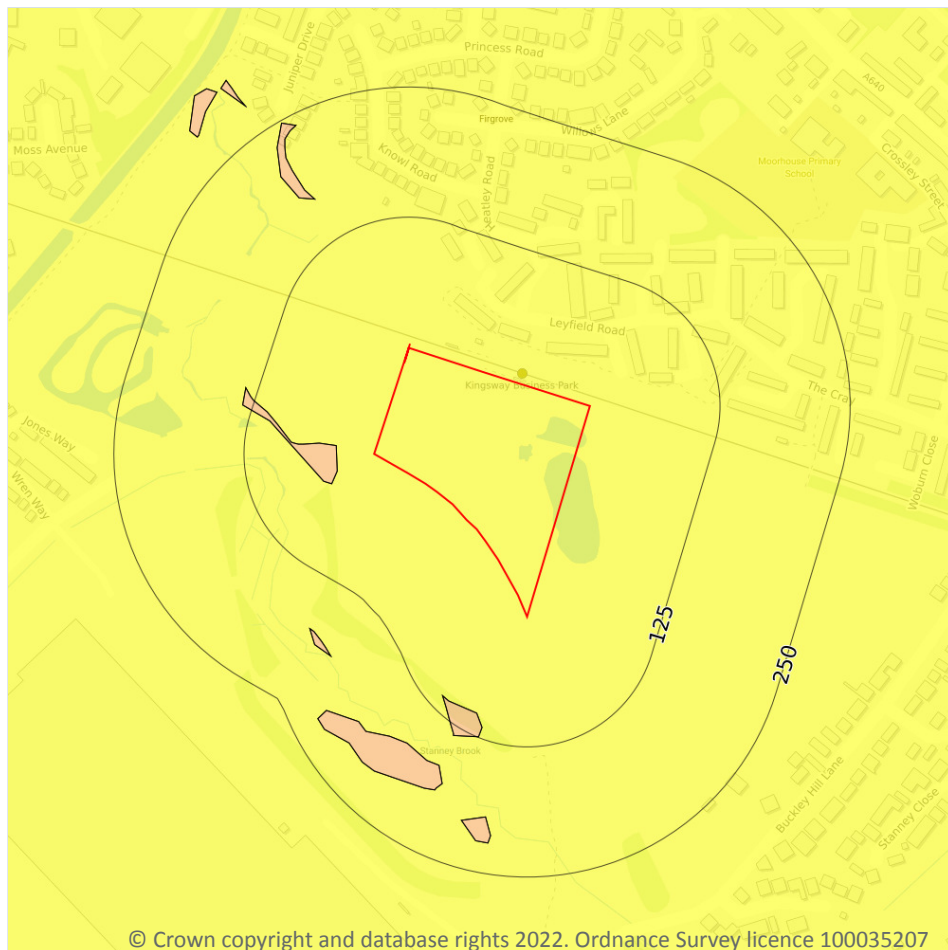
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 94**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



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

17.5 Landslides

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 95**

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

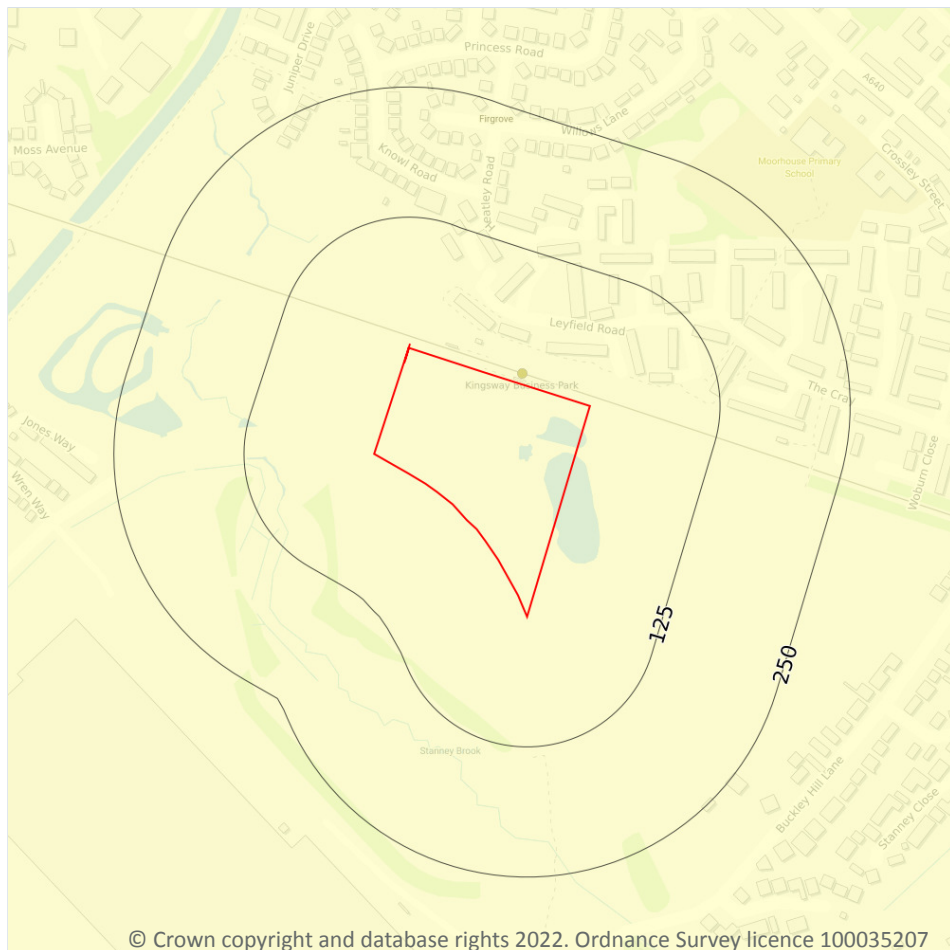


Location	Hazard rating	Details
36m W	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



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

17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

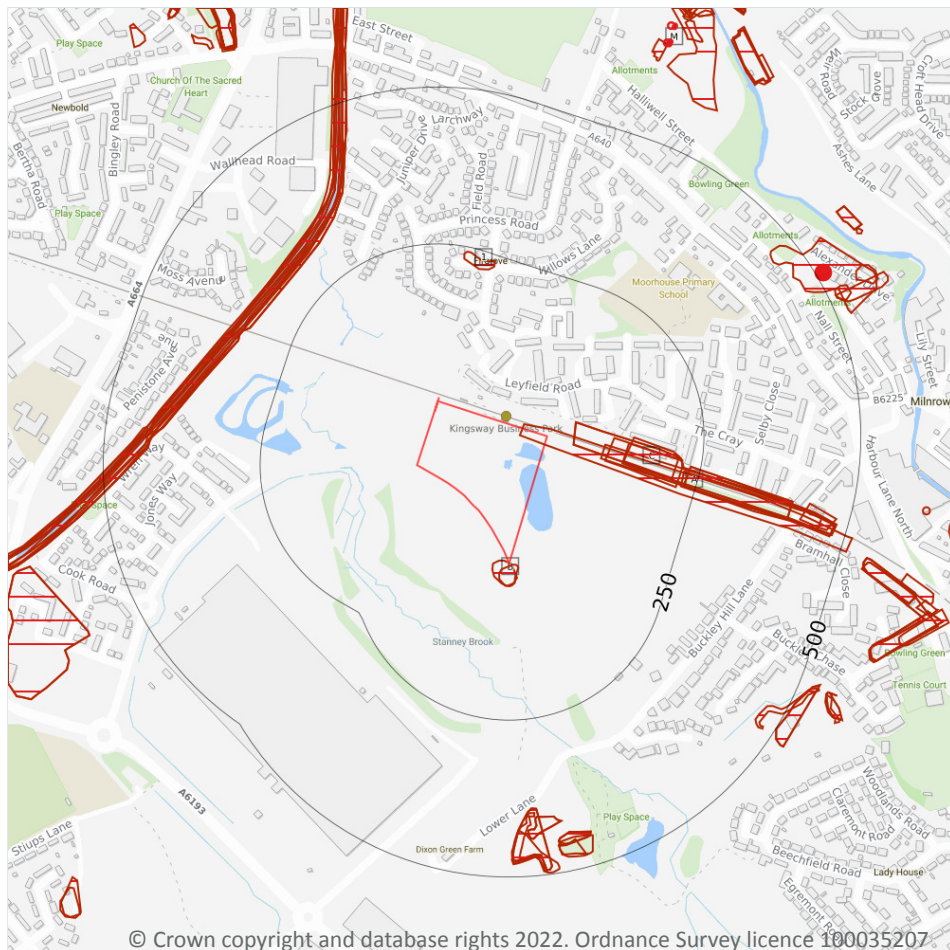
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 97**

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

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

13

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 98**

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Cuttings	1851	1:10560
B	0m SW	Pond	1976	1:10000
B	4m S	Pond	1851	1:10560
A	43m E	Cuttings	1938	1:10560
A	43m E	Cuttings	1928	1:10560
A	93m E	Cuttings	1891	1:10560
C	100m E	Cuttings	1954	1:10560
A	127m E	Cuttings	1908	1:10560
C	129m E	Cuttings	1976	1:10000
1	220m N	Gravel Pit	1928	1:10560
A	225m E	Cuttings	1954	1:10560
A	231m E	Cuttings	1976	1:10000
A	231m E	Cuttings	1967	1:10560

This is data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m

25

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 98**

ID	Location	Land Use	Year of mapping	Mapping scale
M	650m N	Unspecified Disused Shafts	1976	1:10000
M	650m N	Unspecified Disused Shafts	1967	1:10560
M	651m N	Unspecified Old Shaft	1954	1:10560
M	655m N	Old Coal Shafts	1908	1:10560
M	655m N	Unspecified Old Shaft	1938	1:10560
M	655m N	Unspecified Old Shaft	1928	1:10560
M	655m N	Unspecified Old Shafts	1891	1:10560
M	678m N	Unspecified Disused Shafts	1976	1:10000
M	678m N	Unspecified Disused Shafts	1967	1:10560
M	680m N	Unspecified Old Shaft	1954	1:10560
M	682m N	Old Coal Shafts	1908	1:10560
M	684m N	Unspecified Old Shaft	1938	1:10560
M	684m N	Unspecified Old Shaft	1928	1:10560
M	684m N	Unspecified Old Shafts	1891	1:10560
-	971m NW	Unspecified Disused Shaft	1967	1:10560
-	971m NW	Unspecified Disused Shafts	1976	1:10000
-	972m NW	Unspecified Disused Shafts	1976	1:10000
-	972m NW	Unspecified Disused Shaft	1967	1:10560
-	989m NE	Unspecified Disused Shaft	1976	1:10000
-	989m NE	Unspecified Disused Shaft	1967	1:10560
-	992m NE	Unspecified Old Shaft	1954	1:10560
-	994m NE	Disused Colliery	1891	1:10560
-	996m NE	Old Coal Shaft	1908	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
-	996m NE	Unspecified Old Shaft	1938	1:10560
-	996m NE	Unspecified Old Shaft	1928	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.



18.9 Coal mining

Records on site	1
-----------------	---

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

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.

18.10 Brine areas

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

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

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

18.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

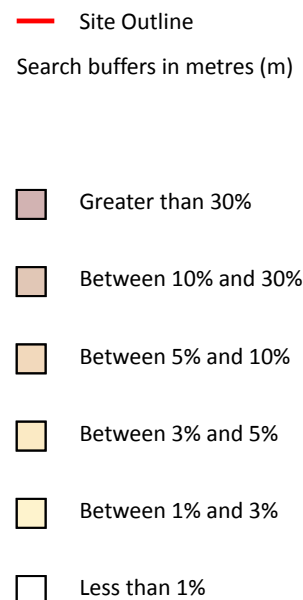
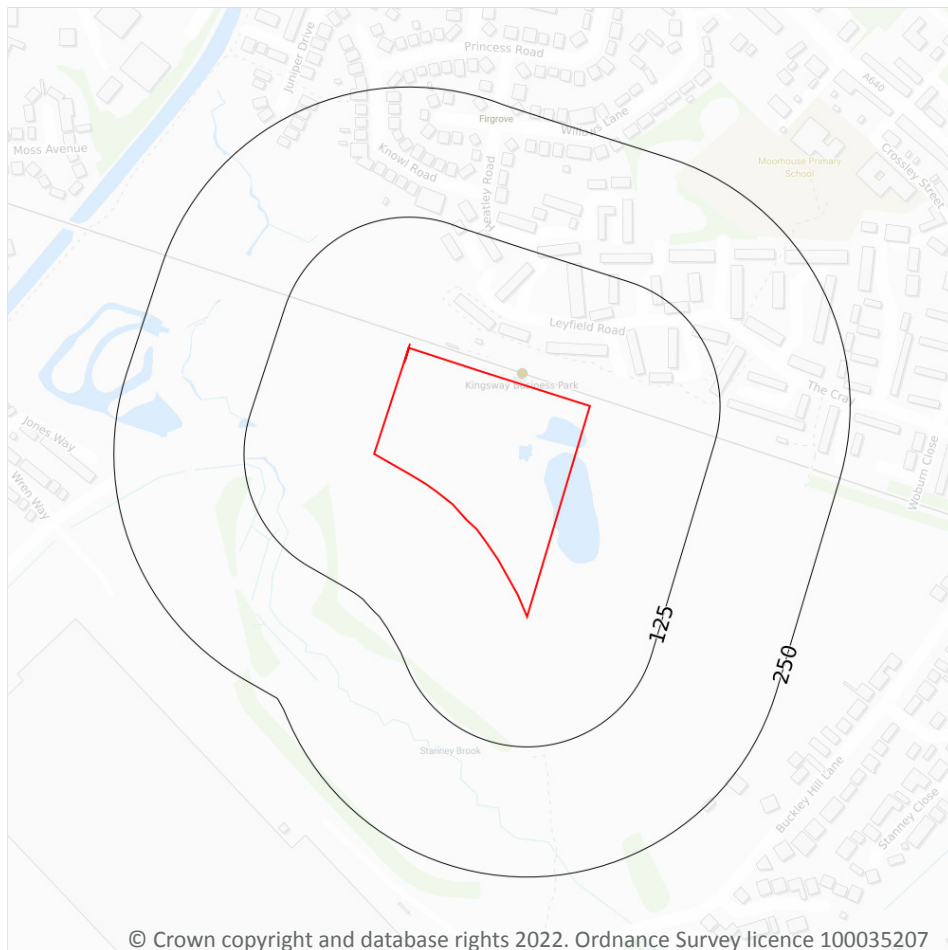
Records on site	0
-----------------	---

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

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



19 Radon



19.1 Radon

Records on site

1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 103**

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

This data is sourced from the British Geological Survey and Public Health England.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

13

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	25 - 35 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
13m NW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg
13m SW	25 - 35 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
19m N	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
24m NE	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
24m NE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
26m S	25 - 35 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
41m S	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg



Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
41m SE	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

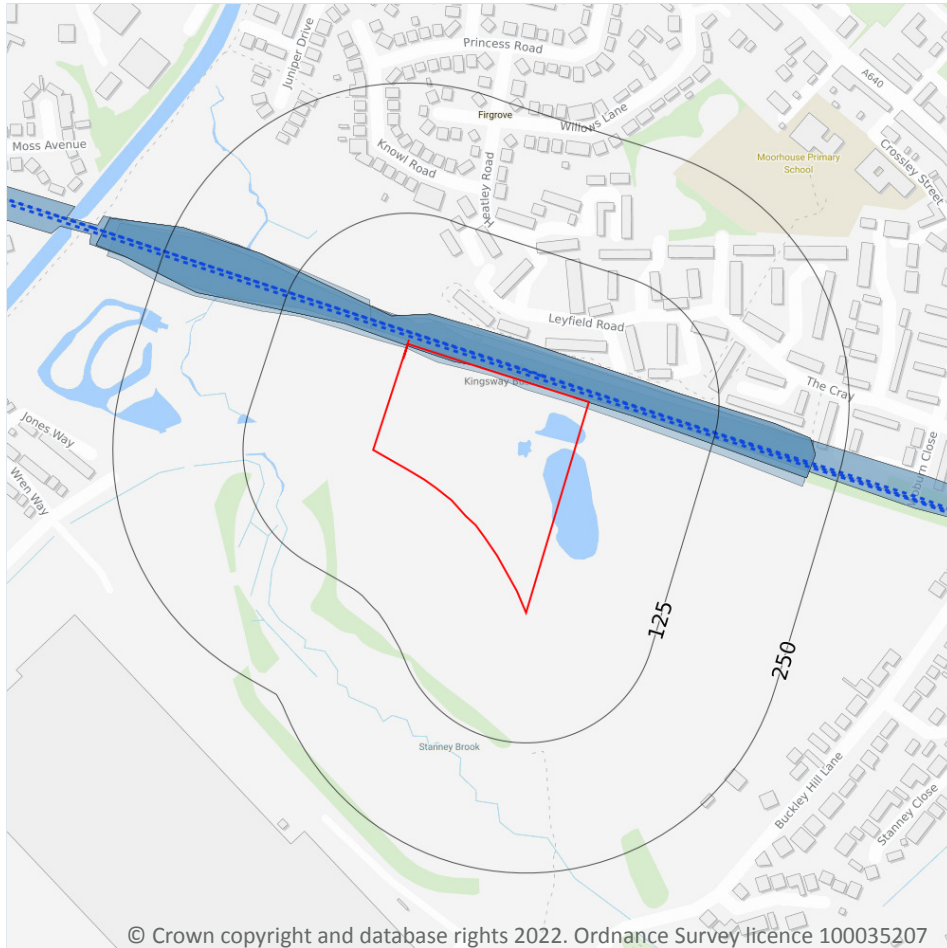
0

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

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)**
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

8

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

Features are displayed on the Railway infrastructure and projects map on **page 106**

Location	Land Use	Year of mapping	Mapping scale
On site	Railway Sidings	1954	10560
On site	Railway Sidings	1938	10560
On site	Railway Sidings	1928	10560
On site	Railway Sidings	1908	10560
0m N	Railway	1891	-
1m N	Railway	1907	-
38m W	Railway	1890	-
38m W	Railway	1908	-

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.



21.6 Historical railways

Records within 250m**0**

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m**8**

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on **page 106**

Location	Name	Type
6m N	Metrolink	light_rail
10m N	Not given	Multi Track
10m N	Not given	Multi Track
10m N	Not given	Multi Track
10m N	Metrolink	light_rail
10m N	Not given	Multi Track
11m N	Not given	Multi Track
223m E	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m**0**

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.



21.9 Crossrail 2

Records within 500m**0**

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m**0**

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

This data is sourced from HS2 Ltd.



Data providers

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

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Appendix 4: Historical Mapping

Site Details:

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PARK, MICHAEL FARADAY
AVENUE, ROCHDALE, OL16
4FW

Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: County Series

Map date: 1851

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A

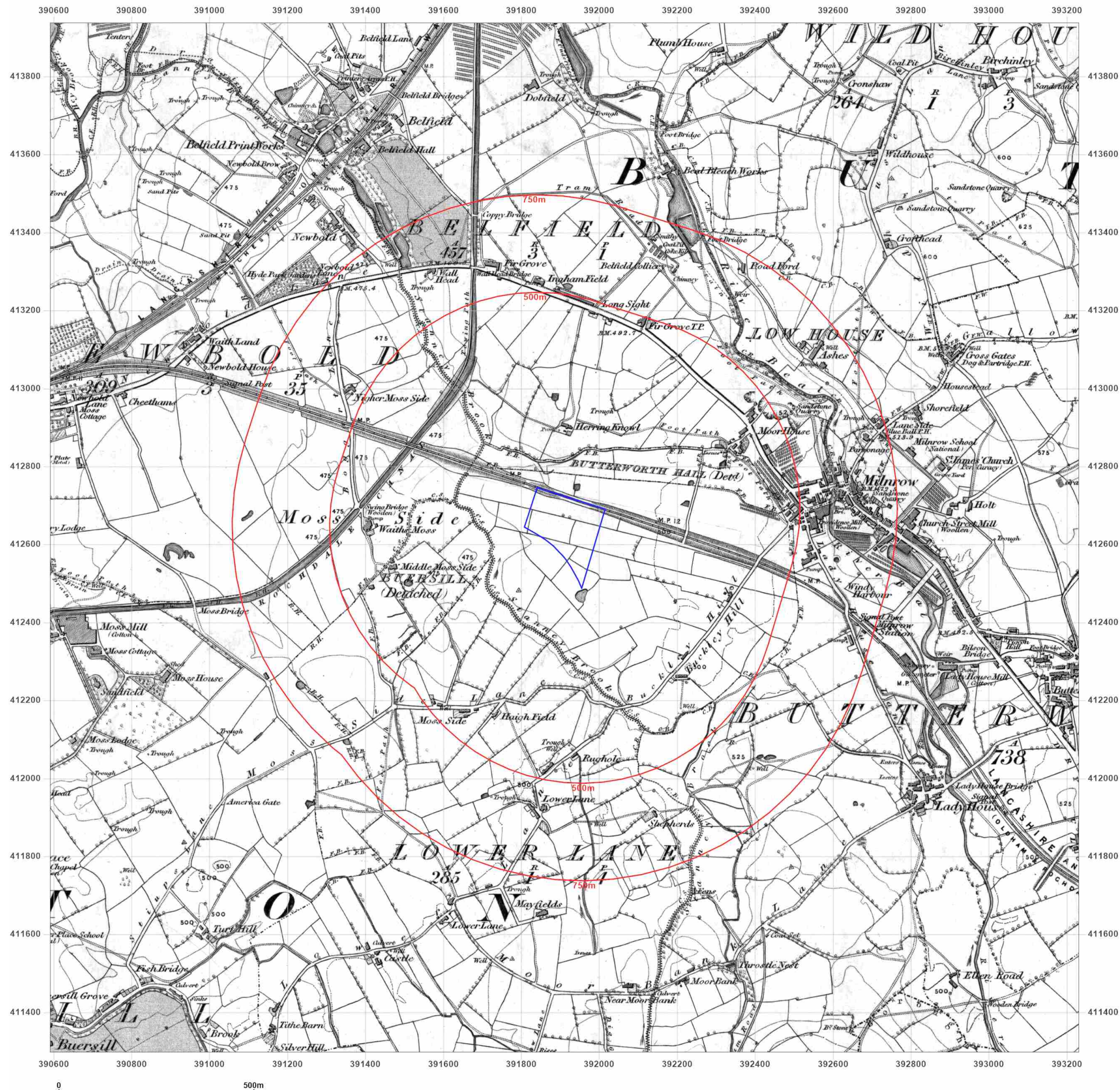


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4FW

Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: County Series

Map date: 1891

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

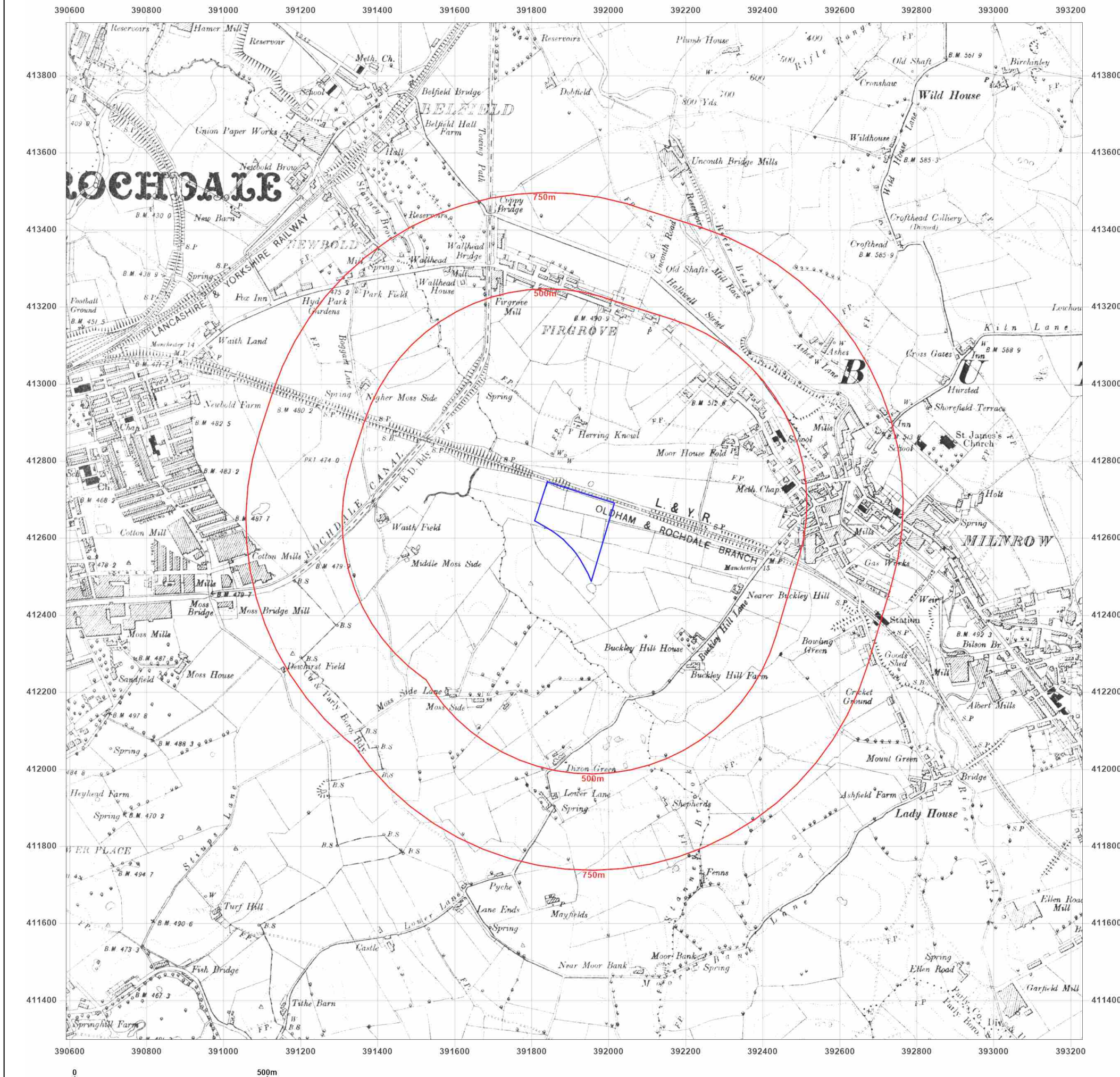


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4FW

Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: County Series

Map date: 1908

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

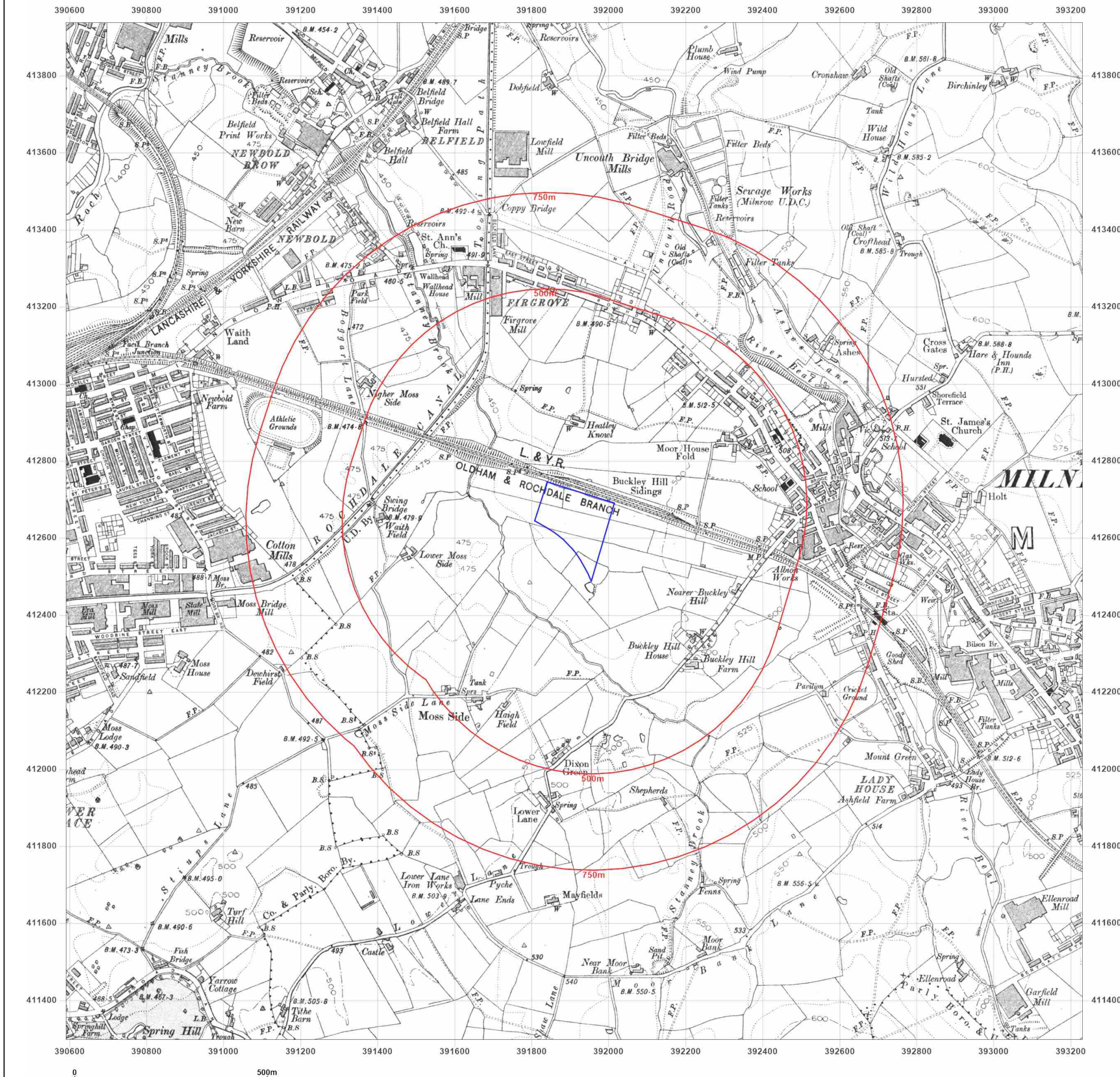


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4FW

Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: County Series

Map date: 1928

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

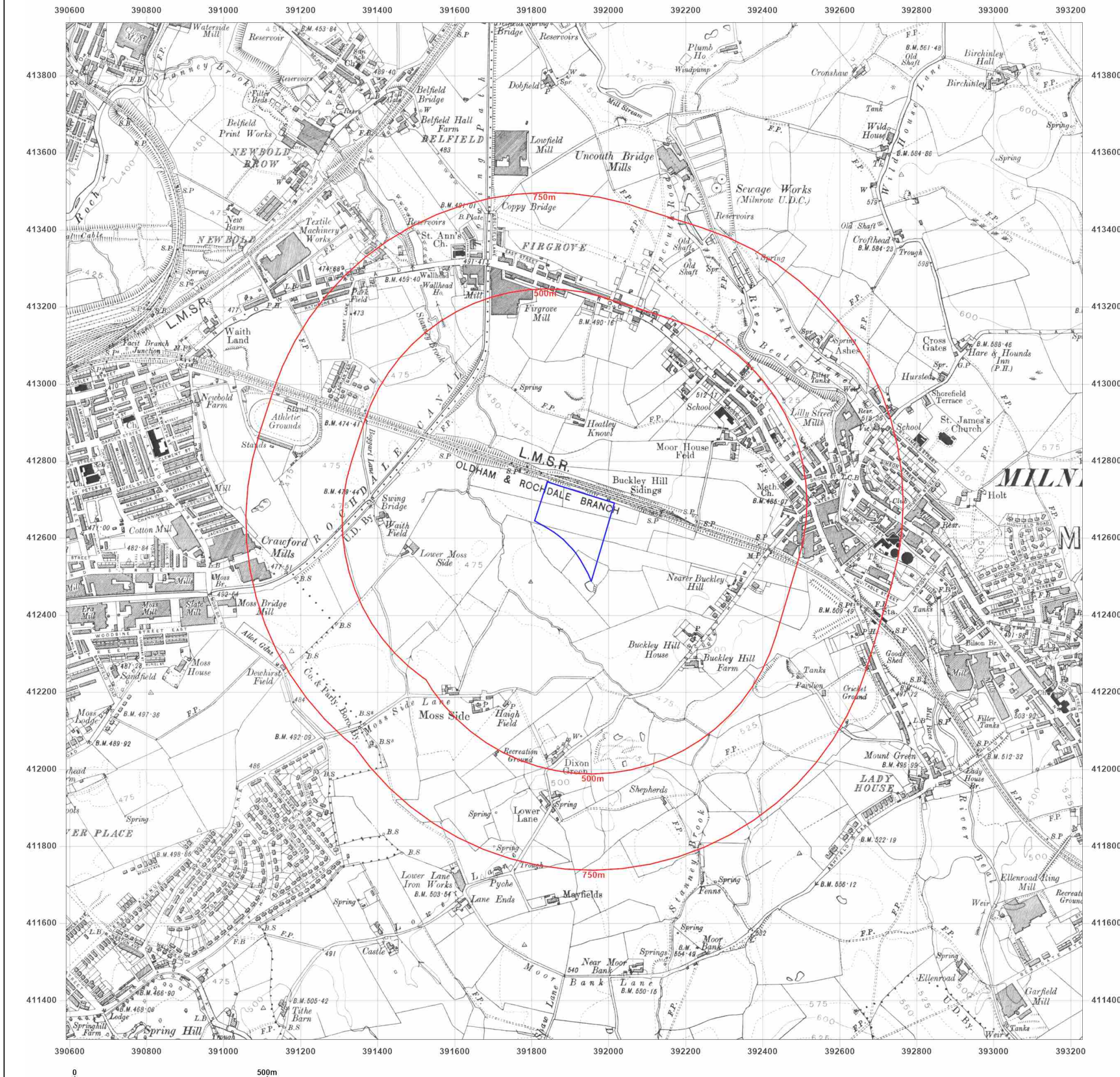


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Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1938
Edition N/A
Copyright N/A
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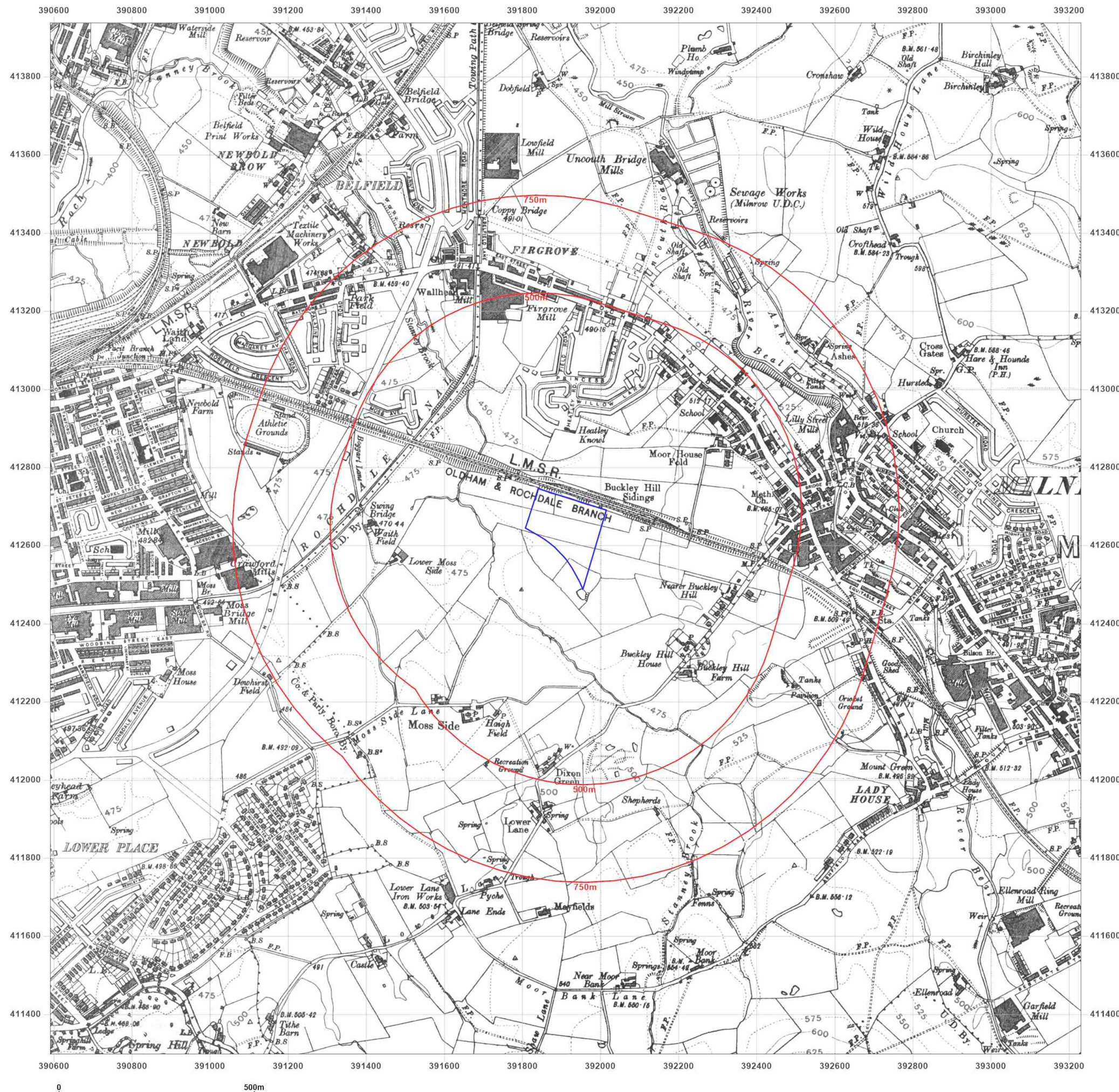


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Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: Provisional

Map date: 1954

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1954
Revised 1954
Edition N/A
Copyright N/A
Levelled N/A

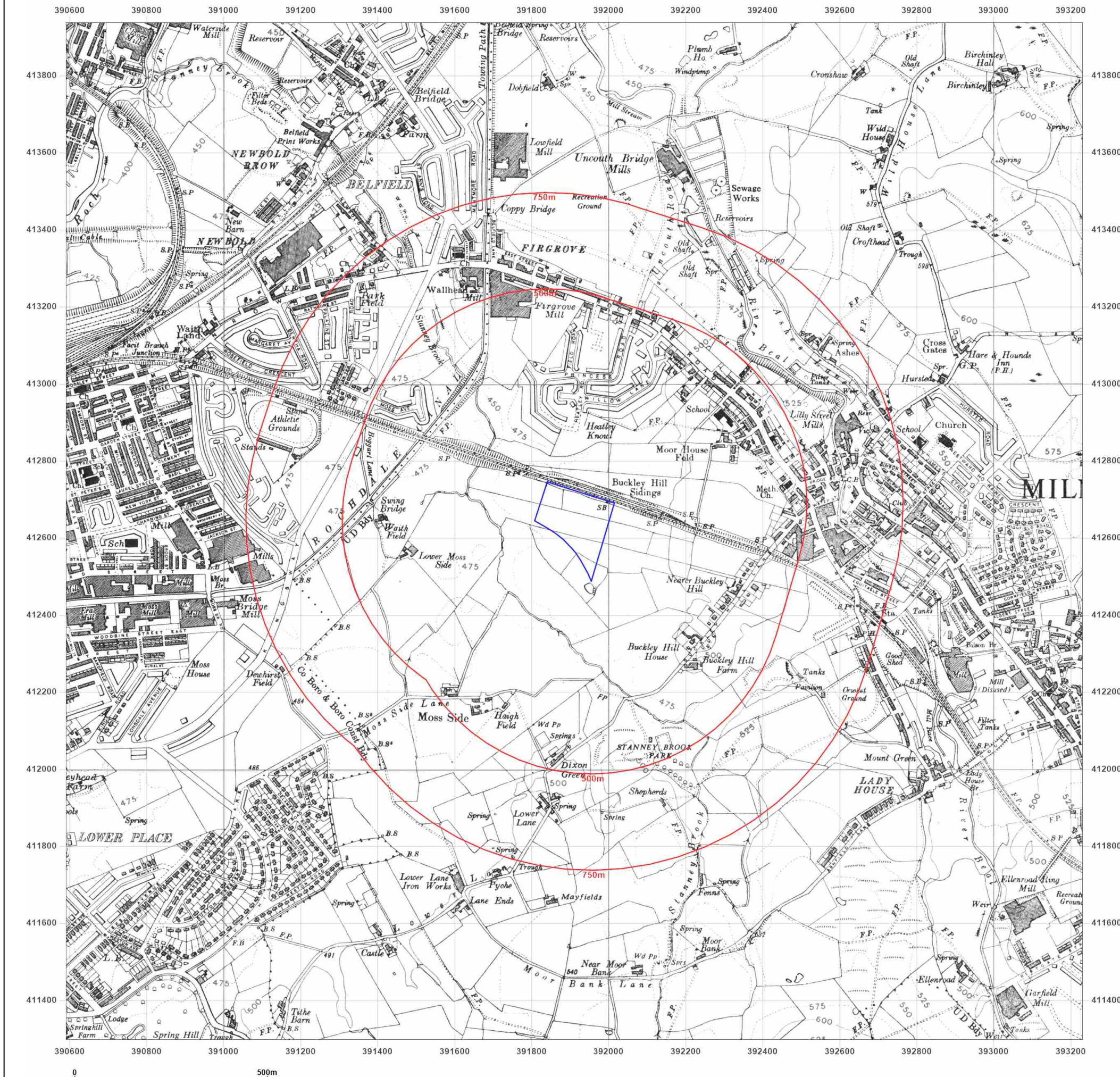


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4FW

Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: Provisional

Map date: 1967

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1967
Revised 1967
Edition N/A
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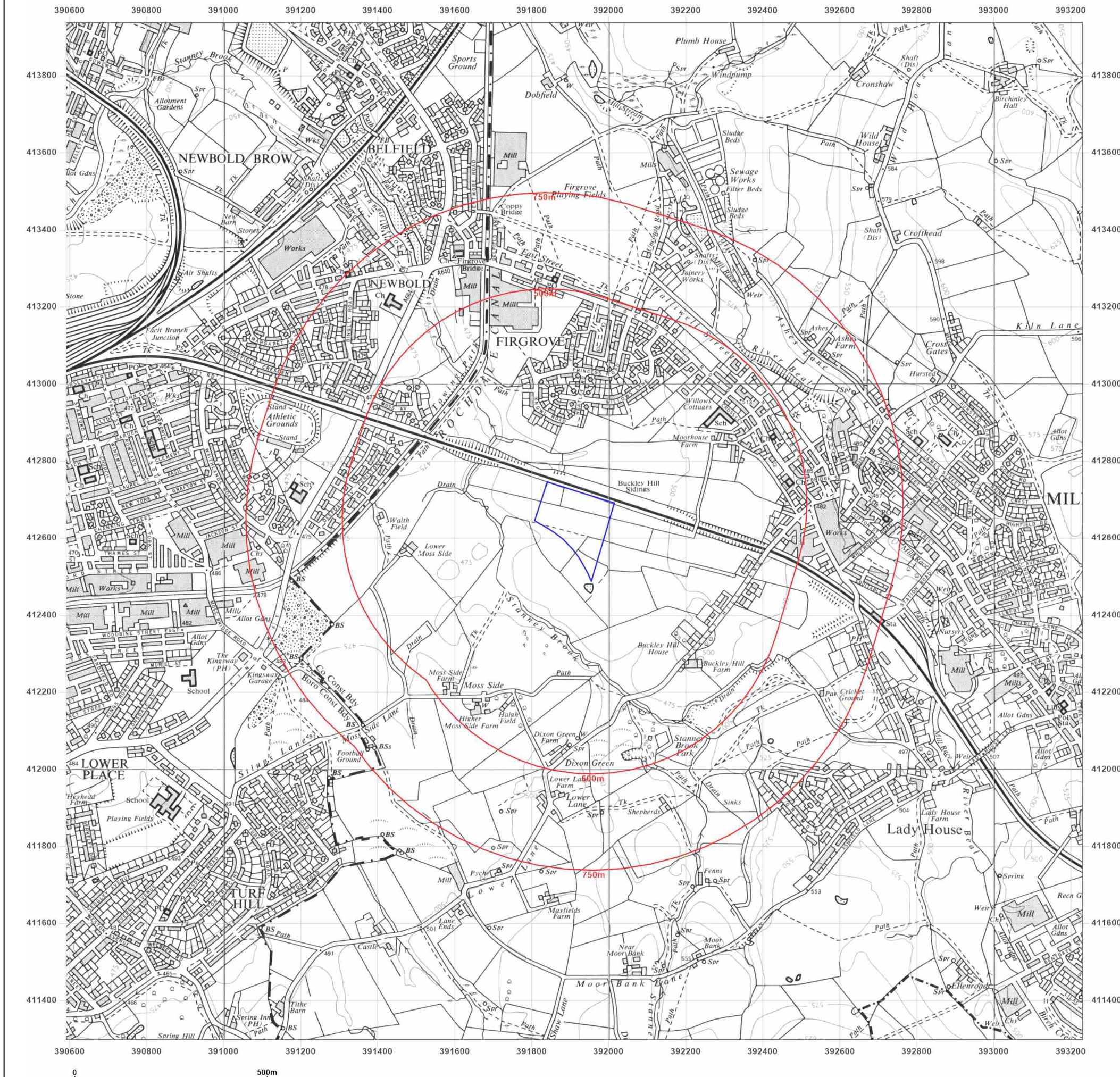


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AVENUE, ROCHDALE, OL16
4FW

Client Ref: 210939_PO_1762
Report Ref: HMD-214-8800196
Grid Ref: 391910, 412617

Map Name: National Grid

Map date: 1976

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1976
Revised 1976
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