Appendix 5: Site condition report

Mondelez Sheffield Site

Environmental Permit Site Condition Report

Application for Environmental Permit Variation

Permit reference number: EPR/ZP3722SD

July 2026

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Executive summary

This document presents the Site Condition Report (SCR) for the Sheffield site operated by Mondelez UK Confectionery Production Limited (Mondelez), and forms part of an application to the Environment Agency (EA) for an environmental permit. The application is being made to operate activities which fall within Schedule 1, Section 6.8 Part A(1) (d)(iii) of the Environmental Permitting Regulations 2016 (as amended). Products are primarily manufactured from vegetable raw materials, however gelatine, which is classified as an animal raw material, is a constituent of certain products in varying amounts. Effluent pre-treatment is also undertaken, this effluent pre-treatment activity falls within Schedule 1, Section 5.4 (a)(ii) of the Environmental Permitting Regulations 2016 (as amended).

The role of the SCR is to document the baseline conditions present at the start of the permit, to assess the likelihood of ground contamination occurring during the life of the permit, and to document measures to minimise the risk of contamination of the ground during operation of the permitted activity.

This assessment has involved a desk study review and site reconnaissance, and has been produced in accordance with the EA's Technical Guidance Note, H5 (2013). Records of the site and surrounding area have been reviewed in order to describe the condition of the installation and, in particular, to identify any substance in, on or under the land that may constitute a pollution risk to land or groundwater. Pollution prevention measures have been identified and an assessment of pollution potential to land and groundwater has been undertaken. This information has been used to produce a conceptual model.

The main findings of the SCR are as follows:

- Permitted activities involve manufacturing a range confectionery products including: hard mints; soft mints; jellies; and liquorice. Associated activities include: raw materials storage and handling; finished product packaging; cleaning; heating including steam raising boilers; refrigeration and cooling; waste storage and handling; and pre-treatment of process effluent. All permitted activities are carried out within the 'installation boundary'.
- The installation is split by the River Don, creating an area to the north of the river and an area to the south of the river.
- The River Don and a tributary of the River Don, located to the north east of the installation, represent receptors at potential risk of pollution.
- Made Ground is known to be present in the northern part of the installation; based on British Geological Survey (BGS) mapping and previous ground investigation results, this has been confirmed to a depth of at least 4 metres below ground level (m bgl) and comprises of granular materials. Made Ground is also expected to be present locally across the southern part of the installation given the long history of development.
- Superficial geology underlying the installation is comprised of granular Alluvium which is classified as a Secondary A Aquifer.
- The underlying solid geology comprises of Pennine Lower Coal Measures Formation, also classified as a Secondary A Aquifer.
- Previous ground investigations did not record shallow groundwater levels, although groundwater is expected to be in hydraulic continuity with the River Don.
- The installation is not within a Drinking Water Safeguard Zone and is not located within a groundwater Source Protection Zone (EA, 2025).
- The installation area has been developed since the early 1900s, and was first labelled as a Confectionery Works in the 1930s. North of the River Don a mill stream associated with a steel works further to the north was present within the site boundary from 1855 to 1981. Historical land use in the vicinity of the installation is dominated by industry associated with metal working. Various historical operations on site have taken place which are no longer present such as storage and use of fuel oil for the boilers.

- A comprehensive site history and conceptual site model have been produced which demonstrate the long-term industrial history of the installation and the potential for legacy contamination to exist. Where available, information from previous ground investigations is provided to indicate conditions prior to the start of the permit.
- The conceptual site model has identified potential pollutant linkages which pre-date the proposed environmental permit variation as well as those associated with the current activities.

The SCR confirms that the installation presents a moderate/low to low risk[1] of future pollution occurring at the installation as a result of the storage and use of raw materials, process materials and wastes under the proposed permit, the management practices and mitigation measures in place are considered to effectively manage the risk of pollutant impacting the identified receptors. On this basis Mondelez do not propose to undertake intrusive investigation to obtain data to set baseline conditions.

[1] CIRIA C552 Contaminated Land Risk Assessment: A guide to good practice

1 Introduction

This document supports the permit application made under the Environmental Permitting Regulations 2016 (England & Wales) (EPR), as amended, to operate the Mondelez Sheffield site which is operated by Mondelez UK Confectionery Production Limited (referred to hereafter as Mondelez).

1.1 EP Regime

This application is being made to operate activities which fall within Schedule 1, Section 6.8 Part A(1) (d)(iii), and Schedule 1, Section 5.4 (a)(ii) of the Environmental Permitting Regulations 2016 (as amended). Products are primarily manufactured from vegetable raw materials, however gelatine, which is classified as an animal raw material, is a constituent of certain products in varying amounts. Effluent pre-treatment is also undertaken, this effluent pre-treatment activity falls within Schedule 1, Section 5.4 (a)(ii) of the Environmental Permitting Regulations 2016 (as amended).

This report uses the term 'installation boundary' to describe the area of operation associated with the permit as defined in the technical description of the main application and outlined by the green line boundary. The wider Mondelez land holding is referred to and delineated where appropriate. The proposed installation boundary is shown on Figure A1 of this SCR.

1.2 Site Condition Report (SCR)

The purpose of this SCR is to describe and record the condition of the land and groundwater within the installation on commencement of the permitted activities and to demonstrate that land and groundwater are protected during the lifetime of the permit, ultimately so that the site is in a 'satisfactory state' when the permit is surrendered.

As detailed in the EA's Technical Guidance Note, H5 (2013) the intention is that this is demonstrated by the following sequence of events:

- Producing the application part of the SCR when applying for an environmental permit (or permit variation);
- Updating the SCR during the lifetime of the permit; and
- Completing the surrender SCR and submitting the full completed SCR when applying to surrender the permit.

This SCR gathers information from available sources to provide supporting information against which any future surrender can be assessed. The report will discuss land use history, activities undertaken by Mondelez during their long-term ownership, present available historical site investigation information, and discuss the potential for permitted activities to impact on land quality given the containment, mitigation and management systems in place.

2 Site details

2.1 Site location

Table 1 Site details

Aspect	Details
Address	Mondelez UK Confectionery Production Limited, PO Box 80, Livesey Street, Sheffield, S6 2AP (Figure A1).
NGR	433760, 390300 [2]
Details of facility	The Mondelez Sheffield site, which manufactures a range of confectionery products, is located c. 3 km to the north west of Sheffield city centre. The proposed installation boundary covers c. 5.6 hectares, of which c. 2.4 hectares are to the north, and c. 3.2 hectares to the south of the River Don, which splits the site. The river flows generally towards the south east at this location. The area to the south of the River Don houses the main production areas, and the area to the north of the river is used for storage and effluent pre-treatment. The land within the installation is broadly level at an elevation of around 61-62 m above Ordnance Datum (maOD).
Main Facility Components	The principal activities currently undertaken within the installation, as described in detail in the permit application include: • Raw material and process materials storage; • Hard mints production; • Soft mints production; • Jellies production; • Continuous liquorice process (CLP); • Cleaning of production areas; • Finished product packing; • Heating including gas fired steam raising boilers; • Refrigeration and cooling processes; • Waste storage and handling; and • Effluent pre-treatment. The location and layout of these activities is illustrated in Figure A2.
Surrounding land uses	Land beyond the installation boundary comprises a variety of land uses as follows: • Commercial / industrial property adjacent to the north with residential property c. 350 m to the north east. • Commercial / industrial property and vegetated scrub land with allotment gardens and residential property beyond (c. 300m east), elevated above the installation at between 118 maOD and 135 maOD. A railway line is located c. 70m east at the closest point. Approximately 120 m to the east is a travellers site, on Club Mill road. • To the south is the Owlerton Stadium (greyhound racing) with commercial / industrial and educational (Sheffield College) property beyond. • Commercial / industrial property adjacent to the west, including Hillsborough sports centre, with residential property c. 165 m beyond, at the closest point. • The River Don splits the site and is therefore often adjacent to the installation as shown on Figure A2.

[2] Based on an approximate mid-point of the proposed installation boundary.

2.2 Identification of Potentially Polluting Substances

An assessment of the pollution potential of substances associated with the activities forming the permit application has been made based upon their properties, toxicity and the volume stored. A stage 1 to 3 Relevant Hazardous Substances (RHS) assessment is presented as Appendix 4, the results of the RHS assessment are referenced in the following sections as appropriate.

Materials have been screened according to their potential to cause concern in respect of future soil and/or groundwater contamination. The potential to pollute, and for any contaminant linkage pathway to be realised, is influenced by the physio-chemical nature of the substance; materials of low mobility are less likely to be transmitted through soil or groundwater if released, and materials of low persistence in soil and groundwater may be of lower impact with regards identified receptors. This approach has been used in the RHS assessment (Appendix 4) and is summarised in Table 2 (Raw Materials / Process Materials), and Table 3 (Waste Materials) to screen substances of potential concern in relation to their toxicity, mobility or persistence in the soil or groundwater environment. Substances identified as potential pollutants are carried forward into the conceptual site model and risk assessment section. The location of bulk raw materials and process materials storage is illustrated in Figure A4. Waste storage areas are illustrated on Figure A5.

Table 2 Raw materials / process materials associated with the facility and their potential to pollute

Substance (contaminants)	Use	State	Storage arrangements	Toxicity/ fate/ mobility	Potential pollutant?
Glucose syrup	Raw material	Thick viscous liquid	Jellies glucose 1, 60 tonne capacity steel tank located within a building. Location 1 on Figure A4. Bulk delivery is via a fill point within a locked cabinet located over mixed hard surfacing, including block paving and tarmac, served by drainage to sewer.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓
Glucose syrup	Raw material	Thick viscous liquid	Jellies glucose 2, 64 tonne capacity steel tank located within a building. Location 2 on Figure A4. Bulk delivery is via a fill point within a locked cabinet located over mixed hard surfacing, including block paving and tarmac served by drainage to sewer.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓
Glucose syrup	Raw material	Thick viscous liquid	Hard mints and soft mints glucose, 81 tonne capacity steel tank within a concrete bund of approximate capacity 74m^3. The bund is common to the CLP glucose tank (below). Location 3 on Figure A4). Bulk delivery is via a fill point located outside of the bund, over concrete hard standing and served by drainage to sewer.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓
Glucose syrup	Raw material	Thick viscous liquid	CLP glucose, 60 tonne capacity steel tank within a concrete bund of approximate capacity 74m^3. The bund is common to the hard mints and soft mints glucose tank (above). Location 4 on Figure A4). Bulk delivery is via a fill point located outside of the bund, over concrete hard standing and served by drainage to sewer.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓

Substance (contaminants)	Use	State	Storage arrangements	Toxicity/ fate/ mobility	Potential pollutant?
Glucose syrup	Raw material	Thick viscous liquid	CLP glucose day hopper, 18 tonne capacity steel tank/hopper located within a building on the ground floor. Location 5 on Figure A4. Glucose is pumped to the day tank via above ground pipework within the buildings.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓
Glucose syrup	Raw material	Thick viscous liquid	Soft mints glucose day hopper, 1 tonne capacity steel tank/hopper located within a building on the first floor. Location 6 on Figure A4. Glucose is pumped to the day tank via above ground pipework within the buildings.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓
Glucose syrup	Raw material	Thick viscous liquid	Hard mints glucose day hopper, 0.25 tonne capacity steel tank/hopper located within a building on the third floor. Location 7 on Figure A4. Glucose is pumped to the day tank via above ground pipework within the buildings.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓
Sugar	Raw material	Granulated solid	Jellies and soft mints bulk sugar, externally located 100 tonne capacity steel tank/silo with cladding. Location 8 on Figure A4. Bulk delivery is via a fill point located over mixed hard surfacing, including block paving and tarmac served by drainage to sewer.	Solid material, low mobility unless dissolved - readily soluble in water, non toxic but would have a high biological oxygen demand. Readily degradable.	✓

Substance (contaminants)	Use	State	Storage arrangements	Toxicity/ fate/ mobility	Potential pollutant?
Sugar	Raw material	Granulated solid	CLP and hard mints bulk sugar, externally located 100 tonne capacity steel tank/silo with cladding. Location 9 on Figure A4. Bulk delivery is via a fill point located over hard standing. A spill kit station is located adjacent to the fill point and drain covers are in place to seal surface water drains adjacent to the fill point.	Solid material, low mobility unless dissolved - readily soluble in water, non toxic but would have a high biological oxygen demand. Readily degradable.	✓
Flour	Raw material	Powder	Bulk flour, externally located 40 tonne capacity steel tank/silo with cladding. Location 10 on Figure A4. Bulk delivery is via a fill point located over hard standing. A spill kit station is located adjacent to the fill point and drain covers are in place to seal surface water drains adjacent to the fill point.	Solid material, low mobility, non-toxic, not soluble in water, readily degradable.	✓
Flour	Raw material	Powder	CLP flour day hopper, 1 tonne capacity steel tank/hopper located within a building on the third floor. Location 11 on Figure A4. Flour is blown to the day hopper via above ground pipework within the buildings.	Solid material, low mobility, non-toxic, not soluble in water, readily degradable	✓
Treacle	Raw material	Thick viscous liquid	60 tonne capacity steel tank/silo externally located within a concrete bund of approximate capacity 44m^3. Location 12 on Figure A4. Bulk delivery is offloaded at a remote fill point located over a stainless steel trough and concrete yard served by effluent drains.	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	✓

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Substance (contaminants)	Use	State	Storage arrangements	Toxicity/ fate/ mobility	Potential pollutant?
Diesel	Fuel for sprinkler system and admin block standby generator	Liquid	1,000 litre IBC located within a metal cabinet over integral drip tray. Location 13 on Figure A4 Bulk delivery is direct from tanker into the IBC within the cabinet which is located on an area of hard standing served by drains to sewer.	Mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Diesel	Fuel for sprinkler system pump	Liquid	<250 litre day tank integral to firewater pump within a building over a concrete floor. Location 14 on Figure A4 The tank is topped up by hand from a jerry can which is filled from the IBC (above).	Mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Packaged raw materials (acid, caustic, colours, flavours, additives)	Raw materials	Liquid	Multiple small containers c. 10 to 25 litres and IBCs either within locked refrigerated containers or located over drip trays within buildings.	Mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Packaged raw materials (starch, sugars, gelatine, colours, coconut)	Raw materials	Solid	Multiple small containers (bags and sacks) located within buildings.	Limited mobility, potentially soluble, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Packaging (cardboard), consumables (glue, paper, plastic etc)	Packaging	Solid	Stacked on racks or in c. 20kg sacks on pallets.	Solid material, low mobility, non-toxic, not soluble in water.	×
Cleaning products (acid, caustic flammables)	Cleaning	Liquid	Multiple small containers c. 10 to 25 litres either within locked containers or located over drip trays within buildings.	Hazardous material, mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss	✓

Substance (contaminants)	Use	State	Storage arrangements	Toxicity/ fate/ mobility	Potential pollutant?
Biocide (oxidising, chlorine based)	Cooling water treatment	Liquid	200 litre drum located within building (LAN plant room)	Toxic, mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Corrosion Inhibitor (acid based	Cooling water treatment	Liquid	200 litre drum located within building (LAN plant room)	Toxic, mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Caustic (sodium hydroxide solution (32%))	Effluent pH balancing	Liquid	Externally located 5m^3 capacity integrally bunded tank located within a concrete bund of 137m^3 capacity shared with two effluent tanks and a chemical tank (acid). Location 22 on Figure A4. Bulk delivery is via pipework; fill points located within the main tank bund. Drain covers are in place to seal surface water drains adjacent to the fill point.	Mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Sulfuric acid solution (98%)	Effluent pH balancing	Liquid	Externally located 5m^3 capacity integrally bunded tank located within a concrete bund of 137m^3 capacity shared with two effluent tanks and a chemical tank (caustic). Location 23 on Figure A4. Bulk delivery is via pipework; fill points located within the main tank bund. Drain covers are in place to seal surface water drains adjacent to the fill point.	Mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓

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Substance (contaminants)	Use	State	Storage arrangements	Toxicity/ fate/ mobility	Potential pollutant?
Glycol (monopropylene glycol)	Cooling systems	Liquid	22,000 litre capacity steel buffer tank. Location 21 on Figure A4. The tank is lagged but unbunded and located within a building over a concrete floor. The tank is periodically topped up, glycol is delivered in an IBC and diluted with towns water in a 500 litre capacity make up / mixing vessel prior to transfer to the tank. Glycol is pumped from the tank via above ground pipework to the cooling equipment.	Relatively low toxicity but polluting to soil, groundwater and watercourses in the event of a significant spillage/loss. Mobile, readily soluble and readily degradable.	✓
Salt	Boiler water softening	Liquid (brine solution)	Up to a maximum of 1,500 kg.	Mobile, potentially polluting to watercourses in the event of a significant loss.	✓
Boiler water treatment (30 – 50% sodium bisulphite and <0.025% cobalt sulphate)	Boiler house water treatment (oxygen scavenger)	Liquid	379 litre capacity tank located internally. Location 24 on Figure A4. The tanks are refilled by pumping from a drum/mobile container.	Polluting to soil, groundwater and watercourses in the event of a spillage/loss	✓
Boiler water treatment (polymer)	Boiler house water treatment (corrosion control & maintains heat transfer)	Liquid	379 litre capacity tank located internally. Location 24 on Figure A4. The tanks are refilled by pumping from a drum/mobile container.	Non toxic, low BOD and COD.	×
Boiler water treatment (a blend of 30 – 50% sodium hydroxide and 10 – 20% potassium hydroxide)	Boiler house water treatment (maintain alkalinity and sludge control)	Liquid	379 litre capacity tank located internally. Location 24 on Figure A4. The tanks are refilled by pumping from a drum/mobile container.	Polluting to soil, groundwater and watercourses in the event of a spillage/loss	✓

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Substance (contaminants)	Use	State	Storage arrangements	Toxicity/ fate/ mobility	Potential pollutant?
Transformer oils (mineral oil and synthetic oil) – no polychlorinated biphenyls (PCBs)	Coolant and insulating oils within electrical transformers.	Liquid	Between 580 and 1,055 litres held in sealed electrical transformers, replaced as required by electrical / specialist contractors. Nine separate locations across the installation.	Polluting to soil, groundwater and watercourses in the event of a spillage/loss	✓
Bottled gasses (e.g. acetylene, oxygen, propane, methane).	Used for maintenance work.	Gas	Cylinders and bottles.	Gaseous state, therefore non-polluting to soil, groundwater and watercourses in the event of a spillage/loss.	×
Refrigerant gas	Used in cooling systems	Gas	Within closed refrigerant systems	Gaseous state, therefore non-polluting to soil, groundwater and watercourses in the event of a spillage/loss.	×
Miscellaneous maintenance chemicals (various).	Small amounts of various aerosols, oils, grease etc. used for maintenance work.	Liquid, grease gas.	Stored in workshop hazardous substances cupboards.	Polluting to soil, groundwater and watercourses in the event of a spillage/loss	✓

Table 3 Waste materials and potential to pollute

Waste type	Nature of material	Storage arrangements and disposal method	Toxicity/ fate/ mobility	Potential pollutant?
Process effluent	Hazardous, liquid	2x Externally located spiral wound polyethylene (PE100 HDPE) 91m^3 capacity tanks located within a shared concrete bund (also shared with two chemical tanks (acid and caustic)) with a capacity of 137m^3. Locations 1 and 2 on Figure A5. After treatment effluent is discharged to public sewer under consent from the utility provider.	Polluting to soil, groundwater and watercourses in the event of a spillage/loss, mobile.	✓

Waste type	Nature of material	Storage arrangements and disposal method	Toxicity/ fate/ mobility	Potential pollutant?
Process effluent	Hazardous, liquid	Four effluent sumps, one for each manufacturing area (CLP, soft mints, jellies and hardmints) continuously collect effluent (when being generated) for pumping to either the ETP or, for hard mints, collected by tanker for off-site treatment and disposal. Location 18 (x4) on Figure A5.	Polluting to soil, groundwater and watercourses in the event of a spillage/loss, mobile.	✓
Waste oil	Hazardous, liquid	Stored in a 1,000 litre IBC located externally on a drip tray in the western yard at location 3 and Figure A5. Waste oil is decanted manually into the IBC from small containers. The storage is located on mixed hard surfacing, including block paving and tarmac. Collected by approved waste contractor for off-site disposal	Polluting to soil, groundwater and watercourses in the event of a spillage/loss, mobile.	✓
General waste, plastic, cardboard, packaging.	Non-hazardous, solid	Dedicated skips and smaller containers located externally in the western yard, eastern yard and south of the Ritz building. Locations 4, 7, 8, 10 and 16 on Figure A5. Collected by approved waste contractor for off-site disposal	Solid material, limited mobility.	×
Waste electronic and electrical equipment (WEEE)	Hazardous, solid	Stored in designated container in the western yard at location 5 on Figure A5. Collected by approved waste contractor for off-site disposal	Solid material, low mobility although possible leaching of contaminants.	✓
Waste fluorescent tubes	Hazardous, solid	Stored in designated container in the western yard at location 6 on Figure A5. Collected by approved waste contractor for off-site disposal	Solid material, low mobility although possible leaching of contaminants.	✓

Waste type	Nature of material	Storage arrangements and disposal method	Toxicity/ fate/ mobility	Potential pollutant?
Empty containers (oil spray cans, additives etc)	Hazardous, solid with liquid residues	Stored in dedicated areas south of the Ritz building and in the western yard at locations 9 and 11 on Figure A5. Collected by approved waste contractor for off-site disposal	Solid material, low mobility although possible leaching of contaminants.	✓
Hazardous waste (oil containers, colours, flavours and acids (CFA))	Hazardous liquids and empty containers with liquid residues	Stored in a dedicated hazardous waste area south of the Ritz building in multiple containers and IBCs. Location 11 on Figure A5. Collected by approved waste contractor for off-site disposal	Potentially mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	✓
Organic / food waste	Non-hazardous, solid	Stored in large covered skips in the western yard and central yard at locations 12 and 13 respectively on Figure A5. Collected by approved waste contractor for off-site disposal	Solid material, low mobility although possible leaching of contaminants.	✓
Metals	Non-hazardous, solid	Stored in designated skip in the eastern yard at location 14 on Figure A5. Collected by approved waste contractor for off-site disposal	Solid material, low mobility although possible leaching of contaminants.	✓
Wood	Non-hazardous, solid	Stored in designated skip in the eastern yard at location 15 on Figure A5.	Solid material, low mobility.	✗
Temporary construction waste	Non-hazardous, solid	Stored in designated skip at location 17 on Figure A5.	Solid material, low mobility, although possible leaching of contaminants.	✓

All waste materials are stored in accordance with the Mondelez Environmental Management System.

2.3 Site drainage

Uncontaminated surface water runoff (from roofs and roadways) is discharged into the River Don at a nine locations as shown on Figure 4 of the main application.

Process effluent from production areas is collected in four below ground effluent sumps, one for each manufacturing area (CLP, soft mints, jellies and hardmints). From the sumps the effluent is then pumped via overland pipes to the on-site ETP or, in the case of hard mints, collected by tanker for off-site treatment and disposal. The on-site ETP carries out initial treatment (balancing and pH correction) prior to discharge to mains sewer for treatment at the local waste water treatment works. Figure 4 of the main application shows the effluent drainage system and discharge points to sewer.

In case of an emergency (e.g. pumping failure) effluent from the jellies sump, CLP sump, soft mints sump and hard mints sump can weir over and discharge directly to sewer (thereby bypassing the ETP / tankered effluent route). This does not occur in normal circumstances but the facility to do so has been retained in case of emergency circumstances. This prevents the sumps from overtopping which would otherwise have the potential to lead to contamination of surface water drains or the River Don.

Other areas of the installation, not served by surface water drains or effluent drains, where materials are handled/stored, or small volumes of cleaning effluent are generated (from dry process areas) are separately drained to mains sewer, as shown on Figure 4 of the main application.

Foul drainage (domestic type) is discharged direct to mains sewer for treatment at the local waste water treatment works.

2.4 Surfacing

The majority (>95%) of the installation is hard surfaced (buildings/structures, roadways and yards), the remainder is soft surfaced (landscaped or gravel). The hard surfacing on roadways and yards within the installation is a combination of concrete, tarmac (impermeable) and block paving (potentially permeable). Hard surfacing was observed to be generally in good condition with some areas showing cracks. Site surfacing within the installation area is illustrated on Figure A3.

2.5 Electrical transformers and sub-stations

There are ten electricity substations and transformers within the installation, six contain mineral oils, three contain synthetic oils and one contains no oils (cast resin). The substations and transformers do not contain polychlorinated biphenyls (PCBs), although PCBs may have been present historically. Mondelez are currently implementing a programme to replace old transformers with new transformers that use amorphous metal transformer (AMT) technology, primarily to provide energy efficiency benefits.

3 Site History

Ordnance Survey (OS) historical maps have been reviewed to provide information relating to the historical development of the installation and surrounding area. The historical maps are provided in Appendix 2. In addition, other sources of information have been used including site records, drawings and anecdotal evidence.

The summary of land condition within this report places emphasis on the operational areas within permit installation boundary and outlines potentially contaminative historical land uses or sensitive land uses within the installation and in the immediately surrounding area. It will discuss land use history, activities undertaken by Mondelez (and their forerunner companies) during their long-term ownership of the site, present site investigation information (where available), and discuss the potential for the proposed permit activities to impact on land quality given the containment, mitigation and management systems in place. This will provide a robust SCR and set a baseline against which any future permit surrender can be assessed.

3.1 Historical land use

Historical Ordnance Survey (OS) maps for the installation and surrounding area are available between 1855 and 2024; these have been reviewed and the findings are presented in Table 4, the maps are provided in Appendix 2. Descriptions of 'on-site' refer to areas situated within the proposed installation boundary[3]. All other areas of the Mondelez landholding, and the wider locale, are 'off-site'.

In addition to the historical OS mapping other information gathered during site reconnaissance and interviews with site personal identified supplementary site specific historical features which are potential sources of pollution, these are shown on Figure A6 and summarised as follows:

- Fuel oil storage and use associated with the boiler house (3x tanks – 87,976 litres, 64,521 litres and 175,707 litres), decommissioned and removed in 2023.
- Former effluent treatment area in the eastern yard. Decommissioned and demolished early 2000s.
- Former bioreactor (Advetec) for treatment of food waste (48,040 bunded tank) in central yard. Decommissioned and removed.
- Former effluent tanks (x8) (Advetec) with total combined capacity of 19,500 litres in western yard. Decommissioned and removed.
- Former caustic storage near effluent sumps (2x 2,000 litres (hard mints and CLP sumps) and 1x 1,700 litres (jellies sump). Decommissioned and removed.
- Former raw materials storage located to the south of the Ritz Building (4x bunded sunflower oil tanks, 1x sugar silo, and 1x flour silo). Decommissioned and removed early 2020s.

In addition to the specific features above there has also been various construction and demolition of buildings across the site over its lifetime.

[3] The boundary shown on the historical mapping may cover a slightly different area than the actual installation boundary and as such should not be used to show an accurate representation of the installation boundary.

Table 4 Historical map review

Historical Map	On Site	Off Site
1855 (1:10,560)	The site is occupied by fields and is bisected by the River Don. To the north of the River Don there is an un-labelled linear feature cutting through the northern area in a generally north west to south east orientation. In the north western corner of the land to the south of the River Don a feature is shown connecting to the River Don – this is likely to be the surface water overflow channel from the Hillsborough Park pond to the west.	Significant features in the vicinity of the site are as follows: • Wardsend Steel Works c.70 m to the north west • Tan Yard c.240 m to the north • Railway line 80 m to the east • Old quarries (sandstone) c.140 m (at closest point) to the north east and east • Owlerton Rolling Mill c.160 m to the south east
1890 (1:10,560) 1892 (1:2,500)	The linear feature in the northern area is coloured blue, identifying it as a water channel connecting the off-site Wardsend Steel Works to the River Don. No other significant change.	Significant additional features in the vicinity of the site are as follows: • Gasometer 140 m to the north west • Park View Steel Works c. 30m to the west • Highbridge Forge c.70 m north west
1901-03 (1:10,560) 1905 (1:2,500)	To the south of the River Don there has been some development with a building labelled as Peel Preserving Works with associated Engine House and Chimney shown. No other significant change.	Significant additional features in the vicinity of the site are as follows: • Residential properties adjacent to the south west • Eclipse Saw Mills and Timber Yard c.40 m to the west
1920-24 (1:10,560	The Peel Preserving Works has expanded, with larger buildings present. No other significant change.	Significant additional features in the vicinity of the site are as follows: • Steel Forge adjacent to the south west • Central Wire Works c. 40 m to the west
1934-38 (1:10,560) 1934-37 (1:2,500)	The Peel Preserving Works is now labelled as Confectionery Works and has expanded further. To the north of the River Don (north of the water channel) and in the south eastern area, allotment gardens are shown along with associated small greenhouses. No other significant change.	Significant additional features in the vicinity of the site are as follows: • Steel Wire Works c. 10 m to the south west • Cutlery Forge c. 50 m to the south west • Mineral Water Works c. 90 m to the south west • Embankment created to the south east (north of the River Don)
1948 (1:10,560)	No significant change.	No significant additional features in the vicinity of the site.

Historical Map	On Site	Off Site
1951-52 (1:2,500) 1951-52 (1:250)	Electricity pylons and overhead lines are shown crossing the eastern site area. No other significant change.	No significant additional features in the vicinity of the site.
1956 (1:10,560)	The water channel north of the River Don is labelled as Mill Stream. No other significant change.	No significant additional features in the vicinity of the site.
1966-68 (1:10,560) 1967 (1:2,500)	The allotment gardens now appear as Paths. Outfalls to the River Don are labelled. The Confectionery Works has expanded with additional building to the east and the south, including tennis courts labelled in the eastern area south of the River Don. The surface water overflow channel from Hillsborough Park now appears to be at least partially culverted. No other significant change.	Significant additional features in the vicinity of the site are as follows: • A number of the steel works and forges are now just labelled as Works.
1973-78 (1:10,000)	Details for on-site not shown.	No significant additional features in the vicinity of the site.
1981-84 (1:10,000)	Additional buildings have been constructed both north and south of the River Don. The Mill Stream is no longer shown. The overhead electricity lines and pylons are no longer shown on site and appear to have been re-located to the east.	The commercial buildings adjacent to the north are now shown.
2001 (1:10,000)	Outfalls to the River Don are labelled. No other significant change.	No significant additional features in the vicinity of the site.
2003 (1:1,250)	Additional details shown of small buildings and tanks	No significant additional features in the vicinity of the site.
2010 (1:10,000)	No significant change.	No significant additional features in the vicinity of the site.
2024 (1:10,000)	No significant change.	No significant additional features in the vicinity of the site.

4 Environmental Setting

The following information was derived from information contained within previous assessments along with other published sources (referenced within).

4.1 Geology and Hydrogeology

Geological map extracts taken from the BGS digital geological map of Great Britain (BGS, 2024) have been reviewed. A summary of the geological maps is discussed below.

4.1.1 Made Ground

The geological map indicates the presence of Made Ground (non-natural strata placed by human activity) beneath the area of the installation located to the north of the River Don.

Four exploratory holes (BH1 to BH4) excavated in 2024 to support design works for proposed installation of new water storage tanks immediately to the north of the River Don confirmed the presence of Made Ground to 4 m below ground level (bgl), possibly extending to 6 m bgl. The Made Ground was typically described as described granular with varying compositions of gravel (stone and brick fragments) and sand with some clay content, localised layers of ash and coal were observed. The possible Made Ground is described as dark grey silt, sand and gravel, which would also be typical of alluvium.

The geological map indicates the absence of artificial ground beneath the area of the installation located to the south of the River Don. However, given the history of the area with multiple phases of development, it is considered likely that there will be some unmapped artificial deposits present to the south of the River Don. For example it is known that rubble was used to backfill a void when the old effluent treatment plant was demolished. Also, two publicly available BGS boreholes (references SK39SW164 and SK39SW6 both drilled in 1962) located approximately where the boiler house is now, within the installation boundary, describe the presence of Made Ground between the surface and a depth of 3 feet 3 inches (0.99 m) bgl.

4.1.2 Superficial Deposits

Superficial deposits of Alluvium, associated with the River Don, are mapped beneath the whole of the installation area. The alluvium is described as gravel, sand, silt and clay.

Two publicly available BGS boreholes (references SK39SW164 and SK39SW6 both drilled in 1962) located approximately where the boiler house is now, within the installation boundary, describe the Alluvium as loamy clay and boulders (between 3 feet 3 inches (0.99 m) and 7 feet (2.13 m) bgl) overlying loamy clay, river silt and boulders (between 7 feet (2.13 m) and 17 feet (5.18 m) bgl.

The exploratory holes excavated in 2024 describe possible Made Ground underlying the Made Ground. The possible Made Ground description of silt, sand and gravel is also indicative of Alluvium and extends to 6.0m bgl which is broadly continuous with the depth of the Alluvium encountered on the other side of the River Don, in the BGS boreholes drilled in 1962.

4.1.3 Solid Geology

The installation is mapped as being underlain by Pennine Lower Coal Measures Formation, which is described by the BGS (BGS, 2025) as “interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part”. The borehole records from site confirm solid geology from between 17 feet (5.18m) and 6m bgl.

4.2 Previous Investigations and Exploratory Hole Records

Within the installation, there are two publicly available BGS borehole records from 1962 and four other borehole records (BH1 to BH4) available from an investigation undertaken in 2024, which are summarised above. The borehole locations are shown on Figure A7 and the borehole logs are reproduced in Appendix 3.

All of the previous ground investigation borehole records confirm the mapped geology i.e. Made Ground overlying Alluvium which in turn is underlain by solid geology of Lower Coal measures.

The previous investigation borehole logs did not record visual or olfactory presence of contamination, although localised layers of ash and coal were observed within the Made Ground north of the River Don.

4.2.1 Chemical analysis testing of soil

A limited number of soil samples were obtained for laboratory chemical analysis during the 2024 investigation; the focus of the testing was for foundation design and waste classification. The full chemical analysis results are presented in Appendix 5 and provide an indication of ground conditions in the area of Made Ground to the north of the River Don in the vicinity of the ETP, hazardous waste storage area and historical raw materials storage south of the Ritz building.

4.3 Hydrogeology

4.3.1 Aquifer Classification

The superficial geology of Alluvium is classified by the Environment Agency as a Secondary A Aquifer. These are 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.

The solid geology of the Pennine Lower Coal Measures Formation is also classified by the Environment Agency as a Secondary A Aquifer.

4.3.2 Groundwater Quality

The installation is not located within a groundwater Source Protection Zone (SPZ) and is not located within a groundwater drinking water safeguard zone.

4.3.3 Groundwater Abstraction

There is one reported active licenced groundwater abstraction within 500 m of the installation, this is located approximately 90m to the west with water abstracted from the Coal Measures and used for ‘drinking, cooking, sanitary, washing, (small garden) – commercial/industrial/public services.

4.3.4 Groundwater Flooding

The installation is within an area with low to moderate potential for groundwater flooding to occur.

4.3.5 Previous Groundwater Observations

The historical borehole records from 1962 and 2024 do not provide observations on groundwater conditions during drilling. It is anticipated that groundwater within the Alluvium will be in hydraulic continuity with the River Don.

4.4 Hydrology

4.4.1 Surface Water Features

The River Don splits the installation, flowing generally in a south easterly direction at this point, Figure A2 shows the location of the river in the context of the installation.

A small tributary of the River Don is present adjacent to the north eastern part of the installation, flowing generally southwards before its confluence with the Don approximately 100m to the south east of the installation.

It is considered very likely that there will be hydraulic continuity between underlying groundwater and the surface water features.

A culverted watercourse is present beneath the yard in the west of the installation (south of the River Don). The culvert is understood to convey water overflow from the pond located in Hillsborough Park approximately 300 m to the west. The culvert flows beneath the yard in a northerly direction before discharging to the River Don as shown on the site drainage drawing (Figure 4 of the main application), labelled 'water course from park'. The culvert is completely separate from site drainage systems.

4.4.2 Flooding

The EA's Flood Map for Planning (November 2025) shows that the majority of the installation is located within Flood Zone 3 with just a small area south of the River Don located within Flood Zone 2. Flood Zone 3 is defined by the EA as 'Areas shown to be at a 1% (1 in 100) or greater annual probability of flooding from rivers'. Flood Zone 2 is defined as 'Land having between 0.1% - 1% (1 in 100 to 1 in 1000) annual probability of flooding from rivers, and accepted recorded flood outlines.

The EA's map of surface water flooding (November 2025) indicates limited areas, located in low points, which are susceptible to surface water flooding.

Flooding known to have occurred on site due to the River Don channel being exceeded, significant recent flood events which impacted the site are recorded as being June 2007 and November 2019. Mondelez subsequently installed flood defences to be deployed when flood warnings are issued. Further flooding events happened in February and March 2022 during which the flood defences were deployed and flood water was successfully prevented from entering the site.

4.4.3 Surface Water Quality

The EA's catchment data explorer indicates that the site is located within the Upper Don water body catchment, from Little Don to River Loxley confluence[4]. This catchment is designated as heavily modified and received a Moderate ecological status in 2022 (the most recent assignment) and chemical status of Fail in 2019 (the most recent assignment), although it should be noted that all water bodies fail chemical status due to a change in the way the EA assess the data, prior to this change the Chemical status was Good in 2016.

4.4.4 Surface Water Abstractions

The Groundsure report (2024) indicates that there are no active licences for surface water abstraction located within 500m of the installation boundary.

[4] https://environment.data.gov.uk/catchment-planning/WaterBody/GB104027057411

5 Environmental Data and Regulatory Information

A summary of the various regulatory and other environmental data is presented below, based on the data obtained in the Groundsure Enviro+Geo Insight report (Appendix 1).

5.1 Discharge Consents

The Mondelez Sheffield site holds three consents to discharge to the River Don, these consents exist for historic purposes and are no longer required; and surrender is being sought through this application process. There are no other active licenced discharges to controlled waters associated with the installation. Surface water runoff (uncontaminated from roofs and roadways) is discharged to the River Don at nine locations, as described in the main permit application.

Mondelez holds four trade effluent discharge consents as described in the main permit application.

Details of other licenced discharges listed within 500 m of the installation can be found in the Groundsure report (2024) provided in Appendix 1.

5.2 Permitted Industrial Activities / Pollution Prevention and Control

Mondelez Sheffield site holds a permit issued under the Environmental Permitting Regulations 2016 relating to operation of medium combustion plant (operation of three boilers).

There are a number of active and historical Part A(2) and Part B activities listed in the Groundsure report with the 250 m of the installation.

5.3 Pollution Incidents

The Groundsure report records no pollution incidents ((category 1 (major) and category 2 (significant)) within 500 m of the installation boundary.

5.4 Landfills and Waste Management Sites

There are no historical or current landfills recorded within 250 m of the installation.

The Groundsure data (2024) lists a licenced waste site as being present within the installation, however on further inspection it is apparent that this entry relates to a metal recycling site (vehicle dismantler) located approximately 25 m to the east. This metal recycling site also corresponds with a number of listed historical scrap yard entries under historical waste sites. Other historical waste management sites including a scrap and steel stock yard and a vehicle depollution facility are listed approximately 190 m and 230 m north west respectively.

There are six listed activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit (waste exemptions) within 250 m. Whilst one of the waste exemptions is listed as being located on site, no address is provided. Review of the DEFRA online public register (2026) confirms that there are no waste exemptions listed for the Mondelez Sheffield site and no exemptions with the reference number included in the Groundsure Report, it has therefore been assumed that the record shown in the Groundsure report has been erroneously attributed to the site. Further details of these waste exemptions can be found in the Groundsure report provided in Appendix 1.

5.5 COMAH Sites

The Groundsure report (2024) does not list any current or historical Control of Major Accident Hazards (COMAH) sites within 500 m of the installation.

5.6 Contaminated Land Register Entries and Notices

There are no sites on the Contaminated Land register entries or notices within 500 m of the installation.

5.7 Fuel Station Entries

There are no active fuel station entries within 500 m of the installation. There are records of two obsolete petrol stations located approximately 315m north west and 460m south respectively.

5.8 Sensitive Land Use / Environmental Designations

The following sensitive land uses have been identified within 2 km of the installation:

- Three Sites of Special Scientific Interest (SSSI): Neepsend Railway Cutting; Neepsend Brickworks; and Wadsley Fossil Forest are located approximately 570m south east, 1.4km south east, and 1.9km north west of the installation respectively. These SSSIs are designated for their geological importance.
- Two designated Local Nature Reserves (LNRs): Roe Woods and Crabtree Ponds; and Loxey and Wadsey Common are located approximately 1.5km east and 1.8km north west of the installation respectively.
- Two areas of designated Ancient Woodland: Roe Wood; and Beeley Wood West are located approximately 1.5km east and 1.8km north west of the installation respectively.
- A number of Local Wildlife Sites (LWS) are present within 2km, the closest being the ‘Upper River Don: Deeper to Hillsborough’ which relates to the section of the River Don adjacent to the installation. A number of protected species are potentially present within the River Don including brown/sea trout, bullhead, European eel (migratory) and European water vole (see conservation screening report, Appendix 2 of main application).

6 Conceptual Site Model

The guiding principle of the Environmental Permitting Regime is to accept no further deterioration of land during the lifetime of the permit. The aim of the SCR is therefore to develop a conceptual site model (CSM) which identifies past and future potential sources of contamination and assesses the vulnerability of the site and sets a baseline against which any potential future deterioration of site condition can be judged at the point of surrender.

The information presented in previous sections of this report have been collated and evaluated to develop the CSM for the installation. This has been undertaken following procedures outlined in 'Land Contamination: Risk Management (LCRM) published by the EA (EA, 2020) and EA's Technical Guidance Note H5 (2013). The CSM outlines:

- Sources: substances that are capable of causing pollution or harm;
- Pathways: routes by which the contaminant can reach a receptor;
- Receptors: something which could be adversely affected by the contaminant including human health, properties and controlled waters.

The establishment of pollutant linkages and assessment of pollution potential enables pollution prevention measures to be identified which will mitigate any potential environment impacts of the permitted activities.

6.1 Sources

A number of potential sources of contamination have been identified on site and in the surrounding area which may have impacted soil and groundwater quality in the areas where the permitted activities will take place, both historically, and which could potentially impact land quality in the future. The following potential sources of contamination have been identified within 250 m of the installation extension:

6.1.1 Historical

On-Site:

- Historical agricultural land-use site wide;
- Long term commercial / industrial use site wide;
- Former raw materials associated with the Ritz Building north of the river;
- Former ETP south of the river;
- Former Advetec bioreactor and effluent tanks south of the river;
- Former fuel oil for boilers south of the river;
- Transformers;
- Phases of construction and demolition site wide; and
- Infill / Made Ground (former ETP and north of river).

Off-site:

- Activities associated with the surrounding commercial/ industrial land use.
- Made Ground mapped to the north of the River Don extending off-site.

Potential contaminants that may impact soils and groundwater beneath the installation derived from these historical land uses include metals, petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), organic materials, polychlorinated biphenyls (PCBs), Volatile Organic Compounds (VOCs), coolants (glycols) acids, alkalis and asbestos.

6.1.2 Potential Contaminant Sources Associated with Permitted Activities

Potential sources of pollution which are present as a result of activities covered by the scope of this permit application have been outlined in Section 2. These include raw materials and process materials (Table 2) and waste materials (Table 3).

6.2 Pathways and Receptors

- Human health exposure via direct contact with contamination, ingestion of contamination and inhalation of contaminated dust or vapours. For site users and operational staff, building cover, hard standing ground cover or appropriate working procedures are expected to break any potential pathway in respect of this risk. Human health is not a focus of the H5 methodology.
- Human health exposure to potential volatile contaminants (vapours) beneath the site (if present) may impact site users and operational staff via the inhalation pathway. Human health is not a focus of the H5 methodology.
- Leaching and migration of contaminants within shallow soils beneath the site to the underlying Secondary A Aquifer and surface waters. Contaminants may also migrate off-site within groundwater in shallow permeable soils and impact off-site human health receptors via direct contact, ingestion and vapour inhalation pathways, although the primary pathway is likely to be towards surface waters. Contaminants and vapours may also migrate onto site from potential current and historical off-site sources.
- Infrastructure, including pipelines and drains, are considered to be a potential pathway to receptors.
- Ecologically designated sites and potential habitats are considered receptors.

6.3 Vulnerability of the Site to Contamination

Sensitive aspects of the site setting are identified in Table 5.

Table 5 Sensitivity of environmental receptors in the vicinity of the site

Receptor Type	Receptor(s)	Sensitivity	Reasoning
Groundwater	Secondary A Aquifer underlying the whole site (superficial Alluvium and solid geology)	Moderately High	Installation is underlain by a Secondary A Aquifer. Intrusive investigation records do not confirm the depth to groundwater, but it is anticipated to be in hydraulic continuity with the River Don and expected to provide base flow to the river. The installation is not located within a groundwater Source Protection Zone although there is an active licensed groundwater abstraction located approximately 90m to the west.
Surface water	The River Don and a tributary of the River Don	High	The River Don is located directly adjacent to the installation boundary, splitting the site and the tributary is adjacent to the north east of the installation. There are no licensed surface water abstractions recorded within 500 m. Surface water quality monitoring indicates a requirement for improvement at a catchment level.
Ecological	Sites of Special Scientific Interest (SSSI) Local Nature Reserves (LNR) Ancient Woodland Local Wildlife Sites (LWS)	Moderately High	The River Don adjacent the site is a LWS with the potential to support protected species. Other statutory designated sites are located a considerable distance from the site, the closest SSSI is approximately 570 m to the south east and is cited for geological interest.

6.4 Assessment of Pollution Potential from Installation Activities

An environmental risk assessment in line with H1 guidance[5] has been completed to identify the possibility of land or groundwater pollution from facility activities to impact the sensitive environmental receptors identified in Table 5. This is presented in Table 6.

[5] Horizontal Guidance Note H1. V2.1. Environment Agency Dec 2011 (Withdrawn 1/2/2016)

Table 6 H1 risk assessment of pollution potential from activities within the installation

Potentially Polluting Substance Relevant System / Activity			Managing the risk	Assessment of Risk		
Hazard	Pathway	Receptor	Pollution prevention measures	Probability	Consequence	Overall Risk
Failure of a raw material or process material bulk storage tank: *glucose syrup, sugar, treacle (low mobility).*	Infiltration / run-off	Land, surface water groundwater	Limited mobility materials. All tanks are subject to periodic inspections and maintenance. Tanks containing liquids include secondary containment bunds or are located within buildings. Regular check on condition and functioning of gauges, level floats and alarms. All tanks are located in areas of hard standing with most areas served by contained drainage to sewer or ETP. A spill response and accident management plan is in place.	Unlikely	Impact on soil and/or groundwater and/or surface water quality [Medium]	Low risk
Failure of a raw material or process material bulk storage tank: *acid, caustic, glycol (higher mobility / liquid)*	Infiltration / run-off	Land, surface water groundwater	All tanks are subject to periodic inspections and maintenance. Tanks include secondary containment bunds or are located within a building. Regular check on condition and functioning of gauges, level floats and alarms. All tanks are located in areas of hard standing. A spill response and accident management plan is in place.	Low likelihood	Impact on soil and/or groundwater and/or surface water quality [Medium]	Moderate / low risk

Potentially Polluting Substance Relevant System / Activity			Managing the risk	Assessment of Risk		
Hazard	Pathway	Receptor	Pollution prevention measures	Probability	Consequence	Overall Risk
Failure of containment / management practices during bulk tank filling: *glucose syrup, sugar, treacle (low mobility).*	Infiltration / run-off	Land, surface water groundwater	Limited mobility materials. Fill points are located over hard standing or containment trough with most areas served by contained drainage to sewer or ETP. Activity undertaken by approved contractors and supervised by Mondelez staff. Spill kits are available in the vicinity of fill points. Staff are trained in the use of spill kits. Management procedures and standard operating procedures are in place to prevent spills and leaks. High level alarms. Rapid manual intervention in the event of a failed connection or hose. A spill response and accident management plan is in place.	Unlikely	Impact on soil and/or groundwater and/or surface water quality [Medium]	Low risk
Failure of containment / management practices during bulk tank filling: *acid, caustic, glycol (higher mobility / liquid).*	Infiltration / run-off	Land, surface water groundwater	Fill points located within the main tank bund (where present) . Activity undertaken by approved contractors and supervised by Mondelez staff. Spill kits are available in the vicinity of fill points. Staff are trained in the use of spill kits. Management procedures and standard operating procedures are in place to prevent spills and leaks. High level alarms. Rapid manual intervention in the event of a failed connection or hose. A spill response and accident management plan is in place.	Low likelihood	Impact on soil and/or groundwater and/or surface water quality [Medium]	Moderate / low risk

Potentially Polluting Substance Relevant System / Activity			Managing the risk	Assessment of Risk		
Hazard	Pathway	Receptor	Pollution prevention measures	Probability	Consequence	Overall Risk
Failure of raw materials and process materials storage (small and intermediate containers): *CFA, acid, caustic.*	Infiltration / run-off	Land, surface water groundwater	No individual large bulk tanks. All storage is on hard standing within buildings. Spill kits are available in storage areas. Staff are trained in the use of spill kits. Management procedures and standard operating procedures are in place to prevent spills and leaks.	Unlikely	Impact on soil and/or groundwater and/or surface water quality [Medium]	Low risk
Failure of maintenance / cleaning materials storage (small and intermediate containers): *water treatment chemicals, acid, caustic oils, grease.*	Infiltration / run-off	Land, surface water groundwater	No individual large bulk tanks. All storage is on hard standing within buildings. Spill kits are available in storage areas. Staff are trained in the use of spill kits. Management procedures and standard operating procedures are in place to prevent spills and leaks.	Unlikely	Impact on soil and/or groundwater and/or surface water quality [Medium]	Low risk
Spillage / loss of diesel containment associated with standby generator / sprinkler pumps – during storage, use or tank refilling: *diesel*.	Infiltration / run-off	Land, surface water groundwater	Diesel storage tank situated within locked bunded container in an area of hard standing served by drains to sewer. Day tank for sprinkler pumps contained within building. Tank filling activity is a manual operation undertaken by approved contractors and supervised by Mondelez staff. Spill kits are available in the vicinity of diesel storage. Staff are trained in the use of spill kits. Management procedures and standard operating procedures are in place to prevent spills and leaks. Tanks are subject to periodic inspections and maintenance. Regular check on condition and functioning of gauges and level floats.	Low likelihood	Impact on soil and/or groundwater and/or surface water quality [Medium]	Moderate / low risk

Potentially Polluting Substance Relevant System / Activity			Managing the risk	Assessment of Risk		
Hazard	Pathway	Receptor	Pollution prevention measures	Probability	Consequence	Overall Risk
Failure of waste storage containment: *solid wastes organic / food wastes*.	Infiltration / run-off	Land, surface water groundwater	Solid materials so limited mobility. Waste storage in dedicated areas located on hard standing within appropriate containers. Management procedures and standard operating procedures are in place to prevent spills and leaks. Waste storage areas are regularly inspected and any issues immediately rectified. A spill response plan is in place.	Unlikely	Impact on soil and/or groundwater and/or surface water quality [Mild	Very low risk
Failure of waste storage container or tank / containment measure: *waste oil, liquid wastes*.	Infiltration / run-off	Land, surface water groundwater	Waste storage in dedicated areas located on hard standing within appropriate containers. Spill kits available where liquid waste is stored. Staff are trained in the use of spill kits. Management procedures and standard operating procedures are in place to prevent spills and leaks. Waste storage areas are regularly inspected and any issues rectified. A spill response plan is in place.	Low likelihood	Impact on soil and/or groundwater and/or surface water quality [Medium]	Moderate / low risk
Failure of process effluent storage tanks at the ETP: *process effluent*.	Infiltration / run-off	Land, surface water groundwater	Tanks are located within a bund. Tanks and bund are subject to periodic inspections and maintenance. Regular check on condition and functioning of gauges, level floats and alarms. A spill response and accident management plan is in place.	Unlikely	Impact on soil and/or groundwater and/or surface water quality [Medium]	Low risk

Potentially Polluting Substance Relevant System / Activity			Managing the risk	Assessment of Risk		
Hazard	Pathway	Receptor	Pollution prevention measures	Probability	Consequence	Overall Risk
Failure of above ground pipes transferring process effluent: *process effluent.*	Infiltration / run-off	Land, surface water groundwater	Planned maintenance and inspection programme to ensure line integrity is maintained. Pipework crossing the River Don includes isolation valves, containment and an alarm system to prevent and detect leaks. A spill response and accident management plan is in place.	Low likelihood	Impact on soil and/or groundwater and/or surface water quality [Medium]	Moderate / low risk
Failure of subsurface drains and/or sumps transferring process effluent (deterioration / cracks releasing relatively small volumes): *process effluent.*	Infiltration	Land, surface water groundwater	Routine site maintenance and inspection procedures. Continuous effluent monitoring at sumps. If concerns are noted regarding the integrity of sumps and below ground pipework, this will be investigated promptly and the necessary remedial action taken.	Likely	Impact on soil and/or groundwater and/or surface water quality [Mild]	Moderate / low risk

Table 7 Risk assessment methodology

Consequence	Severe	Short-term (acute) risk to human health likely to result in "significant harm" as defined in the Environmental Protection Act, Part IIA. Short-term risk of pollution of sensitive water resource (note: Water Resources Act contains no scope for considering significance of pollution). Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definitions of ecological systems within the Circular on Contaminated Land, Defra, 2006)
	Medium	Chronic damage to Human Health ("significant harm" as defined in Defra, 2006). Pollution of sensitive water resources (note: Water Resources Act 1991 contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem. (note: the definitions of ecological systems within Circular on Contaminated Land, Defra, 2006)
	Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ("significant harm" as defined in the Circular on Contaminated Land, Defra, 2006). Damage to sensitive buildings/services or the environment
	Minor	Harm, although not necessarily significant, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.). Easily repairable effects of damage to buildings, structures and services.
Probability	High likelihood	There is a contaminant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution
	Likely	There is a contaminant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
	Low Likelihood	There is a contaminant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place, and is less likely in the shorter term.
	Unlikely	There is a contaminant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.
Risk level		

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very high risk	High risk	Moderate risk	Moderate low risk
	Likely	High risk	Moderate risk	Moderate low risk	Low risk
	Low Likelihood	Moderate risk	Moderate low risk	Low risk	Very low risk
	Unlikely	Moderate low risk	Low risk	Very low risk	Very low risk

Risk description	Very high	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to the designated receptor is currently happening. Urgent investigation (if not undertaken already) and remediation are likely to be required
	High	Harm is likely to arise to a designated receptor from an identified hazard. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely in the long term.
	Moderate	It is possible that harm could arise to a designated receptor for an identified hazard. However, if it is either unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk, and to determine the potential liability. Some remedial works may be required in the long term.
	Moderate low	It is possible that harm could arise to a designated receptor for an identified hazard, but it is likely that this harm, if realised, would at worst be mild
	Low	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Source: CIRIA document 552: 'Contaminated Land Risk Assessment; A Guide to good practice'.

The risk assessment indicates that the risk of pollution from activities to be operated within the installation is moderate/low to very low.

A separate Accident Management Plan has been prepared which assesses other accidental / unexpected events which could increase the risk of release of a potential polluting substance e.g. vandalism, flooding(Appendix 10 of the Main Application).

7 Protection of Land and Groundwater During Operation

7.1 Site Operational Controls

The Mondelez Sheffield installation is operated in accordance with an Environmental Management System (EMS) to minimise point source and fugitive emissions to air, water and land. The Mondelez EMS is aligned with the principles of ISO 14001:2015, and comprises a series of corporate-level documented 'standards' (common to all Mondelez sites), supplemented by site-specific documented procedures which describe how the Mondelez standards are implemented at a site level. A planned maintenance and inspection programme is in place to optimise the operation of plant. Control measures specific to the containment of raw and process materials include:

- High level alarms / interlocks / level monitoring on bulk tanks / silos;
- Low permeability surfacing in key process areas;
- Drainage of local process areas and associated hard standing to effluent drains or mains sewer rather than surface waters;
- Secondary and / or tertiary containment;
- Adequate controls for deliveries e.g. spill kits, delivery procedures, fill point drip trays etc.; and
- Planned infrastructure inspection and maintenance programme.

An Accident Management Plan (Appendix 10 of the main application) is also in place to assess risks and identify controls associated with accidents and other unplanned events.

7.2 Waste Handling

EMS procedures specify appropriate measures to ensure compliance with applicable legislation and to control and minimise pollution risks in relation to the generation, storage and disposal of wastes. Controls to minimise environmental risks associated with waste storage, handling and transfer include:

- Waste materials, including effluent, arising from the process are stored within the installation for the minimum period of time, in suitable, fit for purpose containers located on areas of low permeability surfacing having regard to sensitive receptors and potential pathways. Waste containers are clearly labelled with their intended contents and container storage capacities are not permitted to be exceeded. Site housekeeping inspections are undertaken to ensure these standards are maintained.
- Limited quantities of hazardous waste are generated by site activities. This is limited to items such as, waste oil and fluorescent tubes and CFA. Hazardous waste is stored in secure containers, away from sensitive receptors and segregated from other waste types.
- Procedures are in place to ensure waste 'duty of care' requirements are met including ensuring that waste is only removed from site by contractors properly licenced and approved for use and accompanied by a fully completed waste transfer or hazardous waste consignment note. Waste transfer and consignment note records are retained electronically or as paper copies on site. Effective implementation of these procedures is supported by training for Mondelez personnel as appropriate.

7.3 Environmental Monitoring Programme

The objectives of the monitoring programme are:

- To demonstrate that the pollution prevention measures will be inspected, tested and maintained over the lifetime of the permit; and
- To ensure that future pollution to land is not caused by installation activities.

Environmental monitoring of groundwater, surface water, soil and soil vapour is not considered to be required. It is considered that formalised inspection and testing procedures of the pollution prevention infrastructure will be sufficient to control the risk of future pollution from activities with the potential for releases to ground.

7.3.1 Infrastructure

All tanks and vessels are included on inspection programmes and will be:

- Impermeable and resistant to the stored materials;
- Subject to visual inspection for rusting, leakage or other damage; and
- Subject to programmed inspection incorporating visual examinations and, where applicable, non-destructive testing (e.g. ultrasonic thickness measurements as appropriate).

Bunded areas will:

- Be impermeable and resistant to the stored materials;
- Be designed to catch leaks from the tanks or fittings;
- Be subject to regular visual inspection and any contents pumped out or otherwise removed under manual control after checking for contamination; and
- Have a routine programmed inspection of bunds (normally visual but extending to water testing where structural integrity is in doubt).

7.4 Infrastructure Monitoring Programme

Mondelez will formally inspect and maintain site infrastructure in line with the requirements of the site's EMS and Inspection Procedures. This includes a programme of visual inspections by site staff of all tanks and bunds, pipework, drainage and hard standing. All inspections are recorded in a site log and action taken as required. The log also records the work that has been carried out and any other issues noted within the operating period. Table 8 details the infrastructure inspection and testing programme which will continue to be utilised on site. The inspections will be carried out on a frequency defined in maintenance and management procedures and will primarily be visual to identify any signs of corrosion, cracks or other damage.

Table 8 Details of infrastructure inspection and testing

Activity	Specific Activities	Inspection & Testing Details	Frequency
Tanks, bunds and associated pipework	Confectionery production	Visual checks of the tanks, bunds, pipework and connections for any leaks, corrosion or damage. If concerns are noted regarding the integrity of containment infrastructure then further testing will be undertaken as necessary (e.g. ultrasonic thickness measurements, water testing of the bund etc). Remedial action taken as necessary. Tank bunds will be visually checked for accumulated rainwater.	Monthly visual inspections of tanks, bunds and associated infrastructure.
Drainage system - effluent sumps, pumps, pipework and tanks	Transport and treatment of process effluent	Visual checks of the tanks, bunds, pipework and connections for any leaks, corrosion or damage. Remedial action taken as necessary. Tank bunds will be visually checked for accumulated rainwater. The oil / silt / fat interceptor will be visually checked for accumulated silt and presence of oils, fats and cleaned out as appropriate. If concerns are noted regarding the integrity of sumps and below ground pipework, this will be investigated promptly and the necessary remedial action taken.	Weekly visual inspections of ETP assets including tanks, bunds and associated infrastructure. Weekly inspection of effluent sumps / fat traps. Annual inspection of oil interceptors, emptying as required.
Surfacing	All areas within the installation including around bulk storage tanks and fill points.	Areas of hard standing inspected by detailed visual inspection to assess condition, wear, cracks and surface break up. Remedial action taken as necessary.	Weekly Gemba walks of external areas are undertaken by the Production Leadership Team (PLT). This includes consideration of the condition of site surfacing.
Waste Storage	Storage and handling of wastes	Storage areas and containers visually inspected for any leaks or damage. Remedial action taken as necessary.	Weekly Gemba walks of external areas are undertaken by the Production Leadership Team (PLT). This includes consideration of the condition of waste storage facilities.

7.5 Personnel Issues

Personnel responsible for the inspection, testing and maintenance of pollution prevention infrastructure will be trained to an appropriate level to ensure compliance with the infrastructure monitoring programme.

Staff will be trained in the use of spill kits and spillage response procedures as part of the site's Environmental Management System. For further information, reference should be made to the management system summary section of Mondelez's response to 'Question 3d Management systems' on Form B2.

Site contractors are required to work under a permit system, including undertaking risk assessments and implementing controls to minimise pollution risks, as appropriate.

7.5.1 Reporting Procedure

A log of site inspections will be maintained for the life of the permit. Any maintenance or actions identified during inspections will be recorded using the current procedures for environmental incident reporting. Subsequent actions taken (such as repair of damaged structures and leaking containers) will be recorded in the site log.

At time of surrender, the site's inspection and maintenance records are to be made available for inspection by the EA to demonstrate that the containment and risk control mitigation measures have been maintained for the duration of the permit, such that no deterioration of land or water quality has occurred as a result of the site's activities. The evidence will need to show that:

- Measures to protect land and groundwater have worked;
- Pollution incidents that may have affected the land were investigated and remediated; and
- Any risk of pollution by decommissioning has been investigated and remediated.

Statement of Site Condition

The SCR is based on a desk study review of the historical land use, previous ground investigations, and observations made during a site reconnaissance visit. It has confirmed the following ground conditions:

- Made Ground is known to be present in the northern part of the installation, based on BGS mapping and previous ground investigation results, this has been confirmed to a depth of at least 4 m bgl and comprises of granular materials. Made Ground is also expected to be present locally across the southern part of the installation given the long history of construction and development. Historical boreholes identified approximately 1m thickness of Made Ground, plus there is known to be infill material at the location of the former ETP.
- Superficial geological deposits underlying the installation comprise of Alluvium described as gravel, sand, silt and clay. Previous ground investigation results indicate the Alluvium extends to approximately 5 m to 6 m bgl.
- The underlying bedrock geology comprises of Pennine Lower Coal Measures Formation, typically described as interbedded mudstone, siltstone and sandstone. The borehole records from site confirm solid geology from between approximately 5 m and 6 m bgl.
- Previous ground investigations did not record shallow groundwater levels, although groundwater is expected to be in hydraulic continuity with the River Don.
- Given the long-term use of the installation and its surroundings for commercial / industrial use, legacy contamination including metals, organic compounds including petroleum hydrocarbons and poly-aromatic hydrocarbons and asbestos is potentially present and plausible pathways to potential receptors have been identified.
- The proposed installation will result in the storage and use of number of potentially contaminative materials, including, oils and lubricants, glycol, sugars, food colourings, flavours and additives, acid and alkali and waste materials.
- Drainage on site is separated into different streams which include surface water for low risk areas and mains sewer for higher risk areas. Process effluent is captured and pre-treated in the effluent treatment plant prior to being discharged to mains sewer.
- The principal potential receptors for existing and future contamination are considered to comprise operational staff and visitors, soil, groundwater and surface waters (River Don and tributary).
- The permitted activities include a range of containment and management measures which will limit the potential for spills or leaching of pollutants from the installation directly to the underlying soils, groundwater and adjacent surface water.
- It is considered that the permitted activities to be undertaken at the installation will not present a significant risk of pollution or harm due to the various containment measures provided by site infrastructure, management systems and the implementation of a planned preventative maintenance programme. On this basis Mondelez do not propose to undertake intrusive investigation to obtain data to set baseline conditions.

8 References

1. Environment Agency (2025). MagicMap. Accessed from https://magic.defra.gov.uk/MagicMap.html

2. British Geological Survey (2025). Geology of Britain viewer. Accessed from https://mapapps2.bgs.ac.uk/geoindex/home.html

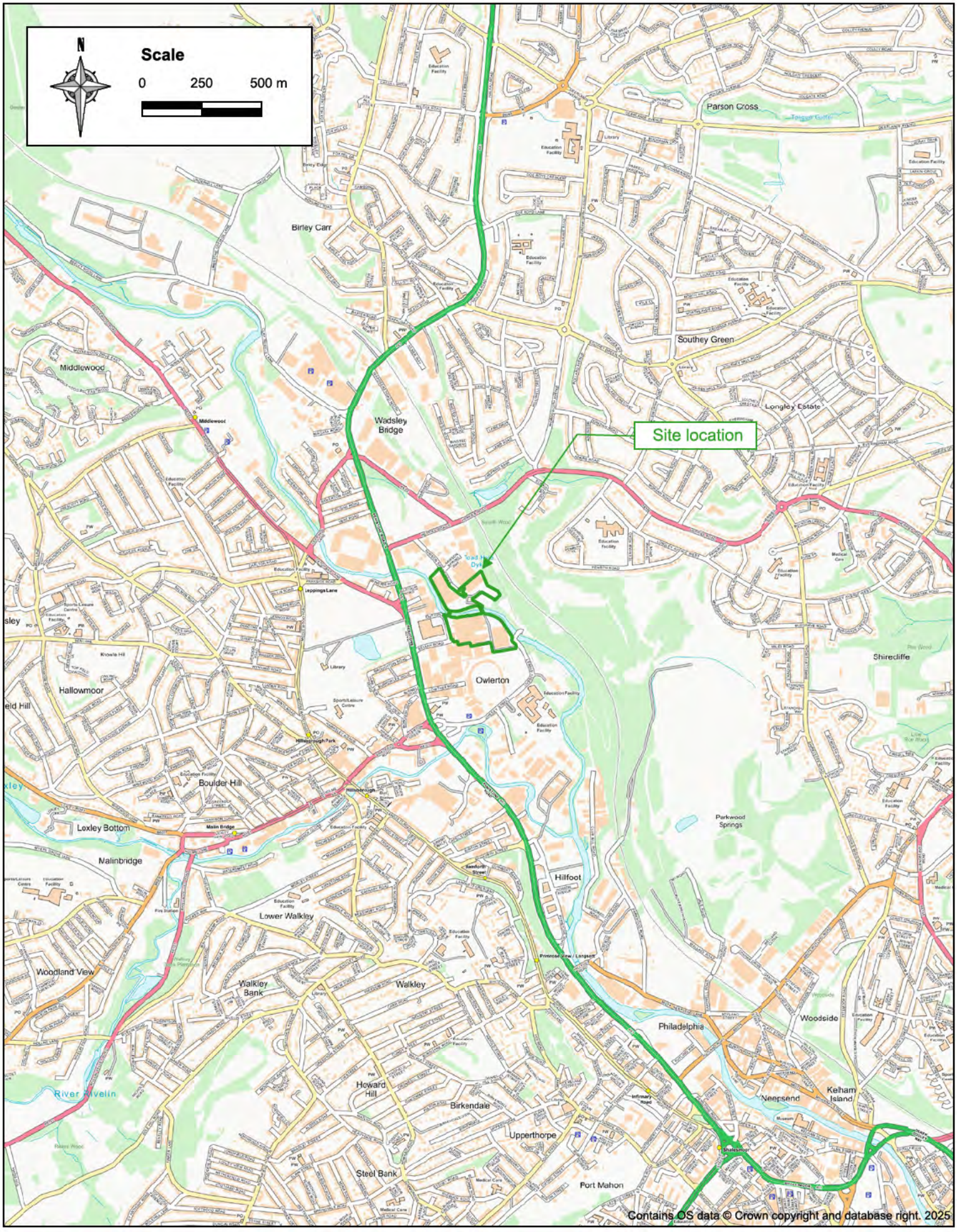
3. Environment Agency (2025). Flood map for Planning. Accessed from https://flood-map-for-planningservice.gov.uk/

Other studies cited:

A. GA Site Investigation Limited (2024): Site Investigation at Mondelez UK Sheffield, Rawson Spring Road, Sheffield, S6 1PD [to support the proposed construction of new firewater tanks and pump].
B. Environment Agency (2024). Nature and Heritage Conservation; Screening Report, Ref: EPR/ZP3722SD/P002 [Reproduced as Appendix 2 of the main application].

Figures

Figure A1 Installation Location



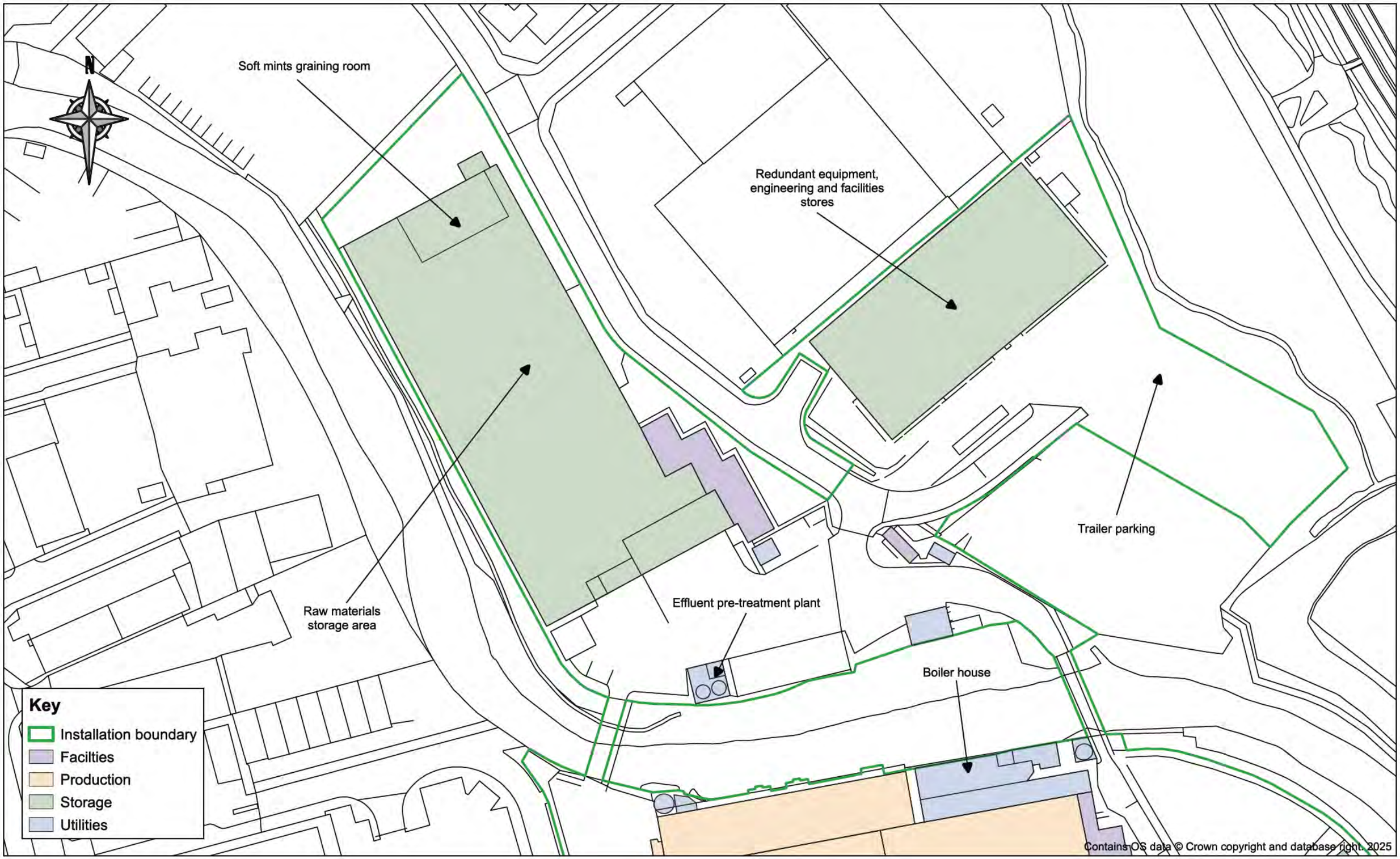
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Project
Mondelez UK Confectionery Production Ltd, Sheffield
Application for Environmental Permit EPR/ZP3722SD

Drawing title
Figure A1: Installation location

Figure A2 Installation Layout



Scale

0 25 50 75 100 m

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Drawing title
Figure A2: Installation layout (Sheet 1 of 2)



Scale

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Mondelez UK Confectionery Production Ltd, Sheffield
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Drawing title
Figure A2: Installation layout (Sheet 2 of 2)

Figure A3 (sheet 1 and sheet 2) Site Surfacing

N

Key

- Buildings
- Hardstanding
- Landscaping (grass/gravel)
- Installation boundary

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Scale

0 25 50 75 100 m

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Drawing title
Figure A3: Site surfacing (Sheet 1 of 2)

N

Key

- Buildings
- Hardstanding
- Landscaping (grass/gravel)
- Installation boundary

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Drawing title
Figure A3: Site surfacing (Sheet 2 of 2)

Figure A4 (sheet 1 and sheet 2) Bulk Storage

No	Storage	Capacity
14	Diesel tank – fire water pump	< 250 litres
15	Liquid raw materials (acid, caustic, cleaning products flamables)	Multiple IBCs and smaller containers located over drip trays
16	Solid raw materials (starch, sugars, gelatine, colours)	Multiple bulk bags and smaller sacks
23	Effluent treatment acid tank	5 m3
22	Effluent treatment caustic tank	5 m3
24	Water treatment chemicals	3 x 379 litres

N

15

16

23

22

24

14

Key

- Bulk storage locations
- Installation boundary

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Scale

0 20 40 60 80 100 m

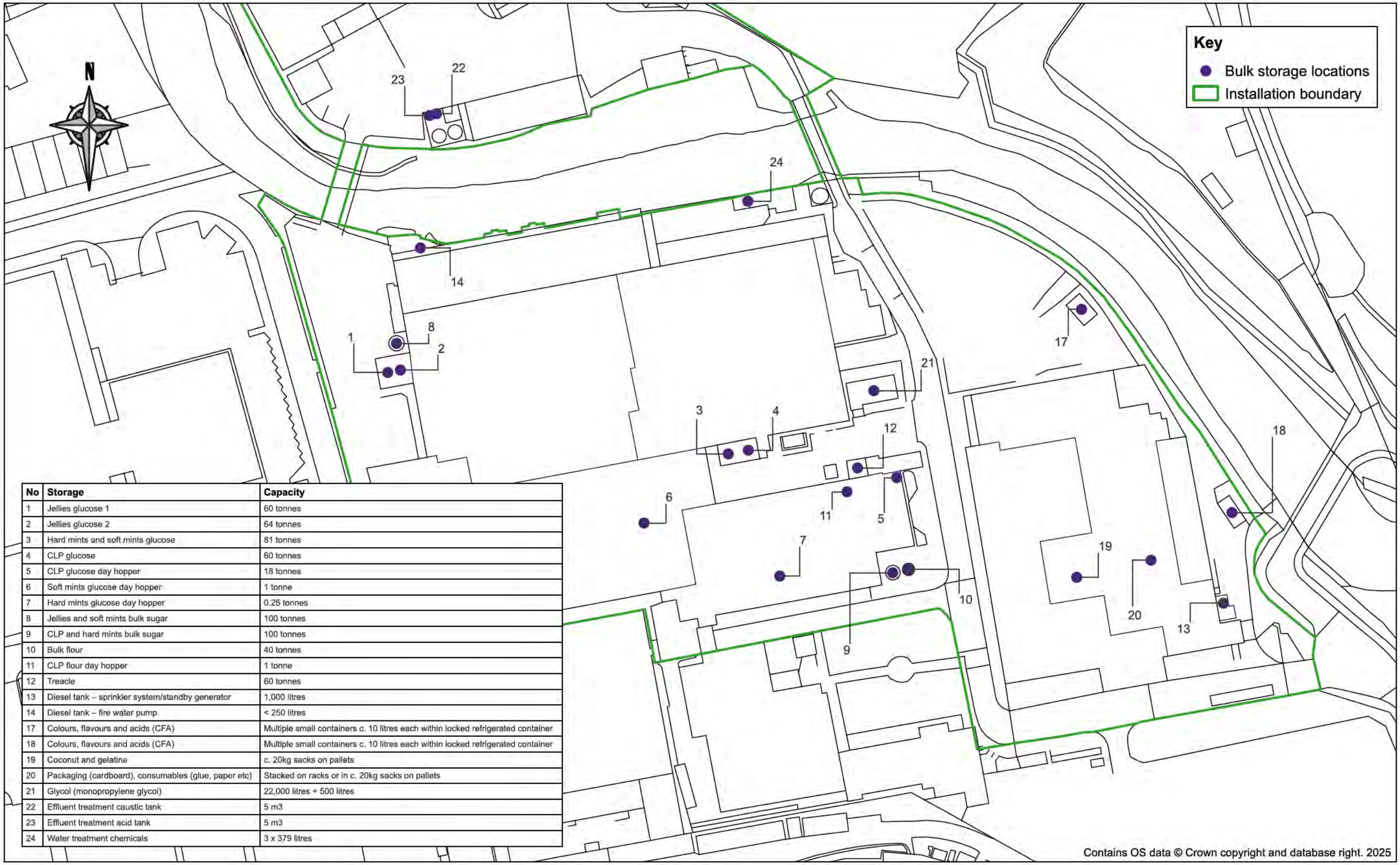
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Drawing title
Figure A4: Bulk storage locations (Sheet 1 of 2)



No	Storage	Capacity
1	Jellies glucose 1	60 tonnes
2	Jellies glucose 2	64 tonnes
3	Hard mints and soft mints glucose	81 tonnes
4	CLP glucose	60 tonnes
5	CLP glucose day hopper	18 tonnes
6	Soft mints glucose day hopper	1 tonne
7	Hard mints glucose day hopper	0.25 tonnes
8	Jellies and soft mints bulk sugar	100 tonnes
9	CLP and hard mints bulk sugar	100 tonnes
10	Bulk flour	40 tonnes
11	CLP flour day hopper	1 tonne
12	Treacle	60 tonnes
13	Diesel tank – sprinkler system/standby generator	1,000 litres
14	Diesel tank – fire water pump	< 250 litres
17	Colours, flavours and acids (CFA)	Multiple small containers c. 10 litres each within locked refrigerated container
18	Colours, flavours and acids (CFA)	Multiple small containers c. 10 litres each within locked refrigerated container
19	Coconut and gelatine	c. 20kg sacks on pallets
20	Packaging (cardboard), consumables (glue, paper etc)	Stacked on racks or in c. 20kg sacks on pallets
21	Glycol (monopropylene glycol)	22,000 litres + 500 litres
22	Effluent treatment caustic tank	5 m3
23	Effluent treatment acid tank	5 m3
24	Water treatment chemicals	3 x 379 litres

Scale

0 20 40 60 80 100 m

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Project
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Application for Environmental Permit EPR/ZP3722SD

Drawing title
Figure A4: Bulk storage locations (Sheet 2 of 2)

Figure A5 Waste Storage

No	Description	Capacity
1	Effluent treatment balance tank 1	80 m3
2	Effluent treatment balance tank 2	80 m3
3	Waste oil (food grade)	1,000 litres
4	Cardboard	Bins
5	WEEE	Container
6	Waste fluorescent tubes	Container
7	Plastic, cardboard, packaging	Bins
8	General waste compactor	Bins
9	Empty containers (oil containers, CFA)	Loose/on pallets
10	General waste	Bins
11	Hazardous waste area	IBCs, drums, empty containers
12	Organic/food waste (Jellies)	Skip
13	Organic/food waste (CLP & Mints)	Skip
14	Metals	Skip
15	Wood	Skip
16	General waste	Skip
17	Temporary construction waste	Skip
18	Effluent collection sump x4	Below ground sump

Key

- Waste storage locations
- Installation boundary

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Project
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Application for Environmental Permit EPR/ZP3722SD

Drawing title
Figure A5: Waste storage

Figure A6 Historical Features

No	Description	Capacity
1	Fuel oil	87,976 litres
2	Fuel oil	64,521 litres
3	Fuel oil	175,707 litres
4	Effluent bioreactor (Advetec)	48,040 litres
5	Effluent treatment	Treatment area and sump
6	Caustic (32%)	2,000 litres
7	Caustic (32%)	2,000 litres
8	Caustic (32%)	1,700 litres
9	Effluent tanks (x8) (Advetec)	19,500 litres
10	Sunflower oil	Tank in bund
11	Sunflower oil	Tank in bund
12	Sunflower oil	Tank in bund
13	Sunflower oil	Tank in bund
14	Sugar	Silo
15	Flour	Silo

Key

- Historical potential sources of contamination
- Installation boundary

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Drawing title
Figure A6: Historical features

Figure A7 Historical Borehole Location Plan

Figure A7 shows the locations of the exploratory hole logs included as Appendix 3

N

BH4
BH3
BH1
BH2
SK39SW164
SK39SW6

Key

- 1962 boreholes
- 2024 boreholes
- Installation boundary

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Project
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Drawing title
Figure A7: Historical borehole locations

Appendices

Appendix 1 Groundsure Report (2024)

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Order Details

Date: 23/08/2024

Your ref: EMS_966869_1201381

Our Ref: EMS-966869_1227143

Site Details

Location: 433789 390330

Area: 6.25 ha

Authority: Sheffield City Council ↗



Summary of findings p. 2 >

Aerial image p. 9 >

OS MasterMap site plan p.14 >

Insight User Guide ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	11	21	37	102	-
22 >	1.2 >	Historical tanks >	6	0	9	17	-
23 >	1.3 >	Historical energy features >	2	3	15	21	-
25	1.4	Historical petrol stations	0	0	0	0	-
25 >	1.5 >	Historical garages >	0	0	6	10	-
26	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
27 >	2.1 >	Historical industrial land uses >	16	29	42	127	-
35 >	2.2 >	Historical tanks >	11	0	13	32	-
38 >	2.3 >	Historical energy features >	2	5	27	53	-
41	2.4	Historical petrol stations	0	0	0	0	-
41 >	2.5 >	Historical garages >	0	0	9	24	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
43 >	3.1 >	Active or recent landfill >	0	0	0	1	-
44	3.2	Historical landfill (BGS records)	0	0	0	0	-
44 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	0	4	-
44 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	5	-
46 >	3.5 >	Historical waste sites >	0	5	1	12	-
48 >	3.6 >	Licensed waste sites >	2	0	1	1	-
49 >	3.7 >	Waste exemptions >	1	0	4	5	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
51 >	4.1 >	Recent industrial land uses >	9	11	40	-	-
55 >	4.2 >	Current or recent petrol stations >	0	0	0	2	-
56 >	4.3 >	Electricity cables >	0	0	2	2	-
56	4.4	Gas pipelines	0	0	0	0	-
56	4.5	Sites determined as Contaminated Land	0	0	0	0	-

57	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
57	4.7	Regulated explosive sites	0	0	0	0	-
57	4.8	Hazardous substance storage/usage	0	0	0	0	-
57	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
57 >	4.10 >	Licensed industrial activities (Part A(1)) >	5	0	0	0	-
58 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	4	2	4	-
60	4.12	Radioactive Substance Authorisations	0	0	0	0	-
60 >	4.13 >	Licensed Discharges to controlled waters >	9	1	5	8	-
63	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
63	4.15	Pollutant release to public sewer	0	0	0	0	-
64	4.16	List 1 Dangerous Substances	0	0	0	0	-
64 >	4.17 >	List 2 Dangerous Substances >	0	0	1	2	-
64 >	4.18 >	Pollution Incidents (EA/NRW) >	0	3	5	4	-
66	4.19	Pollution inventory substances	0	0	0	0	-
66	4.20	Pollution inventory waste transfers	0	0	0	0	-
66	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
67 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
69 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
71 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
72	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
72	5.5	Groundwater vulnerability- local information	None (within 0m)				
73 >	5.6 >	Groundwater abstractions >	0	0	3	2	22
80 >	5.7 >	Surface water abstractions >	0	0	0	0	8
83 >	5.8 >	Potable abstractions >	0	0	2	0	0
83 >	5.9 >	Source Protection Zones >	0	1	0	0	-
84	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
85 >	6.1 >	Water Network (OS MasterMap) >	2	9	8	-	-

87 >	6.2 >	Surface water features >	1	1	2	-	-
87 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
88 >	6.4 >	WFD Surface water bodies >	1	0	0	-	-
88 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
89 >	7.1 >	Risk of flooding from rivers and the sea >	High (within 50m)				
90 >	7.2 >	Historical Flood Events >	2	0	4	-	-
90 >	7.3 >	Flood Defences >	0	0	1	-	-
91	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
91	7.5	Flood Storage Areas	0	0	0	-	-
92 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
93 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
94 >	8.1 >	Surface water flooding >	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
96 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
97 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	5
98	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
98	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
98	10.4	Special Protection Areas (SPA)	0	0	0	0	0
99	10.5	National Nature Reserves (NNR)	0	0	0	0	0
99 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	3
99 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	2
100	10.8	Biosphere Reserves	0	0	0	0	0
100	10.9	Forest Parks	0	0	0	0	0
100	10.10	Marine Conservation Zones	0	0	0	0	0
100 >	10.11 >	Green Belt >	0	0	0	0	6
101	10.12	Proposed Ramsar sites	0	0	0	0	0

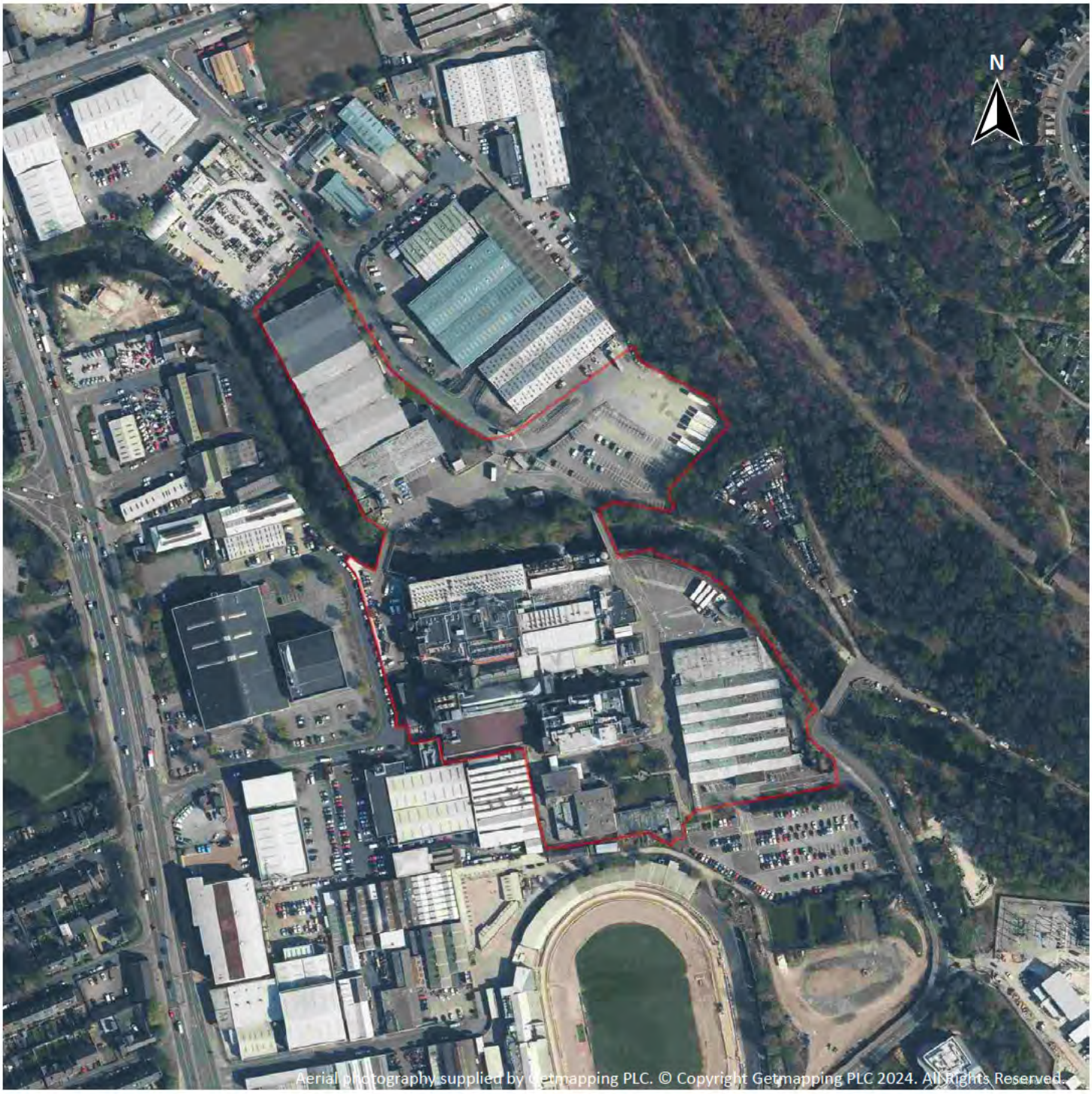
101	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
101	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
101	10.15	Nitrate Sensitive Areas	0	0	0	0	0
102 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	2
103 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
104 >	10.18 >	SSSI Units >	0	0	0	0	5
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
107	11.1	World Heritage Sites	0	0	0	-	-
108	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
108	11.3	National Parks	0	0	0	-	-
108 >	11.4 >	Listed Buildings >	0	0	2	-	-
109 >	11.5 >	Conservation Areas >	0	0	1	-	-
109	11.6	Scheduled Ancient Monuments	0	0	0	-	-
109	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
110 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
111	12.2	Open Access Land	0	0	0	-	-
111	12.3	Tree Felling Licences	0	0	0	-	-
111	12.4	Environmental Stewardship Schemes	0	0	0	-	-
111	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
112 >	13.1 >	Priority Habitat Inventory >	4	8	17	-	-
114	13.2	Habitat Networks	0	0	0	-	-
114 >	13.3 >	Open Mosaic Habitat >	0	0	1	-	-
114	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
115 >	14.1 >	10k Availability >	Identified (within 500m)				
116 >	14.2 >	Artificial and made ground (10k) >	1	1	6	18	-
118 >	14.3 >	Superficial geology (10k) >	1	0	1	0	-

119	14.4	Landslip (10k)	0	0	0	0	-
120 >	14.5 >	Bedrock geology (10k) >	1	1	4	6	-
121 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	1	4	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
122 >	15.1 >	50k Availability >	Identified (within 500m)				
123 >	15.2 >	Artificial and made ground (50k) >	1	0	1	4	-
124 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
125 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
126 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
126	15.6	Landslip (50k)	0	0	0	0	-
126	15.7	Landslip permeability (50k)	None (within 50m)				
127 >	15.8 >	Bedrock geology (50k) >	1	1	2	4	-
128 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
128 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	0	2	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
129 >	16.1 >	BGS Boreholes >	2	2	36	-	-
Page	Section	Natural ground subsidence >					
132 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
134 >	17.2 >	Running sands >	Low (within 50m)				
136 >	17.3 >	Compressible deposits >	Low (within 50m)				
138 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
139 >	17.5 >	Landslides >	Low (within 50m)				
141 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
143 >	18.1 >	BritPits >	0	0	1	4	-
144 >	18.2 >	Surface ground workings >	3	11	31	-	-
146 >	18.3 >	Underground workings >	0	0	0	0	3
147	18.4	Underground mining extents	0	0	0	0	-
147 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	1	-

147 >	18.6 >	Non-coal mining >	0	0	0	0	1
148	18.7	JPB mining areas	None (within 0m)				
148	18.8	The Coal Authority non-coal mining	0	0	0	0	-
148 >	18.9 >	Researched mining >	0	0	1	0	-
148	18.10	Mining record office plans	0	0	0	0	-
149	18.11	BGS mine plans	0	0	0	0	-
149 >	18.12 >	Coal mining >	Identified (within 0m)				
149	18.13	Brine areas	None (within 0m)				
149	18.14	Gypsum areas	None (within 0m)				
149	18.15	Tin mining	None (within 0m)				
150	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
151	19.1	Natural cavities	0	0	0	0	-
151	19.2	Mining cavities	0	0	0	0	0
151	19.3	Reported recent incidents	0	0	0	0	-
151	19.4	Historical incidents	0	0	0	0	-
152	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
153 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
155 >	21.1 >	BGS Estimated Background Soil Chemistry >	3	4	-	-	-
155 >	21.2 >	BGS Estimated Urban Soil Chemistry >	16	7	-	-	-
157 >	21.3 >	BGS Measured Urban Soil Chemistry >	1	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
158	22.1	Underground railways (London)	0	0	0	-	-
158	22.2	Underground railways (Non-London)	0	0	0	-	-
159	22.3	Railway tunnels	0	0	0	-	-
159 >	22.4 >	Historical railway and tunnel features >	0	0	12	-	-
160	22.5	Royal Mail tunnels	0	0	0	-	-

160	22.6	Historical railways	0	0	0	-	-
160 >	**22.7 >**	**Railways >**	0	0	5	-	-
160	22.8	Crossrail 1	0	0	0	0	-
161	22.9	Crossrail 2	0	0	0	0	-
161	22.10	HS2	0	0	0	0	-

Recent aerial photograph

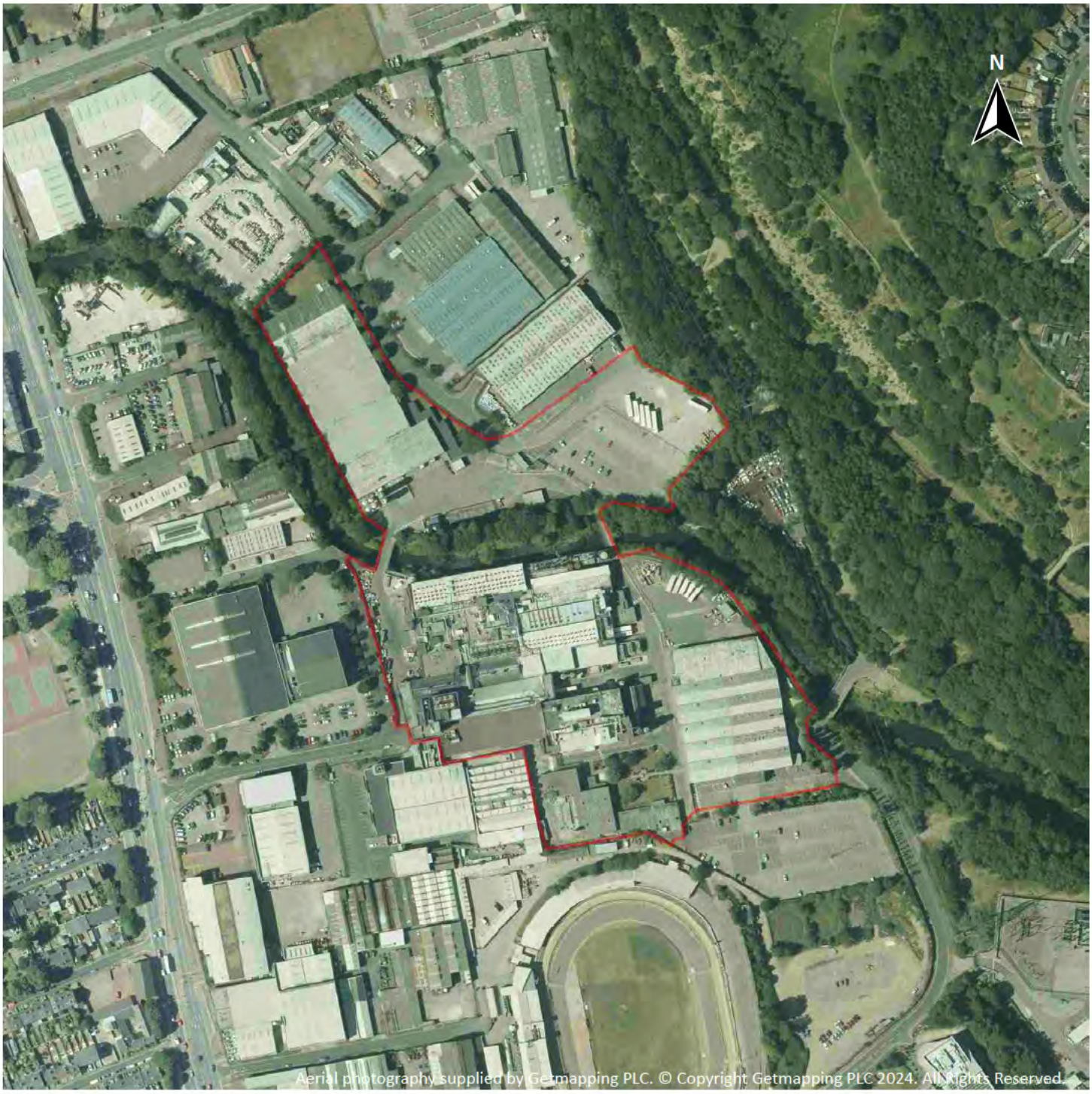


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Capture Date: 12/04/2021

Site Area: 6.25ha

Recent site history - 2018 aerial photograph

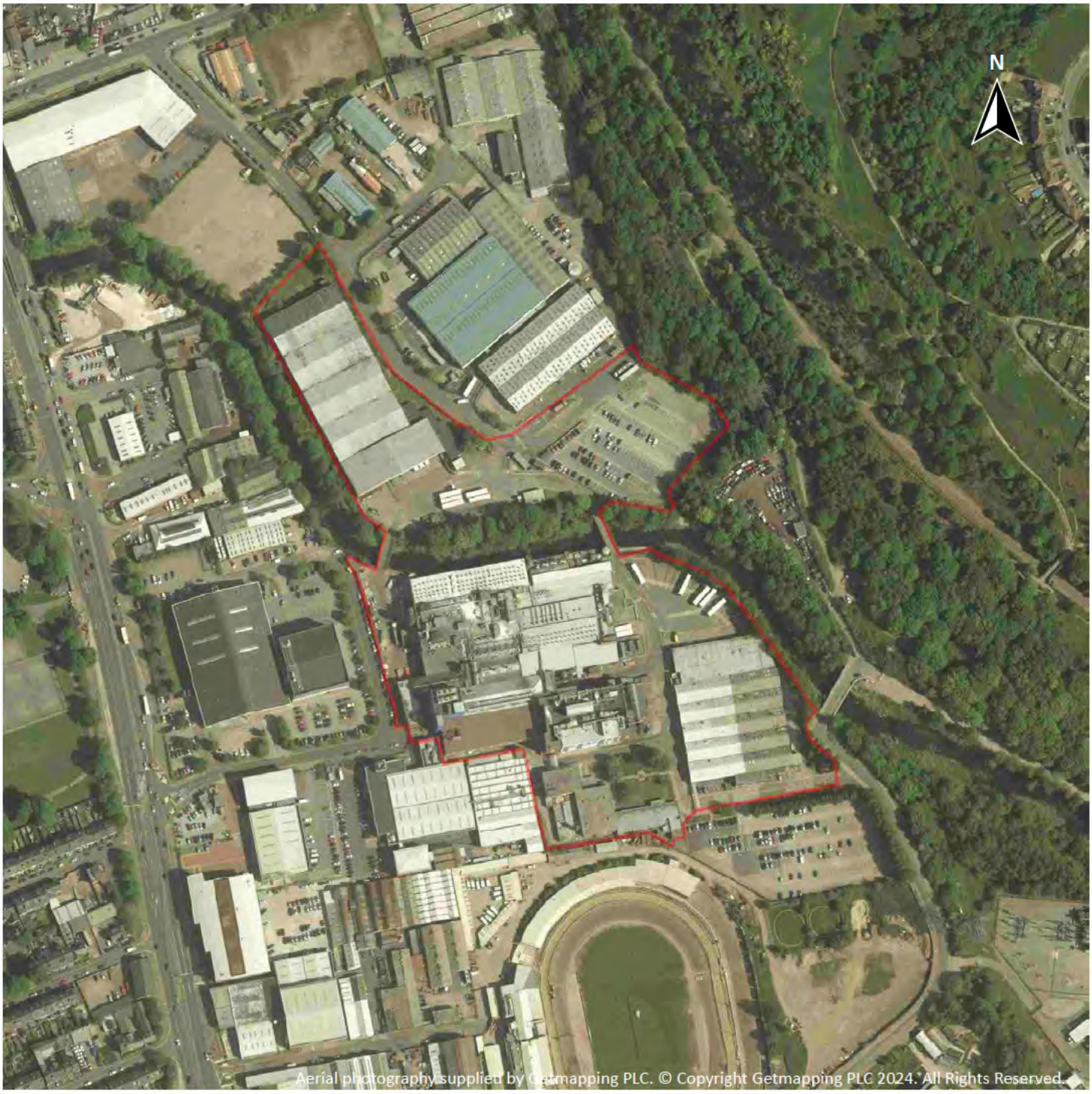


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Capture Date: 27/06/2018

Site Area: 6.25ha

Recent site history - 2012 aerial photograph



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Capture Date: 28/05/2012

Site Area: 6.25ha

Recent site history - 2009 aerial photograph



Capture Date: 11/09/2009

Site Area: 6.25ha

Recent site history - 1999 aerial photograph

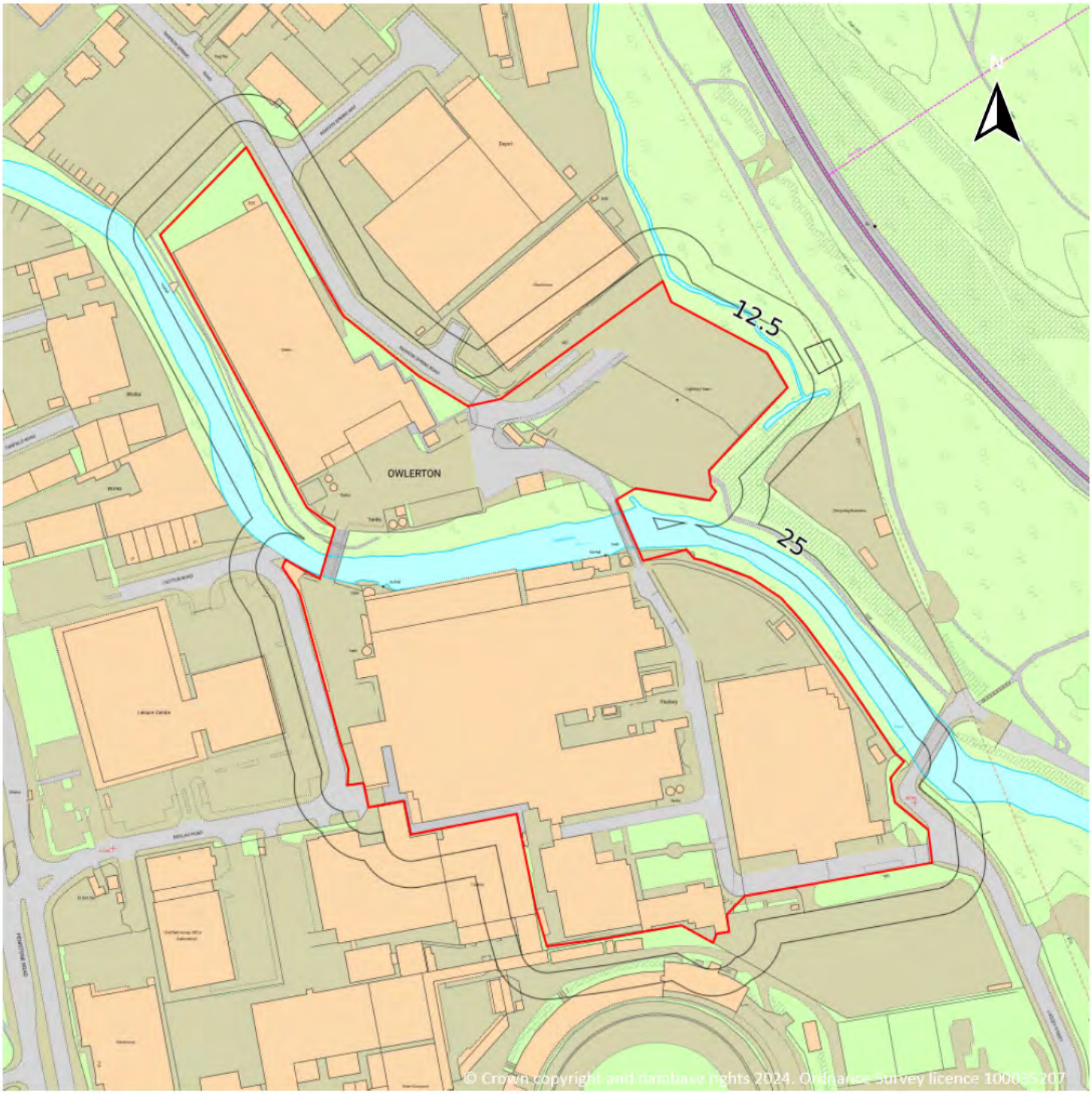


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Capture Date: 17/11/1999

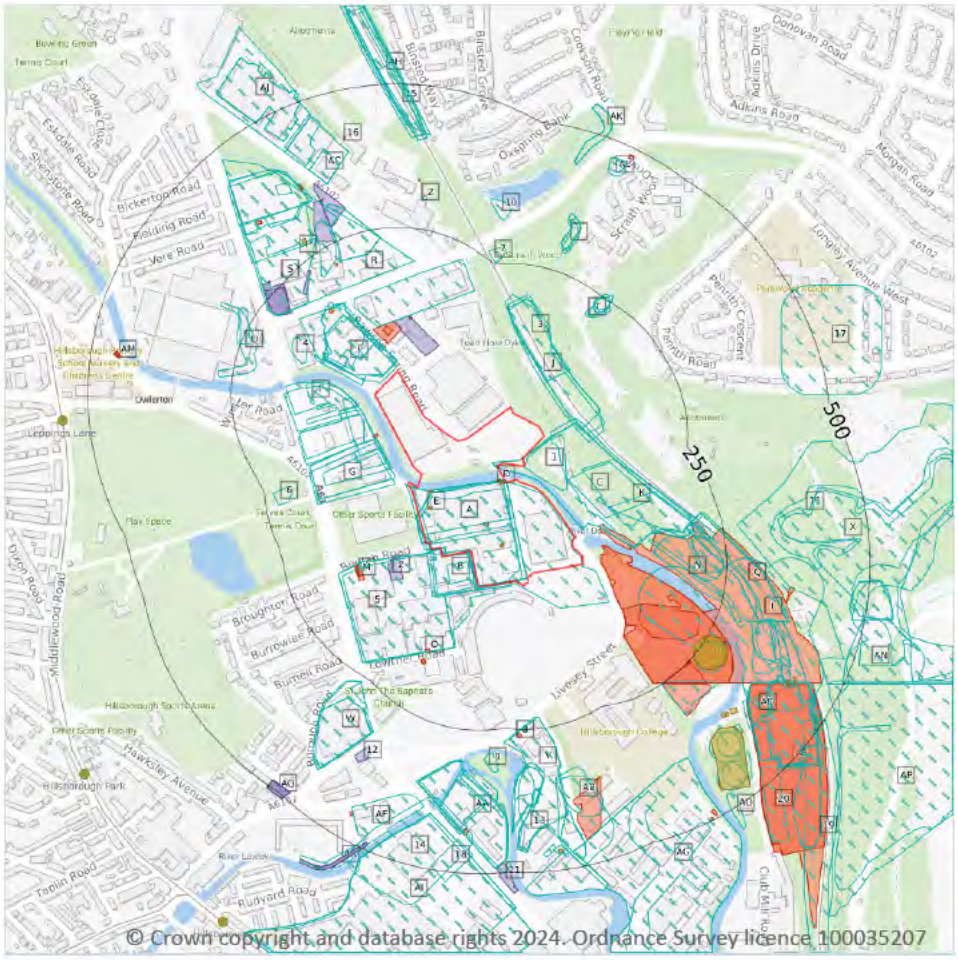
Site Area: 6.25ha

OS MasterMap site plan



Site Area: 6.25ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	171

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
A	On site	Preserving Works	1924	1639000

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Preserving Works**	**1902 - 1920**	**1744947**
A	**On site**	**Confectionery Works**	**1938 - 1948**	**1769357**
B	**On site**	**Unspecified Works**	**1956**	**1654638**
B	**On site**	**Unspecified Works**	**1981**	**1656747**
B	**On site**	**Unspecified Works**	**1956**	**1688887**
B	**On site**	**Steel Forge**	**1938 - 1948**	**1698950**
B	**On site**	**Unspecified Works**	**1966**	**1739399**
B	**On site**	**Steel Forge**	**1920**	**1740511**
C	**On site**	**Cemetery**	**1938 - 1948**	**1702556**
C	**On site**	**Cemetery**	**1920**	**1755422**
1	**On site**	**Unspecified Heap**	**1966 - 1981**	**1741042**
F	7m NW	Steel Works	1924	1742815
B	10m S	Steel Forge	1924	1725726
C	12m NE	Cemetery	1890 - 1902	1704956
F	12m NW	Steel Works	1938	1726582
F	13m NW	Steel Works	1902 - 1920	1755251
F	13m NW	Steel Works	1948	1767069
G	22m W	Steel Works	1924	1671881
G	26m W	Steel Works	1902 - 1920	1672768
G	26m W	Steel Works	1948 - 1956	1711433
G	33m NW	Wire Mills	1938 - 1948	1660150
G	33m NW	Steel Works	1890	1727410
G	33m NW	Sawmills	1902	1619485
I	33m NW	Forge	1938	1642584
G	35m NW	Steel Works	1938	1749862
I	36m NW	Forge	1948	1747569
G	37m NW	Wire Works	1920 - 1924	1770693
I	40m NW	Forge	1924	1722710

ID	Location	Land use	Dates present	Group ID
F	47m NW	Chimney	1966	1631187
C	49m E	Cemetery	1924	1648352
J	49m NE	Cuttings	1924	1702249
J	54m NE	Cuttings	1938 - 1948	1761697
J	54m NE	Cuttings	1902 - 1920	1757536
F	58m NW	Steel Works	1890	1722727
F	60m NW	Unspecified Works	1966	1612809
F	60m NW	Steel Works	1956	1683385
K	67m E	Cemetery	1956	1770259
K	77m E	Cemetery	1966	1710261
3	78m NE	Cuttings	1890	1713535
F	84m NW	Unspecified Works	1966	1612810
L	109m SE	Railway Buildings	1966	1588567
N	119m E	Unspecified Ground Workings	1948	1660671
N	125m E	Unspecified Ground Workings	1924	1686285
4	133m NW	Refuse Heap	1956	1587383
F	159m NW	Gasometer	1890	1589845
P	168m NW	Unspecified Works	1981	1689172
L	187m E	Railway Sidings	1924 - 1948	1659402
L	187m E	Railway Sidings	1920	1663545
Q	187m E	Railway Sidings	1948	1706685
N	191m E	Unspecified Heap	1948	1622231
S	195m NW	Unspecified Works	1966	1696751
6	200m W	Nursery	1966	1608578
Q	200m E	Railway Sidings	1938	1734945
T	206m NE	Unspecified Heap	1948	1622232
P	208m NW	Refuse Heap	1956	1587382
T	210m NE	Unspecified Old Quarry	1920 - 1924	1719067

ID	Location	Land use	Dates present	Group ID
P	210m NW	Unspecified Works	1956	1645625
P	210m NW	Unspecified Works	1966	1775475
U	212m NW	Unspecified Ground Workings	1924	1757173
T	222m NE	Unspecified Pit	1966 - 1981	1680049
T	222m NE	Unspecified Pit	1956	1735666
T	228m NE	Old Stone Pit	1902	1598671
T	228m NE	Unspecified Pit	1948	1729668
V	229m S	Unspecified Works	1967	1612888
V	230m S	Forge	1974 - 1982	1682610
U	235m NW	Unspecified Ground Workings	1902	1731891
H	247m SE	Unspecified Tank	1948	1736664
H	248m SE	Electric Substation	1982	1598230
H	252m SE	Unspecified Tank	1966	1650293
7	253m N	Unspecified Heap	1948	1622082
W	258m SW	Unspecified Works	1974	1759858
W	261m SW	Unspecified Works	1982	1763838
P	269m NW	Saw Works	1948	1680259
X	275m E	Refuse Heaps	1981	1734704
Y	285m N	Unspecified Old Quarry	1924	1733952
9	291m S	Unspecified Pit	1956	1607858
Y	291m N	Cuttings	1938	1585936
W	292m SW	Engineering Works	1956	1634977
W	292m SW	Unspecified Works	1967	1687957
Y	293m N	Unspecified Pit	1948	1607614
Y	293m N	Unspecified Old Quarry	1902 - 1920	1709898
Z	301m N	Chimney	1966 - 1981	1747418
AA	302m S	Unspecified Mills	1974 - 1982	1731235
AA	306m S	Unspecified Mills	1967	1701244

ID	Location	Land use	Dates present	Group ID
AA	306m S	Rolling Mills	1956	1736066
L	310m SE	Unspecified Heap	1924	1649653
L	310m SE	Unspecified Heap	1938	1715667
V	310m S	Forge	1938 - 1948	1759776
V	313m S	Forge	1903	1644840
V	316m S	Forge	1924	1768048
P	319m NW	Unspecified Works	1966	1744762
AA	319m S	Rolling Mills	1948	1747307
L	319m SE	Refuse Heap	1948	1588154
L	320m SE	Unspecified Ground Workings	1903	1593765
AA	320m S	Refuse Heap	1948	1588155
10	321m N	Unspecified Pit	1956	1607613
P	321m NW	Saw Works	1956	1652195
AB	327m S	Refuse Heap	1924 - 1938	1748252
11	331m E	Refuse Heap	1966	1669915
P	332m NW	Saw Works	1938	1682289
AA	337m S	Rolling Mills	1903	1662780
AB	342m S	Refuse Heap	1948	1699655
L	343m SE	Unspecified Pit	1903	1607857
X	347m E	Refuse Heap	1956	1743486
AC	348m NW	Unspecified Works	1956	1747285
AC	349m NW	Unspecified Works	1966	1711692
13	354m S	Forge	1956	1723222
L	358m SE	Power Station	1982	1684176
L	359m SE	Unspecified Works	1967	1611942
L	359m SE	Electric Power Station	1956	1742202
L	359m SE	Power Station	1974	1751993
P	361m NW	Railway Sidings	1938	1635851

ID	Location	Land use	Dates present	Group ID
AD	367m SE	Brick Works	1903	1596880
AD	368m SE	Unspecified Tank	1948	1628612
14	376m S	Unspecified Works	1974 - 1982	1672962
AD	376m SE	Unspecified Tank	1948	1734480
AF	381m S	Unspecified Works	1982	1661639
AD	382m SE	Unspecified Tank	1967 - 1974	1767724
AG	383m SE	Unspecified Works	1967 - 1982	1724070
AG	383m SE	Steel Works	1956	1773835
L	384m SE	Electric Power Station	1924	1706396
AD	386m SE	Refuse Heap	1948	1588152
L	388m SE	Railway Building	1938 - 1948	1643394
AC	392m NW	Sheet Metal Works	1956	1610191
AB	400m S	Unspecified Heap	1956	1740601
AB	400m S	Unspecified Heap	1967	1754037
L	400m SE	Railway Building	1924 - 1948	1739122
15	404m N	Cuttings	1890	1734198
AH	404m N	Cuttings	1948	1774679
AH	404m N	Cuttings	1902 - 1920	1775219
AI	404m S	Unspecified Works	1948 - 1956	1660796
AI	404m S	Unspecified Works	1967	1756451
AH	407m N	Cuttings	1924	1689113
AI	408m S	Artillery and Infantry Barracks	1924 - 1938	1718615
AG	411m SE	Railway Sidings	1967	1727741
AH	412m N	Railway Sidings	1948 - 1956	1719583
AH	415m N	Cuttings	1966 - 1981	1715931
AD	427m SE	Unspecified Tank	1948	1761551
AH	428m N	Cuttings	1938	1762162
AD	428m SE	Unspecified Tank	1967 - 1974	1652607

ID	Location	Land use	Dates present	Group ID
17	429m E	Nursery	1966	1608769
AJ	429m NW	Unspecified Depot	1966	1645276
AD	432m SE	Refuse Heap	1948	1588153
AK	438m N	Unspecified Pit	1956	1653776
AK	438m N	Unspecified Pit	1966	1733382
18	441m S	Unspecified Depot	1974 - 1982	1717519
AL	442m NE	Unspecified Old Quarry	1924	1734059
AJ	447m NW	Unspecified Depot	1956	1651474
AJ	447m NW	Unspecified Depot	1981	1654042
AL	449m NE	Unspecified Old Quarry	1902 - 1920	1689055
AB	453m S	Refuse Destructor	1924 - 1938	1708079
AB	456m S	Refuse Destructor	1948	1651274
L	457m SE	Unspecified Tank	1974 - 1982	1664491
L	466m SE	Chimneys	1956	1634629
AB	466m S	Chimney	1948	1631075
19	470m SE	Railway Sidings	1967 - 1974	1676914
20	471m SE	Forge	1948	1636817
AN	471m E	Refuse Heap	1966	1756299
AO	472m SE	Unspecified Heap	1938	1620994
AB	473m S	Chimney	1948	1631074
AN	473m E	Refuse Heap	1938	1687130
AN	473m E	Refuse Heap	1938	1766464
AP	476m SE	Refuse Heap	1982	1708498
AN	477m E	Refuse Heap	1948	1713366
L	480m SE	Chimneys	1967	1634627
L	485m SE	Chimneys	1956	1634630
AP	487m SE	Refuse Heaps	1948 - 1956	1733962
L	487m SE	Unspecified Tank	1974	1628615

ID	Location	Land use	Dates present	Group ID
L	497m SE	Unspecified Tank	1974	1628614
L	497m SE	Chimneys	1967	1634628

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	32

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Unspecified Tank**	**1990 - 1991**	**287235**
A	**On site**	**Unspecified Tank**	**1997**	**288425**
D	**On site**	**Unspecified Tank**	**1997**	**272102**
D	**On site**	**Unspecified Tank**	**1990 - 1997**	**292568**
E	**On site**	**Unspecified Tank**	**1997**	**274594**
E	**On site**	**Unspecified Tank**	**1990 - 1997**	**284058**
F	93m N	Unspecified Tank	1977	288935
F	94m N	Unspecified Tank	1980 - 1990	291603
5	140m SW	Unspecified Tank	1990 - 1997	284709
F	153m NW	Gasometer	1892	267042
R	189m NW	Unspecified Tank	1980	276065
R	190m NW	Unspecified Tank	1977	280105
P	212m NW	Unspecified Tank	1977 - 1980	277317
H	240m SE	Unspecified Tank	1975	289440
H	240m SE	Unspecified Tank	1951	289563
P	273m NW	Tanks	1985 - 1988	291046

ID	Location	Land use	Dates present	Group ID
Z	333m N	Unspecified Tank	1905	272103
AD	355m SE	Unspecified Tank	1937	286408
P	357m NW	Unspecified Tank	1968	278857
P	357m NW	Unspecified Tank	1985 - 1997	279458
AD	359m SE	Unspecified Tank	1967	291159
AD	360m SE	Tanks	1967	264378
AD	372m SE	Unspecified Tank	1951 - 1967	284962
L	408m SE	Unspecified Tank	1951 - 1975	292767
L	411m SE	Unspecified Tank	1951 - 1967	289345
L	411m SE	Unspecified Tank	1951	292892
16	415m N	Unspecified Tank	1977 - 1990	285107
L	416m SE	Unspecified Tank	1975	267140
AB	463m S	Unspecified Tank	1937	272132
L	487m SE	Unspecified Tank	1967	272107
AO	495m SE	Tanks	1951 - 1967	285242
L	495m SE	Unspecified Tank	1967	272108

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	41

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Electricity Substation**	**1951**	**173339**
A	**On site**	**Electricity Substation**	**1951**	**180161**

ID	Location	Land use	Dates present	Group ID
G	29m NW	Electricity Substation	1951	178028
H	31m SE	Electric Power Station	1951 - 1952	179444
H	31m SE	Power Station	1975	176707
F	51m NW	Electricity Substation	1980 - 1990	179755
F	65m NW	Electricity Substation	1977	175210
H	105m SE	Power Station	1991	182122
M	118m SW	Electricity Substation	1951	183531
H	122m SE	Electricity Substation	1975 - 1991	167469
M	125m SW	Electricity Substation	1985 - 1997	182848
M	126m SW	Electricity Substation	1975	172866
M	126m SW	Electricity Substation	1951	173937
O	138m S	Electricity Substation	1975 - 1988	183648
F	153m NW	Gasometer	1892	165956
O	158m S	Electricity Substation	1985 - 1997	172718
O	158m S	Electricity Substation	1975	171479
H	248m SE	Electricity Substation	1991	165378
H	249m SE	Electricity Substation	1991	181783
H	249m SE	Electricity Substation	1975	178264
H	251m SE	Electricity Substation	1993	177435
8	257m S	Gas Governor	1982 - 1994	184812
P	350m NW	Electricity Substation	1985 - 1997	172635
P	350m NW	Electricity Substation	1968	180646
P	357m NW	Electricity Substation	1967	169205
AB	357m SE	Electricity Substation	1993	162809
AE	359m SE	Electric Power Station	1967	178432
P	360m NW	Electricity Substation	1951 - 1968	182558
AE	360m SE	Electric Power Station	1951	182628
P	360m NW	Electricity Substation	1985 - 1990	174788

ID	Location	Land use	Dates present	Group ID
P	361m NW	Electricity Substation	1996 - 1997	177082
AA	422m S	Electricity Substation	1982 - 1989	172450
AM	448m W	Gas Governor House	1985	176503
AM	448m W	Gas Governor	1988	178069
AM	449m W	Gas Governor	1996 - 1997	181718
AF	451m S	Electricity Substation	1982 - 1994	172522
AM	451m W	Gas Governor	1990	169946
AM	452m W	Gas Governor House	1951	174919
AM	452m W	Gas Governor House	1968	183543
AL	481m NE	Gas Governor	1993	165656
AO	484m SE	Electricity Substation	1967	165374

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 un-grouped 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	16

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 un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on page 15 >

ID	Location	Land use	Dates present	Group ID
2	53m SW	Garage	1951	52787
F	53m NW	Garage	1977 - 1990	59804
S	204m NW	Garage	1967 - 1968	55725
S	206m NW	Garage	1985	56580
S	207m NW	Garages	1951	53026
S	210m NW	Garage	1951	58993
P	252m NW	Garage	1977 - 1980	54358
P	276m NW	Garage	1951	54514
12	338m SW	Garage	1965 - 1991	57779
21	483m S	Transport Repair Depot	1965	52965
AQ	487m SW	Garage	1967	53219
AR	487m S	Garages	1982 - 1991	59473
AR	487m S	Garages	1951	57024
AR	487m S	Garages	1965	58910
AQ	487m SW	Garage	1979 - 1988	58338
AQ	487m SW	Garage	1993 - 1996	57575

This data is sourced from Ordnance Survey / Groundsure.

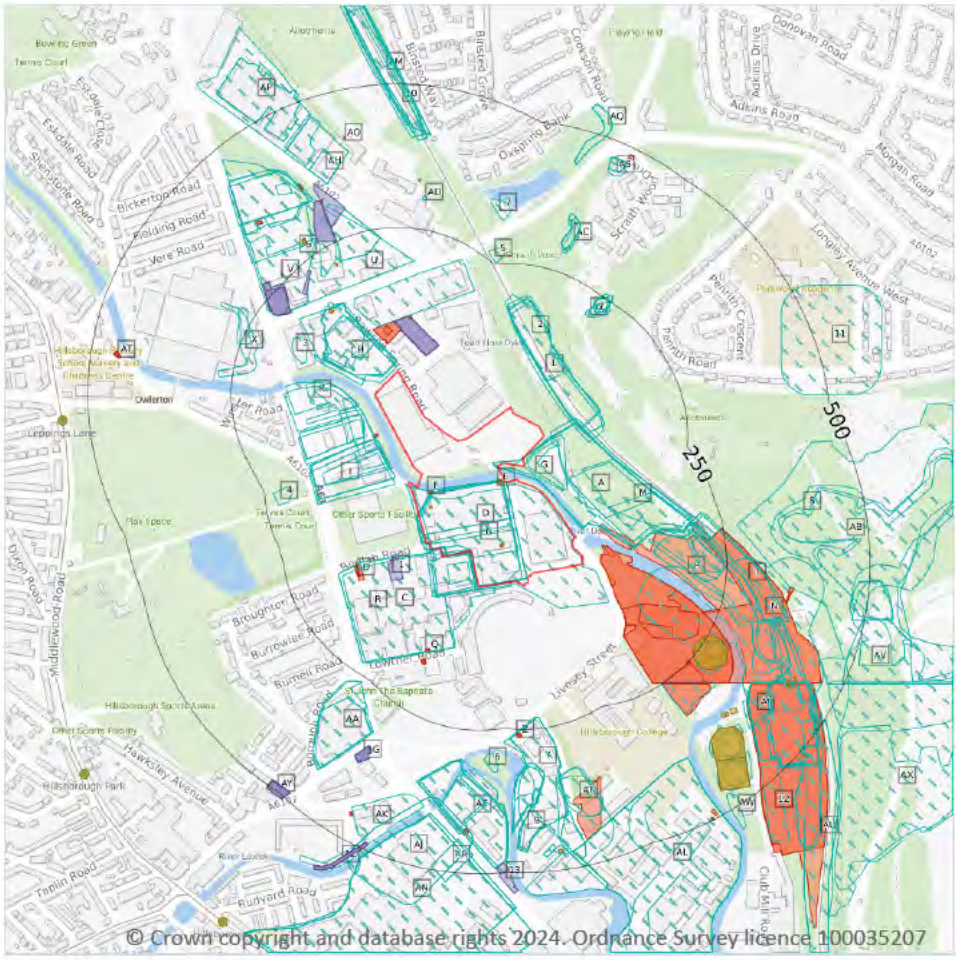
1.6 Historical military land

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



2.1 Historical industrial land uses

Records within 500m	214

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 27 >

ID	Location	Land Use	Date	Group ID
A	On site	Cemetery	1948	1702556
A	On site	Cemetery	1920	1755422
A	On site	Cemetery	1938	1702556

ID	Location	Land Use	Date	Group ID
B	**On site**	**Unspecified Works**	**1981**	**1656747**
B	**On site**	**Unspecified Works**	**1956**	**1654638**
B	**On site**	**Steel Forge**	**1948**	**1698950**
B	**On site**	**Steel Forge**	**1920**	**1740511**
C	**On site**	**Unspecified Works**	**1966**	**1739399**
C	**On site**	**Unspecified Works**	**1956**	**1688887**
D	**On site**	**Unspecified Works**	**1966**	**1739399**
D	**On site**	**Unspecified Works**	**1956**	**1688887**
D	**On site**	**Confectionery Works**	**1948**	**1769357**
D	**On site**	**Preserving Works**	**1920**	**1744947**
D	**On site**	**Preserving Works**	**1902**	**1744947**
D	**On site**	**Preserving Works**	**1924**	**1639000**
D	**On site**	**Confectionery Works**	**1938**	**1769357**
G	**On site**	**Unspecified Heap**	**1981**	**1741042**
B	1m SW	Steel Forge	1938	1698950
G	5m NE	Unspecified Heap	1966	1741042
H	7m NW	Steel Works	1924	1742815
B	10m S	Steel Forge	1924	1725726
A	12m NE	Cemetery	1890	1704956
H	12m NW	Steel Works	1938	1726582
A	13m NE	Cemetery	1902	1704956
H	13m NW	Steel Works	1948	1767069
H	13m NW	Steel Works	1920	1755251
H	13m NW	Steel Works	1902	1755251
I	22m W	Steel Works	1924	1671881
I	26m W	Steel Works	1948	1711433
I	26m W	Steel Works	1920	1672768
I	26m W	Steel Works	1902	1672768

ID	Location	Land Use	Date	Group ID
I	33m NW	Wire Mills	1938	1660150
I	33m NW	Steel Works	1890	1727410
I	33m NW	Sawmills	1902	1619485
K	33m NW	Forge	1938	1642584
I	35m NW	Steel Works	1938	1749862
I	35m W	Steel Works	1956	1711433
K	36m NW	Forge	1948	1747569
I	37m NW	Wire Mills	1948	1660150
I	37m NW	Wire Works	1920	1770693
I	39m NW	Wire Works	1924	1770693
K	40m NW	Forge	1924	1722710
H	47m NW	Chimney	1966	1631187
A	49m E	Cemetery	1924	1648352
L	49m NE	Cuttings	1924	1702249
L	54m NE	Cuttings	1948	1761697
L	54m NE	Cuttings	1920	1757536
L	54m NE	Cuttings	1902	1757536
L	56m NE	Cuttings	1938	1761697
H	58m NW	Steel Works	1890	1722727
H	60m NW	Unspecified Works	1966	1612809
H	60m NW	Steel Works	1956	1683385
M	67m E	Cemetery	1956	1770259
M	77m E	Cemetery	1966	1710261
2	78m NE	Cuttings	1890	1713535
H	84m NW	Unspecified Works	1966	1612810
N	109m SE	Railway Buildings	1966	1588567
P	119m E	Unspecified Ground Workings	1948	1660671
P	125m E	Unspecified Ground Workings	1924	1686285

ID	Location	Land Use	Date	Group ID
3	133m NW	Refuse Heap	1956	1587383
H	159m NW	Gasometer	1890	1589845
S	168m NW	Unspecified Works	1981	1689172
T	187m E	Railway Sidings	1948	1706685
T	187m E	Railway Sidings	1920	1663545
P	191m E	Unspecified Heap	1948	1622231
V	195m NW	Unspecified Works	1966	1696751
T	198m E	Railway Sidings	1924	1659402
4	200m W	Nursery	1966	1608578
T	200m E	Railway Sidings	1938	1734945
W	206m NE	Unspecified Heap	1948	1622232
S	208m NW	Refuse Heap	1956	1587382
W	210m NE	Unspecified Old Quarry	1924	1719067
S	210m NW	Unspecified Works	1966	1775475
S	210m NW	Unspecified Works	1956	1645625
X	212m NW	Unspecified Ground Workings	1924	1757173
W	222m NE	Unspecified Pit	1981	1680049
W	222m NE	Unspecified Pit	1966	1680049
W	222m NE	Unspecified Pit	1956	1735666
W	228m NE	Unspecified Old Quarry	1920	1719067
W	228m NE	Old Stone Pit	1902	1598671
W	228m NE	Unspecified Pit	1948	1729668
Y	229m S	Unspecified Works	1967	1612888
Y	230m S	Forge	1982	1682610
Y	230m S	Forge	1974	1682610
X	235m NW	Unspecified Ground Workings	1902	1731891
J	247m SE	Unspecified Tank	1948	1736664
J	248m SE	Electric Substation	1982	1598230

ID	Location	Land Use	Date	Group ID
J	252m SE	Unspecified Tank	1966	1650293
5	253m N	Unspecified Heap	1948	1622082
AA	258m SW	Unspecified Works	1974	1759858
AA	261m SW	Unspecified Works	1982	1763838
S	269m NW	Saw Works	1948	1680259
AB	275m E	Refuse Heaps	1981	1734704
AC	285m N	Unspecified Old Quarry	1924	1733952
6	291m S	Unspecified Pit	1956	1607858
AC	291m N	Cuttings	1938	1585936
AA	292m SW	Unspecified Works	1967	1687957
AA	292m SW	Engineering Works	1956	1634977
AC	293m N	Unspecified Old Quarry	1920	1709898
AC	293m N	Unspecified Old Quarry	1902	1709898
AC	293m N	Unspecified Pit	1948	1607614
AD	301m N	Chimney	1981	1747418
AD	301m N	Chimney	1966	1747418
AE	302m S	Unspecified Mills	1982	1731235
AE	302m S	Unspecified Mills	1974	1731235
AE	306m S	Unspecified Mills	1967	1701244
AE	306m S	Rolling Mills	1956	1736066
N	310m SE	Unspecified Heap	1938	1715667
N	310m SE	Unspecified Heap	1924	1649653
Y	310m S	Forge	1948	1759776
Y	310m S	Forge	1938	1759776
Y	313m S	Forge	1903	1644840
Y	316m S	Forge	1924	1768048
S	319m NW	Unspecified Works	1966	1744762
AE	319m S	Rolling Mills	1948	1747307

ID	Location	Land Use	Date	Group ID
N	319m SE	Refuse Heap	1948	1588154
N	320m SE	Unspecified Ground Workings	1903	1593765
AE	320m S	Refuse Heap	1948	1588155
7	321m N	Unspecified Pit	1956	1607613
S	321m NW	Saw Works	1956	1652195
AF	327m S	Refuse Heap	1924	1748252
AF	330m S	Refuse Heap	1938	1748252
8	331m E	Refuse Heap	1966	1669915
S	332m NW	Saw Works	1938	1682289
AE	337m S	Rolling Mills	1903	1662780
AF	342m S	Refuse Heap	1948	1699655
N	343m SE	Unspecified Pit	1903	1607857
N	343m SE	Railway Sidings	1948	1659402
N	343m SE	Railway Sidings	1938	1659402
N	344m SE	Railway Sidings	1924	1659402
AB	347m E	Refuse Heap	1956	1743486
AH	348m NW	Unspecified Works	1956	1747285
AH	349m NW	Unspecified Works	1966	1711692
9	354m S	Forge	1956	1723222
N	358m SE	Power Station	1982	1684176
N	359m SE	Unspecified Works	1967	1611942
N	359m SE	Electric Power Station	1956	1742202
N	359m SE	Power Station	1974	1751993
S	361m NW	Railway Sidings	1938	1635851
AI	367m SE	Brick Works	1903	1596880
AI	368m SE	Unspecified Tank	1948	1628612
AJ	376m S	Unspecified Works	1982	1672962
AJ	376m S	Unspecified Works	1974	1672962

ID	Location	Land Use	Date	Group ID
AI	376m SE	Unspecified Tank	1948	1734480
AK	381m S	Unspecified Works	1982	1661639
AI	382m SE	Unspecified Tank	1967	1767724
AI	382m SE	Unspecified Tank	1974	1767724
AL	383m SE	Unspecified Works	1967	1724070
AL	383m SE	Steel Works	1956	1773835
AL	383m SE	Unspecified Works	1982	1724070
AL	383m SE	Unspecified Works	1974	1724070
N	384m SE	Electric Power Station	1924	1706396
AI	386m SE	Refuse Heap	1948	1588152
N	388m SE	Railway Building	1948	1643394
N	388m SE	Railway Building	1938	1643394
AH	392m NW	Sheet Metal Works	1956	1610191
AF	400m S	Unspecified Heap	1967	1754037
AF	400m S	Unspecified Heap	1956	1740601
N	400m SE	Railway Building	1948	1739122
N	400m SE	Railway Building	1938	1739122
N	400m SE	Railway Building	1924	1739122
10	404m N	Cuttings	1890	1734198
AM	404m N	Cuttings	1948	1774679
AM	404m N	Cuttings	1920	1775219
AM	404m N	Cuttings	1902	1775219
AN	404m S	Unspecified Works	1967	1756451
AN	404m S	Unspecified Works	1956	1660796
AM	407m N	Cuttings	1924	1689113
AN	408m S	Unspecified Works	1948	1660796
AN	408m S	Artillery and Infantry Barracks	1938	1718615
AN	408m S	Artillery and Infantry Barracks	1924	1718615

ID	Location	Land Use	Date	Group ID
AL	411m SE	Railway Sidings	1967	1727741
AM	412m N	Railway Sidings	1956	1719583
AM	415m N	Cuttings	1981	1715931
AM	415m N	Cuttings	1966	1715931
AI	427m SE	Unspecified Tank	1948	1761551
AM	428m N	Cuttings	1938	1762162
AI	428m SE	Unspecified Tank	1967	1652607
AI	428m SE	Unspecified Tank	1974	1652607
11	429m E	Nursery	1966	1608769
AP	429m NW	Unspecified Depot	1966	1645276
AI	432m SE	Refuse Heap	1948	1588153
AQ	438m N	Unspecified Pit	1966	1733382
AQ	438m N	Unspecified Pit	1956	1653776
AR	441m S	Unspecified Depot	1982	1717519
AR	441m S	Unspecified Depot	1974	1717519
AS	442m NE	Unspecified Old Quarry	1924	1734059
AP	447m NW	Unspecified Depot	1981	1654042
AP	447m NW	Unspecified Depot	1956	1651474
AS	449m NE	Unspecified Old Quarry	1920	1689055
AS	449m NE	Unspecified Old Quarry	1902	1689055
AF	453m S	Refuse Destructor	1938	1708079
AF	453m S	Refuse Destructor	1924	1708079
AF	456m S	Refuse Destructor	1948	1651274
N	457m SE	Unspecified Tank	1982	1664491
N	457m SE	Unspecified Tank	1974	1664491
N	466m SE	Chimneys	1956	1634629
AF	466m S	Chimney	1948	1631075
AU	470m SE	Railway Sidings	1967	1676914

ID	Location	Land Use	Date	Group ID
AU	470m SE	Railway Sidings	1974	1676914
12	471m SE	Forge	1948	1636817
AV	471m E	Refuse Heap	1966	1756299
AW	472m SE	Unspecified Heap	1938	1620994
AF	473m S	Chimney	1948	1631074
AV	473m E	Refuse Heap	1938	1766464
AV	473m E	Refuse Heap	1938	1687130
AX	476m SE	Refuse Heap	1982	1708498
AV	477m E	Refuse Heap	1948	1713366
N	480m SE	Chimneys	1967	1634627
N	485m SE	Chimneys	1956	1634630
AX	487m SE	Refuse Heaps	1948	1733962
N	487m SE	Unspecified Tank	1974	1628615
N	497m SE	Chimneys	1967	1634628
N	497m SE	Unspecified Tank	1974	1628614

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	56

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 27 >

ID	Location	Land Use	Date	Group ID
D	**On site**	**Unspecified Tank**	**1990**	**287235**
D	**On site**	**Unspecified Tank**	**1991**	**287235**
D	**On site**	**Unspecified Tank**	**1997**	**288425**
E	**On site**	**Unspecified Tank**	**1990**	**292568**
E	**On site**	**Unspecified Tank**	**1991**	**292568**

ID	Location	Land Use	Date	Group ID
E	**On site**	**Unspecified Tank**	**1997**	**272102**
E	**On site**	**Unspecified Tank**	**1997**	**292568**
F	**On site**	**Unspecified Tank**	**1990**	**284058**
F	**On site**	**Unspecified Tank**	**1991**	**284058**
F	**On site**	**Unspecified Tank**	**1997**	**274594**
F	**On site**	**Unspecified Tank**	**1997**	**284058**
H	93m N	Unspecified Tank	1977	288935
H	94m N	Unspecified Tank	1980	291603
H	94m N	Unspecified Tank	1990	291603
R	140m SW	Unspecified Tank	1997	284709
R	142m SW	Unspecified Tank	1990	284709
R	142m SW	Unspecified Tank	1991	284709
H	153m NW	Gasometer	1892	267042
U	189m NW	Unspecified Tank	1980	276065
U	190m NW	Unspecified Tank	1977	280105
S	212m NW	Unspecified Tank	1980	277317
S	212m NW	Unspecified Tank	1977	277317
J	240m SE	Unspecified Tank	1951	289563
J	240m SE	Unspecified Tank	1975	289440
S	273m NW	Tanks	1985	291046
S	273m NW	Tanks	1988	291046
AD	333m N	Unspecified Tank	1905	272103
AI	355m SE	Unspecified Tank	1937	286408
S	357m NW	Unspecified Tank	1968	278857
S	357m NW	Unspecified Tank	1985	279458
S	357m NW	Unspecified Tank	1988	279458
S	357m NW	Unspecified Tank	1990	279458
S	358m NW	Unspecified Tank	1996	279458

ID	Location	Land Use	Date	Group ID
S	358m NW	Unspecified Tank	1997	279458
AI	359m SE	Unspecified Tank	1967	291159
AI	360m SE	Tanks	1967	264378
AI	372m SE	Unspecified Tank	1967	284962
AI	372m SE	Unspecified Tank	1951	284962
N	408m SE	Unspecified Tank	1952	292767
N	409m SE	Unspecified Tank	1951	292767
N	409m SE	Unspecified Tank	1975	292767
N	411m SE	Unspecified Tank	1967	289345
N	411m SE	Unspecified Tank	1951	289345
N	411m SE	Unspecified Tank	1951	292892
AI	414m SE	Unspecified Tank	1967	284962
AI	414m SE	Unspecified Tank	1951	284962
AO	415m N	Unspecified Tank	1980	285107
AO	415m N	Unspecified Tank	1990	285107
AO	415m N	Unspecified Tank	1977	285107
N	416m SE	Unspecified Tank	1975	267140
AF	463m S	Unspecified Tank	1937	272132
N	487m SE	Unspecified Tank	1967	272107
AW	495m SE	Tanks	1967	285242
AW	495m SE	Tanks	1951	285242
N	495m SE	Unspecified Tank	1967	272108
AW	495m SE	Tanks	1951	285242

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	87

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 27 >

ID	Location	Land Use	Date	Group ID
D	**On site**	**Electricity Substation**	**1951**	**180161**
D	**On site**	**Electricity Substation**	**1951**	**173339**
I	29m NW	Electricity Substation	1951	178028
I	29m NW	Electricity Substation	1951	178028
J	31m SE	Electric Power Station	1952	179444
J	31m SE	Electric Power Station	1951	179444
J	31m SE	Power Station	1975	176707
H	51m NW	Electricity Substation	1980	179755
H	51m NW	Electricity Substation	1990	179755
H	65m NW	Electricity Substation	1977	175210
J	105m SE	Power Station	1991	182122
O	118m SW	Electricity Substation	1951	183531
J	122m SE	Electricity Substation	1991	167469
J	122m SE	Electricity Substation	1975	167469
O	125m SW	Electricity Substation	1985	182848
O	125m SW	Electricity Substation	1988	182848
O	125m SW	Electricity Substation	1990	182848
O	125m SW	Electricity Substation	1991	182848
O	126m SW	Electricity Substation	1997	182848
O	126m SW	Electricity Substation	1975	172866
O	126m SW	Electricity Substation	1951	173937
Q	138m S	Electricity Substation	1985	183648
Q	138m S	Electricity Substation	1988	183648

ID	Location	Land Use	Date	Group ID
Q	139m S	Electricity Substation	1975	183648
H	153m NW	Gasometer	1892	165956
Q	158m S	Electricity Substation	1985	172718
Q	158m S	Electricity Substation	1988	172718
Q	158m S	Electricity Substation	1990	172718
Q	158m S	Electricity Substation	1991	172718
Q	158m S	Electricity Substation	1997	172718
Q	158m S	Electricity Substation	1975	171479
J	248m SE	Electricity Substation	1991	165378
J	249m SE	Electricity Substation	1991	181783
J	249m SE	Electricity Substation	1975	178264
J	251m SE	Electricity Substation	1993	177435
J	251m SE	Electricity Substation	1993	177435
Z	257m S	Gas Governor	1984	184812
Z	257m S	Gas Governor	1982	184812
Z	257m S	Gas Governor	1988	184812
Z	257m S	Gas Governor	1989	184812
Z	257m S	Gas Governor	1991	184812
Z	257m S	Gas Governor	1993	184812
Z	257m S	Gas Governor	1994	184812
Z	257m S	Gas Governor	1993	184812
Z	257m S	Gas Governor	1994	184812
S	350m NW	Electricity Substation	1985	172635
S	350m NW	Electricity Substation	1988	172635
S	350m NW	Electricity Substation	1990	172635
S	350m NW	Electricity Substation	1968	180646
S	351m NW	Electricity Substation	1996	172635
S	351m NW	Electricity Substation	1997	172635

ID	Location	Land Use	Date	Group ID
S	357m NW	Electricity Substation	1967	169205
AF	357m SE	Electricity Substation	1993	162809
N	359m SE	Electric Power Station	1967	178432
N	359m SE	Electric Power Station	1951	179444
S	360m NW	Electricity Substation	1951	182558
N	360m SE	Electric Power Station	1951	182628
S	360m NW	Electricity Substation	1968	182558
S	360m NW	Electricity Substation	1951	182558
S	360m NW	Electricity Substation	1985	174788
S	360m NW	Electricity Substation	1988	174788
S	360m NW	Electricity Substation	1990	174788
S	361m NW	Electricity Substation	1996	177082
S	361m NW	Electricity Substation	1997	177082
AE	422m S	Electricity Substation	1984	172450
AE	422m S	Electricity Substation	1982	172450
AE	422m S	Electricity Substation	1988	172450
AE	422m S	Electricity Substation	1989	172450
AT	448m W	Gas Governor House	1985	176503
AT	448m W	Gas Governor	1988	178069
AT	449m W	Gas Governor	1996	181718
AT	449m W	Gas Governor	1997	181718
AK	451m S	Electricity Substation	1993	172522
AK	451m S	Electricity Substation	1994	172522
AK	451m S	Electricity Substation	1993	172522
AK	451m S	Electricity Substation	1994	172522
AK	451m S	Electricity Substation	1984	172522
AK	451m S	Electricity Substation	1982	172522
AK	451m S	Electricity Substation	1988	172522

ID	Location	Land Use	Date	Group ID
AK	451m S	Electricity Substation	1989	172522
AK	451m S	Electricity Substation	1991	172522
AT	451m W	Gas Governor	1990	169946
AT	452m W	Gas Governor House	1968	183543
AT	452m W	Gas Governor House	1951	174919
AT	453m W	Gas Governor House	1951	174919
AS	481m NE	Gas Governor	1993	165656
AW	484m SE	Electricity Substation	1967	165374

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	33

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'.

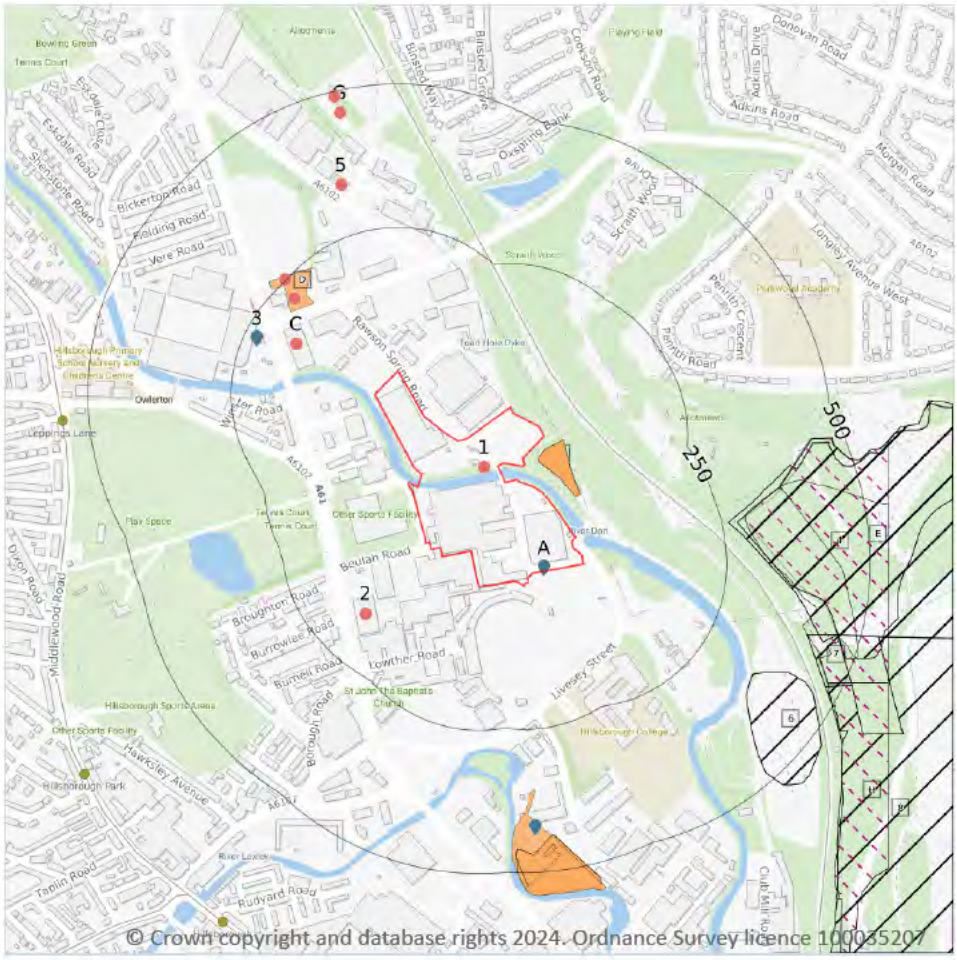
Features are displayed on the Past land use - un-grouped map on page 27 >

ID	Location	Land Use	Date	Group ID
1	53m SW	Garage	1951	52787
H	53m NW	Garage	1977	59804
H	54m NW	Garage	1980	59804
H	54m NW	Garage	1990	59804
V	204m NW	Garage	1967	55725

ID	Location	Land Use	Date	Group ID
V	205m NW	Garage	1968	55725
V	206m NW	Garage	1985	56580
V	207m NW	Garages	1951	53026
V	210m NW	Garage	1951	58993
S	252m NW	Garage	1980	54358
S	252m NW	Garage	1977	54358
S	276m NW	Garage	1951	54514
AG	338m SW	Garage	1965	57779
AG	338m SW	Garage	1984	57779
AG	338m SW	Garage	1982	57779
AG	338m SW	Garage	1988	57779
AG	338m SW	Garage	1989	57779
AG	338m SW	Garage	1991	57779
13	483m S	Transport Repair Depot	1965	52965
AY	487m SW	Garage	1967	53219
AZ	487m S	Garages	1984	59473
AZ	487m S	Garages	1982	59473
AZ	487m S	Garages	1988	59473
AZ	487m S	Garages	1989	59473
AZ	487m S	Garages	1991	59473
AZ	487m S	Garages	1951	57024
AZ	487m S	Garages	1965	58910
AY	487m SW	Garage	1979	58338
AY	487m SW	Garage	1988	58338
AY	487m SW	Garage	1993	57575
AY	487m SW	Garage	1996	57575
AY	487m SW	Garage	1993	57575
AY	487m SW	Garage	1996	57575

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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3.1 Active or recent landfill

Records within 500m	1

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

Features are displayed on the Waste and landfill map on page 43 >

ID	Location	Details	
E	287m E	Operator: Sheffield City Council Site Address: Sheffield City Council, Off Longley Avenue West, Shirecliffe, Sheffield, South Yorkshire, S5 8TY	WML Number: 61620 EPR Reference: 652577 Landfill type: A04: Household, Commercial & Industrial Waste Landfill Status: Closure IPPC Reference: - EPR Number: EA/EPR/PP3598ZK

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	4

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

Features are displayed on the Waste and landfill map on **page 43 >**

ID	Location	Site address	Source	Data type
4	292m E	Refuse Tip	1975 mapping	Polygon
E	365m E	Refuse Tip	1991 mapping	Polygon
H	474m SE	Refuse Tip	1993 mapping	Polygon
H	474m SE	Refuse Tip	1993 mapping	Polygon

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	5

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 43 >**

ID	Location	Details		
E	261m E	Site Address: Douglas / Parkwood Landfill Site, Off Longley Avenue West, Shirecliffe, Sheffield Licence Holder Address: Cleansing Services Department, Town Hall, Sheffield	Waste Licence: Yes Site Reference: WD20 S1006, WD20 S2, WD20 S10 Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: Sheffield City Council First Recorded - Last Recorded: 31/12/1991
E	277m E	Site Address: Douglas Road Tip, Longley Avenue West, Sheffield, South Yorkshire Licence Holder Address: -	Waste Licence: - Site Reference: - Waste Type: Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Sheffield Corporation Cleansing Department Licence Holder: - First Recorded 18/05/1969 Last Recorded: -
6	352m SE	Site Address: Neepsend Power Station, Neepsend, Sheffield Licence Holder Address: Otley, West Yorkshire	Waste Licence: Yes Site Reference: 4400/S451, WD20 S451(63) Waste Type: Inert, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 07/12/1984 Licence Surrender: 09/03/1987	Operator: - Licence Holder: A Ogden and Sons (Demoliton) Limited First Recorded 07/12/1984 Last Recorded: 09/03/1987
7	409m SE	Site Address: EMGAS, Neepsend Works, Neepsend Lane Licence Holder Address: -	Waste Licence: Yes Site Reference: 4400/S171, WD20/S171 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 24/05/1978 Licence Surrender: 29/04/1994	Operator: - Licence Holder: EMGAS First Recorded 31/12/1978 Last Recorded: 29/04/1994
8	473m SE	Site Address: Parkwood Landfill, Parkwood Springs, Parkwood Road, Sheffield, South Yorkshire Licence Holder Address: 211 Shirecliffe Road, Sheffied	Waste Licence: Yes Site Reference: S16(22), WD20/S43, WD20 S16, 4400/S43, S43(126), NE2714 Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: YQ1/L/PAR001 Licence Issue: 01/07/1977 Licence Surrender: 20/04/1994	Operator: Parkwood Landfill Limited Licence Holder: V H Maber First Recorded 13/03/1979 Last Recorded: 20/04/1994

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

3.5 Historical waste sites

Records within 500m	18

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

Features are displayed on the Waste and landfill map on page 43 >

ID	Location	Address	Further Details	Date
B	17m NE	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1985
B	17m NE	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1988
B	17m NE	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1990
B	17m NE	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1991
B	17m NE	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1997
D	187m NW	Site Address: N/A	Type of Site: Scrap & Steel Stock Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1968
F	356m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1937

ID	Location	Address	Further Details	Date
F	436m S	Site Address: N/A	Type of Site: Corporation Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1951
F	436m S	Site Address: N/A	Type of Site: Corporation Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1951
F	436m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1965
F	437m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1988
F	437m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1984
F	437m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1982
F	437m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1989
F	437m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1991
F	453m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1938

ID	Location	Address	Further Details	Date
F	453m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1924
F	456m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1948

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

3.6 Licensed waste sites

Records within 500m **4**

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

Features are displayed on the Waste and landfill map on page 43 >

ID	Location	Details		
A	**On site**	**Site Name: - Site Address: Livesey Street, Sheffield, S Yorks, S6 2BL Correspondence Address: Livesey Street, Sheffield, S Yorks, S6 2BL**	**Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: COO001 EPR reference: - Operator: Cooper Car Spares Waste Management licence No: 61697 Annual Tonnage: 0**	**Issue Date: 11/06/1991 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued**
A	**On site**	**Site Name: Cooper Car Spares Site Address: Land/premises At, Livesey Street, Sheffield, South Yorkshire, S6 2BL Correspondence Address: -**	**Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 631867 EPR reference: EA/EPR/GP3698ZB Operator: Cooper Car Spares Waste Management licence No: 61697 Annual Tonnage: 5000**	**Issue Date: 11/06/1991 Effective Date: 11/06/1991 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued**

ID	Location	Details		
3	228m NW	Site Name: E M R - Sheffield Hillborough Site Address: Herries Road South, Sheffield, South Yorkshire, S6 1QG Correspondence Address: -	Type of Site: 75kte Vehicle Depollution Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 652052 EPR reference: EA/EPR/FP3693VH Operator: European Metal Recycling Limited Waste Management licence No: 101367 Annual Tonnage: 0	Issue Date: 26/05/2010 Effective Date: 26/05/2010 Modified: - Surrendered Date: 26/05/2010 Expiry Date: - Cancelled Date: - Status: Surrendered
F	422m S	Site Name: Transition International Ltd Site Address: 480 Hi - Temp Works, Penistone Road, Sheffield, South Yorkshire, S6 2FU Correspondence Address: -	Type of Site: 75kte Metal Recycling Site Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 628152 EPR reference: EA/EPR/AB3234AV Operator: Transition International Limited Waste Management licence No: 102988 Annual Tonnage: 0	Issue Date: 27/06/2011 Effective Date: 27/06/2011 Modified: - Surrendered Date: 27/06/2011 Expiry Date: - Cancelled Date: - Status: Surrendered

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

3.7 Waste exemptions

Records within 500m **10**

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

Features are displayed on the Waste and landfill map on page 43 >

ID	Location	Site	Reference	Category	Sub-Category	Description
1	**On site**	**-**	**WEX222018**	**Disposing of waste exemption**	**Not on a farm**	**Disposal by incineration**
2	161m SW	718 Penistone Road Sheffield S6 2df	EPR/NF0403GE/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
C	163m NW	Unit 4 Hillsborough Trade Point Rawson Spring Road Sheffield S6 1pd	EPR/NE5346CJ/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
C	163m NW	Unit 4 Hillsborough Trade Point Rawson Spring Road Sheffield S6 1pd	EPR/XE5443LZ/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
D	216m NW	Emr Sheffield Hillsborough Grandstand Works Sheffield S6 1qg	EPR/NE5054RM/A001	Treating waste exemption	Non-agricultural waste only	Recovery of scrap metal
D	252m NW	Emr Sheffield Hillsborough, Grandstand Works, Herries Road South, Sheffield, S6 1qg	WEX010695	Treating waste exemption	Not on a farm	Recovery of scrap metal
5	338m NW	-	WEX304353	Storing waste exemption	Not on a farm	Storage of waste in a secure place
G	461m N	-	WEX355215	Treating waste exemption	Not on a farm	Recovery of scrap metal
G	491m N	-	WEX357246	Storing waste exemption	Not on a farm	Storage of waste in secure containers
G	491m N	-	WEX357246	Storing waste exemption	Not on a farm	Storage of waste in a secure place

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

4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m	60

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on page 51 >

ID	Location	Company	Address	Activity	Category
1	On site	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
2	On site	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
3	On site	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
A	**On site**	**Tank**	**South Yorkshire, S6**	**Tanks (Generic)**	**Industrial Features**
A	**On site**	**Tank Outfall**	**South Yorkshire, S6**	**Waste Storage, Processing and Disposal**	**Infrastructure and Facilities**
B	**On site**	**Tank**	**South Yorkshire, S6**	**Tanks (Generic)**	**Industrial Features**
B	**On site**	**Tank**	**South Yorkshire, S6**	**Tanks (Generic)**	**Industrial Features**
B	**On site**	**Outfall**	**South Yorkshire, S6**	**Waste Storage, Processing and Disposal**	**Infrastructure and Facilities**
C	**On site**	**Factory**	**South Yorkshire, S6**	**Unspecified Works Or Factories**	**Industrial Features**
D	11m NW	Outfall	South Yorkshire, S6	Waste Storage, Processing and Disposal	Infrastructure and Facilities
E	20m SW	Tecomet Symmetry Medical Sheffield	Beulah Road, Sheffield, South Yorkshire, S6 2AN	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
E	22m S	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
4	22m NE	Pylon	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
H	43m E	Coopers Car Spares	Autowrecks Ltd, Livesey Street, Sheffield, South Yorkshire, S6 2BL	Scrap Metal Merchants	Recycling Services
G	44m NW	Pumping Station	South Yorkshire, S6	Water Pumping Stations	Industrial Features
D	45m W	N Thompson	Unit 6, Dutton Road, Sheffield, South Yorkshire, S6 2AG	Vehicle Repair, Testing and Servicing	Repair and Servicing
D	45m W	Professional Lifting Services Ltd	Unit 7 870, Penistone Road, Sheffield, South Yorkshire, S6 2DL	Lifting and Handling Equipment	Industrial Products
D	47m NW	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
H	47m E	Recycling Business	South Yorkshire, S6	Recycling Centres	Infrastructure and Facilities
5	48m N	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
D	53m W	European Radiator Services Ltd	Park View Works 870, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DL	Vehicle Repair, Testing and Servicing	Repair and Servicing
D	54m NW	Sheffield Gauge Plate Ltd	Bastock Road, Sheffield, South Yorkshire, S6 2AE	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
D	55m W	Magill Engineering Ltd	Unit 4, Dutton Road, Sheffield, South Yorkshire, S6 2AG	Industrial Engineers	Engineering Services
G	58m NW	M D N Mechanical Services Ltd	Rawson Spring Road, Sheffield, South Yorkshire, S6 1PD	Mechanical Engineers	Engineering Services
G	62m NW	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
D	67m NW	Premier Motor Collection	23-25, Bastock Road, Sheffield, South Yorkshire, S6 2AE	Secondhand Vehicles	Motoring
D	76m W	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
G	79m NW	Landscaping Supplies Direct	Hardcores House, Rawson Spring Road, Sheffield, South Yorkshire, S6 1PD	Stone Quarrying and Preparation	Extractive Industries
6	79m N	C & D Express Transport Ltd	Rawson Spring Way, Sheffield, South Yorkshire, S6 1PG	Distribution and Haulage	Transport, Storage and Delivery
G	81m N	C D W Motors	Rawson Spring Way, Sheffield, South Yorkshire, S6 1PG	Vehicle Repair, Testing and Servicing	Repair and Servicing
D	89m NW	Hanson Ready-mixed Concrete	918, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DL	Concrete Products	Industrial Products
D	93m NW	S T B Motor Company	906-914, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DL	Secondhand Vehicles	Motoring
G	98m N	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
D	100m W	The Stair Company UK Ltd	Unit 2, Park View Works, 870, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DL	Access Equipment	Industrial Products

ID	Location	Company	Address	Activity	Category
D	107m W	Kwik-Fit (GB) Limited	900, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DL	Vehicle Repair, Testing and Servicing	Repair and Servicing
7	118m NW	J A G Warehousing & Distribution Ltd	Hillsborough Trade Point, Rawson Spring Road, Sheffield, South Yorkshire, S6 1PD	Container and Storage	Transport, Storage and Delivery
D	120m W	Mr Clutch Autocentres	Unit A, Tanfield Road, Sheffield, South Yorkshire, S6 2AF	Vehicle Repair, Testing and Servicing	Repair and Servicing
8	125m SE	Pylon	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
D	126m W	Chapeltown Signs	Unit 1 Park View Works 870, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DL	Signs	Industrial Products
9	130m SW	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
J	130m N	Clear Line	Clear Line, Rawson Spring Way, Sheffield, South Yorkshire, S6 1PG	Building and Component Suppliers	Construction Services
10	133m SW	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
K	143m SW	Tank	South Yorkshire, S6	Tanks (Generic)	Industrial Features
J	153m N	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
N	156m S	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
K	160m SW	Big Yellow Self Storage Company Ltd	718, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DF	Container and Storage	Transport, Storage and Delivery
N	165m S	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
L	167m NW	Niagra Car Sales	991-999, Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2DH	Secondhand Vehicles	Motoring
N	167m S	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
L	172m NW	Trading Cars	33, Penistone Road North, Sheffield, South Yorkshire, S6 1LP	Secondhand Vehicles	Motoring

ID	Location	Company	Address	Activity	Category
L	172m NW	The Car Megastore	33, Penistone Road North, Sheffield, South Yorkshire, S6 1LP	Secondhand Vehicles	Motoring
11	173m N	Mast	South Yorkshire, S6	Telecommunications Features	Infrastructure and Facilities
12	181m SE	Electricity Sub Station	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
J	197m N	Pylon	South Yorkshire, S6	Electrical Features	Infrastructure and Facilities
N	197m S	Footprint Sheffield Ltd	Admiral Works, Sedgley Road, Sheffield, South Yorkshire, S6 2AH	Tools Including Machine Shops	Industrial Products
13	210m NW	Works	South Yorkshire, S6	Unspecified Works Or Factories	Industrial Features
O	220m S	Gas Governor	South Yorkshire, S6	Gas Features	Infrastructure and Facilities
O	230m S	Wind Turbine	South Yorkshire, S6	Energy Production	Industrial Features
14	238m NW	Recycling Business	South Yorkshire, S6	Recycling Centres	Infrastructure and Facilities
15	241m SE	Pylon	South Yorkshire, S6	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 51 >

ID	Location	Company	Address	LPG	Status
18	315m NW	SAVE	176, Penistone Road North, Wadsley Bridge, Sheffield, South Yorkshire, S6 1QA	Not Applicable	Obsolete
22	462m S	OBSOLETE	Penistone Road, Owlerton, Sheffield, South Yorkshire, S6 2FZ	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	4

High voltage underground electricity transmission cables.

Features are displayed on the Current industrial land use map on page 51 >

ID	Location	Cable Set	Cable Route	Details	
P	226m SE	-	-	Cable Make: - Cable Type: PILOT Operating Voltage (kV): -	Year of installation: Not specified Cable in tunnel? Not specified
P	227m SE	-	-	Cable Make: - Cable Type: PILOT Operating Voltage (kV): -	Year of installation: Not specified Cable in tunnel? Not specified
R	301m SE	SGT2 33KV CABLE	NEEPSEND 275KV S/S	Cable Make: PIRELLI 33KV S Cable Type: A/C Operating Voltage (kV): 33	Year of installation: 1974 Cable in tunnel? Not specified
R	302m SE	SGT3 33KV CABLE	NEEPSEND 275KV S/S	Cable Make: PIRELLI 33KV S Cable Type: A/C Operating Voltage (kV): 33	Year of installation: 1974 Cable in tunnel? Not specified

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	5

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

Features are displayed on the Current industrial land use map on **page 51 >**

ID	Location	Details	
A	On site	Operator: MONDELEZ UK CONFECTIONERY PRODUCTION LIMITED Installation Name: Mondelez Sheffield Process: MCP Permit Number: CP3126SW Original Permit Number: CP3126SW	EPR Reference: EPR/CP3126SW Issue Date: 28/05/2024 Effective Date: 28/05/2024 Last date noted as effective: 06/08/2024 Status: Effective
A	On site	Operator: MONDELEZ UK CONFECTIONERY PRODUCTION LIMITED Installation Name: Mondelez Sheffield Process: MCP Permit Number: CP3126SW Original Permit Number: CP3126SW	EPR Reference: EPR/CP3126SW Issue Date: 28/05/2024 Effective Date: 28/05/2024 Last date noted as effective: 06/08/2024 Status: Effective
A	On site	Operator: MONDELEZ UK CONFECTIONERY PRODUCTION LIMITED Installation Name: Mondelez Sheffield Process: MCP Permit Number: CP3126SW Original Permit Number: CP3126SW	EPR Reference: EPR/CP3126SW Issue Date: 28/05/2024 Effective Date: 28/05/2024 Last date noted as effective: 06/08/2024 Status: Effective
A	On site	Operator: MONDELEZ UK CONFECTIONERY PRODUCTION LIMITED Installation Name: Mondelez Sheffield Process: MCP Permit Number: CP3126SW Original Permit Number: CP3126SW	EPR Reference: EPR/CP3126SW Issue Date: 28/05/2024 Effective Date: 28/05/2024 Last date noted as effective: 06/08/2024 Status: Effective
A	On site	Operator: MONDELEZ UK CONFECTIONERY PRODUCTION LIMITED Installation Name: Mondelez Sheffield Process: MCP Permit Number: CP3126SW Original Permit Number: CP3126SW	EPR Reference: EPR/CP3126SW Issue Date: 28/05/2024 Effective Date: 28/05/2024 Last date noted as effective: 06/08/2024 Status: Effective

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

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

Records within 500m	10

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.

Features are displayed on the Current industrial land use map on page 51 >

ID	Location	Address	Details	
E	21m SW	Medicast Ltd, Beulah Rd, Sheffield, S6 2AN	Process: Non-ferrous Metal Foundry Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
E	32m SW	Symmetry Medical Thornton Precision Components Ltd, Beulah Road, Sheffield, S6 2AN	Process: Surface Treatment of Metal Processes; Polishing Glass Products Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
E	32m SW	Symmetry Medical Thornton Precision Components Ltd, Beulah Road, Sheffield, S6 2AN	Process: Non-ferrous Metal Foundry Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
E	32m SW	Symmetry Medical Thornton Precision Components Ltd, Beulah Road, Sheffield, S6 2AN	Process: Surface Treatment of Metal Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
D	89m NW	Hanson Premix, 918 Penistone Road, Sheffield, S6 2DL	Process: Use of Bulk Cement Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
G	118m N	Imi Cornelius Ltd, Riverdale Ind Est, Rawson Spring Way, Sheffield, S6 1PG	Process: Di-isocyanate Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
S	342m SW	Swann Morton Limited, Penn Works, Owlerton Gree, Sheffield, S6 2BJ	Process: Surface Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
S	343m SW	Swann-Morton Limited, Penn Works, Owlerton Green, Sheffield, S6 2BJ	Process: Surface Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
21	448m S	Transition International Limited, 480 Penistone Road, Sheffield, S6 2FU	Process: Iron and Steel Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

ID	Location	Address	Details	
24	468m S	Transition International Limited, 480 Penistone Road, Sheffield, S6 2FU	Process: Non-ferrous Metal Foundry Processes Status: Current Permit Permit Type: Part A2	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

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	23

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 51 >

ID	Location	Address	Details	
A	On site	BASSETT GEORGE & CO LTD, PO BOX 80, BEULAH ROAD, OWLERTON, SHEFFIELD, S6 2AP	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 3278 Permit Version: 1 Receiving Water: -	Status: REVOKED - UNSPECIFIED Issue date: 01/04/1986 Effective Date: 01/04/1986 Revocation Date: 04/07/1991
A	On site	BASSETT GEORGE & CO LTD, PO BOX 80, BEULAH ROAD, OWLERTON, SHEFFIELD, S6 2AP	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 3181 Permit Version: 1 Receiving Water: RIVER DON	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 17/11/1976 Effective Date: 17/11/1976 Revocation Date: 16/02/1992
A	On site	BASSETT GEORGE & CO LTD, PO BOX 80, BEULAH ROAD, OWLERTON, SHEFFIELD, S6 2AP	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 3181 Permit Version: 2 Receiving Water: RIVER DON	Status: REVISED CONSENT, BY NOTICE (SECTION 37(1)) Issue date: 17/02/1992 Effective Date: 17/02/1992 Revocation Date: 16/12/1998

ID	Location	Address	Details	
A	On site	BASSETT GEORGE & CO LTD, PO BOX 80, BEULAH ROAD, OWLERTON, SHEFFIELD, S6 2AP	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 3278 Permit Version: 1 Receiving Water: -	Status: REVOKED - UNSPECIFIED Issue date: 01/04/1986 Effective Date: 01/04/1986 Revocation Date: 04/07/1991
A	On site	BASSETT GEORGE & CO LTD, PO BOX 80, BEULAH ROAD, OWLERTON, SHEFFIELD, S6 2AP	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 3181 Permit Version: 3 Receiving Water: RIVER DON	Status: REVISED CONSENT, BY NOTICE (SECTION 37(1)) Issue date: 17/12/1998 Effective Date: 17/12/1998 Revocation Date: -
B	On site	LIVESEY STREET PREMISES, SHEFFIELD	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: WRA 6752 Permit Version: 1 Receiving Water: RIVER DON	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 25/09/1992 Effective Date: 25/09/1992 Revocation Date: -
C	On site	BEULAH ROAD PREMISES, BEULAH ROAD, SHEFFIELD, SOUTH YORKSHIRE, S6 2AP	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 3186 Permit Version: 1 Receiving Water: RIVER DON	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 13/12/1976 Effective Date: 13/12/1976 Revocation Date: 16/02/1992
C	On site	BEULAH ROAD PREMISES, BEULAH ROAD, SHEFFIELD, SOUTH YORKSHIRE, S6 2AP	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: 3186 Permit Version: 2 Receiving Water: RIVER DON	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: 17/02/1992 Effective Date: 17/02/1992 Revocation Date: 01/10/1996
C	On site	BEULAH ROAD PREMISES, BEULAH ROAD, SHEFFIELD, SOUTH YORKSHIRE, S6 2AP	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: WRA7289 Permit Version: 1 Receiving Water: RIVER DON	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 28/01/1997 Effective Date: 28/01/1997 Revocation Date: -
D	42m NW	HANSON PREMIX, 918 PENISTONE ROAD, SHEFFIELD, S6 2DL	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE (CONTAM SURFACE WATER, NOT WASTE SIT Permit Number: EPRCB3491RE Permit Version: 1 Receiving Water: RIVER DON	Status: SURRENDERED UNDER EPR 2010 Issue date: 07/05/2015 Effective Date: 07/05/2015 Revocation Date: 18/11/2019
I	72m SE	LIVESEY STREET SPS, PENISTONE ROAD, SHEFFIELD, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 130 Permit Version: 1 Receiving Water: RIVER LOXLEY	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 22/04/1953 Effective Date: 22/04/1953 Revocation Date: 25/02/2002

ID	Location	Address	Details	
I	72m SE	LIVESEY STREET SPS, PENISTONE ROAD, SHEFFIELD, SOUTH YORKSHIRE	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 130 Permit Version: 2 Receiving Water: RIVER LOXLEY	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 26/02/2002 Effective Date: 26/02/2002 Revocation Date: -
L	168m NW	HIGH BRIDGE HILLSBOROUGH CSO, O/S SHEFFIELD WEDNESDAY FC, PENISTONE ROAD, HILLSBOROUGH, SHEFFIELD	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA8464 Permit Version: 1 Receiving Water: RIVER DON	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 28/02/2005 Effective Date: 31/03/2005 Revocation Date: -
Q	228m N	HERRIES ROAD NO 2 CSO, HERRIES ROAD, SHEFFIELD, SOUTH YORKSHIRE, S6 1QW	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA8261 Permit Version: 2 Receiving Water: TODD HOLE DYKE (CULVERTED)	Status: VARIED UNDER EPR 2010 Issue date: 31/03/2022 Effective Date: 31/03/2022 Revocation Date: -
Q	232m N	HERRIES ROAD NO 2 CSO, HERRIES ROAD, SHEFFIELD, SOUTH YORKSHIRE, S6 1QW	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA8261 Permit Version: 1 Receiving Water: TODD HOLE DIKE/MILL STREAM	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 08/03/2004 Effective Date: 31/03/2004 Revocation Date: 30/03/2022
T	342m W	PARKSIDE ROAD CSO, PARKSIDE ROAD (ADJ NO.86), SHEFFIELD, SOUTH YORKSHIRE, S6 1SZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA9195 Permit Version: 2 Receiving Water: RIVER DON	Status: VARIED UNDER EPR 2010 Issue date: 28/06/2019 Effective Date: 28/06/2019 Revocation Date: -
T	346m W	PARKSIDE ROAD CSO, PARKSIDE ROAD (ADJ NO.86), SHEFFIELD, SOUTH YORKSHIRE, S6 1SZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: WRA9195 Permit Version: 1 Receiving Water: RIVER DON	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 24/08/2007 Effective Date: 24/08/2007 Revocation Date: 27/06/2019
U	468m S	NISSAN UK LIMITED, 442 PENISTONE ROAD, SHEFFIELD	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 3616 Permit Version: 3 Receiving Water: RIVER LOXLEY	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 07/05/2003 Effective Date: 07/05/2003 Revocation Date: 06/10/2005

ID	Location	Address	Details	
U	468m S	NISSAN UK LIMITED, 442 PENISTONE ROAD, SHEFFIELD	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 3616 Permit Version: 2 Receiving Water: RIVER LOXLEY	Status: REVISED CONSENT, BY NOTICE (SECTION 37(1)) Issue date: 28/09/1998 Effective Date: 29/09/1998 Revocation Date: 06/05/2003
U	468m S	NISSAN UK LIMITED, 442 PENISTONE ROAD, SHEFFIELD	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 3616 Permit Version: 1 Receiving Water: RIVER LOXLEY	Status: TRANSFERRED FROM R(PP)A 1951-1961 Issue date: 28/04/1982 Effective Date: 28/04/1982 Revocation Date: 28/09/1998
U	468m S	NISSAN UK LIMITED, 442 PENISTONE ROAD, SHEFFIELD	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: C5522 Permit Version: 1 Receiving Water: RIVER LOXLEY	Status: TRANSFERRED FROM COPA 1974 Issue date: 05/05/1989 Effective Date: 05/05/1989 Revocation Date: 20/07/1993
U	468m S	NISSAN UK LIMITED, 442 PENISTONE ROAD, SHEFFIELD	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: C5522 Permit Version: 2 Receiving Water: RIVER LOXLEY	Status: REVISED CONSENT, BY NOTICE (SECTION 37(1)) Issue date: 21/07/1993 Effective Date: 21/07/1993 Revocation Date: -
25	495m NW	CATCHBAR LANE CSO, ADJ NO 86 CATCHBAR LANE, OWLERTON, SHEFFIELD, SOUTH YORKSHIRE, S6 1SX	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: YWUCD2/96 Permit Version: 1 Receiving Water: RIVER DON	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 12/11/1997 Effective Date: 12/11/1997 Revocation Date: 30/03/2005

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	3

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 51 >

ID	Location	Name	Status	Receiving Water	Authorised Substances
N	224m SW	Thornton Precision Components,sheffield, S6 2dq	Not Active	Unknown	Chromium, Copper, Lead, Nickel, Zinc
16	294m NW	Hiram Wild Ltd,sheffield,s6 1qu	Not Active	Unknown	Chromium, Copper, Lead, Nickel, Zinc
17	295m NW	Hiram Wild, Herries Road, Sheffield	Not Active	Unknown	Chromium, Copper, Nickel, Zinc

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	12

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 51 >

ID	Location	Details	
F	29m E	Incident Date: 03/04/2002 Incident Identification: 68672 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
G	31m NW	Incident Date: 26/09/2003 Incident Identification: 192768 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
F	46m E	Incident Date: 06/08/2002 Incident Identification: 97787 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
F	54m E	Incident Date: 07/04/2002 Incident Identification: 69482 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)
L	153m NW	Incident Date: 28/07/2003 Incident Identification: 177272 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Animal and Vegetable Oil	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
M	154m E	Incident Date: 05/07/2001 Incident Identification: 14030 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)
L	159m NW	Incident Date: 29/08/2001 Incident Identification: 27647 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
M	176m SE	Incident Date: 06/08/2002 Incident Identification: 97781 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
19	332m W	Incident Date: 27/05/2019 Incident Identification: 1705188 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
T	355m W	Incident Date: 25/07/2001 Incident Identification: 19116 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
20	363m W	Incident Date: 05/06/2002 Incident Identification: 82888 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
23	462m SE	Incident Date: 07/04/2002 Incident Identification: 69464 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

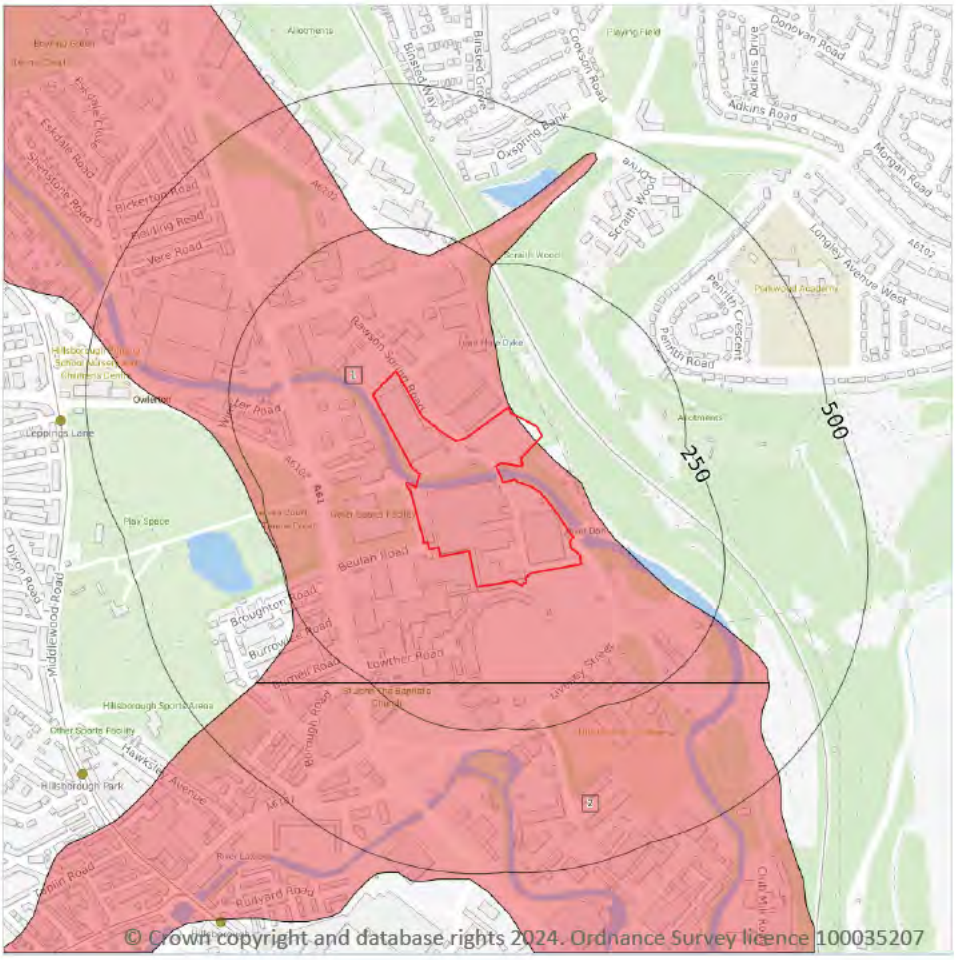
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m	2

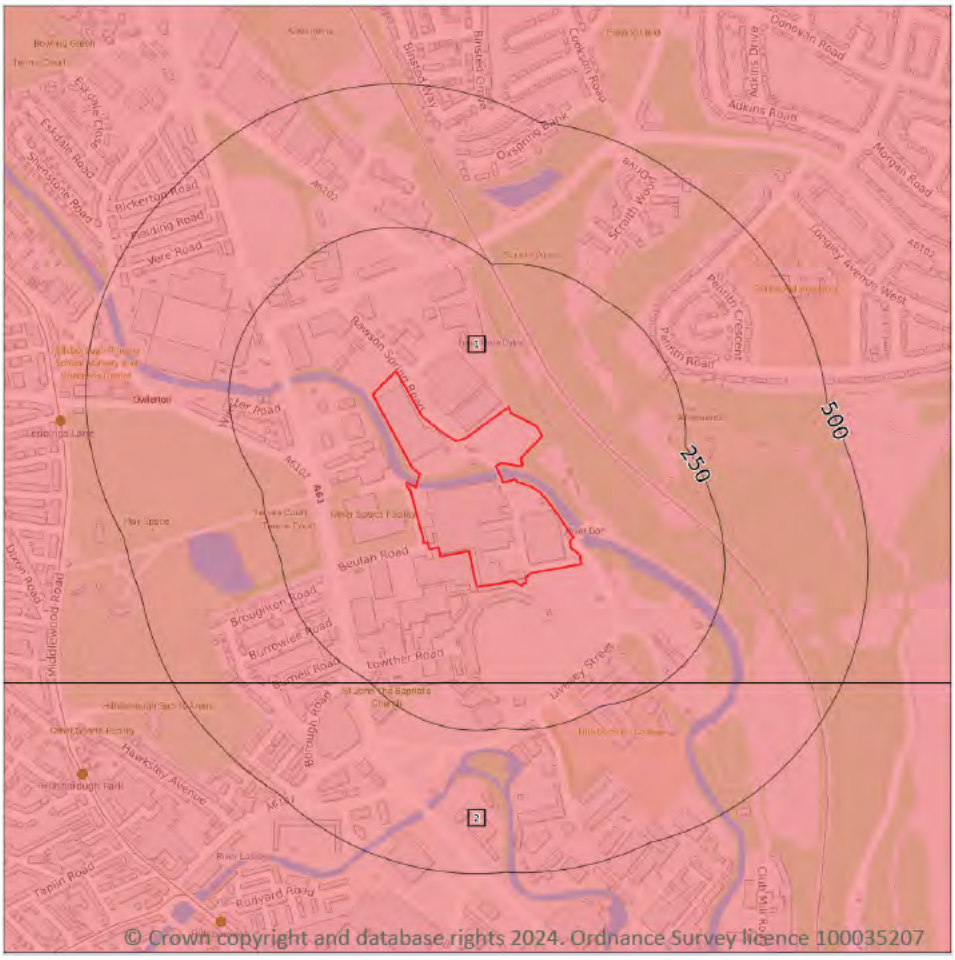
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on page 67 >

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	168m S	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.

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	2

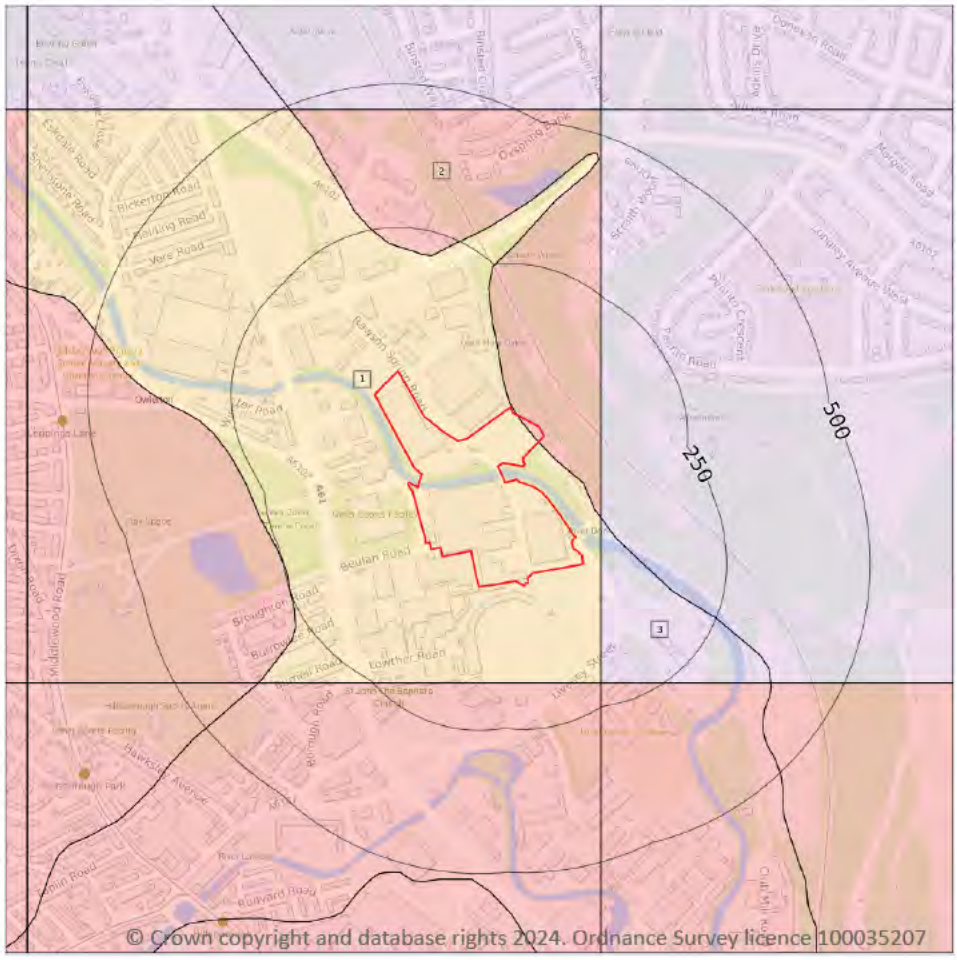
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on page 69 >

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	168m S	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



Site Outline

Search buffers in metres (m)

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

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

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	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 71 >

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: 300-550mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: High**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
2	**On site**	**Summary Classification: Secondary bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: High**	**Vulnerability: High Aquifer type: Secondary Flow mechanism: Well connected fractures**
3	31m SE	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: No Data	Vulnerability: Medium 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.

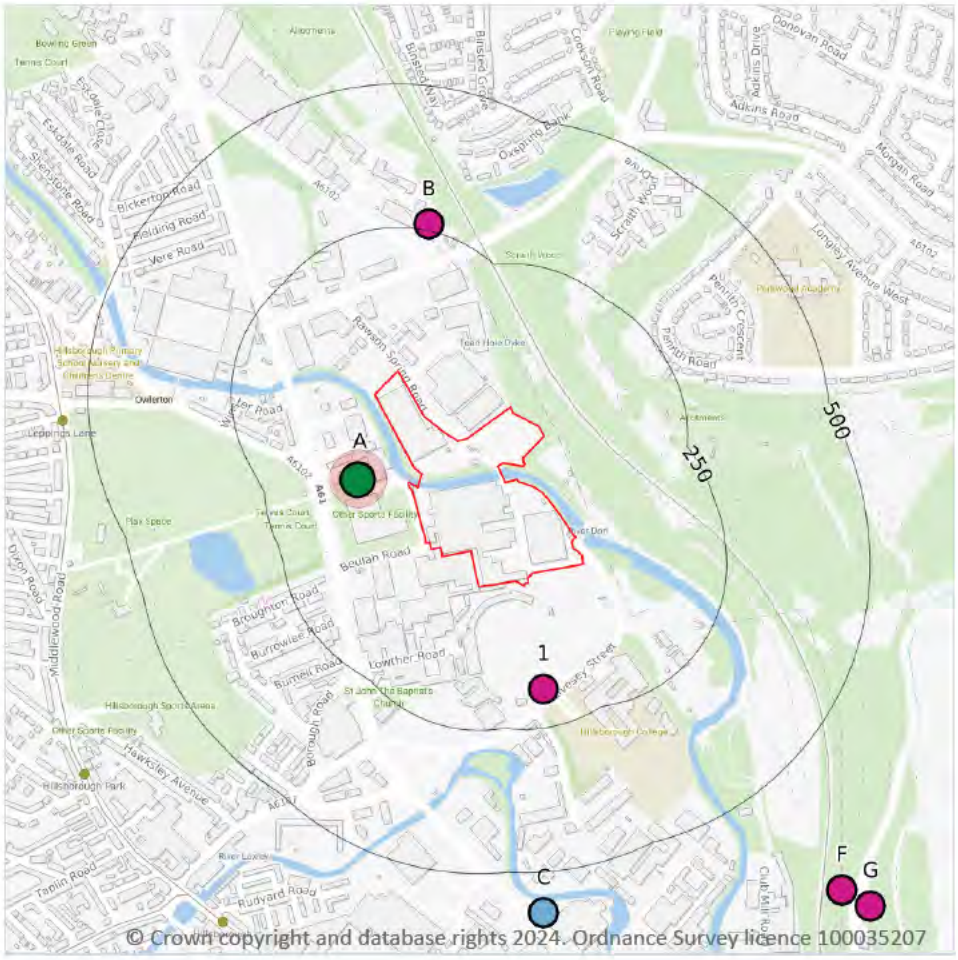
5.5 Groundwater vulnerability- local information

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
- 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	27

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 73 >

ID	Location	Details	
A	84m W	Status: Historical Licence No: 2/27/05/199 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-HILLSBOROUGH Data Type: Point Name: SHEFFIELD INTERNATIONAL VENUES LTD Easting: 433580 Northing: 390360	Annual Volume (m^3): 40000 Max Daily Volume (m^3): 150 Original Application No: - Original Start Date: 03/01/2006 Expiry Date: 31/03/2017 Issue No: 2 Version Start Date: 18/01/2012 Version End Date: -
A	88m W	Status: Active Licence No: 2/27/05/199/R01 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-HILLSBOROUGH Data Type: Point Name: SHEFFIELD INTERNATIONAL VENUES LTD Easting: 433576 Northing: 390355	Annual Volume (m^3): 18000 Max Daily Volume (m^3): 150 Original Application No: NPS/WR/035905 Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 2 Version Start Date: 05/08/2021 Version End Date: -
1	183m S	Status: Historical Licence No: 2/27/05/189 Details: Dust suppression Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - SHEFFIELD Data Type: Point Name: SHEFFIELD SPORTS STADIUM LTD Easting: 433900 Northing: 389990	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 11/05/2001 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 11/05/2001 Version End Date: -
B	262m N	Status: Historical Licence No: 2/27/05/005 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: CARLSBERG TETLEY BREWING LTD Easting: 433700 Northing: 390800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 03/12/1996 Version End Date: -

ID	Location	Details	
B	262m N	Status: Historical Licence No: 2/27/05/005 Details: General use relating to Secondary Category (Medium Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - WADSLEY BRIDGE SHEFFIELD Data Type: Point Name: CARLSBERG TETLEY BREWING LTD Easting: 433700 Northing: 390800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/12/1965 Expiry Date: - Issue No: 100 Version Start Date: 03/12/1996 Version End Date: -
-	650m S	Status: Historical Licence No: 2/27/05/193 Details: Pollution Remediation Direct Source: GROUNDWATERS Point: WELL POINT SYSTEM-SANDS & GRAVELS-CAPEL STREET-SHEFFIELD Data Type: Poly4 Name: MEL LTD Easting: 433850 Northing: 389500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 06/08/2003 Expiry Date: 31/05/2007 Issue No: 1 Version Start Date: 06/08/2003 Version End Date: -
-	650m S	Status: Historical Licence No: 2/27/05/193 Details: Pollution Remediation Direct Source: GROUNDWATERS Point: WELL POINT SYSTEM-SANDS AND GRAVELS-CAPEL STREET-SHEFFIELD Data Type: Poly4 Name: MEL LTD Easting: 433850 Northing: 389500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 06/08/2003 Expiry Date: 31/05/2007 Issue No: 1 Version Start Date: 06/08/2003 Version End Date: -
F	725m SE	Status: Historical Licence No: 2/27/05/181 Details: Dust suppression Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: PARKWOOD LANDFILL LIMITED Easting: 434420 Northing: 389640	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/08/1995 Expiry Date: 31/12/2006 Issue No: 100 Version Start Date: 21/08/1995 Version End Date: -

ID	Location	Details	
F	725m SE	Status: Historical Licence No: 2/27/05/181 Details: Dust suppression Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - NEEPSEND SHEFFIELD Data Type: Point Name: PARKWOOD LANDFILL LTD Easting: 434420 Northing: 389640	Annual Volume (m^3): 10800 Max Daily Volume (m^3): 45 Original Application No: - Original Start Date: 21/08/1995 Expiry Date: 31/12/2006 Issue No: 100 Version Start Date: 21/08/1995 Version End Date: -
F	725m SE	Status: Historical Licence No: 2/27/05/200 Details: Dust Suppression Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - NEEPSEND SHEFFIELD Data Type: Point Name: VIRIDOR WASTE SHEFFIELD LTD Easting: 434420 Northing: 389640	Annual Volume (m^3): 21600 Max Daily Volume (m^3): 90 Original Application No: - Original Start Date: 01/01/2007 Expiry Date: 31/03/2017 Issue No: 2 Version Start Date: 01/04/2008 Version End Date: -
F	725m SE	Status: Historical Licence No: 2/27/05/200 Details: General Washing/Process Washing Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - NEEPSEND SHEFFIELD Data Type: Point Name: VIRIDOR WASTE SHEFFIELD LTD Easting: 434420 Northing: 389640	Annual Volume (m^3): 21600 Max Daily Volume (m^3): 90 Original Application No: - Original Start Date: 01/01/2007 Expiry Date: 31/03/2017 Issue No: 2 Version Start Date: 01/04/2008 Version End Date: -
G	778m SE	Status: Historical Licence No: 2/27/05/200/R01 Details: General Washing/Process Washing Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - NEEPSEND SHEFFIELD Data Type: Point Name: Viridor Waste Management Ltd Easting: 434470 Northing: 389612	Annual Volume (m^3): 10800 Max Daily Volume (m^3): 45 Original Application No: - Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -

ID	Location	Details	
G	778m SE	Status: Historical Licence No: 2/27/05/200/R01 Details: Dust Suppression Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - NEEPSEND SHEFFIELD Data Type: Point Name: Viridor Waste Management Ltd Easting: 434470 Northing: 389612	Annual Volume (m^3): 10800 Max Daily Volume (m^3): 45 Original Application No: - Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -
-	1278m SE	Status: Historical Licence No: NE/027/0005/005 Details: General Use Relating To Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: SHEFFIELD SKI VILLAGE BOREHOLE A Data Type: Point Name: PULLAN DEVELOPMENT (SELBY) LTD Easting: 434775 Northing: 389215	Annual Volume (m^3): 48000 Max Daily Volume (m^3): 150 Original Application No: - Original Start Date: 20/01/2010 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 20/01/2010 Version End Date: -
-	1279m SE	Status: Historical Licence No: 2/27/05/187 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - SHEFFIELD SKI VILLAGE Data Type: Point Name: SPEEDOME LIMITED Easting: 434770 Northing: 389210	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 04/02/2000 Expiry Date: 31/12/2003 Issue No: 1 Version Start Date: 04/02/2000 Version End Date: -
-	1279m SE	Status: Historical Licence No: 2/27/05/194 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-SHEFFIELD SKI VILLAGE Data Type: Point Name: SPEEDOME LIMITED Easting: 434770 Northing: 389210	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/01/2004 Expiry Date: 31/12/2004 Issue No: 1 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1279m SE	Status: Historical Licence No: 2/27/05/198 Details: General Use Relating To Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-SHEFFIELD SKI VILLAGE Data Type: Point Name: PULLAN DEVELOPMENT (SELBY) LTD Easting: 434770 Northing: 389210	Annual Volume (m^3): 48000 Max Daily Volume (m^3): 150 Original Application No: - Original Start Date: 13/07/2005 Expiry Date: 31/12/2009 Issue No: 2 Version Start Date: 08/01/2008 Version End Date: -
-	1325m SE	Status: Historical Licence No: NE/027/0005/005 Details: General Use Relating To Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: SHEFFIELD SKI VILLAGE BOREHOLE B Data Type: Point Name: PULLAN DEVELOPMENT (SELBY) LTD Easting: 434705 Northing: 389105	Annual Volume (m^3): 48000 Max Daily Volume (m^3): 150 Original Application No: - Original Start Date: 20/01/2010 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 20/01/2010 Version End Date: -
-	1327m SE	Status: Historical Licence No: 2/27/05/178 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - LOWER COAL MEASURES - SHEFFIELD SKI VILLAGE Data Type: Point Name: SPEEDOME LIMITED Easting: 434700 Northing: 389100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 24/06/1994 Expiry Date: 31/12/2003 Issue No: 101 Version Start Date: 20/09/1999 Version End Date: -
-	1327m SE	Status: Historical Licence No: 2/27/05/194 Details: General use relating to Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-SHEFFIELD SKI VILLAGE Data Type: Point Name: SPEEDOME LIMITED Easting: 434700 Northing: 389100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/01/2004 Expiry Date: 31/12/2004 Issue No: 1 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1327m SE	Status: Historical Licence No: 2/27/05/198 Details: General Use Relating To Secondary Category (High Loss) Direct Source: GROUNDWATERS Point: BOREHOLE-LOWER COAL MEASURES-SHEFFIELD SKI VILLAGE Data Type: Point Name: PULLAN DEVELOPMENT (SELBY) LTD Easting: 434700 Northing: 389100	Annual Volume (m^3): 48000 Max Daily Volume (m^3): 150 Original Application No: - Original Start Date: 13/07/2005 Expiry Date: 31/12/2009 Issue No: 2 Version Start Date: 08/01/2008 Version End Date: -
-	1359m E	Status: Active Licence No: NE/027/0005/022 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - FIRSHILL Data Type: Point Name: The Sheffield United Football Club Ltd Easting: 435326 Northing: 390141	Annual Volume (m^3): 18250 Max Daily Volume (m^3): 50 Original Application No: NPS/WR/019737 Original Start Date: 05/04/2016 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 05/04/2016 Version End Date: -
-	1359m E	Status: Historical Licence No: NE/027/0005/022 Details: Spray Irrigation - Direct Direct Source: GROUNDWATERS Point: BOREHOLE - SHERWOOD SANDSTONE - FIRSHILL Data Type: Point Name: The Sheffield United Football Club Ltd Easting: 435326 Northing: 390141	Annual Volume (m^3): 18250 Max Daily Volume (m^3): 50 Original Application No: - Original Start Date: 05/04/2016 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 05/04/2016 Version End Date: -
-	1376m NW	Status: Historical Licence No: 2/27/05/042 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - COAL MEASURES - SHEFFIELD Data Type: Point Name: HAGUE PLANT LTD Easting: 432900 Northing: 391700	Annual Volume (m^3): 363640 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/03/1996 Version End Date: -

ID	Location	Details	
-	1960m NW	Status: Historical Licence No: 2/27/05/141 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE Data Type: Point Name: UNION CARBIDE (UK) LIMITED Easting: 432260 Northing: 391930	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 15/11/1968 Version End Date: -
-	1960m NW	Status: Historical Licence No: 2/27/05/141 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT - WADSLEY BRIDGE Data Type: Point Name: Waste Recycling & Destruction Ltd Easting: 432260 Northing: 391930	Annual Volume (m^3): 363688 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 08/02/1967 Expiry Date: - Issue No: 103 Version Start Date: 01/08/2016 Version End Date: -
-	1965m NW	Status: Active Licence No: 2/27/05/141 Details: General Washing/Process Washing Direct Source: GROUNDWATERS Point: BOREHOLE - MILLSTONE GRIT - WADSLEY BRIDGE Data Type: Point Name: Waste Recycling & Destruction Ltd Easting: 432263 Northing: 391939	Annual Volume (m^3): 7300 Max Daily Volume (m^3): 21 Original Application No: NPS/WR/024978 Original Start Date: 08/02/1967 Expiry Date: - Issue No: 104 Version Start Date: 23/03/2017 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	8

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 73 >

ID	Location	Details	
C	571m S	Status: Historical Licence No: 2/27/05/168 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: SURFACE WATER Point: RIVER LOXLEY Data Type: Point Name: THE JEWEL BLADE CO LTD Easting: 433900 Northing: 389600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 07/02/1985 Expiry Date: - Issue No: 100 Version Start Date: 16/10/1996 Version End Date: -
C	571m S	Status: Historical Licence No: 2/27/05/168 Details: General use relating to Secondary Category (Very Low Loss) Direct Source: SURFACE WATER Point: RIVER LOXLEY Data Type: Point Name: THE JEWEL BLADE CO LTD Easting: 433900 Northing: 389600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 07/02/1985 Expiry Date: - Issue No: 100 Version Start Date: 16/10/1996 Version End Date: -
C	571m S	Status: Historical Licence No: 2/27/05/168 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: RIVER LOXLEY Data Type: Point Name: THE JEWEL BLADE CO LTD Easting: 433900 Northing: 389600	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 07/02/1985 Expiry Date: - Issue No: 100 Version Start Date: 16/10/1996 Version End Date: -
-	709m S	Status: Historical Licence No: 2/27/05/150 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: RIVER LOXLEY Data Type: Point Name: T W PEARSON LIMITED Easting: 434100 Northing: 389500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/11/1968 Expiry Date: - Issue No: 100 Version Start Date: 22/01/1999 Version End Date: -

ID	Location	Details	
-	709m S	Status: Historical Licence No: 2/27/05/150 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: SURFACE WATER Point: RIVER LOXLEY Data Type: Point Name: T W PEARSON LTD Easting: 434100 Northing: 389500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/11/1968 Expiry Date: - Issue No: 100 Version Start Date: 22/01/1999 Version End Date: -
-	1254m NW	Status: Active Licence No: NE/027/0005/033 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: SURFACE WATER Point: ABSTRACTION POINT FOR NIAGARA FISH PASS Data Type: Point Name: Yorkshire Water Services Ltd Easting: 432880 Northing: 391537	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: NPS/WR/036765 Original Start Date: 14/12/2022 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 14/12/2022 Version End Date: -
-	1257m NW	Status: Historical Licence No: NE/027/0005/003/R01 Details: Fish Pass/Canoe Pass Direct Source: SURFACE WATER Point: RIVER DON - NIAGRA SHEFFIELD Data Type: Point Name: SHEFFIELD CITY COUNCIL Easting: 432867 Northing: 391530	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: NPS/WR/021604 Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 1 Version Start Date: 01/04/2017 Version End Date: -
-	1263m NW	Status: Historical Licence No: NE/027/0005/003 Details: Fish Pass/Canoe Pass Direct Source: SURFACE WATER Point: RIVER DON - NIAGRA SHEFFIELD Data Type: Point Name: SHEFFIELD CITY COUNCIL Easting: 432864 Northing: 391535	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 28/01/2010 Expiry Date: 31/03/2017 Issue No: 1 Version Start Date: 28/01/2010 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	2

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 73 >

ID	Location	Details	
A	84m W	Status: Historical Licence No: 2/27/05/199 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-HILLSBOROUGH Data Type: Point Name: SHEFFIELD INTERNATIONAL VENUES LTD Easting: 433580 Northing: 390360	Annual Volume (m^3): 40000 Max Daily Volume (m^3): 150 Original Application No: - Original Start Date: 03/01/2006 Expiry Date: 31/03/2017 Issue No: 2 Version Start Date: 18/01/2012 Version End Date: -
A	88m W	Status: Active Licence No: 2/27/05/199/R01 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: GROUNDWATERS Point: BOREHOLE-COAL MEASURES-HILLSBOROUGH Data Type: Point Name: SHEFFIELD INTERNATIONAL VENUES LTD Easting: 433576 Northing: 390355	Annual Volume (m^3): 18000 Max Daily Volume (m^3): 150 Original Application No: NPS/WR/035905 Original Start Date: 01/04/2017 Expiry Date: 31/03/2029 Issue No: 2 Version Start Date: 05/08/2021 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 73 >

ID	Location	Type	Description
A	37m W	1	Inner 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	19

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 85 >

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don

ID	Location	Type of water feature	Ground level	Permanence	Name
B	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**River Don**
D	1m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	3m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
3	5m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Toad Hole Dyke
E	5m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	6m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	10m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
E	10m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Toad Hole Dyke
F	15m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
6	20m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Toad Hole Dyke
7	84m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
F	84m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Toad Hole Dyke
G	94m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don

ID	Location	Type of water feature	Ground level	Permanence	Name
G	94m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	101m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
9	132m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Don
G	132m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
11	226m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Toad Hole Dyke

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	4

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 85 >

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 85 >

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Don from Little Don to River Loxley confluence	GB104027057411	Don Upper	Don and Rother

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 85 >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
2	On site	River	Don from Little Don to River Loxley confluence	GB104027057411 ↗	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

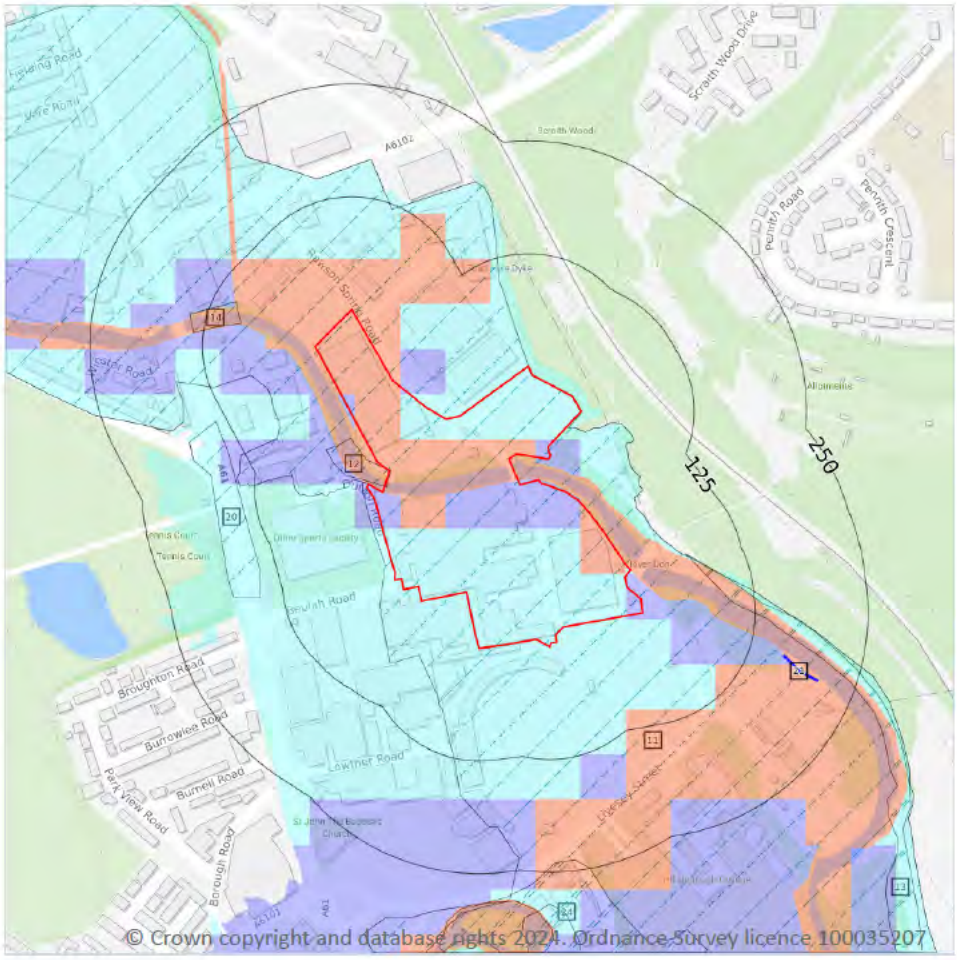
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on page 85 >

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
B	On site	Don & Rother Millstone grit & Coal Measures	GB40402G992300 ↗	Poor	Poor	Good	2019

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

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	10

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

Features are displayed on the River and coastal flooding map on page 89 >

Distance	Flood risk category
On site	**High**
0 - 50m	High

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

7.2 Historical Flood Events

Records within 250m	**6**

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

Features are displayed on the River and coastal flooding map on page 89 >

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
11	**On site**	**2007 River Don - Wadlesy Bridge To Philadelphia**	**2007-06-15 2007-06-30**	**Main river**	**Channel capacity exceeded (no raised defences)**	**Fluvial**
12	**On site**	**2019 November Flood Incident**	**2019-11-07 2019-11-08**	**Main river**	**Channel capacity exceeded (no raised defences)**	**Fluvial**
13	64m E	123 Autumn 2000	2000-11-06 2000-12-04	Main river	Unknown	No data
14	86m NW	2019 November Flood Incident	2019-11-07 2019-11-08	Main river	Channel capacity exceeded (no raised defences)	Fluvial
20	137m W	2019 November Flood Incident	2019-11-07 2019-11-08	Unknown	Unknown	No data
24	238m S	123 Autumn 2000	2000-11-06 2000-12-04	Main river	Unknown	No data

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

7.3 Flood Defences

Records within 250m	**1**

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.

Features are displayed on the River and coastal flooding map on page 89 >

ID	Location	Update
21	163m SE	08/11/2022

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.

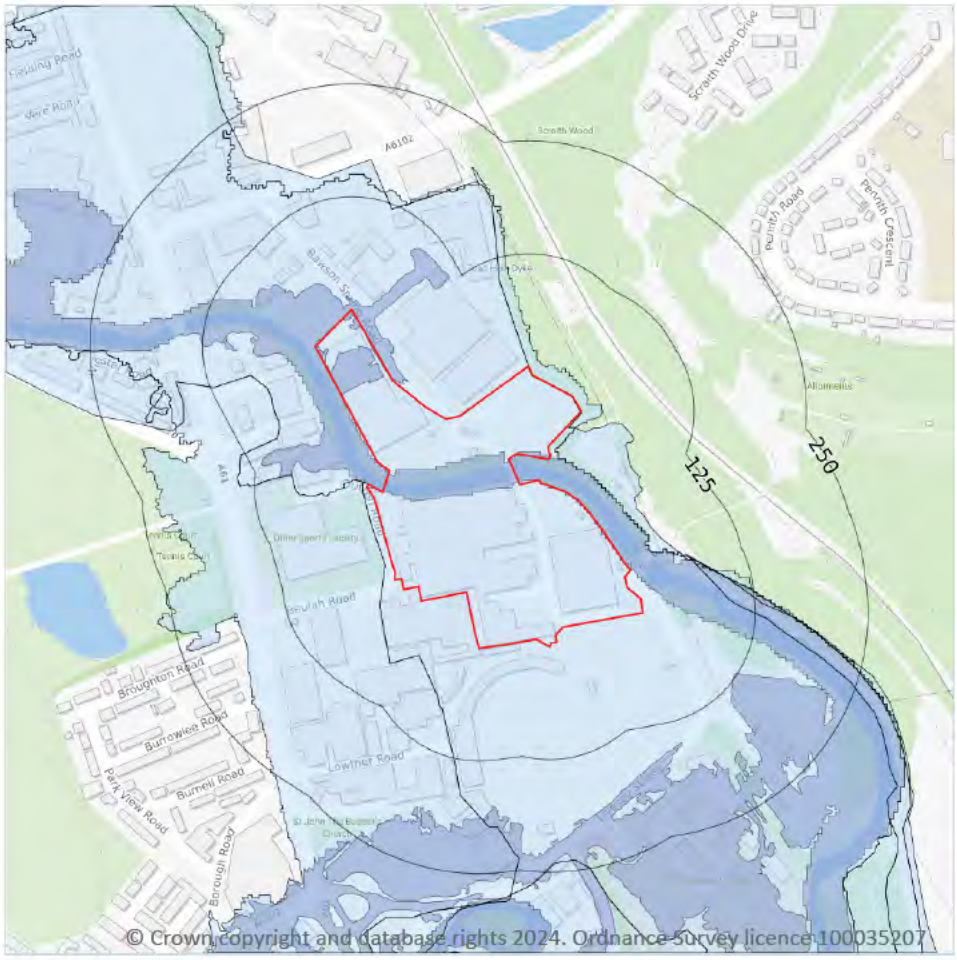
7.5 Flood Storage Areas

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	1

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

Features are displayed on the River and coastal flooding map on page 89 >

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

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

7.7 Flood Zone 3

Records within 50m	1

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

Features are displayed on the River and coastal flooding map on page 89 >

Location	Type
On site	**Zone 3 - (Fluvial Models)**

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 94 >

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 Ambiental 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 96 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	5

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 97 >

ID	Location	Name	Data source
1	555m SE	Neepsend Railway Cutting	Natural England

ID	Location	Name	Data source
2	920m SE	Neepsend Railway Cutting	Natural England
4	1187m SE	Neepsend Railway Cutting	Natural England
5	1383m SE	Neepsend Brickworks	Natural England
-	1904m NW	Wadsley Fossil Forest	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

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	3

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.

Features are displayed on the Environmental designations map on page 97 >

ID	Location	Name	Data source
-	1476m E	Roe Woods & Crabtree Ponds	Natural England
-	1633m E	Roe Woods & Crabtree Ponds	Natural England
-	1771m W	Loxley & Wadsley Common	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	2

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.

Features are displayed on the Environmental designations map on page 97 >

ID	Location	Name	Woodland Type
-	1511m E	Roe Wood	Ancient Replanted Woodland
12	1777m NW	Beeley Wood West	Ancient & Semi-Natural Woodland

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	6

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

Features are displayed on the Environmental designations map on page 97 >

ID	Location	Name	Local Authority name
3	1125m NW	South and West Yorkshire	Sheffield
6	1444m SW	South and West Yorkshire	Sheffield
8	1493m SW	South and West Yorkshire	Sheffield
A	1622m SW	South and West Yorkshire	Sheffield
A	1668m SW	South and West Yorkshire	Sheffield
-	1841m SW	South and West Yorkshire	Sheffield

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

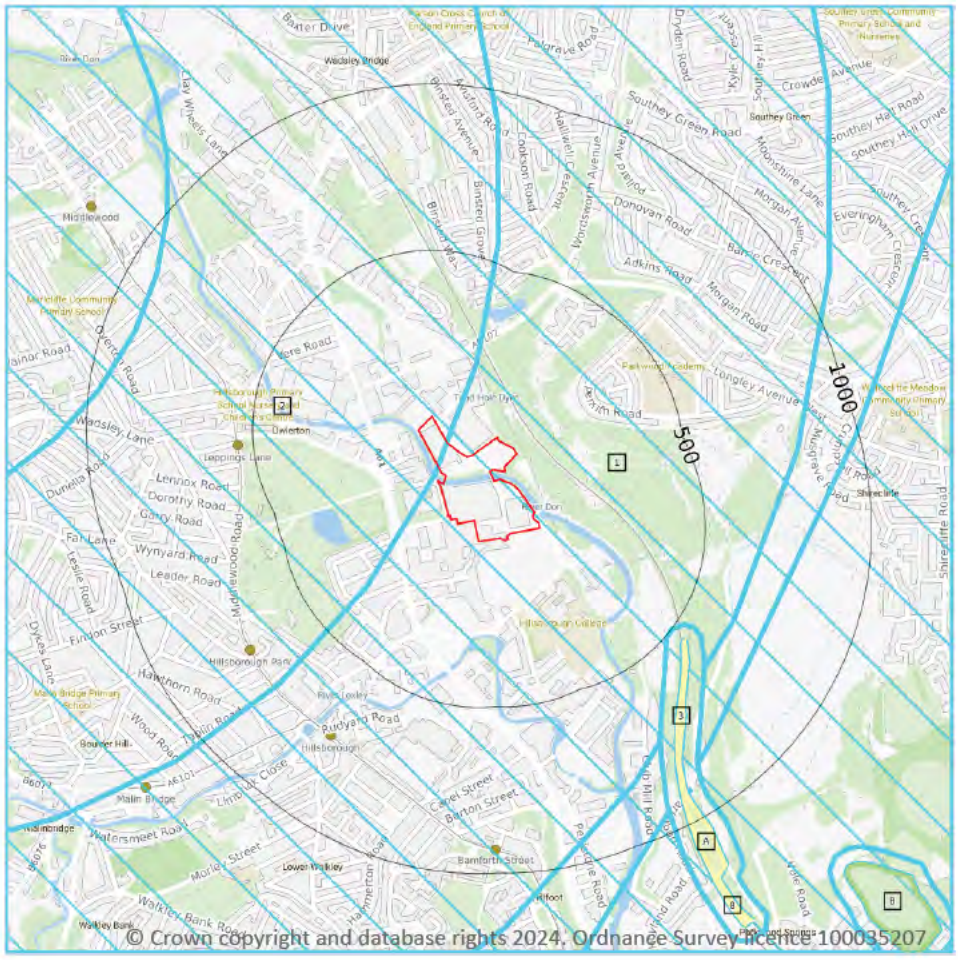
Records within 2000m	2

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

Location	Name	Type	NVZ ID	Status
1435m NE	Blackburn Brook from Source to River Don NVZ	Surface Water	261	Existing
1753m N	Blackburn Brook from Source to River Don NVZ	Surface Water	261	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

10.17 SSSI Impact Risk Zones

Records on site	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 103 >**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - 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. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.**
2	On site	**Infrastructure - Pipelines and underground cables, 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. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW 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. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	5

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 103 >

ID: 3
Location: 555m SE
SSSI name: Neepsend Railway Cutting
Unit name: Neepsend Railway Cutting
Broad habitat: Earth Heritage
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
ER - Westphalian	Unfavourable - Recovering	25/04/2022

ID: A
Location: 920m SE
SSSI name: Neepsend Railway Cutting
Unit name: Neepsend Railway Cutting
Broad habitat: Earth Heritage
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
ER - Westphalian	Unfavourable - Recovering	25/04/2022

ID: 8
Location: 1187m SE
SSSI name: Neepsend Railway Cutting
Unit name: Neepsend Railway Cutting
Broad habitat: Earth Heritage
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
ER - Westphalian	Unfavourable - Recovering	25/04/2022

ID: B
Location: 1383m SE
SSSI name: Neepsend Brickworks
Unit name: Neepsend Brickworks
Broad habitat: Earth Heritage
Condition: Favourable
Reportable features:

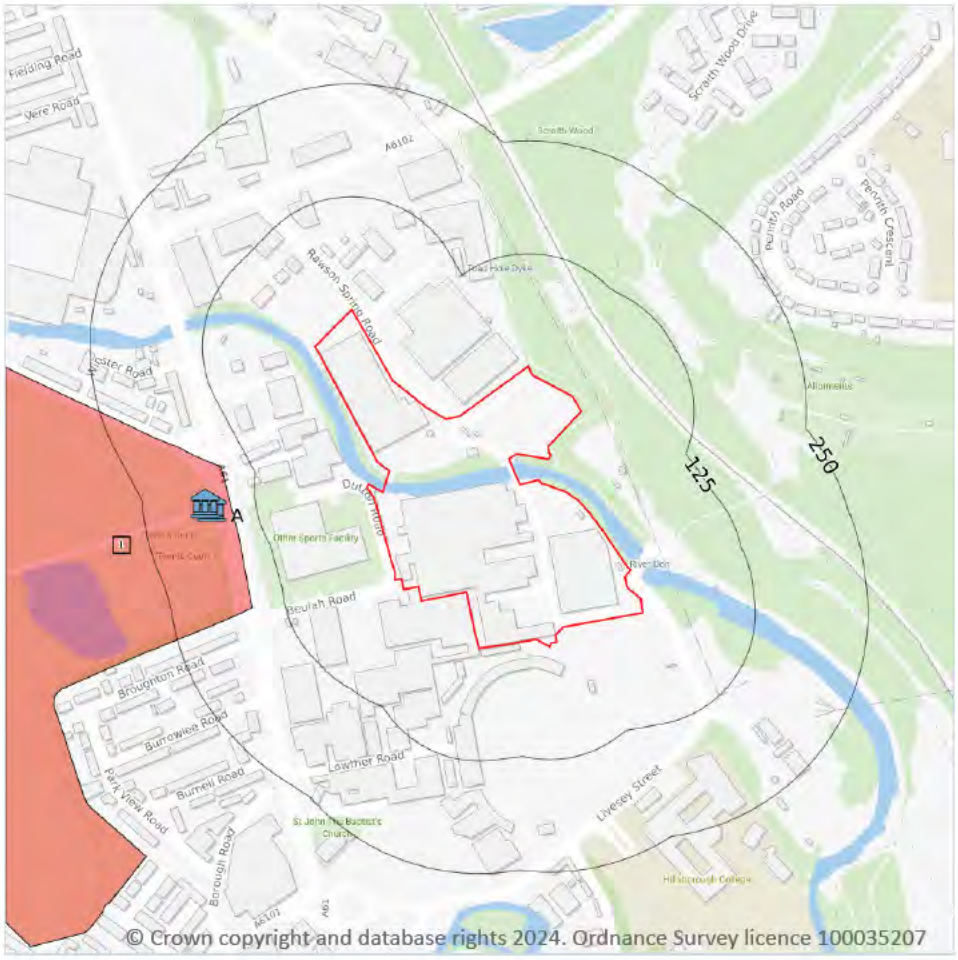
Feature name	Feature condition	Date of assessment
ED - Westphalian	Favourable	02/03/2021

ID: -
Location: 1904m NW
SSSI name: Wadsley Fossil Forest
Unit name: Wadsley Fossil Forest
Broad habitat: Earth Heritage
Condition: Unfavourable - Declining
Reportable features:

Feature name	Feature condition	Date of assessment
FB - Palaeozoic Palaeobotany	Favourable	26/11/2010

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	2

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

Features are displayed on the Visual and cultural designations map on page 107 >

ID	Location	Name	Grade	Reference Number	Listed date
A	174m W	Gateway And Boundary Wall At Number 947 East Lodge To Hillsborough House	II	1246900	12/12/1995
A	180m W	East Lodge To Hillsborough Park	II	1246899	28/06/1973

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

11.5 Conservation Areas

Records within 250m	1

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

Features are displayed on the Visual and cultural designations map on **page 107** >

ID	Location	Name	District	Date of designation
1	151m W	Hillsborough Park	Sheffield	05/01/1993

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	1

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

Features are displayed on the Agricultural designations map on page 110 >

ID	Location	Classification	Description
1	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	29

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 112 >

ID	Location	Main Habitat	Other habitats
1	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
3	6m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	12m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	12m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	19m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	27m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	27m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	38m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	49m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	54m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	75m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
11	78m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
12	88m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	140m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
13	143m NE	No main habitat but additional habitats present	Additional: DWOOD (INV 50%)
C	148m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
14	162m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
15	176m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
16	185m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
17	186m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
18	191m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
19	191m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
20	194m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
21	197m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
22	208m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
23	224m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	1

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.

Features are displayed on the Habitat designations map on **page 112 >**

ID	Location	Site reference	Identification confidence	Primary source	Secondary source	Tertiary source
24	235m NW	NLUD Ref: 442200081	Low	National Land Use Database - Previously Developed Land	UK Perspectives Aerial Photography	-

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m	2

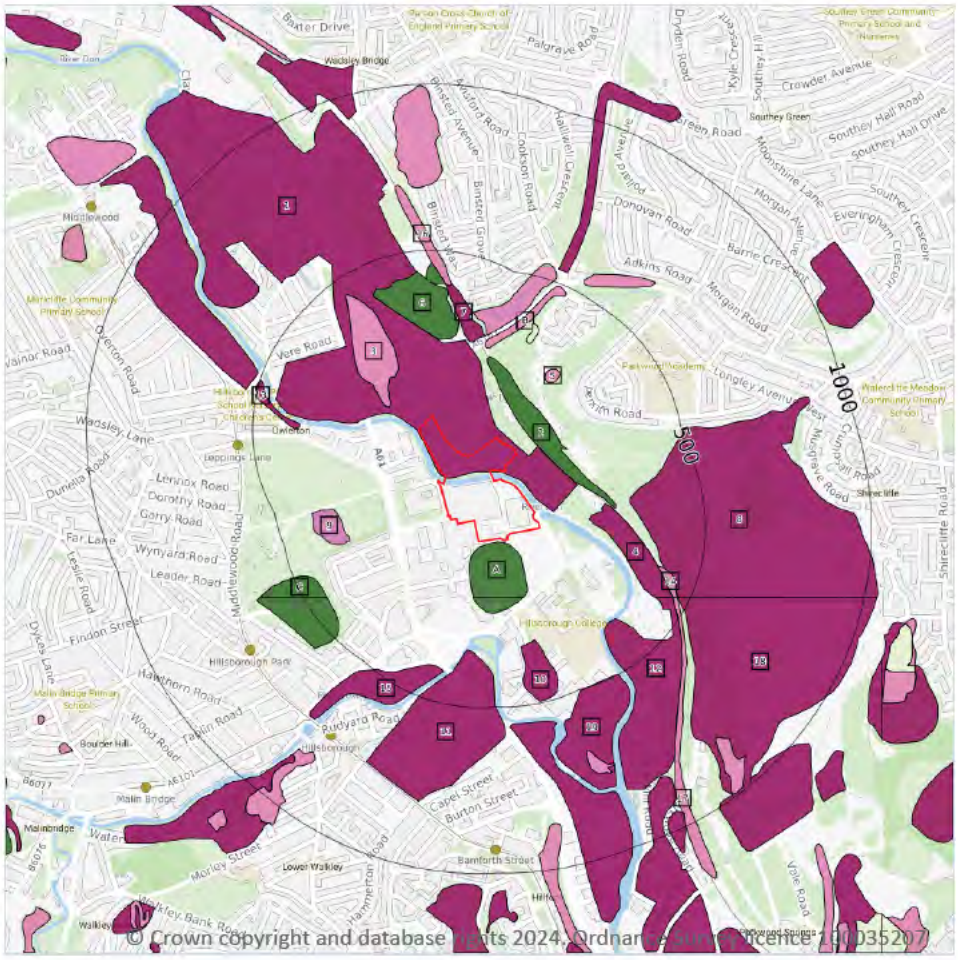
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on page 115 >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SK39SW**
2	168m S	Full	Full	Full	Full	SK38NW

This data is sourced from the British Geological Survey.

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



14.2 Artificial and made ground (10k)

Records within 500m	26

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.

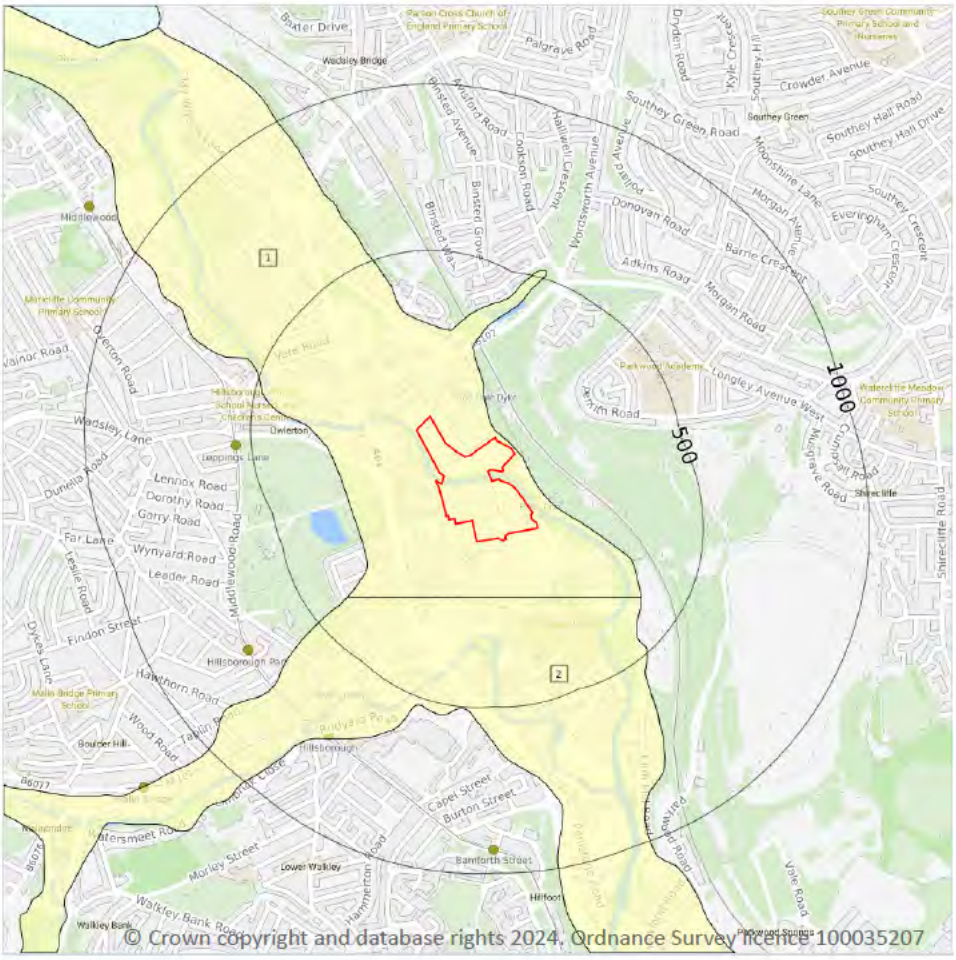
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on page 116 >

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**Made Ground (Undivided)**	**Artificial Deposit**
A	6m SE	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
2	60m NE	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
3	113m NW	WGR-VOID	Worked Ground (Undivided)	Void

ID	Location	LEX Code	Description	Rock description
4	151m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	168m S	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
5	224m NE	WGR-VOID	Worked Ground (Undivided)	Void
6	232m N	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
7	253m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	265m N	WGR-VOID	Worked Ground (Undivided)	Void
8	282m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	294m N	WGR-VOID	Worked Ground (Undivided)	Void
B	298m N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
9	304m W	WGR-VOID	Worked Ground (Undivided)	Void
10	311m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
11	329m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
12	352m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
13	357m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
14	375m SE	WGR-VOID	Worked Ground (Undivided)	Void
15	396m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
16	397m N	WGR-VOID	Worked Ground (Undivided)	Void
C	436m SW	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
C	438m SW	LSGR-UKNOWN	Landscaped Ground (Undivided)	Unknown/unclassified Entry
17	452m SE	WGR-VOID	Worked Ground (Undivided)	Void
18	464m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
19	496m SE	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 **2**

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 118 >

ID	Location	LEX Code	Description	Rock description
1	**On site**	**ALV-XVSZC**	**Alluvium - Gravel, Sand, Silt And Clay**	**Gravel, Sand, Silt And Clay**
2	168m S	ALV-XVSZC	Alluvium - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay

This data is sourced from the British Geological Survey.

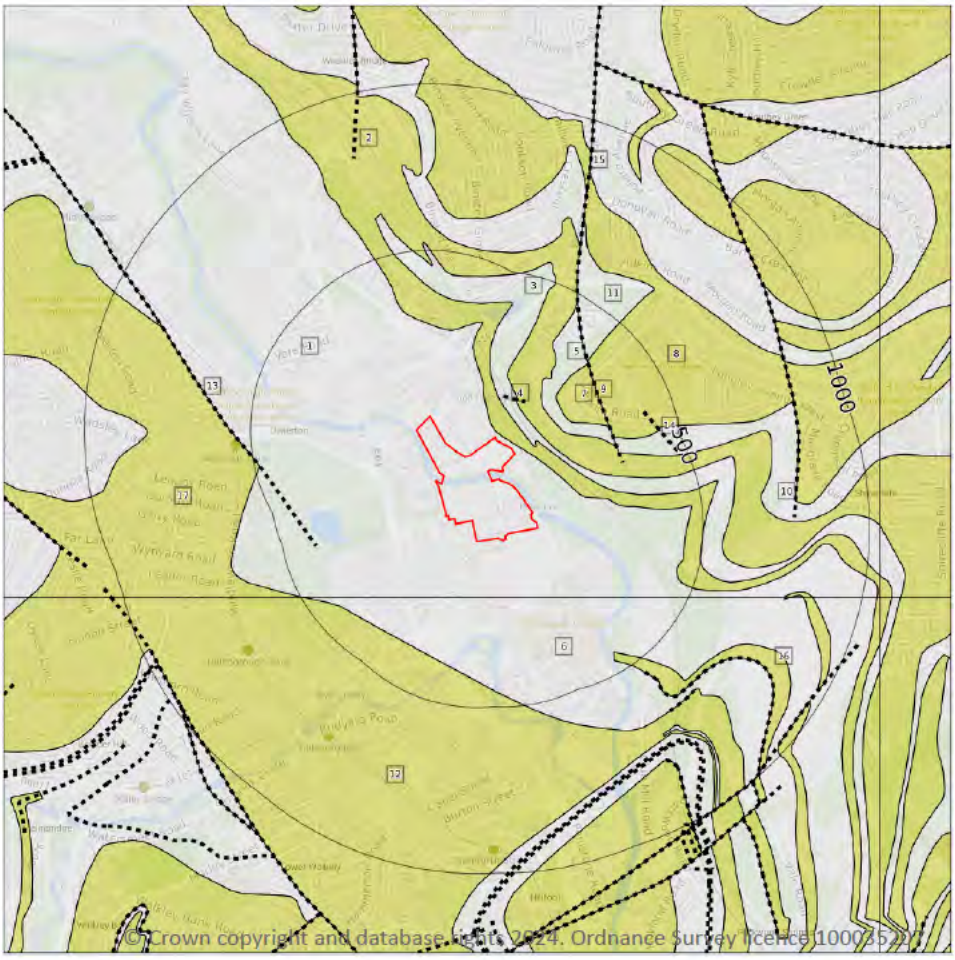
14.4 Landslip (10k)

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 **12**

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 120 >

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PLCM-MDSS**	**Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone**	**Langsettian Sub-age**
2	15m N	GM-SDST	Greenmoor Rock - Sandstone	Langsettian Sub-age
3	57m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age

ID	Location	LEX Code	Description	Rock age
5	150m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
6	168m S	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
7	188m NE	GR-SDST	Grenoside Sandstone - Sandstone	Langsettian Sub-age
8	296m NE	GR-SDST	Grenoside Sandstone - Sandstone	Langsettian Sub-age
10	301m E	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
11	348m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
12	371m S	LER-SDST	Loxley Edge Rock - Sandstone	Langsettian Sub-age
16	438m SE	PLCM-SDST	Pennine Lower Coal Measures Formation - Sandstone	Langsettian Sub-age
17	484m W	LER-SDST	Loxley Edge Rock - 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	5

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 120 >

ID	Location	Category	Description
4	126m N	FAULT	Normal fault, inferred
9	296m NE	FAULT	Normal fault, inferred
13	401m W	FAULT	Normal fault, inferred
14	409m NE	FAULT	Normal fault, inferred
15	422m NE	FAULT	Normal fault, inferred

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



15.1 50k Availability

Records within 500m	1

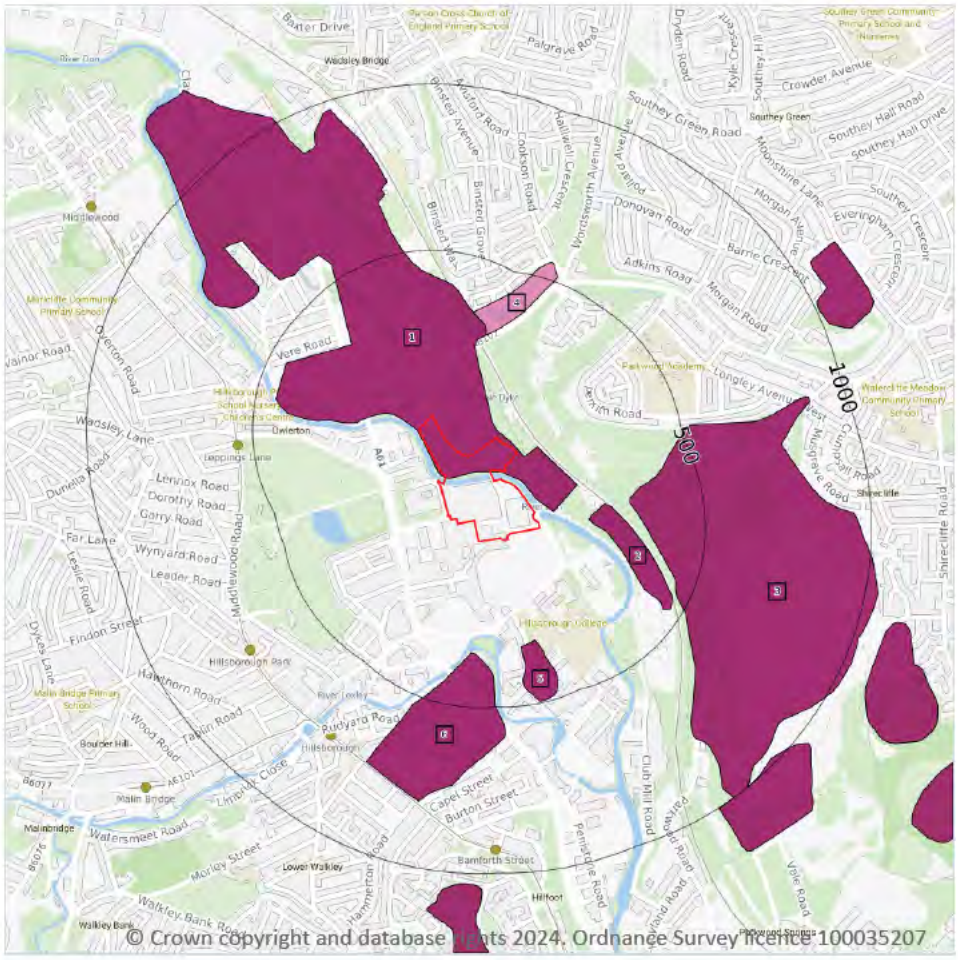
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on page 122 >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW100_sheffield_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	6

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.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on page 123 >

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**MADE GROUND (UNDIVIDED)**	**ARTIFICIAL DEPOSIT**
2	151m E	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
3	281m E	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
4	294m N	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

ID	Location	LEX Code	Description	Rock description
5	312m S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
6	337m S	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

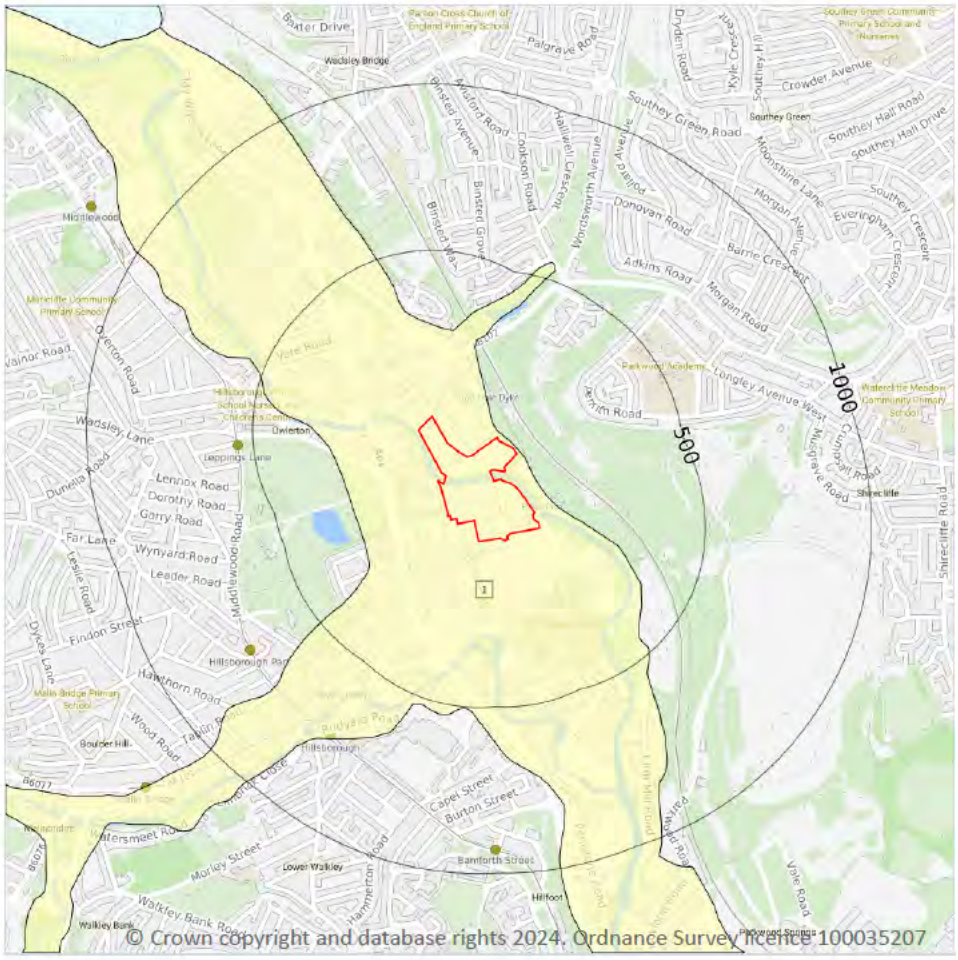
Records within 50m	1

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

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

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	1

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 125 >

ID	Location	LEX Code	Description	Rock description
1	On site	ALV-XVSZC	ALLUVIUM	GRAVEL, SAND, SILT AND CLAY

This data is sourced from the British Geological Survey.

15.5 Superficial 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 any superficial deposits (the zone between the land surface and the water table).

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

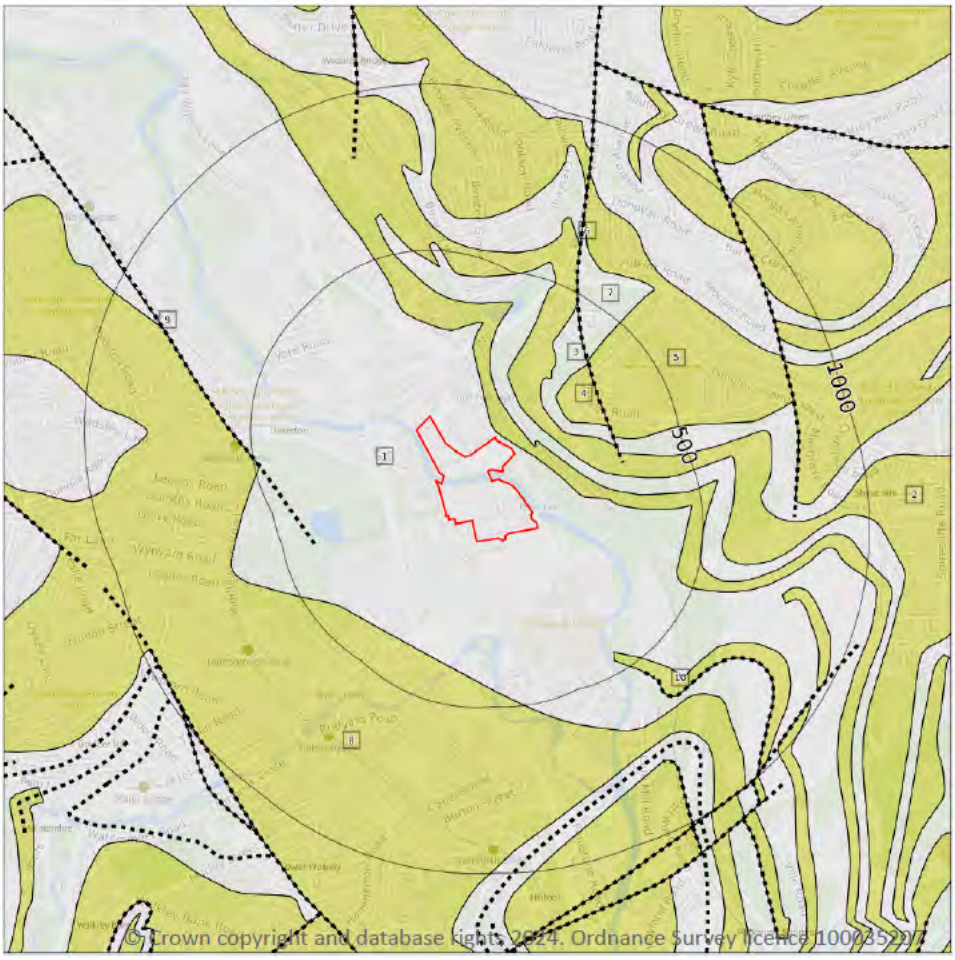
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	8

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 127 >

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PLCM-MDSI**	**PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE**	**WESTPHALIAN**
2	15m N	GM-SDST	GREENMOOR ROCK - SANDSTONE	WESTPHALIAN
3	150m NE	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
4	188m NE	GR-SDST	GRENOSIDE SANDSTONE - SANDSTONE	WESTPHALIAN
5	296m NE	GR-SDST	GRENOSIDE SANDSTONE - SANDSTONE	WESTPHALIAN
7	348m NE	PLCM-MDSI	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE AND SILTSTONE	WESTPHALIAN
8	371m S	LER-SDST	LOXLEY EDGE ROCK - SANDSTONE	WESTPHALIAN
10	438m SE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m 2

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**
15m N	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m 2

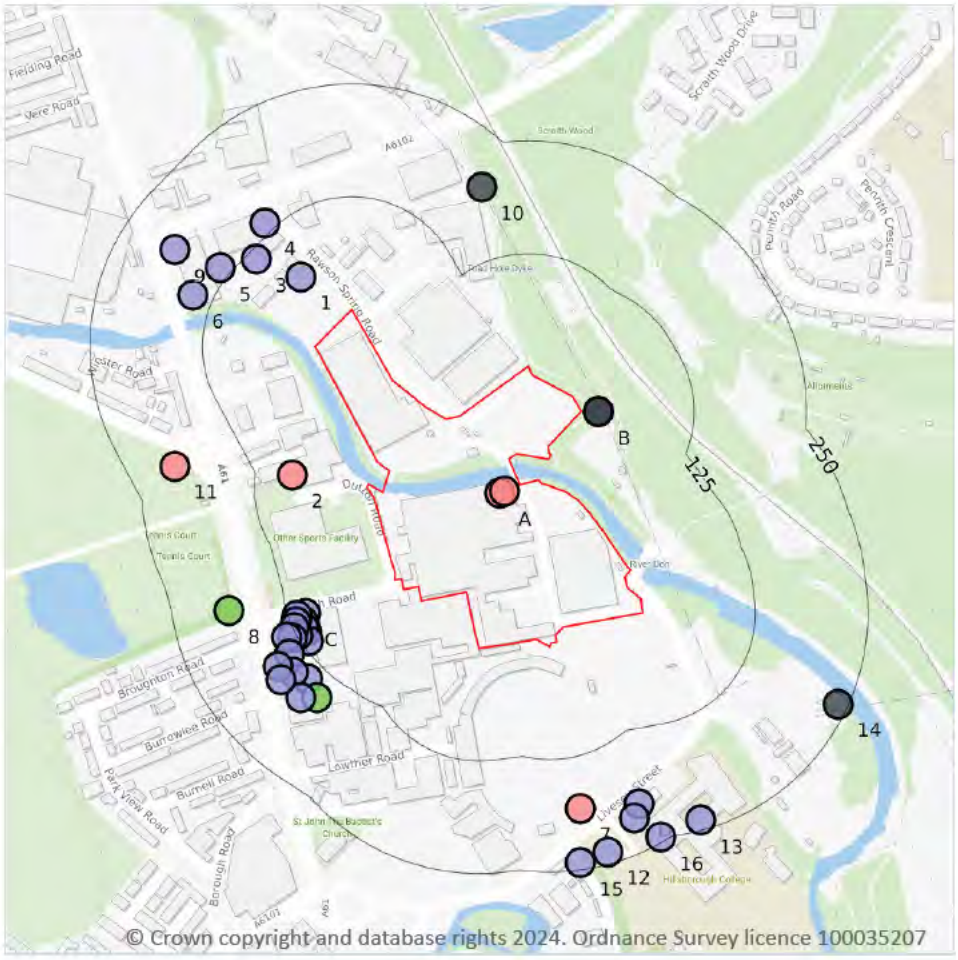
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on page 127 >

ID	Location	Category	Description
6	296m NE	FAULT	Fault, inferred
9	401m W	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



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16.1 BGS Boreholes

Records within 250m	40

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

Features are displayed on the Boreholes map on page 129 >

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	433810 390340	MESSERS G.BASSETTS OWLERTON	245.06	N	216102 ↗
A	On site	433816 390342	BASSETT'S OWLERTON	245.06	N	215944 ↗
B	19m NE	433920 390430	NEEPSEND/STOCKSBRIDGE 2H	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
B	19m NE	433920 390430	NEEPSEND/STOCKSBRIDGE 2L	-	Y	N/A
1	65m NW	433590 390580	RAWSON SPRING RD SHEFFIELD BH6	7.0	N	216000 ↗
2	84m W	433580 390360	HILLSBOROUGH L.C, BEYLAN ROAD, SHEFFIELD	73.0	N	15618679 ↗
C	105m SW	433595 390207	YELLOW STORAGE PENISTONE ROAD SHEFFIELD 3	8.65	N	18356570 ↗
C	111m SW	433593 390197	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP103	1.7	N	18356593 ↗
C	113m SW	433596 390187	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP7	3.9	N	18356583 ↗
C	114m SW	433593 390191	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP105	1.7	N	18356598 ↗
C	115m SW	433586 390205	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP101	1.6	N	18356589 ↗
3	115m NW	433540 390600	RAWSON SPRING RD SHEFFIELD BH5	8.15	N	215999 ↗
C	117m SW	433598 390176	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP6	3.7	N	18356581 ↗
C	119m SW	433584 390197	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP102	1.6	N	18356591 ↗
C	123m SW	433587 390182	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP106	1.4	N	18356601 ↗
C	124m SW	433582 390191	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP104	2.1	N	18356595 ↗
C	131m SW	433580 390179	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP107	1.6	N	18356604 ↗
C	136m SW	433574 390180	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP4	3.6	N	18356577 ↗
4	136m NW	433550 390640	RAWSON SPRING RD SHEFFIELD BH4	7.8	N	215998 ↗
5	137m NW	433500 390590	RAWSON SPRING RD SHEFFIELD BH2	8.0	N	215996 ↗
C	143m SW	433577 390161	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP3	3.85	N	18356574 ↗
C	146m SW	433597 390134	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP8	3.6	N	18356586 ↗
6	147m NW	433470 390560	RAWSON SPRING RD SHEFFIELD BH3	8.0	N	215997 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
C	153m SW	433581 390141	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP2	3.7	N	18356573 ↗
C	154m SW	433608 390113	YELLOW STORAGE PENISTONE ROAD SHEFFIELD 1/1RC	14.0	N	18356565 ↗
C	161m SW	433565 390148	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP1	3.9	N	18356572 ↗
C	166m SW	433590 390113	YELLOW STORAGE PENISTONE ROAD SHEFFIELD TP5	3.0	N	18356578 ↗
C	168m SW	433568 390133	YELLOW STORAGE PENISTONE ROAD SHEFFIELD 2	9.33	N	18356569 ↗
7	183m S	433900 389990	OWLERTON STADIUM PENISTONE ROAD SHEFFIELD	90.0	N	18528591 ↗
8	187m SW	433510 390210	DON VALLEY SEWER SHE'FLD T69	30.0	N	216014 ↗
9	189m NW	433450 390610	RAWSON SPRING RD SHEFFIELD BH1	8.0	N	215995 ↗
10	198m N	433790 390680	NEEPSEND/STOCKSBRIDGE 3	-	Y	N/A
11	200m W	433450 390370	DON VALLEY SEWER SHE'FLD T70	30.1	N	216015 ↗
D	201m SE	433965 389995	PROPOSED ASDA SHEFFIELD TP 8	3.0	N	214905 ↗
D	212m SE	433960 389980	LIVESEY STREET SHEFFIELD D	1.8	N	15933598 ↗
12	236m S	433930 389942	SHEFFIELD COLLEGES TP 02	3.2	N	14287327 ↗
13	239m SE	434033 389977	SHEFFIELD COLLEGES TP 01	2.9	N	14287326 ↗
14	239m SE	434186 390106	NEEPSEND/PARKWOOD RD 275KV LINE 1	-	Y	N/A
15	242m S	433900 389930	LIVESEY STREET SHEFFIELD E	8.0	N	15933599 ↗
16	245m SE	433989 389958	PROPOSED ASDA SHEFFIELD TP 5A	3.0	N	214903 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays





17.1 Shrink swell clays

Records within 50m	3

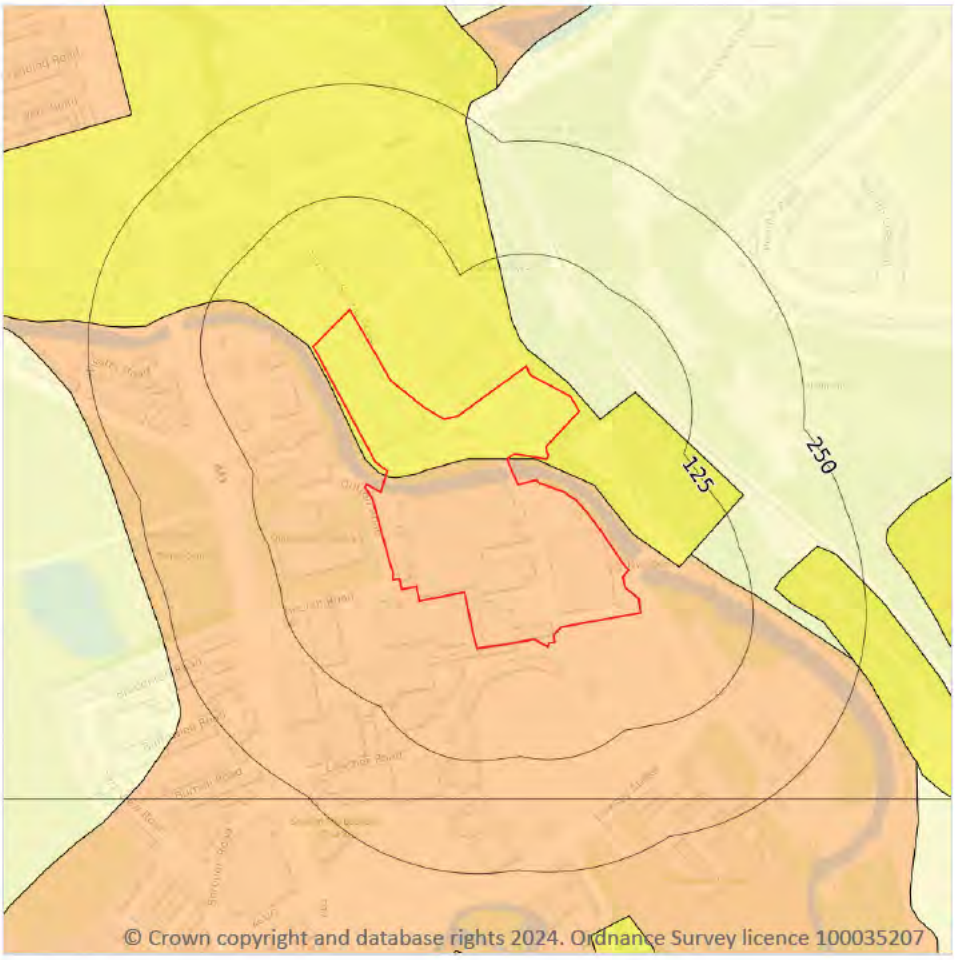
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on page 132 >

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
On site	**Very low**	**Ground conditions predominantly low plasticity.**
15m N	Negligible	Ground conditions predominantly non-plastic.

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	3

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.

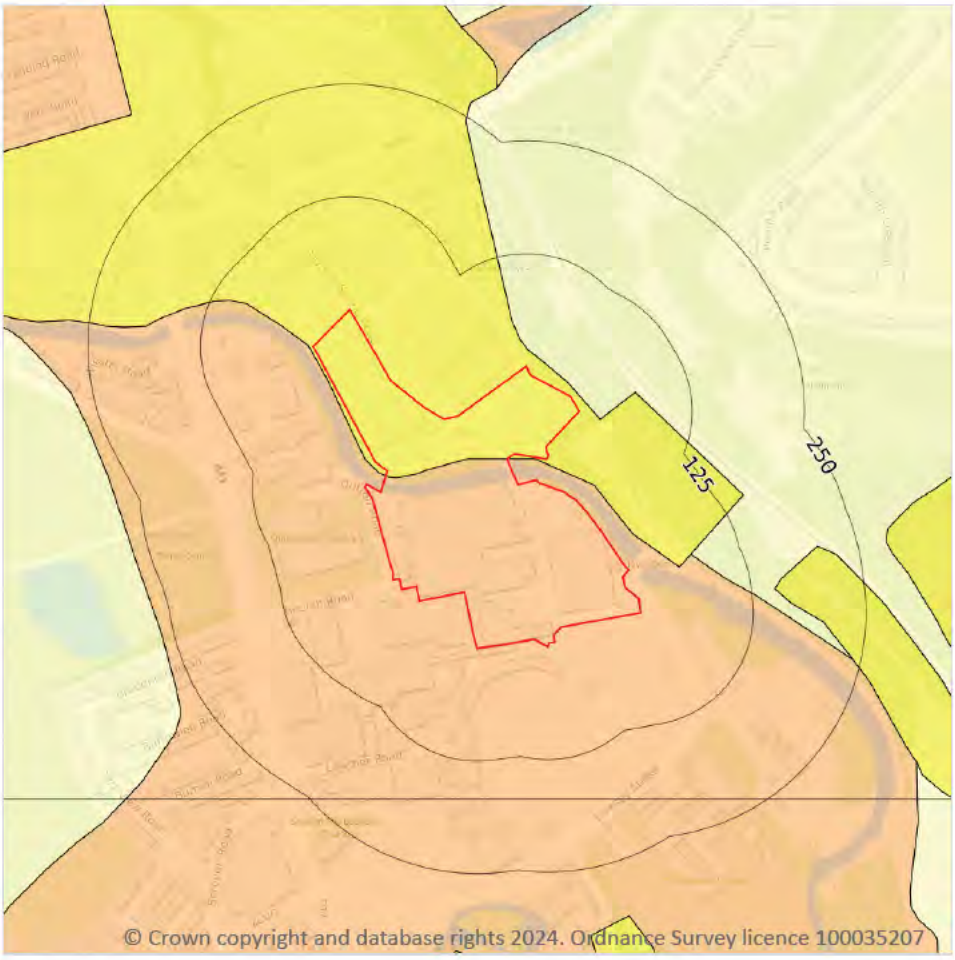
Features are displayed on the Natural ground subsidence - Running sands map on **page 134 >**

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

Location	Hazard rating	Details
On site	**Low**	**Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.**
8m NE	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

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	3

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

Features are displayed on the Natural ground subsidence - Compressible deposits map on page 136 >

Location	Hazard rating	Details
On site	**Very low**	**Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.**

Location	Hazard rating	Details
On site	**Low**	**Compressibility and uneven settlement potential may be present. Land use should consider specifically the compressibility and variability of the site.**
8m NE	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	2

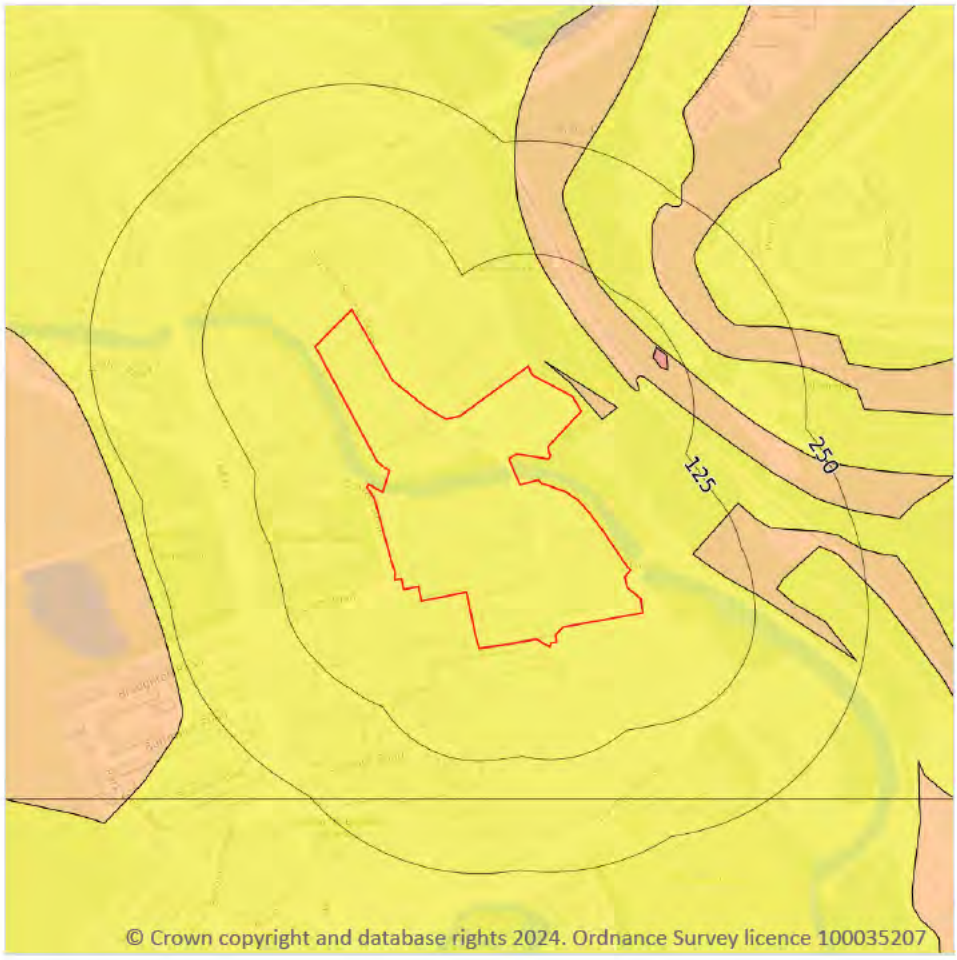
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on page 138 >

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**
8m NE	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 139 >**

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
8m NE	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

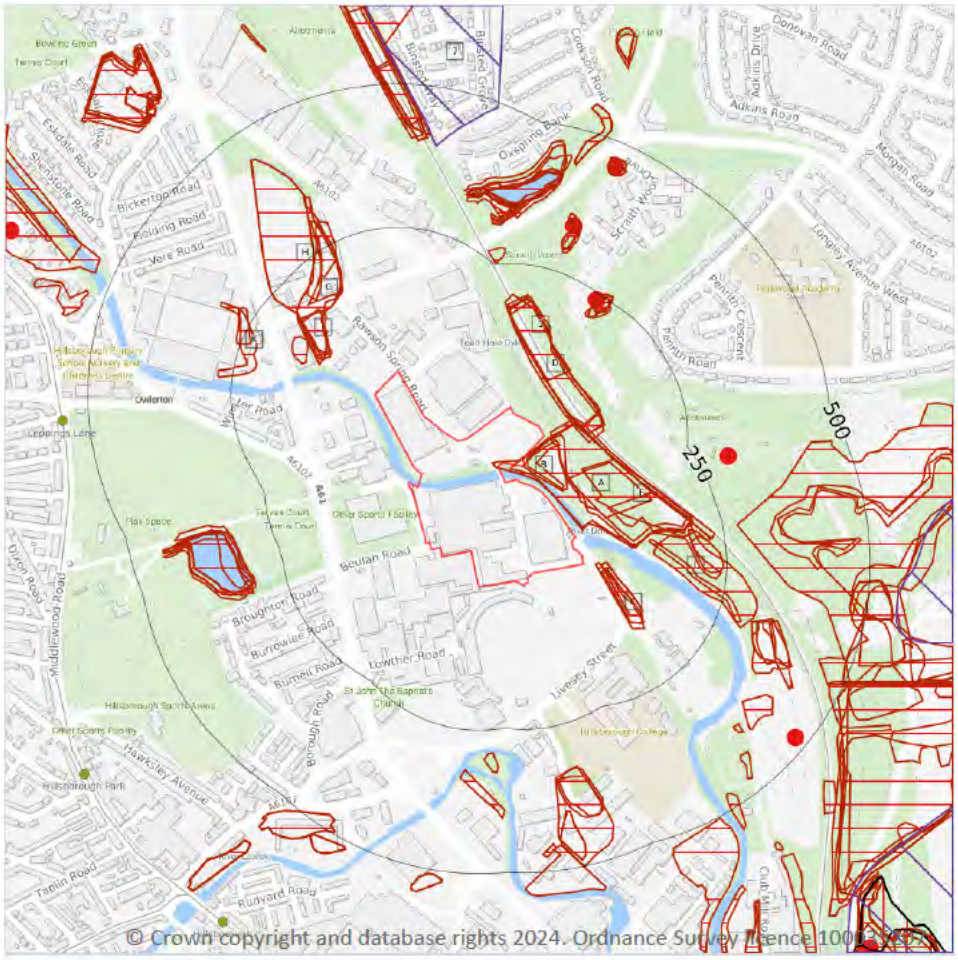
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on page 141 >

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

This data is sourced from the British Geological Survey.

18 Mining and ground workings



Site Outline

Search buffers in metres (m)

- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining

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 BritPits

Records within 500m	5

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.

Features are displayed on the Mining and ground workings map on page 143 >

ID	Location	Details	Description
J	240m NE	Name: Rawson Spring Address: Owlerton, SHEFFIELD, South Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
4	301m E	Name: Shirecliff Address: Owlerton, SHEFFIELD, South Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
M	334m N	Name: Scraith Wood Address: Owlerton, SHEFFIELD, South Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
U	456m NE	Name: Scraith Quarry Address: Owlerton, SHEFFIELD, South Yorkshire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
12	477m SE	Name: Park Wood Brick Works Address: Parkwood Springs, SHEFFIELD, South Yorkshire Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	45

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 and ground workings map on page 143 >

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Cemetery**	**1948**	**1:10560**
A	**On site**	**Cemetery**	**1920**	**1:10560**
A	**On site**	**Cemetery**	**1938**	**1:10560**
B	**On site**	**Unspecified Heap**	**1981**	**1:10000**
B	5m NE	Unspecified Heap	1966	1:10560
A	12m NE	Cemetery	1890	1:10560
A	13m NE	Cemetery	1902	1:10560
C	22m SE	Water Bodies	1924	1:10560
C	31m SE	Water Body	1890	1:10560
C	31m SE	Water Body	1902	1:10560
C	35m SE	Water Body	1948	1:10560
C	35m SE	Water Body	1920	1:10560
A	49m E	Cemetery	1924	1:10560
D	49m NE	Cuttings	1924	1:10560
D	54m NE	Cuttings	1948	1:10560
D	54m NE	Cuttings	1920	1:10560
D	54m NE	Cuttings	1902	1:10560
D	56m NE	Cuttings	1938	1:10560
E	67m E	Cemetery	1956	1:10560
E	77m E	Cemetery	1966	1:10560
1	78m NE	Cuttings	1890	1:10560
F	102m NW	Pond	1966	1:10560
F	104m NW	Pond	1956	1:10560
G	109m NW	Water Body	1948	1:10560
G	109m NW	Water Body	1920	1:10560
F	109m NW	Pond	1938	1:10560
H	115m NW	Water Body	1890	1:10560
H	115m NW	Water Body	1902	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
I	119m E	Unspecified Ground Workings	1948	1:10560
I	125m E	Unspecified Ground Workings	1924	1:10560
F	133m NW	Refuse Heap	1956	1:10560
G	170m NW	Pond	1938	1:10560
G	188m NW	Pond	1966	1:10560
I	191m E	Unspecified Heap	1948	1:10560
J	206m NE	Unspecified Heap	1948	1:10560
G	208m NW	Refuse Heap	1956	1:10560
J	210m NE	Unspecified Old Quarry	1924	1:10560
K	212m NW	Unspecified Ground Workings	1924	1:10560
J	222m NE	Unspecified Pit	1981	1:10000
J	222m NE	Unspecified Pit	1966	1:10560
J	222m NE	Unspecified Pit	1956	1:10560
J	228m NE	Unspecified Old Quarry	1920	1:10560
J	228m NE	Old Stone Pit	1902	1:10560
J	228m NE	Unspecified Pit	1948	1:10560
K	235m NW	Unspecified Ground Workings	1902	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	3

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 and ground workings map on page 143 >

ID	Location	Land Use	Year of mapping	Mapping scale
AI	751m SE	Unspecified Mine	1967	1:10560
AI	751m SE	Gannister Mines	1956	1:10560
AI	819m SE	Unspecified Mine	1948	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	1

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.

Features are displayed on the Mining and ground workings map on **page 143 >**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
7	398m N	Crossley	Clay, bricks	Surface mineral working	Valid	14/1/49

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	1

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).

Features are displayed on the Mining and ground workings map on **page 143 >**

ID	Location	Name	Commodity	Class	Likelihood
-	873m SE	Parkwood	Ganister	D	Underground mining is considered likely to have occurred within or close to the area. The location, extent and nature of mining should be considered in any site investigation. Potential for difficult ground conditions should be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	1

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

Location	Mineral type
108m NW	Unspecified

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	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.

18.13 Brine areas

Records on site	0

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

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

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m	0

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

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

This data is sourced from Groundsure.

19.5 National karst database

Records within 500m	0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	2

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

Features are displayed on the Radon map on page 153 >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	None

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

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

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m **7**

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 km^2. 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 km^2; 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**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**120 - 180 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**	**120 - 180 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**30 - 45 mg/kg**
12m NE	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	90 - 120 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	120 - 180 mg/kg	15 - 30 mg/kg
31m SE	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	120 - 180 mg/kg	30 - 45 mg/kg
36m NE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m **23**

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 km^2).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**24**	**4.2**	**152**	**104**	**0.6**	**80**	**59**	**29**	**9**
On site	**24**	**4.2**	**147**	**101**	**0.6**	**77**	**56**	**27**	**9**
On site	**25**	**4.4**	**156**	**107**	**0.6**	**84**	**61**	**31**	**9**
On site	**25**	**4.4**	**160**	**110**	**0.6**	**90**	**63**	**33**	**9**
On site	**26**	**4.6**	**164**	**113**	**0.7**	**92**	**66**	**34**	**10**
On site	**26**	**4.6**	**170**	**117**	**0.6**	**92**	**66**	**34**	**10**
On site	**27**	**4.7**	**156**	**107**	**0.5**	**94**	**67**	**35**	**9**
On site	**27**	**4.7**	**176**	**121**	**0.6**	**90**	**66**	**32**	**10**
On site	**28**	**4.9**	**184**	**126**	**0.6**	**106**	**74**	**41**	**11**
On site	**29**	**5.1**	**196**	**135**	**0.6**	**97**	**73**	**35**	**11**
On site	**30**	**5.3**	**204**	**140**	**0.6**	**107**	**81**	**42**	**11**
On site	**32**	**5.6**	**223**	**153**	**0.5**	**92**	**80**	**34**	**15**
On site	**33**	**5.8**	**190**	**131**	**0.5**	**95**	**76**	**35**	**11**
On site	**34**	**5.9**	**242**	**166**	**0.6**	**107**	**89**	**41**	**13**
On site	**37**	**6.5**	**261**	**179**	**0.5**	**100**	**94**	**39**	**16**
On site	**43**	**7.5**	**319**	**219**	**0.6**	**111**	**114**	**45**	**18**
6m NW	39	6.8	288	198	0.5	103	103	41	19
6m NW	35	6.1	252	173	0.4	97	90	37	18
19m N	38	6.7	265	182	0.7	120	102	49	14
25m NW	43	7.5	313	215	0.7	116	116	49	17
31m SE	24	4.2	160	110	0.6	94	63	34	9
31m SW	30	5.3	166	114	0.5	93	84	35	11
32m SE	25	4.4	170	117	0.7	99	68	37	10

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	1

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 km^2.

Location	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Lead (mg/kg)	Tin (mg/kg)	Sample Type
On site	**23.7**	**0.6**	**74.8**	**55.2**	**26.5**	**145.6**	**8.6**	**Topsoil**

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects



Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- 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

22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	12

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 158 >

Location	Land Use	Year of mapping	Mapping scale
166m E	Railway Sidings	1952	2500
166m E	Railway Sidings	1951	1250
166m E	Railway Sidings	1975	1250
187m E	Railway Sidings	1948	10560
187m E	Railway Sidings	1920	10560
192m E	Railway Sidings	1934	2500
198m E	Railway Sidings	1924	10560
200m E	Railway Sidings	1938	10560
211m E	Railway Sidings	1951	1250
211m E	Railway Sidings	1975	1250
220m SE	Railway Sidings	1993	1250
220m SE	Railway Sidings	1994	1250

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	5

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 158 >

Location	Name	Type
71m NE	Stocksbridge Line	rail
71m NE	Not given	Single Track
169m E	Not given	Single Track
223m N	Not given	Single Track
233m E	Not given	Single Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 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.

22.9 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.

22.10 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 ↗.

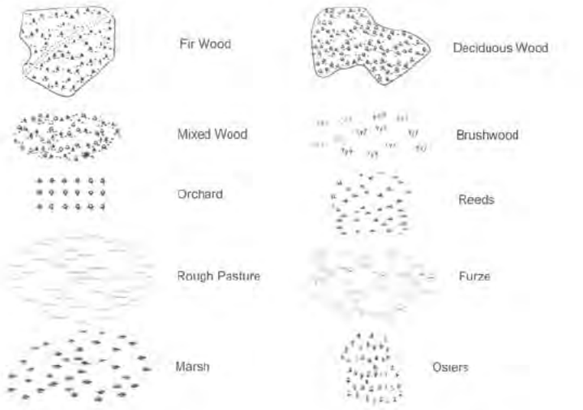
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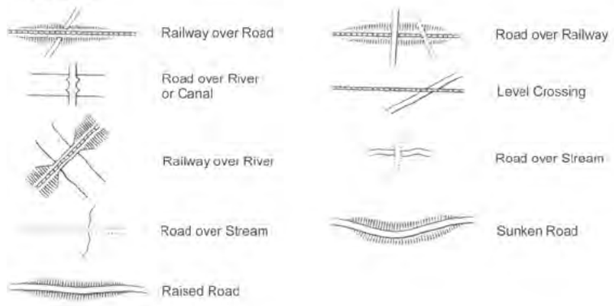
Appendix 2 Historical Ordnance Survey Maps

County Series 1:10,560 scale

VEGETATION



ROADS



RAILWAYS



GENERAL FEATURES



BOUNDARIES



National Grid 1:10,000 scale

HEIGHTS (METRES)

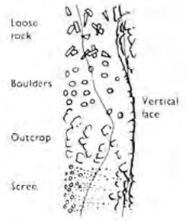
Values are given in metres above mean sea level at Newlyn.

Surface heights determined by: ground survey ▲183m; air survey ×

Bench marks and their values are shown on large scale maps, and bench mark lists containing fuller and possibly later levelling information are obtainable from the Director General, Ordnance Survey.

Contours are at 5 metres vertical interval.

ROCK FEATURES



CONVERSION SCALE

Metres - Feet

Metres	Feet
2000	6500
	6000
	5000
1500	
	4000

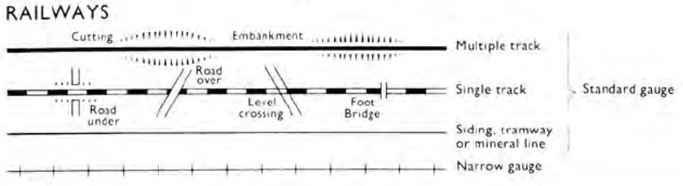
ABBREVIATIONS

BP,BS	Boundary Post or Stone
Ch	Church
CH	Club House
F Sta	Fire Station
FB	Foot Bridge
Fn	Fountain
GP	Guide Post
MP,MS	Mile Post or Stone
P	Pole or Post
Pol Sta	Police Station
PO	Post Office
PC	Public Convenience
PH	Public House
S	Stone
Spr	Spring
TCB	Telephone Call Box
TCP	Telephone Call Post
TH	Town Hall
W	Well
Y	Youth hostel

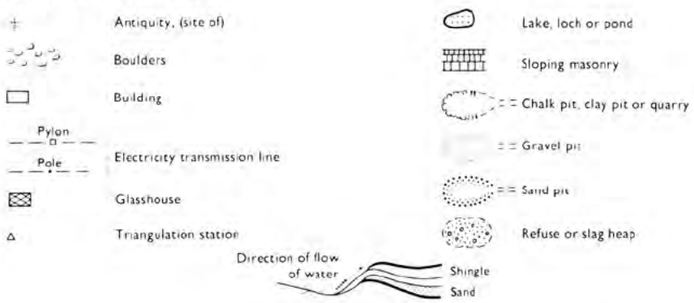
ROADS



RAILWAYS



GENERAL FEATURES



VEGETATION



In some areas bracken ( ) and rough grassland ( ) are shown separately.

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Historical Map Pack Legend

County Series & National Grid

1:10,560 scale

Information present on these legends is sourced from the same Ordnance Survey mapping as the maps used in this product.

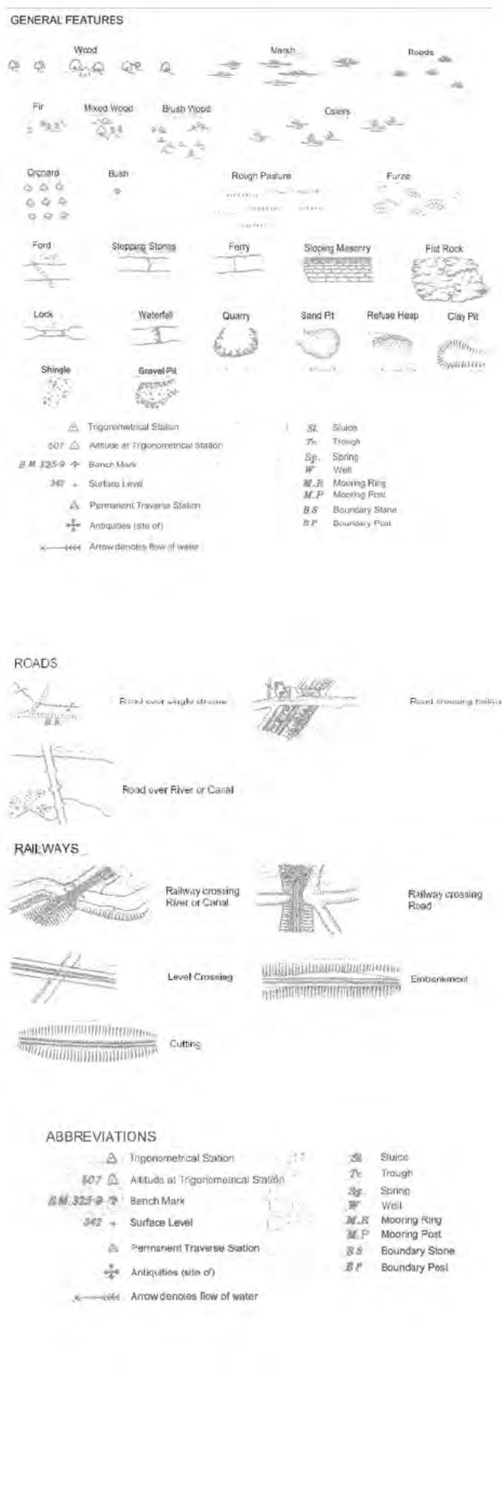
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Technical Helpline

Tel 08444159000

groundsureinsight@groundsure.com
www.groundsure.com

County Series 1:2,500 scale



National Grid 1:2,500 / 1:1,250 scale



GroundSure

Historical Map Pack Legend

County Series

1:1,250 scale

~

County Series & National Grid

1:2,500 scale

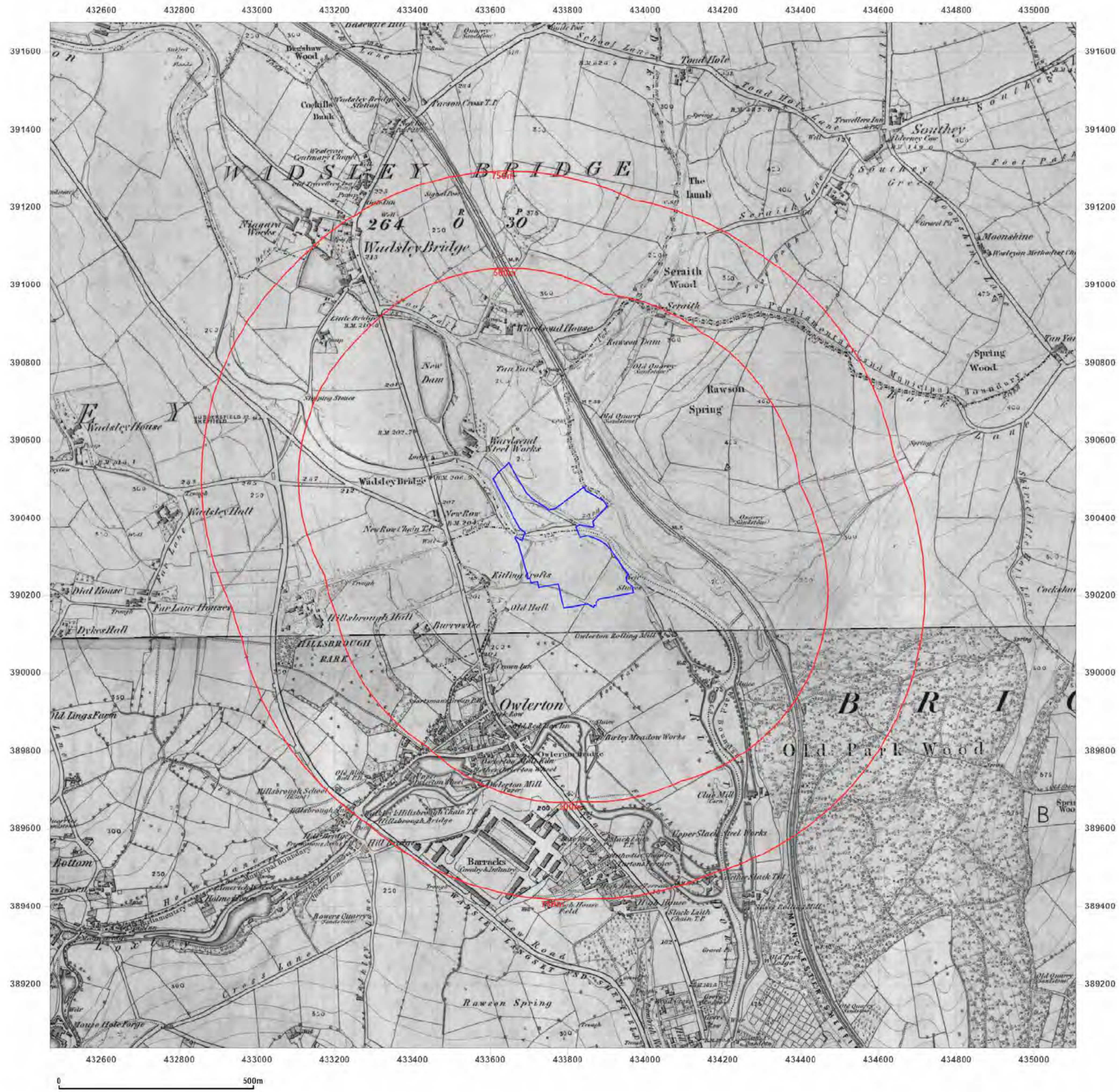
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Grid Ref: 433787, 390355

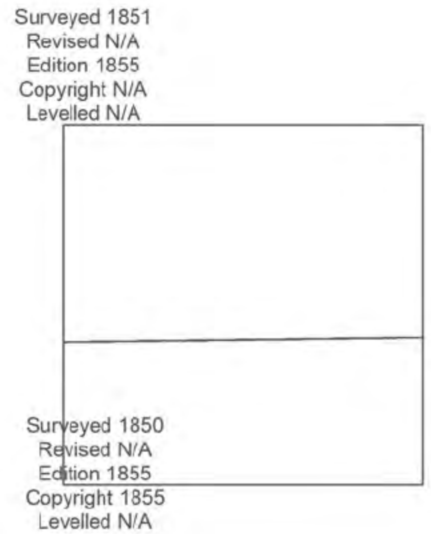
Map Name: County Series

Map date: 1855

Scale: 1:10,560

Printed at: 1:10,560

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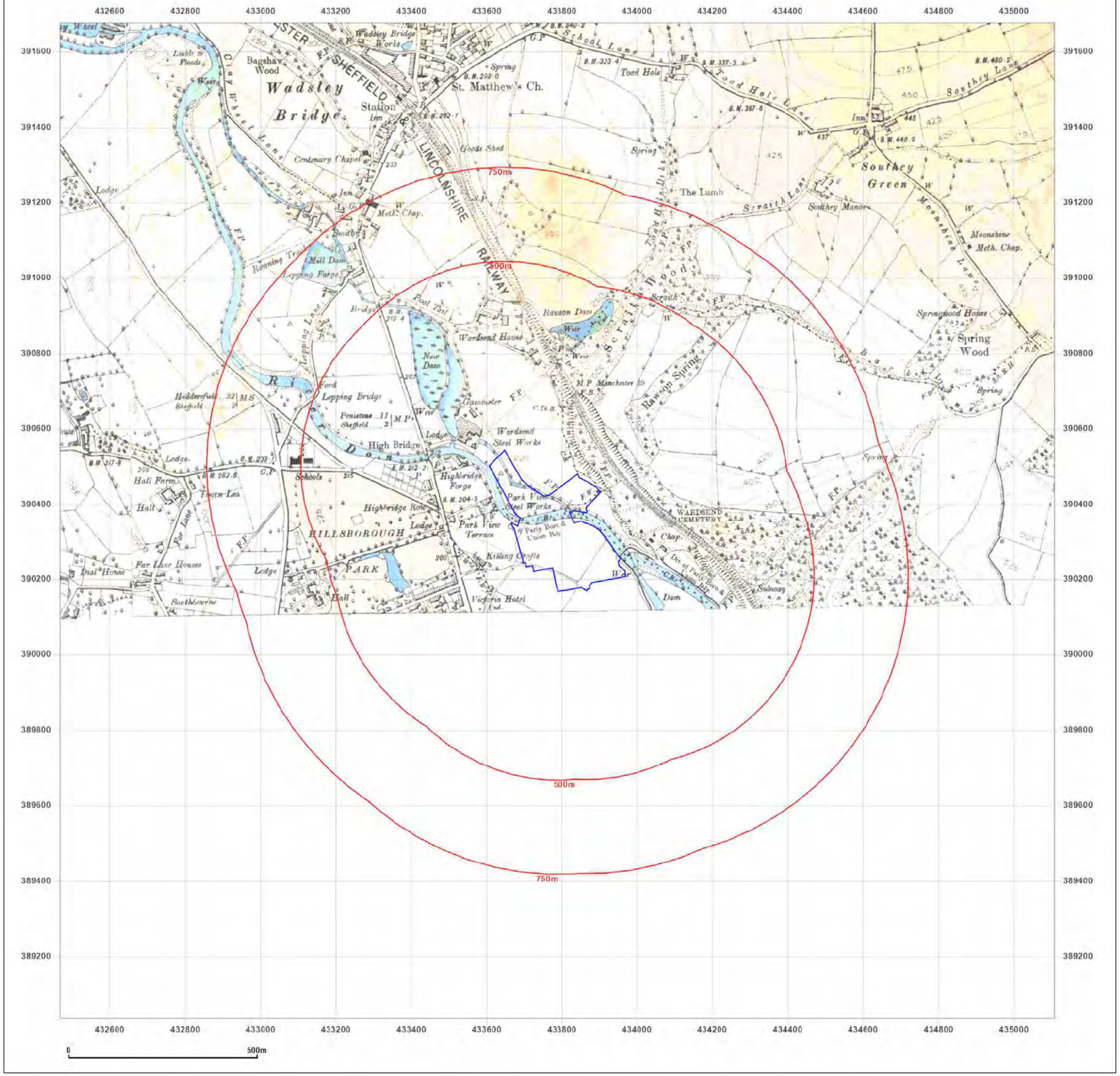
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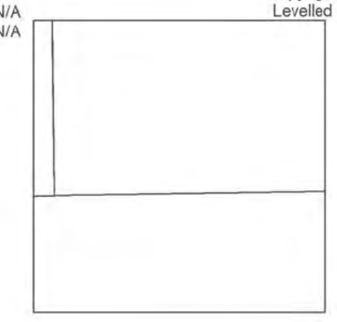
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Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1890**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1890
Revised 1890
Edition N/A
Copyright N/A
Levelled N/A



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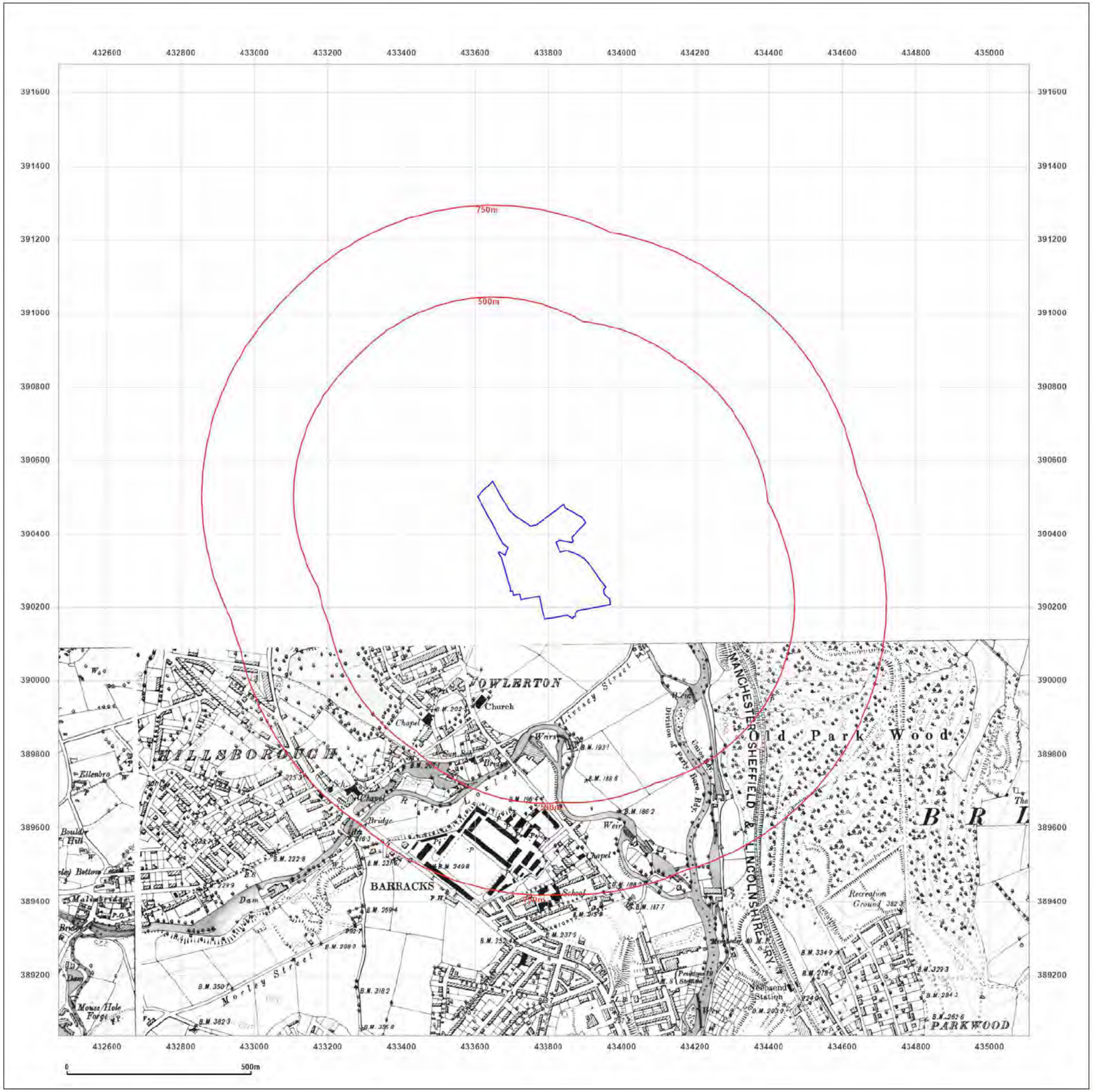
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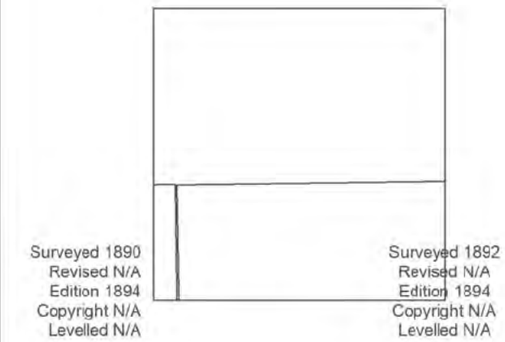
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Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1894**
Scale: 1:10,560
Printed at: 1:10,560

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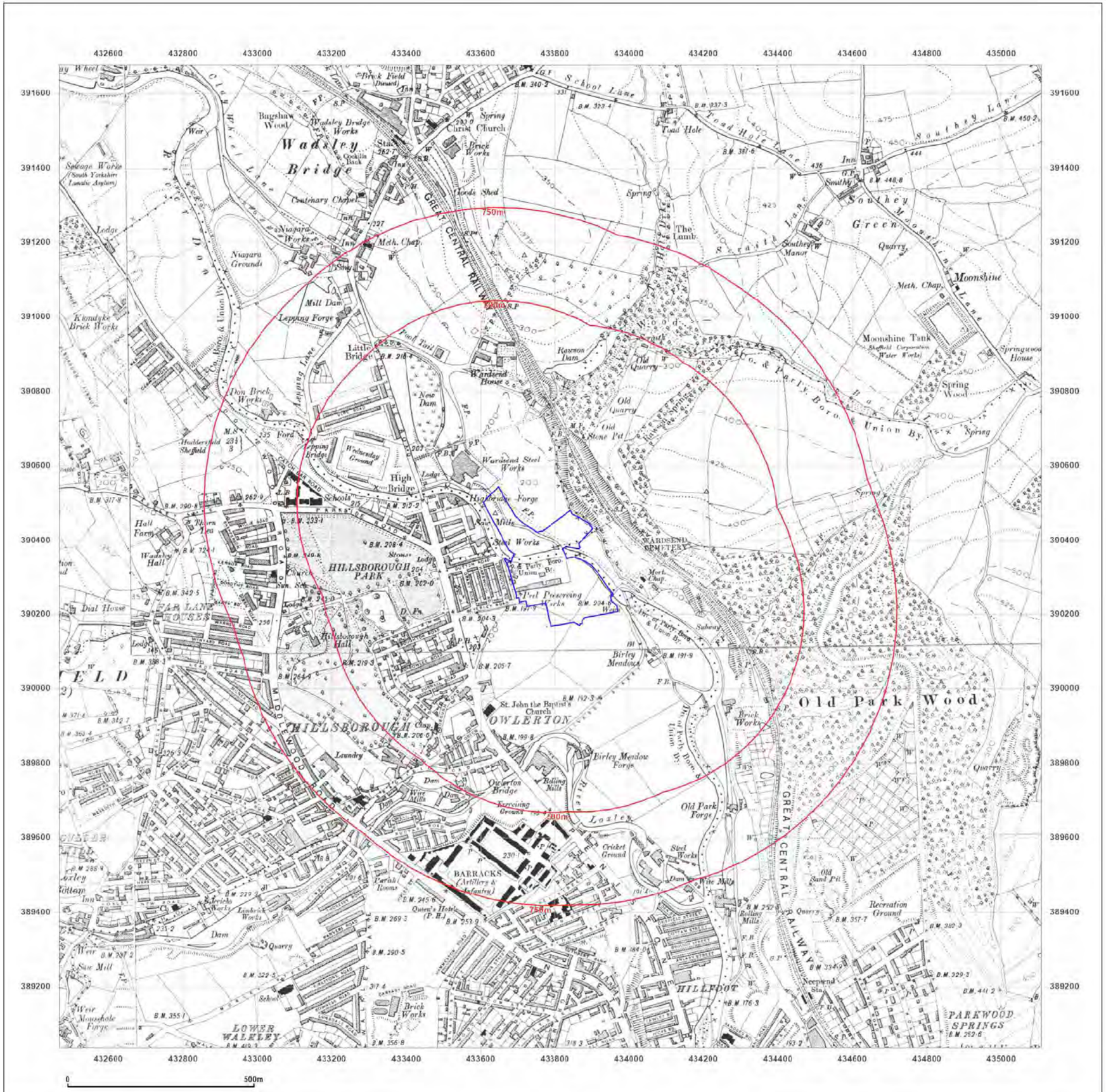
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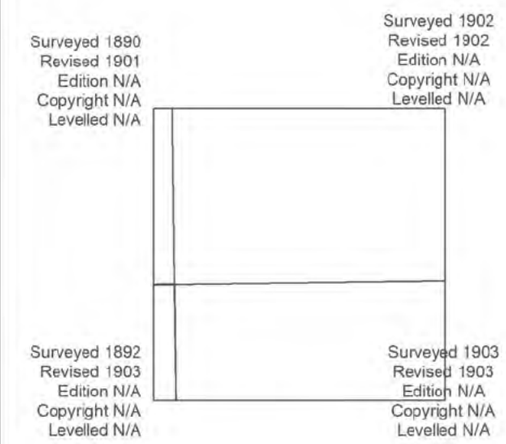
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Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1901-1903**
Scale: 1:10,560
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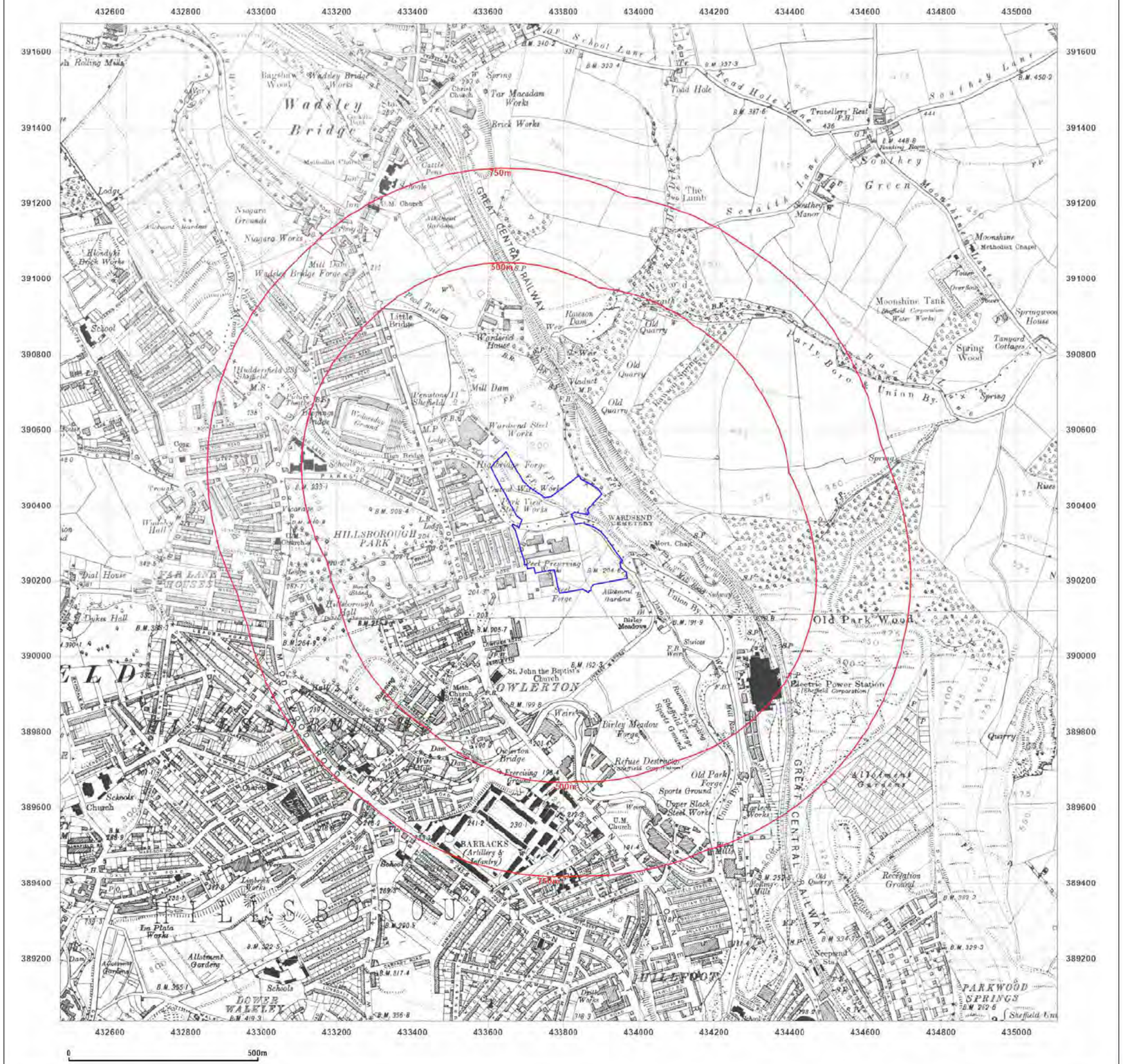
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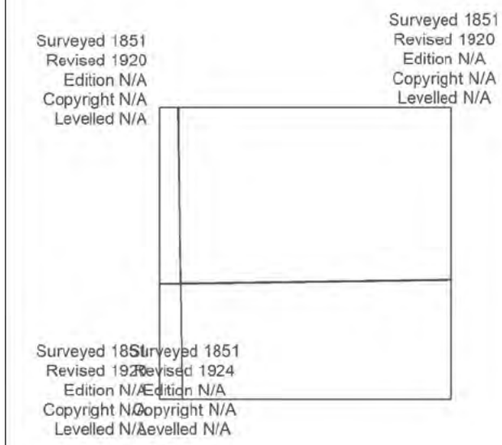
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Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1920-1924**
Scale: 1:10,560
Printed at: 1:10,560

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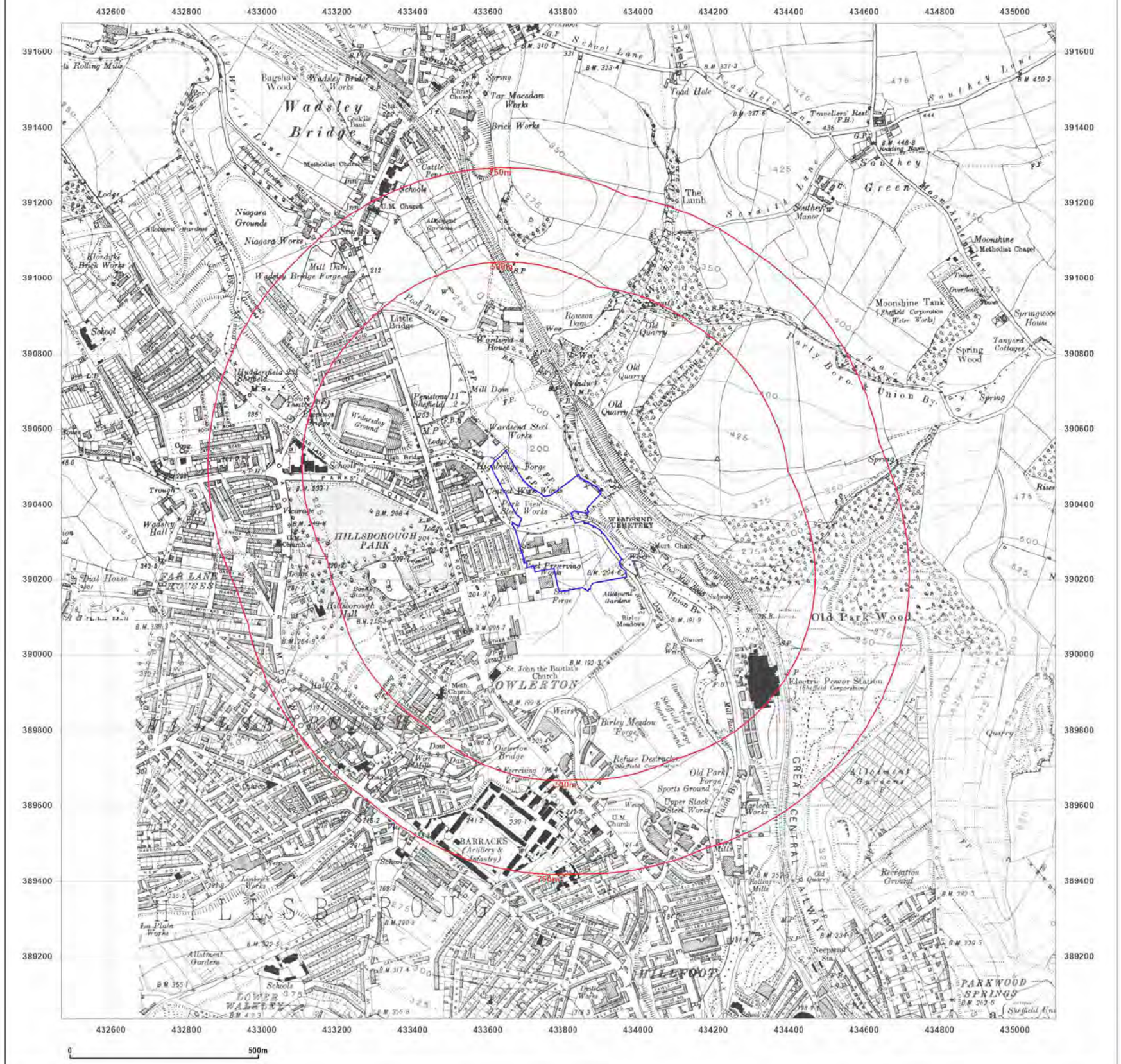
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Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1921-1924**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1851
Revised 1924
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1921
Edition N/A
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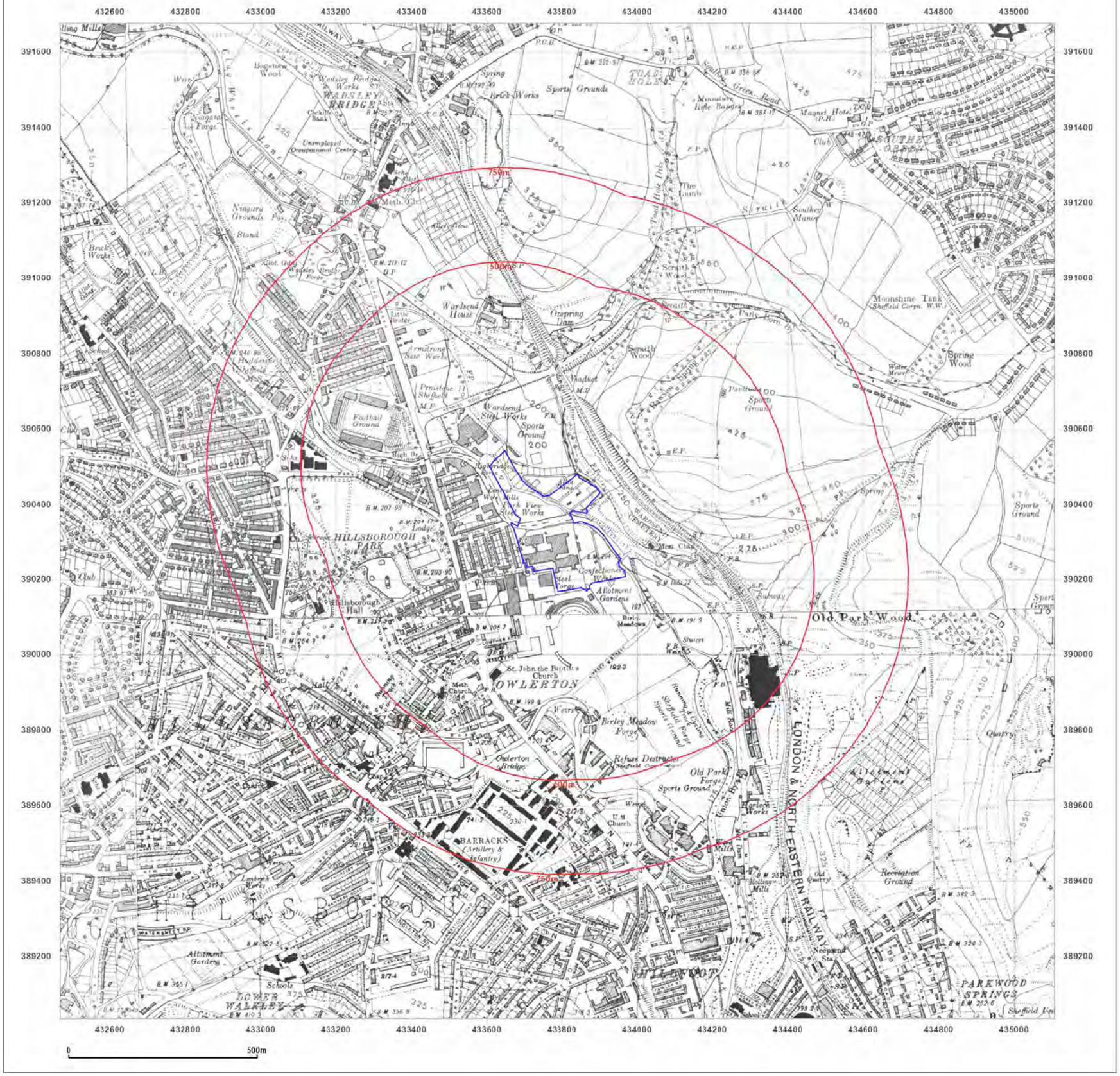
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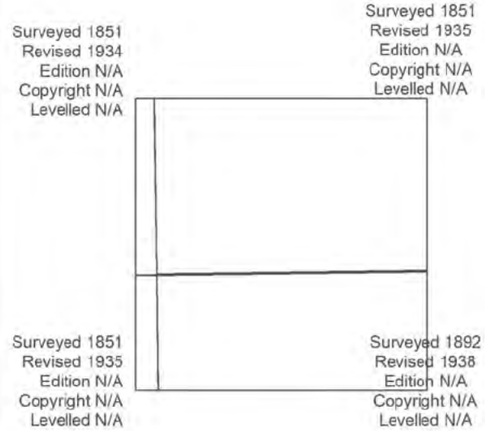
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Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1934-1938**
Scale: 1:10,560
Printed at: 1:10,560

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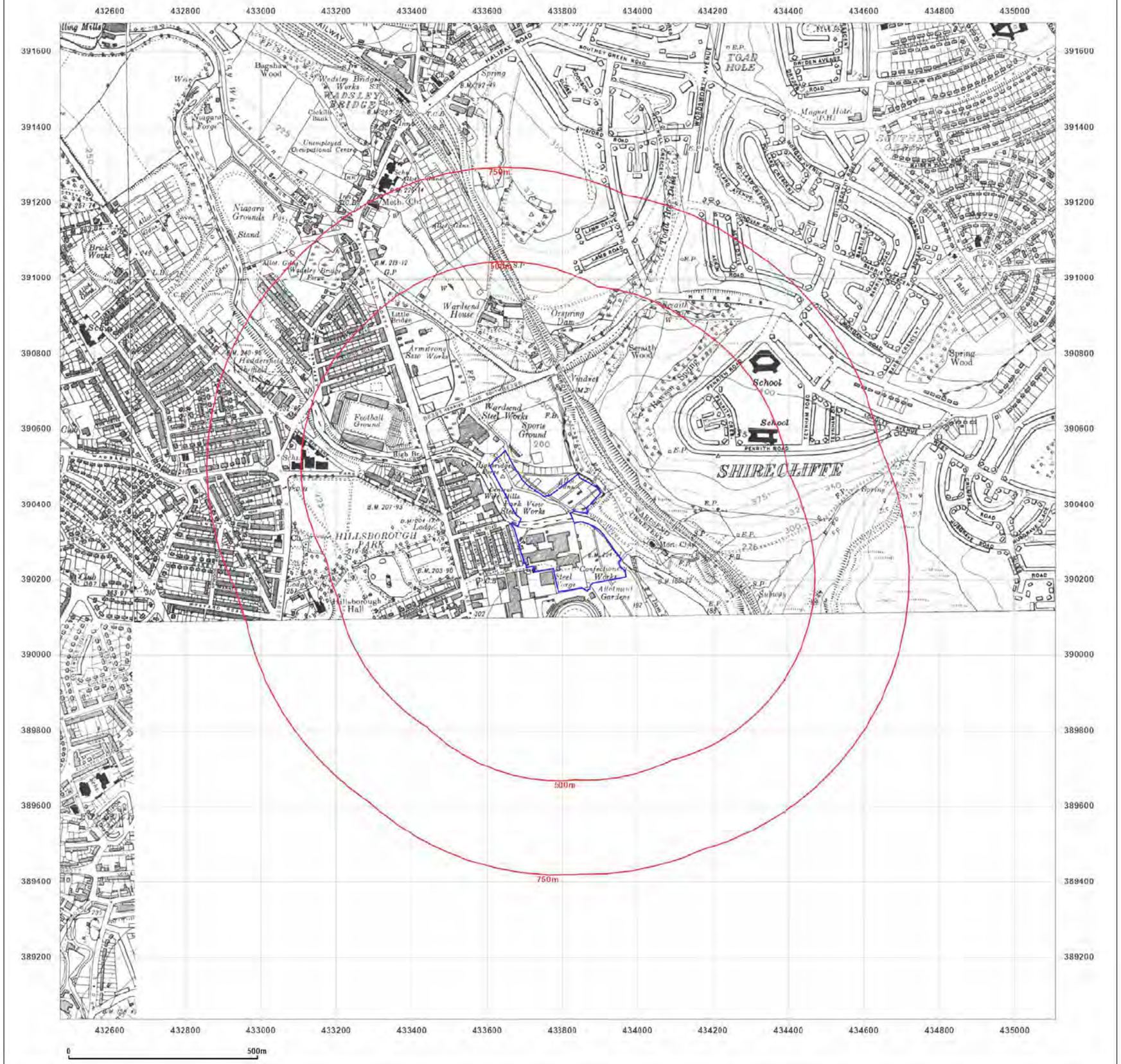
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1938**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1851
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1851
Revised 1938
Edition 1938
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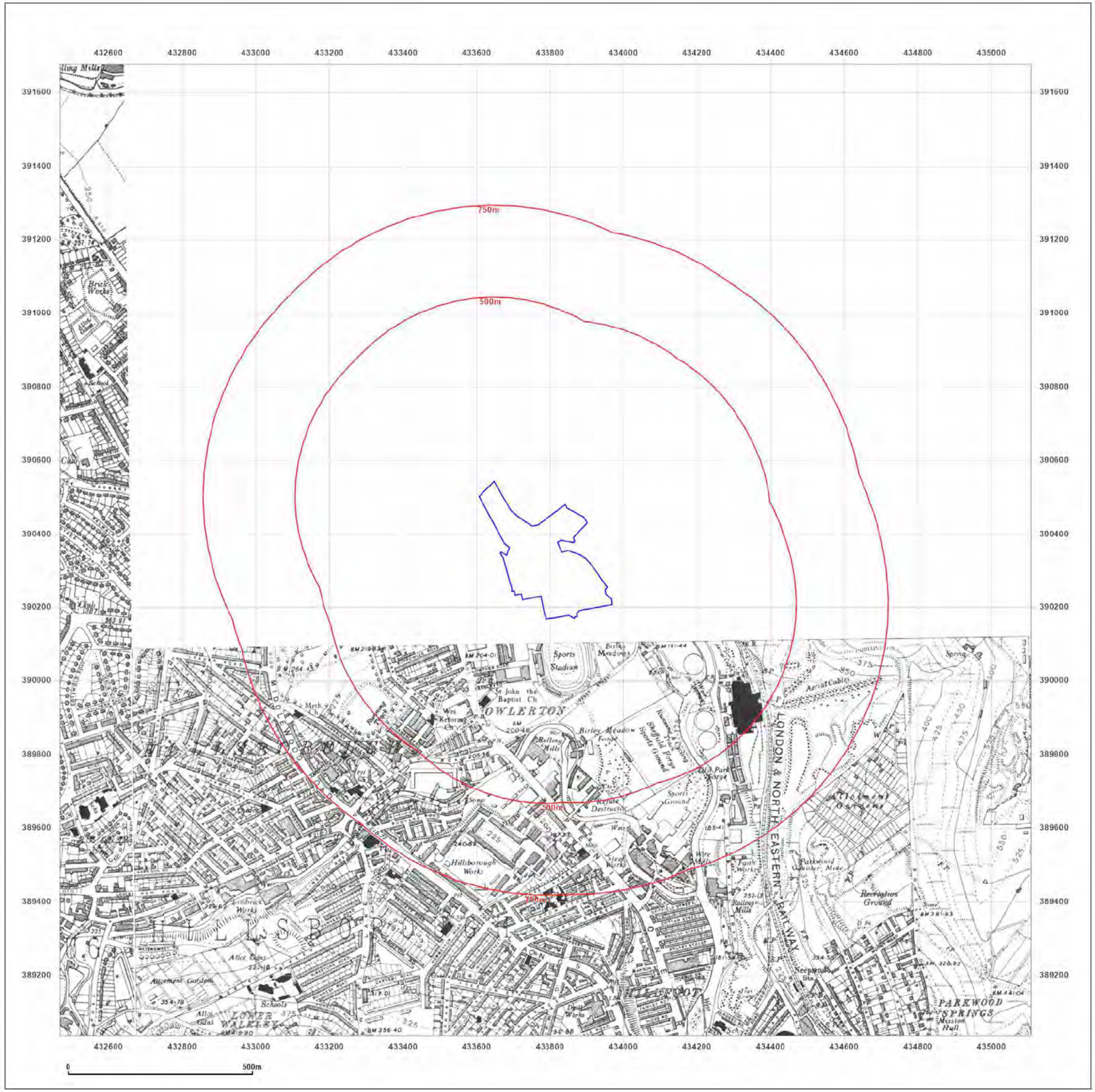
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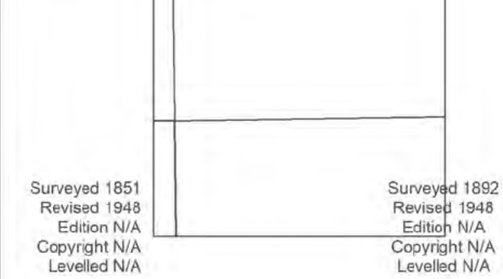
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Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1948**
Scale: 1:10,560
Printed at: 1:10,560

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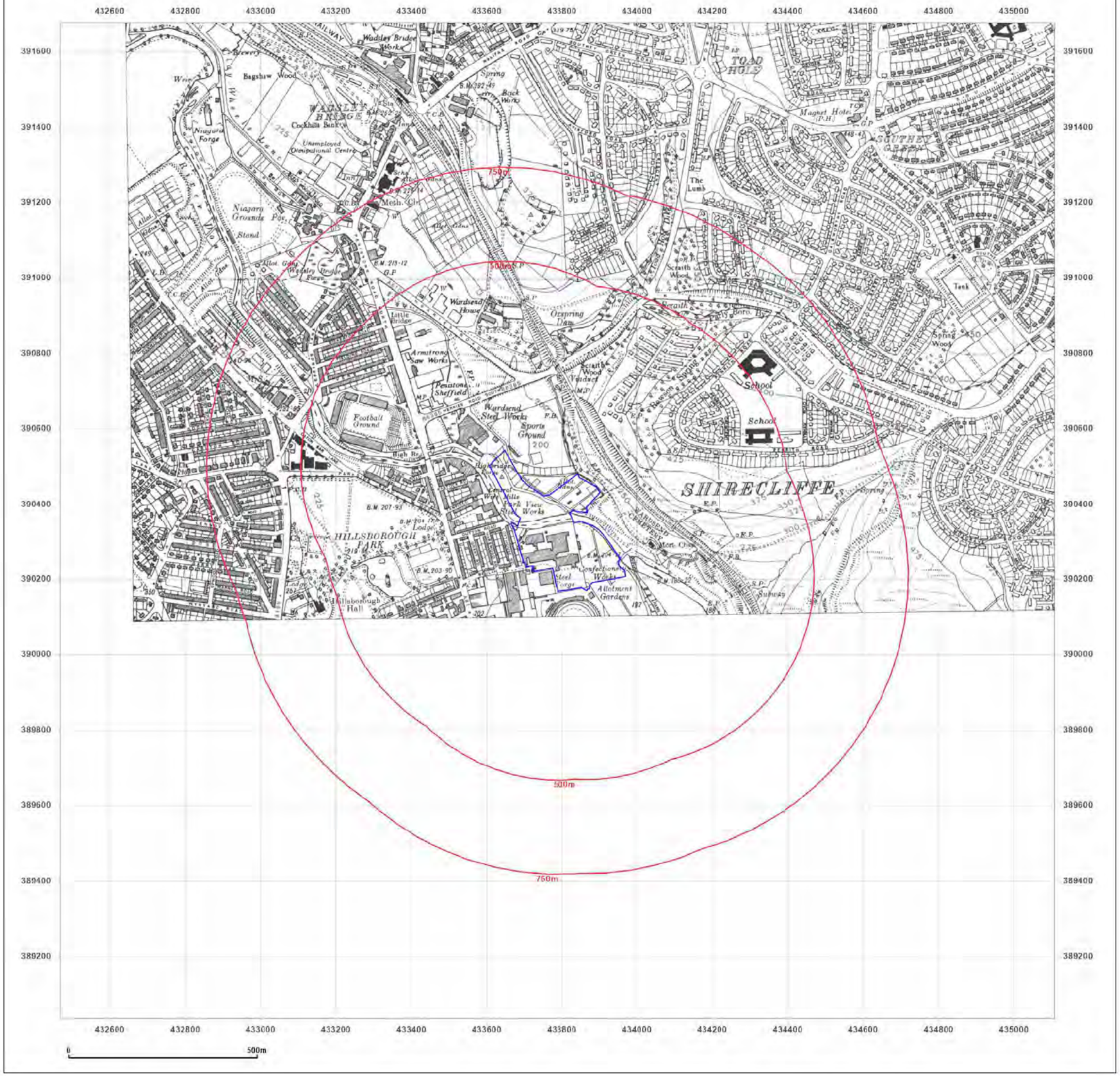
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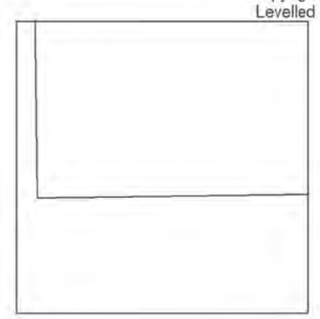
Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1948**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1851
Revised 1948
Edition N/A
Copyright N/A
Levelled N/A



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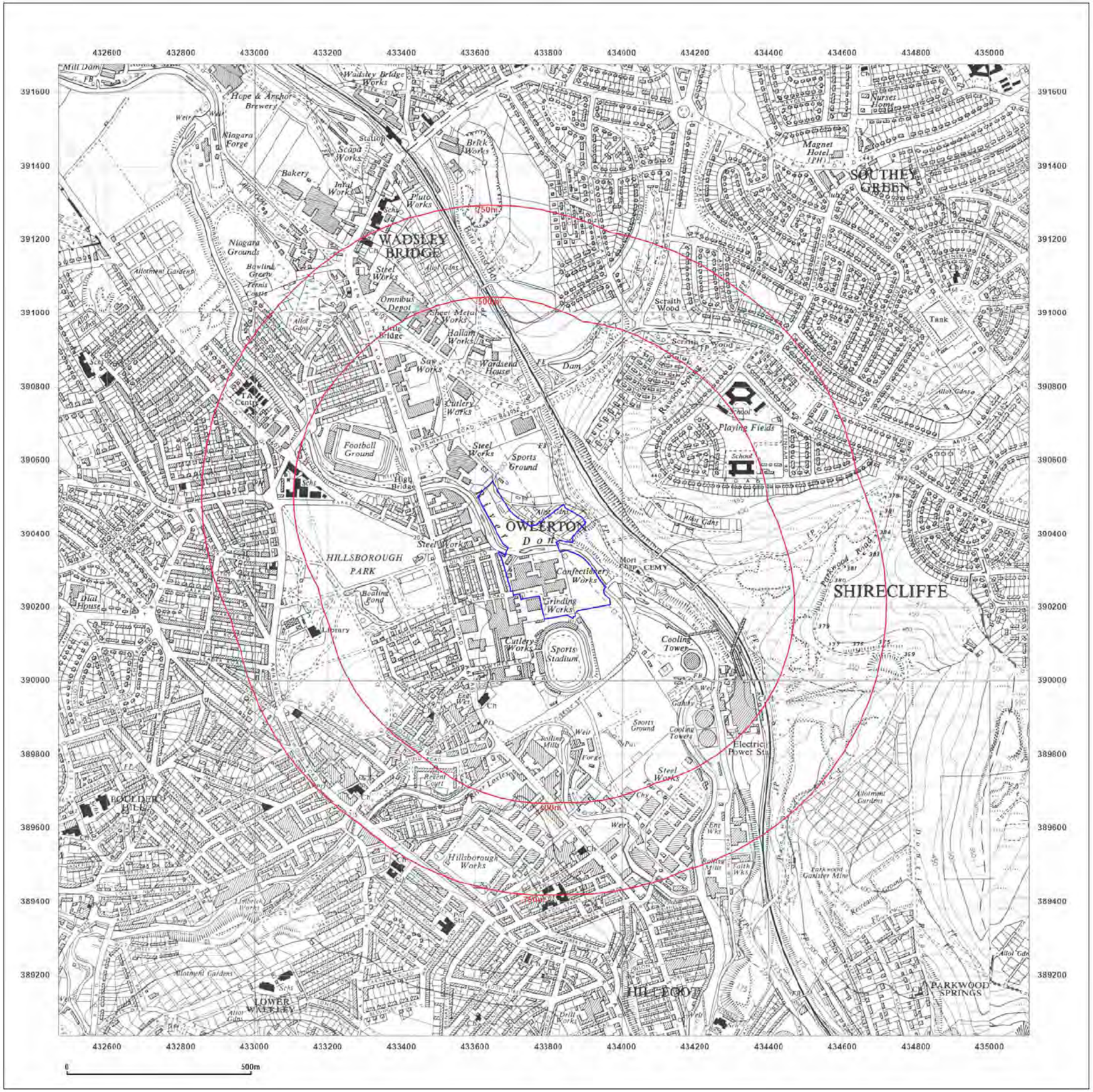
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Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: Provisional
Map date: **1956**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1952
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

Surveyed 1954
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

Surveyed 1951
Revised 1955
Edition N/A
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Revised 1955
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Grid Ref: 433787, 390355

Map Name: Provisional

Map date: **1966-1968**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1966 Revised 1966 Edition N/A Copyright N/A Levelled N/A	Surveyed 1967 Revised 1967 Edition N/A Copyright N/A Levelled N/A
Surveyed 1967 Revised 1967 Edition N/A Copyright N/A Levelled N/A	Surveyed 1968 Revised 1968 Edition N/A Copyright N/A Levelled N/A

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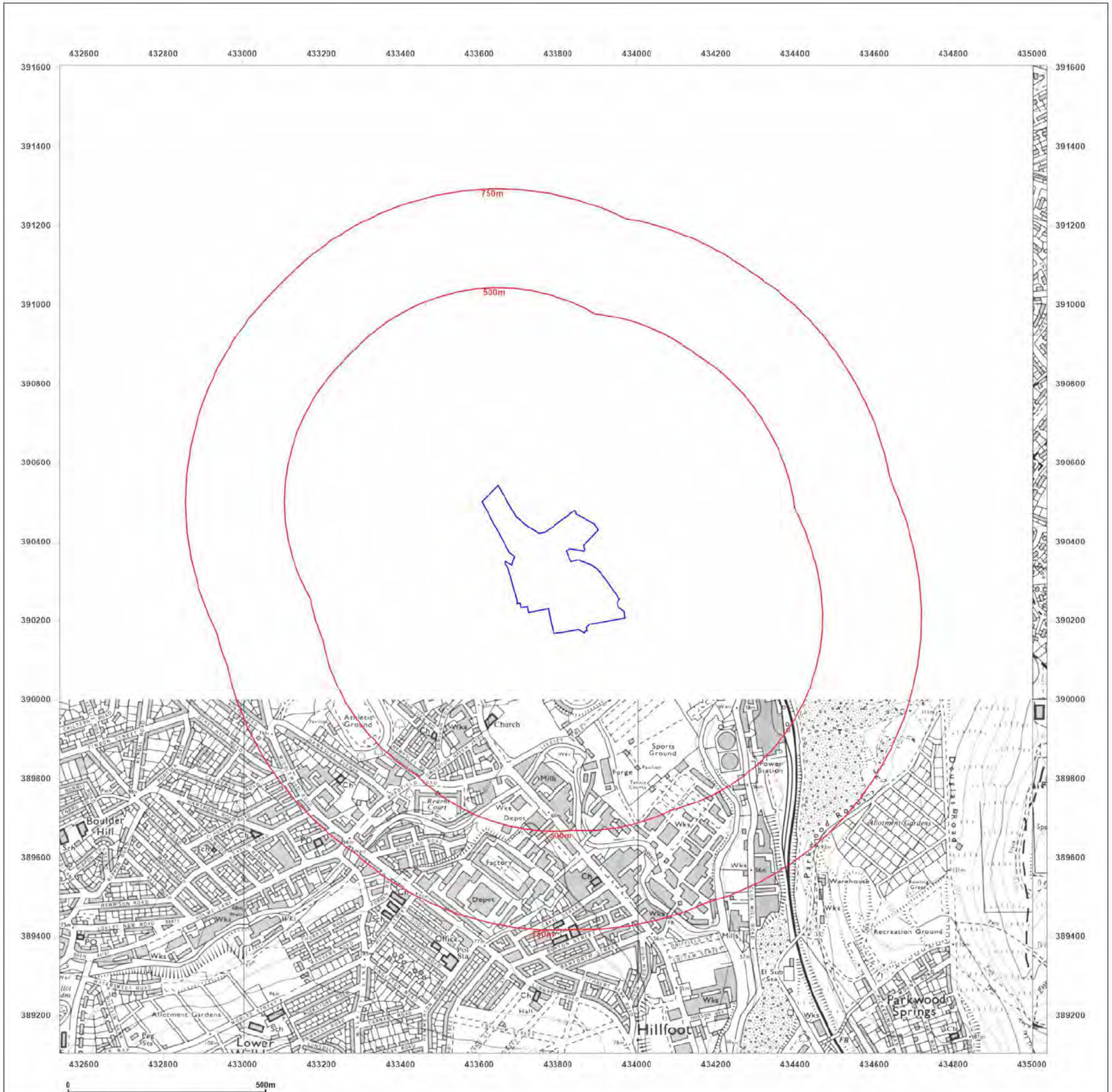
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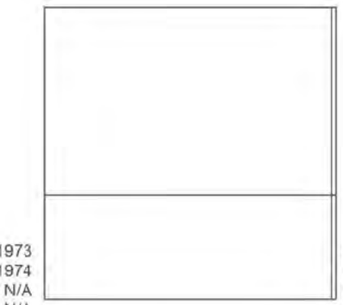
Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: National Grid
Map date: **1973-1978**
Scale: 1:10,000
Printed at: 1:10,000

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Surveyed 1973
Revised 1973
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1973
Revised 1974
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1977
Revised 1978
Edition N/A
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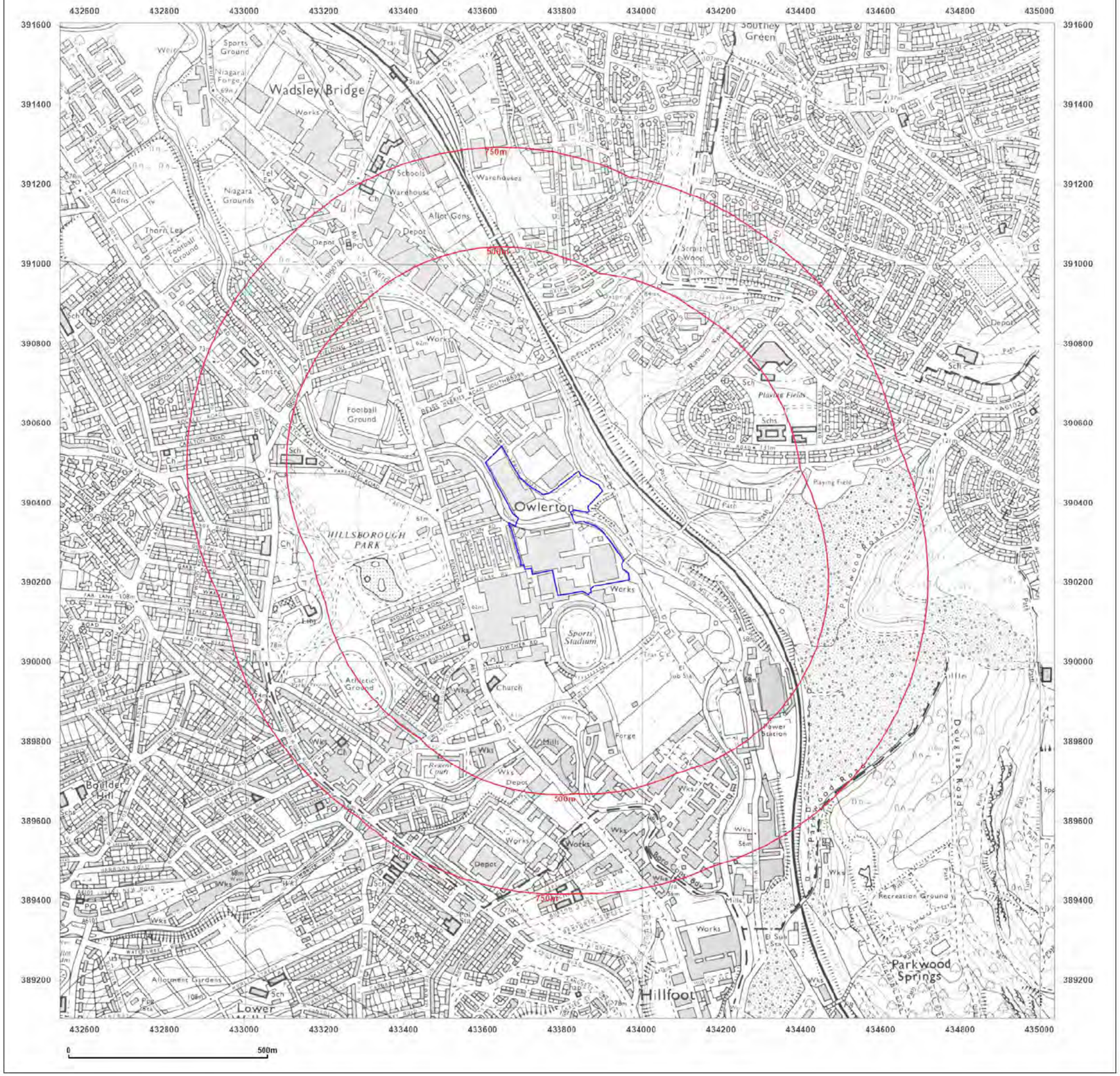
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: National Grid
Map date: **1981-1984**
Scale: 1:10,000
Printed at: 1:10,000

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Surveyed 1980
Revised 1981
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1980
Revised 1982
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1984
Revised 1984
Edition N/A
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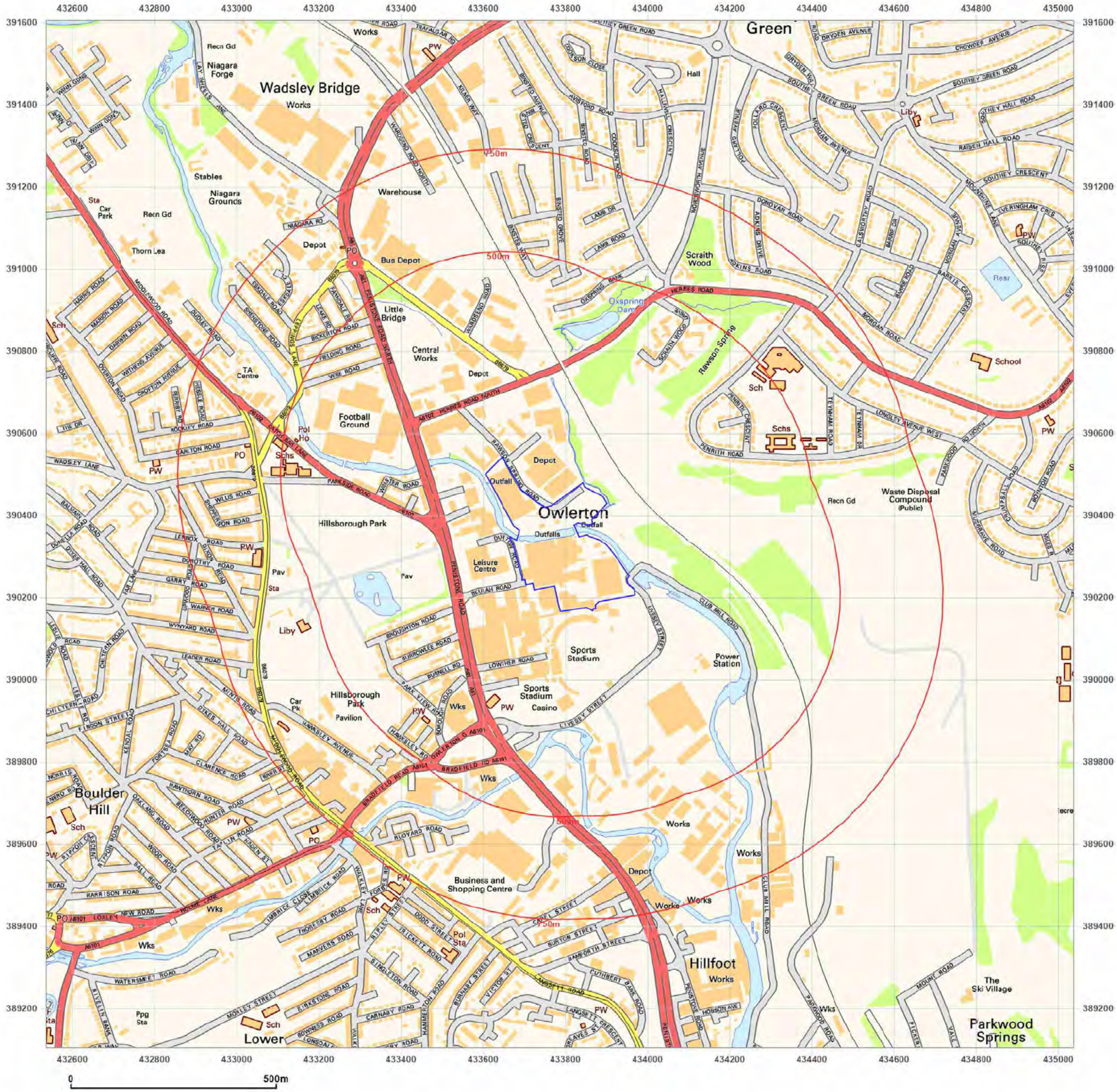
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Site Details:

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

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2001

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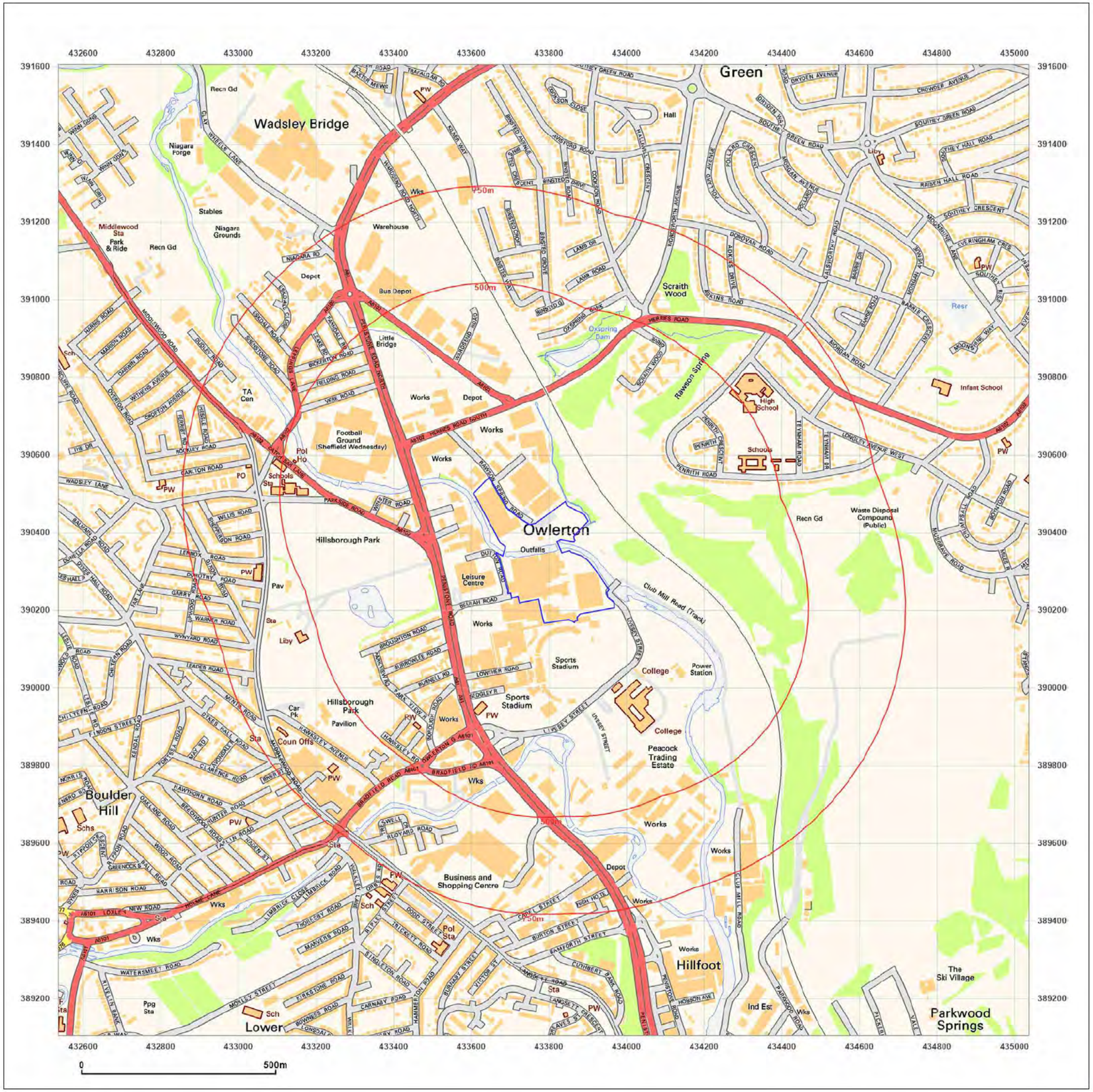
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

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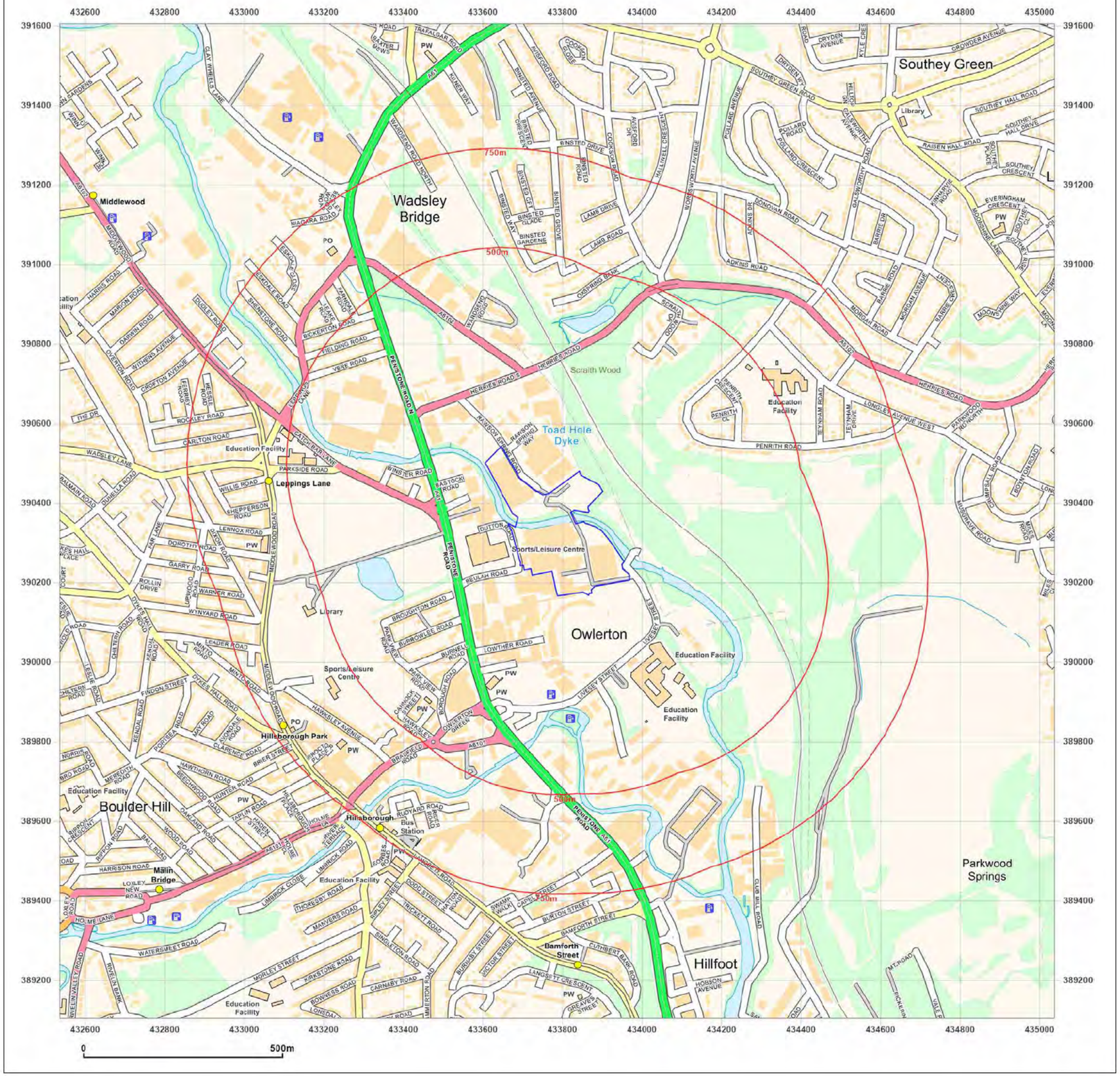
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142
Grid Ref: 433787, 390355

Map Name: National Grid
Map date: 2024
Scale: 1:10,000
Printed at: 1:10,000

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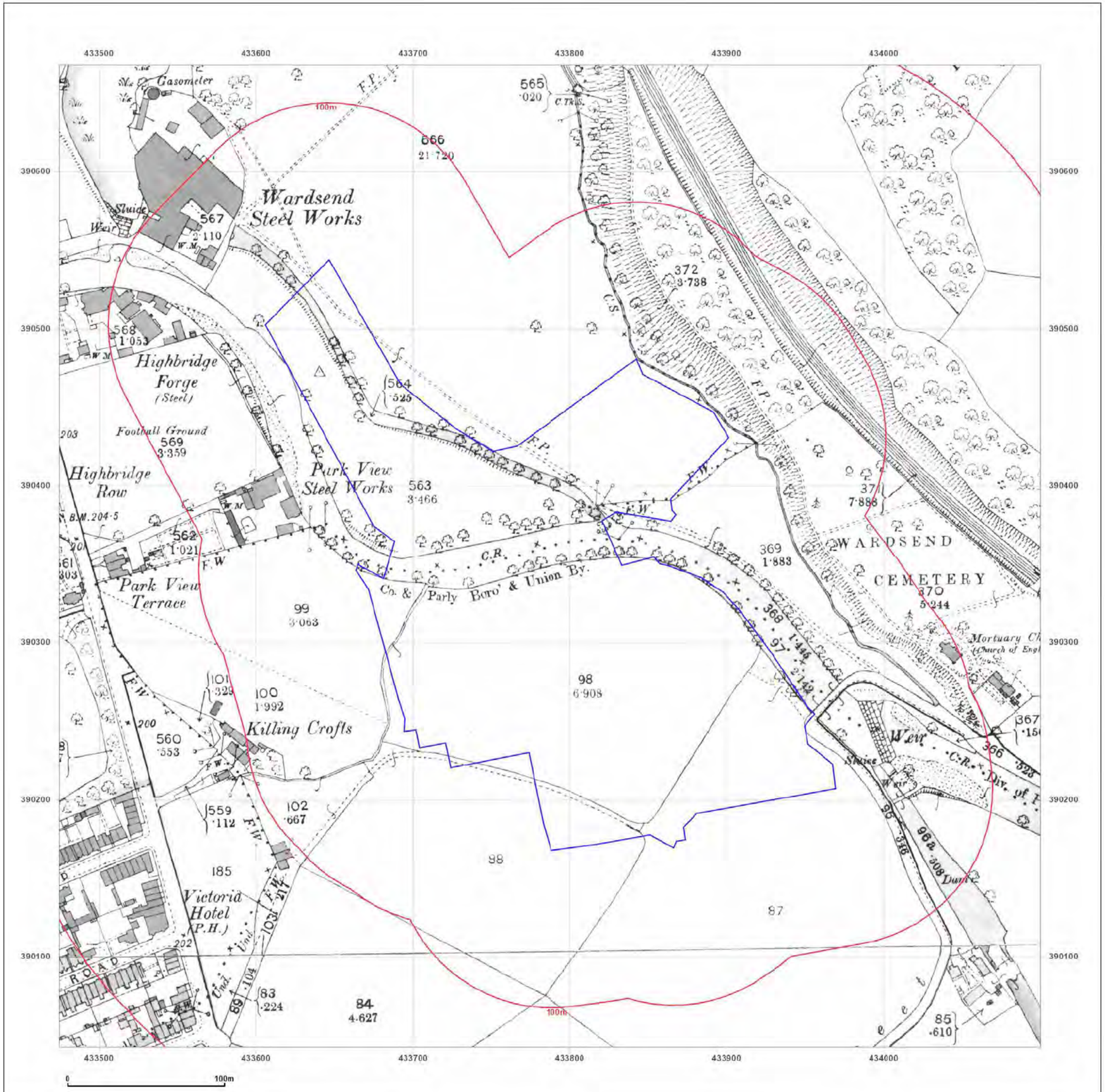
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_LS_1_1
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1892-1893**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1892
Revised 1892
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1893
~~Revised 1893~~
Edition N/A
Copyright N/A
Levelled N/A

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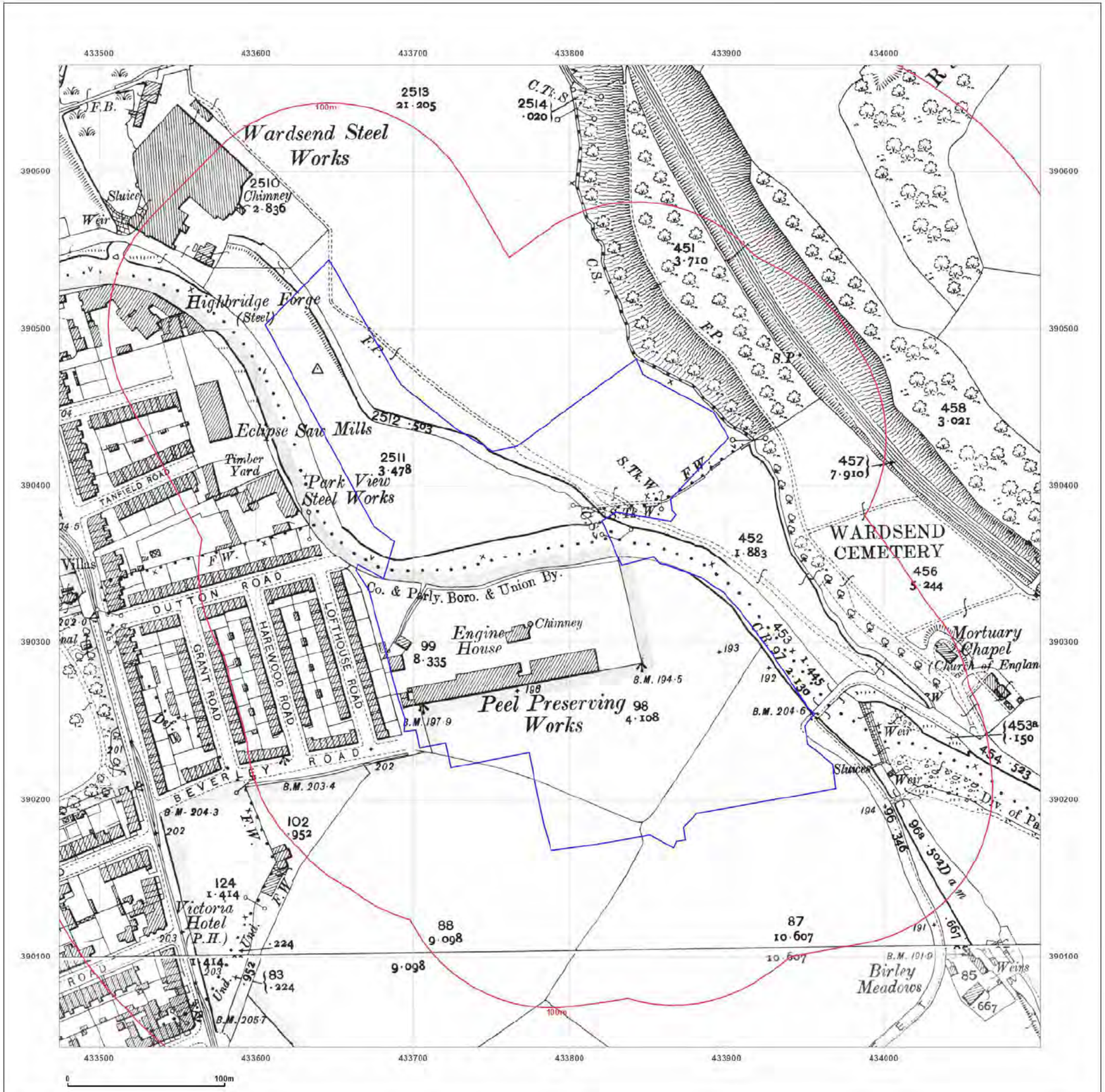
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_LS_1_1
Grid Ref: 433787, 390355

Map Name: County Series
Map date: 1905
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1905
Revised 1905
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1905
~~Revised 1905~~
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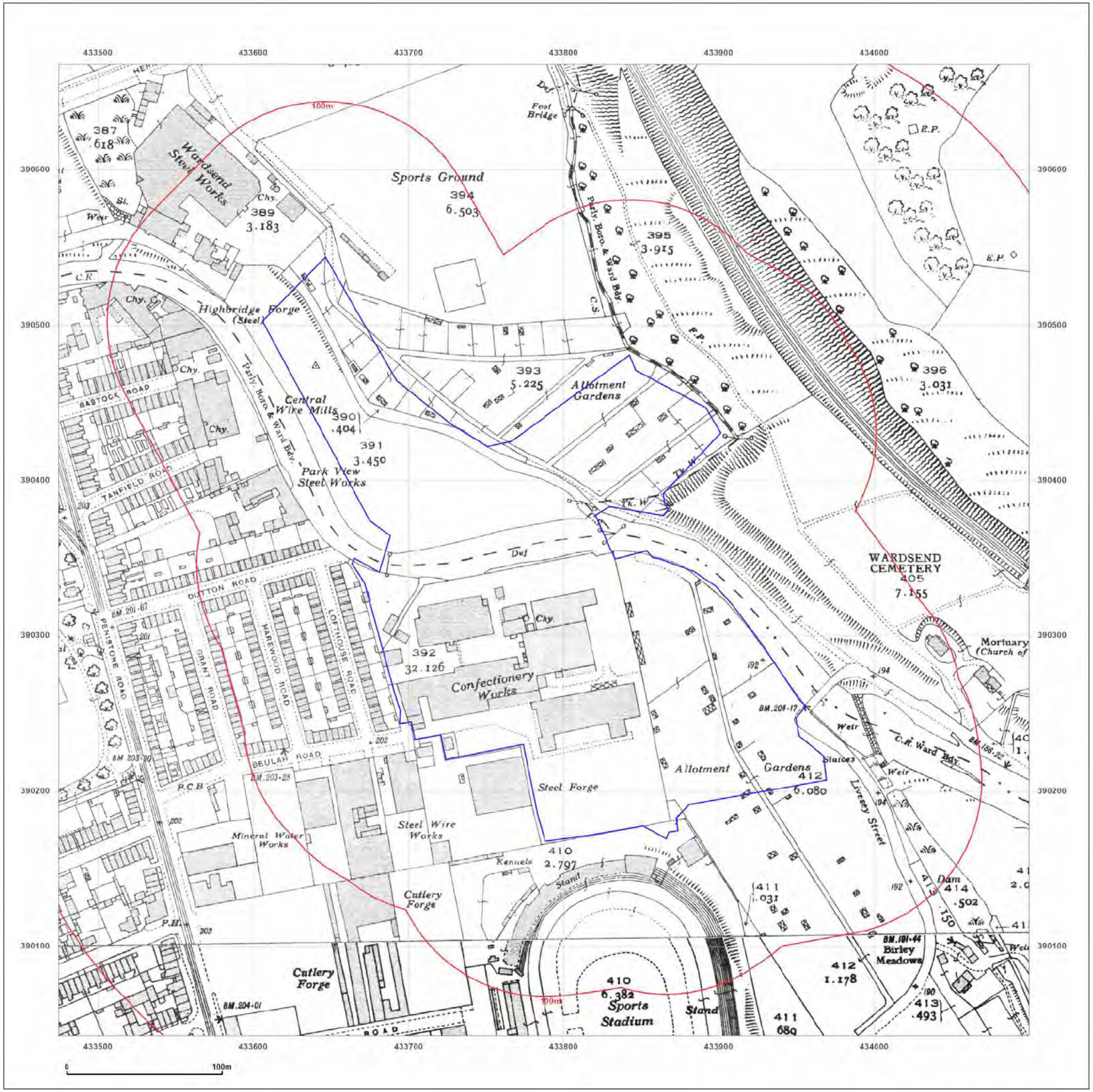
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_LS_1_1
Grid Ref: 433787, 390355

Map Name: County Series
Map date: **1934-1937**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1934
Revised 1934
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1937
~~Revised 1937~~
Edition N/A
Copyright N/A
Levelled N/A

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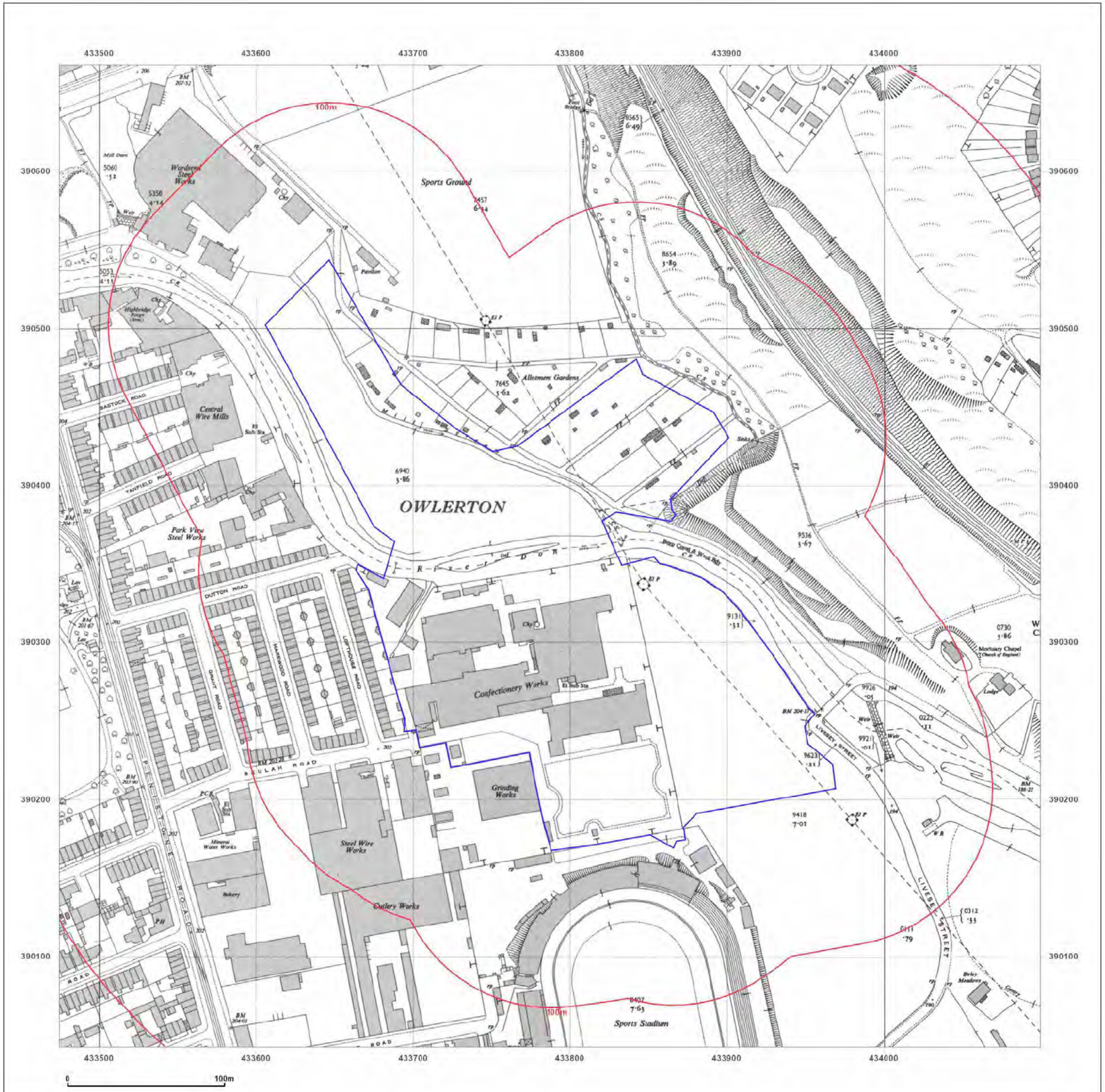
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_LS_1_1
Grid Ref: 433787, 390355

Map Name: National Grid
Map date: **1951-1952**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1951	Surveyed 1952
Revised 1951	Revised 1952
Edition N/A	Edition N/A
Copyright N/A	Copyright N/A
Levelled 1949	Levelled 1949

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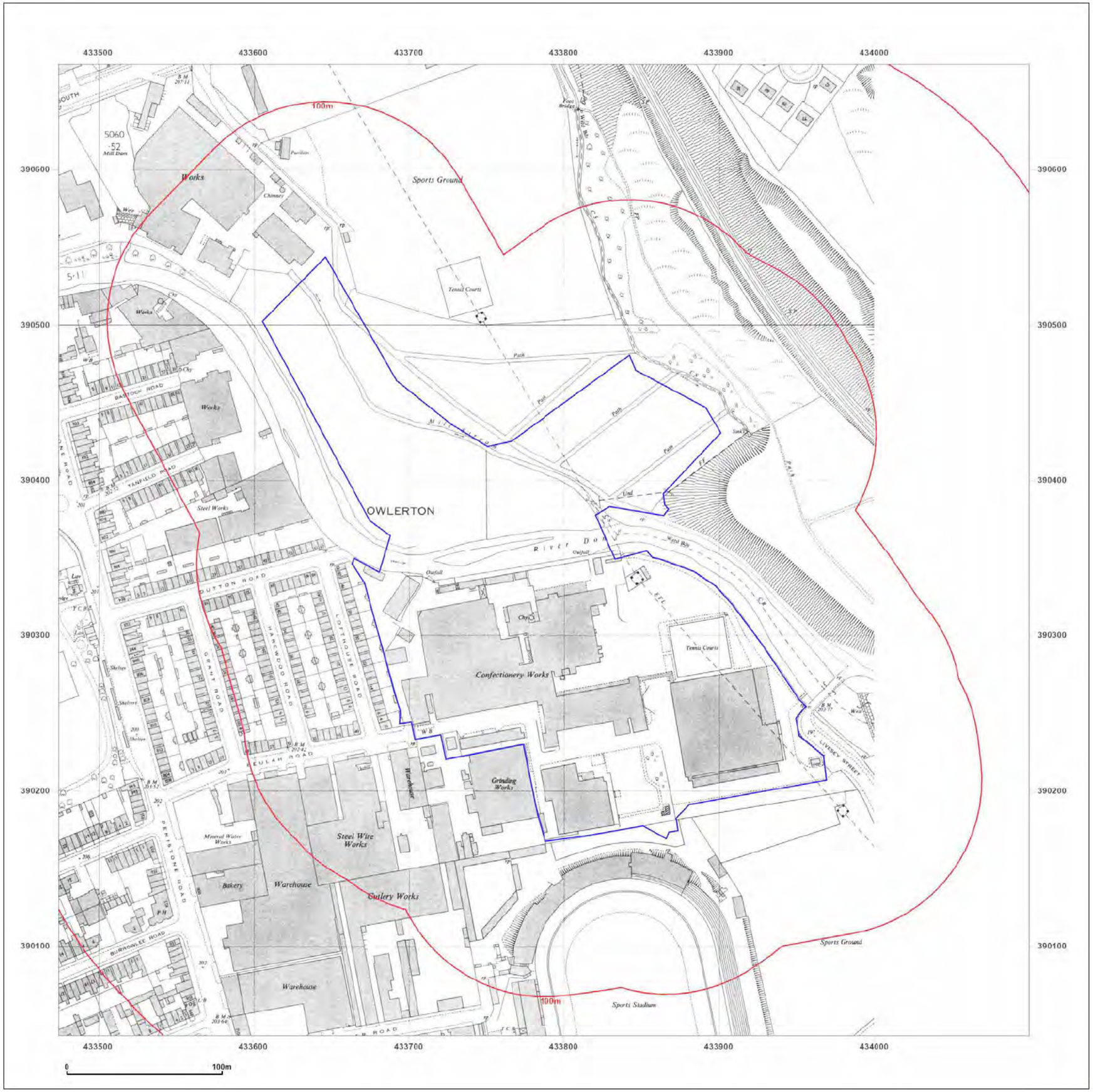
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_LS_1_1
Grid Ref: 433787, 390355

Map Name: National Grid

Map date: **1967**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1966
Revised 1966
Edition N/A
Copyright 1967
Levelled 1961

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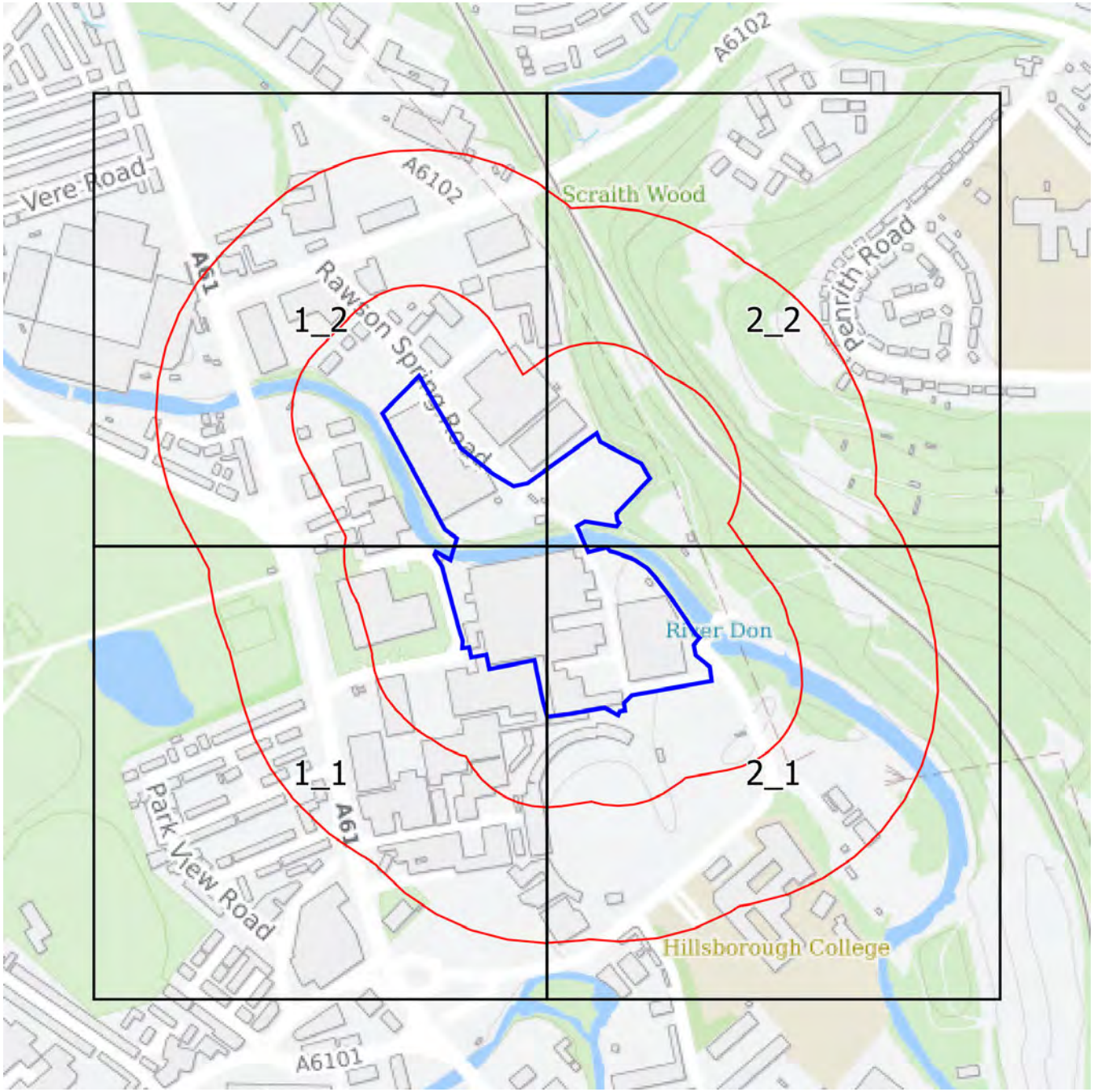
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1:1,250 Scale Grid Index

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1951**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1951 Revised 1951 Edition N/A Copyright N/A Levelled 1949	Surveyed 1951 Revised 1951 Edition N/A Copyright N/A Levelled 1949
Surveyed 1951 Revised 1951 Edition N/A Copyright N/A Levelled 1928	Surveyed 1951 Revised 1951 Edition N/A Copyright N/A Levelled 1928

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1952**
Scale: 1:1,250
Printed at: 1:2,000

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

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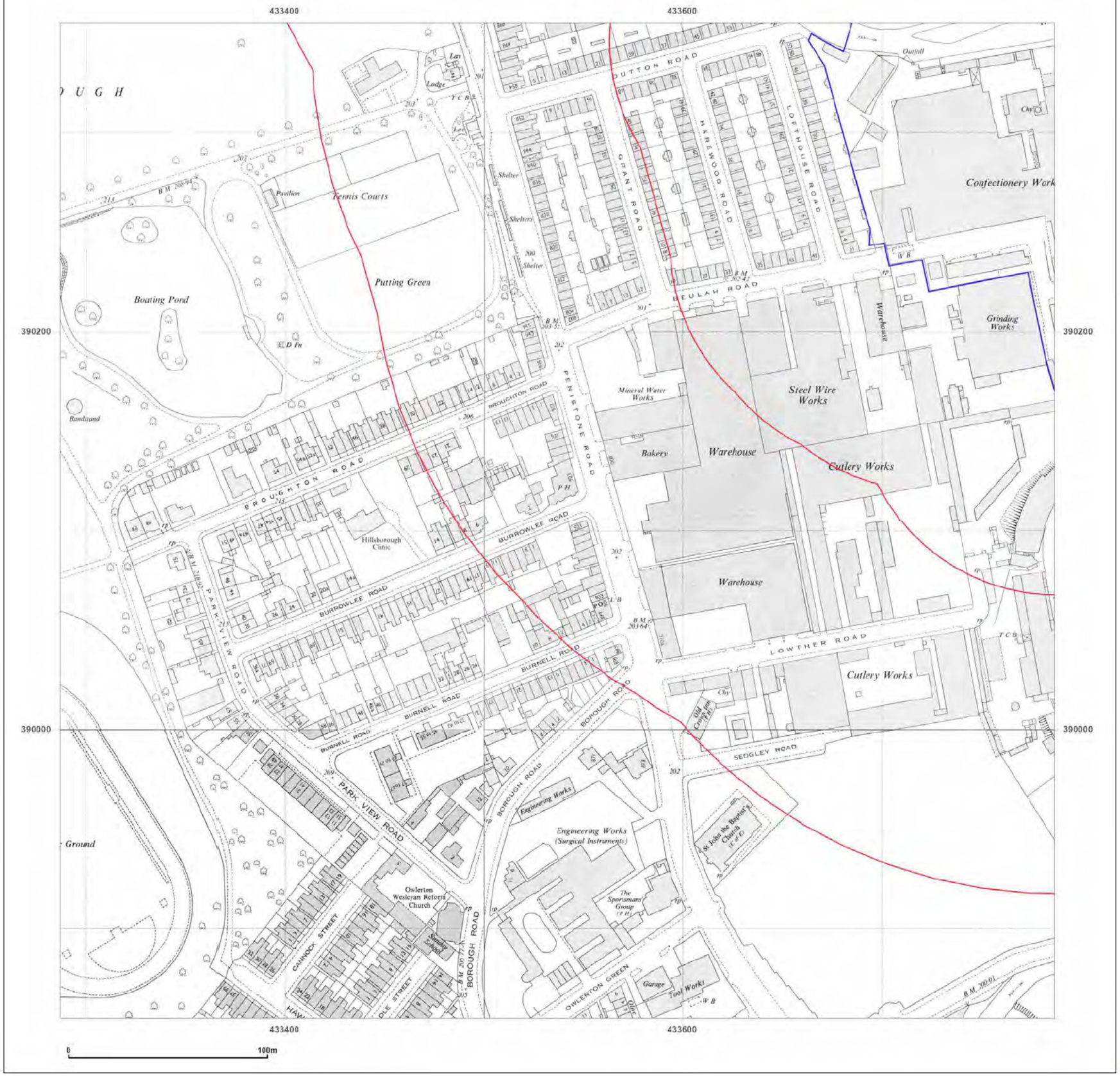
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1965-1967**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1951 Revised 1965 Edition N/A Copyright 1965 Levelled 1961	Surveyed 1964 Revised 1964 Edition N/A Copyright 1965 Levelled 1964
Surveyed 1966 Revised 1966 Edition N/A Copyright 1967 Levelled 1961	Surveyed 1951 Revised 1964 Edition N/A Copyright 1965 Levelled 1961

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Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1974-1975**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1951
Revised 1975
Edition N/A
Copyright 1975
Levelled 1961

Surveyed N/A
Revised N/A
Edition N/A
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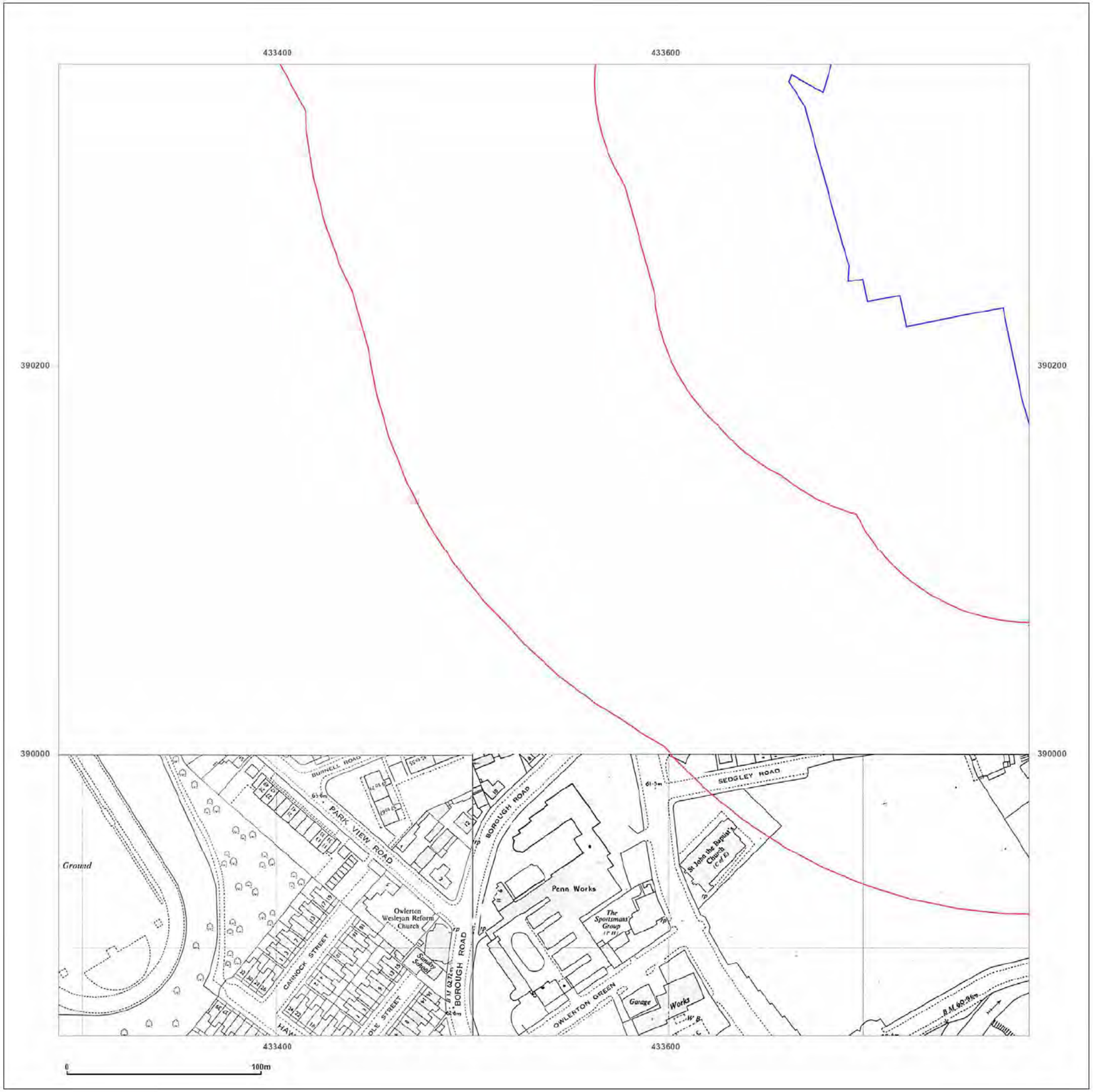
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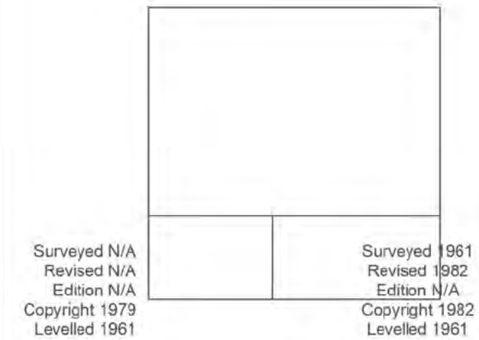
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1979-1982**
Scale: 1:1,250
Printed at: 1:2,000

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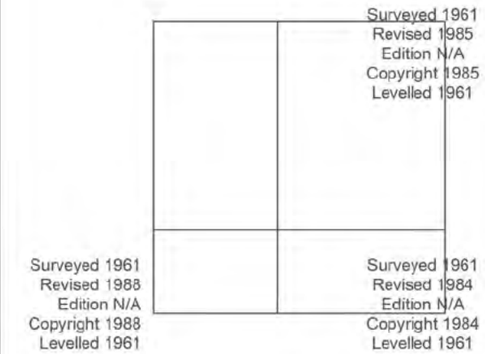
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1984-1988**
Scale: 1:1,250
Printed at: 1:2,000

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1993**
Scale: 1:1,250
Printed at: 1:2,000

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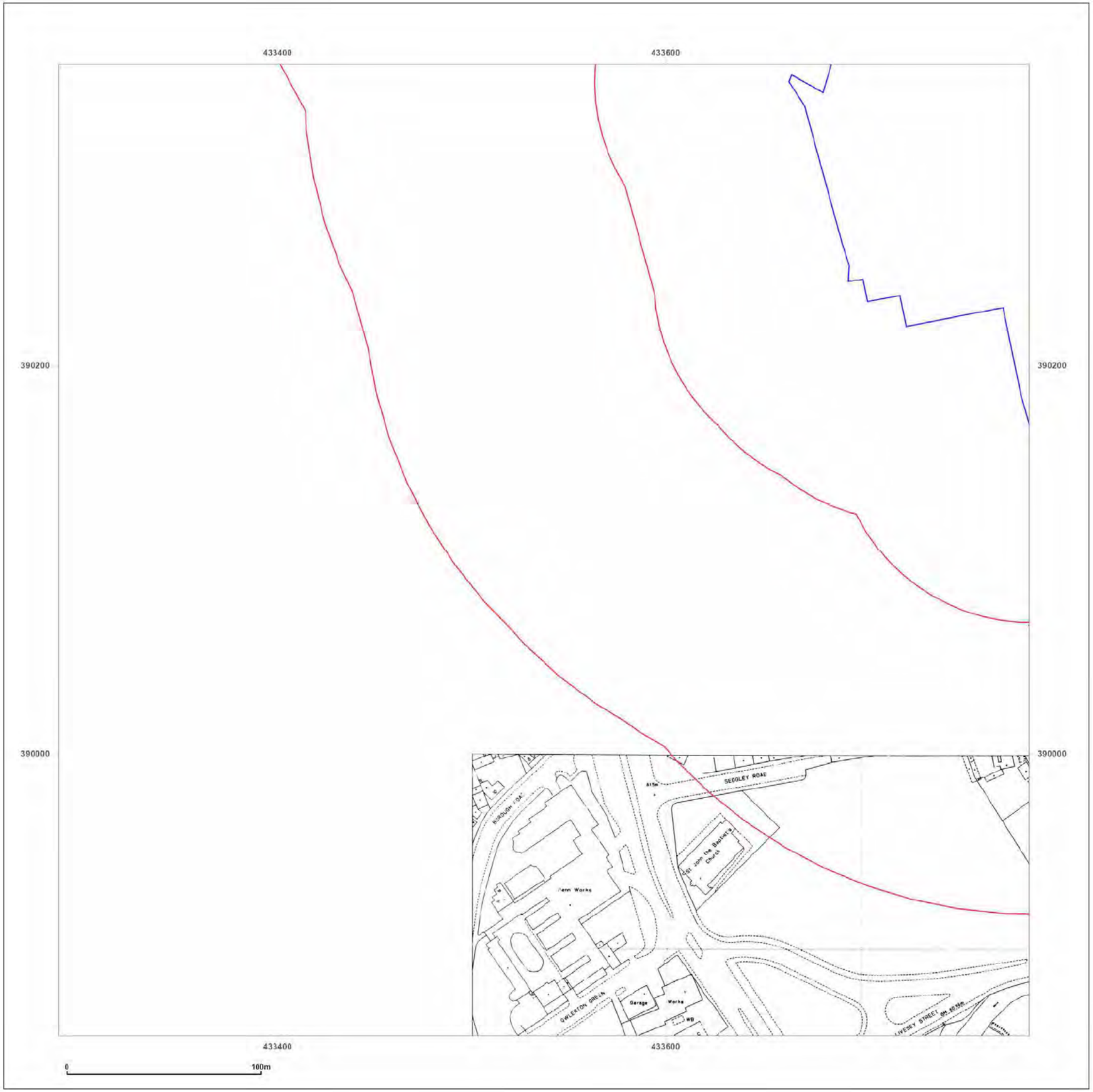
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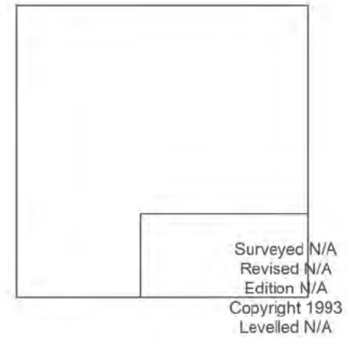
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Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1993**
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Printed at: 1:2,000

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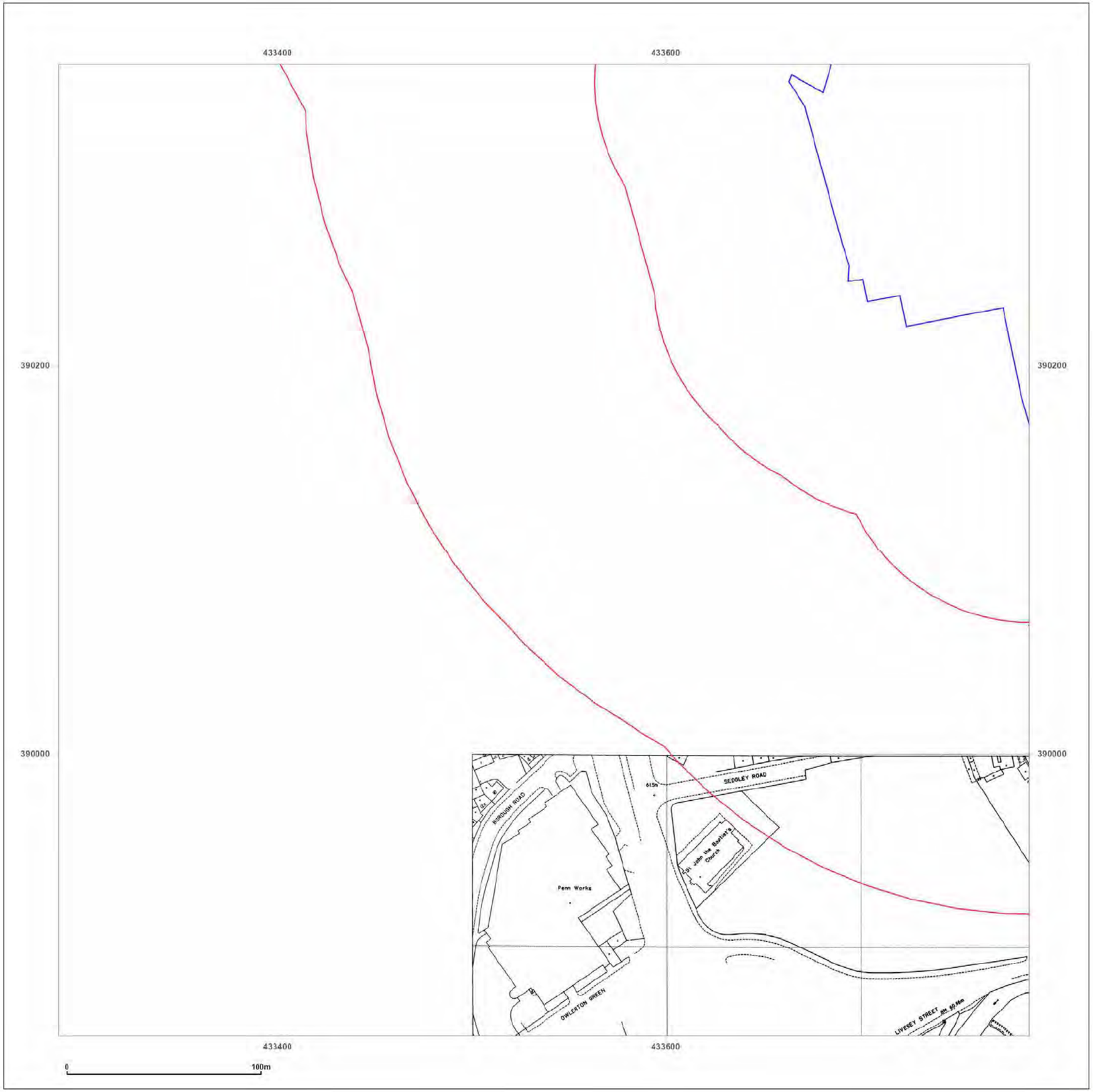
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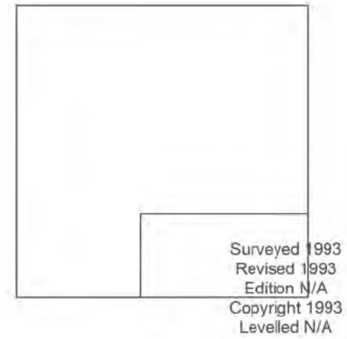
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Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1993**
Scale: 1:1,250
Printed at: 1:2,000

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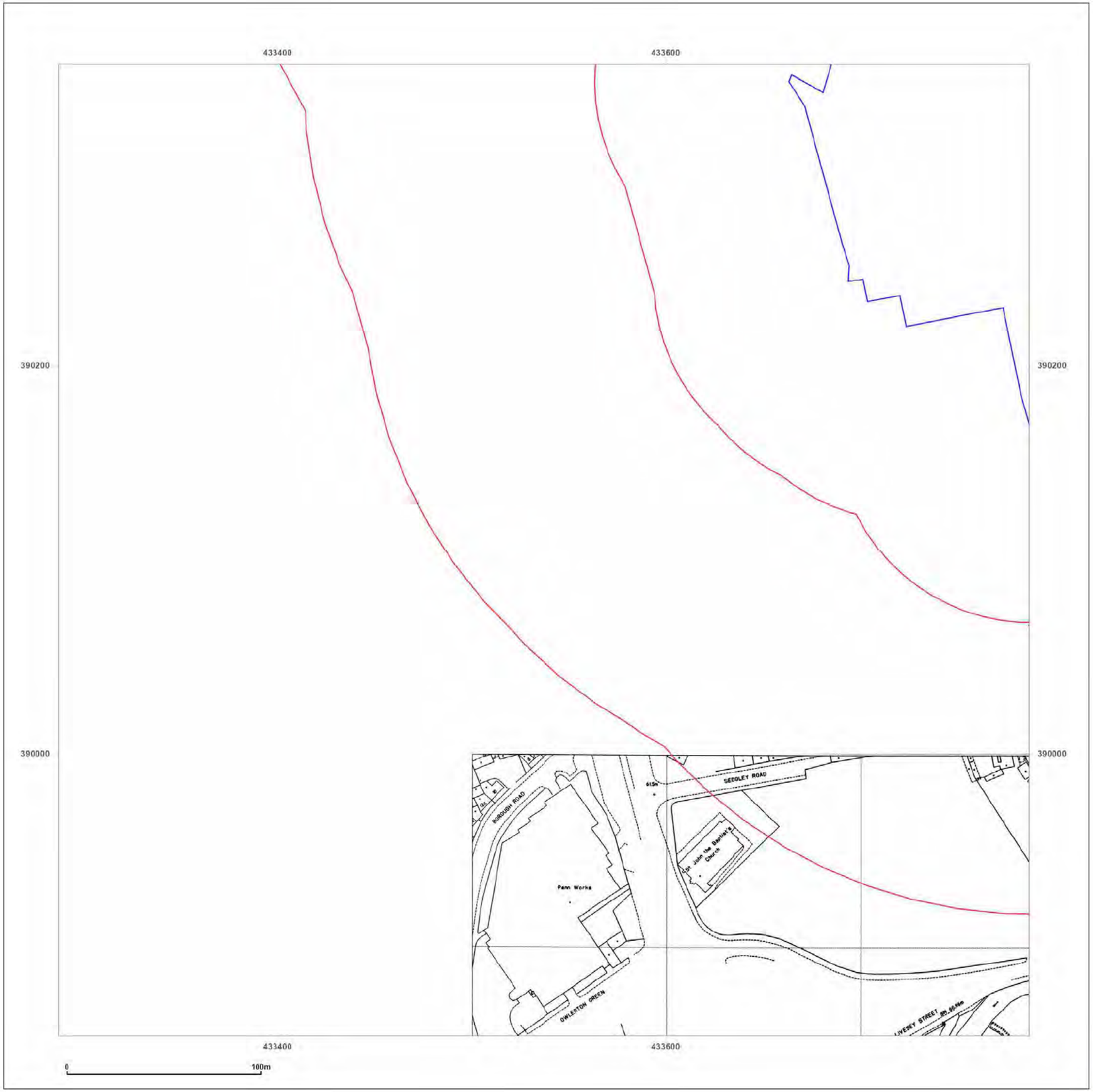
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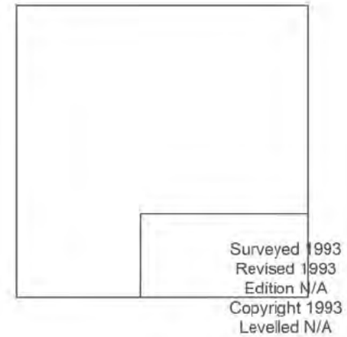
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Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1993**
Scale: 1:1,250
Printed at: 1:2,000

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1988-1993**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A		Surveyed 1961 Revised 1988 Edition N/A Copyright 1988 Levelled 1961

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1989-1993**
Scale: 1:1,250
Printed at: 1:2,000

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1991-1993**
Scale: 1:1,250
Printed at: 1:2,000

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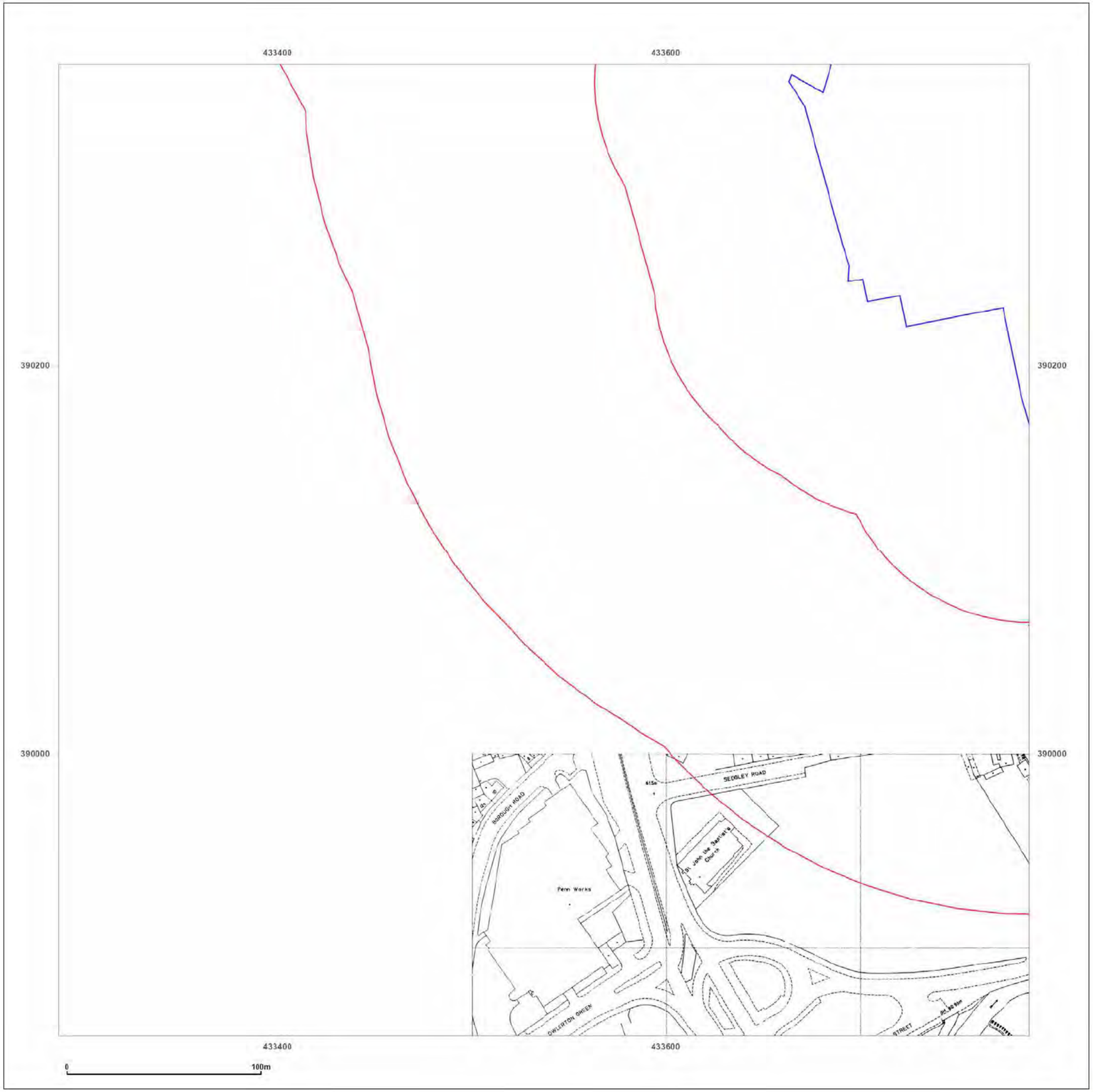
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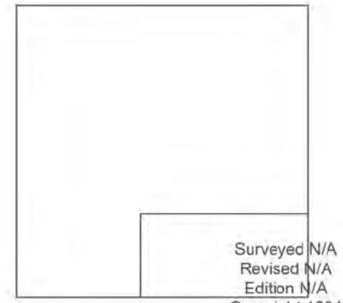
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Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1994**
Scale: 1:1,250
Printed at: 1:2,000

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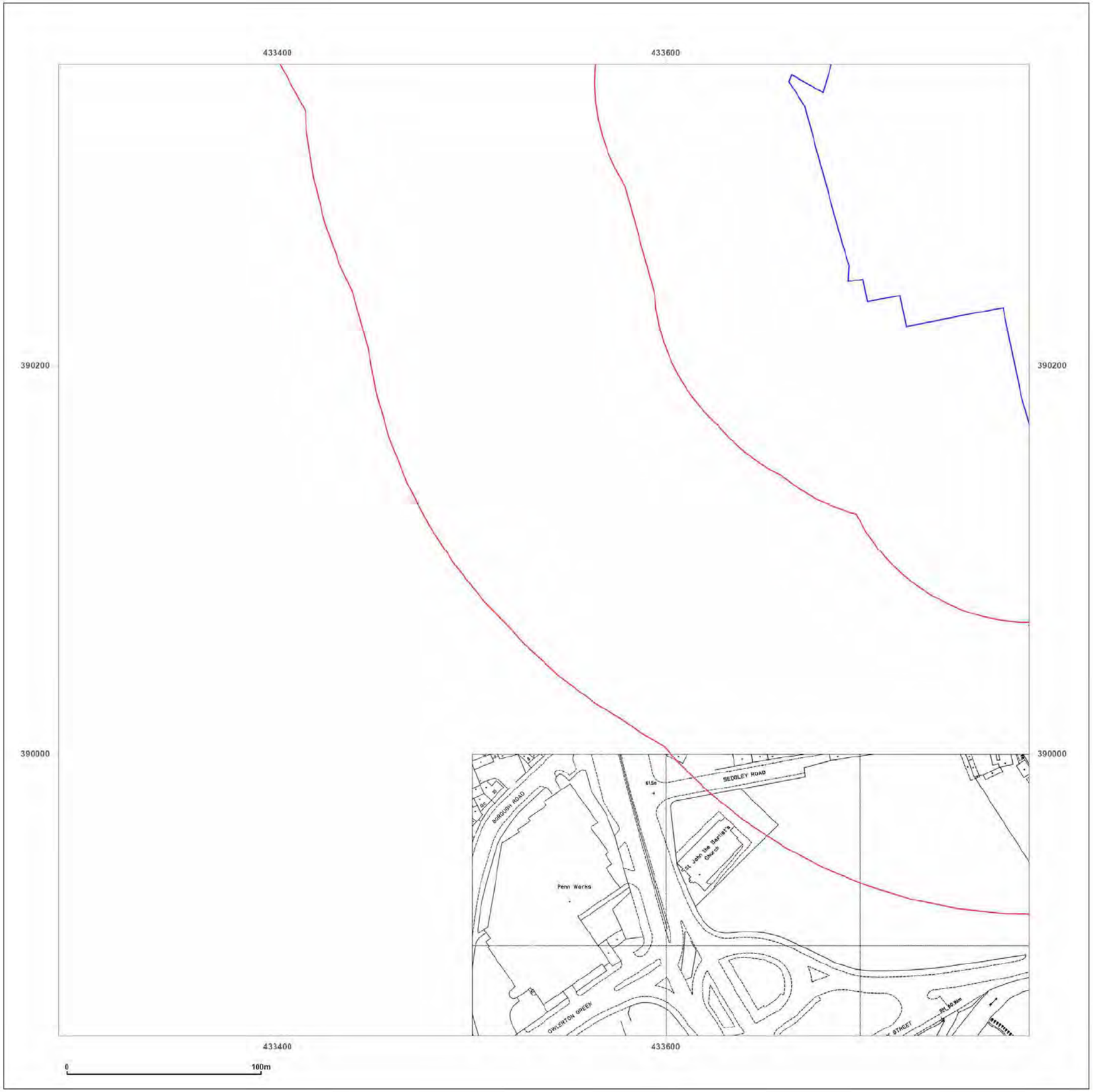
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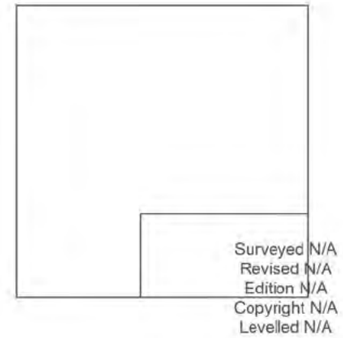
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Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1994**
Scale: 1:1,250
Printed at: 1:2,000

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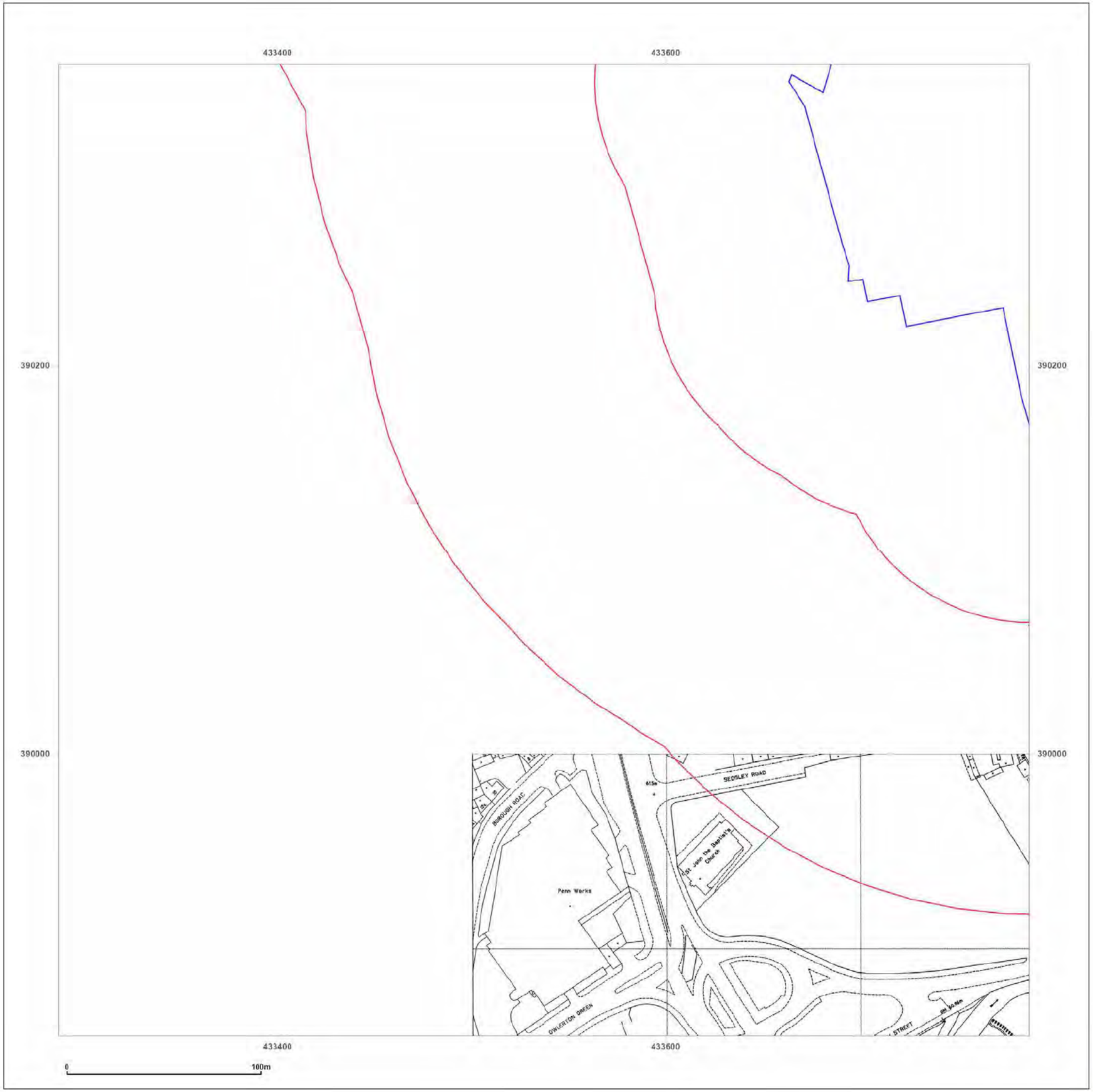
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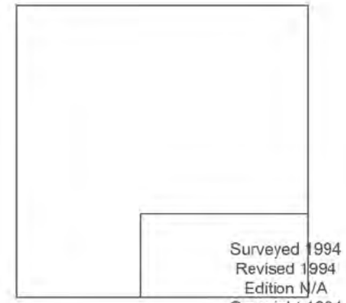
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_1
Grid Ref: 433537, 390105

Map Name: National Grid
Map date: **1994**
Scale: 1:1,250
Printed at: 1:2,000

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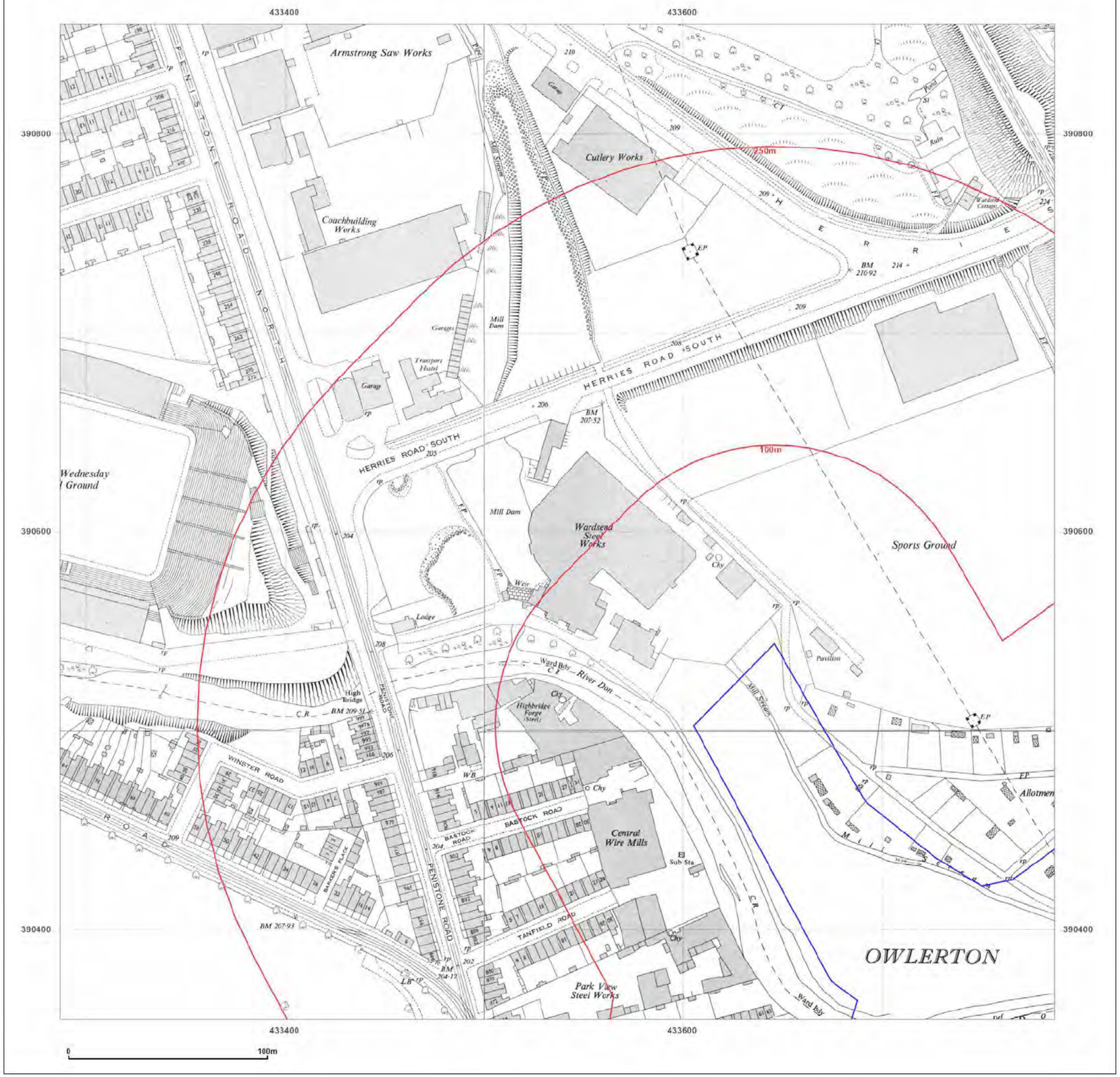
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1951**
Scale: 1:1,250
Printed at: 1:2,000

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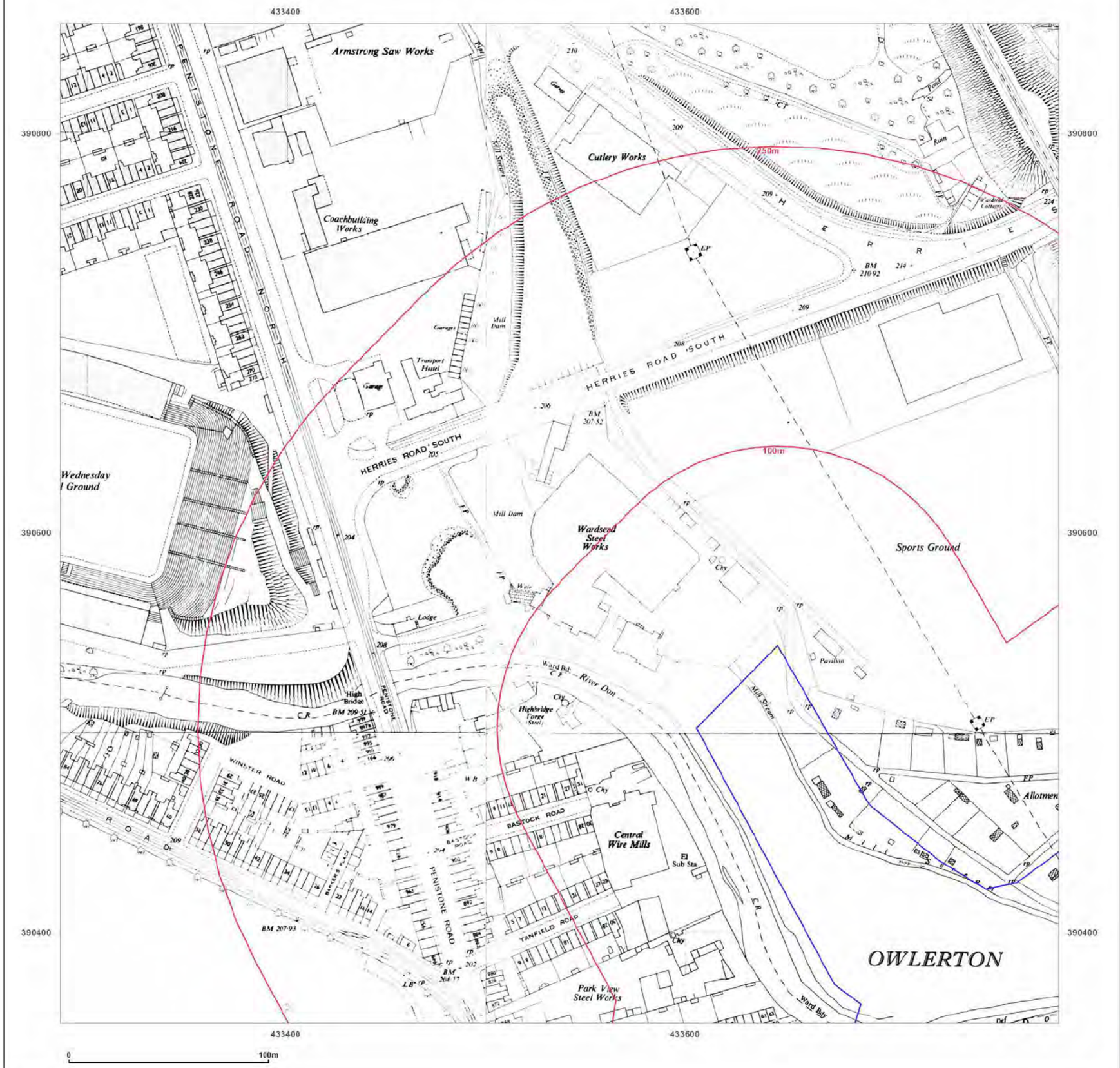
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: 1952
Scale: 1:1,250
Printed at: 1:2,000

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1963-1965**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1951 Revised 1965 Edition N/A Copyright 1965 Levelled 1961		Surveyed 1964 Revised 1964 Edition N/A Copyright 1965 Levelled 1964

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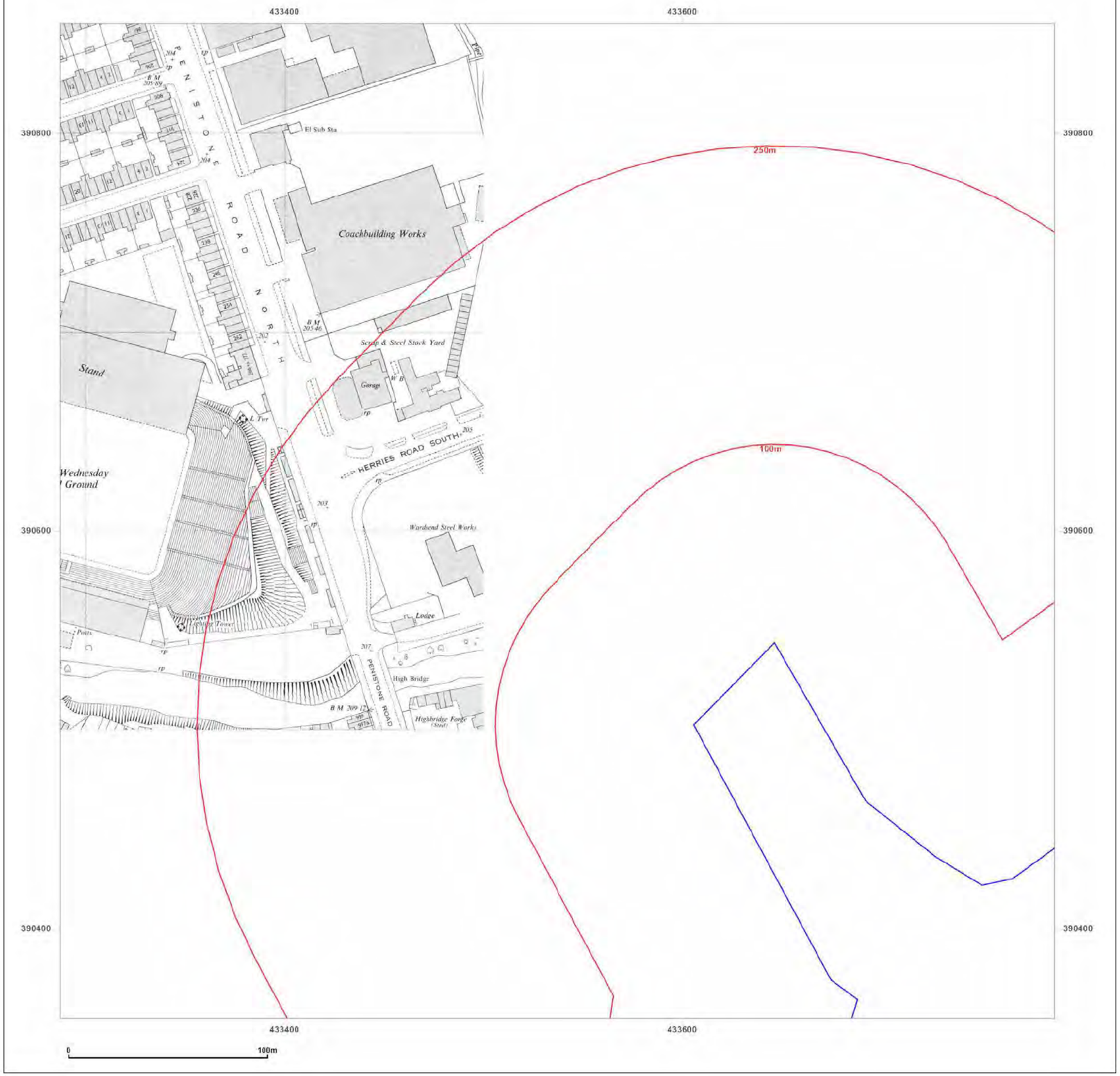
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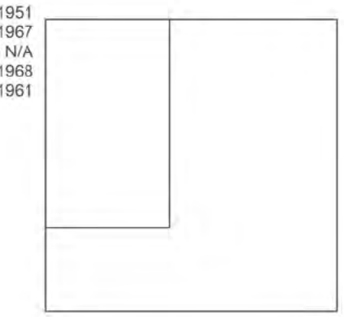
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1968**
Scale: 1:1,250
Printed at: 1:2,000

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Edition N/A
Copyright 1968
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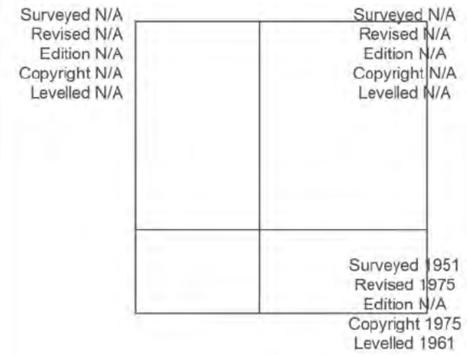
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1970-1975**
Scale: 1:1,250
Printed at: 1:2,000

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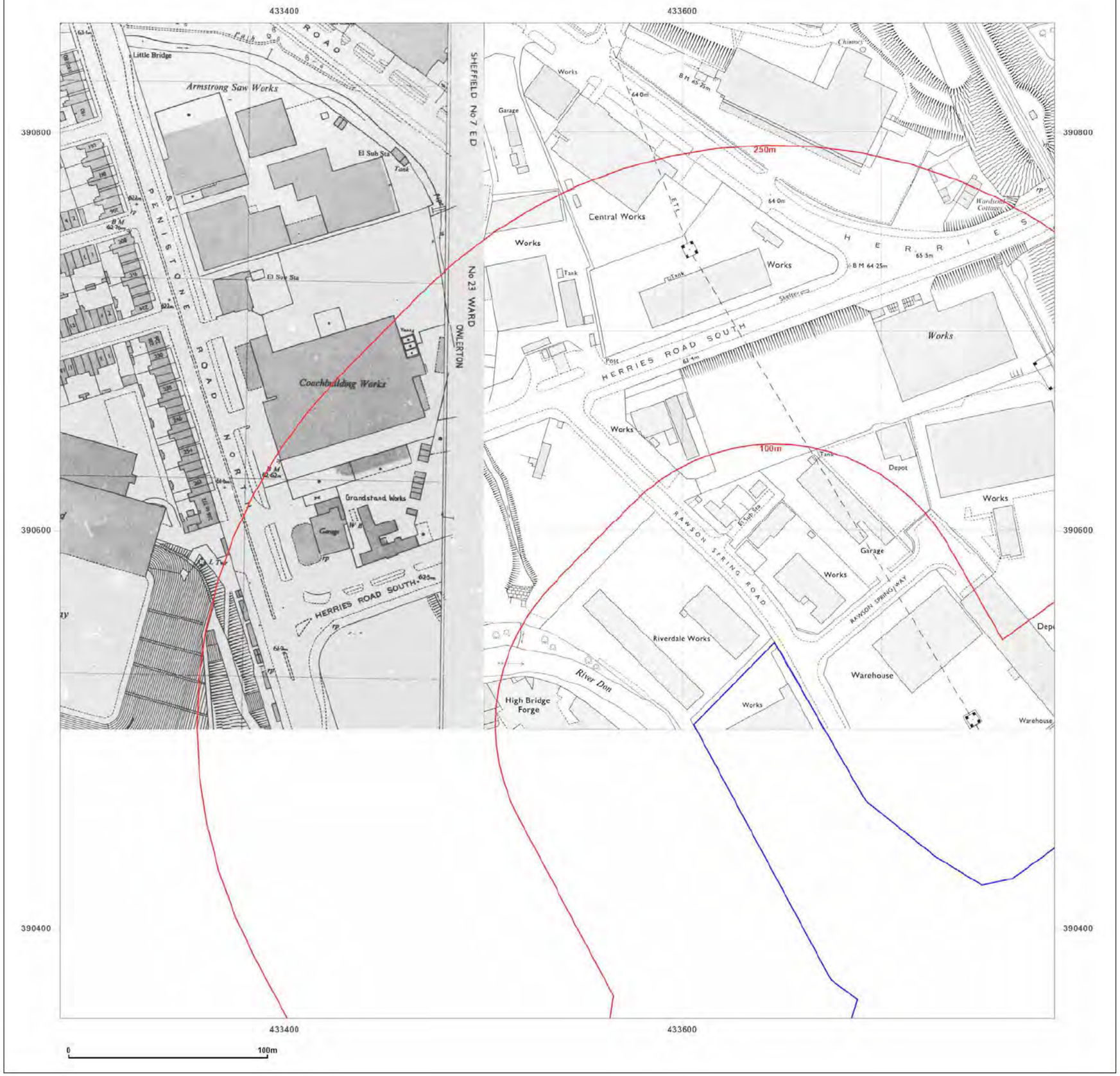
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1977-1978**
Scale: 1:1,250
Printed at: 1:2,000

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

Surveyed 1951
Revised 1975
Edition N/A
Copyright 1977
Levelled 1961

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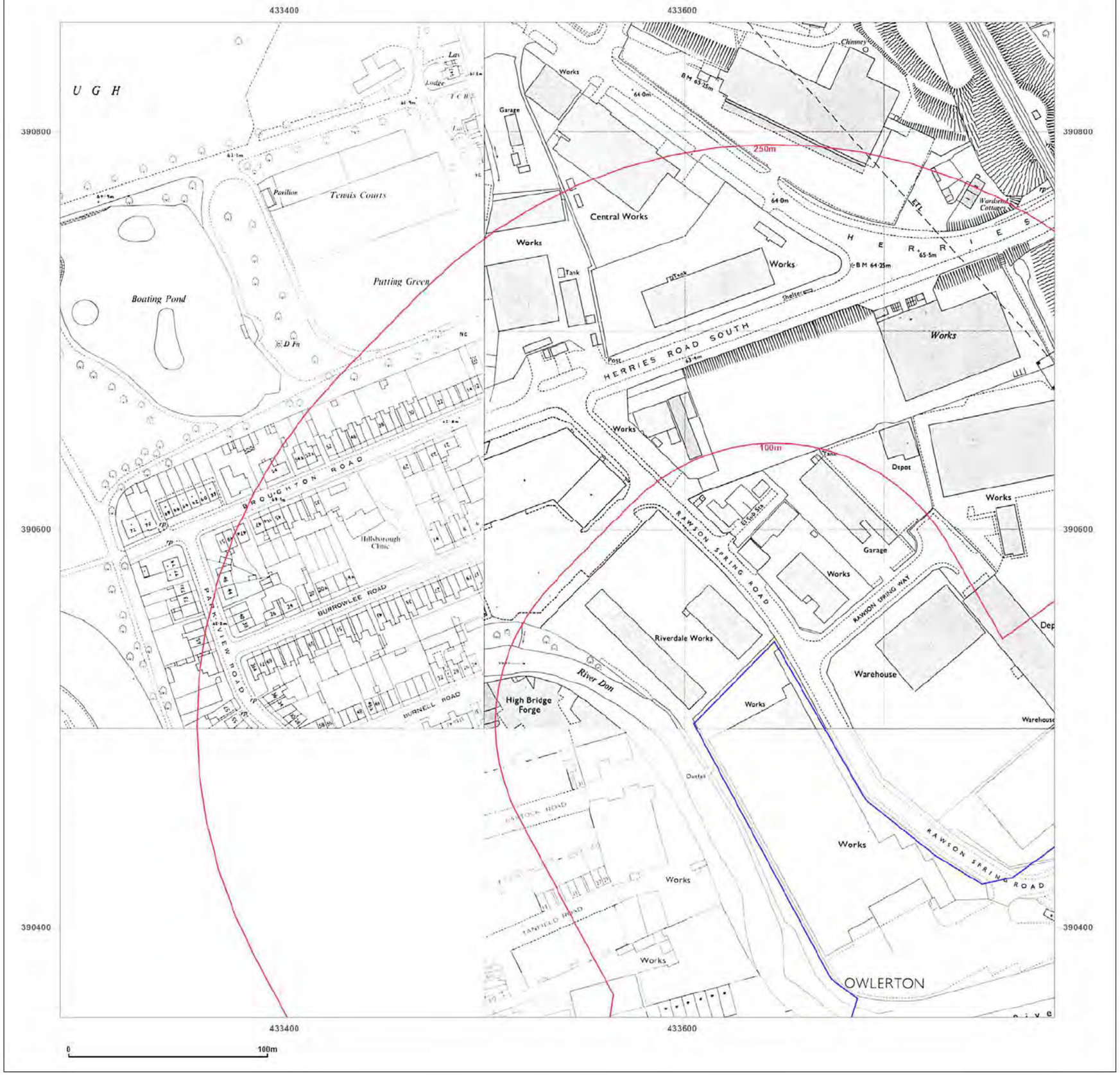
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1980-1985**
Scale: 1:1,250
Printed at: 1:2,000

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	Surveyed 1961 Revised 1985 Edition N/A Copyright 1985 Levelled 1961

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1985-1990**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1961 Revised 1985 Edition N/A Copyright 1985 Levelled 1961	Surveyed 1961 Revised 1990 Edition N/A Copyright 1990 Levelled 1961
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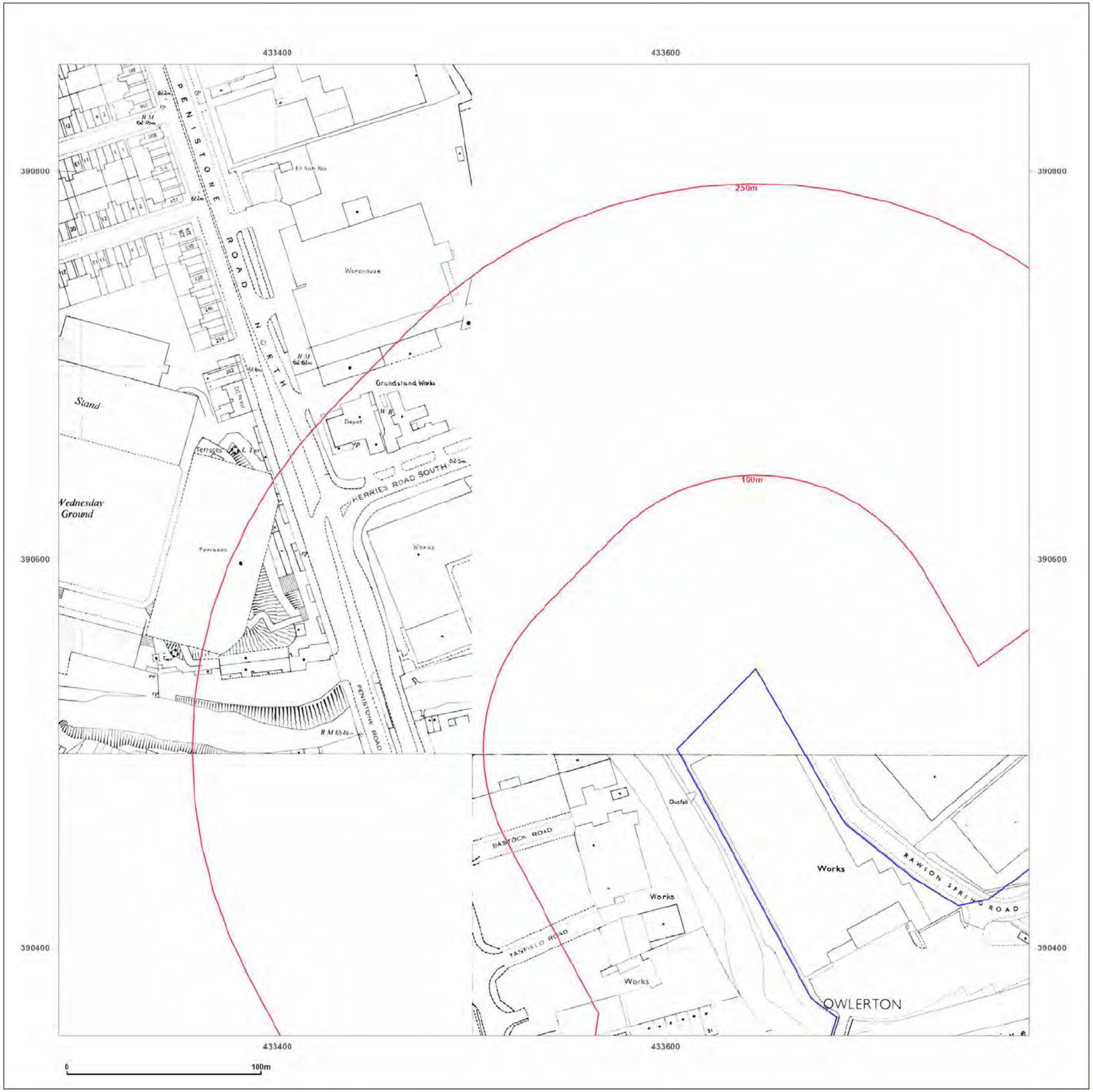
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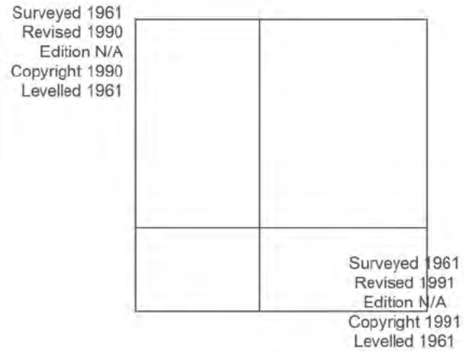
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Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1990-1991**
Scale: 1:1,250
Printed at: 1:2,000

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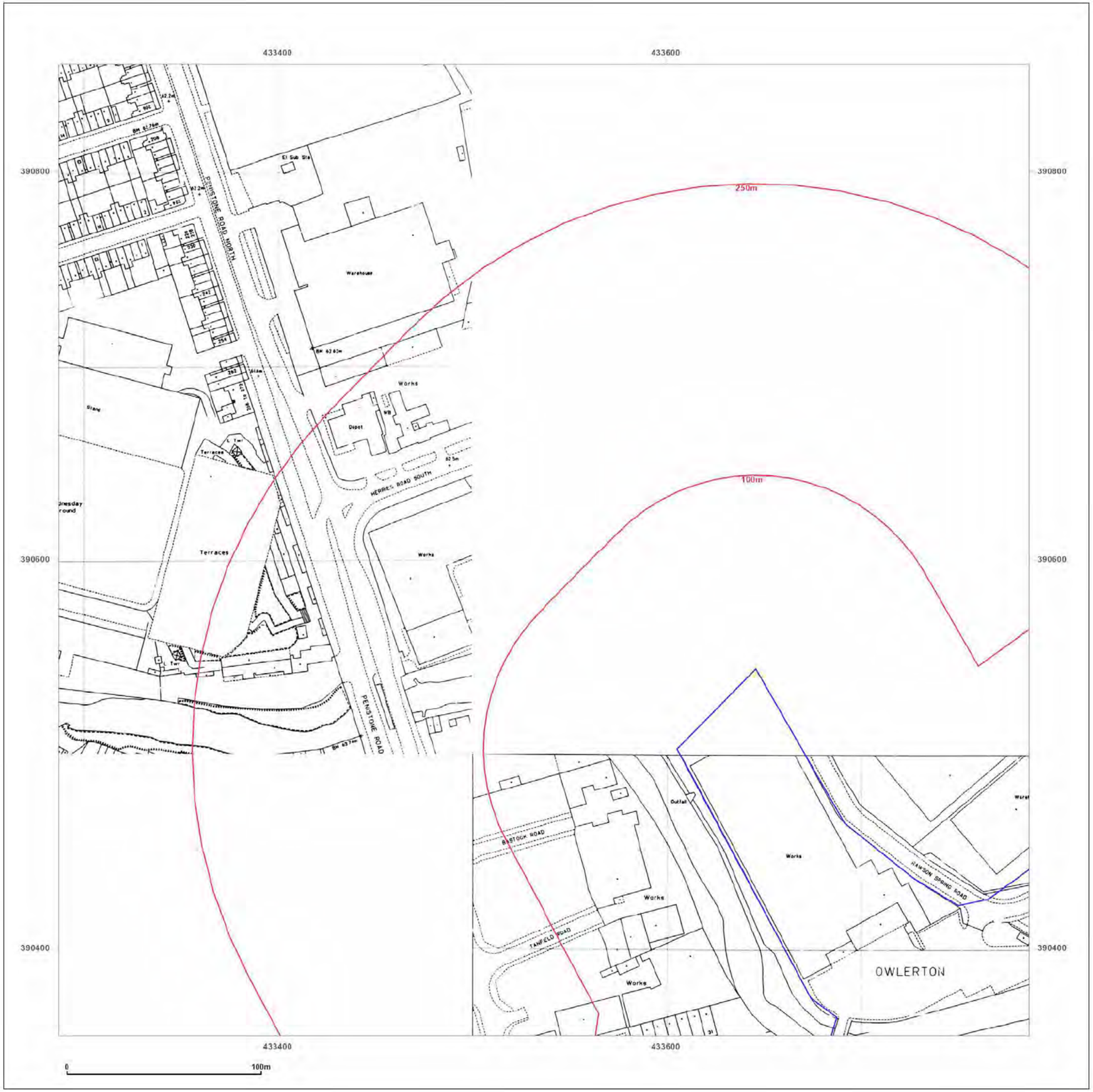
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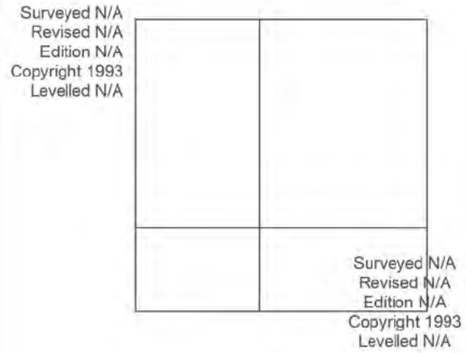
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: 1993
Scale: 1:1,250
Printed at: 1:2,000

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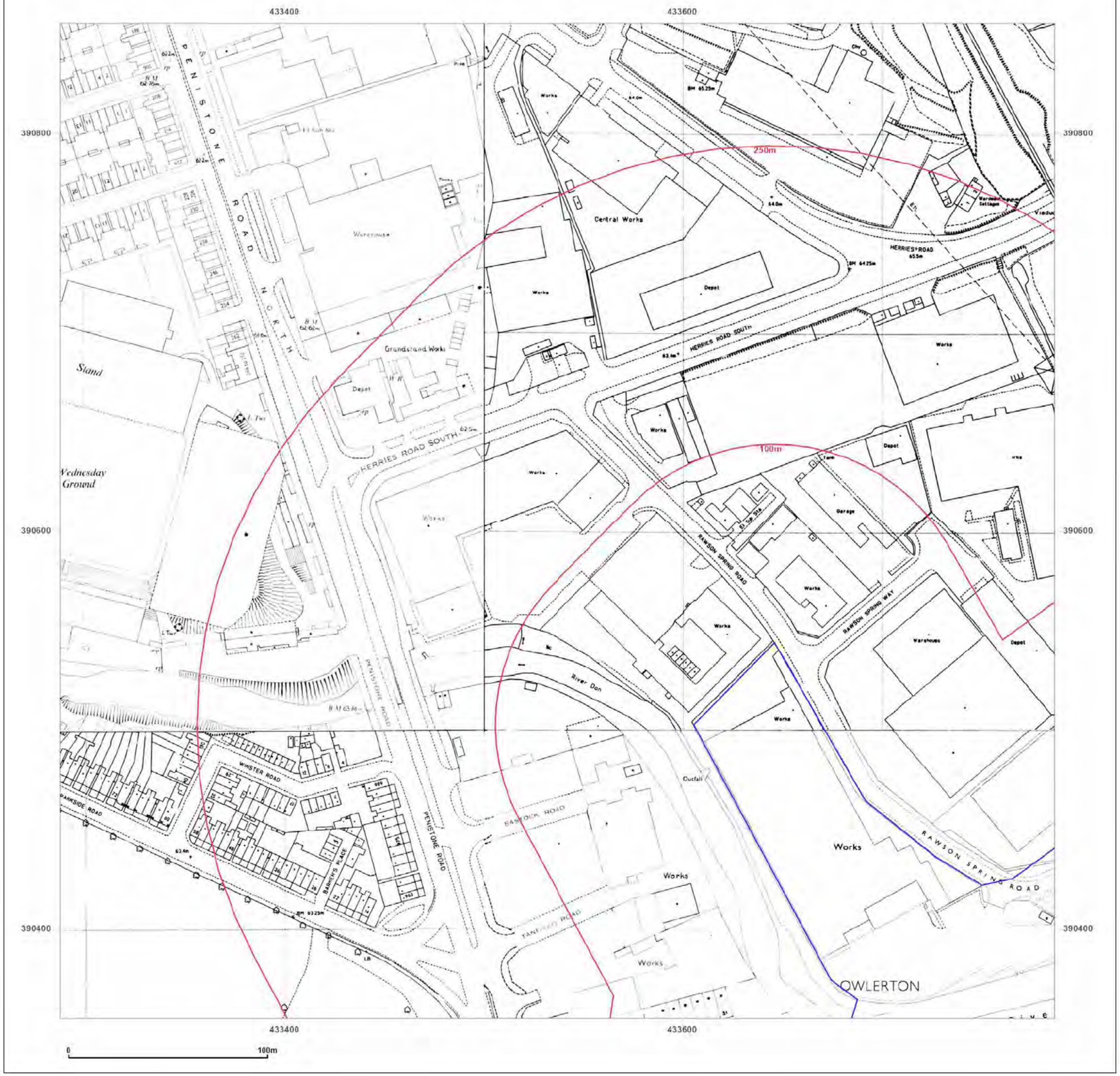
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_1_2
Grid Ref: 433537, 390605

Map Name: National Grid
Map date: **1988-1993**
Scale: 1:1,250
Printed at: 1:2,000

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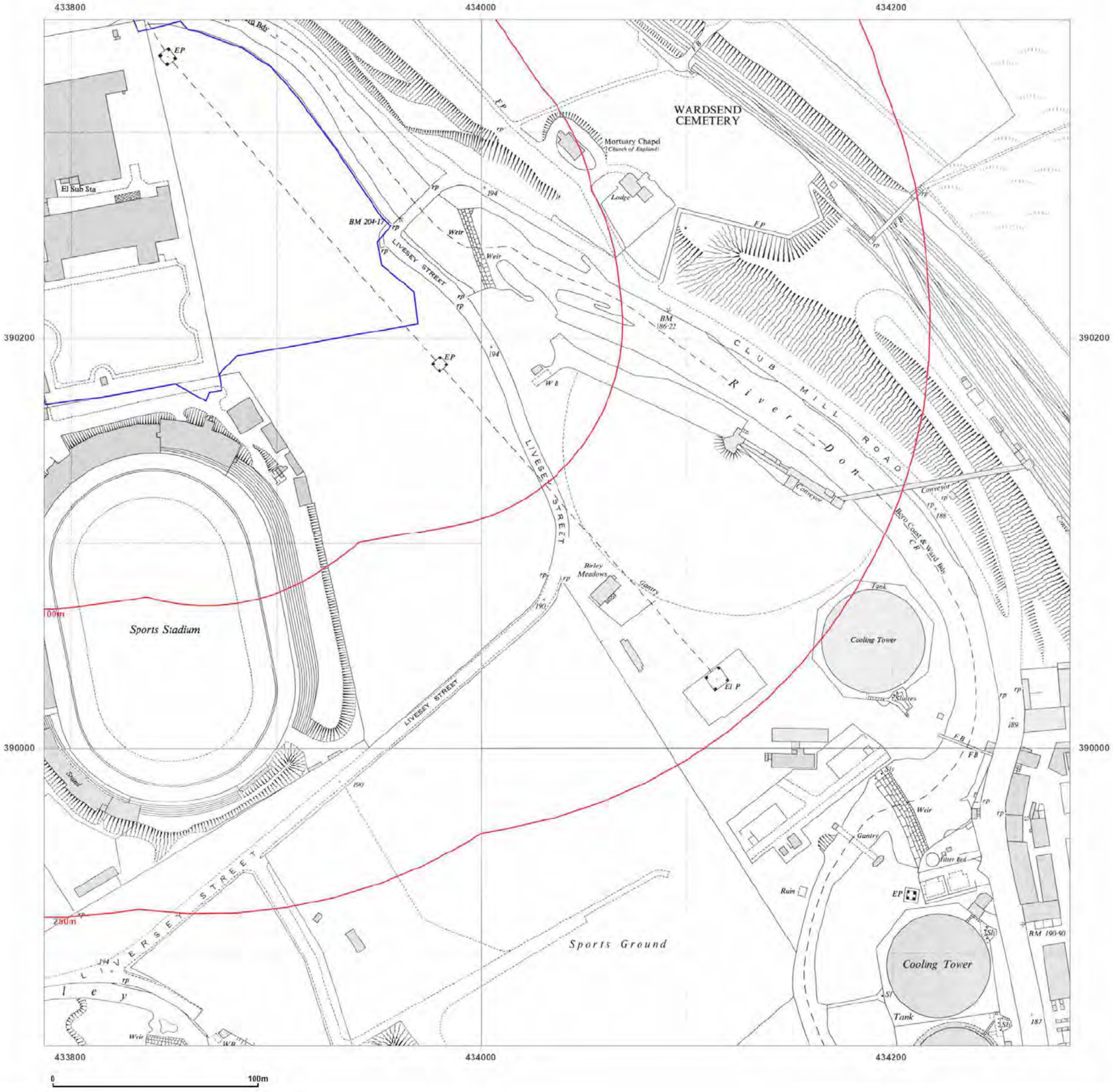
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1951**
Scale: 1:1,250
Printed at: 1:2,000

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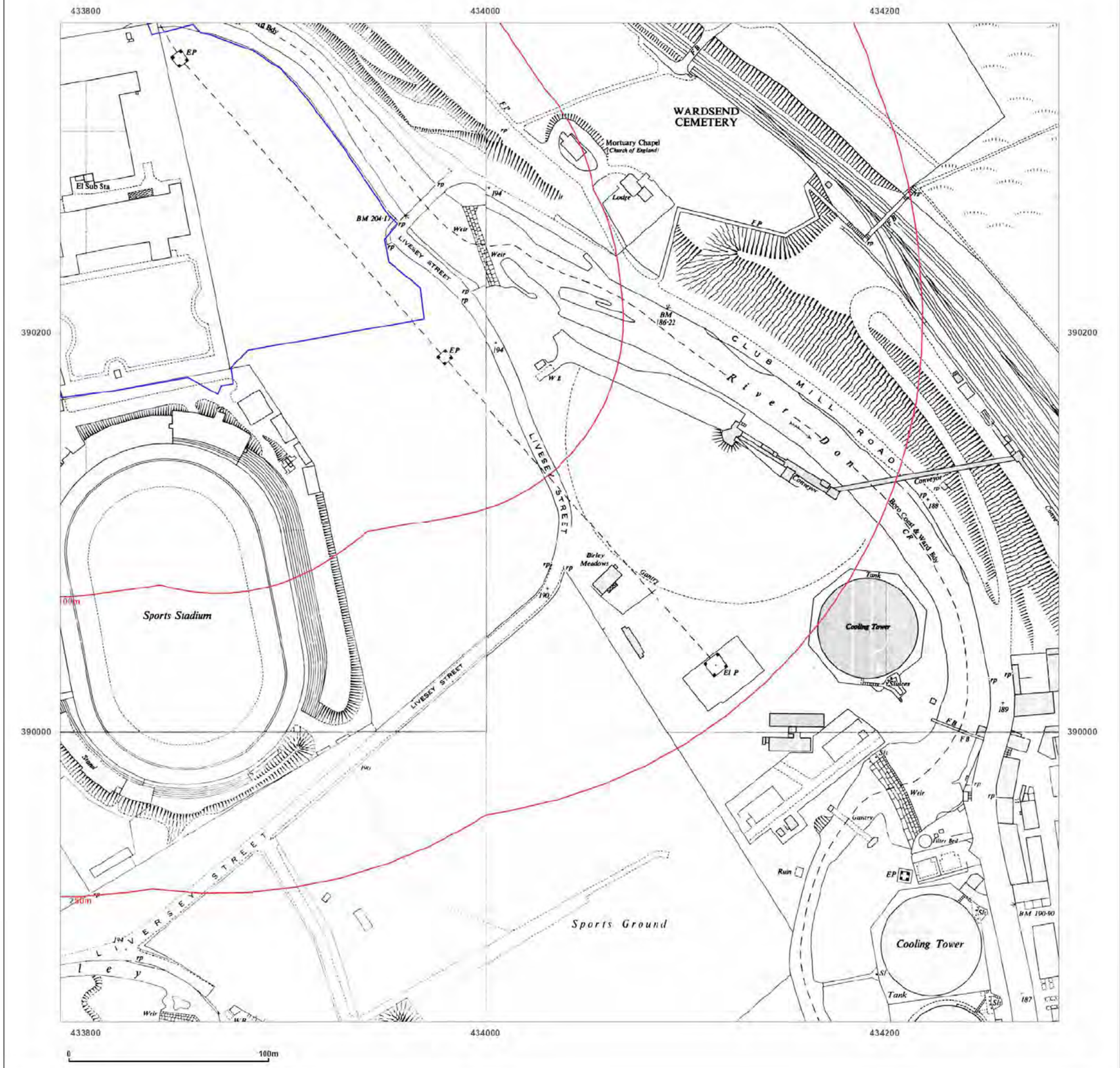
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: 1952
Scale: 1:1,250
Printed at: 1:2,000

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Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
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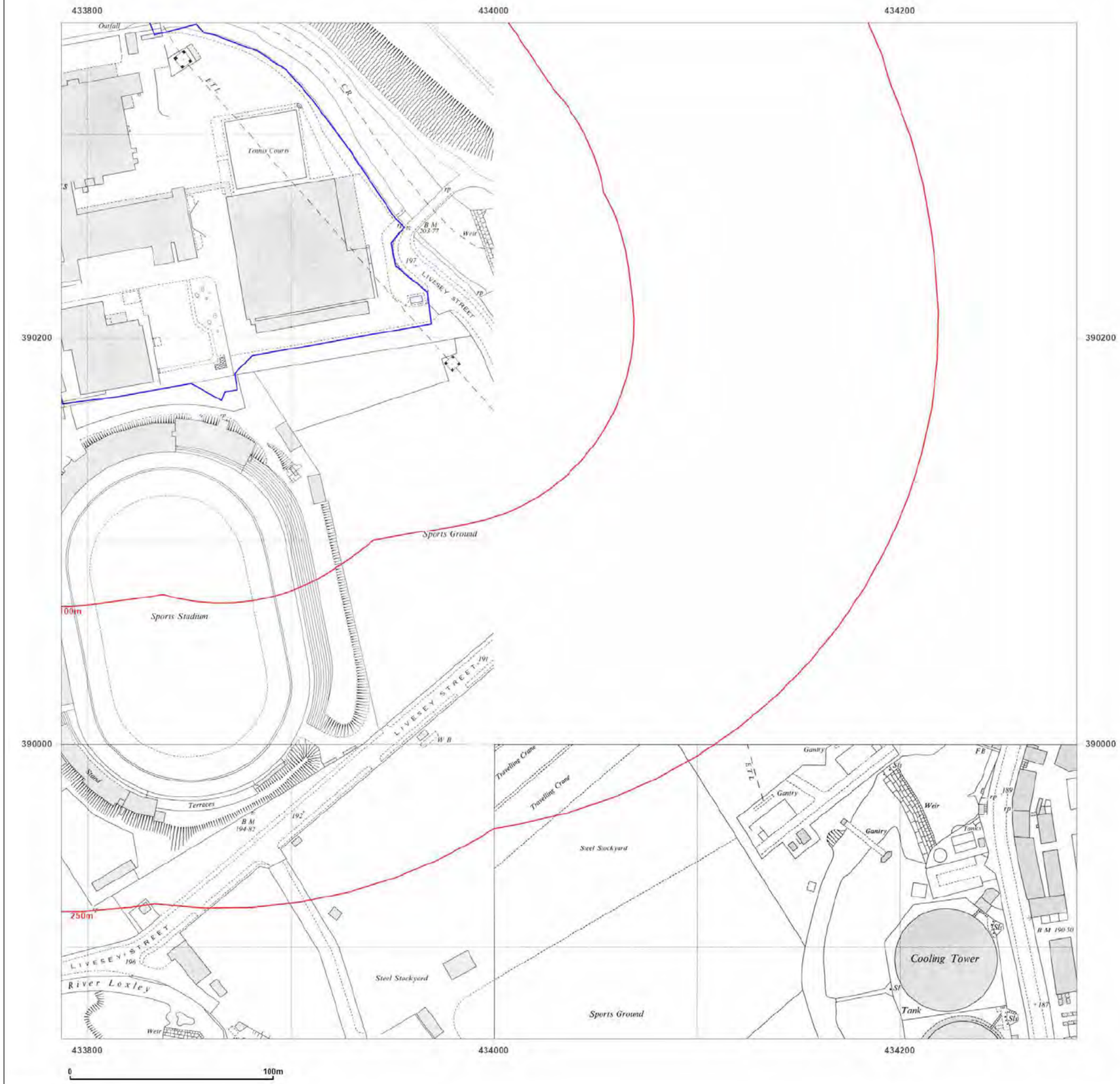
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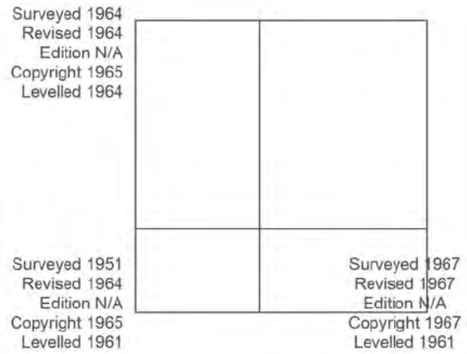
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1965-1967**
Scale: 1:1,250
Printed at: 1:2,000

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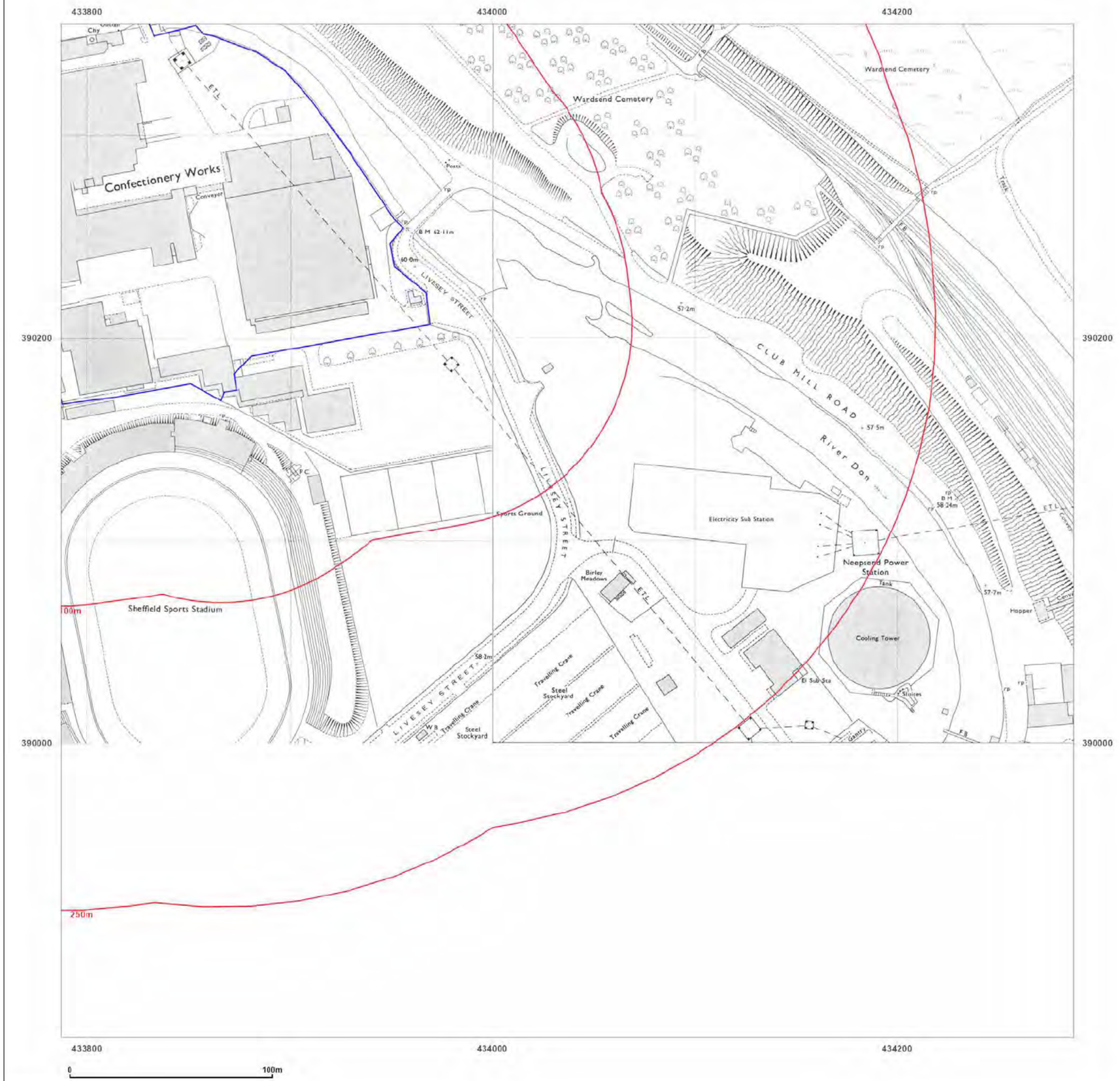
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1975**
Scale: 1:1,250
Printed at: 1:2,000

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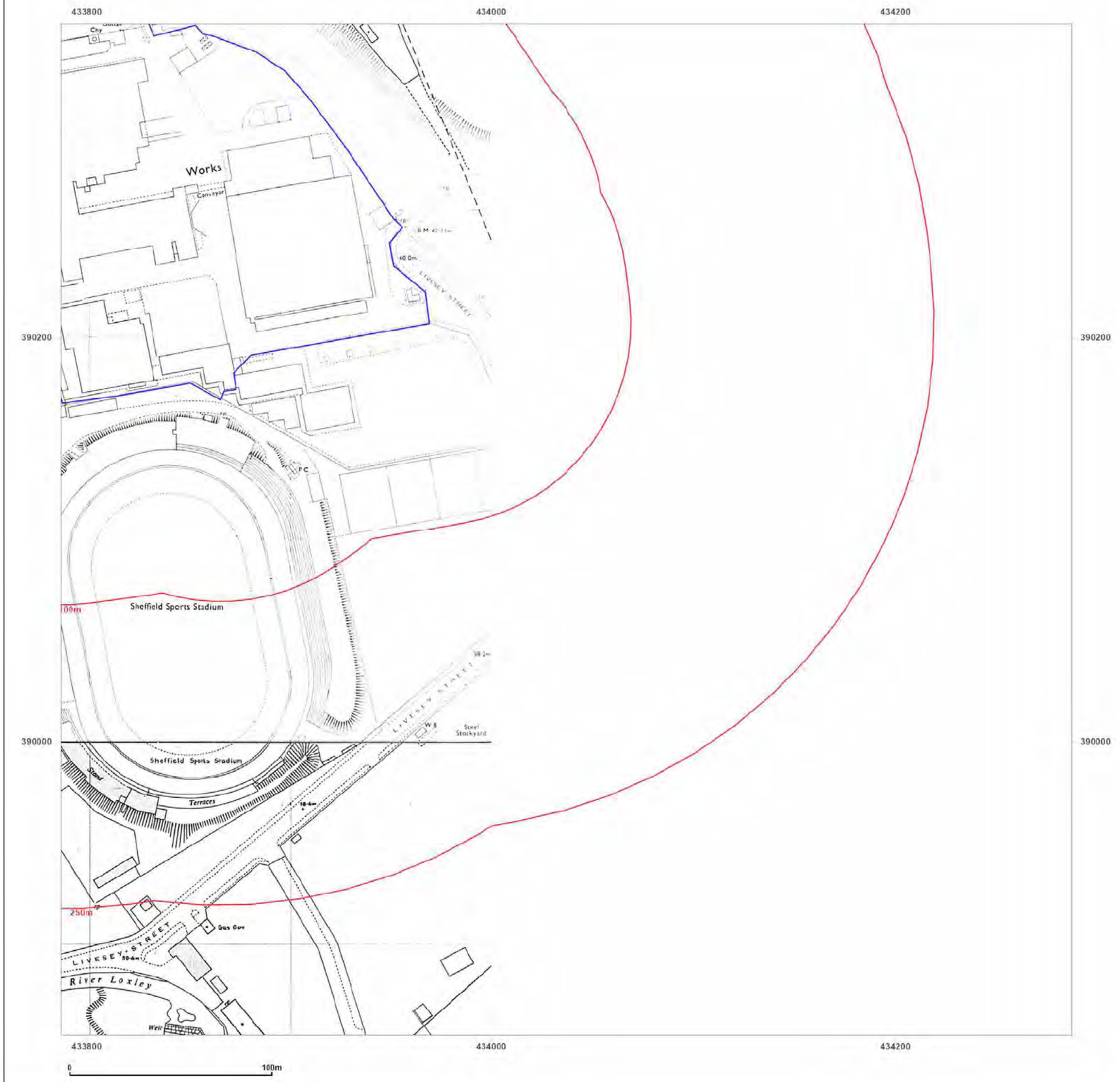
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Site Details:

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1982-1985**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1961
Revised 1985
Edition N/A
Copyright 1985
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Surveyed 1961
Revised 1982
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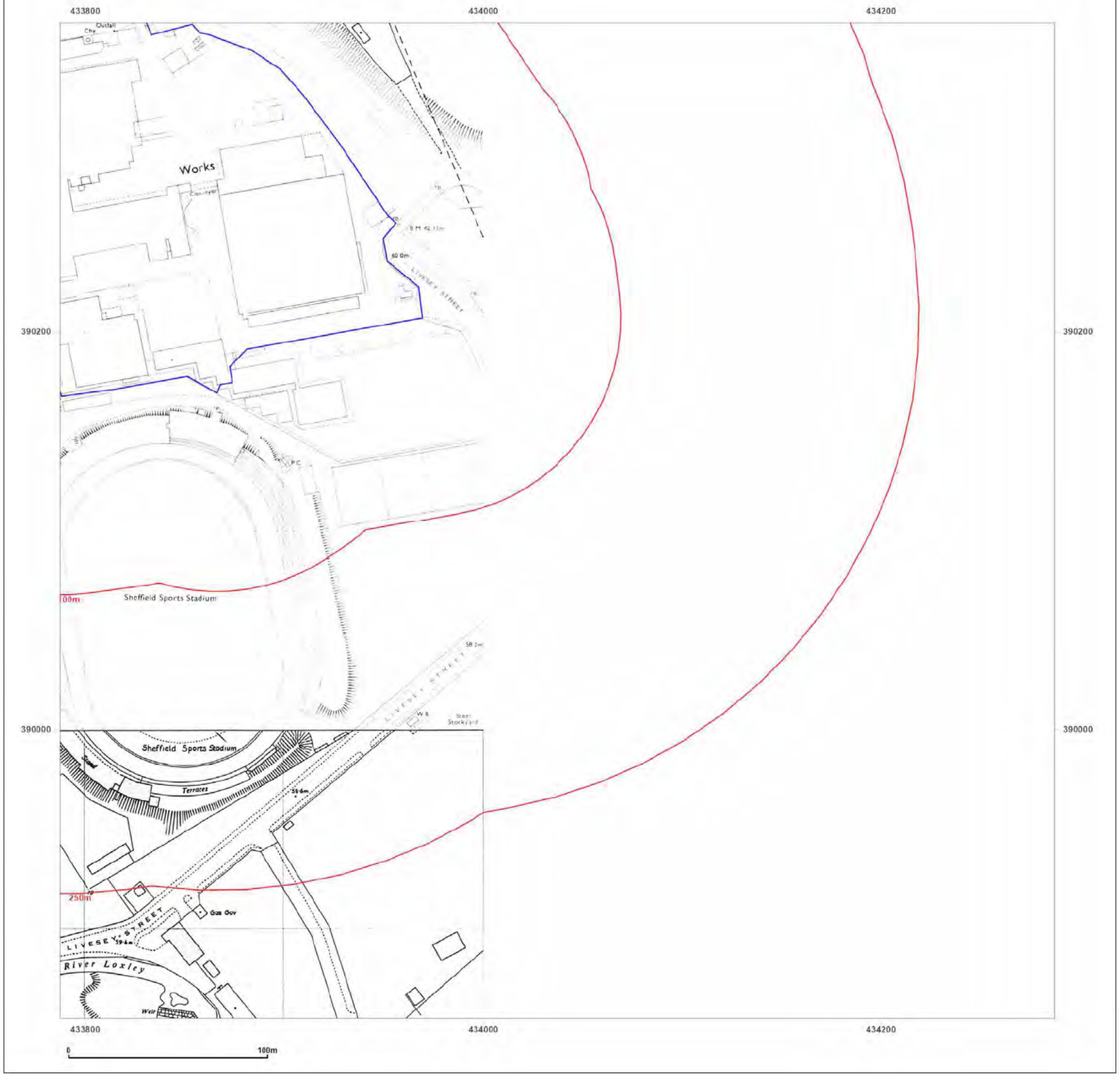
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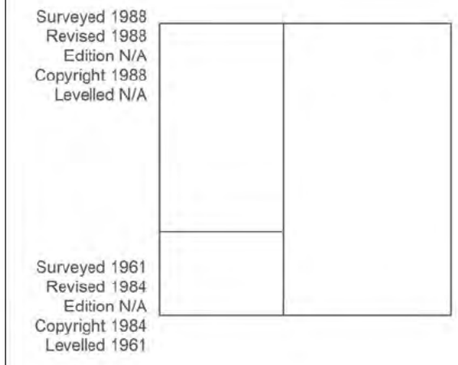
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Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1984-1988**
Scale: 1:1,250
Printed at: 1:2,000

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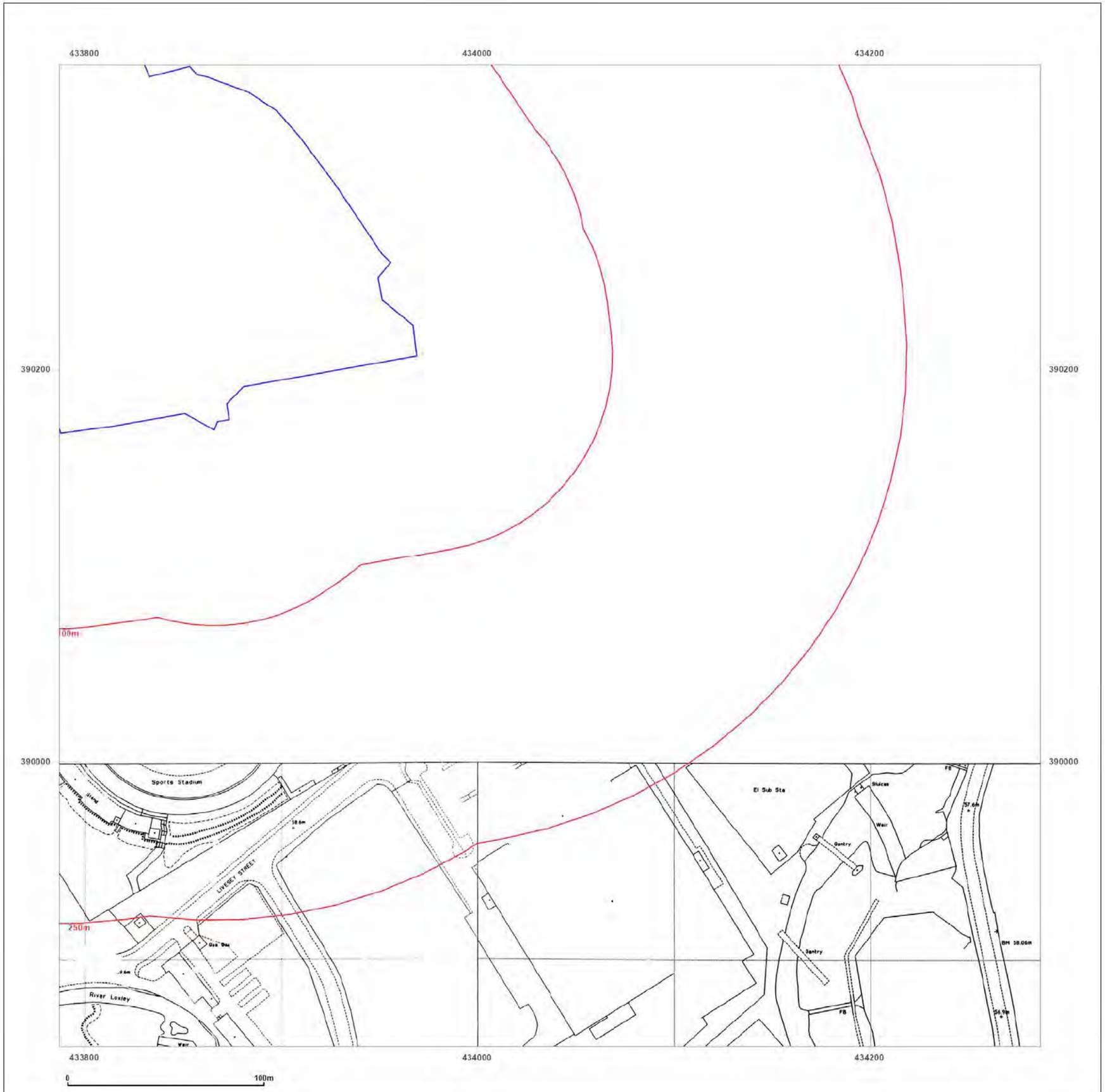
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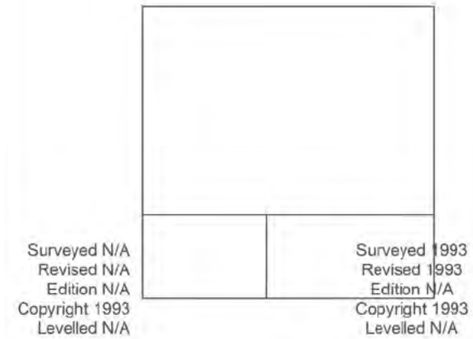
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Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: 1993
Scale: 1:1,250
Printed at: 1:2,000

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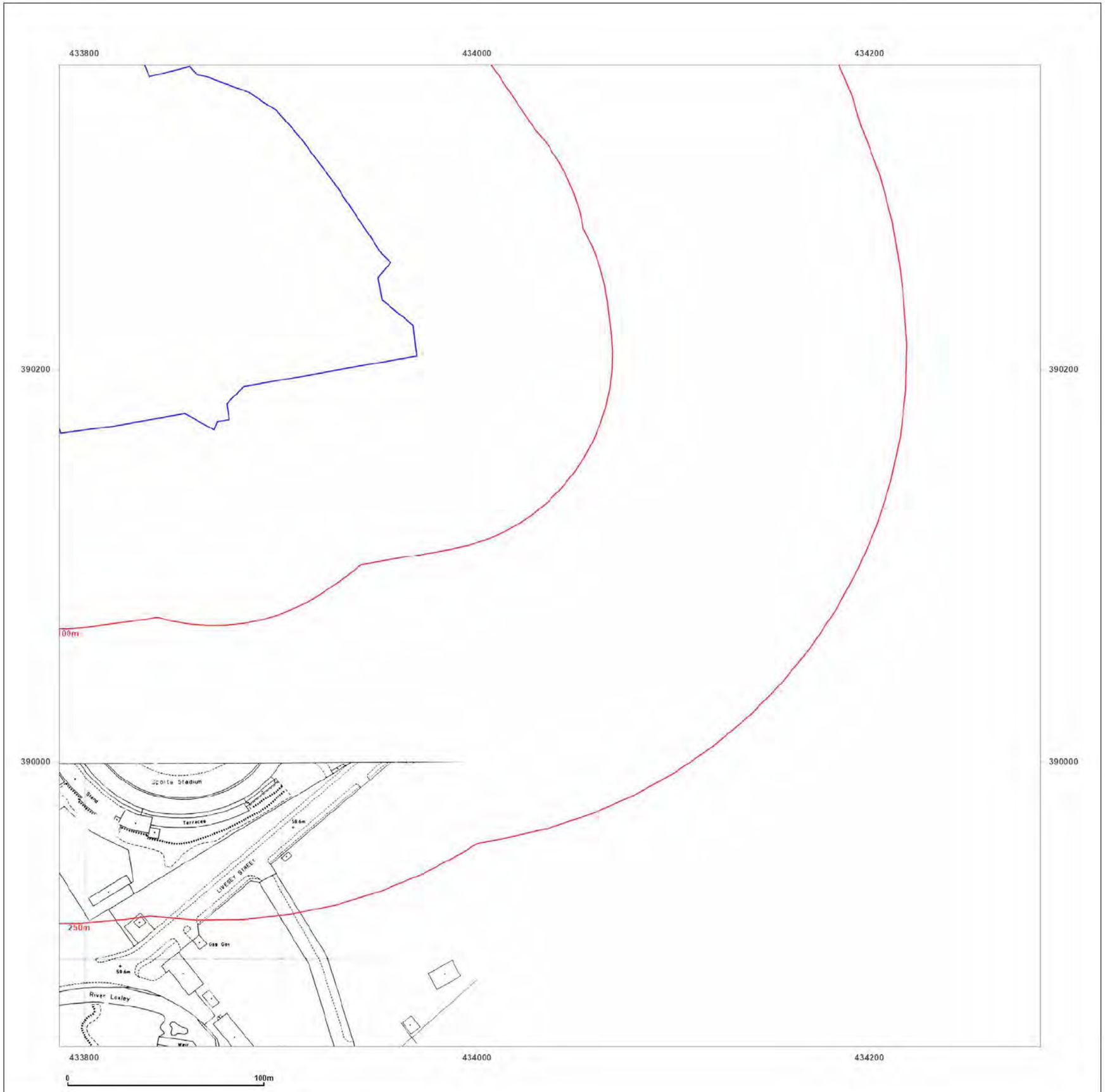
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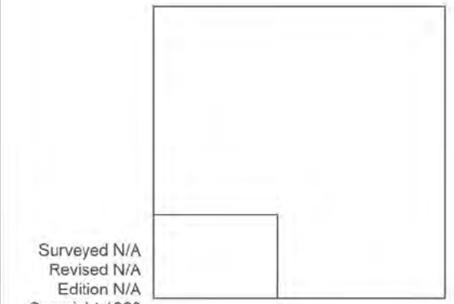
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Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: 1993
Scale: 1:1,250
Printed at: 1:2,000

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Edition N/A
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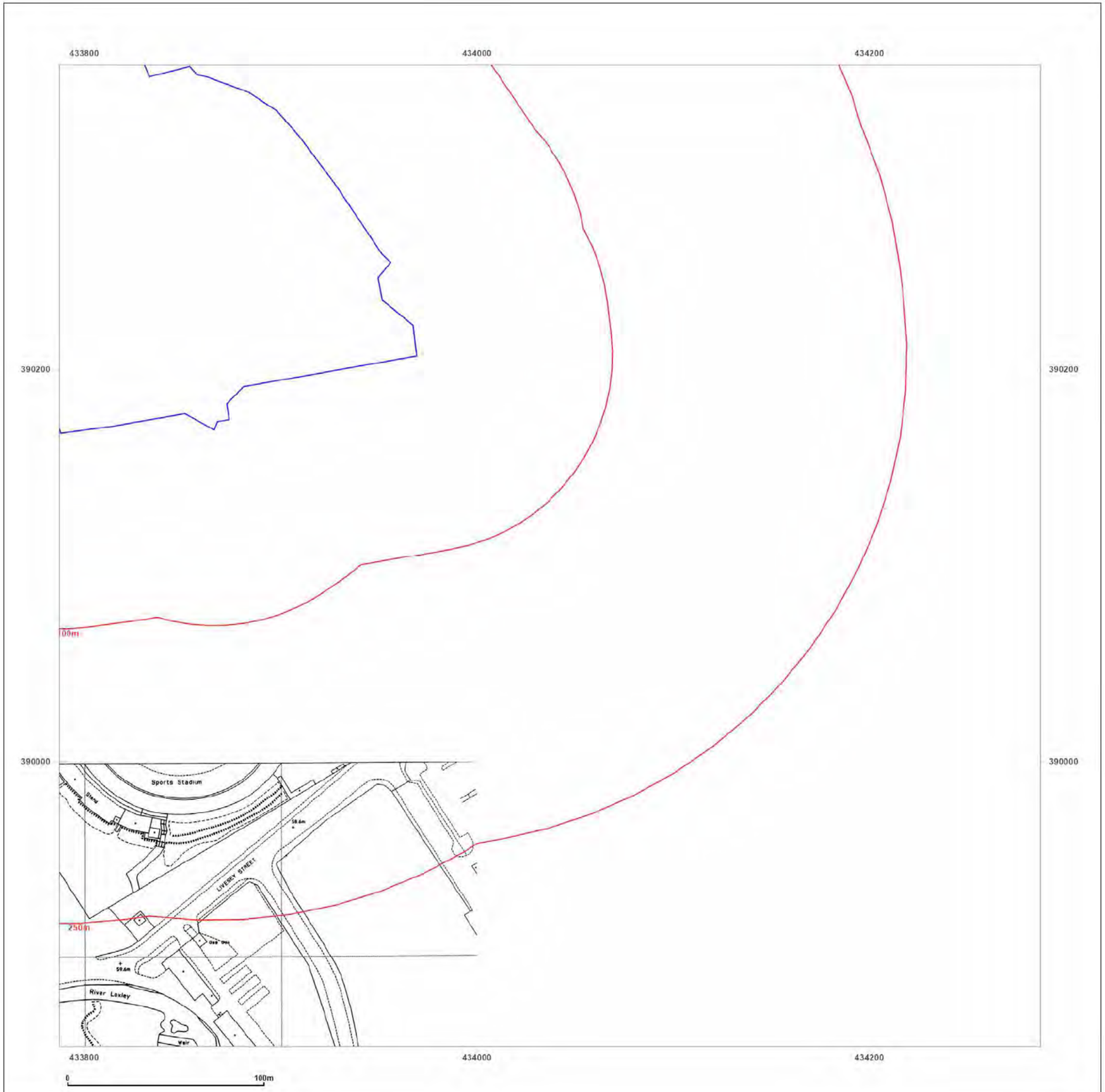
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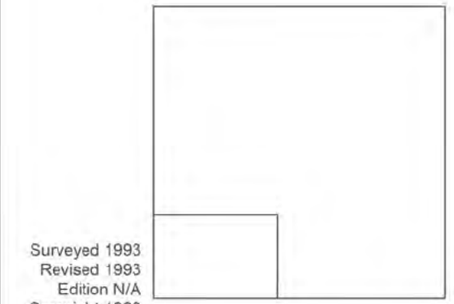
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: 1993
Scale: 1:1,250
Printed at: 1:2,000

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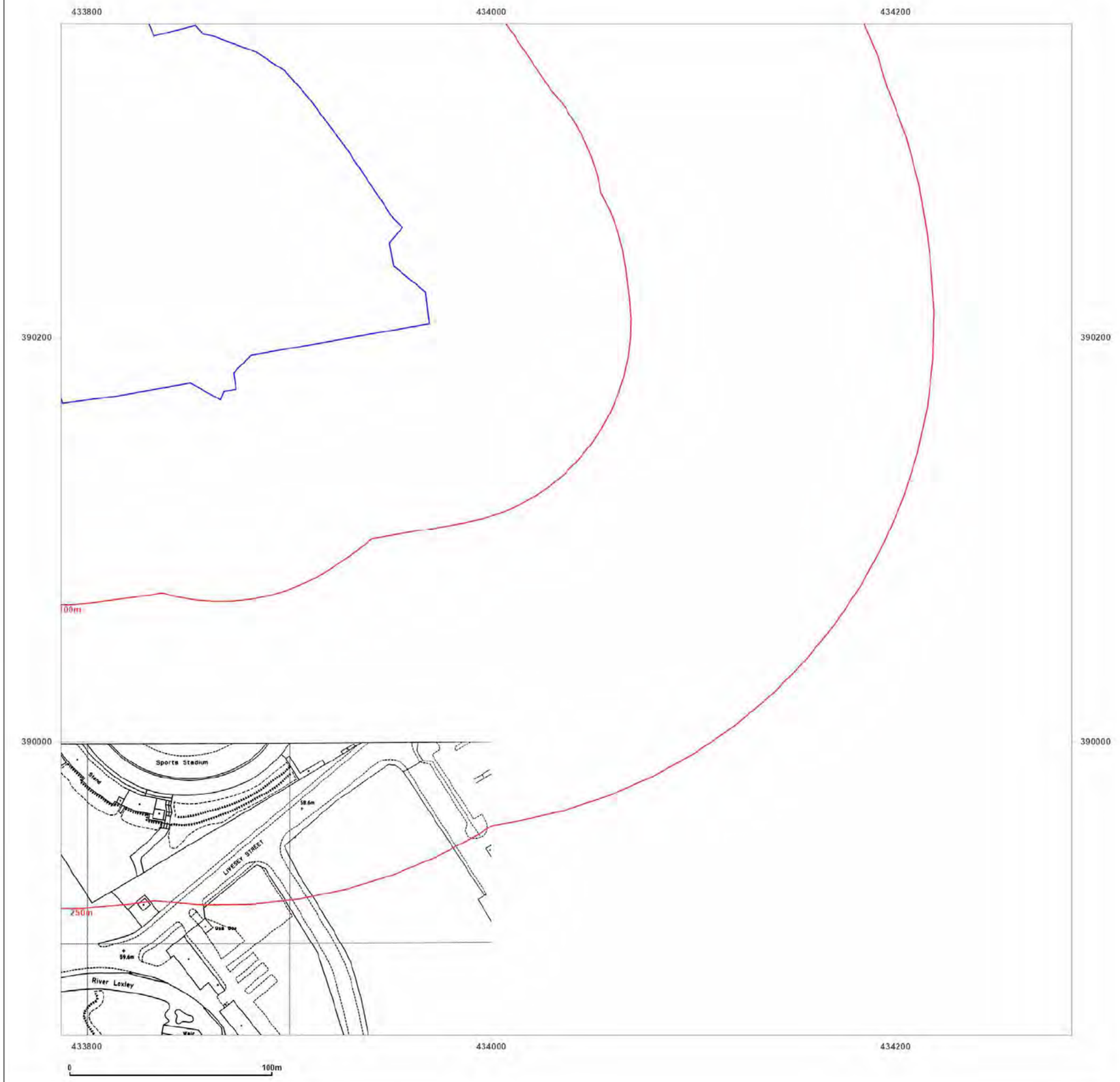
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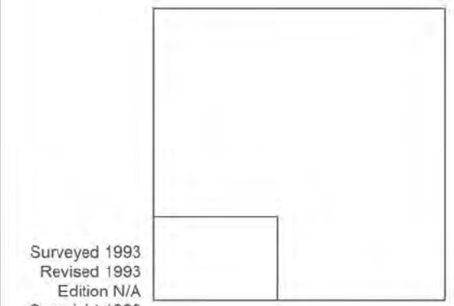
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Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: 1993
Scale: 1:1,250
Printed at: 1:2,000

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Revised 1993
Edition N/A
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Levelled N/A

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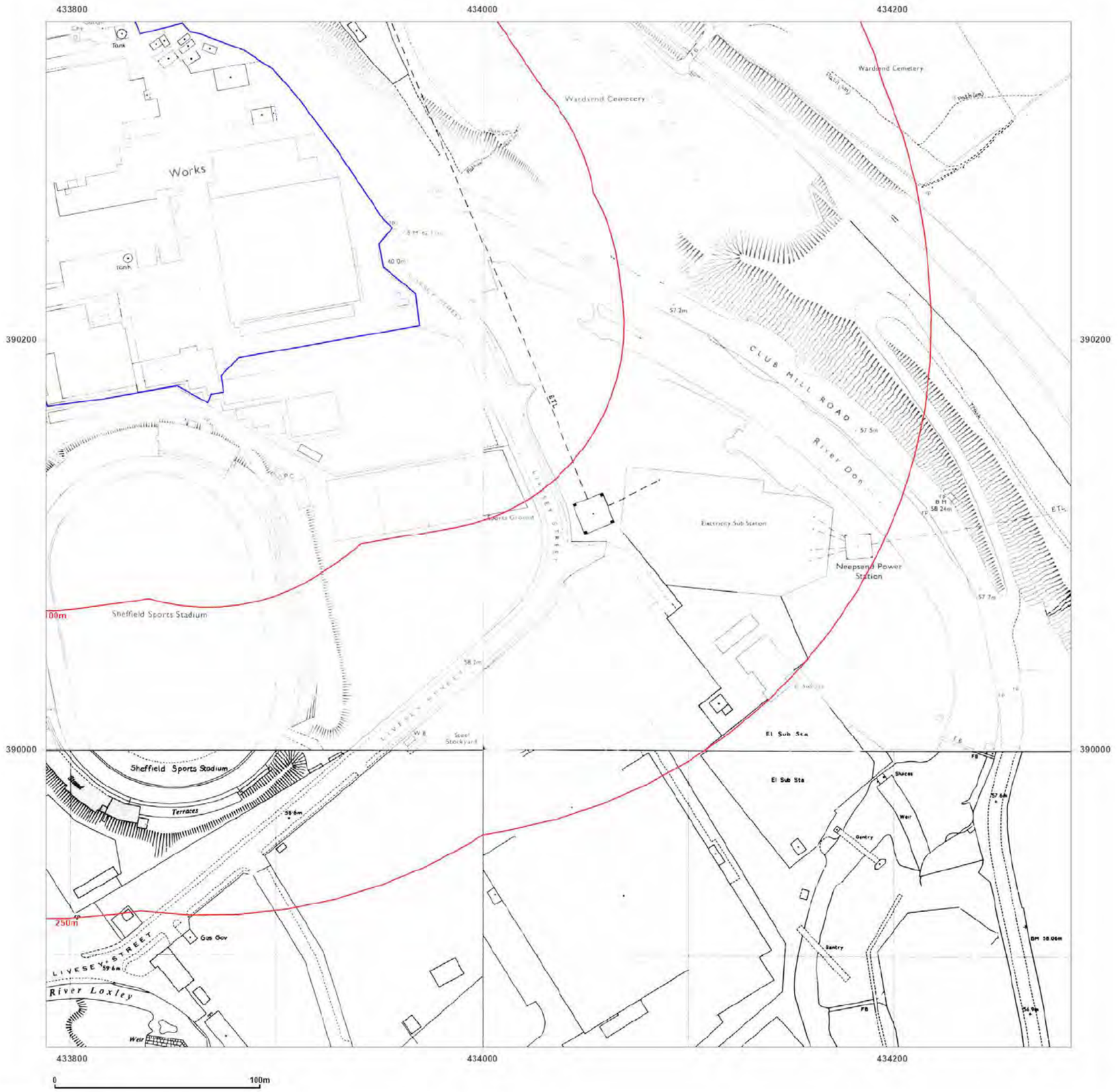
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1988-1993**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1961 Revised 1990 Edition N/A Copyright 1990 Levelled 1961	Surveyed 1961 Revised 1991 Edition N/A Copyright 1991 Levelled 1961
Surveyed 1961 Revised 1988 Edition N/A Copyright 1988 Levelled 1961	Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A

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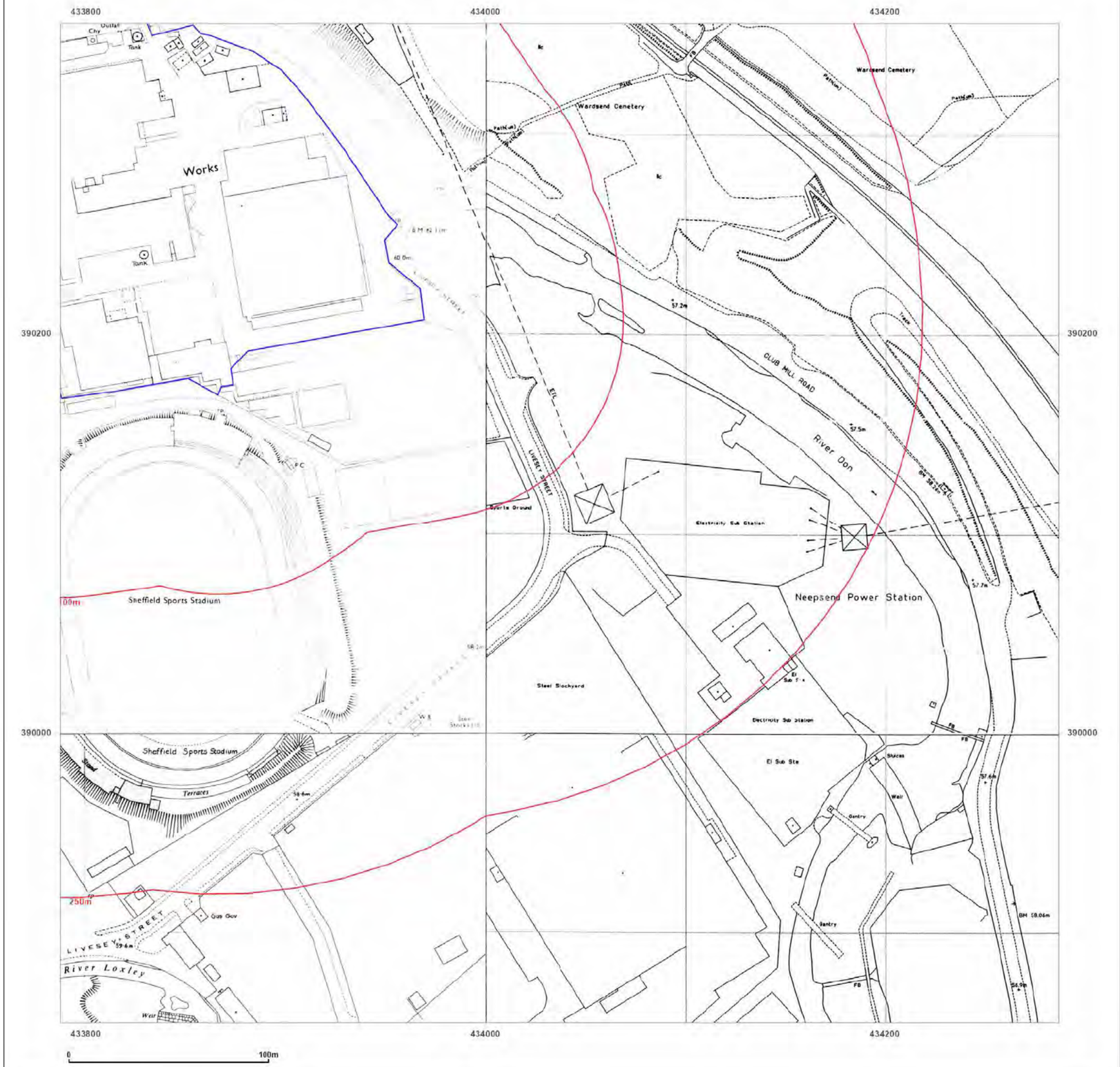
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1989-1993**
Scale: 1:1,250
Printed at: 1:2,000

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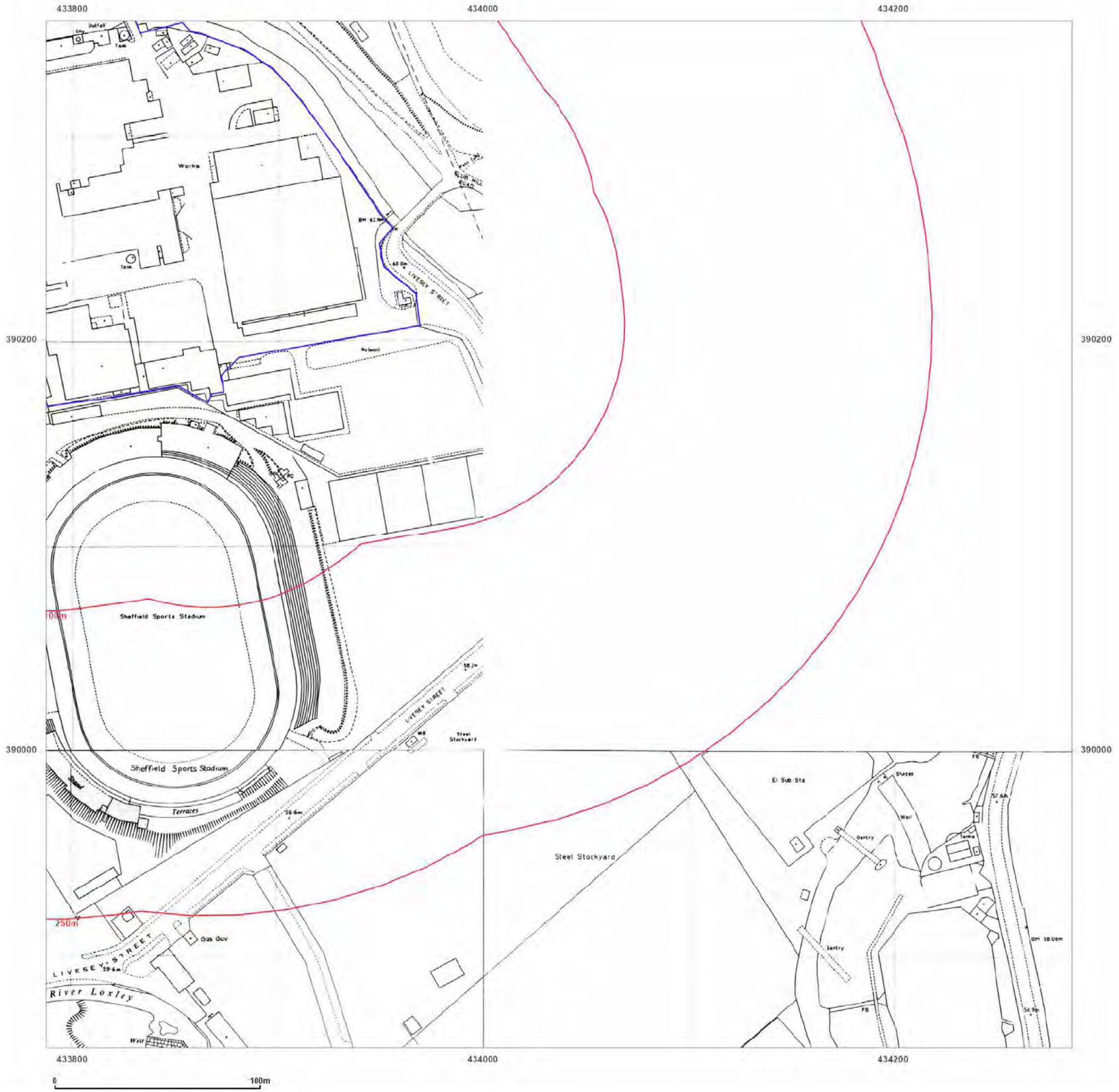
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1991-1993**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed 1961
Revised 1991
Edition N/A
Copyright 1991
Levelled 1961

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Edition N/A
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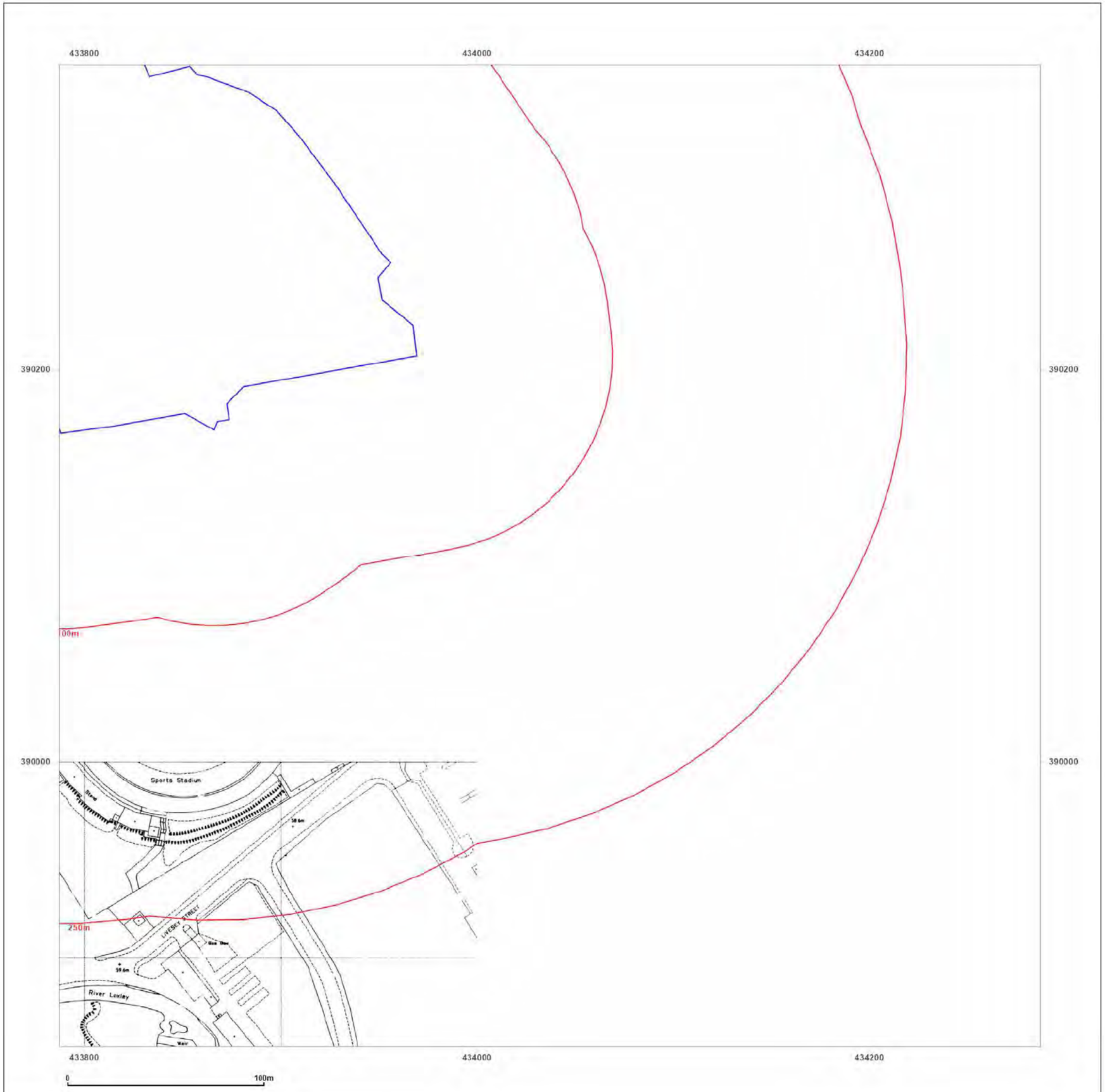
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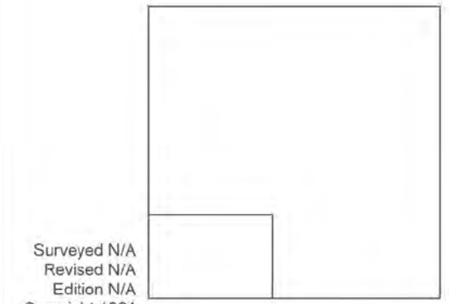
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_1
Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1994**
Scale: 1:1,250
Printed at: 1:2,000

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Revised N/A
Edition N/A
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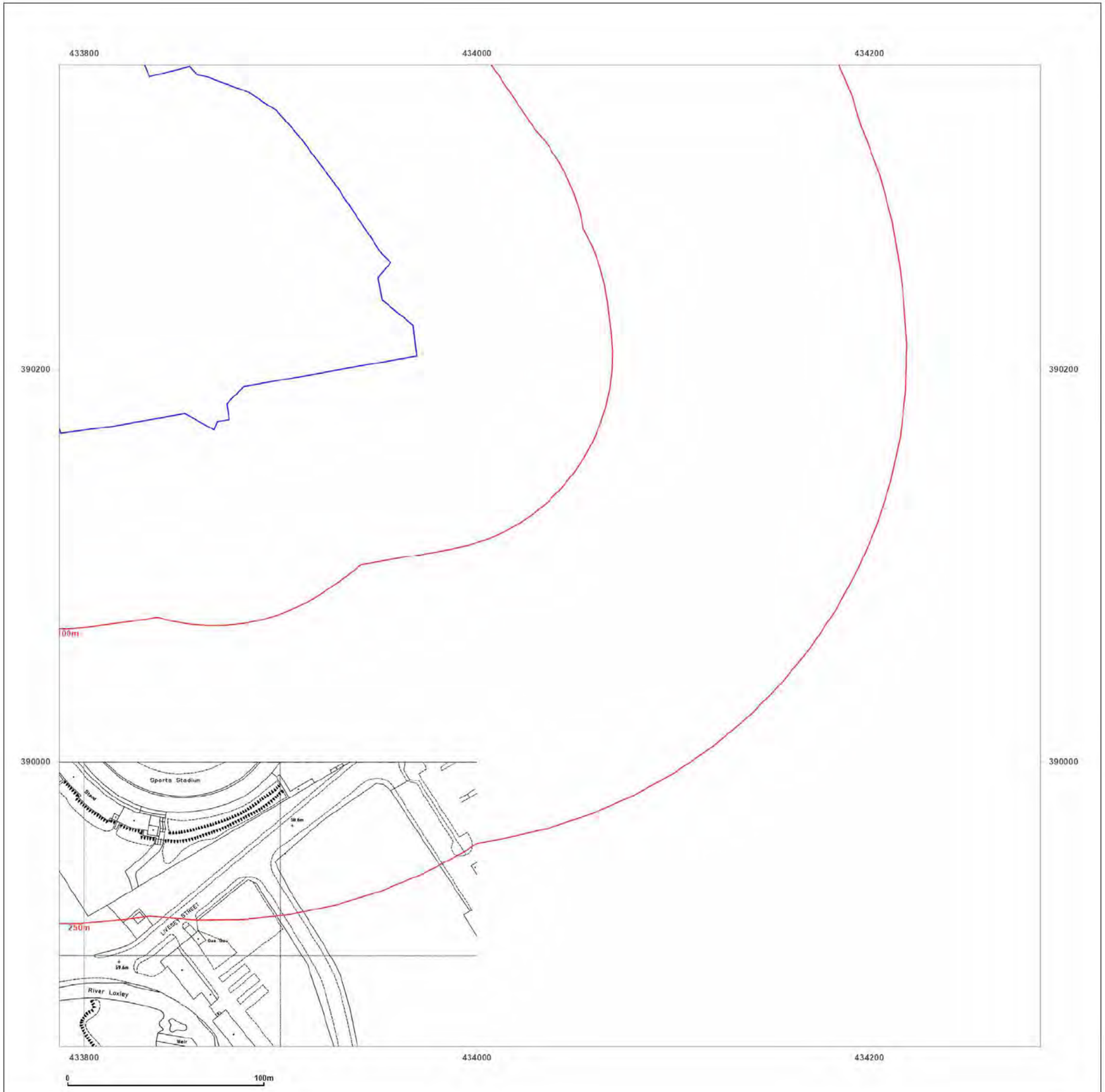
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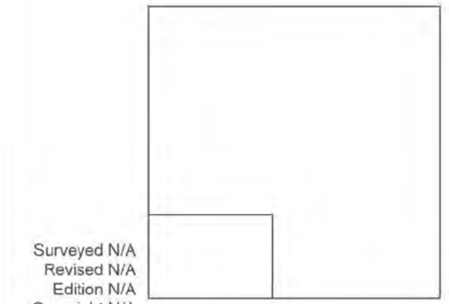
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Grid Ref: 434037, 390105

Map Name: National Grid
Map date: 1994
Scale: 1:1,250
Printed at: 1:2,000

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Revised N/A
Edition N/A
Copyright N/A
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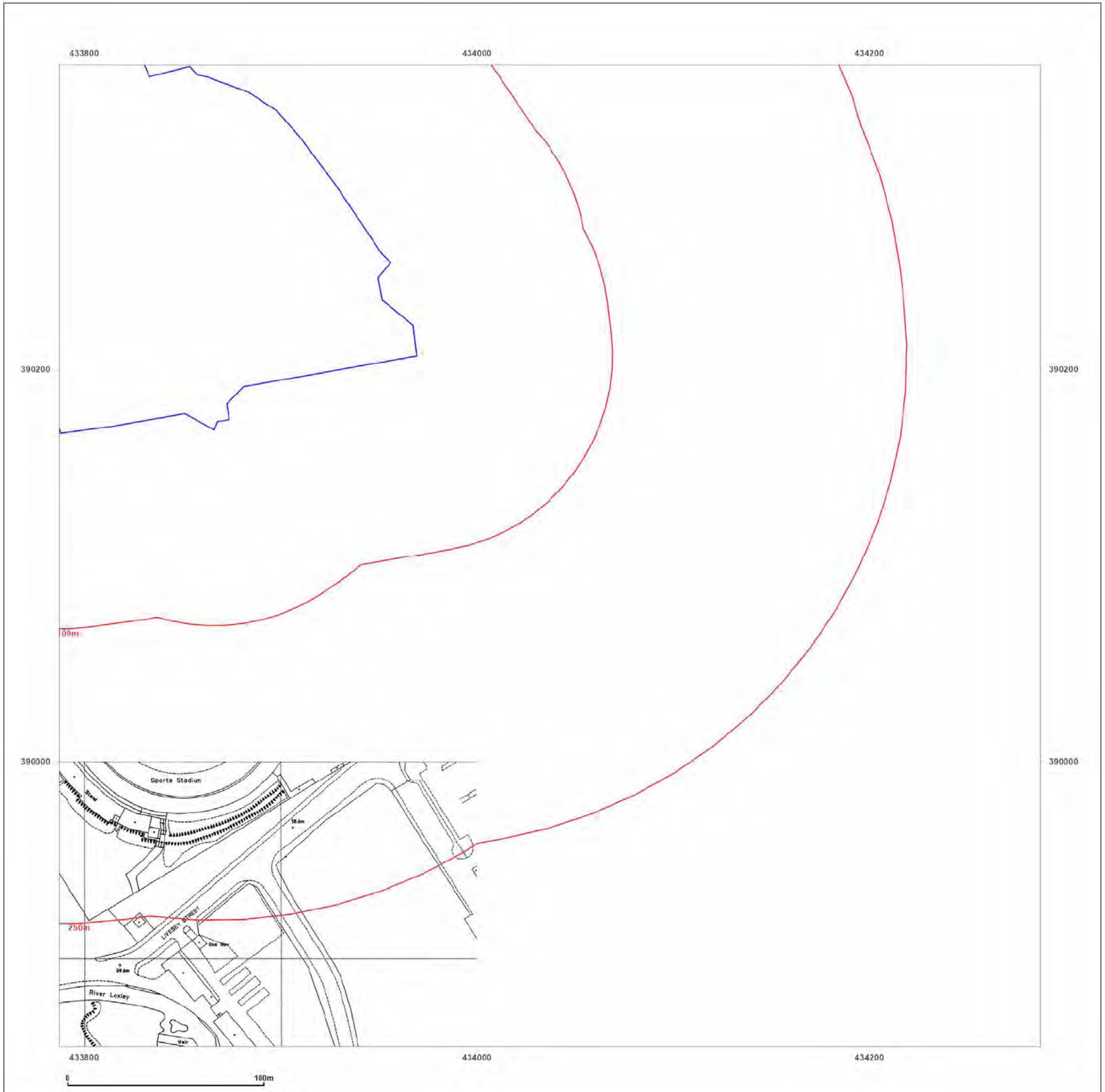
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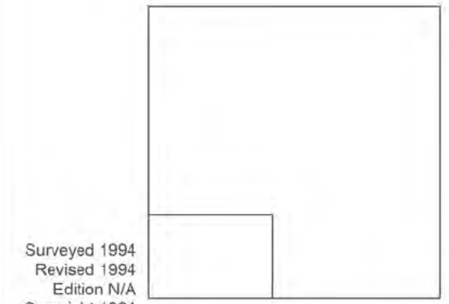
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Grid Ref: 434037, 390105

Map Name: National Grid
Map date: **1994**
Scale: 1:1,250
Printed at: 1:2,000

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Revised 1994
Edition N/A
Copyright 1994
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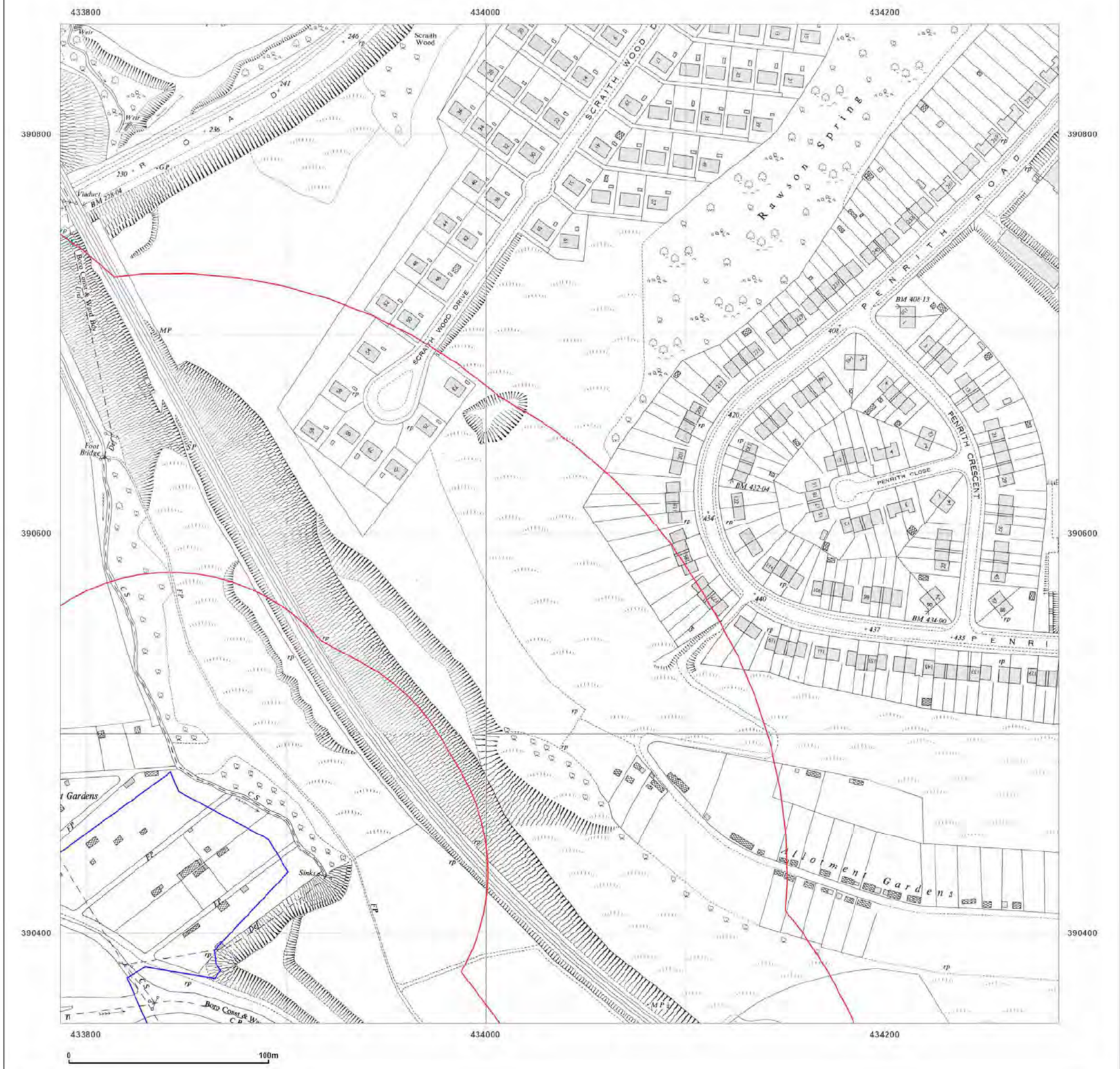
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1951-1952**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1951 Revised 1951 Edition N/A Copyright N/A Levelled 1949	Surveyed 1951 Revised 1951 Edition N/A Copyright N/A Levelled 1930

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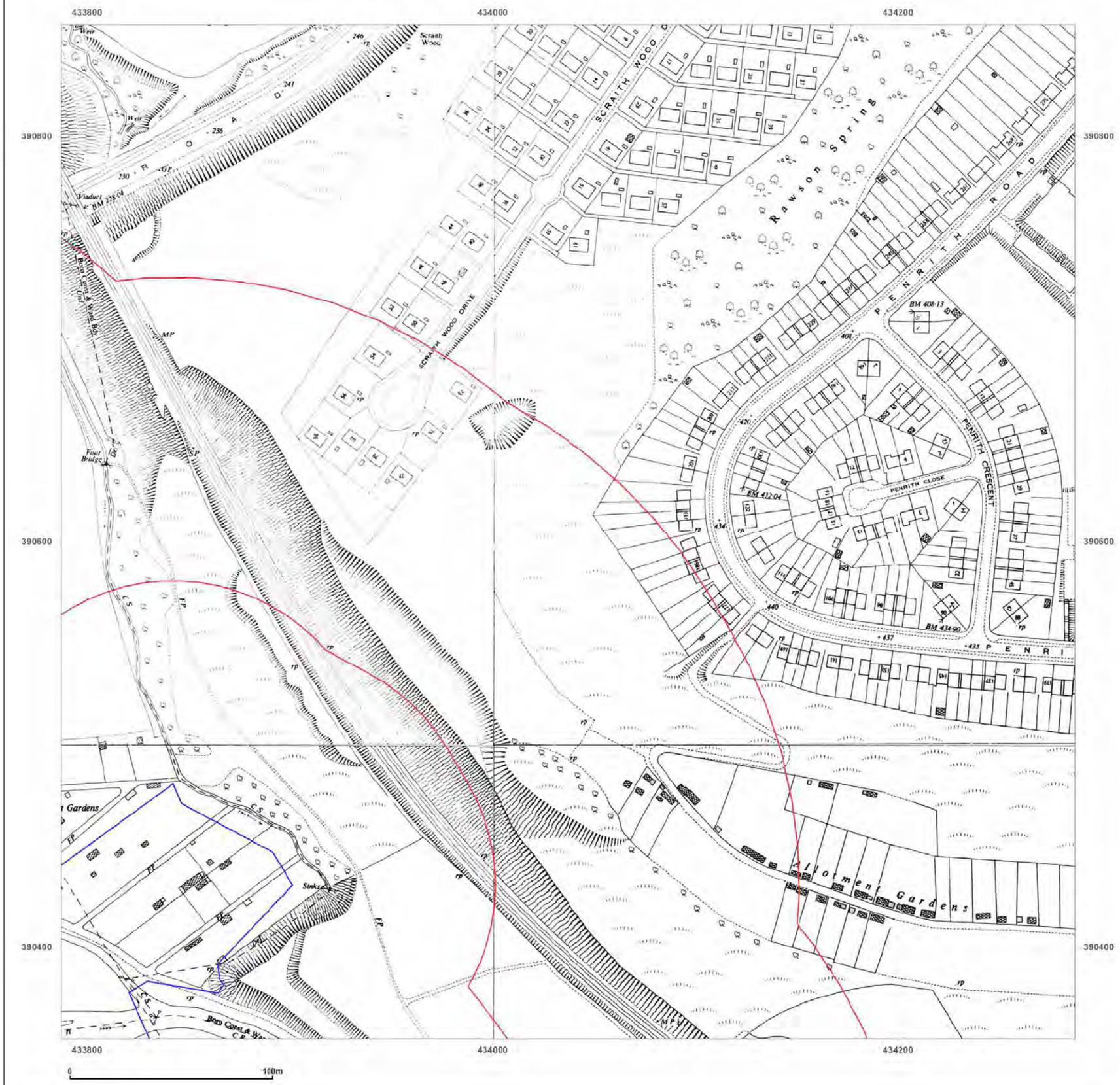
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1952-1953**
Scale: 1:1,250
Printed at: 1:2,000

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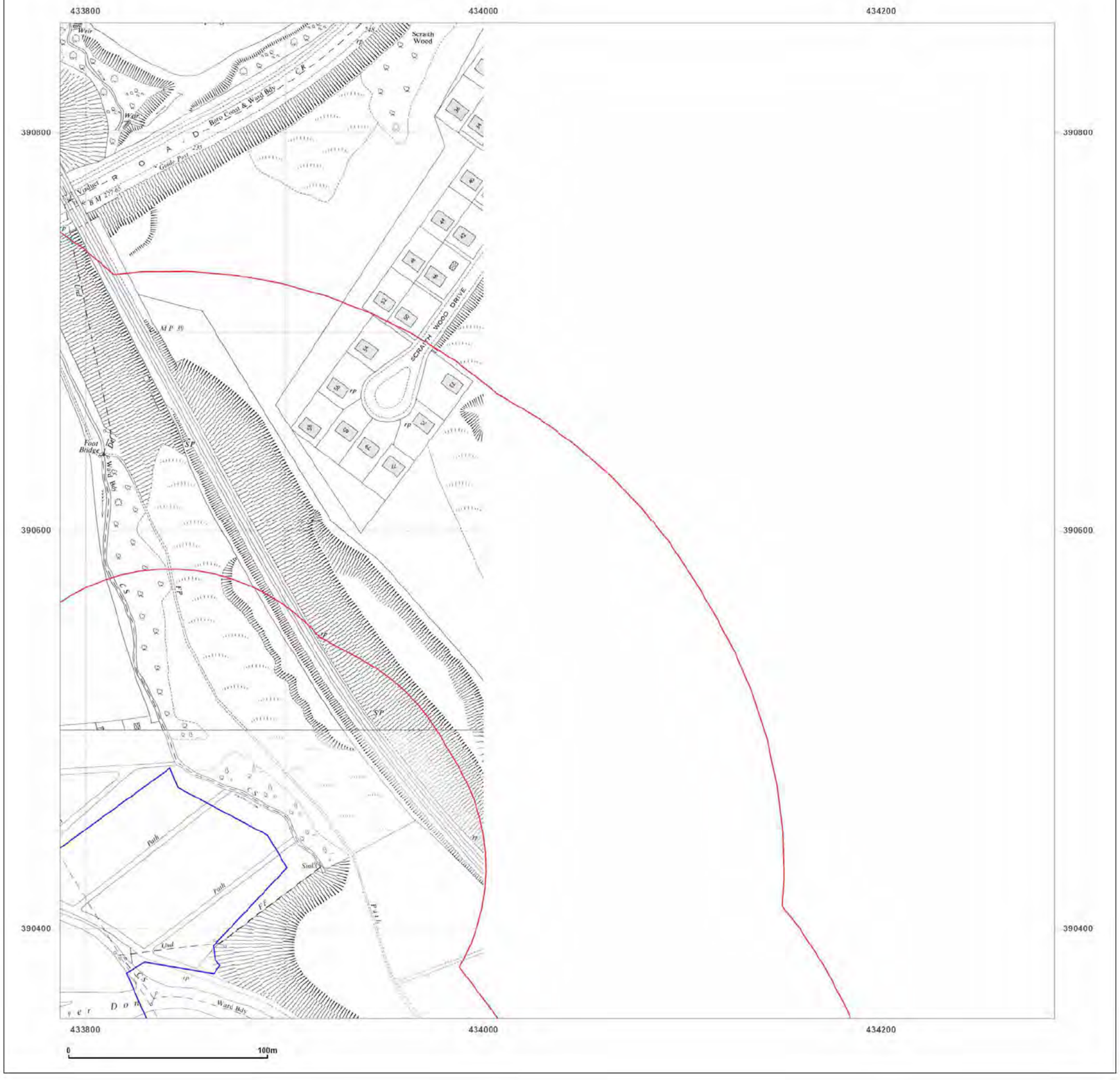
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1963-1965**
Scale: 1:1,250
Printed at: 1:2,000

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

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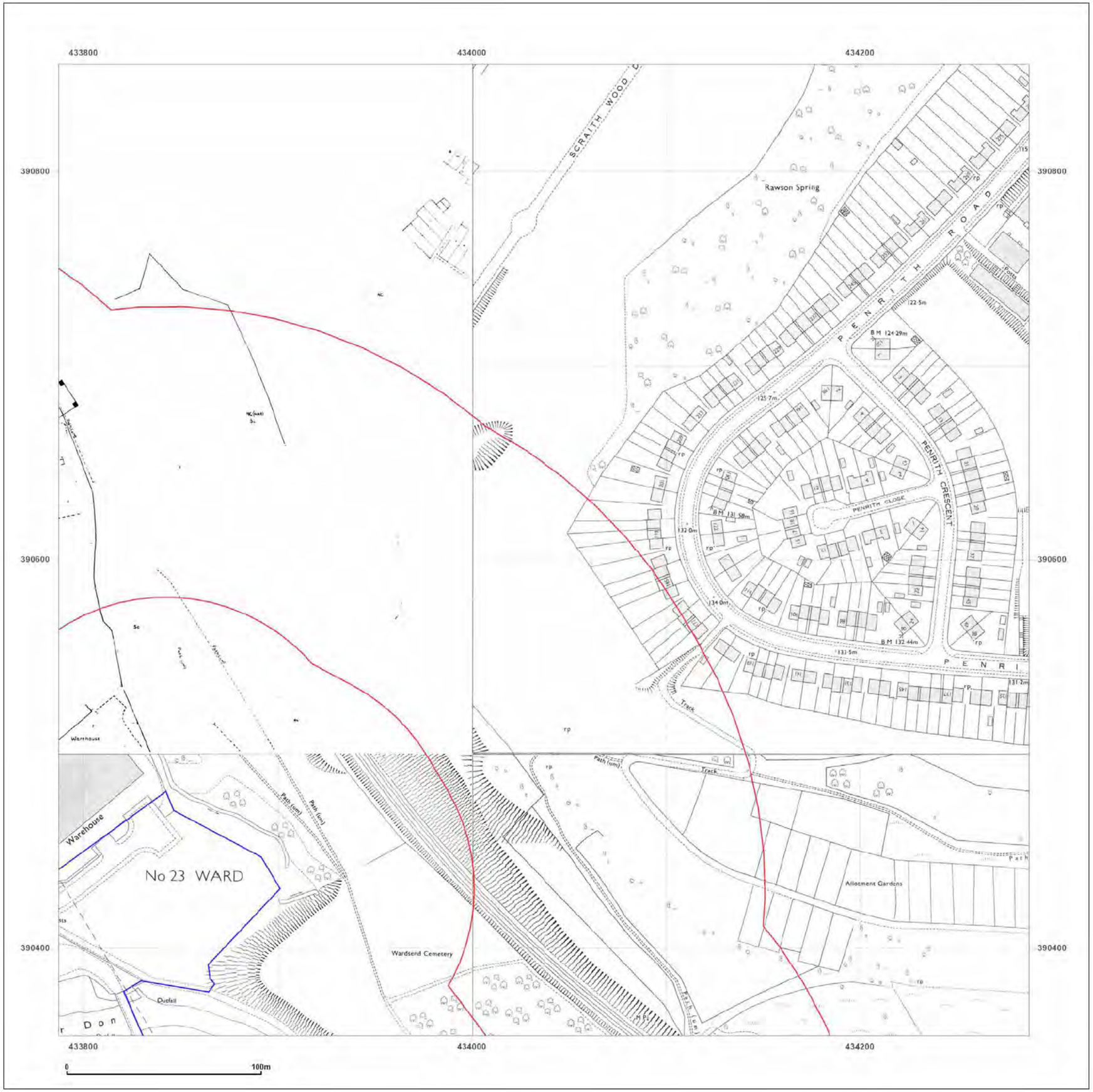
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1971-1975**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1951 Revised 1975 Edition N/A Copyright 1975 Levelled 1961	Surveyed 1951 Revised 1975 Edition N/A Copyright 1975 Levelled 1961

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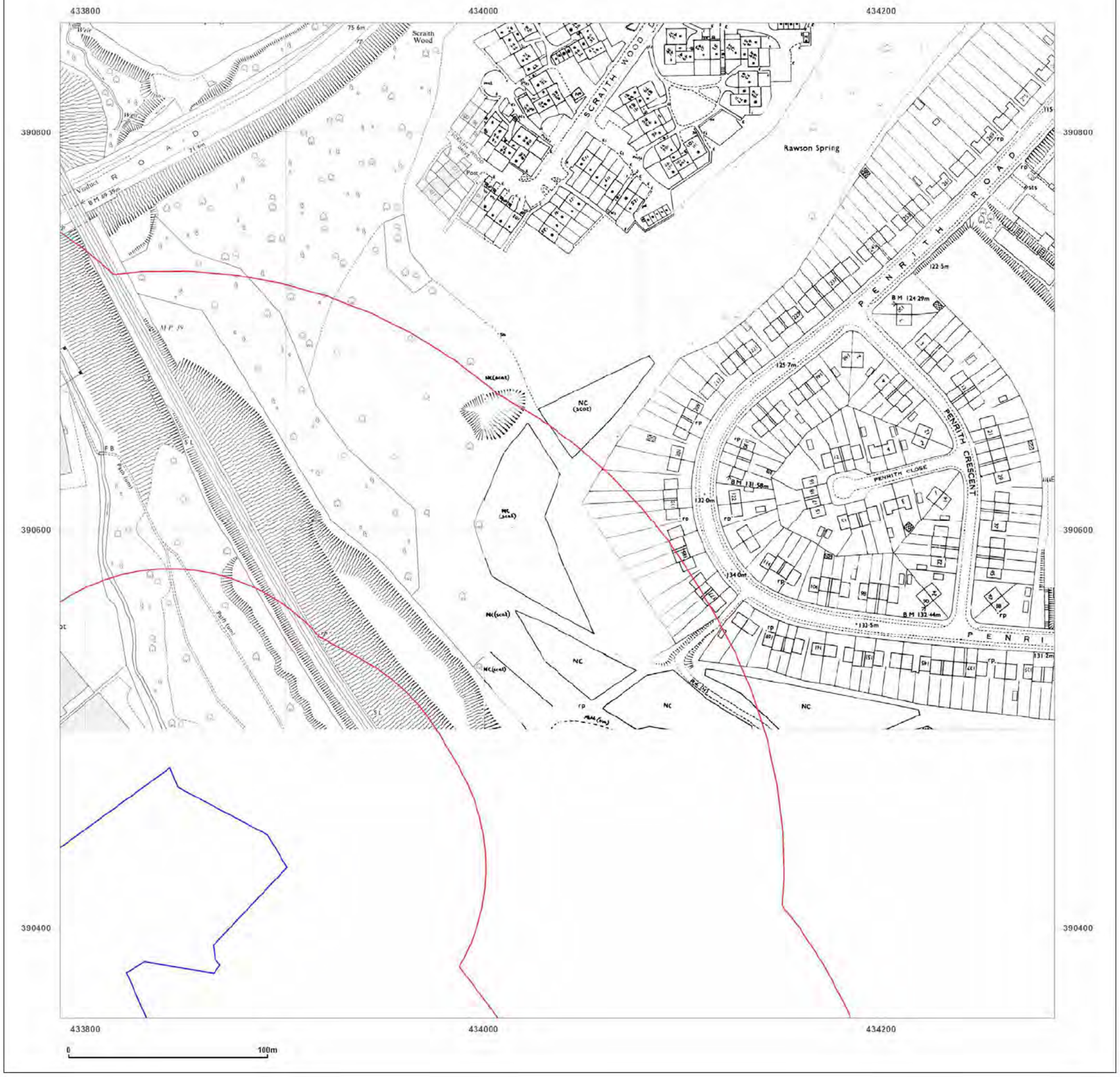
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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1977**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed 1951	Surveyed N/A
Revised 1975	Revised N/A
Edition N/A	Edition N/A
Copyright 1977	Copyright N/A
Levelled 1961	Levelled N/A

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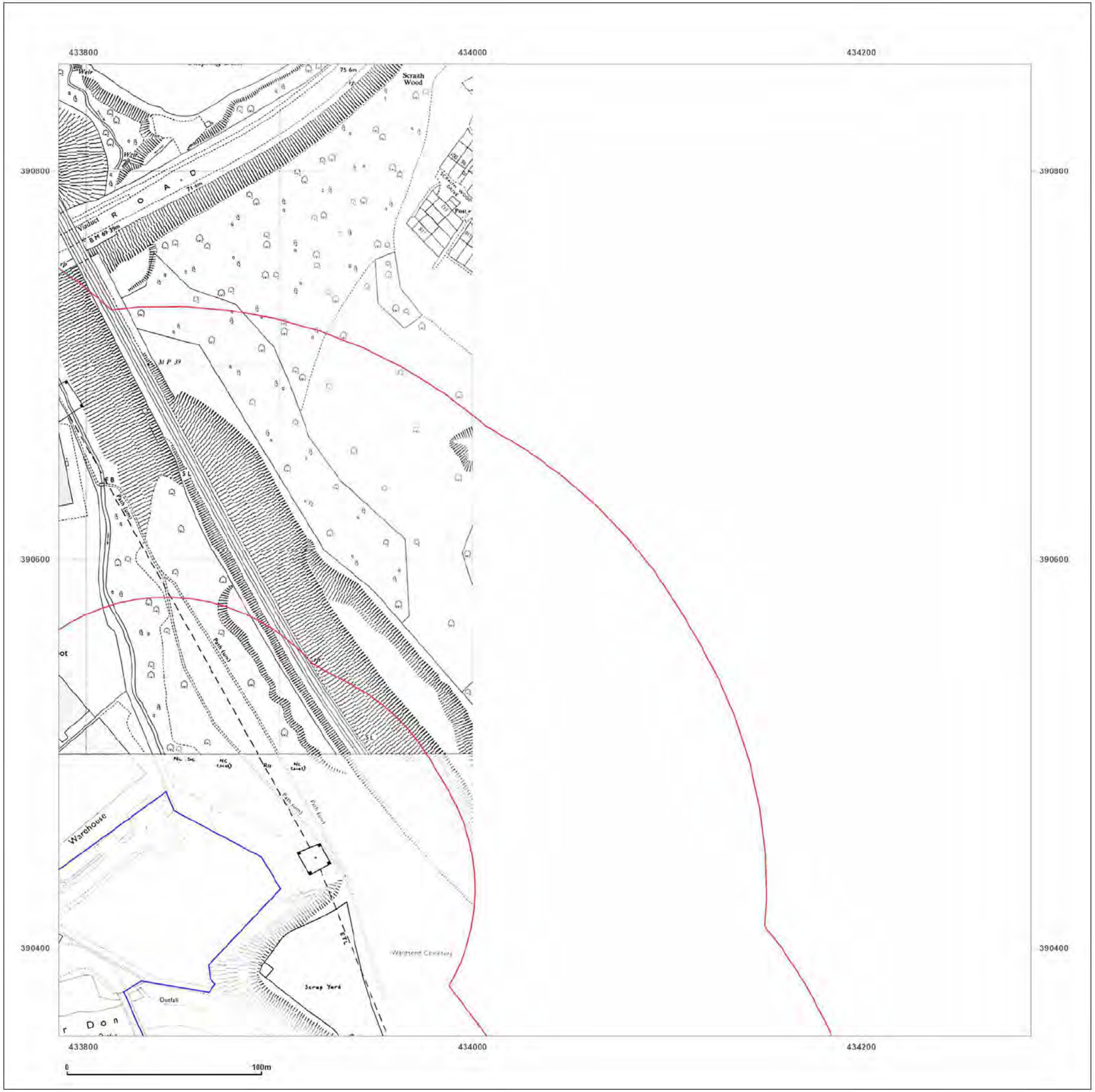
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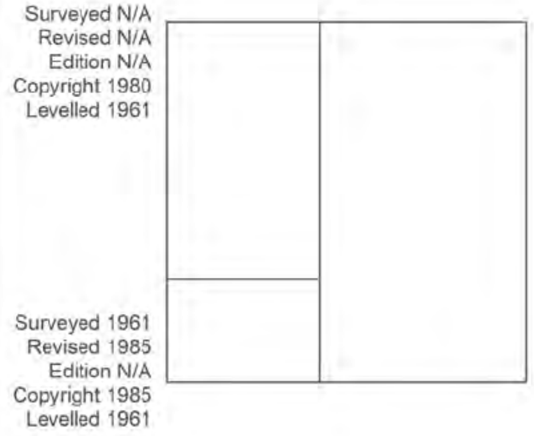
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Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid

Map date: **1980-1985**

Scale: 1:1,250

Printed at: 1:2,000



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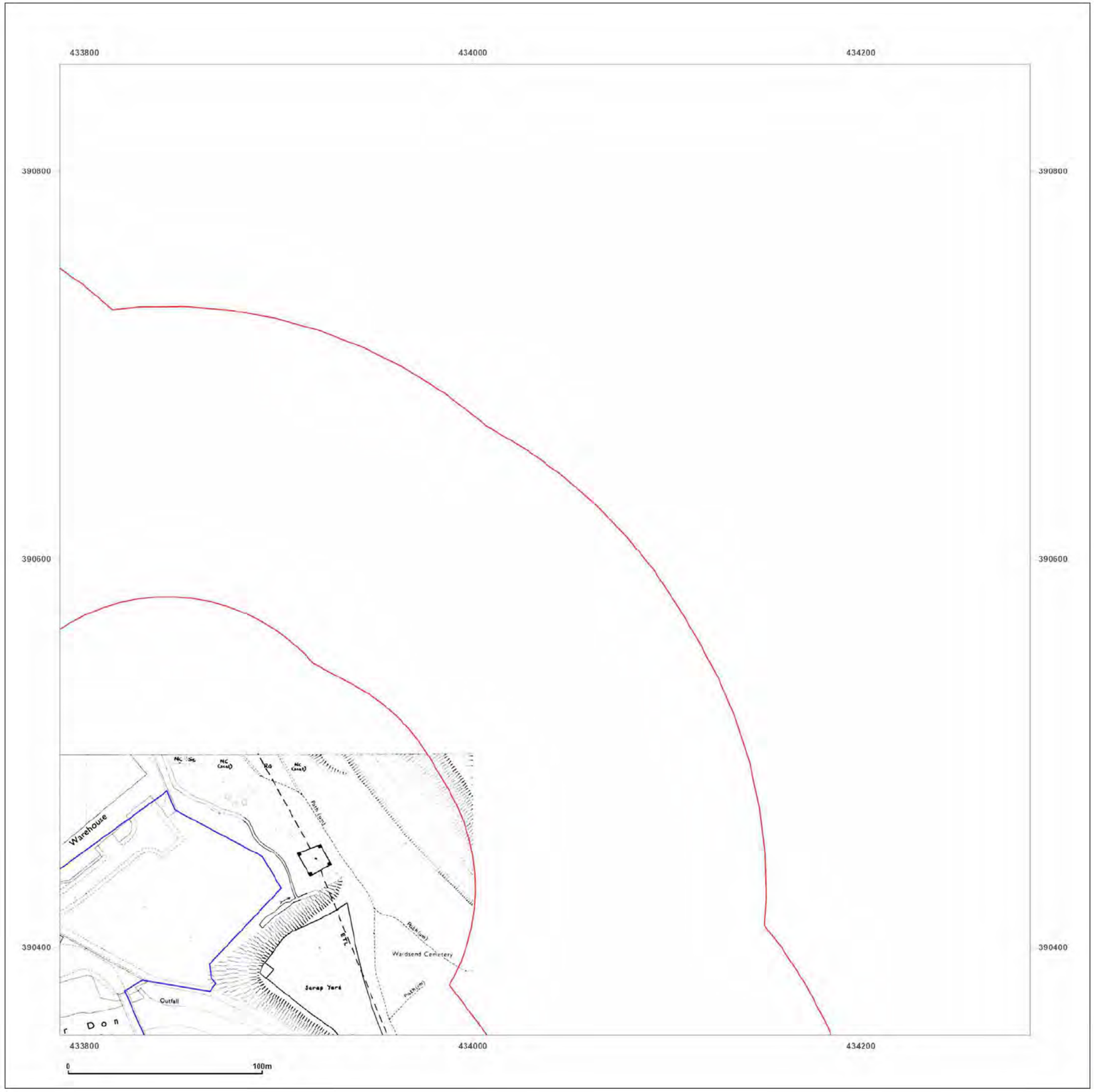
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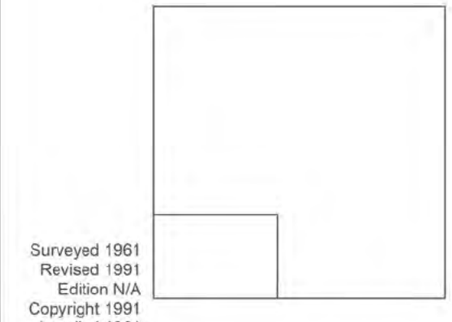
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Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1991**
Scale: 1:1,250
Printed at: 1:2,000

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Revised 1991
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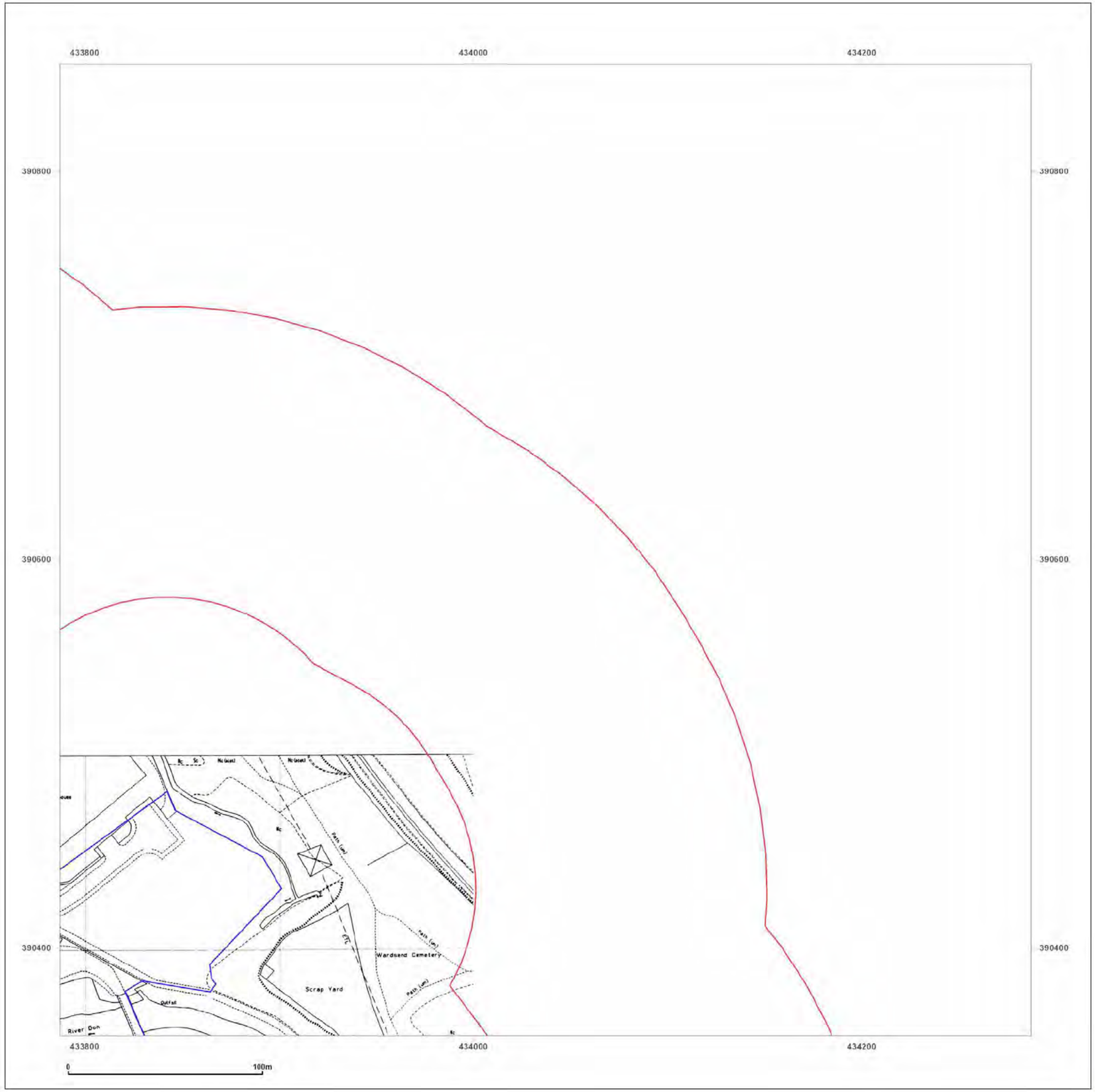
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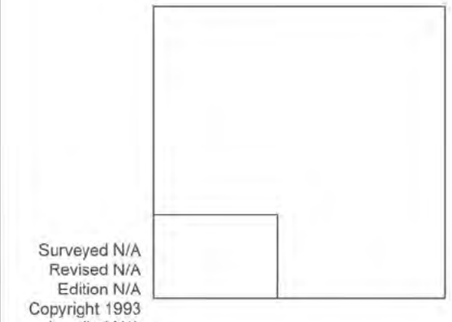
Site Details:

Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_1250_2_2
Grid Ref: 434037, 390605

Map Name: National Grid
Map date: 1993
Scale: 1:1,250
Printed at: 1:2,000

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Edition N/A
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Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1988-1993**
Scale: 1:1,250
Printed at: 1:2,000

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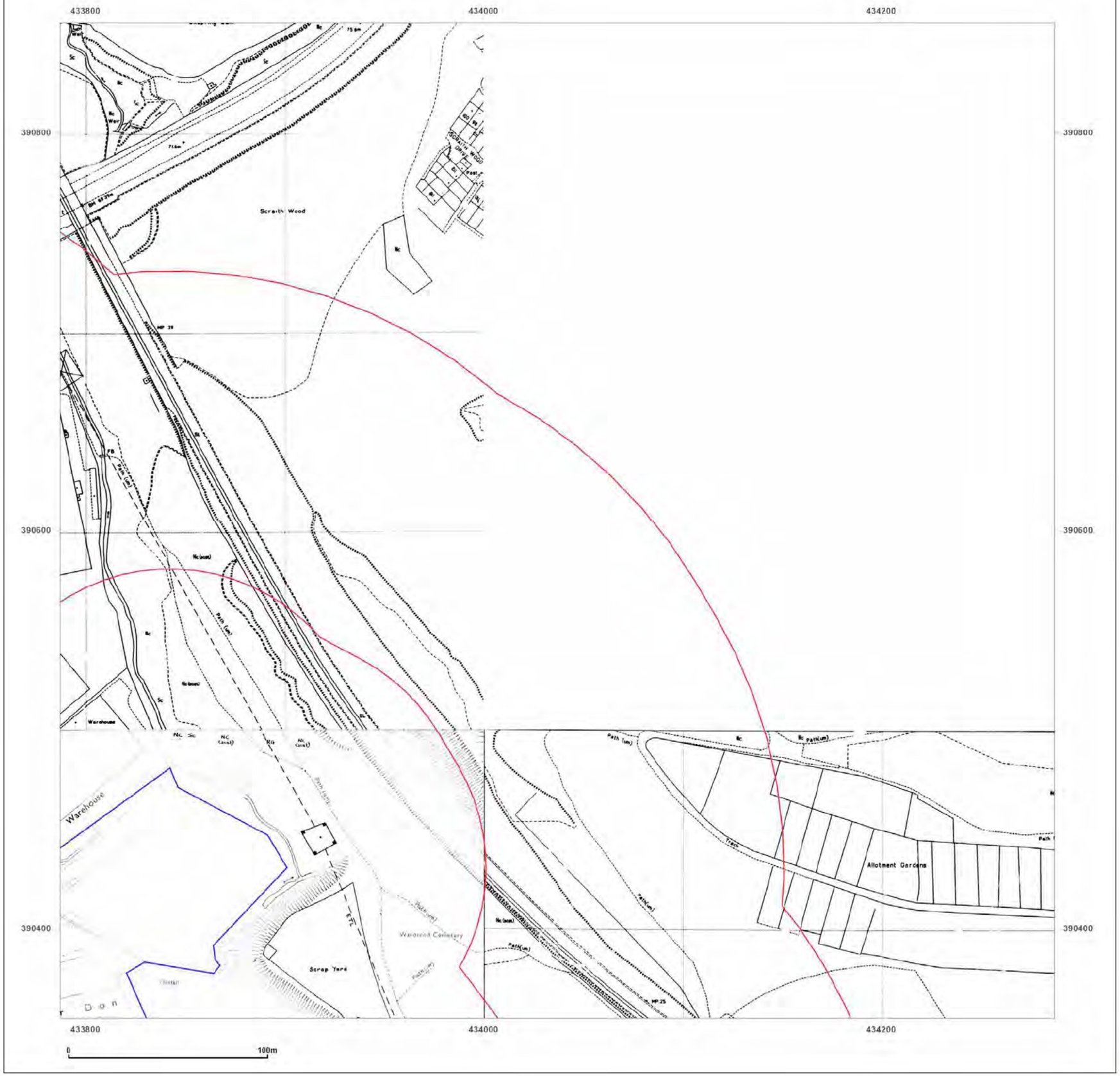
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Grid Ref: 434037, 390605

Map Name: National Grid
Map date: **1990-1993**
Scale: 1:1,250
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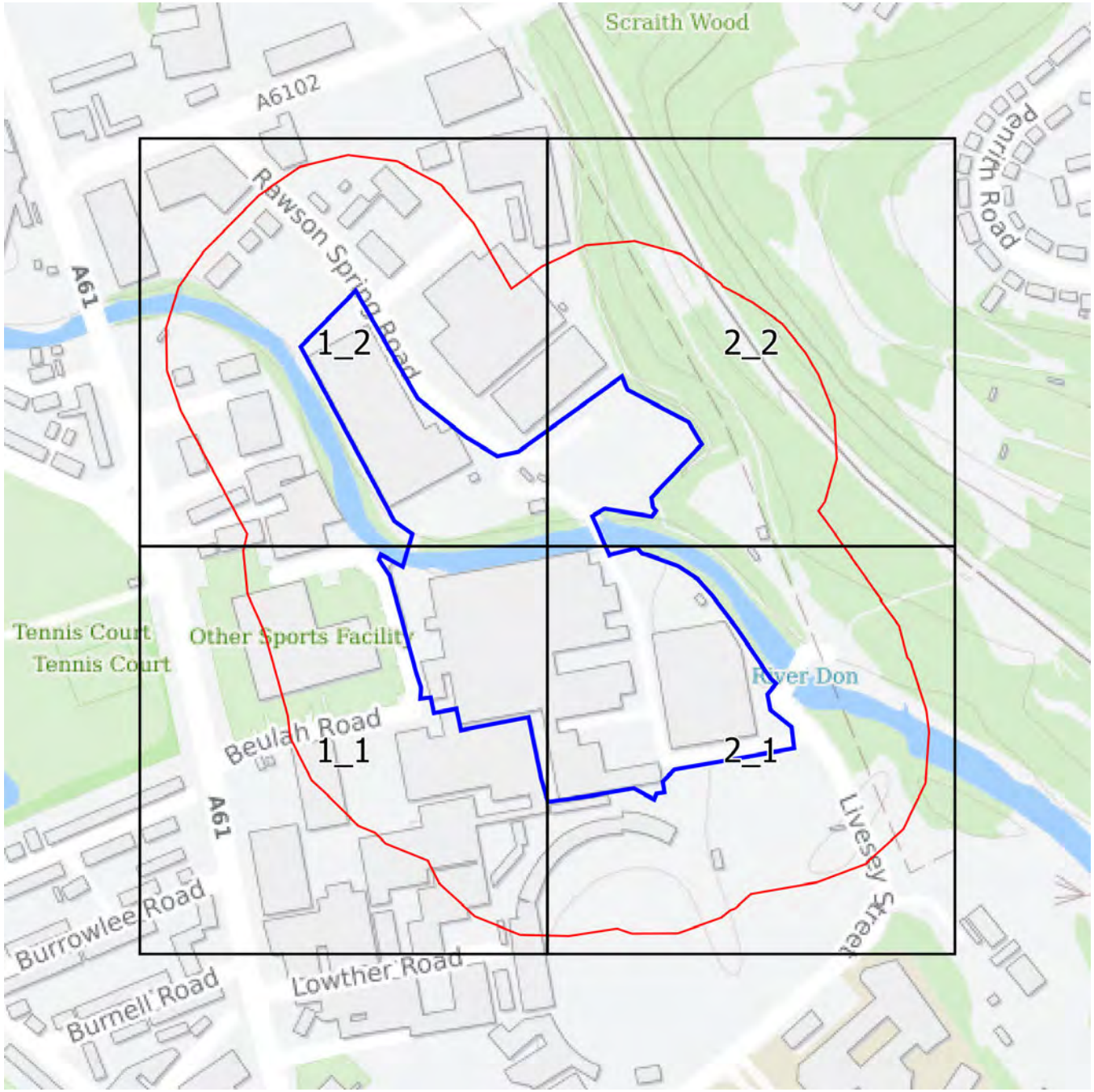
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Landline Scale Grid Index

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Site Details:

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_Landline_1_1
Grid Ref: 433637, 390205

Map Name: LandLine
Map date: 2003
Scale: 1:1,250
Printed at: 1:1,250

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2003

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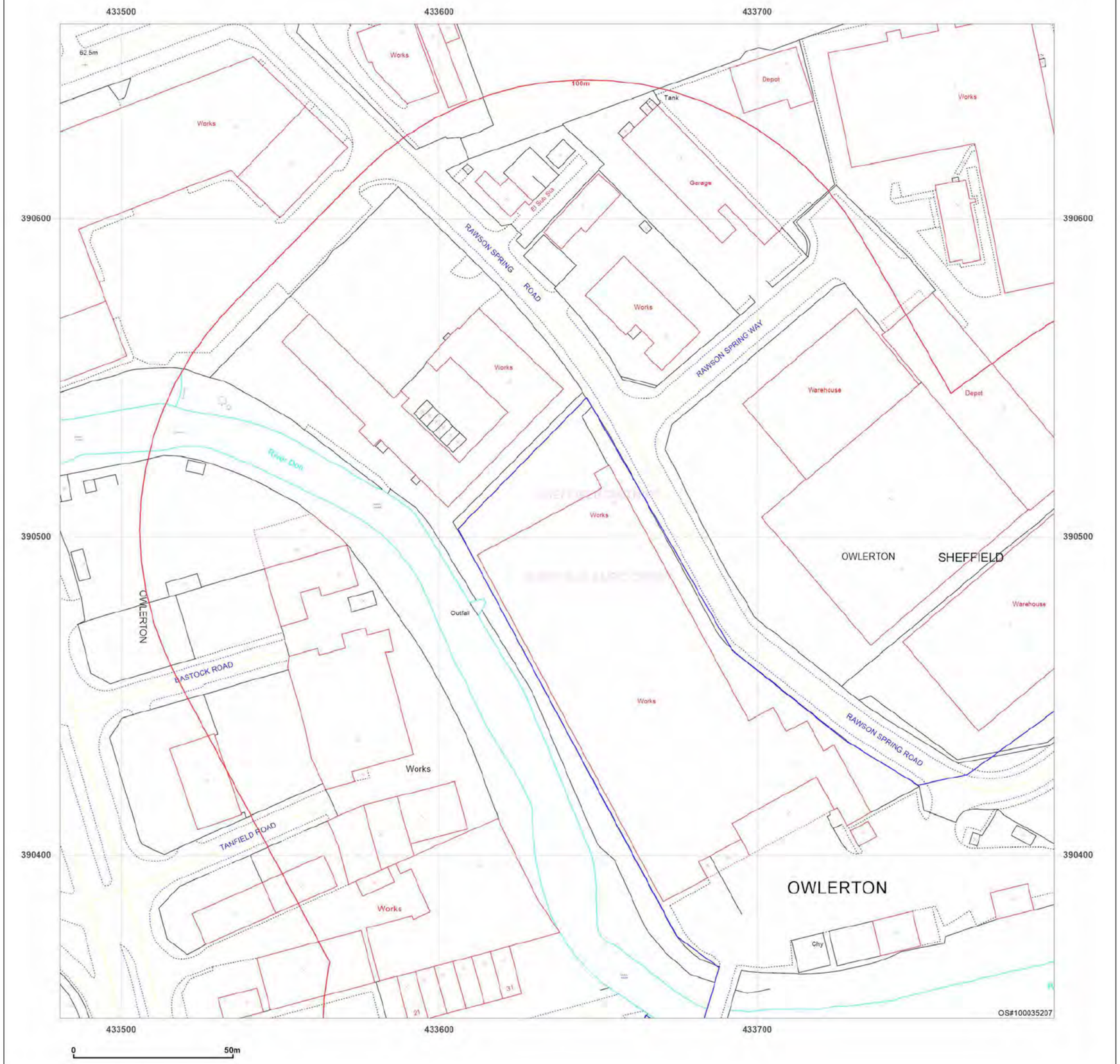
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Site Details:

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_Landline_1_2
Grid Ref: 433637, 390505

Map Name: LandLine
Map date: 2003
Scale: 1:1,250
Printed at: 1:1,250

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Production date: 23 August 2024

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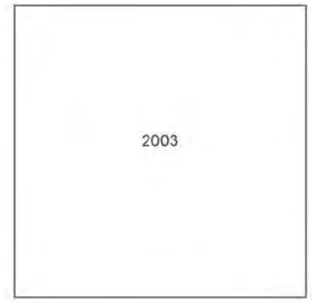
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Mondelez Sheffield, Livesey Street, Sheffield, S6 2AP

Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_Landline_2_1
Grid Ref: 433937, 390205

Map Name: LandLine
Map date: 2003
Scale: 1:1,250
Printed at: 1:1,250

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Client Ref: EMS_966869_1201381
Report Ref: EMS-966869_1227142_Landline_2_2
Grid Ref: 433937, 390505

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250

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2003

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Appendix 3 Historical Exploratory Hole Records

Exploratory hole logs have been extracted from the BGS web site and the following report, locations are shown on Figure A7:

- BGS records – https://mapapps2.bgs.ac.uk/geoindex/home.html
- GA Site Investigation Limited (2024): Site Investigation at Mondelez UK Sheffield, Rawson Spring Road, Sheffield, S6 1PD [to support the proposed construction of new firewater tanks and pump].

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

RECORD OF WELL (SHAFT OR BORE)

(attach copy of analysis if available)

For Survey use only

~~1000/207~~ N.

SK 39 SW 6.

EXACT SITE OF WELL

At Messrs. GEO. BASSETTS, OWLERTON, SHEFFIELD
AT the back of the Confectionary Works, close to the S. bank of the river Don. SK 3381 9034

Town or Village Owlerton, Sheffield

County Sheffield C.B. Six-inch quarter sheet Yorks. 288 SE; SK 39 SW

For Mr Messrs. Geo. Bassetts, Confectioners State whether owner, tenant, builder, contractor, consultant, etc. :— Owner

Address (if different from above) As above

Level of ground surface above sea-level (O.D.) About +195 ft. If well-top is not at ground level, state how far ... (above; below;) ..... ft.

SHAFT - ft.; diameter ..... ft.; Details of headings .....

BORE ..... ft.; diameter of bore : at top ..... ins.; at bottom ..... ins.

Details of permanent lining tubes 34'6" of 24", 67' of 21", 242' of 18"
(vide T. Matthews 6/7/65)

Water struck at depths of ..... ft. below well-top.

TEST CONDITIONS

Rest-level of water ..... ft. above / below well-top. Suction at ..... ft. Yield on ..... hours' / days' test pumping at ..... galls. per ..... with depression to ..... ft. below well-top.

Recovery to rest-level in ..... mins. / hours Capacity of pump ..... g.p.h. Date of measurements .....

NORMAL CONDITIONS

Description of permanent pumping equipment :

Make and/or type ..... Motive power .....

Capacity ..... gallons per hour. Suction at ..... ft.

Amount pumped ..... galls. per day. Estimated consumption ..... galls. per week.

Well made by Messrs. Matthews Date of well 1962

Information from .....

ADDITIONAL NOTES

This hole was cored from 48 feet to base with some core loss above 70 feet. The core diameter was about 17 ins. In the upper part of the hole samples were taken of the sandstones passed through; from the base of the Crawshaw sandstone specimens were also taken at 10 foot intervals through the mudstones. The core was subsequently sampled for petrological study by West German oil geologists.
YPF 8517 - 8766 were collected from the cores of this hole.
The cores were examined by C.G. Godwin. The hole was also visited by Mr W.E. Graham of the Palaeontological Dept, to obtain fossils from the two lowest Marine bands in the section.

1080 feet E 7°S from Junction of A 616 and A 61
1½ miles NNW of Sheffield Centre.

The following data was supplied by Mr. Hordley (Thos. Matthews) on 26th May, 1965.—
8,100 g.p.h. PWL 310 SWL surface
Hardness 10 p.p.m.

JFW. 2.6.65.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.		Date Received	1" O.S. Map No.	Site marked on 1" Map	(use symbol) on 6" Map

(*35243) Wt.44731/0424 12,000 3/48 A.& E.W.Ltd. Gp.685

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

(For Survey use only) Geological Classification	NATURE OF STRATA If measurements start below ground surface, state how far ...	Thickness Feet ...	 Inches ...	Depth Feet	 Inches
	OPEN hole-Drillers Log only.				
	Made ground	3	3	3	3
	Loamy clay and boulders	3	9	7	-
	Loamy clay, river silt, and boulders	10	-	17	-
	Siltstone dark grey; bands of shale	31	6	48	-
	Core examined by C.G.G.				
	Mudstone dark grey rather silty with Fucoids occasional Guilielmites, very scattered fish fragments and indet organic debris. Plant fragments in the lower part. Some of these suggest roots. The top of the core was very micaceous. About 3'0 recovered.				
	Mudstone dark grey silty to very silty, hard, with very abundant tubular nodules of a mineral similar to Marcasite. Most of these lie flat or at a gentle angle to the bedding. Fish fragments not infrequent. About 2'0 rec.	6	-	54	-
	Loss of core; Stony bind of driller	14	6	68	6
	Silty beds, grey, with a greenish cast at intervals above 75'0; the top is a sandy and silty mudstone with probable roots, and many thin beds of greyer micaceous silty mudstone. These continue down, appearing as dark partings about 70'0. There is a rather rapid passage into beds dominated by silty sandstones with beds varying from thin (1") to shaly (under a sixteenth). The darker partings are very micaceous. Prominent vertical structures up to 2" long are present, filled with disordered sand or mud, and sometimes mud within sand. Frequent load casts. Towards the base the vertical structures becomes less marked and are replaced by tubules of sand lying flat on the bedding. In the lowest 2'6 the only survivors are the load casts at sand-mud interfaces. A lenticular mass of sandstone occurs about 1" from the base. A general impression of cyclic bedding was given by this stretch of core.	15	-	83	6
	Sandstone grey white fine grained, perhaps varying to medium grained at some horizons. Siliceous; in beds up to 6" thick. Core all broken probably as the result of extensive jointing. A few spots of a white mineral at the top. Occasional beds of dark silty mudstone with odd plant fragments. In the lower part there are some inclusions of mudstone and ironstone. Beds, when seen, uneven to undulating, but apparently not rippled. In this bed also there are signs of cyclic bedding, especially in laminae at the top of mudstone beds. The upper bands also contain tubular structures. Planar cross bedding in truncated units up to 4" thick Ca. 95'0. Further down there are more thinner ones. Poor short crested ripples occur at about 103'0. Further white mineral at the base, reminiscent of the ?Kaolin at Barnsley 'N'.	24	9	108	3
	Mudstone dark grey to black at base, silty at top. Fish scales and plant fragments from 109'0; Planolites, fucoids and Guilielmites Ca. 112'0. This fauna persists to the base; neither Lingula nor a non-marine fauna was found despite intensive search	15	3	123	6
	Sandstone fine grained brownish ganisteroid rooty	1	3	124	9

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:

Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			124	9
	Sandstone fine grained grey micaceous, massive to 129'2. A rooty mudstone band in the upper part. From 129'2 there are dark micaceous partings with plant debris, which shew a good deal of cross bedding. In this part the beds are rather thin and nearly even.	5	4	130	1
	Mudstone mid grey silty with laminae of siltstone. Shiny marks are either roots or an elongate form of Planolites. The laminae die out at 132'6 but the silt persists almost to the base, where the rock becomes rather darker and softer, with plant debris. No part of this bed has the lithology of a marine band. Recovery 80%	8	9	138	10
	Alternation of listric coaly mudstones, with rather variable beds of coal. This is essentially a dark seatearth with coaly beds.	1	2	140	-
	Siltstone grey and greenish grey (pale) ganisterbid, rooty, with ironstone nodules. Massive except for wisps of bedding. Large Stigmaria at the top. Ironstone almost to base. Passing into	6	9	146	9
	Mudstone grey to mid grey silty micaceous with roots and layers of ironstone nodules. Hard and close to siltstone at the base. Some irony masses.	2	6	149	3
	Siltstone grey, with impregnated irony layers at intervals. The outside of the core weathers brown. Top rooty. Thin bedded at base and also ~~at~~ below 150. At this horizon there are quite a lot of darker laminae and partings. No fossils seen. Passing into	3	9	153	-
	Mudstone hard grey silty micaceous. No fossils seen. Passing into	6	-	159	-
	Mudstone mid grey micaceous, softer, no fossils seen. In the lowest part there are some very obscure impressions. Passing to	11	6	170	-
	Mudstone mid grey very micaceous, softer again No fossils seen except p ant debris at the base.	15	¾	185	-
	Mudstone mid grey to rather dark, less micaceous, Planolites at top. Fish and round marks at about 188. Fauna very sparse. Plant fragments. A 2" band of ironstone at 192	9	-	194	-
	Mudstone rather dark with quite a lot of vague impressions and pimples. Lenses of ir ironstone at intervals as far as 198. Well slickensided joints in the body of the rock.	8	-	202	-
	Mudstone dark grey more shaly, with the lithology of a marine band. Yellow spots and pits. One or two plant fragments.	2	-	204	-
	Mudstone dark grey as above, but with one or two possible very ill preserved marine fossils. Some suggest Posidonia.		3	204	3
	Mudstone dark grey silty, more micaceous down, apparently almost barren. Bands of sideritic ironstone and little nodules of pyrite. Some of the latter were described in the field as 'curly'.	5	9	210	-
	Mudstone dark grey, the bedding planes				

Contd.

2S98293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlertonx 1962

6-inch Map Registered No. SK 39 SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			210	-
	(Contd) richly covered with minute pimples and litle nodules of pyrite about the size of Ostracods. Macro-fossils seem to be restricted to plant fragments. In the lower part tubules appear.	1	-	211	-
	Mudstone dark grey with the lithology of a marine band. Vague impressions. A lenticular ironstone band with good fish fragments. At the base there are further nodules.	1	6	212	6
	Mudstone dark grey more micaceous. Fish fragments reported. Ironstone lenses. A few nodules at the top. Obscure fragments at 213'6.	2	6	215	-
	Mudstone dark grey silty micaceous, becoming less dark to just grey down. From 220 there are abundant plant stems. Aboove this level they are ill preserved and fewer.	8	-	223	-
	Mudstone hard to silty, lisricised, coaly, with uneven partings and bands of COAL. Lenses of ironstone are also present. This bed is essentially a seatearth with large coal streaks.	2	3	225	3
	Core lost; could be Coal or seatearth	5	3	230	8
	Mudstone dark brown rooty, less dark down, with carbonaceous layers. Lenses of coaly material. Listric surfaces.	2	2	232	10
	Mudstone brownish grey rooty with ironstone nodules.		8	233	6
	Core broken; includes at least 3" dark grey rooty mudstone. This appears to conclude 'Coal in thin partings with shale' of the drillers log. (A single coaly lens)		4	233	10
	Mudstone rather dark grey silty rooty with rather large ironstone nodules		11	234	9
	Alternation of silty mudstone with silt-filled structures either resulting from roots or from burrows, and fine to silty sandstone. The latter is often disturbed, but in places it can be seen to be shaly bedded.		10	235	7
	Sandstone very fine grained to silty, off white, essentially a single bed, but with numerous wisps of grey material and one very uneven parting near the base. The structuer seems to be disturbed, possibly by roots.		11	236	6
	Rapid striped alternation of fine grained sandstones and silty mudstones, with many micaceous partings. Bedding flat and fairly smooth for the most part, but slight unevenness is quite common. Some beds are fractured. A few were very disturbed, with sand nodules; some suggest gentle rippling.	3	6	240	-
	Mudstone grey silty, no fossils seen.		2	240	2
	Sandstone white medium to coarse grained, much of if massive to very massive (beds over 2 feet). Strata 253-256 show much thinner bedding. The upper part of this band, from 253 to 254'2 is full of coaly scars and partings, some of which show numerous crossa fractures and disturbances. This is especially true 253'11-254'2. Coaly scars also seen about 248, and at the base. (contd.)				

25/98293/2 P585 4m 11/61 XL

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British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No.
SK 39 ~~SW~~ SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	~~Continuing item begun at~~			240	2
	Partings are usually grey micaceous. A breccio-conglomerate of masses of ironstone occurs 2-4" from the base. Smudge like markings about 2 feet from the base suggest the presence of pebbles of sandstone. At about 256 there is an ironstained mass. There are relatively few joints; despite this, water overflowed at 700 galls per hour from this sandstone. The water at this level was of ~~XXXXX~~ low hardness, but with a Sodium bicarbonate content of 835 ppm.	44		284	3
	Mudstone grey silty probably rooty, disturbed. Sand increases downwards. All the bedding is interupted by possible roots in vertical structures.		6	284	9
	Sandstone light grey silty with abundant carbonaceous debris forming partings and wisps. Beds of sandstone often 2" or more thick are separated by dark carbonaceous layers where the debris is more concentrated. The overall appearance suggests rather large scale lens bedding (Flaser?). On the whole the upper beds are more disturbed. A more massive bed interrupts this sequence 288'6-29½'8. Mica not abundant on partings, but elongate structures seen, cf. roots. At the base borings up to 1" deep penetrate the sandy beds, and there are occasional thin lenses of ironstone. 'Cut and fill' by mudstone 9" from the base.	14	-	298	9
	Mudstone hard grey silty with laminae and bands of material near the sand-silt junction. The upper ones of these bored. They become thinner down. Lenses and bands of ironstone. Slight unevenness is common, but most of the beds are flat. A few cases of truncated cross bedding seen. Partings micaceous.	6	3	305	-
	Mudstone mid grey silty with laminae towards the top (few); becoming rather softer and darker down. Passing into	5	-	310	-
	Mudstone rather dark grey silty with occasional large nodules of ironstone. A few scattered plant fragments. Passing into	15	-	325	-
	Mudstone dark grey rather silty micaceous; no fossils seen except plant stems at 326'1 Large ironstone lenses in the lower part. A 2" band at the base.	3	10	328	10
	Mudstone dark grey shaly with much organic debris. At the top there are Fish, nodular structures, and possible Foraminifera. The middle part is less shaly, with scattered fossils in the lower part. Then it becomes shaly again, with abundant plant debris below ~~XXXX~~.	2	2	331	-
	Mudstone dark grey, silty from 333, with a great deal of carbonaceous debris. Fossils, all of them poor, are reported to include Lingula, fish, Orbiculoidea, Posidoniella and Anthracoceras. Although marine fossils were not seen below 334, this bed may well be marine to the base.	4	4	335	4
	COAL, 1'0 recovered	1	1	336	5
	Mudstone dark grey rooty with angular boundaries		1	336	6

IS98293/2 P585 4m 11/61 XL

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British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:

Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			336	6
	Ganister, thickness 4"-7"; average 6"; spec.		6	337	-
	Mudstone grey brown with abundant dark roots		6	337	6
	Mudstone grey brown rather harder, with dark roots. Frequent masses of sphaerosideritic iron. Thin coaly partings at some horizons.	1	7	339	1
	Mudstone greenish grey, the greenish colour concentrated in vertical patches. This bed is penetrated by twisted and branched vertical structures (cf. 'Neptunian dykes') of whitish grey siltstone. The largest of these seen was up to 4 or 5" broad. A branch which appears to end upwards may in fact simply leave the core. In the lower part, where some brownish tints are mixed with the grey greens, and in the lowest 6", which is greenish grey and rather silty, dykes continue at least 1½ ins broad. Roots continue throughout this bed, both in the background and also in the 'dykes'.	3	6	342	7
	Mudstone, mottled in strong greenish grey and rather dark grey brown. Except for the beds 344'2-345'2 the greenish grey usually predominates. As far as 344'2 there are 'dykes' continuing from the beds above. In the top 11" these are greyish; below this they bear an orange ferruginous stain. Only 2" from the top the main 'dyke' seen splits into two, each of them ¼-½" wide, which show unrelated or definitely opposed twists. They rejoin at the top of the irony beds and continue into them for 5" as a single 'dyke' about 1" wide. Then it abruptly dwindles to a contorted ¼" 'dykelet' and in 2-3" dies out altogether. In the irony beds there are scattered skeins of similar material not definitely to it, but close by. There are also quite a lot of ironstone nodules, perhaps related, to roots, which persist beyond the end of the 'dykes'. The lowest 2'0 is silty; roots not seen. Abrupt change at the base.	6	10	349	5
	Mudstone dark grey rather silty micaceous, with frequent plant debris; Guilielmites after roots at the top. Some of the debris is brown and listricised.	2	1	351	6
	Mudstone hard dark grey with a little very fine mica, and a few ironstone bands or lenses, especially in the top 3'0 and the bottom 3'0. Fish occur 351'6-356'9, but they are not common below 356. Pimples at the top increase down to a bed of small pyritic nodules 354'8½-355'0. There are A obscure impression and lumps, possibly inorganic in this part of the core. At 355'9 there are a few pyritic plant fragments. No fossils recorded from the lowest 1'6	6	9	358	3
	Mudstone dark grey to very dark grey, micaceous at top, becoming hard below this. The only fossils seen were in the softer lowest 1'3. Pimples and Lingula in the basal inch. Rest indet.?	4	11	363	2

IS98293/2 PS65 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Brought forward			363	2
	Mudstone dark grey micaceous		2	363	4
	Sandy strata, grey fine grained, with beds often under 1" thick, but with a single bed 5" thick at the top which is ganisteroid. The bedding is often disturbed and uneven, especially towards the top. Masses of pyritic iron occur 1'6-3'0 from the top. There are also several thin dark rooty mudstone bands in the beds 3'4-4'0 from the top.	6	1	369	5
	Sandstone white fine grained massive, with a pale greenish lens of silty rooty mudstone 0-6" thick at 372'6 Above this there are ironstone nodules and a few dark bands, disturbed as by roots. The topmost part suggests a poor silica rock	5	7	375	-
	Sandstone whitish grey becoming grey down. The top consists of only a few beds and much of it is stained brownish. A layer of ironstone lenses occurs at 375'6½; the undulation of the floor of this bed may well be due to diversion of beds by the ironstone itself. The lower part is rather thin and was described in the field as 'wispy bedded.' Becoming increasingly muddy towards the base, where passage.	5	10	380	10
	Mudstone grey silty very micaceous with scattered much ironstone in lenses. The top one of these had a coaly layer on its upper side. Darker from 381'9. Fish debris at base and possibly in middle	3	11	384	9
	Mudstone dark grey silty very micaceous, with scattered fish debris and plant fragments.	1	3	386	-
	Mudstone dark grey silty, with mussels not seen on the outside of the core		8	386	8
	Mudstone dark grey, softer, less micaceous, with mussels which appear as scattered individuals on the outside of the core; they are concentrated in an ironstone lens.	1	2	387	10
	Mudstone dark greyx to black, softer, less micaceous; mussels not seen on outside of core.	1	2	389	-
	Mudstone dark grey to black with abundant mussels most of which lie flat in layers; those occurring between layers and the topmost layers themselves, are often disturbed.	1	2	390	2
	Mudstone dark grey to black, shaly at base, with much Lingula in a half inch band,		3½	390	5½
	Mudstone less dark, very micaceous; no fossils seen		4	390	9½
	Loss of core; either here or at 384'9		8½	391	6
	Sandstone greyish white, fine grained, beds at top very thick. In the strata 96'4-98'2 they are 2-5"; below this they are 1½ ins or less. Dark micaceous partings. Above 397'6 all the beds are disturbed, with roots in the partings and ironstone nodules in the body of the rock. Flame structures at 397'5. At 399'1 the beds have undulating sections. Cross bedding seen at 401.	11	4	402	10
	Mudstone grey dark down silty at the top, with two prominent ironstone bands, each about 1½ ins. Contd.				

DS98293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:

~~Bassetts Owlerton~~ 1962

6-inch Map Registered No.

SK 39 ~~SE~~ SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Continuing item begun at			403	10
	The lower one of these has abundant mussels which also occur in the mudstones below it; above this band there is abundant plant debris. The lowest 3" of this item were taken to Leeds and preserved intact as an example of the C.Haberghamensis fauna.	1	5	404	3
	Mudstone hard grey silty with carbonaceous marks, either roots or plant debris		2	404	5
	Siltstone grey with plant debris, softer in the lowest 4"	2	1	406	6
	Mudstone dark grey with mussels		2	406	8
	Mudstone grey silty with lenses of siltstone in the lower part. No fossils seen	2	1	408	9
	Mudstone dark grey silty with large plant stems at top, including Calamites sp. Mica abundant. Mussels reappear 10" from top	1	5	410	2
	Mudstone dark probably rather silty, containing major mussel bed. Mussels seen in layers on the outside of the core. Many good Carbonicola seen	6	-	416	2
	Mudstone dark grey shaly with poor mussels, fish and Ostracods		1½	416	3½
	Siltstone grey compact, passing down into silty mudstone in the lowest foot CA.	4	2½	420	6
	Mudstone rather dark grey silty micaceous, no fossils seen except poor mussels and fish. To about	3	-	423	6
	Mudstone dark grey shaly partly micaceous, mostly smooth. Abundant fish at top become fewer down. Inclined polished fracture planes. Core recovered about 6"; this is the probable horizon of the local core loss. Specimens marked 424 are at a level near the top.				
	(COAL said to come here; not recovered)		7	424	1
	Mudstone brownish grey rooty with mica and listric surfaces. About 6" recovered	1	4	425	5
	Mudstone grey, brownish at top, greenish down, silty rooty, with ironstone nodules from 425'9. Passes into pale green grey siltstone at 426'7	3	7	429	-
	Mudstone grey silty with siltstone bands. Ill preserved roots and ironstone nodules at the top. Greenish as far as 432, and slightly so for a short distance below this. Below 440 there are a few thin bands of sandstone, one of them near 446 showing truncated cross bedding. Below this the sandstone occurs in more frequent bands. Almost all of this bed has flat and fairly even bedding; below 432 there is a change of colour or lithology at intervals usually of 3" or less. A large mass of iron diverts the beds at 433'2. At 438'6 there is a ferruginous lens with curved ~~band~~ bands forming a type of 'lens bedding'. Another exceptional bed Ca,441 shows a complex cross lamination in light grey and grey, with some disturbances and small scale unevenness of beds. In the lowest part of this item the bedding of the sandstones becomes much more complex. Some of them show cross bedding, flow casts on underlying silty mudstones, and uneven lamina. Here and there ripp es are suggested but no good ones were seen. Contd.				

DS98293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey: Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 [redacted] SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Continuing item begun at			429	-
	In this part the mudstones are all laminated with silt and unevenness and diversion of these laminae becomes evident near the flow/load casts. Finally in the lowest 1'7 sandstone is predominant and the silty laminated muds form bands or major inclusions within it. Thin complex cross bedding is shown by the sands here	23	-	452	-
	Sandstone fine grained whitish, massive with wisps except for a group of dark beds in the top 6". The wisps are grey and micaceous. A joint passes through the core for 3ft; pyrite occurs on its surface. The base of this bed is uneven but there is no sign of load casts.	8	1	460	1
	Mudstone grey silty laminated, the laminae almost all very even, but a few at the base slightly curved. There are slight disturbances near a thin layer of sand at 462'5½. No fossils seen	2	9	462	10
	Sandstone white fine grained with an external massive appearance. Inspection shows, however, that cross bedding units up to 1'0 in thickness, several of which are readily seen in the lowest 4'0 occur at intervals throughout to within at least 2'0 of the top. Clusters of close thin bedding follow the cross bedding direction and are truncated at some horizons. The partings are grey to mid grey and micaceous. From 3'7 to 5'0 below there is considerable ironstain. The base is angular and shows loadcasts.	12	5	475	3
	Mudstone grey silty with siltstone and a few sandstone bands, much of it in the lower 30 feet closely laminated with silt. The top however is not laminated closely; it contains some highly disturbed beds of sandy silt in the top 5'0 and quite a lot of plant debris in the top 10'0 A sandstone band 6'0-8'0 from the top shows lenses of rib and furrow in the lower half. There is a suggestion of poor ripples. Plant debris recurs in the lower laminated part, especially on certain bedding planes. At the base the laminae are even; higher up they vary from even to lenticular. The lowest thin sandstone band occurs 1'6-2'2 from the base, and shows very thin curly bedding, but not ripples	44	3	517	6
	Mudstone rather dark grey silty micaceous	1	10	519	4
	Mudstone grey silty micaceous with a few bands and laminae of siltstone, the laminae fairly even. Plant stems occur. Becoms a little darker from 522'10; otherwise much paler than the bed above it	6	3	525	7
	Mudstone dark grey rather silty micaceous, with plant debris		5	526	-
	Mudstone dark grey shaly with lenticular ironstone bands, rather silty at top. Core partly weathered, examined after heavy rain. No fossils see. except one or two obscure marks.	3	-	529	-

DS98293/2 P185 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey
BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			529	-
	Mudstone dark grey with a paler close banding at the top, but mostly unbanded. There is very scattered plant debris and a few marks at about 530'6 suggestive of poor Planolites. Lenses of ironstone.	2	6	531	6
	Mudstone harder, rather dark grey, with lenticular ironstone bands. Rather silty with more silty bands, and banded in greys in the lower part. No fossils recorded	3	-	534	6
	Alternations of closely banded mudstones with rather hard and rather dark unbanded mudstones. A scattering of sharply angular lenses and bands of ironstone. Some of these do occur in more than one bed, but the closely banded structure seen in analogous ironstones at the Huddersfield (Royd's Mill) was not recorded here. Plant debris occasionally seen.	15	6	550	-
	Mudstone hard rather dark grey, mostly rather silty, resisting weathering. The top softer. A mark either of plant or fucoid at the top; obscure indeterminate debris near the base To about	3	-	553	-
	Core broken, mudstones	1	2	554	2
	Mudstone hard dark grey with lenses of pyritic iron ore. No fossils seen		7	554	9
	Mudstone dark grey shaly with fish debris at the top and perhaps near the base. This bed is banded. No other change.		6	555	3
	Mudstone dark grey heavily listricised, with nodules of uncertain origin.		3	555	6
	Mudstone dark grey shaly with thin partings of even lenticular ironstone. Occasional fish debris		3	555	9
	Mudstone dark grey, rather shaly, with little or no mica; lithology of a marine band. A single layer of crowded Dunbarella-like Lamellibranchs, with Cephalopods associated. The rest of the bed contains Gastrioceras, Posidonia, probable Foraminifera and plant debris. The top 3" was collected. The very top contains only a few traces. A 1" silt bed at 556'3 with abundant fossils	1	3	557	-
	Mudstone dark grey, apparently rather barren		6	557	6
	Mudstone dark grey, the lower 3" canelloid, with Ostracods and poorish mussels.		6	558	-
	Sandstone greyish, fine grained, ganisteroid, with a strong greenish discolouration in the lower part. Roots and ironstone nodules, especially in the top 1'11. The base abrupt	4	3	562	3
	Sandstone fine grained, thin and cross bedded, alternating brownish and greenish when weathered.	3	11	566	2
	Sandstone whitish fine grained, very thin bedded at the top, with thinnish silty mudstone bands, bearing large micas. In this part extensive ripple marking forms a 'network' of beds on the outside of the core. There are a few beds up to 2" thick devoid of close rippling. The lowest 4 feet of this bed contains a big strongly ironstained bed. A joint present in this bed does not extend beyond it	17	10	584	-

Z5980293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:

Bassetts Owlerton 1962

6-inch Map Registered No.

SK 39 ~~NE~~ SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			584	-
	Sandstone whitish fine grained, thin and cross bedded, with massive bands. Partings grey, micaceous. Small wedges of steeper cross bedding. Truncations seen. Bedding even. The base is sharply erosional or transgressive, with peaked festoon bedding filling a channel.	8	-	592	-
	Mudstone grey silty rather dark with thin bands and lenses up to 1½ ins thick of paler siltstone. Most of these are lenses, often sharply angular. Most of the rest have undulating surfaces. Sme of them are fractured, and some are reduced to rafts or shapeless masses of silt. There are also less prominent thin lenses of brown irony material. About 15 feet from the top the bands become fewer, even and more regular. The first of a number of scattered bands of sandstone occurs at 614; these are very thin bedded, very fine grained, and their bedding suggests poor ripples. Plant debris, abundant at about 605, becomes much less so downwards. In the lower part there are still some lenticular silts, while the lowest band of sandstone has cross laminated lenses within it. To about	35	-	627	-
	Mudstone rather dark grey silty with scattered lenses of irony material and a very few layers of siltstone. No fossils seen.	2	6	629	6
	Mudstone rather dark grey, hard, rather silty, and especially so in bands; lenses and layers of ironstone. No fossils seen.	9	8	639	2
	Siltstone or hard silty mudstone		10	640	-
	Mudstone rather dark grey, shaly, rather silty, with Goniatites in the top foot. Provisionally identified by Pal. Dept. as Gastrioceras cumbriense band.	2	-	642	-
	Sandstone grey fine grained, mostly thin bedded, but the top has thicker beds, up to massive (8"+). The beds present many small scale unevennesses. Some of these suggest load casts. In the lower part there are rather frequent bands of grey silty mudstone, which increase towards the base. The base is very muddy. Partings not abundantly micaceous.	12	10	654	10
	Mudstone rather dark grey silty micaceous No fossils seen		11	655	9
	Siltstone grey. No fossils reported	1	3	657	-
	Mudstone dark grey micaceous, especially in the lower part, where it is laminated with siltstone. A bed of nodules at 660. Comminuted debris of plants. No convincing evidence of fauna. Laminae flat, even.	14	8	671	8
	Mudstone grey silty and sandy, rooty		4	672	-
	Sandstone white fine to medium grained, mainly rather massive, but with beds about 2-2" thick in the top 5 feet. There are well developed joints; cross bedding was seen at several horizons. Partings have scattered mica. The middle and lower part of this bed was very massive, with cross bedded units over several feet thick. Contd.				

2598293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 [redacted]SW/6

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Continuing item begun at			672	-
	Water was struck in this sandstone; the hardness of the water was again testd and found to be low with much Sodium Bicarbonate. This appears to be an unnamed horizon.	34	7	706	7
	Sandstone fine grained ~~massive~~ thin bedded, the beds an inch or less in thickness, with bands and layers of silty mudstone. Load casts. Bedding otherwise flat or undulating	1	5	708	-
	Mudstone grey silty hard with frequent ~~lx~~ laminae and layers of siltstone. These are all very even or slightly undulating. No fossils recorded	8	-	716	-
	Mudstone grey silty, rather dark, especially in the lower part. The laminae are less prominent than in the last bed. At the top they are represented only by a form of colour banding. In the lower part they return but still in lesser quantity than above 716. The mid prt is rather softer, especially 724-726, where the rock is less silty. No fossils seen	16	-	732	-
	Mudstone dark grey rather shaly with lenses of ironstone in the top 2'0. Only a few nodular marks seen.	8	2	740	2
	Mudstone dark grey rather shaly with rather abundant fossils. This bed had been disturbed by the staff of the Pal. Dept. and no dtailed section was possible. Posidonia and rather well preserved Gastrioceras form a large part of the fauna. This band has been provisionally identified by W.H.C.R. as that of G.Cancellatum	6	-	746	2
	Ganister of very variable thickness, but averaging about 8". As the base of the marine band is attached to one side there is no question of it being wrongly placed above the coal.		8	746	10
	COAL, broken core, but some recovery		1	746	11
	Mudstone hard grey silty varying to siltstone, thr top part carbonaceous and rooty. Roots obscure in the lower part, where there are a few large pyritised plant or root fragments.	5	3	752	2
	Sandstone whitish, with the appearance of medium grain. It falls into two distinct parts. The top 12'8 consists of beds mostly 1-3' thick and strongly cross bedded. The bed surfaces are generally flat, but in detail they present unevennesses. Some of the beds undulate as if they were rippled, but exposed beds are simply uneven. In some mudstone bands nodules of sand, ?flute casts, are seen. The bands of mudstone are scattered throughout; some of them have flame-like structures leading down into ~~the~~ underlying sands. Most of these lean sideways. The lower part is mostly thick bedded and towards the base tends to massive. There are ironstained joints and much broken core. Where the bedding is thin enough to show it, cross bedding is seen to persist. There are occasional layers of very thin bedding. The partings are darkish and micaceous. The lowest massive bed (3'0 thick) shows truncated cross bedding units. Load casts on the base. Aquifer?	33½	4	785	6

ZS98293/2 P185 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW/6

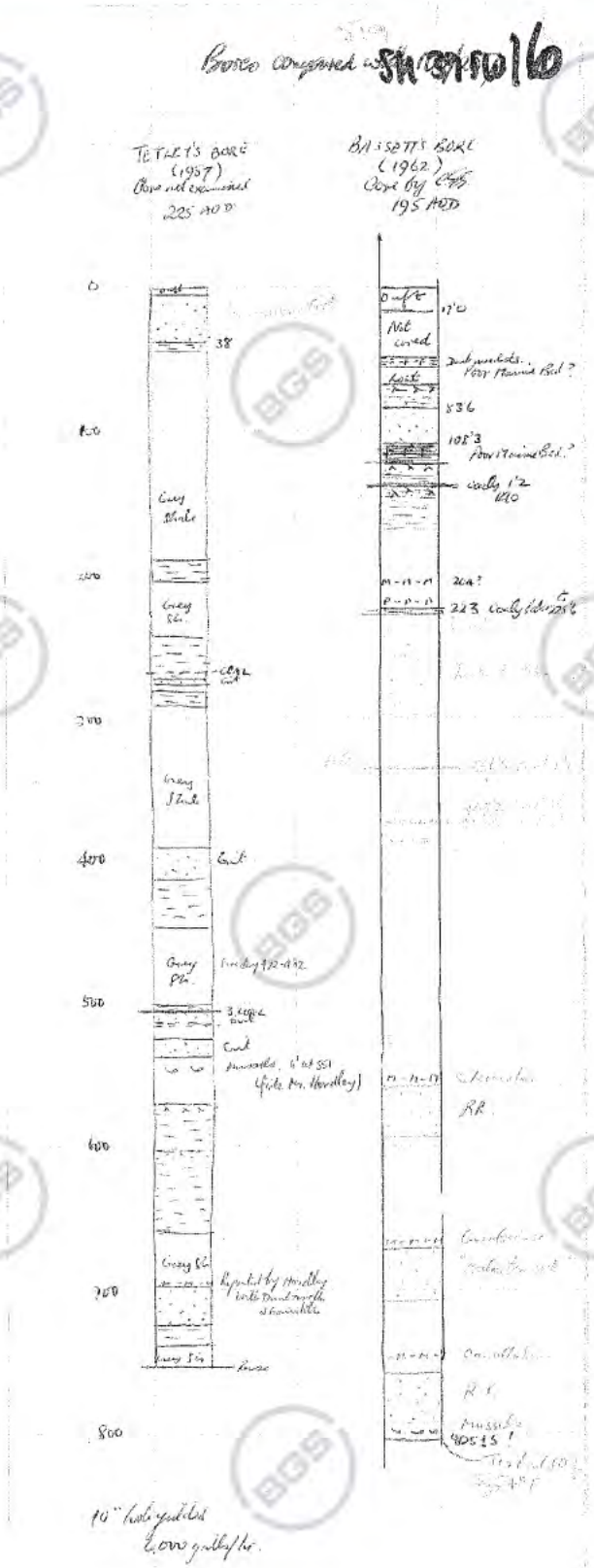
Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Brought forward			785	6
	Mudstone grey to mid grey silty, richly micaceous at the top, but much less so in the lower part. On the whole becomes quite shaly in the lower part. Much of it rather uniform, without laminae. Two well marked beds of mussels 789'8-790 and 791'3-791'6. At the base there are a few large pyritised plant stems.	18	6	804	-
	Hole tested.				
	Analysis of Loxley Edge Water				
	Suspended matter - none				
	Appearance of 2-ft column - clear, faintly yellow				
	Odour - none				
		Parts per million			
	Chlorides in terms of chlorine	52.0			
	Equivalent to sodium chloride	85.7			
	Total hardness	12.0			
	Temporary hardness	12.0			
	Permanent hardness	nil			
	Oxygen absorbed in 4 hours at 80°F	0.24			
	Excess sodium bicarbonate	835			
	pH value	8.7			
	(Obtained from driller by C. G. Godwin)				
	Report from analyst on 16 Jan 63 stated that apart from high alkalinity (large amount of sodium bicarbonate) the water is satisfactory. (vide T. Matthews 6/7/65)				

DS 98293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342



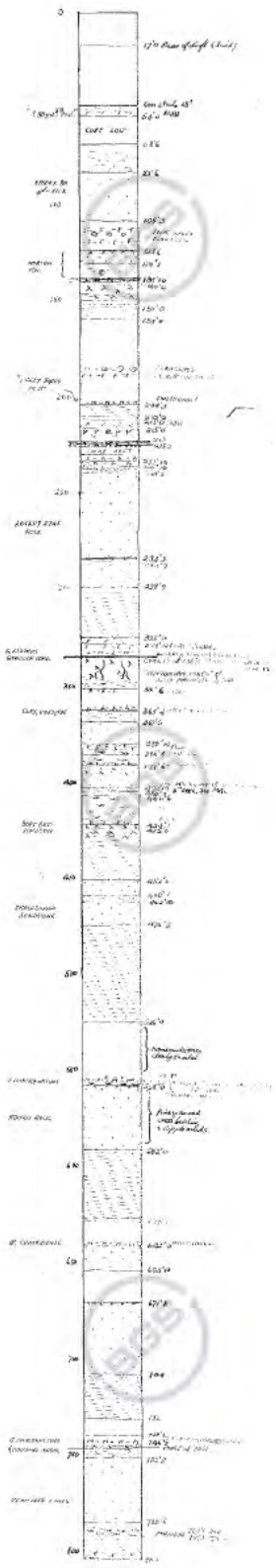
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British Geological Survey

BGS ID: 215944 : BGS Reference: SK39SW6
British National Grid (27700) : 433816,390342

SK39SW 6

BRIGGETTS OBSERVATION No2



Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

YORKSHIRE RIVER AUTHORITY – **Survey of Existing Boreholes**

I.G.S. Ref. No SK.39.SW/6 N.G.R. SK.338.903

Licence No. 5/147

OWNERS NAME ... Geo. Bassett & Son

ADDRESS ... Owlerton ... Sheffield

App No 4869

Authorised Abstraction

10.000 g.p.h.
240.000 g.p.d.
85 44 m.g.a.

S.f.t water Hard. 10 ppm

Depth	Thick^ns	STRATA DETAILS
12'	12'	Soil. Sand & boulders
48'	31'	Grey sandstone
54'	6'	Shale
84'	30'	Stoney blue
108'	24'	Broken grey sandstone
121'-6"	13'-6"	Shale
138'-10"	17'-4"	Thin sandstone. Blue & shale
146'-9"	7'-11"	Coal
234'	87'-3"	Sandstone. Shaley blue
236'	2'	* Mudstone (measured 204' Mudstone 236' Sandstone 238')
271'-8"	37'-8"	Stoney blue
309'-6"	37'-10"	Shaley blue & shale (measured 304')
336'	26'-6"	Hard grit stone. thin coal
337'-1"	1'-1"	Coal

Dia. ....18".....
Depth ....800'.....
Lining 18" to 237'..
Well sinker Matthews.
Date ...1962.....
R.W.L. ..2' flow....
Date .....
Test pumped 8,100 g.p.h. D.W. 6 320'

INSPECTION REPORT	WATER QUALITY	DATE OF INSPECTION:-
Present Owner:-	Date	Other Comments:-
Access (Yes or No)	pH	
½" Probe	Total hard	
3" Instruments	Temp.hard	
Landrover	Alk.	
Access Agreed	Ca	
	Mg	
	Na	
	K	Sketch Plan of Location
Water Level at time of insp.	HCO_3	
..... metres below	SO_4	
Date	Cl	
Datum above O.D.	NO_3	
R.W.L. above O.D.	Fe	
Date		

British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

NGRC
BOREHOLE RECORDS
ADJUSTMENT FORM

British Geological Survey

QUARTER SHEET SK 39 SW

BH REGISTRATION NUMBER 161-166

~~NUMBER NOT USED~~ / ~~! LOG MISSING !~~

(Delete as appropriate)

Records entered and held in Wallingford

(NGRC FORM 2)

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

RECORD OF WELL (SHAFT OR BORE)

(attach copy of analysis if available)

DO NOT SEND COPY TO LEEDS

For Survey use only

SK39 13 N.10548

100/211

(1)

EXACT SITE OF WELL

At Messrs. GEO. BASSETTS, OWLERTON, SHEFFIELD
AT the back of the Confectionary Works, close to the S. bank of the river Don. SK 3381/9034

Town or Village Owlerton, Sheffield

County Sheffield C.B. Six-inch quarter sheet Yorks. 288 SE; SK 39 SW

For Messrs. Geo. Bassetts, Confectioners — State whether owner, tenant, builder, contractor, consultant, etc. :— Owner

Address (if different from above) As above

Level of ground surface above sea-level (O.D.) About +195 ft. — If well-top is not at ground level, state how far ... above ; below ; ft.

SHAFT ~ ft. ; diameter ft. ; Details of headings

BORE 804 ft. ; diameter of bore : at top ins. ; at bottom ins.

Details of permanent lining tubes

Water struck at depths of ft. below well-top.

TEST CONDITIONS

Rest-level of water ft. above / below well-top. Suction at ft. Yield on hours' / days' test pumping at galls. per with depression to ft. below well-top.

Recovery to rest-level in mins. / hours Capacity of pump g.p.h. Date of measurements

NORMAL CONDITIONS

Description of permanent pumping equipment :

Make and/or type Motive power

Capacity gallons per hour. Suction at ft.

Amount pumped galls. per day. Estimated consumption galls. per week.

Well made by Messrs. Matthews Date of well 1962

Information from Leeds Office field staff

ADDITIONAL NOTES

This hole was cored from 48 feet to base with some core loss above 70 feet. The core diameter was about 17 ins. In the upper part of the hole samples were taken of the sandstones passed through; from the base of the Crawshaw sandstone specimens were also taken at 10 foot intervals through the mudstones. The core was subsequently sampled for petrological study by West German oil geologists. YPF 8517 - 8766 were collected from the cores of this hole. The cores were examined by C.G.Godwin. The hole was also visited by Mr W.E. Graham of the Palaeontological Dept, to obtain fossils from the two lowest Marine bands in the section.

1080 feet E 7°S from Junction of A 616 and A 61
1½ miles NNW of Sheffield Centre.

Sited by ⊙ on 6" Yorks. 288 SE/w. 13.2.64.

LOG OF STRATA OVERLEAF.

GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.		Date Received 20.1.64 from Leeds.	1" O.S. Map No.	Site marked on 1" Map ⊙	(use symbol) on 6" Map ⊙

(*3328/3) W.t.44731/0424 12,000 3/48 A.&E.W.Ltd. Gp.685

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

100 SK 39/13
211

(For Survey use only) Geological Classification	NATURE OF STRATA If measurements start below ground surface, state how far ...	Thickness Feet ...	Thickness Inches ...	Depth Feet	Depth Inches
	OPEN hole-Drillers Log only.				
	Made ground	3	3	3	3
	Loamy clay and boulders	3	9	7	-
	Loamy clay, river silt, and boulders	10	-	17	-
	Siltstone dark grey; bands of shale	31	6	48	-
	Core examined by C.G.G.				
	Mudstone dark grey rather silty with Fucoids occasional Guilielmites, very scattered fish fragments and indet organic debris. Plant fragments in the lower part. Some of these suggest roots. The top of the core was very micaceous. About 3'0 recovered.				
	Mudstone dark grey silty to very silty, hard, with very abundant tubular nodules of a mineral similar to Marcasite. Most of these lie flat or at a gentle angle to the bedding. Fish fragments not infrequent. About 2'0 rec.	6	-	54	-
	Loss of core; Stony bind of Driller	14	6	68	6
	Silty beds, grey, with a greenish cast at intervals above 75'0; the top is a sandy and silty mudstone with probable roots, and many thin beds of greyer micaceous silty mudstone. These continue down, appearing as dark partings about 70'0. There is a rather rapid passage into beds dominated by silty sandstones with beds varying from thin (1") to shaly (under a sixteenth). The darker partings are very micaceous. Prominent vertical structures up to 2" long are present, filled with disordered sand or mud, and sometimes mud within sand. Frequent load casts. Towards the base the vertical structures becomes less marked and are replaced by tubules of sand lying flat on the bedding. In the lowest 2'6 the only survivors are the load casts at sand-mud interfaces. A lenticular mass of sandstone occurs about 1" from the base. A general impression of cyclic bedding was given by this stretch of core.	15	-	83	6
	Sandstone grey white fine grained, perhaps varying to medium grained at some horizons. Siliceous; in beds up to 6" thick. Core all broken probably as the result of extensive jointing. A few spots of a white mineral at the top. Occasional beds of dark silty mudstone with odd plant fragments. In the lower part there are some inclusions of mudstone and ironstone. Beds, when seen, uneven to undulating, but apparently not rippled. In this bed also there are signs of cyclic bedding, especially in laminae at the top of mudstone beds. The upper bands also contain tubular structures. Planar cross bedding in truncated units up to 4" thick Ca. 95'0. Further down there are more thinner ones. Poor short crested ripples occur at about 103'0. Further white mineral at the base, reminiscent of the ?Kaolin at Barnsley 'N'.	24	9	108	3
	Mudstone dark grey to black at base, silty at top. Fish scales and plant fragments from 109'0; Planolites, fucoids and Guilielmites Ca. 112'0. This fauna persists to the base; neither Lingula nor a non-marine fauna was found despite intensive search	15	3	123	6
	Sandstone fine grained brownish ganisteroid rooty	1	3	124	9

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British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

(2)

Name of Shaft or Bore given by Geological Survey:

Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SEU

100 SK 39/13 211

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Brought forward			124	9
	Sandstone fine grained grey micaceous, massive to 129'2. A rooty mudstone band in the upper part. From 129'2 there are dark micaceous pantings with plant debris, which show a good deal of cross bedding. In this part the beds are rather thin and nearly even.	5	4	130	1
	Mudstone mid grey silty with laminae of siltstone. Shiny marks are either roots or an elongate form of Planolites. The laminae die out at 132'6 but the silt persists almost to the base, where the rock becomes rather darker and softer, with plant debris. No part of this bed has the lithology of a marine band. Recovery 80%	8	9	138	10
	Alternation of listric coaly mudstones, with rather variable beds of coal. This is essentially a dark seatearth with coaly beds.	1	2	140	-
	Siltstone grey and greenish grey (pale) ganisterbid, rooty, with ironstone nodules. Massive except for wisps of bedding. Large Stigmaria at the top. Ironstone almost to base, Passing into	6	9	146	9
	Mudstone grey to mid grey silty micaceous with rooots and layers of ironstone nodules. Hard and close to siltstone at the base. Some irony masses.	2	6	149	3
	Siltstone grey, with impregnated irony layers at intervals. The outside of the core weathers brown. Top rooty. Thin bedded at base and also ~~At~~ below 150. At this horizon there are quite a lot of darker laminae and partings. No fossils seen. Passing into	3	9	153	-
	Mudstone hard grey silty micaceous. No fossils seen. Passing into	6	-	159	-
	Mudstone mid grey micaceous, softer, no fossils seen. In the lowest part there are some very obscure impressions. Passing to	11	6	170	-
	Mudstone mid grey very micaceous, softer again No fossils seen except p ant debris at the base.	15	~~7~~	185	-
	Mudstone mid grey to rather dark, less micaceous, Planolites at top. Fish and round marks at about 188. Fauna very sparse. Plant fragments. A 2" band of ironstone at 192	9	-	194	-
	Mudstone rather dark with quite a lot of vague impressions and pimples. Lenses of ir ironstone at intervals as far as 198. Well slickensided joints in the body of the rock.	8	-	202	-
	Mudstone dark grey more shaly, with the lithology of a marine band. Yellow spots and pits. One or two plant fragments.	2	-	204	-
	Mudstone dark grey as above, but with one or two possible very ill preserved marine fossils. Some suggest Posidonia.		3	204	3
	Mudstone dark grey silty, more micaceous down, apparently almost barren. Bands of sideritic ironstone and little nodules of pyrite. Some of the latter were described in the field as 'curly'.	5	9	210	-
	Mudstone dark grey, the bedding planes				

Contd.

2598293/2 P585 4m 11/61 XL

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British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

(4)

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlertonx 1962

6-inch Map Registered No. SK 39 100/21 SK39/13

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			210	-
	(Contd) richly covered with minute pimples and litle nodules of pyrite about the size of Ostracods. Macro-fossils seem to be restricted to plant fragments. In the lower part tubules appear.	1	-	211	-
	Mudstone dark grey with the lithology of a marine band. Vague impressions. A lenticular ironstone band with good fish frgments. At the base there are further nodules.	1	6	212	6
	Mudstone dark grey more micaceous. Fish fragments reported. Ironstone lenses. A few nodules at the top. Obscure fragments at 213'6.	2	6	215	-
	Mudstone dark grey silty micaceous, becoming less dark to just grey down. From 220 there are abundant plant stems. Aboove this level they are ill preserved and fewer.	8	-	223	-
	Mudstone hard to silty, lisricised, coaly, with uneven parings and bands of COAL. Lenses of ironstone are also present. This bed is essentially a seatearth with large coal streaks.	2	3	225	3
	Core lost; could be Coal or seatearth	5	3	230	8
	Mudstone dark brown rooty, less dark down, with carbonaceous layers. Lenses of coaly material. Listric surfaces.	2	2	232	10
	Mudstone brownish grey rooty with ironstone nodules.		8	233	6
	Core broken; includes at least 3" dark grey rooty mudstone. This appears to conclude				
	'Coal in thin partings with shale' of the drillers log. (A single coaly lens)		4	233	10
	Mudstone rather dark grey silty rooty with rather large ironstone nodules		11	234	9
	Alternation of silty mudstone with silt-filled structures either resulting from roots or from burrows, and fine to silty sandstone. The latter is often disturbed, but in places it can be seen to be shaly bedded.		10	235	7
	Sandstone very fine grained to silty, off white, essentially a single bed, but with numerous wisps of grey material and one very uneven patting near the base. The structuer seems to be disturbed, possibly by roots.		11	236	6
	Rapid striped alternation of fine grained sandstones and silty mudstones, with many micace us partings. Bedding flat and fairly smooth for the most part, but slight unevenness is quite common. Some beds are fractured. A few were very disturbed, with sand nodules; some suggest gentle rippling.	3	6	240	-
	Mudstone grey silty, no fossils seen.		2	240	2
	Sandstone white medium to coarse grained, much of it massive to very massive (beds over 2 feet). Strata 253-256 show much thinner bedding. The uppper part of this band, from 253 to 254'2 is full of coaly scars and partings, some of which show numerous crosss fractures and disturbances. This is especially true 253'11-254'2. Coaly scars also seen about 248, and at the base. (contd.)				

JS98293/2 P585 4m 11/61 XL

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British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW 100/211 SK39/13

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Continuing item begun at			240	2
	Partings are usually grey micaceous. A breccio-conglomerate of masses of ironstone occurs 2-4" from the base. Smudge like markings about 2 feet from the base suggest the presence of pebbles of sandstone. At about 256 there is an ironstained mass. There are relatively few joints; despite this, water overflowed at 700 galls per hour from this sandstone. The water at this level was of ~~XXXXX~~ low hardness, but with a Sodium bicarbonate content of 835 ppm.	44	3	284	3
	Mudstone grey silty probably rooty, disturbed. Sand increases downwards. All the bedding is interrupted by possible roots in vertical structures.		6	284	9
	Sandstone light grey silty with abundant carbonaceous debris forming partings and wisps. Beds of sandstone often 2" or more thick are separated by dark carbonaceous layers where the debris is more concentrated. The overall appearance suggests rather large scale lens bedding (Flaser?). On the whole the upper beds are more disturbed. A more massive bed interrupts this sequence 288'6-291'8. Mica not abundant on partings, but elongate structures seen, cf. roots. At the base borings up to 1" deep penetrate the sandy beds, and there are occasional thin lenses of ironstone. 'Cut and fill' by mudstone 9" from the base.	14	-	298	9
	Mudstone hard grey silty with laminae and bands of material near the sand-silt junction. The upper ones of these bored. They become thinner down. Lenses and bands of ironstone. Slight unevenness is common, but most of the beds are flat. A few cases of truncated cross bedding seen. Partings micaceous.	6	3	305	-
	Mudstone mid grey silty with laminae towards the top (few); becoming rather softer and darker down. Passing into	5	-	310	-
	Mudstone rather dark grey silty with occasional large nodules of ironstone. A few scattered plant fragments. Passing into	15	-	325	-
	Mudstone dark grey rather silty micaceous; no fossils seen except plant stems at 326'1				
	Large ironstone lenses in the lower part. A 2" band at the base.	3	10	328	10
	Mudstone dark grey shaly with much organic debris. At the top there are Fish, nodular structures, and possible Foraminifera. The middle part is less shaly, with scattered fossils in the lower part. Then it becomes more shaly again, with abundant plant debris below ~~XXXX~~.	2	2	331	-
	Mudstone dark grey, silty from 333, with a great deal of carbonaceous debris. Fossils, all of them poor, are reported to include Lingula, fish, Orbiculoidea, Posidoniella and Anthracoceras. Although marine fossils were not seen below 334, this bed may well be marine to the base.	4	4	335	4
	COAL, 1'0 recovered	1	1	336	5
	Mudstone dark grey rooty with angular boundaries	-	1	336	6

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(4)

Name of Shaft or Bore given by Geological Survey:

Bassetts Owlerton 1962

6-inch Map Registered No. 100 SK39/13 211
SK 39 SW

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			336	6
	Ganister, thickness 4"-7"; average 6"; spec.		6	337	-
	Mudstone grey brown with abundant dark roots		6	337	6
	Mudstone grey brown rather harder, with dark roots. Frequent masses of sphaero-sideritic iron. Thin coaly partings at some horizons.	1	7	339	1
	Mudstone greenish grey, the greenish colour concentrated in vertical patches. This bed is penetrated by twisted and branched vertical structures (cf. 'Neptunian dykes') of whitish grey siltstone. The largest of these seen was up to 4 or 5" broad. A branch which appears to end upwards may in fact simply leave the core. In the lower part, where some brownish tints are mixed with the grey greens, and in the lowest 6", which is greenish grey and rather silty, dykes continue at least 1½ ins broad. Roots continue throughout this bed, both in the background and also in the 'dykes'.	3	6	342	7
	Mudstone, mottled in strong greenish grey and rather dark grey brown. Except for the beds 344'2-345'2 the greenish grey usually predominates. As far as 344'2 there are 'dykes' continuing from the beds above. In the top 11" these are greyish; below this they bear an orange ferruginous stain. Only 2" from the top the main 'dyke' seen splits into two, each of them ¼-½" wide, which show unrelated or definitely opposed twists. They rejoin at the top of the iromy beds and continue into them for 5" as a single 'dyke' about 1" wide. Then it abruptly dwindles to a contorted ¼" 'dykelet' and in 2-3" dies out altogether. In the irony beds there are scattered skeins of similar material not definitely to it, but close by. There are also quite a lot of ironstone nodules, perhaps related, to roots, which persist beyond the end of the 'dykes' The lowest 2'0 is silty; roots not seen. Abrupt change at the base.	6	10	349	5
	Mudstone dark grey rather silty micaceous, with frequent plant debris; Guilielmites after roots at the top. Some of the debris is brown and listricised.	2	1	351	6
	Mudstone hard dark grey with a little very fine mica, and a few ironstone bands or lenses, especially in the top 3'0 and the bottom 3'0. Fish occur 351'6-356'9, but they are not common below 356. Pimples at the top increase down to a bed of small pyritic nodules 354'8½-355'0. There are a obscure impression and lumps, possibly inorganic in this part of the core. At 355'9 there are a few pyritic plant fragments. No fossils recorded from the lowest 1'6	6	9	358	3
	Mudstone dark grey to very dark grey, micaceous at top, becoming hard below this. The only fossils seen were in the softer lowest 1'3. Pimples and Lingula in the basal inch. Rest indet.?	4	11	363	2

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(7)

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW 100/211

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			363	2
	Mudstone dark grey micaceous		2	363	4
	Sandy strata, grey fine grained, with beds often under 1" thick, but with a single bed 5" thick at the top which is ganisteroid. The bedding is often disturbed and uneven, especially towards the top. Masses of pyritic iron occur 1'6-3'0 from the top. There are also several thin dark rooty mudstone bands in the beds 3'4-4'0 from the top.	6	1	369	5
	Sandstone white fine grained massive, with a pale greenish lens of silty rooty mudstone 0-6" thick at 372'6 Above this there are ironstone nodules and a few dark bands, disturbed as by roots. The topmost part suggests a poor silica rock	5	7	375	-
	Sandstone whitish grey becoming grey down. The top consists of only a few beds and much of it is stained brownish. A layer of ironstone lenses occurs at 375'6½; the undulation of the floor of this bed may well be due to diversion of beds by the ironstone itself. The lower part is rather thin and was described in the field as 'wispy bedded.' Becoming increasingly muddy towards the base, where passage.	5	10	380	10
	Mudstone grey silty very micaceous with much ironstone in lenses. The top one of these had a coaly layer on its upper side. Darker from 381'9. Fish debris at base and possibly in middle	3	11	384	9
	Mudstone dark grey silty very micaceous, with scattered fish debris and plant fragments.	1	3	386	-
	Mudstone dark grey silty, with mussels not seen on the outside of the core		8	386	8
	Mudstone dark grey, softer, less micaceous, with mussels which appear as scattered individuals on the outside of the core; they are concentrated in an ironstone lens.	1	2	387	10
	Mudstone dark greyx to black, softer, less micaceous; mussels not seen on outside of core.	1	2	389	-
	Mudstone dark grey to black with abundant mussels most of which lie flat in layers, those occurring between layers and the topmost layers themselves, are often disturbed.	1	2	390	2
	Mudstone dark grey to black, shaly at base, with much Lingula in a half inch band,		3½	390	5½
	Mudstone less dark, very micaceous; no fossils seen		4	390	9½
	Loss of core; either here or at 384'9		8½	391	6
	Sandstone greyish white, fine grained, beds at top very thick. In the strata 96'4 -98'2 they are 2-5"; below this they are 1½ ins or less. Dark micaceous partings. Above 397'6 all the beds are disturbed, with roots in the partings and ironstone nodules in the body of the rock. Flame structures at 397'5. At 399'1 the beds have undulating sections. Cross-bedding seen at 401.	11	4	402	10
	Mudstone grey dark down silty at the top, with two prominent ironstone bands, each about 1½ ins. Contd.				

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(8)

Name of Shaft or Bore given by Geological Survey:

Bassetts Owlerton 1962

6-inch Map Registered No. 100/SK39/13 SK 39 SE 211

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Continuing item begun at			402	10
	The lower one of these has abundant mussels which also occur in the mudstones below it; above this band there is abundant plant debris. The lowest 3" of this item were taken to Leeds and preserved intact as an example of the C.Haberpharnensis fauna.	1	5	404	3
	Mudstone hard grey silty with carbonaceous marks, either roots or plant debris		2	404	5
	Siltstone grey with plant debris, softer in the lowest 4"	2	1	406	6
	Mudstone dark grey with mussels		2	406	8
	Mudstone grey silty with lenses of siltstone in the lower part. No fossils seen	2	1	408	9
	Mudstone dark grey silty with large plant stems at to p, including Calamites sp. Mica abundant. Mussels reappear 10" from top	1	5	410	2
	Mudstone dark probably rather silty, containing major mussel bed. Mussels seen in layers on the outside of the core. Many good Carbonicola seen	6	-	416	2
	Mudstone dark grey shaly with poor mussels, fish and Ostracods		1½	416	3½
	Siltstone grey compact, passing down into silty mudstone in the lowest foot CA.	4	2½	420	6
	Mudstone rather dark grey silty micaceous, no fossils seen except poor mussels and fish. To about	3	-	423	6
	Mudstone dark grey shaly partly micaceous, mostly smooth. Abundant fish at top become fewer down. Inclined polished fracture planes. Core recovered about 6"; this is the probable horizon of the local core loss. Specimens marked 424 are at a level near the top.				
	(COAL said to come here; not recovered)		7	424	1
	Mudstone brownish grey rooty with mica and listric surfaces. About 6" recovered	1	4	425	5
	Mudstone grey, brownish at top, greenish down, silty rooty, with ironstone nodules from 425'9. Passes into pale green grey siltstone at 426'7	3	7	429	-
	Mudstone grey silty with siltstone bands. Ill preserved roots and ironstone nodules at the top. Greenish as far as 432, and slightly so for a short distance below this. Below 440 there are a few thin bands of sandstone, one of them near 446 showing truncated cross bedding. Below this the sandstone occurs in more frequent bands. Almost all of this bed has flat and fairly even bedding; below 432 there is a change of colour or lithology at intervals usually of 3" or less. A large mass of iron diverts the beds at 433'2. At 438'6 there is a ferruginous lens with curved bedxx bands forming a type of 'lens bedding'. Another exceptional bed Ca, 441 shows a complex cross lamination in light grey and grey, with some disturbances and small scale unevenness of beds. In the lowest part of this item the bedding of the sandstones becomes much more complex. Some of them show cross bedding, flow casts on underlying silty mudstones, and uneven laminae. Here and there ripples are suggested but no good ones were seen. Contd.				

DS98293/2 P3485 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
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(9)

Name of Shaft or Bore given by Geological Survey:

Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW 100 SK39/13

21

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Continuing item begun at			429	-
	In this part the mudstones are all laminated with silt and unevenness and diversion of these laminae becomes evident near the flow/load casts. Finally in the lowest 1'7 sandstone is predominant and the silty laminated muds form bands or major inclusions within it. Thin complex cross bedding is shown by the sands here	23	-	452	-
	Sandstone fine grained whitish, massive with wisps except for a group of dark beds in the top 6". The wisps are grey and micaceous. A joint passes through the core for 3ft; pyrite occurs on its surface. The base of this bed is uneven but there is no sign of load casts.	8	1	460	1
	Mudstone grey silty laminated, the laminae almost all very even, but a few at the base slightly curved. There are slight disturbances near a thin layer of sand at 462'5½. No fossils seen	2	9	462	10
	Sandstone white fine grained with an external massive appearance. Inspection shows, however, that cross bedding units up to 1'0 in thickness, several of which are readily seen in the lowest 4'0 occur at intervals throughout to within at least 2'0 of the top. Clusters of close thin bedding follow the cross bedding direction and are truncated at some horizons. The partings are grey to mid grey and micaceous. From 3'7 to 5'0 below there is considerable ironstain. The base is angular and shows loadcasts.	12	5	475	3
	Mudstone grey silty with siltstone and a few sandstone bands, much of it in the lower 30 feet closely laminated with silt. The top however is not laminated closely; it contains some highly disturbed beds of sandy silt in the top 5'0 and quite a lot of plant debris in the top 10'0. A sandstone band 6'0-8'0 from the top shows lenses of rib and furrow in the lower half. There is a suggestion of poor ripples. Plant debris recurs in the lower laminated part, especially on certain bedding planes. At the base the laminae are even; higher up they vary from even to lenticular. The lowest thin sandstone band occurs 1'6-2'2 from the base, and shows very thin curly bedding, but not ripples	44	3	517	6
	Mudstone rather dark grey silty micaceous	1	10	519	4
	Mudstone grey silty micaceous with a few bands and laminae of siltstone, the laminae fairly even. Plant stems occur. Becoms a little darker from 522'10; otherwise much paler than the bed above it	6	3	525	7
	Mudstone dark grey rather silty micaceous, with plant debris		5	526	-
	Mudstone dark grey shaly with lenticular ironstone bands, rather silty at top. Core partly weathered, examined after heavy rain. No fossils seen except one or two obscure marks.	3	-	529	-

DS98293/2 P685 4m 11/61 XL

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(19)

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 100 SK39/13 211

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			529	-
	Mudstone dark grey with a paler close banding at the top, but mostly unbanded. There is very scattered plant debris and a few marks at about 530'6 suggestive of poor Planolites.				
	Lenses of ironstone.	2	6	531	6
	Mudstone harder, rather dark grey, with lenticular ironstone bands. Rather silty with more silty bands, and banded in greys in the lower part. No fossils recorded	3	-	534	6
	Alternations of closely banded mudstones with rather hard and rather dark unbanded mudstones. A scattering of sharply angular lenses and bands of ironstone. Some of these do occur in more than one bed, but the closely banded structure seen in analogous ironstones at the Huddersfield (Royd's Mill) was not recorded here. Plant debris occasionally seen.	15	6	550	-
	Mudstone hard rather dark grey, mostly rather silty, resisting weathering. The top softer. A mark either of plant or fucoid at the top; obscure indeterminate debris near the base To about	3	-	553	-
	Core broken, mudstones	1	2	554	2
	Mudstone hard dark grey with lenses of pyritic iron ore. No fossils seen		7	554	9
	Mudstone dark grey shaly with fish debris at the top and perhaps near the base. This bed is banded. No other change.		6	555	3
	Mudstone dark grey heavily listricised, with nodules of uncertain origin.		3	555	6
	Mudstone dark grey shaly with thin patings of even, lenticular ironstone. Occasional fish debris		3	555	9
	Mudstone dark grey, rather shaly, with little or no mica; lithology of a marine band. A single layer of crowded Dunbarella-like Lamellibranchs, with Cephalopods associated. The rest of the bed contains Gastrioceras, Posidonia, probable Foraminifera and plant debris. The top 3" was collected. The very top contains only a few traces. A 1" silt bed at 556'3 with abundant fossils	1	3	557	-
	Mudstone dark grey, apparently rather barren		6	557	6
	Mudstone dark grey, the lower 3" canelloid, with Ostracods and poorish mussels.		6	558	-
	Sandstone greyish, fine grained, ganisteroid, with a strong greenish discolouration in the lower part. Roots and ironstone nodules, especially in the top 1'11. The base abrupt	4	3	562	3
	Sandstone fine grained, thin and cross-bedded, alternating brownish and greenish when weathered.	3	11	566	2
	Sandstone whitish fine grained, very thin bedded at the top, with thinnish silty mudstone bands, bearing large micas. In this part extensive ripple marking forms a 'network' of beds on the outside of the core. There are a few beds up to 2" thick devoid of close rippling. The lowest 4 feet of this bed contains a big strongly ironstained bed. A joint present in this bed does not extend beyond it	17	10	584	-

DS9823/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

(11)

Name of Shaft or Bore given by Geological Survey:

Bassetts Overton 1962

6-inch Map Registered No. SK 39 SE 100/211 SK39/13

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Brought forward			584	-
	Sandstone whitish fine grained, thin and cross bedded, with massive bands. Partings grey, micaceous. Small wedges of steeper cross bedding. Truncations seen. Bedding even. The base is sharply erosional or transgressive, with peaked festoon bedding filling a channel.	8	-	592	-
	Mudstone grey silty rather dark with thin bands and lenses up to 1½ ins thick of paler siltstone. Most of these are lenses, often sharply angular. Most of the rest have undulating surfaces. Sme of them are fractured, and some are reduced to rafts or shapeless masses of silt. There are also less prominent thin lenses of brown irony material. About 15 feet from the top the bands become fewer, even and more regular. The first of a number of scattered bands of sandstone occurs at 614; these are very thin bedded, very fine grained, and their bedding suggests poor ripples. Plant debris, abundant at about 605, becomes much less so downwards. In the lower part there are still some lenticular silts, while the lowest band of sandstone has cross laminated lenses within it. To about	35	-	627	-
	Mudstone rather dark grey silty with scattered lenses of irony material and a very few layers of siltstone. No fossils seen.	2	6	629	6
	Mudstone rather dark grey, hard, rather silty, and especially so in bands; lenses and layers of ironstone. No fossils seen.	9	8	639	2
	Siltstone or hard silty mudstone		10	640	-
	Mudstone rather dark grey, shaly, rather silty, with Goniatites in the top foot. Provisionally identified by Pal. Dept. as GAstrioceras cumbriense band.	2	-	642	-
	Sandstone grey fine grained, mostly thin bedded, but the top has thicker beds, up to massive (8"+). The beds present many small scale unevennesses. Some of these suggest load casts. In the lower part there are rather frequent bands of grey silty mudstone, which increase towards the base. The base is very muddy. Partings not abundantly micaceous.	12	10	654	10
	Mudstone rather dark grey silty micaceous No fossils seen		11	655	9
	Siltstone grey. No fossils reported	1	3	657	-
	Mudstone dark grey micaceous, especially in the lower part, where it is laminated with siltstone. A bed of nodules at 660. Comminuted debris of plants. No convincing evidence of fauna. Laminae flat, even.	14	8	671	8
	Mudstone grey silty and sandy, rooty		4	672	-
	Sandstone white fine to medium grained, mainly rather massive, but with beds about 2-2" thick in the top 5 feet. There are well developed joints; cross bedding was seen at several horizons. Partings have scattered mica. The middle and lower part of this bed was very massive, with cross bedded units over several feet thick.				

Contd.

2598293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

(17)

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SW 100 SK 39/13 211

Geological Classification	Description of Strata	Thickness Ft	Thickness in.	Depth Ft	Depth in.
	Continuing item begun at			672	-
	Water was struck in this sandstone; the hardness of the water was again testd and found to be low with much Sodium Bicarbonate.				
	This appears to be an unnamed horizon.	34	7	706	7
	Sandstone fine grained ~~xxxxx~~ thin bedded, the beds an inch or less in thickness, with bands and layers of silty mudstone. Load casts. Bedding otherwise flat or undulating	1	5	708	-
	Mudstone grey silty hard with frequent ~~lx~~ laminae and layers of siltstone. These are all very even or slightly undulating. No fossils recorded	8	-	716	-
	Mudstone grey silty, rather dark, especially in the lower part. The laminae are less prominent than in the last bed. At the top they are represented only by a form of colour banding. In the lower part they return but still in lesser quantity then above 716. The mid prt is rather softer, especially 724-726, where the rock is less silty. No fossils seen	16	-	732	-
	Mudstone dark grey rather shaly with lenses of ironstone in the top 2'0. Only a few nodular marks seen.	8	2	740	2
	Mudstone dark grey rather shaly with rather abundant fossils. This bed had been disturbed by the staff of the Pal. Dept. and no dtailed section was possible. Posidonia and rather well preserved Gastrioceras form a large part of the fauna. This band has been provisionally identified by W.H.C.R. as that of G.Cancellatum	6	-	746	2
	Ganister of very variable thickness, but averaging about 8". As the base of the marine band is attached to one side there is no question of it being wrongly placed above the coal.		8	746	10
	COAL, broken core, but some recovery		1	746	11
	Mudstone hard grey silty varying to siltstone, thr top part carbonaceous and rooty. Roots obscure in the lower part, where there are a few large pyritised plant or root fragments.	5	3	752	2
	Sandstone whitish, with the appearance of medium grain. It falls into two distinct parts. The top 12'8 consists of beds mostly 1-3' thick and strongly cross bedded. The bed surfaces are generally flat, but in detail they present unevennesses. Some of the beds undulate as if they were rippled, but exposed beds are simply uneven. In some mudstone bands nodules of sand, ?flute casts, are seen. The bands of mudstone are scattered throughout; some of them have flame-like structures leading down into ~~xxx~~ underlying sands. Most of these lean sideways. The lower part is mostly thick bedded and towards the base tends to massive. There are ironstained joints and much broken core. Where the bedding is thin enough to show it, cross bedding is seen to persist. There are occasional layers of very thin bedding. The partings are darkish and micaceous. The lowest massive bed (3'0 thick) shows truncated cross bedding units. Load casts on the base. Aquifer?	33½	4	785	6

IS98293/2 P385 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 216102 : BGS Reference: SK39SW164
British National Grid (27700) : 433810,390340

(13)

Name of Shaft or Bore given by Geological Survey:
Bassetts Owlerton 1962

6-inch Map Registered No. SK 39 SE 100 SK39/13

211

Geological Classification	Description of Strata	Thickness Ft	Thickness In.	Depth Ft	Depth In.
	Brought forward			785	6
	Mudstone grey to mid grey silty, richly micaceous at the top, but much less so in the lower part. On the whole becomes quite shaly in the lower part. Much of it rather uniform, without laminae. Two well marked beds of mussels 789'8-790 and 791'3-791'6. At the base there are a few large pyritised plant stems.	18	6	804	-
	Hole tested.				

2598293/2 P585 4m 11/61 XL

Contact BGS: ngdc@bgs.ac.uk

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Site
Proposed Water Tanke Areas, Mondelez UK, Sheffield, S6 1PD

Borehole Number
BH1

Boring Method
Diamond coring of concrete extended by dynamic windowless sampling extended by rotary water flush Geobore-S coring

Casing Diameter
200 (C) to 0.72m
116 (WS) to 4.00m
102(RC) to 15.00m

Ground Level (mOD)

Client
Richmond Fire Engineers Limited

Job Number
GA1721.24

Location

Dates
18/01/2024-19/01/2024

Project Contractor
GA Site Investigation Limited

Sheet
1/2

Depth (m)	TCR (%)	SCR (%)	RQD (%)	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.72					C1		(0.72)	REINFORCED CONCRETE on polythene DPM - 10mm dia re-bar @ 0.05 and 0.09m		
					6,4/2,2,3,4		0.72 (0.18)	Beige crushed limestone sub-base: (MADE GROUND)		
0.75-0.85					ES1		0.90			
0.90-1.00					ES2			Soft dark grey sandy clayey gravel. Gravel is fine to coarse of angular brick and stone of mixed lithology: (MADE GROUND)		
1.00-1.45					SPT N=11		(1.20)			
1.50-1.60					D1					
					2,1/2,1,2,1		2.10			
2.00-2.45					SPT N=6			Loose brown sandy clayey gravel. Gravel is of fine to coarse angular stone and brick fragments: (MADE GROUND)		
2.20-2.30					D2		(0.60)			
							2.70	Medium dense brown sand and gravel. Gravel is of fine to cobble sized sandstone and brick: (MADE GROUND)		
					6,5/10,10,9,12					
3.00-3.45					SPT N=41		(1.30)			
					6,5/12,10,6,4					
3.50-3.95					SPT N=32					
3.50-3.95					D4		4.00	Dark grey silt, sand and gravel. Gravel is of extremely weak siltstone: POSSIBLE MADE GROUND) ...rotary Geobore-S coring commenced at 4.0m ... poor sample recovery from 4.0m to 6.0m with descriptions based on flush returns		
3.80-2.90					D3					
4.50	0	0	0	NR			(2.00)			
6.00	0	0	0	NR			6.00	Dark grey locally black weathered fractured CARNONIFEROUS SILTSTONE recovered as fine to coarse tabular to angular gravel of siltstone in very closely bedded and highly fractured: (Pennine Lower Coal Measures)		
							(2.00)			
7.50										

Remarks
Rotary Geobore-S coring commenced at 4.0m

Scale (approx)
1:40

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Figure No.
GA1721.24.BH1

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76 Thames Avenue
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TS14 8AR
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Site
Proposed Water Tanke Areas, Mondelez UK, Sheffield, S6 1PD

Borehole Number
BH1

Boring Method
Diamond coring of concrete extended by dynamic windowless sampling extended by rotary water flush Geobore-S coring

Casing Diameter
200 (C) to 0.72m
116 (WS) to 4.00m
102(RC) to 15.00m

Ground Level (mOD)

Client
Richmond Fire Engineers Limited

Job Number
GA1721.24

Location

Dates
18/01/2024-19/01/2024

Project Contractor
GA Site Investigation Limited

Sheet
2/2

Depth (m)	TCR (%)	SCR (%)	RQD (%)	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
	0	0	0	NR			8.00	Dark grey locally black weathered fractured CARNONIFEROUS SILTSTONE recovered as fine to coarse tabular to angular gravel of siltstone in very closely bedded and highly fractured: (Pennine Lower Coal Measures)		
9.00	5	0	0	NI			(2.50)			
10.50 10.50-10.55	50	22	0	NI	82/ SPT 82*/50		10.50	Moderately strong to strong dark grey and black very to extremely closely horizontally smooth bedded, randomly highly fractured CARBONIFEROUS SILTSTONE: (Pennine Lower Coal Measures)		
12.00	56	27	0	NI			(4.50)			
13.50	62	39	0	NI						
15.00							15.00	Complete at 15.00m		

Remarks

Scale (approx)
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Site
Proposed Water Tank Areas, Mondelez UK, Sheffield, S6 1PD

Number
BH2

Excavation Method
Dynamic windowless sampling borehole extended by super heavy dynamic probing

Dimensions
0.75 (C) to 0.75m
116mm to 3.00m

Ground Level (mOD)

Client
Richmond Fire Engineers Limited

Job Number
GA1721.24

Location

Dates
19/01/2024

Project Contractor
GA Site Investigation Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.75	C1				(0.75)	REINFORCED CONCRETE on polythene DPM - 5mm re-bar @ 0.08m and 10mm re-bar @ 0.10m		
0.70-0.80	D1				0.75			
0.90-1.00	ES1				0.80	Medium dense beige crushed limestone sub-base: (MADE GROUND)		
1.00-1.45	SPT N=19		5,4/6,5,4,4			Medium dense brown sandy gravel. Gravel if of fine to cobble sized sandstone and brick: (MADE GROUND)		
1.10-1.20	ES2							
1.50-1.60	ES3				(1.40)			
1.90-2.00	D2							
2.00-2.45	SPT N=9		5,2/3,2,2,2					
2.40-2.50	D3				2.20	Loose to medium dense brown gravelly fine to coarse sand. Gravel is of fine to medium round to angular stone and brick: (MADE GROUND)		
2.90-3.00	D4				(0.80)			
					3.00	... continued by dynamic probing		
						Not Finished at 3.00m		

Remarks
Continued by dynamic probing from 3.0m

Scale (approx)
1:40

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Figure No.
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Site
Proposed Water Tank Areas, Mondelez UK, Sheffield, S6 1PD

Number
BH3

Excavation Method
Dynamic windowless sampling borehole extended by super heavy dynamic probing

Dimensions
0.75 (C) to 0.75m
116mm to 3.00m

Ground Level (mOD)

Client
Richmond Fire Engineers Limited

Job Number
GA1721.24

Location

Dates
23/01/2024

Project Contractor
GA Site Investigation Limited

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.50	C1				(0.12) 0.12	ASPHALT: (MADE GROUND)		
					(0.38)	CONCRETE on polythene DPM - no re-bar present in core sample		
0.50-0.60	ES1				0.50 (0.20) 0.70	Soft to firm clayey fine to medium sand and gravel. Gravel is of fine to medium stone, brick and low coal content: (MADE GROUND)		
0.80-0.90	ES2							
1.00-1.45	SPT N=9		4,3/3,2,2,2		(0.60)	Firm to stiff brown and grey sandy clayey gravel. Gravel is of fine to cobbles size sandstone with fine to coarse angular brick: (MADE GROUND)		
					1.30			
1.40-1.50	ES3				(0.40)	Firm black and dark brown sand and gravel. Gravel is of fine to medium ash and coal: (MADE GROUND)		
1.70-1.80	D1				1.70	Loose to medium dense brown sand and gravel. Gravel is of fine to coarse angular to rounded stone with brick: (MADE GROUND)		
2.00-2.45	SPT N=9		2,4/4,2,2,1					
2.20-2.30	D2				(1.30)			
2.90-3.00	D3				3.00	... continued by dynamic probing		
						Not Finished at 3.00m		

Remarks
Continued by dynamic probing from 3.0m

Scale (approx)
1:40

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Site
Proposed Water Tanke Areas, Mondelez UK, Sheffield, S6 1PD

Borehole Number
BH4

Boring Method
Diamond coring of asphalt extended by dynamic windowless sampling extended by rotary water flush Geobore-S coring

Casing Diameter
200 (C) to 0.72m
116 (WS) to 4.00m
102(RC) to 13.50m

Ground Level (mOD)

Client
Richmond Fire Engineers Limited

Job Number
GA1721.24

Location

Dates
23/01/2024-24/01/2024

Project Contractor
GA Site Investigation Limited

Sheet
1/2

Depth (m)	TCR (%)	SCR (%)	RQD (%)	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
							0.07	ASPHALT		
0.10-0.20					ES1			Firm to stiff grey sandy very gravelly clay. Gravel is of fine to medium angular brick with low fine coal content: (MADE GROUND)		
0.50-0.60					ES2		(1.03)			
1.00-1.45					2,2/2,2,4,3 SPT N=11		1.10			
1.20-1.30					D1		(0.60)	Medium dense dark grey and black sandy, gravel. Gravel is of fine to medium angular ash: (MADE GROUND)		
							1.70			
1.80-1.90					D2			Medium dense brown gravelly fine to medium sand. Gravel is of medium angular brick: (MADE GROUND)		
2.00-2.45					3,3/4,5,7,8 SPT N=24		(0.60)			
							2.30			
2.40-2.50					D4			Loose brown fine to medium sand and fine to coarse gravel. Gravel is of fine to cobble sized brick and sandstone: (MADE GROUND)		
							(0.70)			
2.90-3.00					D3		3.00			
3.00	0	0	0	NR				Medium dense dark grey sand and carboniferous siltstone gravel: (POSSIBLE MADE GROUND) Rotary Geobore-S coring commenced at 3.0m ... strata descriptions from 3.0m to 4.5m based on water flush returns		
							(3.00)			
4.50	69	0	0	NI						
6.00					53/		6.00			
6.00-6.10	73	0	0	NI	SPT 53*/100			Moderately strong to strong dark grey and black very to extremely closely horizontally smooth bedded, randomly highly fractured CARBONIFEROUS SILTSTONE: (Pennine Lower Coal Measures)		
							(2.00)			
7.50										

Remarks
Rotary Geobore-S coring commenced at 3.0m

Scale (approx)
1:40

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Figure No.
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Site
Proposed Water Tanke Areas, Mondelez UK, Sheffield, S6 1PD

Borehole Number
BH4

Boring Method
Diamond coring of asphalt extended by dynamic windowless sampling extended by rotary water flush Geobore-S coring

Casing Diameter
200 (C) to 0.72m
116 (WS) to 4.00m
102(RC) to 13.50m

Ground Level (mOD)

Client
Richmond Fire Engineers Limited

Job Number
GA1721.24

Location

Dates
23/01/2024-24/01/2024

Project Contractor
GA Site Investigation Limited

Sheet
2/2

Depth (m)	TCR (%)	SCR (%)	RQD (%)	FI	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
	88	0	0	NI			8.00	Moderately strong to strong dark grey and black very to extremely closely horizontally smooth bedded, randomly highly fractured CARBONIFEROUS SILTSTONE: (Pennine Lower Coal Measures)		
9.00										
	81	0	0	NI	50/ SPT 50*/50					
10.00-10.05										
10.50							(5.50)			
	71	0	0	NI				... silt infill to fractures 11.6m to 12.0m		
12.00								... medium spaced thin <20mm silt infill in horizontal bedding joints		
	70	0	0	NI						
13.50							13.50	Complete at 13.50m		

Remarks

Scale (approx)
1:40

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Figure No.
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Appendix 4 Relevant Hazardous Substances Assessment

Relevant Hazardous Substances, Stage 1 to 3 Assessment for Mondelez Sheffield Site

Stage 1	Stage 2				Stage 3						
Substance	Liquid or Solid	Toxicity / Fate / Mobility in soil/groundwater	Potential to cause pollution of soil / groundwater	Proceed to Stage 3?	Location	Internal or external storage / use	Internal or external delivery point	Continue through Stage 3*	Quantity stored	Containment / pollution prevention measures	Baseline Report Required?
								* - Substances that are delivered, stored and used internally are not progressed to Stage 3 on the basis that all areas within buildings have good quality hard surfacing and it is considered that there is no pathway for any spills or leaks to reach soils or groundwaters.		In addition to physical containment measures, the following is applicable for all hazardous substance storage, use and delivery across the installation: - Management, maintenance, inspection and testing procedures in place to prevent leaks and spills. - All deliveries are supervised by trained staff. - A spill response / emergency response plan in place to deal with leaks or spills if they occur.	The Site Condition Report (SCR) provides a conceptual model and site specific risk assessment to determine whether substances stored and used within the installation pose a risk to soil and/or groundwater. The risk has been assessed as Very Low, Low or Moderate/Low for all substances.
Raw Materials											
Glucose syrup	Viscous Liquid	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	Possible	Yes	Jellies glucose 1 - western yard	Internal	N/A	No	60 tonnes		
					Jellies glucose 1 - western yard (delivery point)	N/A	External	Yes	N/A	Delivery area located over mixed hard surfacing, including block paving and tarmac and drains to sewer. All deliveries supervised, spills manually cleaned and disposed of as food waste.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					Jellies glucose 2 - western yard	Internal	N/A	No	64 tonnes		
					Jellies glucose 2 - western yard (delivery point)	N/A	External	Yes	N/A	Delivery area located over mixed hard surfacing, including block paving and tarmac and drains to sewer. All deliveries supervised, spills manually cleaned and disposed of as food waste.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					Hard mints and soft mints glucose - central yard	External	N/A	Yes	81 tonnes	Tank located in uncovered concrete bund. Sump pit for ad hoc pump to empty bund contents in accordance with standard operating procedures.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					Hard mints and soft mints glucose - central yard (delivery point)	N/A	External	Yes	N/A	Delivery area is hard standing and drains to sewer / effluent drains. All deliveries supervised, spills manually cleaned and disposed of as food waste.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					CLP glucose - central yard	External	N/A	Yes	60 tonnes	Tank located in uncovered concrete bund. Sump pit for ad hoc pump to empty bund contents in accordance with standard operating procedures.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					CLP glucose - central yard (delivery point)	N/A	External	Yes	N/A	Delivery area is hard standing and drains to sewer / effluent drains. All deliveries supervised, spills manually cleaned and disposed of as food waste.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					CLP glucose day hopper	Internal	Internal	No	18 tonnes		
					Soft mints glucose day hopper	Internal	Internal	No	1 tonne		
					Hard mints glucose day hopper	Internal	Internal	No	0.25 tonne		

Relevant Hazardous Substances, Stage 1 to 3 Assessment for Mondelez Sheffield Site

Stage 1	Stage 2				Stage 3						
Substance	Liquid or Solid	Toxicity / Fate / Mobility in soil/groundwater	Potential to cause pollution of soil / groundwater	Proceed to Stage 3?	Location	Internal or external storage / use	Internal or external delivery point	Continue through Stage 3*	Quantity stored	Containment / pollution prevention measures	Baseline Report Required?
Sugar	Solid / granulated	Solid material so mobility limited. Biodegradable, readily soluble, non-toxic, high BOD, readily dissolved in water.	Possible	Yes	Jellies and Soft mints bulk sugar tank/silo	External	External	Yes	100 tonnes	Tank / silo located in an area of mixed hard surfacing, including block paving and tarmac with drainage to sewer. Delivery point adjacent tank / silo. All deliveries supervised, high level alarms, spills manually cleaned up in accordance with standard operating procedures.	No - Considered unlikely to cause pollution due to low mobility solid material and containment infrastructure coupled with pollution prevention systems and procedures in place.
					CLP and hard mints bulk sugar tank/silo	External	External	Yes	100 tonnes	Tank / silo located in an area of hardstanding. Delivery point adjacent tank / silo. All deliveries supervised, high level alarms, spills manually cleaned up in accordance with standard operating procedures. Drain covers and spill kit located adjacent to fill point.	No - Considered unlikely to cause pollution due to low mobility solid material and containment infrastructure coupled with pollution prevention systems and procedures in place.
Flour	Solid/powder	Solid material, low mobility, non-toxic, not soluble in water.	Possible	Yes	Bulk flour tank/silo south of CLP building	External	External	Yes	40 tonnes	Tank / silo located in an area of hardstanding. Delivery point adjacent tank / silo. All deliveries supervised, high level alarms, spills manually cleaned up in accordance with standard operating procedures. Drain covers and spill kit located adjacent.	No - Considered unlikely to cause pollution due to low mobility solid material and containment infrastructure coupled with pollution prevention systems and procedures in place.
Treacle	Viscous Liquid	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	Possible	Yes	Treacle tank - central yard	External	N/A	Yes	60 tonnes	Tank located in uncovered concrete bund. Sump pit for ad hoc pump to empty bund contents in accordance with standard operating procedures.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					Treacle tank, delivery point - east side of CLP building	N/A	External	Yes	N/A	Delivery area is hard standing over stainless steel trough and drains to sewer / effluent drains. All deliveries supervised, spills manually cleaned and disposed of as food waste.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Food colours, flavours and acids (CFA)	Liquids	Acid, alkali and oil based liquids. Mobile, generally low toxicity .	Possible	Yes	Various locations at point of use, Ritz Building and CFA stores - no bulk tanks	Internal	Internal	No			
Food colours, flavours and acids (CFA)	Solids	Limited mobility, potentially soluble, low toxicity.	Possible	Yes	Various locations at point of use, Ritz Building and CFA stores - no bulk tanks	Internal	Internal	No			
Packaging	Solids	Solid material, low mobility, non-toxic, not soluble in water.	Unlikely	No							

Relevant Hazardous Substances, Stage 1 to 3 Assessment for Mondelez Sheffield Site

Stage 1	Stage 2				Stage 3						
Substance	Liquid or Solid	Toxicity / Fate / Mobility in soil/groundwater	Potential to cause pollution of soil / groundwater	Proceed to Stage 3?	Location	Internal or external storage / use	Internal or external delivery point	Continue through Stage 3*	Quantity stored	Containment / pollution prevention measures	Baseline Report Required?
Cleaning and Sanitation											
Cleaning fluids (caustic and acid solutions)	Liquid	Mobile with high/low pH. Alkalinity/acidity may be mitigated by buffering capacity of soils and cation exchange	Possible	Yes	Various locations at point of use - no bulk tanks	Internal	N/A	No			
Various cleaning liquids / creams / soaps / wipes / cloths	Liquid and solid	Potentially mobile, relatively low toxicity.	Possible	Yes	Various locations at point of use - no bulk tanks	Internal	N/A	No			
Various sanitiser and biocides	Liquid	Potentially mobile, relatively low toxicity.	Possible	Yes	Various locations at point of use - no bulk tanks	Internal	N/A	No			
Fuels / Engineering Oils											
Diesel	Liquid	Mobile, immiscible, moderately degradable, relatively low toxicity	Possible	Yes	Standby generator and sprinkler system fuel tank - east of admin building	External	N/A	Yes	1,000	Tank is an IBC within a metal cabinet over an integral drip tray. Metal cabinet is located in an area of hardstanding with drains to sewer.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					Standby generator and sprinkler system fuel tank - east of admin building (delivery point)	N/A	External	Yes	N/A	Delivery is direct from tanker into the IBC within the cabinet which is located on an area of hard standing served by drains to sewer.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					Fire water pump	Internal	N/A	No	<250 litres		
					Fire water pump (delivery point)	N/A	Internal	Yes	25 litres	Fuel transferred manually from 25 litre jerry cans filled from the standby generator tank.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Lubricants	Liquid / Gelatinous (grease)	Potentially mobile, moderately degradable, relatively low toxicity	Possible	Yes	Engineering workshop	Internal	N/A	No	Various containers (no bulk tanks)		
Degreasers	Liquid	Potentially mobile, moderately degradable, relatively low toxicity	Possible	Yes	Engineering workshop	Internal	N/A	No	Various containers (no bulk tanks)		
Hydraulic oils	Liquid	Mobile, moderately degradable, relatively low toxicity	Possible	Yes	Engineering workshop	Internal	N/A	No	Various containers (no bulk tanks)		
Food grade oils	Liquid	Mobile, immiscible, moderately degradable, low toxicity.	Possible	Yes	Various locations at point of use and Ritz Building - no bulk tanks	Internal	N/A	No	Various containers (no bulk tanks)		

Relevant Hazardous Substances, Stage 1 to 3 Assessment for Mondelez Sheffield Site

Stage 1	Stage 2				Stage 3						
Substance	Liquid or Solid	Toxicity / Fate / Mobility in soil/groundwater	Potential to cause pollution of soil / groundwater	Proceed to Stage 3?	Location	Internal or external storage / use	Internal or external delivery point	Continue through Stage 3*	Quantity stored	Containment / pollution prevention measures	Baseline Report Required?
Cooling and Boiler Water Treatment											
Biocide	Liquid	Toxic, mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	Possible	yes	LAN plant room	Internal	N/A	No	200 litre drum - no bulk tank		
Corrosion Inhibitor	Liquid	Toxic, mobile, polluting to soil, groundwater and watercourses in the event of a spillage/loss.	Possible	yes	LAN plant room	Internal	N/A	No	200 litre drum - no bulk tank		
Glycol (monopropylene glycol) solution	Liquid	Mobile, readily soluble, degradable in aquatic environment, unlikely to cause toxic effects unless released in large quantities.	Possible	yes	Tank in building north of central yard	Internal	N/A	No	22,000 litres		
					Tank in building north of central yard (delivery point)	N/A	Internal	No	Delivered in IBC and transferred to 500 litre make up tank before transfer to main tank		
Salt (sodium chloride)	Liquid (brine solution)	Mobile, potentially polluting to watercourses in the event of a significant loss.	Possible	yes	Vessel in boiler house.	Internal	Internal	No	1,500kg max		
Boiler water treatment, oxygen scavenger (30 – 50% sodium bisulphite and <0.025% cobalt sulphate)	Liquid	Polluting to soil, groundwater and watercourses in the event of a spillage/loss	Possible	yes	Tank in boiler house. Tank topped up from drum/mobile container	Internal	Internal	No	379 litres		
Boiler water treatment, corrosion control & maintains heat transfer (polymer)	Liquid	Non toxic, low BOD and COD	Unlikely	No					379 litres		
Boiler water treatment, maintain alkalinity and sludge control (a blend of 30 – 50% sodium hydroxide and 10 – 20% potassium hydroxide)	Liquid	Polluting to soil, groundwater and watercourses in the event of a spillage/loss	Possible	yes	Tank in boiler house. Tank topped up from drum/mobile container	Internal	Internal	No	379 litres		

Relevant Hazardous Substances, Stage 1 to 3 Assessment for Mondelez Sheffield Site

Stage 1	Stage 2				Stage 3						
Substance	Liquid or Solid	Toxicity / Fate / Mobility in soil/groundwater	Potential to cause pollution of soil / groundwater	Proceed to Stage 3?	Location	Internal or external storage / use	Internal or external delivery point	Continue through Stage 3*	Quantity stored	Containment / pollution prevention measures	Baseline Report Required?
Effluent Treatment											
Sodium Hydroxide (32%) - pH balancing	Liquid	Mobile with high pH. Alkalinity may be mitigated by buffering capacity of soils and cation exchange capacity. Toxic.	Possible	Yes	ETP caustic tank	External	N/A	Yes	5,000 litres	Tank (whole ETP) located within concrete bunded area with 137,000 litre capacity.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					ETP (caustic delivery point)	N/A	External	Yes	N/A	Delivery area is hard standing. Fill points within main tank bund. All deliveries supervised, spills manually cleaned using spill kits at the fill point. Drain covers in place over surface water drains in the vicinity of the fill point.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Sulfuric acid solution (98%) - pH balancing	Liquid	Corrosive and mobile but mitigated by buffering capacity of soils and cation exchange capacity.	Possible	Yes	ETP acid tank	External	N/A	Yes	5,000 litres	Tank (whole ETP) located within concrete bunded area with 137,000 litre capacity.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
					ETP (acid delivery point)	N/A	External	Yes	N/A	Delivery area is hard standing. Fill points within main tank bund. All deliveries supervised, spills manually cleaned using spill kits at the fill point. Drain covers in place over surface water drains in the vicinity of the fill point.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Effluent Balance Tanks	Liquid	Mobile, possibly toxic mixture	Possible	Yes	ETP	External	N/A	Yes	2x 91,0000 litres	Tanks located within concrete bunded area with 137,000 litre capacity.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Process / effluent drains (below ground and bridge crossing)	Liquid	Mobile, possibly toxic mixture	Possible	Yes	Site effluent drainage system	Below ground and bridge crossing	N/A	Yes		Effluent, contained within drainage pipework infrastructure and sumps. Pipework crossing the River Don includes isolation valves, containment and an alarm system to prevent and detect leaks. A programme of inspections of site drains is in place, issues are addressed as required.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Wastes											
Waste oil	Liquid	Mobile, immiscible, moderately degradable, relatively low toxicity	Possible	Yes	Waste oil tank - western yard.	External	N/A	Yes	1,000 litre IBC	IBC located over a drip tray in an area of mixed hard surfacing, including block paving and tarmac with drainage to sewer. Small volumes of oil are transferred by hand into the top of the IBC. Collected by approved waste contractor for off-site disposal, collections are supervised and any spills manually cleaned.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Metals	Solid	Solid material, low mobility, although possible leaching of contaminants.	Possible	Yes	Eastern yard	External	N/A	Yes	Small quantities in dedicated skip	Skip is covered and located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor.	No - Considered unlikely to cause pollution due to low mobility solid wastes and containment infrastructure coupled with pollution prevention systems and procedures in place.
Waste Electrical and Electronic Equipment (WEEE)	Solid	Solid material, low mobility although possible leaching of contaminants.	Possible	Yes	Western yard	External	N/A	Yes	Small quantity in dedicated container	Waste container located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor. Concrete hardstanding drains to the site drains which discharge to mains sewer.	No - Considered unlikely to cause pollution due to low mobility solid wastes and containment infrastructure coupled with pollution prevention systems and procedures in place.
Fluorescent tubes	Solid	Solid material, low mobility although possible leaching of contaminants.	Possible	Yes	Western yard	External	N/A	Yes	Small quantity in dedicated container	Waste container located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor. Hardstanding drains to the site drains which discharge to mains sewer.	No - Considered unlikely to cause pollution due to low mobility solid wastes and containment infrastructure coupled with pollution prevention systems and procedures in place.

Relevant Hazardous Substances, Stage 1 to 3 Assessment for Mondelez Sheffield Site

Stage 1	Stage 2				Stage 3						
Substance	Liquid or Solid	Toxicity / Fate / Mobility in soil/groundwater	Potential to cause pollution of soil / groundwater	Proceed to Stage 3?	Location	Internal or external storage / use	Internal or external delivery point	Continue through Stage 3*	Quantity stored	Containment / pollution prevention measures	Baseline Report Required?
Empty containers (oil spray cans, additives etc)	Solid	Solid material, low mobility although possible leaching of residual contents / contaminants.	Possible	Yes	Western yard	Externa;	N/A	Yes	Small quantity in dedicated area	Wastes located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor. Hardstanding drains to the site drains which discharge to mains sewer.	No - Considered unlikely to cause pollution due to low mobility solid wastes and containment infrastructure coupled with pollution prevention systems and procedures in place.
Hazardous waste (oil containers, CFA)	Liquid	Varying constituents therefore varying mobility and toxicity.	Possible	Yes	South of Ritz Building	External	N/A	Yes	Drums, IBCs, no bulk tank	Wastes located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor. Drainage separate from surface water drains.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
Wood	Solid	Solid material, low mobility although possible leaching of contaminants.	Possible	Yes	Eastern yard	External	N/A	Yes	Small quantities in dedicated skip	Skip is covered and located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor.	No - Considered unlikely to cause pollution due to low mobility solid wastes and containment infrastructure coupled with pollution prevention systems and procedures in place.
Temporary construction waste	Solid	Solid material, low mobility although possible leaching of contaminants.	Possible	Yes	South of Rawson Spring security lodge	External	N/A	Yes	Small quantities in dedicated skip	Skip is located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor.	No - Considered unlikely to cause pollution due to low mobility solid wastes and containment infrastructure coupled with pollution prevention systems and procedures in place.
Waste product / organic / food waste	Solid / viscous liquid	Non-toxic but polluting to soil and water in the event of a large spillage/loss (high biological oxygen demand). Limited mobility at ambient temperatures. Readily degradable	Possible	Yes	Eastern yard and central yard	External	N/A	Yes	Waste held in dedicated skips	Skips are located on hardstanding. No areas of soft ground present to allow infiltration. Waste storage areas regularly inspected to ensure no loss of materials. Wastes regularly removed by licenced contractor. Drainage in the area is to effluent drains or mains sewer.	No - Considered unlikely to cause pollution due to containment infrastructure coupled with pollution prevention systems and procedures in place.
General waste (paper, cardboard, plastics etc)	Solid	Solid materials so mobility limited.	Unlikely	No							
Miscellaneous											
Transformer oils (PCB free)	Liquid	Potentially mobile, moderately degradable, potentially toxic.	Possible	Yes	Local substations	Internal on hardstanding	N/A	No	Between 580 and 1,055 litres		
Bottled gas (e.g. acetylene, oxygen, propane, methane)	Gas	Gaseous.	Unlikely	No							

Appendix 5 Historical Laboratory Analysis (2024)

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Analytical Report Number : 24-80839

Project / Site name:	Modelez Sheffield	Samples received on:	31/01/2024
Your job number:	GA-MOND	Samples instructed on/ Analysis started on:	31/01/2024
Your order number:	GMA	Analysis completed by:	09/02/2024
Report Issue Number:	1	Report issued on:	09/02/2024
Samples Analysed:	4 soil samples		

Signed: A. Czerwińska

Agnieszka Czerwińska
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 24-80839
Project / Site name: Modelez Sheffield
Your Order No: GMA

Lab Sample Number				2942521	2942522	2942523	2942524
Sample Reference				BH1	BH2	BH3	BH4
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.80-2.90	1.50-1.60	0.50-0.60	1.20-1.30
Date Sampled				25/01/2024	25/01/2024	27/01/2024	29/01/2029
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1	58	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	13	17	17
Total mass of sample received	kg	0.001	NONE	0.5	0.6	0.6	0.5

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8	8.6	8.5	7.9
Total Sulphate as SO4	%	0.005	MCERTS	0.015	0.066	0.039	0.277
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0195	0.109	0.0772	0.111
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	19.5	109	77.2	111
Total Sulphur	%	0.005	MCERTS	0.011	0.035	0.034	0.248

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number : 24-80839
Project / Site name: Modelez Sheffield

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2942521	BH1	None Supplied	2.80-2.90	Brown sand with gravel.
2942522	BH2	None Supplied	1.50-1.60	Brown sand with gravel and stones.
2942523	BH3	None Supplied	0.50-0.60	Brown clay with gravel.
2942524	BH4	None Supplied	1.20-1.30	Brown clay and sand with ash and gravel

Analytical Report Number : 24-80839
Project / Site name: Modelez Sheffield

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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Analytical Report Number : 24-80840

Project / Site name:	Modelez Sheffield	Samples received on:	31/01/2024
Your job number:	GA-MOND	Samples instructed on/ Analysis started on:	31/01/2024
Your order number:	GMA	Analysis completed by:	12/02/2024
Report Issue Number:	1	Report issued on:	12/02/2024
Samples Analysed:	3 10:1 WAC samples		

Signed:

Joanna Szwagrzak
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Application of uncertainty of measurement would provide a range within which the true result lies.
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Waste Acceptance Criteria Analytical Results

Client: GASILTD

Report No:	24-80840						
Location	Modelez Sheffield						
Lab Reference (Sample Number)	2942525 / 2942526				Landfill Waste Acceptance Criteria Limits		
Sampling Date	25/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH1						
Depth (m)	0.90-1.00						
Solid Waste Analysis							
TOC (%)**	1.8				3%	5%	6%
Loss on Ignition (%) **	5.1				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	21				500	--	--
Total PAH (WAC-17) (mg/kg)	10.5				100	--	--
pH (units)**	8.1				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	7.1				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0138			0.138	0.5	2	25
Barium *	0.0181			0.181	20	100	300
Cadmium *	0.0002			0.0020	0.04	1	5
Chromium *	0.0007			0.0072	0.5	10	70
Copper *	0.063			0.63	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.105			1.04	0.5	10	30
Nickel *	0.0071			0.071	0.4	10	40
Lead *	0.0016			0.016	0.5	10	50
Antimony *	0.048			0.48	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0097			0.097	4	50	200
Chloride *	10			100	800	15000	25000
Fluoride*	0.72			7.2	10	150	500
Sulphate *	34			340	1000	20000	50000
TDS*	130			1300	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	17.3			173	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	82						
Moisture (%)	18						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepencies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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The results included within the report are representative of the samples submitted for analysis.

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Waste Acceptance Criteria Analytical Results

Report No:	24-80840						
					Client: GASILTD		
Location	Modelez Sheffield						
Lab Reference (Sample Number)	2942527 / 2942528				Landfill Waste Acceptance Criteria Limits		
Sampling Date	27/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH3						
Depth (m)	1.40-1.50						
Solid Waste Analysis							
TOC (%)**	2.7				3%	5%	6%
Loss on Ignition (%) **	7.7				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	33				500	--	--
Total PAH (WAC-17) (mg/kg)	12.3				100	--	--
pH (units)**	7.1				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.76				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0036			0.0361	0.5	2	25
Barium *	0.112			1.12	20	100	300
Cadmium *	0.0001			0.0015	0.04	1	5
Chromium *	0.0007			0.0067	0.5	10	70
Copper *	0.018			0.18	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0099			0.0985	0.5	10	30
Nickel *	0.030			0.30	0.4	10	40
Lead *	0.0040			0.040	0.5	10	50
Antimony *	0.0076			0.077	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.036			0.36	4	50	200
Chloride *	1.8			18	800	15000	25000
Fluoride*	0.27			2.7	10	150	500
Sulphate *	170			1700	1000	20000	50000
TDS*	250			2500	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	16.8			168	500	800	1000
Leach Test Information							
Stone Content (%)	63						
Sample Mass (kg)	0.90						
Dry Matter (%)	85						
Moisture (%)	15						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepencies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

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Waste Acceptance Criteria Analytical Results

Report No:	24-80840						
					Client: GASILTD		
Location	Modelez Sheffield						
Lab Reference (Sample Number)	2942529 / 2942530				Landfill Waste Acceptance Criteria Limits		
Sampling Date	29/01/2024				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH4						
Depth (m)	0.50-0.60						
Solid Waste Analysis							
TOC (%)**	0.5				3%	5%	6%
Loss on Ignition (%) **	3.6				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	16				500	--	--
Total PAH (WAC-17) (mg/kg)	8.46				100	--	--
pH (units)**	8.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	2.3				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0020			0.0204	0.5	2	25
Barium *	0.0127			0.127	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	< 0.0004			< 0.0040	0.5	10	70
Copper *	0.0066			0.066	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0111			0.111	0.5	10	30
Nickel *	0.0013			0.013	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	0.0017			0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0019			0.019	4	50	200
Chloride *	1.6			16	800	15000	25000
Fluoride*	1.2			12	10	150	500
Sulphate *	3.8			38	1000	20000	50000
TDS*	54			540	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	10.1			101	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.80						
Dry Matter (%)	88						
Moisture (%)	12						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

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Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 24-80840
Project / Site name: Modelez Sheffield

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2942525	BH1	None Supplied	0.90-1.00	Brown clay and sand with gravel.
2942527	BH3	None Supplied	1.40-1.50	Brown clay and sand with gravel and stones.
2942529	BH4	None Supplied	0.50-0.60	Brown clay and sand with gravel and brick.

Analytical Report Number : 24-80840
Project / Site name: Modelez Sheffield

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270.	L064-PL	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073-PL	W	MCERTS
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025

Analytical Report Number : 24-80840
Project / Site name: Modelez Sheffield

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031-PL	W	ISO 17025
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total