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Our Ref: 8353WCH260430L

By EMAIL

30 April 2026

For the Attention of Mr E. Lehman

Dear Elliot,

Re: Supplemental Ground Investigation and Remediation Strategy for Land Adjacent to Bealey Industrial Estate, Radcliffe.

Coopers (Chester) Ltd, hereafter referred to as Coopers, undertook supplemental ground investigations at the above site on behalf of Westchurch Homes. This correspondence includes an interpretative assessment of the ground conditions, contaminated land, and hazardous ground gas for the purposes of formal submission to supplement previous works. Please find enclosed the following appended documents:

- Appendix 1 - Referenced Drawings
- Appendix 2 - Referenced Desk Study Data
- Appendix 3 - Exploratory Hole Logs
- Appendix 4 - Chemical Test Data
  Geotechnical Test Data
- Appendix 5 - Ground Gas Monitoring Results
  - Gas Monitor Calibration Certificates
  - Gas Ventilation Calculations
  - Gas Membrane Product Specification
- Appendix 6 - Risk Assessments
- Appendix 7 - Tier 1 Risk Assessment Screening Values
  - Controlled Water Receptor Threshold Values
  - Legislation Framework which Drives the Contamination Assessment of Land in England and Wales

This correspondence and following sections should be provided to Bury Council and NHBC for formal approval.

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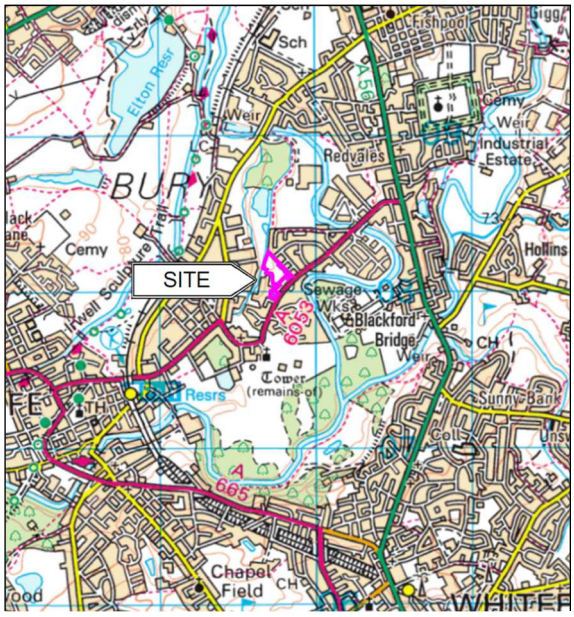
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1. Background

1.1 Site Location

The site is located approximately 1.58km to the north-east of Radcliffe Town Centre at National Grid Reference SD 797 081. Access to the proposed site was located off Wild Street and the adjacent Bealey Industrial Estate located to the north west of Dumers Lane (A6053). The location of the site is shown on Drawing No. 8353/L1 & 8353/AP in Appendix 1 (extracts in Figures 1 and 2).





Figures 1 and 2: Extract of Sie Location Plan and Aerial Photograph.

1.2 Development Proposals

The site is proposed for development by Westchurch, comprising of a residential development of 77 No. dwellings together with vehicular / pedestrian access, open space, landscaping and other related infrastructure. The dwellings comprise traditional 2 story buildings, consisting of a combination of detached, semi-detached and mews properties, with the mews buildings including self-contained apartments over separate floors. The detached and semi-detached properties have private gardens, whilst the mews buildings contain communal landscaped areas. An extract of the overall layout is shown in Figure 3, with drawings reflecting the layout (Foundation Plan and Build Phase Remediation Plan) contained in Appendix 1.

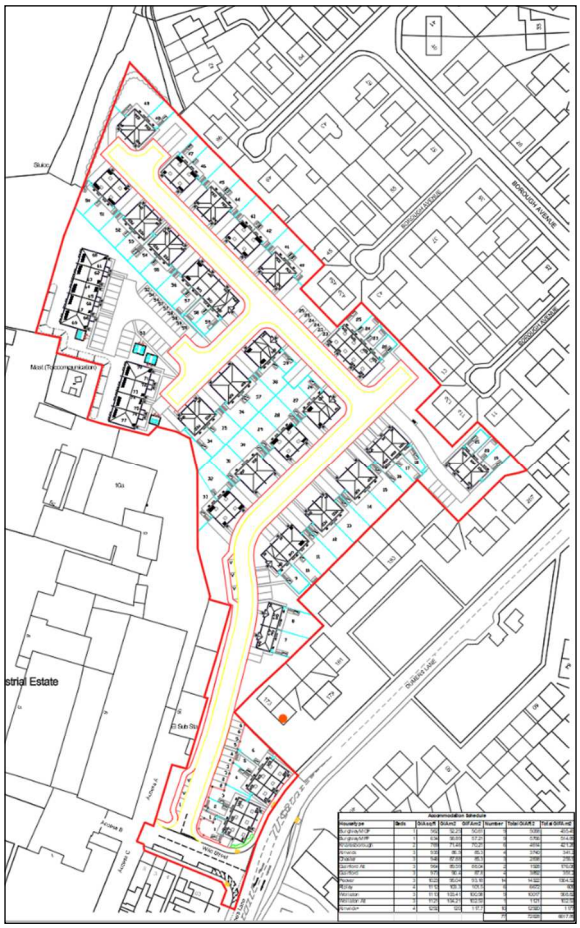


Figure 3: Extract of Proposed Site Layout.

1.3 Previous Investigations

Consultations with Bury Council (Appendix 2) referenced a previous ground investigation had been supplied to the Council for part of the site and the land to the north of the site, included in the following:

- Leyden Kirkby Associates (LKA) "Ground Investigation and Risk Assessment Report", referenced CL1192-02, Draft A, dated 30 November 2007.

The Council were able to supply a copy for review, but stated the information would be subject to copyright and hence we have no reliance on the information provided, and the data has not been included within this report. The LKA report included inconsistencies, where the exploratory hole references differed between the plan, logs, and testing (site plan references the window samples as WS1-WS12, but the logs provided are WS101-WS112, the chemical test results reference samples WS102-WS108, then WS9-WS12).

The following reports have been supplied by Coopers, the results of which are summarised in subsequent sections:

- Coopers "*Site Investigation Report for Land Adjacent to Bealey Industrial Estate, Radcliffe*", referenced No. 8353si, dated 8 November 2024.
- Coopers "Build Phase Remediation Strategy", referenced 8353bprs, dated 2 April 2026.

Coopers have undertaken previous investigations on numerous sites in the local area, as referenced in Figure 4.



Figure 4: Extract of Previous ground investigations/assessments within the local area.

1.4 Existing and Former Use

The desk study data records the site to have consisted of agricultural land from 1850. From 1891 the north western parts of the site consisted of a reservoir and settling tanks to the adjacent Broad Dumers Paper Works, located to the south west of the site (refer to Figures 5 and 6). A raised tramway was recorded within the site. In the 1980's the reservoir and settling tanks were infilled and the paper works repurposed by the existing Bealey Industrial Estate.

The land to the south of the site (beyond Dumers Lane) was the former Bealey's Bleach and Chemical Works, now occupied by housing. A diverted channel of water, named Bealey's Goit, ran from the River Irwell to the north west of the site and fed the onsite reservoir and channeled water to the former bleach & chemical works. An offshoot from Bealey's Goit is considered likely to be culverted in the southern part of the site.

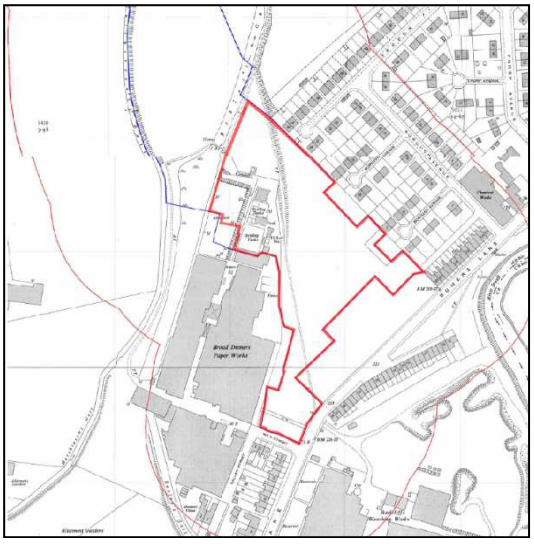


Figure 5: Extract of 1891 Ordnance Survey map from previous desk study (note the site boundary is approximate and areas have changed.



Figure 6: Annotated aerial photograph of the site on 12 June 1948 with approximate site boundary (image from Historic England)

2. Supplemental Ground Investigation

2.1 Consultations

Coopers Site Investigation Report (referenced in Section 1.3) detailed an initial consultation with Bury Council's Environmental Protection Department, and the results of an Environmental Search Request, referenced ES897.210224.1, dated 21 February 2024. Following previous planning submissions of the Site Investigation Report to Bury Council's planning department, Bury Council's Environmental Protection Department provided a planning consultation response within a correspondence referenced CL1099.200125.1, dated 20 January 2025. The Environment Agency also responded to the planning submission, within a correspondence referenced SO/2025/124668/03-L01, dated 7 November 2025.

Prior to undertaking the supplemental investigations Coopers held discussions with Bury Council's Environmental Protection Department on 16 January 2026. Further information was supplied regarding the Council's records relating to a historical planning application relating to historical filling on the site supplied under a Freedom of Information request, FOI2526.1095, supplied on 23 February 2026.

Coopers requested a paid consultation with the Environment Agency's Contaminated Land Officer, via their Sustainable Places Team to discuss the proposed investigation and assessments. A formal response was received on 18 February 2026 to advise the Environment Agency have suspended their voluntary cost-recovered service and advised for future consultations to be provided via the local planning authority.

2.2 Objectives

The previous Coopers Site Investigation Report, assessed the ground conditions associated within accessible parts of the site, with recommendations for further works, including the following:

- Complete ground gas monitoring and further water sampling from monitoring wells and report on findings.
- Undertake additional investigation and testing of soils within the area of current commercial use, including electrical substations, concurrent with demolition.
- Report on the findings of the investigation during the demolition to finalise remediation proposals for formal approval with the local authority.
- Remediation and enabling works strategy required.

Additional consideration and testing has been undertaken to further define the risks associated with Per- and polyfluoroalkyl substances (PFAS) as referenced by the local authority and Environment Agency. Additional targeted water monitoring and testing towards the areas of the former reservoir, and closest surface water receptors have been undertaken. No investigation has been possible below the existing electrical substations and further works are recommended with respect to associated contaminants. Additional grading analysis has been undertaken on the reservoir infill materials in accordance with recommendations from the proposed remediation contractor. Whilst live services were present the exploratory holes were permitted in close proximity following tracing and marking out by the utilities company.

2.3 Methodology

Coopers proposed additional small diameter boreholes within the areas of the former trading units, settling tanks and some trial pits within the settling tanks to define variations in the ground conditions. Deeper cable percussive boreholes were proposed within the former reservoir/tanks, to address the contamination assessment requirements.

2.4 Exploratory Holes

The locations of the exploratory holes are recorded on Coopers Drawing No. 8353/01 in Appendix 1, Copies of the exploratory holes logs undertaken within the site are contained in Appendix 3, including the following:

- 14 No. trial pits, referenced TP01 to TP09, excavated 26 September 2024, TP101 to TP104, excavated 9 February 2026.
- 26 No. small diameter boreholes, referenced WS01 to WS09, drilled 21-22 March 2024, WS101 to WS104, drilled 30 September 2024, WS201 to WS212, incl. WS205a, drilled 19-23 January 2026.
- 3 No. Cable Percussive Boreholes, referenced BH01 to BH03, drilled 9 February 2026.
- 4 No. hand dug pits, referenced HDTP01 to WDTP03, excavated 30 September 2024, and HDP01, dated 21 January 2026.

2.5 In-situ Testing

The investigations included testing to allow inferred strength of the ground, including SPT testing in small diameter boreholes and cable percussive boreholes. Hand shear vanes were recorded from natural cohesive strata.

2.6 Monitoring Wells

Monitoring wells were installed with selected boreholes to allow monitoring for the potential presence of hazardous ground gas and sampling of groundwater. All monitoring wells included bentonite sealants above and below the response zones to limit downward migration. Subject to approvals of the assessments of groundwater risk the monitoring wells will be decommissioned with removal or pipework and bentonite to seal the well position.

2.7 Sampling/Testing Strategy

Selected samples were commissioned for laboratory testing, including specific types of analysis to define the extent of potential contaminants and physical properties based upon the conceptual site model (detailed in Section 3.2). Testing included analysis of standard metals, PAH-16, asbestos, sulphates, speciated aliphatic and aromatic hydrocarbons (TPH-CWG), volatile and semi-volatile organic carbons (VOC/SVOC), and per and poly fluorinated alkali substances (PFAS). Additional analysis was undertaken for selected leachates and quantification of asbestos, later stages included water sampling. Bulk gas analysis was undertaken to verify gas monitoring results. Bulk fragments of suspected Asbestos Containing Materials were subject to confirmation testing for asbestos. Geotechnical testing was undertaken on selected samples for classification testing

A summary of the numbers of samples commissioned for chemical and geotechnical testing are provided in Tables 1 to 4.

Table 1: Summary of Number of Samples Scheduled for Chemical Testing Laboratory Testing for Soils

Strata	Metals, TOC, PAH-16	Asbestos	Sulphates	TPH (CWG)	VOC	SVOC	PFAS	PCB (WHO12)
Topsoil	1	1	1	1	-	-	-	-
Madeground (Topsoil)	2	2	2	1	-	-	-	-
Made Ground	30	30 (4)	30	12	11	11	7	2
Clay	1	0	1	-	-	-	-	-
Sand	1	0	1	1	-	-	-	-
Gravel	1	0	1	-	-	-	-	-
Peat	1	0	1	-	-	-	-	-
Bulk ACM	-	1	-	-	-	-	-	-

Table 2: Summary of Number of Samples Scheduled for Chemical Testing Laboratory Testing for Waters/Leachates

Strata	Metals, TOC, PAH-16	DOC/$CACO_3$	Sulphates	TPH (CWG)	VOC	PFAS (25)
Groundwater	12	12	12	12	12	12
Surface Water (receptor)	6	6	6	6	6	6
Leachates	6	-	-	-	-	-

Table 3: Summary of Number of Samples Scheduled for Chemical Testing Laboratory Testing for Bulk Gas

Strata	Methane	Carbon Dioxide	Carbon Monoxide	Hydrogen Sulphide	Oxygen/Nitrogen/ Hydrogen
Ground Gas	9	9	9	9	9

Table 4: Summary of Number of Samples Scheduled for Geotechnical Laboratory Testing

Strata	Atterberg Limits	Particle Size Distribution	Recycled Aggregate Constituent Testing
Madeground	-	-	5
Clay	3	-	-
Silt	-	1	-
Sand	-	1	-

2.8 Ground Conditions

Hardstanding, Foundations and Services: Surface tarmac and concrete hardstanding within industrial unit areas. Remnant substructures to former buildings and reservoir present within the site, to be cleared prior to development.

Topsoil: Encountered in open parts of the site, sandy/gravelly silt with inclusions of fragmented brick, concrete, glass, plastic and ash.

Madeground (general): The general madeground deposits on the site were relatively shallow (<1.0m) reworked natural granular strata with local pockets of clay. The madeground contained inclusions of ash, clinker, burnt shale, fragmented concrete, brick and ceramics. In places inclusions of metal, rubber, glass, tarmac, coal, timber and plastic were noted. The madeground depth is relatively deeper in the southern periphery of the site (1.5-2.8m deep), adjacent to Wild Street.

Madeground (reservoir/settling tanks): The infilling of the reservoirs/settling tanks in the 1980s consisted of an upper material of gravel with moderate cobble content sizes, compromising of a high proportion of materials of demolition provenance (e.g. brick and concrete). In places visible fragments of cement asbestos sheeting was present in the upper materials. The deeper material was reworked clays with gravels of metal, brick and plastic.

*Natural Drift: A*lluvium highly varied, primarily soft/firm clay, very loose/loose sand, and loose to medium dense gravel. Localised areas of soft silt and peat identified. Deeper stiff glacial clay identified.

Bedrock: Not encountered (anticipated to be circa 20m depth).

Groundwater: Frequent shallow perched groundwater. Commonly 2m to 3m depth, but variable and in places <1m.

3. Contamination Assessment

3.1 General

The assessment of the potential contamination was based upon the initial Conceptual Site Model (CSM), in accordance with guidance and legislation, discussed in Appendix 7. The investigation works were undertaken in phases during staged vacant possession and vegetation clearance works. Subject to decommissioning of the electrical substation further testing will be required in this area.

3.2 Initial Conceptual Site Model (CSM)

The initial CSM was established based upon the current and former use, in conjunction with knowledge gained from the previous investigations in the local area, and consultation with Bury Council's Contaminated Land Department. The CSM includes an initial appraisal of potential sources, likely pathways and receptors, summarised below.

The historical OS maps (Appendix 2) and Local Authority Consultations (Appendix 2) demonstrate the site to have been utilised as open land, filter beds, and reservoirs from the former Dumers Paper Works (subsequently Broad Dumers Paper Works). A tramway connecting to Radcliffe Bleach and Chemical Works, electricity substations, and Bealeys Goit (part infilled). The historical maps/Local Authority response record surrounding area to include Eaton Hill Cotton Mill (later a dye works, then dye and finishing), a gasometer, Dumers Paper Works, Radcliffe Bleach and Chemical Works (later bleaching works), a chemical works, engineering works, infilled reservoirs, areas of waste disposal activity and a sewage works (refer to Figure 5 and 6 in Section 1.4).

The specific potential sources of contaminants are defined in the following sections, based upon industry profiles, ground investigation and historical data.

Paper Manufacturing Works - General.

The site was within the grounds of the former "Broad Dumers Works (Paper)", which was established between the Ordnance Survey map editions of 1850 and 1890. Trade Directories of 1888 recorded the site to have been operated by John Wild and Sons. The site consisted of open grounds, reservoirs, electrical substation, filter beds and settling tanks for the works. A section of Bealey's Goit is recorded adjacent to the site, consisting of a cut to channel water from the River Irwell to the Bealey's Vitriol Works (latterly named Radcliffe Bleach and Chemical Works) located to the south of the site. The paper works was last referenced on Ordnance Survey maps of 1977, and by 1985 as Bealey Industrial Estate.

The former Department of Environment - Industry Profile "*Pulp and Paper Manufacturing Works*" records the main groups of contaminants as follows:

- Metals and Metallic Compounds
- Inorganic compounds
- Acids and Alkalis
- Solvents
- Other Organic Compounds
- Oils
- Asbestos
- Polychlorinated Biphenyls (PCBs)

CIRIA C819 (2024) "*Good Practice Guidance on Some Per- and Polyfluoroalkyl Substances (PFAS) in Soil and the Water Environment*" references that surface coatings in the paper industry are also an industry where PFAS are used.

Each of the forms of contaminants are detailed/discussed in the following sections.

The former reservoirs/filter beds/settling tanks in the north western part of the site are recorded as a historical landfill, detailed within Bury Council "*Environmental Search Report*" (Appendix 2), and further information provided regarding historical filling from Bury Council under a Freedom of Information request (Appendix 2). The landfill was a pre-licensed site, owned by Wimpy Waste Management and latterly Beazer. Planning permission for the landfill was granted by Greater Manchester Council in 1982 for the filling with inert and construction waste, followed by permission in 1989 to raise levels using materials from levelled buildings.

The information supplied with specific reference to the conditions imposed for the infilling in the 1982 planning application, referenced on the decision notice of 13th October 1982 as follows:

"*The materials to be tipped shall be restricted to builders' waste arising within the site: there shall be no importation of material*".

"*The site shall be tipped level with the surrounding land, and finished with light shale or cinders. No revisions will be permitted without the written agreement of the local planning authority*".

Additional information was provided following a site visit on 4th August 1982:

Site Note: "*Particularly difficulty to obtain access to the site. Large buildings now dilapidated. Tanks and reservoir adjacent to a group of single story buildings besides the main complex. Proposal to demolish existing chimney (built 1907) and to use rubble to fill tanks, etc. Do not intend to bring any rubble into site*".

Report: "*Large industrial premises which are now vacant and becoming derelict. GMC have spoken to the agent and they have informed me verbally that there will be no importation of materials because the fill will come from the 1907 Brick Chimney when demolished. It is expected to take 3 months. Remainder of consultations + discussions to be undertaken by GMC – It is probably debatable whether P.P.* [Planning Permission] *is required.*"

The Council's report also references that local areas of filling within the influencing distance of the site may have been carried out for which no records are held.

Metals and PAH Compounds

The Bury Council "*Environmental Search Report*" (Appendix 2) references an investigation to the immediate north of the site by a third party where madeground deposits of 1-2m in depth were identified including ash and clinker inclusions. These forms of deposits are derived from partial combustion of low grade coal and fusing to walls of boiler systems within furnaces. The type of contaminants are commonly associated with elevated concentrations of metals and PAH compounds, which are relatively stable and bound to the soil (due to the method of formation from combustion). Elevated concentrations of these compounds are relatively common which can provide risks to human health from chronic exposure.

The information supplied by Bury Council in 2026 included details from the 1982 Greater Manchester Council planning application for infilling of the reservoirs, where recommendations were made to add "shale or cinders" to the surface following completion (Appendix 2). Historically it was commonly considered that cinders, clinker and similar forms of materials from residual combustion of low grade coals improved soil fertility, although latterly identified as commonly associated with elevated metal and PAH compounds.

Paper Manufacturing/Industry - Petroleum Range Hydrocarbons and Volatile Organic Carbons.

The open parts of the site have been located adjacent to the former paper mill, works and industrial estate where storage or disposal of waste fuels, oils and lubricants may have occurred. The historical OS maps reference 3 No. circular tanks adjacent to settling tanks in 1975, which were removed between 1982 and 1990. The nature and types of products stored in the tanks are unknown, however are more likely to have been settling tanks for waters, given the reference to an adjacent sluice to a settling tank, lack of clear access road/path for filling and location in the context of the works.

The historical maps record a former tramway track running through the site to the Radcliffe Bleach and Chemical Works to the south of Dumers Lane. The track was established by 1891 and removed between 1910 and 1922. Concentrations of fuel and lubricating oils and preservative products for the sleepers, such as creosote, maybe present along the railway lines running across the site. Therefore, hydrocarbons and VOC's may be present in elevated concentrations along these routes.

The presence of fuels, oils and lubricants will commonly be identified by clear visual and olfactory signs of contaminants, these however can be more difficult to detect where older spillages/release occurs where the products are diluted and the more volatile fractions degrade/volatilise. Confirmation testing of soils are required to identify the presence of potential contaminants.

Once released into the soils these contaminants will be mobile and follow complex pathways with groundwater movements. These contaminants will commonly pose risks to human health from multiple exposure pathways, including inhalation of vapours/dusts, dermal contact with impacted soils and secondary ingestion (via hand to mouth or vegetable growth). The high mobility of these contaminants can pose risks to controlled waters where pathways exist to reach aquifers or perched groundwater/water courses.

Paper Manufacturing/Industry – Polychlorinated Biphenyls (PCBs)

The site contained an electrical substation, recorded on historical Ordnance Survey maps as established between 1937 and 1956 in the northern part of the site. An existing electrical substation transformer is also recorded on service plans adjacent to the southern part of the site.

Electrical substations are commonly associated with the historical use of Polychlorinated Biphenyls (PCBs). PCBs were used between the 1950s and the late 1970s as a dielectric fluid in most capacitors (used to stabilise fluctuations in electrical current, mainly on industrial sites) and <1% of transformers (used to change voltage of power supply). PCBs are a restricted substance which is prohibited for manufacture in the UK, first controlled under the 1986 Control of Pollution Regulations (*Department of Environment Industry Profile – Engineering Works: Electrical and Electronic Equipment, Manufacturing Works*).

PCBs provide a risk to human health and ecosystems, which are recorded to cause chloracne (skin condition) in humans and found in animals to reduce the autoimmune system, damage liver, effect reproduction and cause cancers, amongst other health effects (*HSE website*). PCBs are stable and highly persistent once released into the environment, characterised by their very low mobility, as highly viscous fluids or solids. PCBs bioaccumulate within a food chain and considered a high risk to fresh water ecosystems, although low risk to groundwater (*Department of Environment Industry Profile – Engineering Works: Electrical and Electronic Equipment, Manufacturing Works*).

Given the age of the substation this would be considered to have contained PCBs with the potential for release to the subsurface during maintenance or through leaks. PCBs in these areas would be very local to the source with investigation required beneath the structures following decommissioning to confirm the potential presence. It should be noted that these areas must be tested by laboratory analysis as PCBs commonly have no olfactory indication and are only observed as an oily liquid at high concentrations.

Paper Manufacturing/Industry – Asbestos Fibres or Asbestos Containing Materials (ACMs).

The recorded historical filling of the reservoirs/settling tanks in 1982 (discussed previously) is considered to have a high risk of asbestos containing materials used within the fill operations. The other madeground deposits on the site may include asbestos fibres or materials if generated with inclusions from former buildings.

The original buildings were built prior to the common use of asbestos, however expansions, renovations and changes are considered highly likely and may have used a variety of types and forms of ACMs. Corrugated sheeting on industrial units was particularly common, along with pipe lagging and Asbestos Insulating Boards (AIB). On some sites surplus materials during renovation works were buried in open ground to avoid additional disposal costs. Burial pits are very unlikely to found during investigation works however would be located during development phase works where specialist removal and disposal under consultation with qualified asbestos consultants is advised.

Coopers site walkover has identified suspected fly tipped ACM materials at surface. If these materials are disturbed or degrade then asbestos fibres can be released into the soils.

Paper Manufacturing/Industry - Per- and Polyfluoroalkyl Substances (PFAS)

Paper and cardboard manufacturing facilities are listed as sites which use PFAS as coatings to paper and cardboard. CL:AIRE Technical Bulletin 22 (2023) referenced the PFAS use/profile as follows:

> *"Fluorochemicals are used in the paper and cardboard industries to manufacture grease- and water- repellent materials, which includes food packaging as a food contact material. These include plates, popcorn bags, burger wrappers, greaseproof paper, microwaveable containers, biscuit, bread and pastry packaging and pizza boxes.*
>
> *Facilities which manufacture, process, or finish papers or cardboard may require investigation to assess environmental impacts from PFAS.*
>
> *PFAS coatings applied to paper and cardboard tend to be blends or polymers, potentially comprising >100 differing polyfluorinated PFAS. A wide variety of polyfluorinated surfactants, side-chain fluorinated polymers and sulfonamido phosphate diesters.*
>
> *(SAmPAPs), that transform to generate PFOS, were used in food contact materials, until 3M ceased production in 2000. PFAS coatings containing side-chain fluorinated polymers and phosphate diesters (diPAPs) based on 8:2 fluorotelomers (PFOA precursors) have been replaced by products based on 6:2 fluorotelomers (PFHxA precursors). In addition, food contact materials have been manufactured that are based on perfluoropolyethers (PFPE)."*

The Environment Agency have undertaken research into PFAS release from current paper production facilities with "*An Investigation of PFAS Emissions from UK Paper Mills*" Report No. UC16743.3, dated 20th June 2023. *"* It should be noted that this related to the contemporary paper industry, and practices may have differed in the past (site was known to be derelict by 1982). The investigation included testing of input paper, including recycled coated paper, input waters, effluent, sludge and output products. The paper drew the following conclusions.

> "*Papers mills are a discharge point of a small amount of PFOS, PFOA and PFHxS . Based on this dataset, the PFOS, PFOA and PFHxS originate in the input water rather than the recycled waste paper stream and may be concentrated into effluent and crumb during the process".*

The site was recorded to be derelict by 1982. PFAS chemicals predate this and may have been used at the site, subject to the type of paper production undertaken. CIRIA C819 references the types of PFAS used within the paper industry as below (note these were also used in other industries and determining provenance of PFAS requires consideration of the different components/combinations of materials, which have changed over time):

Table 5: Commonly detected PFAS associated within the paper industry (Based upon CIRIA C819 – Table 3.2).

Carboxylic Acids			
CAS No.	Name	Acronym	Alkyl Chain Length
375-95-1	Perfluorononanoic acid	PFNA	C9
335-76-2	Perfluorodecanoic acid	PFDA	C10
2058-94-8	Perfluoroundecanoic acid	PFUnA	C11
307-55-1	Perfluorododecanoic acid	PFDoA	C12
72629-94-8	Perfluorotridecanoic acid	PFTrDA	C13
Sulfonic Acids			
CAS No.	Name	Acronym	Alkyl Chain Length
375-73-5	Perfluorobutane sulfonic acid	PFBS	C4
1763-23-1	Perfluorooctane sulfonic acid	PFOS	C8

Pathways of Mobile Contaminants.

The preferential pathway for most mobile contaminants will be via madeground or utilities trenches, due to the less consolidated nature of the material, combined with typical larger variations of gravel/cobble inclusions. These can result in complex migration pathways and local attenuation around built structures (e.g. chambers, foundations, etc). Where contaminants enter natural strata the migration will commonly be dictated the particle size of the strata types and following the trends of the shallow groundwater. Cohesive materials will commonly limit migration pathways and result in perching of shallow groundwater, whilst granular strata will commonly allow migration. Any contaminants in bedrock will commonly migrate along fractures and fissures within the shallow rock, which are dictated by weathering condition more so than strata type.

The historical maps identified a former well in the southern part of the site, and the former path of the culverted section of Bealey's Goit. These provide preferential pathways for migration of contaminants and direct pathways to impact controlled water receptors.

The desk study information supported the likely presence of madeground overlying alluvium. Deeper glacial clays were likely with bedrock in the region of 20m below ground level.

Receptors – Human Health.

The primary human receptors are assumed to be the future residents with exposure to contaminants within gardens or properties through inhalation (vapours or dusts), dermal (soil contact), or ingestion (via hand to mouth or particles adhered to vegetable growth). Other common human health receptors can be contractors on site, adjacent residents, utilities company workers and landscape gardeners. Whilst it is difficult to account for non-conventional uses of the site the likely exposure of these key receptors is considered in the context of the contamination findings in subsequent sections.

Receptors – Controlled Waters.

The drift and bedrock geology is designated as a "Secondary A Aquifer", described as "*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.*"

The Groundsure Report (Appendix 2) references the site to lie outside of a groundwater source protection zone.

There are 5 No. historical potable water groundwater abstractions recorded within 2000m of the site, relating to 2 No. sites, located 1700m south (Total Fitness Gym), and 1914m (Castlebrook Water Company), both of which are within separate fault blocks to the site. There are 2 No. active groundwater abstraction licenses and 15 No. historical groundwater abstraction licenses within 2000m of the site. The active licenses relate to Bury Golf Club for irrigation, located 1169m to the south east of the site and Danish Crown UK Ltd (process water), located 1992m south east of the site, both within separate fault blocks. The historical licensed abstractions are located >1000m from the site, relating to a variety of uses including irrigation, pollution remediation, general cooling, process water, and expired versions of the active permits (all different fault blocks from the site).

Historical Ordnance Survey maps identify the presence of a former groundwater abstraction well adjacent to the tramway in 1890. The well was located away from the buildings of the paper works (which utilised reservoir water and contained other referenced wells outside of the site, likely to relate to use for steam production on the locomotives to Radcliffe Bleach and Chemical Works to the south of the site. The well was not referenced on the subsequent map edition of 1910 and tramway removed by 1930.

The closest surface water receptor to the site is a section of Bealey's Goit which runs to the north of the site. The surface water is a historical cut to divert water from the River Irwell for use at a former bleach/dye works to the south of the site. The watercourse terminates close to the site, although sections may be culverted within the site, based upon the historical maps, and current surface position in the region.

The hydrogeological conditions are considered of relatively lower sensitivity, situated outside of a groundwater source protection, although designated as a Secondary A Aquifer for both drift and bedrock (bedrock is overlain by deeper glacial till).

The primary controlled water receptors are considered likely to be the surface waters associated Bealey's Goit close to the site, with the deeper bedrock aquifer protected by deeper glacial clays (underlying the alluvium). The superficial aquifer (alluvium) directly underlies the madeground and will contribute to the regional watercourses.

Where mobile contaminants are present these could pose a risk to these receptors, where further assessments would be required.

The sensitive change of use to residential land use will often result in remediation criteria for protection of human health that are less than for the protection of controlled waters, but can depend on the properties and risks of the specific contaminants, depths/extent, and migration pathways.

3.3 Investigation Strategy and Sampling Protocols

The ground investigation was designed to get a general coverage across the site and target specific areas to address local variations. The targets for the investigation are listed in Table 6 below, however limitations due to existing use, services will necessitate further investigation following site clearance and disconnection/diversion of services.

Table 6: List of targets for ground investigation due to contamination risk, likely risks and accessibility

Target for Investigation	Reason	Accessible for investigation
Former Reservoir	Filled Ground (recorded landfill)	Yes
Settling Tanks	Filled Ground (recorded landfill)	Yes
Thin Filter Beds	Filled Ground	Yes
Former Tramway	Oils/lubricants/timber treatment	Yes
Electrical Substation	PCB potential	No (live)
Existing Works/Units	Variable Fuels/Oils/Solvents	Yes
Historical Well	Pathway for migration of contaminants	No (services)

The area of the existing trading units in the southern part of the site were permitted for additional investigation following vacant possession in 2026. Limitations to the investigation were associated with live services, although these did not require a wide offset following tracing. The electrical substations were live and therefore investigation of the locations directly beneath these were not possible. Whilst the overall coverage achieved within these areas are reasonable additional works are required following decommissioning of the on site electrical substation.

The investigation included combinations of shallow hand dug pits (where limitations to the investigation necessitated this approach), small diameter boreholes to depths of up to 5.45m, mechanical trial pits to depths of up to 3.0m, and cable percussive boreholes to depths of up to 10m. Details of the numbers of the different types of exploratory holes are provided in Section 2.4.

Chemical Testing was undertaken on specified suites summarised in Tables 1 to 4 in Section 2.7. All samples were taken in specified containers, agreed/supplied by the laboratory. Samples were returned to Coopers storage in refrigerators, removed at the time of collection for transit to the laboratory in cool boxes with ice packs. Coopers held a meeting with DETS technical director regarding sampling protocols for PFAS analysis, part of the working committee for PFAS analysis. Specific containers were provided which were PFAS free, and procedures following AGS guidance adopted to avoid contaminating the samples with products from the site engineer's equipment or procedures.

It should be noted that the laboratory testing references the PFAS analysis as deviating due to being over temperature. We have raised the problem with DETS as the samples cannot be below 4°c (to avoid freezing) but not above 5°c (deviation limit). As referenced, the samples were stored in fridges on the day of collection and transported to the laboratory in cool boxes with ice packs. DETS reported the temperatures recorded are not the soil sample but the packaging/boxes upon receipt the day after collection. We consider all our works have been to achieve valid results, minimizing sample deviations.

3.4 Contamination Results (Soils) – Initial Assessment Against Screening Values

The laboratory testing was scheduled in batches for accredited analysis by DETS. The results of the testing are provided within the following laboratory certificates, contained in Appendix 4:

- DETS Test Report No. 24-06432, dated 11 April 2024.
- DETS Test Report No. 24-07560, dated 17 April 2024.
- DETS Test Report No. 24-20913, dated 8 October 2024.
- DETS Test Report No. 24-21167, dated 14 October 2024.
- DETS Test Report No. 24-22203, dated 22 October 2024.
- DETS Test Report No. 24-22201, dated 22 October 2024.
- DETS Test Report No. 26-01654, dated 16 February 2026.
- DETS Test Report No. 26-01999 ,dated 16 February 2026.
- DETS Test Report No. 26-03725, dated 4 March 2026.
- DETS Test Report No. 26-03725-1, dated 5 March 2026.
- DETS Test Report No. 26-05674, dated 24 March 2026.
- DETS Test Report No. 26-05668, dated 25 March 2026
- DETS Test Report No. 26-06843, dated 8 April 2026.
- DETS Test Report No. 26-07988, dated 20 April 2026.

Bulk Samples (circa 50kg) were submitted for aggregate testing of the former reservoir/settling tank infill by Murray Rix, with subcontracted testing for asbestos undertaken by Envirolab. The following laboratory certificates represent the results of the testing, provided in Appendix 4:

- EnviroLab, Report No. 26-02897-1, dated 13 March 2026.
- Murray Rix Report No. MRN 26099-7, dated 26 March 2026.

Soil samples were reviewed against available generic Tier 1 screening values for residential gardens with plant uptake, contained in Appendix 7, with associated explanation sheets. The results of which are discussed in subsequent sections.

Metal and PAH compounds (Soils)

Elevated concentrations of metals and PAH compounds above the Tier 1 thresholds for residential gardens, summarised in Table 7 (below):

Table 7: Summary of elevated metal and PAH contaminants within soil samples

Determinant	Concentration in mg/kg (above Tier 1)	Tier 1 Threshold in mg/kg	Elevated samples
Arsenic	49-150	37	12 of 40 No.
Beryllium	2.8	1.7	4 of 40 No.
Copper	200-440	100-200 (*)	5 of 40 No.
Lead	210-470	200	12 of 40 No.
Nickel	80	60-110	1 of 40 No.
Zinc	240-310	200-300 (*)	2 of 40 No.
Benzo(a)pyrene	3.1-3.2	2.2	2 of 40 No.
Dibenzo(a.h)anthracene	0.44	0.24	1 of 40 No.

Notes to Table 7:
** - Phytotoxic threshold for gardens where thresholds vary by pH*

Topsoil, madeground and shallow alluvium clay were identified to contain elevated concentrations of metals across the site. The natural granular strata and peat did not contain any elevated concentrations. The elevated PAH compounds were specific to the area of the infilled reservoirs. Further discussions and assessments of these forms of contaminants are provided in Section 3.6.

Petroleum Range Hydrocarbons (Soils)

The samples outside of the reservoir/settling tanks identified no elevated concentrations of petroleum range hydrocarbons. Samples from WS101 at 3.0-4.0m depth within the former reservoir identified elevated concentrations of mid to high carbon range aromatic hydrocarbons. A sample from WS212 at 0.7m adjacent to a former tank within the settling tank area identified a slightly elevated concentration within the C12-C16 aromatic range (summarised in Table 8).

Table 8: Summary of elevated TPH contaminants within soil samples

TPH Ranges	WS212 0.7m	WS101 3.0-4.0m	Tier 1 Threshold in mg/kg
Aromatic >C12-C16	145	498	140
Aromatic >C16-C21	-	1760	250
Aromatic >C21-C35	-	1362	890

Further discussions of the petroleum range hydrocarbons are provided in Section 3.6.

Volatile and Semi-Volatile Organic Carbons (VOCs and SVOCs) (Soils)

Samples from 13 No. exploratory holes were sent for laboratory testing for VOCs/SVOCs, targeted within areas on or adjacent to the trading estate, former tanks and areas of filling. No detected VOCs (excluding xylene at LOD) and no detected non-PAH SVOCs were recorded within the samples tested, the distribution of the samples tested are shown in Figure 7. The absence of detected VOCs/SVOCs is determined to not require additional assessments.

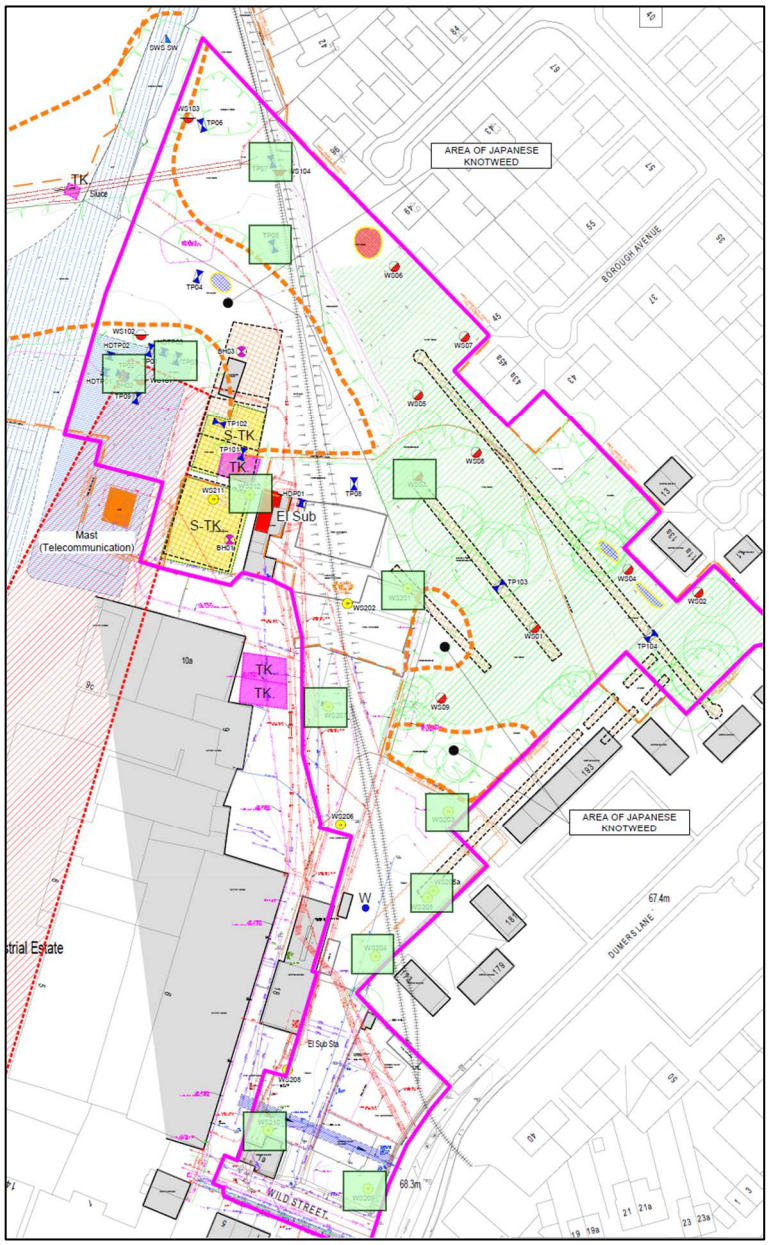


Figure 7: Samples tested for VOCs/SVOCs represented within green squares.

Polychlorinated Biphenyls (PCBs)

The conceptual site model references the potential for PCBs within close proximity to the existing electrical substations. The relatively high viscosity indicating the most likely location for PCBs to be present are within shallow soils directly beneath the substations. The southern electrical substation is offsite and proposed to remain, whilst the electrical substation in the northern part of the site is live and requires decommissioning.

Targeted testing for PCBs (refer to Figure 8) in the locations close to the substations has identified no detectable concentrations of PCBs. Testing of the filled materials within the reservoir has also not identified any evidence of PCBs within these materials.

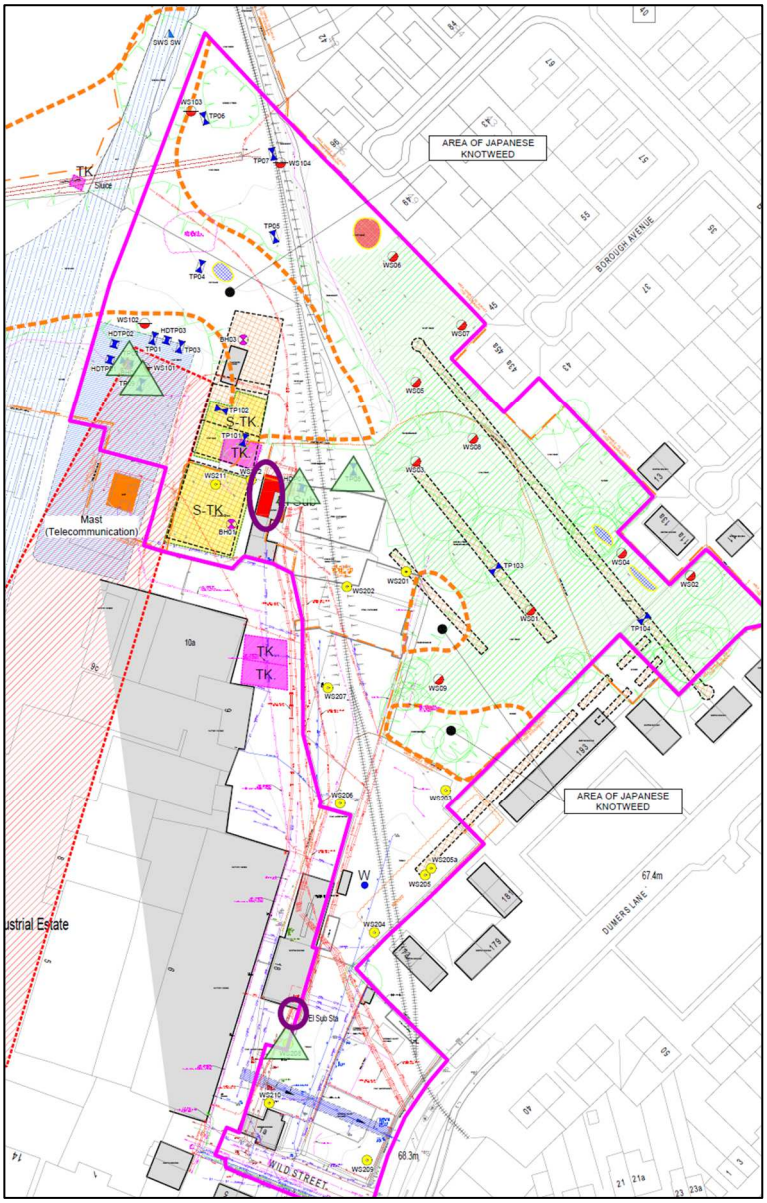


Figure 8: Annotated site plan referencing the locations of electrical substations (purple circles) and samples tested for PCBs (green triangles).

Whilst no evidence of PCBs has been identified, further testing of the shallow soils under the northern electrical substation is required.

Asbestos Containing Soils (ACS)

Laboratory testing identified the presence of amosite and chrysotile asbestos, with reference to fibre bundles, loose fibres, loose insulation, and cement fragments observed. 1 No. bulk cement fragment observed during excavation of trial pit TP01 within the former reservoir, this was tested and confirmed to contain chrysotile. A relatively high proportion of exploratory holes tested from the reservoir/settling tank area identified asbestos containing soils, identified in 8 No. of 11 No. locations (72.7%) tested. Outside of the reservoir/settling tank area, 3 No. of the 7 No. located (43%) of the madeground within the general trading estate identified asbestos, whilst none of the 12 samples from the open area of the site contained asbestos fibres, although surface fly-tipping of suspected cement asbestos was observed. Quantification of the amount of asbestos relative the soil sample was undertaken on selected samples. Where presence as fibres bundles these were identified to be between 0.002% to 0.004%, whilst a sample with inclusions of cement ACM was identified at 0.035% (although the percentage is dependent on the size/mass of the ACM inclusion relative to the soil.

The general distribution of identified asbestos containing soils are represented in Figure 9, which represent the identification of fibres within samples selected for analysis, representing fibres within a medium, where soil heterogeneity and source influence the distribution (not forming hotspots for delineation of mobile fuel spillages).

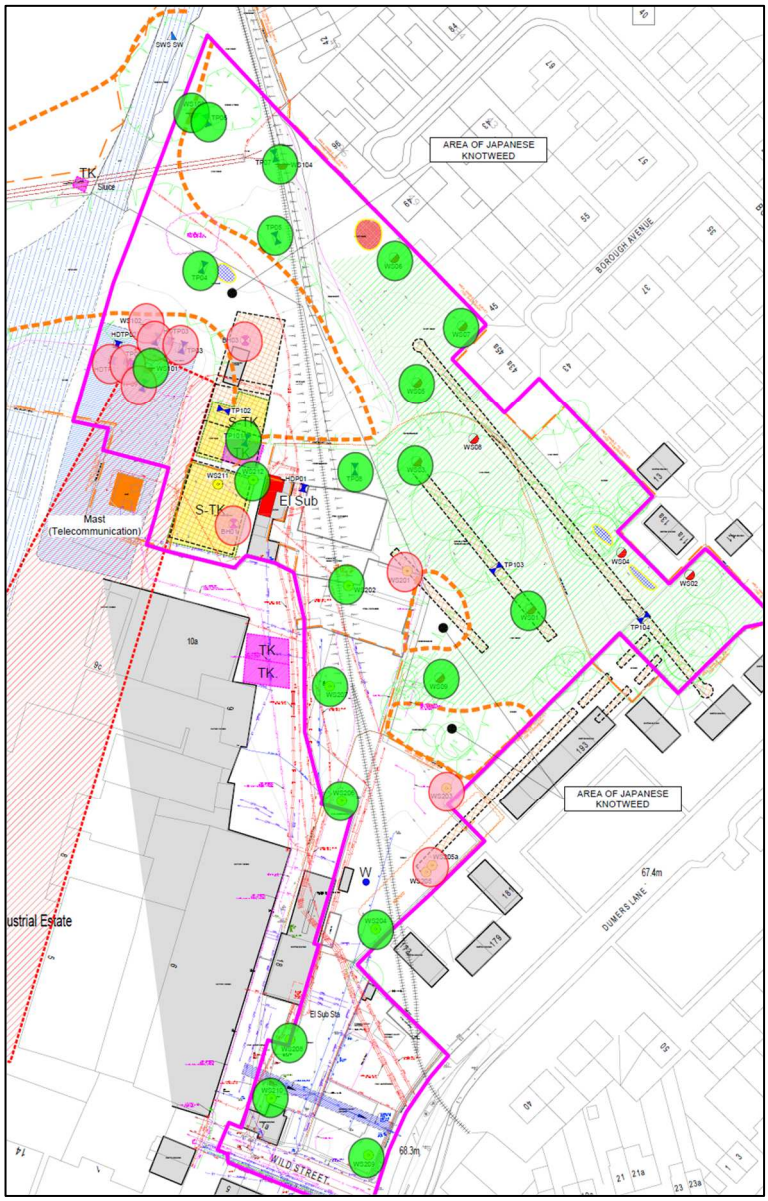


Figure 9: Distribution of exploratory holes where testing identified asbestos (red circles) and no asbestos (green circles).

There are no GAC for asbestos containing soils and further discussions are provided in Section 3.6, following the qualitative initial assessment within CIRIA C733.

Per- and Polyfluoroalkyl Substances (PFAS) (Soils)

Chemical testing of madeground soil samples for the DETS multi-PFAS soil suite was undertaken on the margins of the former paper mill and the reservoir/settling tank filled area (refer to Figure 10). Only one location, WS207, was identified to have no detected concentrations above LOD. The results identified concentrations of the following PFAS types above the laboratory detection limit:

- N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)
- Perfluorohexanesulfonate (PFHxS)
- Perfluoro-n-pentanoic acid (PFPeA)
- Perfluorooctanesulfonate (PFOS)
- Perfluoro-1-octanesulfonamide (PFOSA)
- Perfluoro-n-octanoic acid (PFOA)

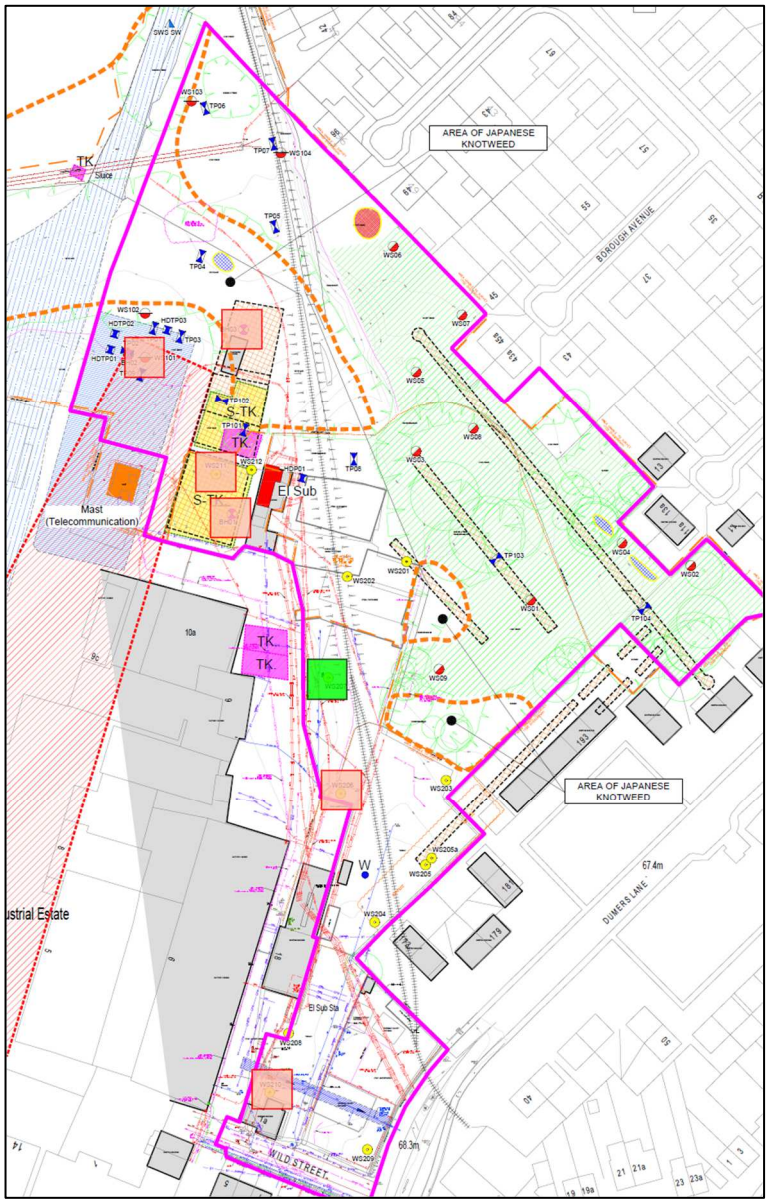


Figure 10: Distribution of exploratory holes where testing identified PFAS (red squares) and no detected PFAS (green squares).

CIRIA C819 references the initial stages of Generic Quantitative Risk Assessment are via screening against Generic Assessment Criteria with initial screening values provided by the C4SL Consortium, for PFOS, PFOA, PFHxS, and PFNA, with numerous clarifications, limitations and cumulative Hazard Quotients to factor. Where toxicological data is available a selected number of PFAS have referenced Relative Potency Factors (RPF). A summary of the results is provided in Table 9, followed by discussion of each identified PFAS.

Table 9: Identified PFAS chemicals above LOD.

PFAS Identified above LOD	LOD	SoBRA C4SL (resi+plant)	SoBRA C4SL (resi+POS)	BH01 (2.2m)	BH02 (4.5m)	BH03 (2.2m)	WS206 (0.3m)	WS207 (0.8m)	WS210 (1.6m)	WS211 (0.5m)
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA total)	0.4	-	-	-	0.56	-	-	-	-	-
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA Linear)	*0.4*	-	-	-	*0.47*	-	-	-	-	-
Perfluorohexanesulfonate (PFHxS) (Branched)	0.1	8.1 (*1)	79 (*1)	0.18	-	-	-	-	0.17	-
Perfluoro-n-pentanoic acid (PFPeA)	0.2	-	-	-	-	-	0.43	-	-	-
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	0.8	13.0	79	-	-	3.1	33	-	-	3.4
Perfluorooctanesulfonate (PFOS - (Branched)	*0.3*	-	-	-	-	*0.4*	*3.6*	-	-	*0.67*
Perfluorooctanesulfonate (PFOS - (Linear)	*0.6*	-	-	-	-	*2.7*	*29*	-	-	*2.8*
Perfluoro-1-octanesulfonamide (PFOSA)	0.4	-	-	-	-	-	0.87	-	-	-
Perfluoro-n-octanoic acid (PFOA)	0.30	7.6	79	-	-	0.36	-	-	-	-

Notes to Table 9:
All units in µg/kg
**1 – C4SL thresholds provided for combined linear and branched PFHxS. The laboratory limit of detection for the combined PFHxS is 0.2µg/kg, with no detected combined concentrations above this limit.*

- **N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)** - $C_{12}H_6F_{19}NO_4S$

Identified in 1 No. soil sample from deeper madeground in the former reservoir (BH202) at 4.5m depth at a concentration of 0.56µg/kg relative to the LOD of 0.4µg/kg. N-EtFOSAA does not have an interim C4SL GACs and is not listed as having any identified RPFs. N-EtFOSAA is not listed as a type of PFAS associated with the paper industry.

Referenced detailed information on PFAS chemicals are provided by the Interstate Technology Regulatory Council (ITRC) in the USA within website section on PFAS (https://pfas-1.itrcweb.org/). This defines N-EtFOSAA as within the Non-Polymer Class, Sub Class of Polyfluoroalkyl Substances, grouped with Perfluoroalkane sulfonamido substances, within the subgroup of EtFASAA. These are listed as potential precursors to both per and poly fluoroalkyl substances.

The absence of sufficient toxicological data to determine thresholds, can only allow a qualitative assessment that the concentrations present are close to the LODs and not prevalent across the site.

Concentrations of N-EtFOSAA are therefore not considered a significant risk to human health.

Perfluorohexanesulfonate (PFHxS) - $C_6F_{13}O_3S$

Identified branched form of PFHxS in 2 No. soil samples from sample in the former settling tank area in BH01, at 2.2m depth at a concentration of 0.18µg/kg and from madeground in the southern part of the site in WS210 at 1.6m of 0.17µg/kg, relative to LOD of 0.10µg/kg.

Testing of linear and total PFHxS has a higher LOD of 0.2µg/kg with no samples identified above LOD. Total PFHxS has a referenced interim C4SL threshold for residential gardens of 8.1µg/kg and POS (residential) threshold of 79µg/kg. The soil concentrations of 0.17µg/kg to 0.18µg/kg for branched PFHxS, with total PFHxS of <0.20 µg/kg considered to be significantly lower than the GAC.

PFHxS was not listed as associated with paper production, although the EA did reference the presence in feedwater within current paper manufacturing.

Concentrations of PFHxS are well below the GAC which are therefore not considered a significant risk to human health.

Perfluoro-n-pentanoic acid (PFPeA) - $C_5HF_9O_2$ C_4F_9COOH

Identified in 1 No. soil sample from adjacent to the former paper mill at WS206 – 0.3m, at a concentration of 0.43µg/kg above the LOD of 0.2µg/kg.

PFPeA has no referenced interim C4SL GAC, although contains a liver toxicity RPF of between 0.01 to 0.05 of PFOA. This would put the equivalent range where PFPeA would be considered to pose a risk in residential gardens as likely to fall between 152µg/kg to 760µg/kg. The soil concentration of 0.43µg/kg is considered significantly lower than the GAC-RPF for residential gardens.

PFPeA was not listed as associated with paper production, although the EA did reference the association with food wrappers.

Concentrations of PFPeA are well below the GAC-RPF ranges, which are therefore not considered a significant risk to human health.

- **Perfluorooctanesulfonate (PFOS)** - $C_8F_{17}SO_3H$ $C_8HF_{17}O_3S$

Identified in 3 No. soil samples:
- Former settling tanks in BH03 at 2.2m depth, concentration of 3.1µg/kg.
- Adjacent to Trading Estate/Former Paper Mill in the southern/central part of the site in WS206 at 0.3m depth, concentration of 33µg/kg.
- Former Settling tanks in WS211 at 0.5m depth, concentration of 3.4µg/kg.

PFOS has a referenced interim C4SL threshold for residential gardens of 13µg/kg and POS (residential) threshold of 79µg/kg. The concentrations in the settling tank area were 3.1-3.4µg/kg, below the residential thresholds. The sample from WS206 adjacent to the trading estate in the southern/central part of the site was 33µg/kg, above the residential garden (with plant uptake) threshold, but below the POS threshold.

PFOS was listed as associated with paper production, and the EA referenced the presence in feedwater within current paper manufacturing.

The soil concentrations adjacent to the existing trading estate in the southern parts of the site (area of WS206) are classified as above the GAC for garden growing mediums, requiring further assessment/remedial action. No remedial action/assessments are likely to be required for public open space areas for PFOS. Further discussions of the risks posed by PFOS are provided in Section 3.6.

- **Perfluoro-1-octanesulfonamide (PFOSA)** - $C_8F_{17}SO_2NH_2$ $C_8H_2F_{17}NO_2S$

Identified in 1 No. soil sample from adjacent to the former paper mill at WS206 – 0.3m, at a concentration of 0.87µg/kg above the LOD of 0.4µg/kg.

PFOSA has no referenced interim C4SL GAC, although is referenced in CIRIA C819 as having a liver toxicity RPF of "none", and no stated internal RPF, indicative that this substance has a relatively low equivalent toxicity relative to PFOA.

PFOSA was not listed as a common contaminat associated with paper production, and the EA did not reference the presence as associated with current paper mills.

Concentrations of PFOSA are well below the RPF ranges which are therefore not considered a significant risk to human health.

- **Perfluoro-n-octanoic acid (PFOA)** - $C_8HF_{15}O_2$

Identified in 1 No. soil sample from deeper madeground in the area of former filter beds/filling (BH202) at 2.2m depth at a concentration of 0.36µg/kg relative to the LOD of 0.30µg/kg. PFOA has an interim C4SL GAC of 7.6µg/kg.

PFOA was not listed as associated with paper production, although the EA referenced the presence in feedwater within current paper manufacturing.

Concentrations of PFOA are well below the GAC which are therefore not considered a significant risk to human health.

3.5 Contamination Results (Waters) – Initial Assessment

General

As referenced within the conceptual site model, the site is located adjacent to Bealey's Goit (surface water), with drift alluvium defined as a Secondary A aquifer. Bedrock is also defined as a Secondary A aquifer, although at depths of circa 20m, and overlain by deeper lower permeability glacial till. No ground abstraction wells are present within the areas local to the site and the site is outside of a groundwater source protection zone.

Following review of the previous Coopers Site Investigation Report by the Environment Agency, the response highlighted the requirements for further testing and assessments of groundwater, including analysis for PFAS chemicals associated with the adjacent former Paper Mill. The Environment Agency advised they were unable to provide any voluntary advice service to discuss the proposals for further testing, where the approaches and methods were therefore discussed between Coopers and a proposed remediation contractor.

It was determined that deeper monitoring wells to intercept the groundwater should be completed, with wells including a base seal comparable to relatively lower permeable layers to limit downward migration of contaminants, and wells to be decommissioned subject to review and agreements in sufficiency of the data to enable assessments.

It was agreed to undertake targeted monitoring towards the former reservoir and settling tanks due to the relatively higher risk posed by the former infilling activities and association between PFAS chemicals and feedwater in current paper mills (discussed in Section 3.2). 4 No. borehole locations were agreed for testing to establish the areal distribution, and gradients of shallow waters in the target area, along with 2 No. locations of surface samples from Bealey's Goit were proposed for testing, one located adjacent to the filled terminus of the Goit adjacent to the site boundary, and one approximately 75m upflow of the site boundary to determine concentrations prior to having any influence from the site waters (locations reflected in Coopers Drawing No. 8353/01 and extract in Figure 11 (below).

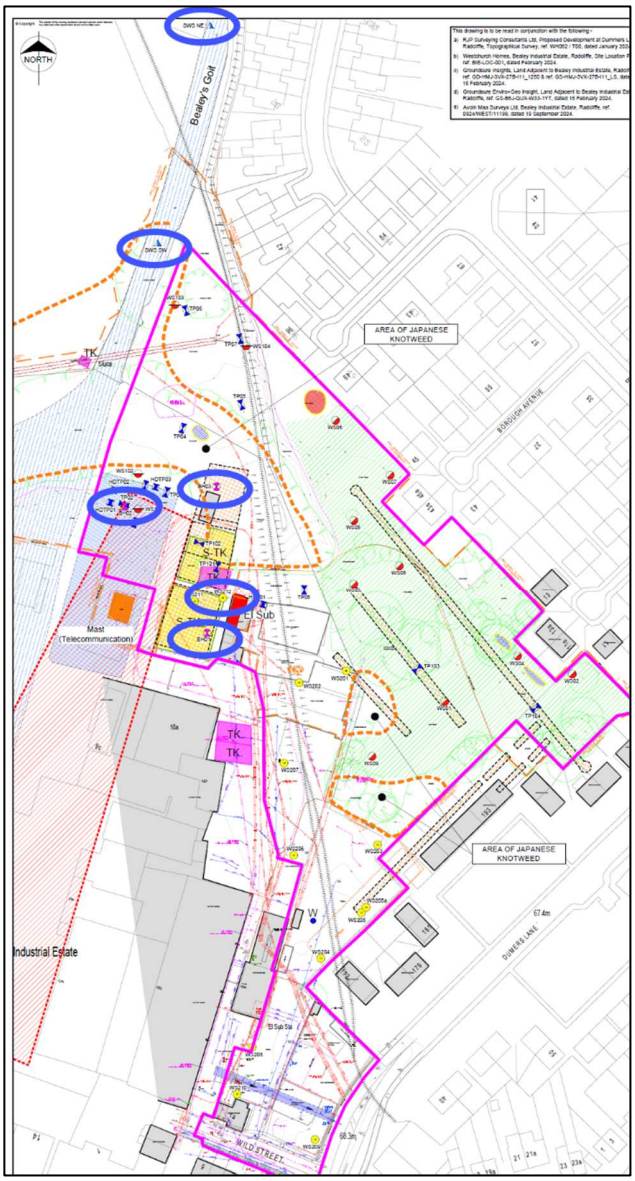


Figure 11: Extract of site plan showing water sampling locations highlighted with Blue Circles (note Bealey's Goit is the historical location, which has been filled adjacent to the site.

Suites of analysis included full metals, pH, DOC, $CaCO_3$, PAH-16, VOCs, TPH-CWG, VOCs, and PFAS. Borehole samples were obtained following purging 3 times the well volume, with samples obtained utlising a low flow pump to allow testing of the volatile components. Specialist containers and sample procedures were adopted for PFAS following advice from DETS director.

Water Testing Results – Metals and PAH Compounds

A summary table of the metal and PAH compound groundwater and surface water testing from the 3 rounds of monitoring is provided in Table 10. The majority of the testing showed no significantly elevated results, comparable with the adjacent surface waters from Bealey's Goit. Samples from the surface water in the Goit were also comparable or lower than the up flow sampling (100m north of the site). The main variation was variable spikes in the PAH compounds from water samples in borehole BH03, discussed further below.

Table 10: Summary of the metal and PAH water sampling over 3 rounds of monitoring.

Determinant	Groundwater Quality	EQS			Groundwater results	Surface Water Results	
		Long Term (mean) fresh water	Annual Average (inland surface water)	Maximum Allowable (inland surface water)		Up Flow	Adjacent
Arsenic	10	50	-	-	0.59-2.9	1.80-3.34	1.58-2.70
Boron	1000	-	-	-	89.23-174.4	44.20-54.62	47.28-72.26
Cadmium	5.0	-	0.08-0.25	0.45-1.5	<0.03-0.14	<0.03	<0.03
Chromium	50	3.4	-	-	<0.25-0.85	0.90-1.20	0.55-0.75
Copper	2000	1	-	-	<0.40-3.29	1.69-2.35	1.33-1.69
Lead	10	-	1.2	14	0.10-1.96	0.84-1.24	0.20-0.48
Nickel	20	-	4	34	1.39-7.07	1.72-2.10	1.71-2.05
Zinc	-	10.9	-	-	69.54-163.1	69.54-76.72	59.38-69.60
pH	-	-	-	-	6.8-7.4	7.1-7.4	7.0-7.3
DOC	-	-	-	-	3.7-7.7	<2.0-5.5	4.3-7.2
Alkalinity ($CaCO^3$)	-	-	-	-	140-550	88-110	94-200
Anthracene	-	-	0.1	0.1	<0.01-2.1	<0.01	<0.01
Benzo(a)pyrene	0.01	-	$1.7x10^{-4}$	0.27	<0.01-44	<0.01	<0.01
Fluoranthene	-	-	0.0063	0.12	<0.01-5.0	<0.01	<0.01
Naphthalene	-	-	2	130	<0.05-2.1	<0.05	<0.05
PAH compounds (benzo(b)fluoranthene + benzo(k)fluoranthene + benzo(ghi)perylene + indeno(1,2,3-cd)pyrene)	0.1	-	$1.7x10^{-4}$	0.27	<0.08-119.6	<0.08	<0.08

Notes to Table 10:

- *All units are in µg/l.*

Borehole BH03 identified a spike in PAH compounds on the second monitoring visit, summarised in Table 11. The preceding weather conditions were comparable (Figure 12), water levels similar, all samples taken after bailing 3 times well volume, recharging fast and sampling undertaken with flow pumps. The same site engineer undertook all of the monitoring visits and reported nothing different on the sampling procedures. The soil samples on the site had slightly elevated concentrations of PAH compounds, with the most logical explanation would be sediment containing higher PAH values. A forensic assessment of the source signature double ratios (Figure 13) indicate the sediment material is likely to be coal derived, which can include materials derived from coal (such as coal tar). Sampling for petroleum range hydrocarbons (discussed in sections below) identified no detectable concentrations, from BH03 further supporting the likely potential being sediment with materials derived from coal.

Table 11: Summary of the PAH water sampling results from BH03.

Determinant	5 March 2026 3.20m depth	18 March 2026 3.17m depth	31 March 2026 3.18m depth
Naphthalene	0.16	2.1	<0.05
Acenaphthylene	0.02	0.65	<0.01
Acenaphthene	0.22	3.1	0.13
Fluorene	0.10	2.0	0.02
Phenanthrene	0.54	43	0.10
Anthracene	0.13	3.5	0.03
Fluoranthene	0.99	70	0.2
Pyrene	0.95	64	0.2
Benzo(a)anthracene	0.52	45	0.09
Chrysene	0.57	41	0.12
Benzo(b)fluoranthene	0.86	51	0.17
Benzo(k)fluoranthene	0.31	34	0.06
Benzo(a)pyrene	0.70	44	0.11
Indeno(1,2,3-c,d)pyrene	0.54	32	0.11
Dibenzo(a,h)anthracene	0.09	2.9	0.02
Benzo(g,h,i)perylene	0.52	32	0.11
PAH Total	7.2	470	1.5

Notes to Table 11:

- *All units are in µg/l.*

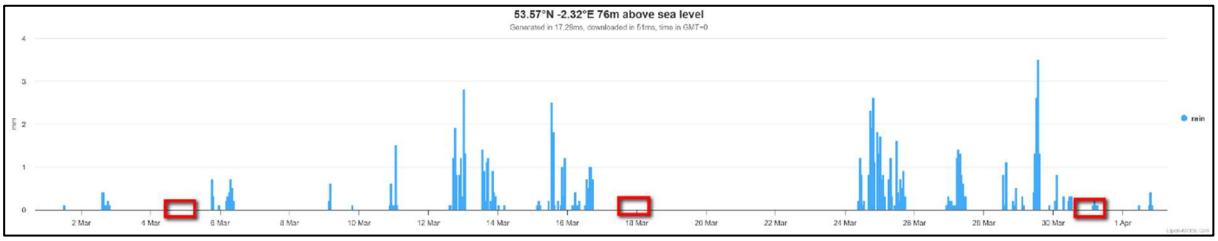


Figure12: Hourly rainfall in Radcliffe in mm, relative to water sampling visits (red rectangles).

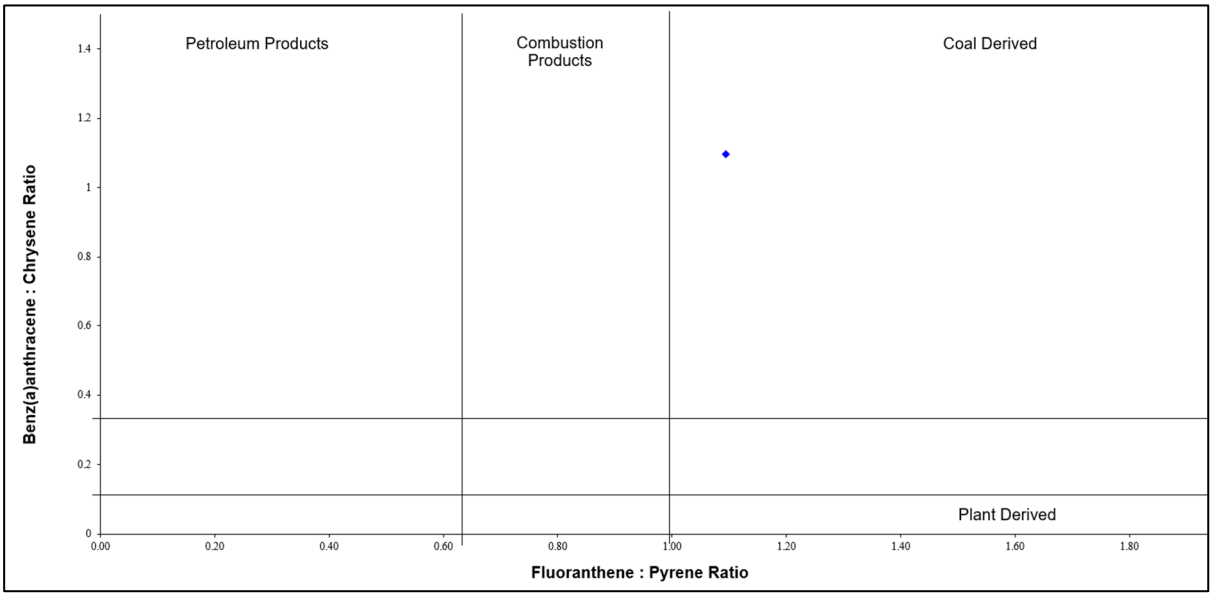


Figure 13: Source Signature Double Ratio Plot of potential origin of elevated PAH compounds from water sampling on 18 March 2026.

The initial results indicate the concentrations of metal and PAH results are not posing a significant risk to controlled waters, representing typically low concentrations, with no elevated concentrations identified in the surface water receptor. Further discussions of the impacts from the development to pathways are included in Section 3.7.

Water Testing Results – Petroleum Range Hydrocarbons and Volatile Organic Carbons

Samples from low pumping of boreholes and surface water sampling of Bealey's Goit, identified no detectable Volatile Organic Carbons in any of the samples. Based upon the absence of any identified VOCs within soils or waters, these are not considered as a potential significant risk to controlled waters.

Water samples tested for carbon banded aliphatic and aromatic petroleum range hydrocarbons has identified the majority of samples tested to have below detection limit concentrations. 1 No. sample from 75m up flow of the site and 1 No. sample from BH02 identified mid-range aliphatic hydrocarbons, summarised in Table 12.

Table 12: Summary of identified Petroleum Range Hydrocarbon.

TPH Ranges	BH02 – 3.56m depth Visit of 18 March 2026	Surface Water (Up Flow) Visit of 31 March 2026
Aliphatic C10-12	68	6.5
Aliphatic C12-16	870	16
Aliphatic C16-21	14	37
Aliphatic C21-35	<1	12

Notes to Table 12:

- *All units are in µg/l.*

There are no generic assessment criteria for aliphatic and aromatic range hydrocarbons in relation to surface or groundwater (only BTEX). The soil concentrations have identified evidence of petroleum range hydrocarbons with potential to pose risks to human health from mid-carbon aromatic ranges where remedial works are required. Whilst the water results are indicating no significant persistent risk to ground or surface waters from petroleum hydrocarbons it can only be concluded that there is no extensive plume to be modeled, and removal of any impacted soils would help to reduce the overall risk of mobilising petroleum range hydrocarbons to impact surface or ground water. Further discussions of the impacts from the development to pathways are included in Section 3.7.

Water Testing Results – Per- and Polyfluoroalkyl Substances (PFAS)

Chemical testing has identified the majority of the samples to contain detectable concentrations of PFOS, with identified levels above detection limit for other types of PFAS, summarised in Table 13.

Table 13: Summary of PFAS testing.

PFAS Identified above LOD	LOD (ng/l)	BH01 (ng/l)	BH02 (ng/l)	BH03 (ng/l)	WS212 (ng/l)	Goit (Up Flow) (ng/l)	Goit (Adjacent) (ng/l)
Perfluoro-n-butanoic acid (PFBA)	10	-	<10 - 51	-	-	-	-
Perfluoro-n-pentanoic acid (PFPeA)	3	4.4 - 17	<3.0 - 4.7	-	-	-	-
Perfluoro-1-butanesulfonate (PFBS)	3	<3.0 - 3.9	-	-	<3.0 - 6.6	-	-
Perfluoro-n-hexanoic acid (PFHxA)	3	4.6 - 8.5	<3.0 – 3.2	-	3.1 - 3.4	-	-
Perfluoro-n-heptanoic acid (PFHpA)	3	3.7 - 6.7	<3.0 - 3.1	-	3.3 - 3.5	-	-
Perfluoro-n-octanoic acid (PFOA)	3	4.4 - 43	6.9 - 43	5.1 - 32	7.6 - 55	3.2 - 32	<3.0 - 31

CIRIA C819, Chapter 13.2 and 13.3 references the approaches to assessments of risks to surface waters and groundwater. For surface waters PFOS and derivatives have an EU Annual Average (AA) EQS of 0.65ng/l, and a Maximum Allowable Concentration (MAC) for inland waters 36,000ng/l. For other surface waters the AA-EQS is 0.13ng/l, and MAC is 7200ng/l.

In relation to the above AA-EQS it should be noted these are below the accredited limits of detection by DETS, and the background levels of PFOS identified by the Environment Agency (CIRIA C819 – Figure 4.2) are reported at units scales to 0.05µg/l (50ng/l).

CIRIA C819 references that DEFRA have not released any groundwater quality standards for PFAS chemicals and the starting point for assessments as Drinking Water thresholds by DWI (2022). These use a tiered approach by water companies to test for specified PFAS types, with designations for any concentrations as follows:

Tier 1 = <0.01µg/l (<10ng/l) - Continue to monitor quarterly, risk assessments and hazard assessments.

Tier 2 = <0.1µg/l (<100ng/l) - Continue to monitor monthly to quarterly, risk assessments and hazard assessments, notify liaison inspector, prepare to prevent water supply to consumers if further samples identify >0.1µg/l (>100ng/l).

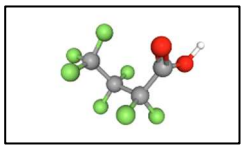
Tier 3 = ≥0.1µg/l (≥100ng/l) – Notifications to UKHSA and local authorities, review of blended waters, combined and final waters, resampling to be fast tracked, prepare emergency procedures to prevent consumer exposure, review hydrological conditions and catchment.

The results indicate the presence of various types of PFAS within the site, several orders of magnitude below the MAC, but above the AA-EQS, comparable to background levels for Perfluorooctanesulfonate (PFOS), and within thresholds permitted for drinking water (albeit with heightened testing and monitoring requirements), defined as Tier 2 class waters.

Perfluoro-n-octanoic acid (PFOA) concentrations are slightly higher than surface water samples from Bealey's Goit, although no measurable difference at the terminus of the Goit, adjacent to the site, and those 75m up flow from the site.

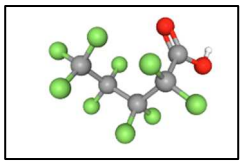
The samples from Bealey's Goit and Borehole BH03 (north of the settling tanks) identified no other forms of PFAS (other than PFOA). The samples from the former reservoir and settling tanks identified other types of PFAS, discussed below.

Perfluoro-n-butanoic acid (PFBA) - $C_4HF_7O_2$ C_3F_7COOH



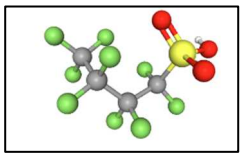
- Identified at 51ng/l above detection limit of 10ng/l within 1 No. of 3 No. sampling visits within the former reservoir (BH02) at a depth of 3.56m.
- Not identified within any soil samples.
- Not listed as associated with the paper industry.
- Not reported as identified with current paper mill feedwater.
- Concentrations within drinking water levels (Tier 2).

Perfluoro-n-pentanoic acid (PFPeA) - $C_5HF_9O_2$ C_4F_9COOH



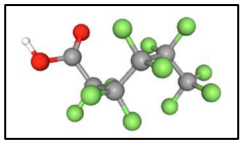
- Identified at 4.4ng/l to 17ng/l within BH01 (settling tanks) and <3.0 ng/l to 4.7ng/l within BH02 (former reservoir).
- Identified within one soil sample, but not from any within the reservoir/settling tank area.
- PFPeA was not listed as associated with paper production, although the EA did reference the association with food wrappers.
- Concentrations within drinking water levels (Tier 2).

Perfluoro-1-butanesulfonate (PFBS) - $C_4HF_9O_3S$ $C_4F_9SO_3H$



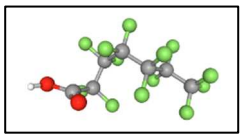
- Identified at <3.0 ng/l to 3.9ng/l within BH01 (settling tanks) and <3.0ng/l - 6.6ng/l within WS212 (settling tanks).
- PFBS was not identified within any soil samples.
- PFBS was not listed as associated with paper production, although the EA did reference the presence in feedwater within current paper manufacturing.
- Concentrations within drinking water levels (Tier 1).

Perfluoro-n-hexanoic acid (PFHxA) - $C_6HF_{11}O_2$ $C_5F_{11}COOH$



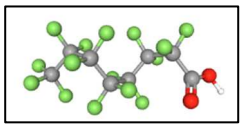
- Identified at 4.6ng/l to 8.5ng/l within BH01 (settling tanks), <3.0ng/l – 3.2ng/l within BH02 (reservoir) and 3.1ng/l – 3.4ng/l within WS212 (settling tanks).
- PFHxA was not identified within any soil samples.
- PFHxA was not listed as associated with paper production, although the EA did reference the presence in feedwater within current paper manufacturing.
- Concentrations within drinking water levels (Tier 1).

Perfluoro-n-octanoic acid (PFHpA) - $C_7HF_{13}O_2$ $C_6F_{13}COOH$



- Identified within all water samples (as referenced previously) at 3.7ng/l to 6.7ng/l within BH01 (settling tanks), <3.0ng/l – 3.1ng/l within BH02 (reservoir) and 3.3ng/l – 3.5ng/l within WS212 (settling tanks).
- PFHpA was not identified within any soil samples.
- PFHpA was not listed as associated with paper production, although the EA did reference the presence in effluent samples within current paper manufacturing.
- Concentrations within drinking water levels (Tier 1).

Perfluoro-n-heptanoic acid (PFOA) - $C_8HF_{15}O_2$



- Identified at 4.4ng/l to 43ng/l within BH01 (settling tanks), 6.9ng/l – 43ng/l within BH02 (reservoir), 5.1ng/l - 32ng/l within BH03 (north of settling tanks) and 7.6ng/l – 55ng/l within WS212 (settling tanks).
- PFOA was identified within 1 No. soil sample from BH03.
- PFOA was listed as associated with paper production, and the EA referenced the presence in some effluent samples and crumb samples within current paper manufacturing (also identified in field blanks).
- Concentrations within drinking water levels (Tier 2).

The results of the PFAS testing of groundwater samples and surface water samples are indicating the results are not significantly elevated. The results fall within Tier 1 or Tier 2 DWI thresholds, and significantly lower than EQS-MAC.

3.6 Contamination Assessment & Recommended Remedial Actions

Metal and PAH Compounds

The testing of soils across the site have identified the presence of slighted elevated concentrations of metals and PAH above chronic exposure thresholds for residential gardens, with no consistent significant concentrations present within groundwater. The concentrations are not considered to be approaching levels where acute human health exposure risks occur (following SOBRA, 2020, *Development of Acute Generic Assessment Criteria for Assessing Risks to Human Health from Contaminants in Soil).* These forms of contaminants are primarily a risk to the future residents from exposure to contaminated soils in residential garden growing mediums, hand to mouth ingestion (including uptake through vegetable/fruit grown within the gardens) with secondary transfer of soils to properties and formation of dusts. Remedial actions will be required to break the exposure pathway between the residents and the madeground deposits within the site.

TPH Compounds

The testing of soils and waters have identified the presence of elevated petroleum range hydrocarbons within the area of the former reservoir and settling tanks. Soil samples identified elevated concentrations above residential garden threshold for the aromatic mid-high carbon ranges. Within these fractions the primary pathway for human health exposure is through dermal and secondary ingestion, with a less significant vapour inhalation pathway. Modelling of the health risks within CLEA 1.071 (Appendix 6) demonstrates that outside of the garden growing medium the concentrations present are below the human health risks from vapour inhalation, such that breaking the exposure pathway between the residents and the madeground deposits will be sufficient for protection of human health (no vapour inhalation risks). A summary of the results and thresholds for soils in relation to human health is provided in Table 14.

Table 14: Summary of elevated TPH contaminants within soil samples

TPH Ranges	Maximum Soil Concentration	**Standard Residential Gardens** (dermal, ingestion, indoor & outdoor inhalation – Tier 1)	**At depth below Buildings & Gardens** (indoor & outdoor inhalation)	**At depth below Public Open Space** (outdoor inhalation)
Aromatic >C12-C16	498	140	2,004	100%
Aromatic >C16-C21	1760	250	35,773	100%
Aromatic >C21-C35	1362	890	100%	100%

Notes to Table 14:

- *All units are in mg/kg (unless stated as percentage).*

There was no evidence of consistent elevated concentrations of petroleum hydrocarbons typical of a plume, with one number water sample identifying a spike in mid carbon range aliphatic hydrocarbons. There was no evidence of hydrocarbons within surface water samples from Bealey's Goit adjacent to the site (although present upstream on one occasion). The identified concentrations are not considered to be posing a significant risk to controlled waters at present, with consideration of the impacts from pathway formation from development to be the primary factor on the potential future risks (discussed in Section 3.7).

Volatile and Semi-Volatile Organic Carbons (VOCs and SVOCs) (Soils)
No detected VOCs and SVOCs (excluding PAH compounds) within samples of soils or water. No further assessments required.

Polychlorinated Biphenyls (PCBs)
The testing of samples close to the electric substations has not identified indications of the presence of PCBs. The electrical substation in the north of the site is to be decommissioned and further testing will be required beneath the substation to confirm if PCBs are present.

Any detectable PCBs are likely to be above residential garden thresholds (derived within CLEA 1.071 with application of Toxicity Equivalency Factors) and would require removal from these areas.

Asbestos Containing Soils (ACS) - General
The previous sections provide details as to the presence of Asbestos Containing Soils (ACSs) in the form of free fibres within the madeground and topsoil, and cement asbestos fragments within the infilled reservoir.

As referenced above there are requirements for protection of residents for Inorganic/PAH Compounds and TPH compounds, however ACSs can pose risks to construction workers and adjacent members through inhalation pathways which differ significantly. The approaches to assessment of asbestos containing soils are detailed in the following guidance:

- CIRIA C733, 2014, "*Asbestos in Soils and Madeground*".
- CL:AIRE, 2016. "*Control of Asbestos Regulations 2012 - Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry guidance.*"
- CIRIA C765, 2017, "*Asbestos in Soil and Made Ground Good Practice Guide.*"

There are no acceptable generic thresholds for Asbestos Containing Soils (ACSs) by designated end use. CIRIA C733 advocates a staged approach with initial qualitative assessment (below), and where higher risks are identified then further detailed quantitative assessments and exposure assessments should be complete. It should be noted there is no generic threshold for determining relative lower or higher risks, although risk assessment tools have been released by CL:AIRE to aid assessments. The approach of several companies to infer laboratory detection limit or withdrawn ICRCL threshold as an applicable threshold for risk is not appropriate, as detailed within CIRIA C733 "*the value of 0.001 per cent mentioned in ICRCL should not be used in this capacity.*" This is further detailed that "*It is not a level below which ICRCL considered that risks are acceptable or below which potential civil liberties could be assumed to be negligible. So, it is not an appropriate generic assessment criterion for ACSs.*"

In addition to the normal contaminated land legislation the following regulations and acts apply to asbestos exposure:

- Control of Asbestos Regulations, 2012.
- Health and Safety at Work Act, 1974.
- Construction (Design and Management) Regulations, 2015.
- Management of Health and Safety at Work Regulations, 1999.

Asbestos Containing Soils (ACS) - Initial Qualitative Assessment

Exposure Risks

The primary asbestos risk to human health is through the inhalation of respirable fibres, where they can provide non-malignant pleural disease, asbestosis, lung cancer, and mesothelioma. CIRIA C733 details that environmental exposure (non-work related) to asbestos is not considered a concern for non-malignant pleural disease and asbestosis, with asbestos related lung cancer and mesothelioma the primary human health risks. The HSE have stated that occupational exposure to asbestos is "*the single greatest cause of work-related deaths in UK*" with an estimated circa 4000 deaths annually in the UK alone (CIRIA C733).

Initial Asbestos Analysis and Supplemental Investigation Method

To undertake a robust qualitative assessment of the risks a method of qualitative assessment has been assessed by SOBRA within the publication "*Summer Workshop Report – Asbestos in Soils*" (2015). The approach is based upon assessments of the nature of the asbestos, the soil characteristics, quality of the data and the receptor types during each activity where asbestos containing soils are liable to be disturbed. The approach assessed by SOBRA has been included into assessment tools by CL:AIRE/JIWG and a summary of the SOBRA approach is provided in Table 15 (below), followed by appraisal of each criteria.

Table 15 - Qualitative Assessments Criteria Based Upon SOBRA Guidance

Assessment Criteria		Explanation
Asbestos Nature	Asbestos type	whether chrysotile, amosite, crocidolite or a mixture of fibre types
	Asbestos composition	whether bonded, unbonded, and whether in a poor or good condition
	Asbestos quantity	percentage asbestos content in the soil
	ACM matrix	the ACM matrix degradation rate – i.e. the potential release rate of asbestos fibres from the matrix
	Respirable fibres	the respirable fibre index – a measure of the proportion of respirable fibres in the ACM, as opposed the total fibre count
Soil Characteristics	Soil type	sand, loam, silt, clay and aggregates
	Moisture content	-
	Depth to ACS	-
	Ground cover and propensity for surface wind erosion	-
	Heterogeneity of ground conditions	spatial scale of variation
Data	Data Quality	assessment of the ground investigation to characterise the asbestos in soils (see below)
Receptor	Age group	-
	Exposure frequency	-
	Exposure duration	-
	Activity level	associated with physical intensity of soil disturbance activity and propensity for dust generation

Asbestos Nature:

- Fibre bundles of chrysotile and amosite (0.002-0.004%) in 8 No. of 11 No. samples from the former reservoir/settling tank area, and 3 No. of 7 No. samples from the madeground within the trading estate, and None of the 12 No. samples from the open area of the site.
- Microscopic debris was measures (0.035% of the soil sample) in 2No. of 30No. samples, reported as cement and insulating material.
- Cement Asbestos Fragments (15% chrysotile) observed in reservoir.
- The potential fibre release to the air from small amounts of fibre bundles would be relatively low.
- The potential for degradation and release of large volumes of asbestos fibres from material with frequent cement sheeting is high if this material is heavily worked.

Soil Characteristics:

- The ACS was a madeground with little limitations on atmospheric release provided by granular nature of the constituents of the host material.
- The silt/clay content of the soils hold a greater proportion of moisture and therefore relatively less liable to release fibres than granular soils. CIRIA C733 details the relative proportion of asbestos release from cohesive strata to sand strata is 40%. Given the soil type a high release rate is anticipated.

Data Quality:

- A relatively large sample population has been subject to testing by laboratories for the size of the site, with the data supporting the results of previous investigations.
- The asbestos fibres are frequent in areas of the former reservoir/settling tanks, and common in the trading estate area, such that it is not viable to distinguish areas as absent of asbestos without high density sampling, which will commonly identify sporadic presence (not forming hotspot/plumes like fuel spillages).
- The fragmented ACMs were visibly identified within the area of the reservoir infill.
- It should be made clear that with any investigation there is a potential for undisclosed contaminants to be found. With ACMs the common risk is the deliberate burial in discrete locations. These are difficult to disclose during the investigations and during any soil disturbance contractors would be required to identify any potential suspected ACMs and appoint qualified/licensed persons to confirm the materials and provide/agree the information for safe removal.
- It should be noted that evidence of previous fly-tipping and potential for asbestos containing materials at surface, with risk that debris and fibres will be local to the area of storage. Advice on the safe removal of ACMs requires advice from specialist asbestos consultants.

Receptor:

- The receptor sensitivity varies by work activity and stage. The primary phase of soil disturbance would be during the excavation works to regrade site levels and construction of roads/sewers. The receptors most exposed to soil dusts would be the contractors, due to proximity, who are less sensitive receptors, due to age.
- The site is located in close to offsite residential housing. Adjacent residents would be considered less likely to be impacted (due to proximity to the work areas) but more sensitive to exposure (due to age, with infants and children potentially playing in the gardens subject to occupation at the time of construction).
- The future residents are the most sensitive receptor if asbestos containing soils were present within the growing medium of gardens/landscaping, due to the potential for repeat and long-term exposure. It is generally accepted that no acceptable amounts of asbestos within residential gardens/POS are acceptable under planning regimes for new developments. As outlined previously the madeground deposits also contain other forms of contaminants such that an inert cover system is proposed (remediation detailed in Section 5.5).

The above qualitative assessment shows the risks posed by asbestos would be unacceptable for long term exposure within a soil in a residential open space area and proposed gardens, which also contains other forms of contaminants. The proposals are for inclusion of an inert cover system within the proposed gardens/landscaping to break the exposure pathway between the most sensitive receptors and the contaminants.

During excavation works within the former reservoir an asbestos consultant/contractor should be in attendance to hand pick any ACM fragments. Whilst this will not remove all asbestos, the higher risk of significant fibre release would be mitigated by ACM removal. During these works mitigation measures to control dusts and air monitoring will be required. Further details for asbestos mitigation works will be provided within a proposed remediation and enabling works strategy.

Further details of the remediation are provided in Section 5.

The print sheets for the JIWG decision support tools released by CL:AIRE have been provided in Appendix 6, confirming the remediation works would be classified as being an activity where Control of Asbestos Regulations (CAR) apply to workers, and the remediation works would be sufficient to be determined as negligible risk upon completion. A summary of the receptor ranking tool results are provided in Table 16 and 17, below. It should be noted that the sheets work on the basis of the ACMs being within a soil, and do not apply to ACMs outside of a soil where much more significant risks are present and must be strictly managed from CAR under guidance from an asbestos consultant.

Table 16: Summary of CL:AIRE Decision Support Tools for Qualitative Assessment of Receptor Risks – ACM Materials in Reservoir

Future Residents – Post Remediation (cover system)		Future Residents – No Remediation	
Source Hazard	Low	Source Hazard	Low
Emission-Exposure	Low	Emission-Exposure	Medium
Receptor	High	Receptor	High
Pathway	Negligible	Pathway	Medium
Overall Risk	Negligible	Overall Risk	Medium
Adjacent Residents (During Soil Excavation/Movement)		Contractors (During Soil Excavation/Movement)	
Source Hazard	Low	Source Hazard	Low
Emission-Exposure	Medium	Emission-Exposure	Medium
Receptor	High	Receptor	Medium
Pathway	Medium	Pathway	High
Overall Risk	Medium	Overall Risk	High

Table 17: Summary of CL:AIRE Decision Support Tools for Qualitative Assessment of Receptor Risks – Free Fibres/Debris in madeground/soil

Future Residents – Post Remediation (cover system)		Future Residents – No Remediation	
Source Hazard	Medium	Source Hazard	Medium
Emission-Exposure	Low	Emission-Exposure	Medium
Receptor	High	Receptor	High
Pathway	Negligible	Pathway	Medium
Overall Risk	Negligible	Overall Risk	Medium
Adjacent Residents (Madeground During Soil Excavation/Movement)		Contractors (Madeground During Soil Excavation/Movement)	
Source Hazard	Medium	Source Hazard	Low
Emission-Exposure	Medium	Emission-Exposure	Medium
Receptor	High	Receptor	Medium
Pathway	Medium	Pathway	High
Overall Risk	Medium	Overall Risk	High

Asbestos Containing Soils (ACS) - Conclusions

The initial qualitative assessment has identified the potential medium to high risks if madeground was to remain within the gardens and if no measures were undertaken to manage or control dusts formed during soil movements/earthworks. These risks can be reduced to negligible via breaking the exposure pathway to the future residents from placement of cover systems in gardens and management of dust formation through dampening down soils during periods of dry weather, with removal of identifiable ACMs during works within the former reservoir/settling tank area prior to development.

Per- and Polyfluoroalkyl Substances (PFAS)

The testing has identified 1 No. soil sample to contain concentrations of PFOS above residential garden GAC, but below thresholds for public open space. Water samples have not identified significantly elevated PFAS from the former reservoirs/tanks to the former paper mill, and surface water sampling. Remedial actions will be required to break the exposure pathway between the residents and the madeground deposits with PFOS, although other contaminants are also present which require the same within the site. Further discussions of the impacts from the development to pathways are included in Section 3.7.

Controlled Waters

The program of water sampling have not identified a consistent significant risk to controlled waters. Localised mid to high carbon range TPHs have been identified within the former reservoir/settling tank area and localised removal of the source soils are proposed which would further reduce the associated risks.

3.7 Development Impacts and Preferential Pathway

The development of residential houses can result in changes to the pathways for migration of mobile contaminants, gases and vapours to impact receptors in the future (both human and controlled waters). The most common factors to be considered are the intended foundation construction and formation of sewers, which can result in the potential to bypass existing natural attenuation provided by lower permeability strata.

The intended foundation construction consists of piled foundations. The determination of the type, number of piles (and therefore the loads) against pile length is largely commercial and typically determined by the contractors. It is assumed that the piles would likely be friction bearing within the glacial clay at depths up to 15m.

Driven concrete piles will seal against glacial strata during construction, limiting migration pathways. Where movement occurs during the driving process a pile whip process can result in voids in the upper sections of the ground adjacent to the pile, resulting in an increase in void space and associated migration pathways (particularly at shallow depths where gas/vapour migration can become significant – discussed in Section 4). Bedrock is anticipated to be at depths of 20m where driven piles would not intercept this, resulting in no significant pathway potential.

The drainage layout records the surface and foul water sewers are up to 3m below proposed floor slab levels, with all drainage designed to drain via gravity to public sewers to the south of the site. Areas of flood attenuation storage are below parking/roads, within 2.5m of surface. No proposed drainage to surface waters are included.

3.8 Conclusions

The phased investigation works identified the presence of contaminants on site with the primary risk to future residents through exposure to contaminants within residential gardens. Remedial measures are required to protect the future residents from exposure to the contaminants, with assessments and proposals provided in Section 6.

Further testing for PCBs are required after decommissioning of the electrical substation.

Measures are required to mitigate dust formation and segregate any identifiable ACM materials, with particular measures adopted during earthworks.

4. Hazardous Ground Gas Assessment

4.1 General

All information and advice regarding requirements for gas precaution measures are considered to be provisional until approval from statutory bodies has been granted. The assessment within this report assessment upon completion of additional monitoring. The approaches to ground gas investigations and assessments of risks are detailed within the following British Standards:

- BS 8485:2015+A1:2019 '*Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.'*
- BS 8576:2013 '*Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs).'*

The British Standards references numerous specific papers regarding ground gas research. Papers referenced in this report include publications released after the latest updates to the British Standard. Of particular relevance to this site are the following publications, discussed and referenced in subsequent sections, some of which were released between commencing investigation and report production:

- BRE BR211 (2023) "*Radon – Guidance on Protective Measures for New Buildings (including supplementary advice for extensions, conversions and refurbishment projects)*."
- CIRIA C735 (2014) "*Good Practice on the Testing and Verification of Protection Systems for Buildings Against Ground Gases*."
- CL:AIRE (2021) "*Good Practice in the Risk Assessment for Coal Mine Gas Emissions*".
- Lucas, S., and Wilson, S. (2020) "*Corrosion and Puncture Resistance of Aluminium Foil Gas Membranes beneath Concrete Slabs*" in Geosynthetics International, Vol. 27-4.
- NHBC Foundation, Report No. NF94 (2023) "*Hazardous Ground Gas – An Essential Guide for Housebuilders*".

Coopers have appraised the potential risk of ground gases to provide an initial conceptual model in terms of source-pathway-receptor, following current standards and guidance. Based upon this conceptual model it was determined that gas monitoring was required (completed at the time of this report) to assess potential risks associated with areas of infilling.

4.2 Initial Conceptual Site Model

General: - In accordance with BS8485, Clause 4, "*To complete an assessment of the risks posed by the presence of permanent and other ground gases, the potential sources of gas in and around a site should be identified; guidance on the collection of the relevant information is provided in BS 8576.*"

In accordance with BS8576, Clause 6, the development of a preliminary conceptual site model is the first stage in determining the requirements for a program for gas monitoring. The initial stage of which is identification of "*Potential sources of hazardous gases based on a review of the current and previous uses of the site and neighbouring land, and the underlying natural and man-made geology and hydrogeology*;"

The following sections include a more detailed discussion of the risks posed by known and common sources of hazardous ground gases, the pathways for gas mitigation and the potential impact to the receptors. To aid classification of the risk of different sources of hazardous ground gas a decision matrix has been provided in BS8576, Clause 8.7, Figure 7, which classifies the generation potential of sources of hazardous ground gas from very low to very high.

The Initial Conceptual Site Model (ICSM) identified the potential sources were limited to localised areas of deeper infill materials. Whilst the infill materials were primarily of inert demolition origin, these did include some material with higher degradable organic carbon content.

In order to robustly determine the potential risks relating to hazardous ground gas Coopers have revisited the ICSM for common sources of hazardous ground gas. The sections below define the site as having low to moderate risk sources of hazardous ground gas close to the former reservoir/settling tank and very low risk elsewhere.

Initial Conceptual Model - Potential Sources

The below information includes a detailed appraisal of common sources of hazardous ground gases, with the associated potential migration pathways to reach receptors specific to each source.

Common Hazardous Ground Gas Source Identification – Historical Landfills and Filling (on and off site):

A detailed review of multiple sources of information has been undertaken to assess the potential for landfill gases to impact the proposed development. The reviews have included the findings of a Groundsure Report (Appendix 2), Bury Council "*Environmental Search Report*" (Appendix 2), and further information provided regarding historical filling from Bury Council under a Freedom of Information request (Appendix 2).

The Bury Council "*Environmental Search Report*" (Appendix 2) references the former reservoirs and settling tanks to the paper mill are recorded as a historical landfill site. The landfill was a pre-licensed site, owned by Wimpy Waste Management and latterly Beazer. Planning permission for the landfill was granted by Greater Manchester Council in 1982 for the filling with inert and construction waste, followed by permission in 1989 to raise levels using materials from demolished buildings.

The information supplied with specific reference to the conditions imposed for the infilling in the 1982 planning application, referenced on the decision notice of 13th October 1982 as follows:

"*The materials to be tipped shall be restricted to builders' waste arising within the site: there shall be no importation of material*".

"*The site shall be tipped level with the surrounding land, and finished with light shale or cinders. No revisions will be permitted without the written agreement of the local planning authority*".

Additional information was provided following a site visit on 4th August 1982:

Site Note: "*Particularly difficulty to obtain access to the site. Large buildings now dilapidated. Tanks and reservoir adjacent to a group of single story buildings besides the main complex. Proposal to demolish existing chimney (built 1907) and to use rubble to fill tanks, etc. Do not intend to bring any rubble into site*".

Report: "*Large industrial premises which are now vacant and becoming derelict. GMC have spoken to the agent and they have informed me verbally that there will be no importation of materials because the fill will come from the 1907 Brick Chimney when demolished. It is expected to take 3 months. Remainder of consultations + discussions to be undertaken by GMC – It is probably debatable whether P.P.* [Planning Permission] *is required.*"

The Council's report also references that local areas of filling within the influencing distance of the site may have been carried out for which no records are held.

The gas generation potential of landfills is defined by the types of waste and the age since deposition. The primary gases associated with historical landfills are methane and carbon dioxide from the bacterial decay of organic constituents (other secondary gases and vapours also associated). The decay begins shortly after deposition and can take many years to stabilise. During the active phase of decay high concentrations and flow rates would be characteristic, whilst older landfills will commonly display high concentrations from gases held within pore spaces, but at low flow rates due to the reduction in ongoing decay. BS8576 designates landfill risks by type and age as detailed in Table 18 (the standards are >10 years ago, the boundaries may be considered to need revising):

Table 18: Landfill Risk Designation by Type from BS8576

Landfill Type/Age	Risk Designation	Comments
Municipal landfill sites	Very High Risk	
Landfill 1990's onwards	Very High Risk	
Landfill mid 1960's to 1990	High Risk	
Landfill 1945 to 1965	Moderate Risk	This could also be "low" or, if disturbed, "high".
Inert landfill sites	Very Low Risk	Lack of regulation in the past means that most sites are never entirely inert – they can include timber, plasterboard and even domestic refuse and consequently care is needed when assessing such sites. They might require a higher risk classification

The landfill of inert and construction wastes in 1982 and demolition of buildings used to raise levels are likely to be primarily materials with little organic content, such as brick and concrete, although timber and other wastes are present. The very low risk designation for inert landfills is therefore considered to not apply, and a more realistic low to moderate risk designation would be assigned.

Common Hazardous Ground Gas Source Identification - Underground Coal Mine Workings and Mine Shafts (on / off site): As detailed within Coopers Site Investigation Report - Section 12, the site is situated within a Coal Authority coal mine reporting area but designated as outside of a high-risk development area. This risk designation is applied where no shallow mine workings, mine entries or other significant mining related hazard exists.

Coal is commonly associated with trapped hazardous gases within pore spaces, primarily comprising of methane and carbon dioxide, although other gases including carbon monoxide can be present. Numerous historical coal mining disasters are attributed to the release of mine gas. Following abandonment of former coal mines these gases can migrate towards the surface where they can pose a significant risk to human health, including loss of life from asphyxiation and explosion.

CL:AIRE have released guidance "*Good Practice in the Risk Assessment for Coal Mine Gas Emissions*", 2021. The procedures follow the same initial approach outlined in BS8485 of formation of an initial conceptual site model through desk study data, determining source-pathway-receptor relationship and investigations to monitor gases based upon the model. The main variations are that the interpretation and designation of gas risks requires specific classification based upon the nature of the mine workings, and that adoption of gas screening values within BS8485 may not be appropriate, particularly where pathways of gas migration bypass the shallow soils, such as mine shafts, faults or future development pathways. The initial appraisal coal mine gas risk classification within CL:AIRE (2021) are summarised in Table 19.

Table 19: Summary of Risk Designations of Coal Mine Gas Emissions based upon CL:AIRE Guidance (2021)

Risk Designation	Criteria	Requirements
No Risk	• Outside of Coal Authority Coal Mining Reporting Area.	• No mitigation measures required for coal mine gases.
Negligible Risk	• Mine Entries >50m from site boundary. • Workings >150m depth. • No faults or other potential pathways connecting surface to deeper unflooded mine workings • Outside area of past or probably shallow workings on Coal Authority viewer.	• Findings of assessment to be provided in report. • No mitigation measures required for coal mine gases.
Low Risk	• Workings 30-150m but permanently flooded or covered by 10m+ of low permeability (<$1x10^{-6}$ m/s hydraulic conductivity) superficial deposits. • Mine Entries >50m from site boundary	• Findings of assessment to be provided in report. • No mitigation measures required for coal mine gases. • Review of assessment once development designs are finalised.

Table 19 continued on following page.

Table 19…continued: Summary of Risk Designations of Coal Mine Gas Emissions based upon CL:AIRE Guidance (2021)

Risk Designation	Criteria	Requirements
Moderate Risk	• None of the high risk criteria below.	• Detailed mine gas risk assessment required. • Findings of assessment to be provided within a report. • Assessment of mitigation measures based upon risk-based design. • Review of assessment once development designs are finalised.
High Risk	• Mine Entries on site or within 20m of site boundary. • Workings below site at <30m depth and unflooded or variable water levels. • Faults of other pathways connecting surface to deeper unflooded workings. • Within area of past or probable shallow workings on Coal Authority viewer.	• Assess if mine gas risks can be mitigated, if not there will be requirements to change the development proposals. • Detailed mine gas risk assessment required. • Findings of assessment to be provided within a report. • Assessment of mitigation measures based upon risk-based design. • Review of assessment once development designs are finalised.

The site is underlain by deep workings at depths of circa 195m to 368m last worked in 1894. The seams at this depth would have flooded and designated as a negligible risk on this basis. Based upon the CL:AIRE approach the designation is defined as a negligible risk where no mitigation measures are required.

Former Ponds and Natural Organic Rich Material (on/off site): - The historical OS maps record no historical ponds on or close to the site. Drift strata includes alluvium where deposits of natural organic materials such as silt and peat can be present.

Natural organic strata is commonly associated with elevated concentrations of gases trapped within the pore spaces of the soil, but at low flow rates as a result of the older natural deposits where degradable plant matter has largely decayed leaving little ongoing degradation. These can pose risks where groundwater fluctuates resulting in displacement of hazardous ground gas, but generally classified as a very low risk source.

Deep Madeground (on site): - Potential for reworked ground on land adjacent to the paper mill, with mill race (Goit) adjacent to the site. Historical maps do not record any ground disturbance and land remaining largely the same since late 1800s. Madeground gas risk would depend on the type of materials and age of deposition.

The investigations identified no defined deep madeground areas within the fields on the site, with localised areas of deeper madeground in the southern part of the site (up to 2.8m deep), consisting of reworked natural granular strata with local pockets of clay, common inclusions of ash, clinker, burnt shale, fragmented concrete, brick and ceramics, localised inclusions of metal, rubber, glass, tarmac, coal, timber and plastic.

The ground gas risk posed by areas of deep madeground vary by the type and age of the materials deposited. NHBC NF94 (2023) describes the following:

"Made Ground soils are not inherently a significant source of hazardous ground gas. Typically, substantial proportions of putrescible materials such as vegetation, food waste, paper, cardboard, wood are required to be a source of gas in the ground. The likely source of Made Ground on site needs to be considered when determining if it is a credible source of gas. Shallow Made Ground comprising predominantly construction and demolition waste is not a credible source. Made Ground comprising reworked natural soils is very unlikely to be a significant source of gas. The type of organic material is also relevant, ashy Made Ground may have a high TOC, but it is not readily degradable. Infilled features can be sources of ground gas."

The general fills are reworked natural and no significant amounts of organic materials are present. Deep madeground is not defined as a potential source within the initial conceptual site model.

Radon (on site): - As detailed within Coopers Site Investigation Report - Section 13 (Radon), the site lies within an area where radon protection measures are not required for new buildings.

Petroleum Hydrocarbons/Volatile Substance Vapours (on site): - The contamination section (Section 16) details areas of weathered petroleum range hydrocarbons were limited to the areas of the former reservoir/settling tanks. The vapour inhalation pathway for petroleum range hydrocarbons differs between the more volatile lower carbon ranges and less volatile higher carbon ranges. Older petroleum contaminants tend to have volatilized with low risks posed.

As detailed within the remediation proposals, the area is intended to be excavated and removal of any localised mobile contaminants, subject to completion and verification there should be allowance for residual mitigation for vapour inhalation risks.

Radon (on site): - The desk study report text contained conflicting information. The executive summary defined the site as within an area where <1% of properties contained radon above the action level, whilst the main body of the report referenced that between 1% to 3% of properties were above the action level. The enclosed Groundsure Report confirmed that the risk designation was defined as between 1% to 3%. Both <1% and 1-3% are classed as areas where new buildings are designated as not requiring radon protection measures in accordance with BRE Report BR 211 (2023) "*Radon Guidance on protective measures for new buildings (including supplementary advice for extensions, conversions and refurbishment projects)*".

The Groundsure Report was undertaken in 2019 and predated the updated radon dataset from BGS and UKHSA in December 2022. Coopers have reviewed the UK radon maps based upon the worst case designations within a 1m square which confirms the radon risk designation has remained as 1-3% of properties and therefore does not require radon mitigation measures for the new buildings.

Petroleum Hydrocarbons/Volatile Substance Vapours (on site): - The contamination section (Section 3 of this report) details there were no identified petroleum hydrocarbon or other volatile contaminants from the investigation, although further investigation is required within the farmyard following vacant possession of the site. Where present the vapours from petroleum range hydrocarbons will commonly require a higher level of protection than other forms of hazardous ground gas. Given the ground investigation this common source of hazardous vapours can be determined as not applicable.

Future Filling (on site): - Proposals for cutting and filling the site have not been provided. The site topography is on a gentle gradient and based upon the surrounding land use is unlikely to have substantial changes to the proposed levels. If level raising is required the imported materials will be required to be tested/inspected to confirm they are inert and not providing an additional gas risk.

Potential Pathways

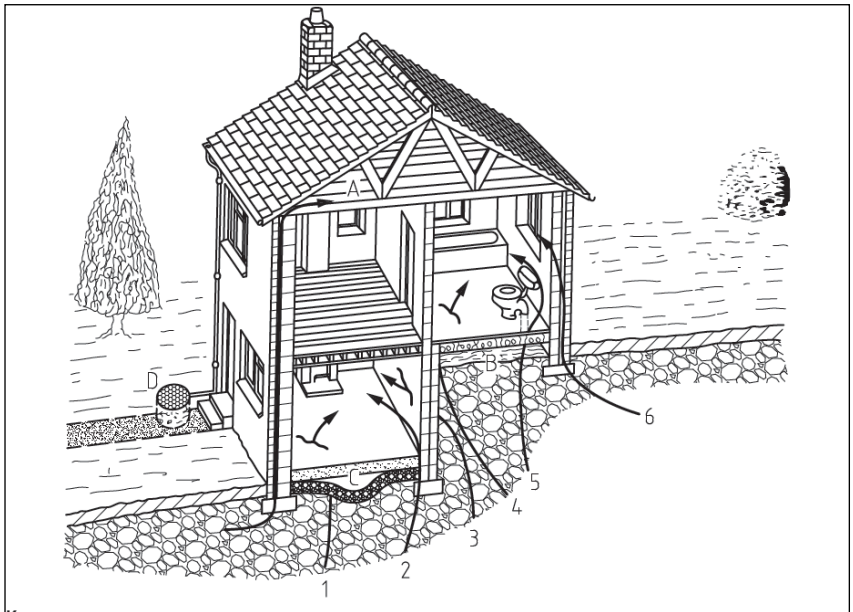
The primary pathway for migration of hazardous ground gases commonly follow pathways created by the built environment, such as foundations, pipelines and trenches associated with services. These pathways are often difficult to assess by monitoring and require consideration of the potential increased risk where pathways will be created by the development. Madeground deposits will commonly have high gas transmissivity due to the common gravel to cobble sized inclusions and poor consolidation from works were placed in an uncontrolled manner. The natural shallow drift strata are alluvium, which are commonly silts, clays and fine sands with potential for limited migration of gases. The deeper glacial clays would be limiting to gas migration due to the fine cohesive soils.

As referenced above, the primary risks are defined with variations in ground conditions associated with the infilled reservoirs/settling tanks. The primary pathway for gas migration would be vertically through the infill, with less migration laterally through the natural alluvium with variable water.

Deeper sources of hazardous ground gas can form complex pathways, although no deeper sources are present on this site.

The presence of groundwater can significantly limit the potential for lateral migration from distant sources, although they also have the potential for dissolved gases which can give false representation of gas risks within monitoring wells. Foundation construction, ground improvement, and service trenches can change the existing ground gas migration pathways and create preferential pathways to the subfloor of the buildings which would not be identified during gas monitoring. These construction methods would require consideration of a precautionary design where hazardous ground gases are present.

Once gases generated have reached the surface they will dissipate rapidly through atmospheric diffusion unless confined by buildings, as summarised in Figure 14 (below), or low points such as trenches. Hazardous gases beneath buildings can migrate through cracks or spaces in the floor slab and collect within the buildings. Any work in a confined space (including trenches) must assess the potential for hazardous gases to be present and health and safety provisions should be applied in accordance with HSE guidance.



Key

1	Through cracks and openings in solid concrete ground slabs if present due to shrinkage and curing	A	Roof voids
2	Through construction joints and openings at wall-foundation interface with ground slab if not sealed	B	Beneath suspended floors
3	Through cracks in walls below ground level	C	Within settlement voids below floor slab
4	Through numerous gaps and openings in suspended block and beam floors or timber floors	D	Drains and soakaways (or similar voids)
5	Through gaps around service pipes and ducts or within the ducts		
6	Through cavity walls		

Figure 14: Potential pathways for hazardous ground gas to ingress into residential buildings (from BS8485)

Receptors

***Future Occupants**:* The primary receptors are anticipated to be the future occupants of the residential houses via the build up and ingress of potential hazardous gases/vapours through the ground floor slabs of the properties. These are considered highly sensitive receptors for the purposes of the conceptual model.

***Adjacent residents**:* These can be exposed to hazardous gas if sources of gas are generated on site and migrate beyond the site boundary or preferential pathways exist for the horizontal migration of gases beyond the site boundary. The likelihood of this occurring is minimal due to the low potential for gas generation on site and pathways for gas migration being primarily vertical.

Construction/Maintenance Workers: Other receptors include construction workers, primarily through work within trenches or excavations where preferential pathways for the migration and collection of gases could occur. HSE guidance on safe work in confined space details potential dangers from gases within trenches, assessments required and precautions to take prior to entering a confined space. The appointment of a supervisor to ensure the necessary procedures and precautions are in place where construction workers intend to enter a confined space is advisable in accordance with HSE guidance.

4.3 Conceptual Model Summary

The conceptual model has demonstrated that the main potential gas risks are associated with the former landfill operations associated with filling of reservoirs and raising of levels with inert and construction wastes, in addition to materials derived from historical demolition. The risk designation of the type of landfill is considered to be low to moderate, subject to the types of waste present. Other potential sources (deep madeground, alluvium, and coal workings) are designated as low risk, very low risk or negligible risk.

A summary of the ground gas risks is provided in Table 20 below with extract of conceptual model in Figure 15.

Table 20: Summary of Initial Conceptual Model Associated with Hazardous Ground Gases

Sources	Gas	Receptor	Pathway	Risk
Landfills (off site)	Methane, carbon dioxide, & carbon monoxide (other trace gases)	Future occupants, construction/ maintenance workers/off site residents	Gas present at shallow depths with preferential pathways following built structures of granular strata.	Landfill was inert and construction waste relating to infilled reservoirs in 1980's. Raising of levels with materials from the former buildings in late 1980's. Pre-licensed landfill may have other types of waste and potential presence of degradable organic materials. Age and nature of the wastes would be defined as **low to moderate risk**.
Coal Mining – Underground Workings (on/offsite)	Methane, carbon dioxide, & carbon monoxide.	Future occupants, construction/ maintenance workers/off site residents	Negligible pathways to surface from deep workings.	Deep workings, last mining in late 1800's. Mine workings at depth would be flooded **– Negligible risk.**
Former Ponds and Natural Organic Strata (on/offsite)	Methane & carbon dioxide	Future occupants, construction/ maintenance workers/off site residents	Gas present at shallow depths with preferential pathways following built structures of granular strata.	No former ponds. Alluvium may contain peat pockets or peat or organic silt. Materials would not be actively generating gas, with residual gas trapped on pore space of soils. Unless groundwater fluctuations the potential risks for significant gas is designated as a **very low risk**.

Table 20 Continued on following page.

Table 20…continued: Summary of Initial Conceptual Model Associated with Hazardous Ground Gases

Sources	Gas	Receptor	Pathway	Risk
Deep Madeground (on site)	Primary risks from Methane & carbon dioxide	Future occupants, construction/ maintenance workers/off site residents	Gas present at shallow depths with preferential pathways following built structures of granular strata.	Excludes madeground from landfill and raising of levels from former buildings over the landfill (detailed in landfill section). Initial conceptual model defines potential for madeground associated with open land adjacent to the former paper mill. No significant ground workings recorded on historical maps. Intrusive investigation will identify the depth of madeground and the nature of the materials – **Low Risk**.
Radon (on site)	Radon	Future Residents	Exposure to radon gases migrating into buildings through floor slab construction.	The site is within an area where **No Radon Protection Measures** are required.
Petroleum Hydrocarbons/ VOCs (on site)	Hydrocarbon vapours	Future occupants	Primarily vertical pathway of hazardous vapours which can migrate into buildings and enclosed spaces	The primary risk is chronic exposure. These source of the vapours can pose risks to controlled waters and human health from other exposure pathways where removal is proposed. No VOCs identified. **Site Unaffected following remediation.**

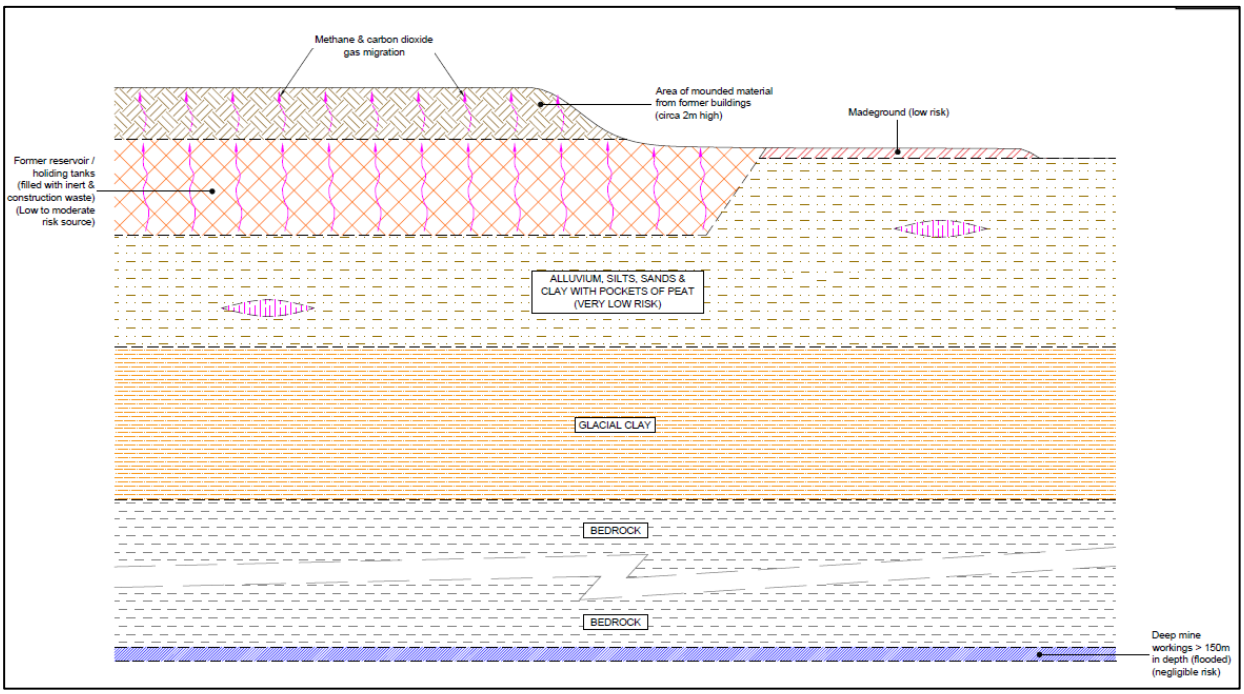


Figure 15: Extract of Coopers Ground Gas Conceptual Model

4.4 Profile of Potential Hazardous Ground Gases

The primary hazardous ground gases with the potential to be generated from the defined sources are methane and carbon dioxide. Other forms of hazardous ground gas can be present and provide a higher risk at lower concentrations, such as carbon monoxide and hydrogen sulphide. The properties, pathways and hazards posed by these gases differ, with summary profile of the gases of concern contained in Tables 21 to 24 below.

Table 21: Profile of Methane as Significant Hazardous Ground Gas from BS8576

Methane - CH_4
Methane is a colourless, odourless, flammable gas. Methane is explosive at concentrations of between about 5% and 15% v/v (volume fraction) in air. Below 5% v/v (the lower explosive limit – LEL) there is insufficient methane to support combustion and above 15% v/v (the upper explosive limit – UEL) there is insufficient oxygen to support combustion. The flammability range of methane varies depending on the concentrations of other gases present. For example: • where carbon dioxide concentrations are >25% v/v, methane is non-flammable; and • if the oxygen concentration is reduced, the limits of flammability are reduced (e.g. at 13.45% v/v oxygen, the LEL and UEL are altered to 6.5% v/v and 7% v/v respectively, whilst at 13.25% oxygen, the mixture is incapable of propagating flame (see [14]). Methane is a low toxicity gas but can result in asphyxiation due to its ability to displace air and hence oxygen. Oxygen starvation occurs at 33% v/v methane, whilst at 75% v/v methane, death results after 10 minutes. Methane is less dense than air.

Table 22: Profile of Carbon Dioxide as Significant Hazardous Ground Gas from BS8576

Carbon Dioxide - CO_2
Carbon dioxide (CO_2) is a colourless, odourless gas. It is both highly toxic and an asphyxiant and can cause adverse health effects in concentrations greater than 0.5% v/v. It is denser than air. • 3% v/v carbon dioxide can result in headaches and shortness of breath, with increasing severity up to 5% v/v or 6% v/v; • 6% to 10-11% v/v causes visual distortion, headaches, increased heart rates, dizziness, mental depression, tremors and rapid loss of consciousness (less than 15 minutes) possibly resulting in death; • >22% v/v is likely to result in death. The Health and Safety Executive has published the following limiting concentrations for work-related exposure: • Long-term exposure limit (LTEL – 8 hour period): 0.5% v/v; and • Short-term exposure limit (STEL – 15 minute period): 1.5% v/v. An additional hazard arises if air containing more than 0.5% carbon dioxide provides the combustion air to a central heating boiler or similar apparatus (e.g. it is drawn in from the sub-floor void). In these circumstances, there is a danger that carbon monoxide could be formed.

Table 23: Profile of Carbon Monoxide as Significant Hazardous Ground Gas from BS8576

Carbon Monoxide - CO
Carbon monoxide (CO) is a colourless, odourless gas. It is highly toxic, flammable an explosive at higher concentrations. Primary risks are as an asphyxiant and can cause adverse health effects at low concentrations. It is denser than air. The effects of exposure to different concentrations of carbon monoxide are: • 35ppm – 6 to 8 hours exposure, headaches and dizziness • 100ppm – 2 to 3 hours exposure, slight headache, • 200ppm – 2 to 3 hours exposure, slight headache, loss of judgement. • 400ppm – 1 to 2 hours frontal headache. • 800ppm – 45 minutes exposure, dizziness, nausea and convulsions. Insensible within 2 hours. • 1600ppm – 20 minutes exposure, headache, tachycardia, dizziness, and nausea. Death in <2 hours. • 3200ppm – 5 to 10 minutes exposure, headache, dizziness, nausea. Death in <30 minutes. • 6400ppm – 1 to 2 minutes exposure, headache & dizziness. Convulsions, respiratory arrest, and death in <20 minutes. • 12800ppm – 2 to 3 breaths, loss of consciousness. Death in <3 minutes. The Health and Safety Executive has published the following limiting concentrations for work-related exposure: • Long-term exposure limit (LTEL – 8 hour period): 30ppm; and • Short-term exposure limit (STEL – 15 minute period): 200ppm

Table 24: Profile of Hydrogen Sulphide as Significant Hazardous Ground Gas from BS8576

Hydrogen Sulphide – H_2S
Hydrogen sulphide (H_2S) is a colourless gas, with distinctive odour of rotten eggs at low concentrations (<1ppm), but at higher concentrations (>50ppm) anaesthesia of olfactory senses. It is highly toxic at low concentrations and flammable at higher concentrations. Can be classified as an annoyance or nuisance at very low concentrations due to odour. The effects of exposure to different concentrations of hydrogen sulphide are: • 10-20ppm – eye irritation. • 50-100ppm – serious eye damage. • 150-250ppm – loss of olfactory sense. • 320-530ppm – pulmonary oedema, risk of death. • 530-1000ppm – strong stimulation of central nervous system, hyperpnoea followed by respiratory arrest. • 1000-2000ppm – immediate collapse and paralysis of respiration. The Health and Safety Executive has published the following limiting concentrations for work-related exposure: • Long-term exposure limit (LTEL – 8 hour period): 5ppm; and • Short-term exposure limit (STEL – 15 minute period): 10ppm

4.5 Investigation Strategy, Monitoring Wells and Response Zones

***Investigation Strategy*:**
BS8576 (2013) defines that investigation and mitigation is not required where there is no credible source. Very low potential sources may be viable to discount if no credible pathway exists. Where low to high ground gas risks exist then an investigation and monitoring strategy is required.

BS8576 (2013), Chapter 8.4 advocates that the monitoring should commonly be targeted to identify the risks in relation to the source-pathway-receptor model. This targeted method supersedes the approach of CIRIA C665 (2007) which made recommendations for prescriptive spacing of monitoring wells based upon source classification and receptor sensitivity. BS8576 (2013), Chapter 8.4, provides examples of sites where non-targeted methods would be appropriate, as below:

i) Permanent and consistent on site gas source;
ii) VOCs in wide and undefined extent;
iii) Where the conceptual model is unable to suitably define the gas targets, such that a phased monitoring approach would be appropriate.

Coopers appraisal of the gas risk defined that a targeted approach was required to target the areas of the landfill and areas of deeper madeground. Monitoring wells in other areas of the site were required to identify if horizontal gas migration from the landfill is present and identify if significant gas concentrations are present of the other defined sources (deep madeground and alluvium).

The investigation was phased with initial areas available for investigation limited to the eastern parts of the site, with further access made to allow investigation of the north western areas of the site, including the former reservoir. Monitoring wells were installed in all of Coopers' small diameter boreholes (excluding WS102 which terminated on an obstruction during the hand dug service inspection pit). The locations of the boreholes are provided on Coopers Drawing No. 8353/01 in Appendix 1, with annotated extract in Figure 16.

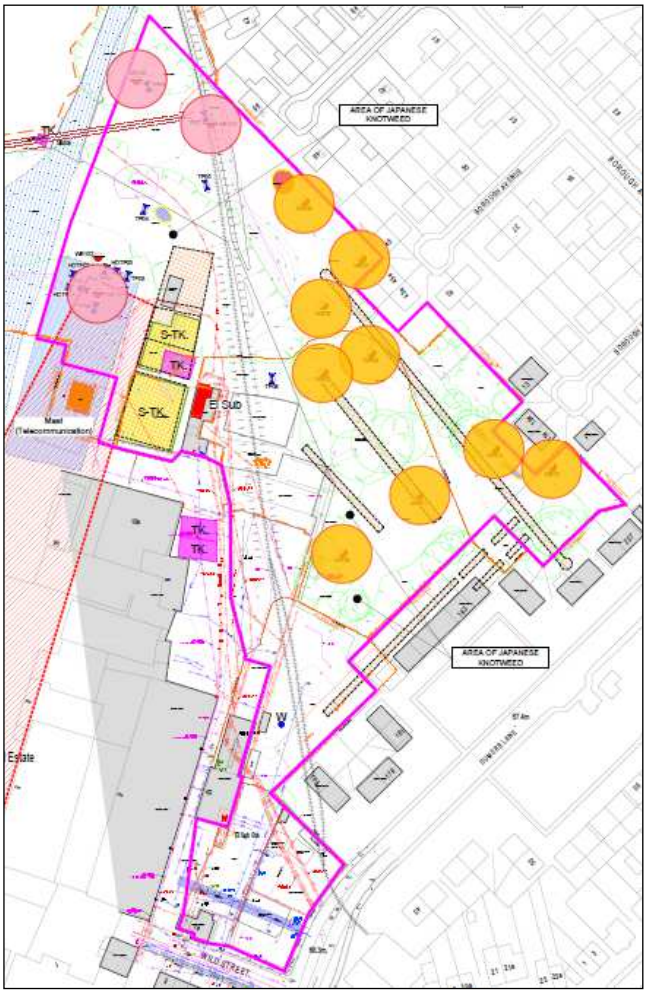


Figure 16: Showing gas monitoring positions in relation to varying sources. The orange circles represent the initial phase of investigation and the red circles are the secondary phase

Details of the monitoring wells and response zones are provided in the borehole logs, contained in Appendix 3 and summarised in Table 25 within Section 4.6. The gas monitoring wells constructed on behalf of Coopers consisted of 50mm HDPE pipe with slotted sections, geosoc surround to prevent silting up and inert gravel surround. Bentonite seals were constructed above the response zone to limit atmospheric gas ingress. A dual valve system with down feed was constructed to homogenise stratified gases, compliant with BS8576 (2013), was included, as shown in Figure 17, with flush stopcock cover.

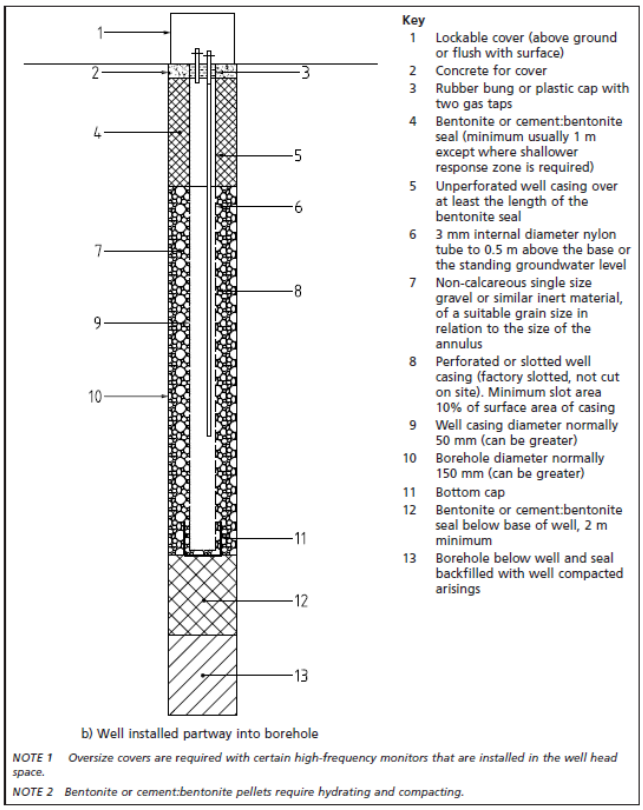


Figure 17: Extract of borehole monitoring well installation as recommended by BS8576

4.6 Ground Gas Monitoring

As detailed in BS8485(2015)+A1:2019 the gas monitoring procedures are to follow BS8576 (2013). This removes prescribed monitoring periods and frequencies with the onus transferred to the consultants to justify that their monitoring data is sufficient to characterise the site. Specific guidance on the requirements for gas monitoring duration is detailed within BS8576, Clause 8.6, in which the consultants should assess and appraise the risks based upon the levels of protection, as follows "*Gas monitoring does not necessarily need to be carried out under worst case conditions. It does not necessarily need to be at low or falling atmospheric pressure, but rather should be continued until it is unlikely that additional data will change the interpretation of the data, the outcome of the risk assessment, and the proposed remedial actions. This requires continued assessment of data as the monitoring progresses. One of the main considerations is to assess whether gas flow rates or concentrations could possibly increase and thereby affect the risk assessment and hence the choice of protective measures.*"

The approach to determining the sufficiency of the data is provided within BS8576, Annex F: Assessment of Whether Sufficient Gas Monitoring Data Have Been Collected. Table F.1 to F.3 within the BS8576 provide a decision matrix to appraise the sufficiency of the gas data.

For the purposes of practicality it is common practice to undertake an initial predefined set of monitoring visits to establish the ranges and variations that occur under different conditions and times. The monitoring proposed is to include 6 No. visits over a period of just under 3 months, which would be commonly considered appropriate for initial appraisal purposes. At the time of this report production gas monitoring was completed and included a range of atmospheric pressure and weather conditions, typically valid to allow an appraisal of variations occurring as a result of changes in conditions. Charts highlighting the pressure conditions over the monitoring period are included in Figures 18 and 19 demonstrating the pressure ranges and targeting of low pressure systems, and further evidence of the pressure conditions are provided in Figures 20 and 21.

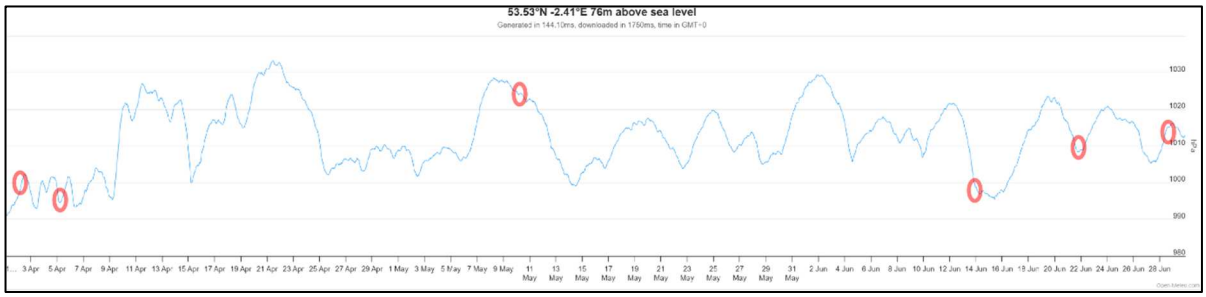


Figure 18: Graph plotting atmospheric pressure conditions in Radcliffe over ground gas monitoring period in April 2024 to June 2024. Circles represent gas monitoring visits.

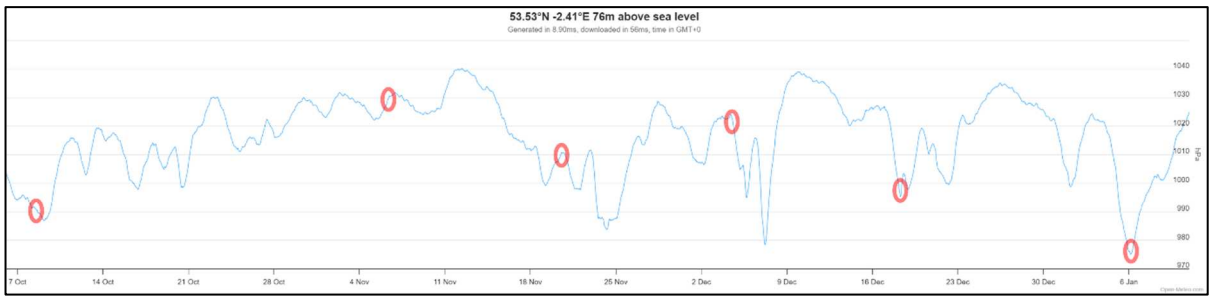
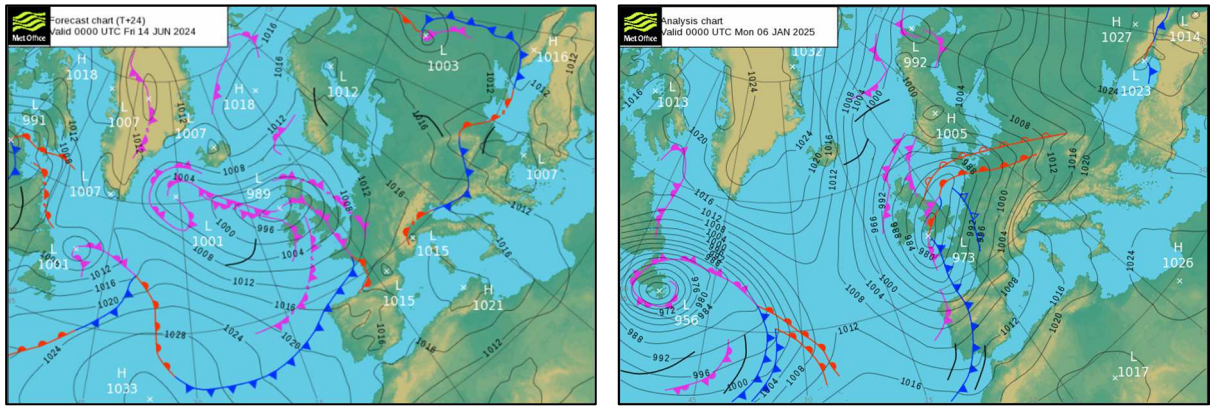


Figure 19: Graph plotting atmospheric pressure conditions in Radcliffe over ground gas monitoring period in October 2024 to January 2025. Circles represent gas monitoring visits.



Figures 20 and 21: Met Office Pressure Charts showing low pressure system on monitoring visits on 14 June 2024 (left) and 6 January 2025 (right)

Coopers monitoring was undertaken with GA5000 gas analyser, manufactured by QED (formerly Geotechnical Instruments). The initial phase of monitoring was undertaken within a 24-month manufacturer calibration, with certificate provided in Appendix 5. The secondary phase occurred after the manufacturer closed their UK and European operations, with equipment calibration and certification being undertaken in the USA. The return time for the instrument calibration had been advised to be 2 months. Coopers ordered a second GA5000 to allow calibration to be staggered, and in the interim undertook Gresham Tube samples for laboratory testing to confirm the results of the instrument (which is out of calibration). Laboratory certification for the Gresham Tube testing is contained in Appendix 5.

The monitoring procedures by Coopers include an initial flow reading recorded at 10 second intervals over a period of 1 minute (to allow rates to stabilise), followed by continuous monitoring of gas concentrations at 15 second intervals over a period of at least 5 minutes, as recommended within BS8576. Following completion of the monitoring the bung is removed, water levels measured, followed by replacement of the bung and closing of valves. Gresham tube sampling immediately follows the gas monitoring stage.

The summary of peak and steady concentrations, flow rates and any relevant notes relating to the monitoring are contained on a summary table in Appendix 5. The range of results identified to date are summarised in Table 25 below.

Table 25: – Summary of Ground Gas Monitoring

Borehole	Target Strata/Source	Response Zone (m bgl)	Pressure Range (mbar) (*1)	Peak Carbon Dioxide (% by Vol.)	Peak Methane (% by Vol.)	Min. Oxygen (% by Vol.)	Hydrogen Sulphide (ppm)	Carbon Monoxide (ppm)	Water Level (m bgl)	Steady Flow (l/h)
Initial Phase (April to June 2024)										
WS01	Pathways/Control – Sand	0.5-1.6	991-1020	2.6-6.1	0.0-0.1	14.6-18.1	0	0-2	Dry	0.1-0.3
WS02	Pathways/Control – Clay and Sand	1.0-3.0	992-1020	2.1-3.8	0.0-0.1	17.2.-19.5	0	1-2	2.02-2.39	0.0-0.4
WS03	Shallow Madeground	0.5-1.0	991-1020	1.4-2.9	0.0-0.1	17.8-20.5	0-1	1-2	Dry	0.2-0.3
WS04	Pathways/Control – Gravel	1.0-2.0	992-1020	0.1-3.0	0.0-0.1	19.2-21.4	0	1-2	Dry	0.0-0.4
WS05	Pathways/Control – Sand/Gravel	0.5-1.5	992-1020	2.2-4.2	0.0-0.1	15.3-18.8	0-1	1-2	Dry	0.0-0.3
WS06	Shallow Madeground	0.5-1.1	991-1019	0.3-8.3	0.0-0.2	10.7-21.5	0-1	1-3	0.67-0.99	0.0-2.1
WS07	Shallow Madeground – Clay	1.0-3.0	992-1020	2.8-4.8	0.0-0.1	15.9-18.7	0-1	1-2	1.21-1.59	0.0-0.3
WS08	Pathways/Control – Gravel	1.0-1.8	991-1020	3.0-4.6	0.0-0.1	15.5-18.1	0-1	1-2	Dry	0.0-0.4
WS09	Pathways/Control – Sand/Gravel	1.0-2.45	990-1019	2.9-5.3	0.0-0.1	15.7-17.3	0	0-2	Dry	0.0-0.3
Secondary Phase (October 2024 onwards)										
WS101	Landfill – Former Reservoir	1.0-3.5	985	0.1-5.4	0.1-1.9	0.5-21.3	0	0-3	3.20-Dry	0.0-0.2
WS103	Deep Madeground	1.0-2.5	986	1.7-3.0	0.1-0.3	16.1-19.1	0	0-3	Dry	0.0-0.3
WS104	Madeground	1.0-1.5	986	1.4-2.2	0.1-0.3	19.0-21.7	0	0-2	Dry	0.0-0.3

4.7 Ground Gas Assessment

For the majority of sources of hazardous ground gas, the methods for risk assessment follow the guidance within BS 8485:2015+A1:2019 '*Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.'* The approach is required to consider the monitoring data in relation to the conceptual site model, not in isolation, with development of Gas Screening Values based upon the concentrations and flow rates, as follows:

$$GSV = \frac{concentration\ (by\ vol.)}{100} \times flowrate\ (l/hr)$$

The site specific GSVs for methane and carbon dioxide are used to correlate gas risks based upon thresholds outlined within BS8485, summarised in Table 26. The standards reference that the GSV should be used as an aid to the ground gas risk assessment, and not replacing it. The decisions of requirements for mitigation requires determination by appropriately experienced persons with justification.

Table 26: Thresholds for Gas Screening Values (GSV) in accordance with BS8485:2015+A1:2019

BS8485:2015+A1:2019		
Classification	GSV (methane and carbon dioxide)	Limitations for Consideration
CS1	<0.07 L/hr	<1% CH4, <5% CO2
CS2	<0.70 L/hr	Flow <70 L/hr
CS3	<3.5 L/hr	-
CS4	<15 L/hr	-
CS5	<70 L/hr	-
CS6	>70 L/hr	-

No GSVs are provided for other hazardous gases being monitored, such as carbon monoxide or hydrogen sulphide. As detailed within BS8576 the only existing thresholds available to assess these are for occupational exposure limits (OEL). For carbon monoxide the short term OEL_{ST} is 200ppm and the long term OEL_{LT} is 30ppm. For hydrogen sulphide the OEL_{ST} is 10ppm and OEL_{LT} is 5ppm.

It should be noted that the OEL_{LT} is based upon 8 hour exposure limit converted to an annual mean and the OEL_{ST} is based upon 15 minute exposures converted to an annual mean. The OEL's may therefore be inappropriate for residential end use. For carbon monoxide it may be suitable to assume the European Standard EN50291 (supersedes BS7860) for domestic carbon monoxide detectors in residential properties lower alarm limit of 30ppm is appropriate and is in correlation with the OEL_{LT}. It may be considered that where hydrogen sulphide is present in any consistent notable presence it could pose a risk to residential human health and will require assessment.

As referenced previously the Gas Screening Values (GSVs) can be used to correlate gas risk against the conceptual site model. The GSV designations for methane and carbon dioxide are provided in Table 27.

Table 27 – Summary of GSV's for Each Borehole

Borehole Reference	Characteristic Carbon Dioxide (%)	Characteristic Methane (%)	Characteristic Flow Rate (l/hr)	GSV Carbon Dioxide	GSV Methane	BS8485 CS Class
Initial Phase (April to June 2024)						
WS01	6.1	0.1	0.3	0.0183	0.0003	CS1
WS02	3.8	0.1	0.4	0.0152	0.0004	CS1
WS03	2.9	0.1	0.3	0.0078	0.0003	CS1
WS04	3.0	0.1	0.4	0.0120	0.0004	CS1
WS05	4.2	0.1	0.3	0.0126	0.0003	CS1
WS06	8.3	0.2	2.1	0.1743	0.0042	CS2
WS07	4.8	0.1	0.3	0.0144	0.0003	CS1
WS08	4.6	0.1	0.4	0.0184	0.0004	CS1
WS09	5.3	0.1	0.3	0.0159	0.0003	CS1
Secondary Phase (October 2024 to January 2025)						
WS101	5.4	1.9	0.2	0.0108	0.0038	CS1
WS102	3.0	0.3	0.3	0.0090	0.0009	CS1
WS103	2.2	0.3	0.3	0.0066	0.0009	CS1

Notes to Table 27:

- *Where applicable zero values have been changed to instrument LOD as GSVs include multiplication of values.*
- *Characteristic carbon dioxide and methane and flow rates are typically the maximum values during the monitoring, although consideration of steady state can be justified if monitoring data and assessment justify these are representative.*

The monitoring identified a spike in flow rates within borehole WS06 of 2.1 l/hr on 1 No. monitoring visit. The monitoring well was installed in natural strata, with no significant methane or carbon dioxide concentrations identified during that monitoring visit. During this visit the groundwater was close to the top of the response zone, which can result in anomalous flow rates due to a pressure differential within the well headworks. The other monitoring visits all identified negligible flow rates.

Sporadic spikes in carbon dioxide above 5% were identified in boreholes WS01, WS06 and WS09. WS01 and WS09 were control positions with response zones in natural strata, however WS06 contained shallow madeground with high perched groundwater (as described above). BS8485 provides clarification that peak concentrations are not thresholds for ground gas assessment, and that consideration of the peak values may result in changes to the ground gas designations, where supported by the conceptual site model. These monitoring wells were not within any defined likely source and considered to represent the variations that occur on sites, with any higher flow rates in WS06 not due to gas generation, such that a designation of gas regime of CS1 would be applied.

Methane above 1% was identified within the former reservoir where the same approach to consider the gas results in the context of the conceptual site model applies. The former reservoir and settling tanks were defined as a historical landfill, infilled with demolition materials, of which some include materials with the potential to degrade (e.g. timber). Given the age since deposition was >40 years the primary phase of gas generation of degradable organic carbon through bacterial action has reduced and residual methane is present. A precautionary gas regime of Characteristic Situation 2 (CS2) would be considered for plots over the former reservoir due to the slightly increased methane over a defined source of gas.

The site is proposed for residential development with small, enclosed spaces and sensitive receptors to the ingress of hazardous ground gas. The development includes pre-development works (detailed in Section 5), including proposals for excavation and removal of any unsuitable materials from the former reservoir/settling tank, reducing the gas generation by these actions. The development will include piled foundations which can generate preferential pathways for gas migration towards the underside of the building. Whilst on the balance of works the gas generation potential will be reduced, precautionary mitigation measures are warranted for the proposed plots over the reservoir/settling tanks.

The precautionary mitigation measures would be determined as CS2 gas mitigation measures for plots over the former reservoir/hold tanks. Based upon the current development layout the plots proposed for mitigation are Plots 52 to 76, as recorded on the build phase remediation plan in Appendix 1.

Gas mitigation details are provided in Appendix 1, with membrane specification and ventilation calculations in Appendix 5. The design justification (design report) is included in Section 5.9 and verification plan/strategy in Section 5.11

4.8 Conclusions

The gas monitoring data and conceptual model define there elevated concentrations of methane from the former reservoir/holding tank areas, where a precautionary Characteristic Situation 2 (CS2) gas regime with associated mitigation designs is considered for the sensitive end use. Other areas with slightly elevated carbon dioxide and flow rates influenced by water are considered as a Characteristic Situation 1 (CS1) gas regime where no gas mitigation measures are proposed.

The proposed buildings are intended to be constructed with driven concrete piled foundations (determined by Coopers). The pathways for gas migration through the precast concrete are relatively low, although pile whip can result in void space migration in the areas adjacent to the pile. The precautionary CS2 mitigation measures would be suitable for this intended foundation type. If changes to the proposed foundations increased the preferential pathway for gas migration under the building (e.g. vibro stone columns) this would require prior assessment and approval by Coopers.

The design and justification of the gas mitigation measures specific to the proposed construction is included in Section 5.9. Independent verification of the installation will be required, detailed in Section 5.11.

5. Remediation Proposals

5.1 Summary

The phases of investigations have identified areas of contaminated soils and hazardous ground gas specific to parts of the site. The proposed remediation will be primarily undertaken within the development phase, with works undertaken to remove the source of contaminants or break the exposure pathway. Predevelopment works will be required to remove remnant substructures to facilitate the development, with regrading of levels relative to the proposed finished levels. The proposed levels include areas to be cut around the former reservoir/tank, where further measures are required to manage and control works in this area due to the presence of ACMs. Further testing is required for the area of the electrical substation, additional testing will be required for imported soils for use during the development. Summary of additional works required are shown in Table 28:

Table 28: Additional works relating to testing, assessments, remediation, mitigation and management.

Item	Requirements	Stage	Plots
A1	Testing of soils following decommissioning of substation	Earthworks	70-77
A2	Management/Removal of ACMs	Earthworks	60-77
B1	Inert cover system in gardens	Build Phase	All
B2	Chemical testing of any imported soils (if required)	Build Phase	All
B3	Verification of gas mitigation measures	Build Phase	52-77
C1	Completion Report	Build Phase	All

5.2 Pre-development Remediation & Enabling Works

Prestart Works.

Identification of services and proposals for decommissioning/abandoning

Live services are recorded on site plan, including below ground telecoms and electricity cables. All requirements for stand offs, and exclusions should be defined and agreed with the developer in advance.

Identification of Invasive Weeds

Previously defined invasive plant species have been recorded within the site. Specialist consultants should advise on requirements for treatment/removal or exclusion zones prior to commencing works.

Establish Condition and Standoff Requirements for land use beyond the site

The site is located adjacent to residential and commercial properties. Prior to commencing works a clear understanding of the formal agreements are required as to the limitations for proposed works in the vicinity of adjacent land use. This must ensure no adverse impacts to buildings, infrastructure, trees or land use beyond the boundary, with cognisance of the proposed end use.

Site Clearance

The site contains surface debris and evidence of potential fly-tipped materials, including potential ACMs. These will require inspection, segregation and suitable disposal off site. No surface/fly-tipped wastes can be deposited on site. Any suspected Asbestos Containing Materials (ACMs) will require separation and disposal under the supervision of a qualified asbestos consultant/contractor and, where required, may need a license or notification with the HSE.

Management of Removal of Substructures and Unsuitable Materials.

The substructures should be removed from the areas of the proposed construction works. The base of the excavation should be surveyed to inform geotechnical assessments for the proposed foundation construction.

All remnant substructures should be removed where practicable, provided removal does not pose a risk of damage to boundary or offsite structures and are located outside of any defined/agreed safe stand off to the adjacent canal and roads. Surveys should be provided of any deep removed structures and these provided to the developer prior to infilling to determine if further excavations to homogenise the depth of infill relative to the development is required.

Any substructures considered by the contractors as not viable for removal and to be potentially left in situ must be agreed with Westchurch Homes in advance and be accurately surveyed for assessments of the geotechnical and geoenvironmental implications prior to backfilling.

The contractors should be cognisant that remnant substructures and former service trenches may form a preferential pathway for migration of mobile contaminants and keep an adequate inspection program to identify if suspected contaminants are present. In the event of identification of suspected previously undisclosed contaminants, the independent geoenvironmental consultant shall be notified to attend site and sample any potential contaminants and seek agreement for appropriate remedial works, if required.

Tank Identification and Removal.

In the event of identification of any suspected below ground fuel storage tanks the works should halt whilst inspection and testing are undertaken. Any liquids will require testing and pumping into a tanker for safe disposal offsite. Where potential explosive gases are present within the tanks these will require specialist contractors to undertake degassing and certification prior to removal. All tank structures and surrounding impacted materials should be removed from site.

Following removal of the tanks and surrounding areas the resultant excavation should have sampling/testing undertaken to determine if further remediation and hotspot removal is required. At the conclusion of remediation the validated void should be surveyed.

Well Treatment

As referenced previously, there is a historical groundwater abstraction well recorded on an early Ordnance Survey map in the southern part of the site. Unless previously decommissioned this can provide a preferential pathway for mobile contaminants to impact deeper aquifers. The contractor will be required to maintain adequate measures to identify any suspected well and decommission this in accordance with EA guidance.

Subject to the size and location of the well a designed reinforced concrete cover may be required to mitigate against potential for future settlement.

Management of Dusts, Asbestos Fibres and ACM removal.

Asbestos identification within madeground:
The madeground within the site has been identified to contain asbestos fibre bundles (amosite and chrysotile), microscopic ACM debris (chrysotile) in the form of insulating material and cement material, and visible fragments of cement sheeting containing chrysotile.

Asbestos Regulations and Classification:

In addition to the normal contaminated land legislation the following regulations and acts apply to asbestos exposure:

- Control of Asbestos Regulations, 2012.
- Health and Safety at Work Act, 1974.
- Construction (Design and Management) Regulations, 2015.
- Management of Health and Safety at Work Regulations, 1999.

The excavation of the soils containing asbestos fibres and Asbestos Containing Materials (ACM's) requires assessments compliant with the Control of Asbestos Regulations (CAR) (2012). Specific guidance on interpretations of asbestos impacted soils are provided within the following publications:

- CIRIA C733, 2014, "*Asbestos in Soils and Madeground*".
- CL:AIRE, 2016. "*Control of Asbestos Regulations 2012 - Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials: Industry guidance.*"
- CIRIA C765, 2017, "*Asbestos in Soil and Made Ground Good Practice Guide.*"

Where asbestos containing soils are classified in accordance with CAR they can fall into three designations:

- Licensed Asbestos Works (LAW);
- Notifiable Non-Licensed Works (NNLW);
- Non-Licensed Works (NLW);

CL:AIRE CAR-SOIL (2016) provides flow charts, and discussion through each stage of the assessment to assist in the designation, with accompanying qualitative decision support tool to assist in the determination and requirements. The initial stage of the assessment defines where an Asbestos Containing Soils is defined as any ACM under CAR, which excludes trace asbestos content compliant with HSE L143.

The identification of asbestos was primarily in the form of fibre bundles of chrysotile and amosite, with quantification at 0.002% to 0.004%. The amount of asbestos in soils samples containing ACM debris were identified to contain 0.035% although the percentage is dependent on the size/mass of the ACM inclusion relative to the soil sample.

The CLAIRE CAR-SOIL decision support tool print sheets which are included in Appendix 6, are summarised as follows:

General Madeground with Fibre bundles: Percentage of host material (max. asbestos proportional to percentage of samples containing fibres) calculated at 0.004%. Hazard defined as Medium Risk, Exposure defined as a Low Risk designation. Combined Hazard Rating – **MEDIUM RISK**, works classed as **Non-Licensed**, as referenced below:

Stage 3
Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

General Madeground with ACM debris: Percentage of host material (mean asbestos proportional to percentage of samples containing ACM debris) calculated at 0.035%. Hazard and Exposure are both defined as a low risk designation. Combined Hazard Rating – **LOW RISK**, works classed as **Non-Licensed**, as referenced below:

Stage 3
Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

Whilst the generic tools are an aid to site specific assessments (not replacing them) these would generally fit the considerations for asbestos containing soils on this site. Controls would be considered to ensure the non-visible fibres/debris does not cause an unacceptable level of risk to workers during the excavations to comply with CAR.

As discussed within CIRIA C733 the risks from asbestos exposure are primarily via inhalation of fibres (although consideration of secondary exposure can be significant on higher risk sites), which must become airborne to be inhaled. The release of airborne asbestos fibres from a soil decreases exponentially with increase in moisture content, such that at 20% moisture content there are no significant airborne fibres from soil disturbance. The most effective means of minimising asbestos release is to therefore dampen soils during dry periods of weather. It is recommended that verification monitoring is to be completed to ensure the mitigation works were sufficient (discussed below).

Asbestos Validation Requirements – Air Monitoring

As discussed above, during earthworks which involve disturbance of madeground there will be requirements for local/manual dust suppression and RPE during periods of dry weather with monitoring to confirm no significant airborne fibres are released.

It is recommended therefore that air monitoring by a specialist asbestos consultant is undertaken prior to starting works to establish a background level. It is noted that the air monitoring accredited limit of detection of 0.01f/ml is not a threshold for safe levels or where civil liberties are not exceeded. The monitoring should be undertaken to obtain the lowest concentrations possible (longer pumping duration/volumes) to be used as a baseline to establish potential risks. This requires cognisance of the calculation of fibre levels (not just Lowest Order of Detection - LOD).

The verification approach for asbestos air monitoring is reflective of the site specific risk, factoring in the source, type of works, duration of works, and the persons potentially exposed. These works have disclosed the site to be of relatively low asbestos risk, with procedures below provided for the initial works, and should be revised if higher fibre concentrations or large amounts of ACMs are identified during the works.

The initial monitoring proposals can be reduced, subject to the confidence in the works and findings of the monitoring results. The tiered approach is subject to the results being provided to the independent verification consultant and agreement that it is appropriate to reduce the monitoring frequency. The tiers of monitoring are detailed in Table 29, below, and will be refined once the remediation program has been determined.

Table 29: Site Specific Tiered Approach to Air Monitoring

Tier	Monitoring Frequency	Monitoring Duration	Monitoring Locations and Requirements
0	Once	Prior to any soil working.	Site boundary – 2 No. upwind, and 2 No. downwind positions. All monitoring to utilise maximum feasible sample volumes to characterise background site conditions. Prevalent wind direction to be recorded.
1	Twice Weekly	During all excavations and soil movements associated with zones of asbestos impacted topsoil.	Adjacent working areas (downwind), site boundary. Prevalent wind direction to be recorded.

Notes to Table 29:
1) Monitoring frequency and duration is subject to revision dependant upon the duration, and findings of air monitoring. Prior to reducing monitoring frequency the results of the asbestos air monitoring must be provided to Coopers to confirm appropriate.

The results of the air monitoring must be provided to the verification consultants within 48 hours of the completion of the monitoring to ensure the results can be appraised and records verified for approval. The results will be compared with background levels to ascertain if a significant increase in fibre release has occurred (not just LOD).

Liability associated with disturbing soils containing asbestos are complex with guidance highlighting that air monitoring following HSG248 (with optical microscopy) may not be sufficient to remove liabilities in which exceedances of background levels can be considered as having increased the level of risks. Whilst studies are ongoing there are very few sources of current background urban air concentrations to correlate against. To determine this a wide range program of background monitoring would be needed including Scanning Electron Microscopy / Transmission Electron Microscopy (SEM/TEM) testing. Discussions with laboratories have confirmed that there are insufficient facilities to deal with SEM/TEM testing for every site where asbestos is in the ground (as a common contaminant on all sites). Irrespective these tests can't be completed in real time and therefore can't be used as a real time guide to the remediation works and mitigation complete. Air monitoring to lower levels of detection can be completed but from Coopers previous experience these can't reach the quoted levels needed to achieve background levels with any great reliability (unless background levels are relatively high). This situation has been discussed within the guidance without any realistic means of resolution. It is understood that the Asbestos Working Group of SOBRA are working on this as active research as it is hoped that a satisfactory way of assessments and practical monitoring can be provided. In the meantime, the principals of the science behind asbestos air fibre mitigation are the most appropriate and we therefore consider air monitoring to be supportive to demonstrate this, rather than outright proof that no liabilities are present.

Earthworks/Remediation Contractor Requirements:

The contractor is responsible for all forms of dust mitigation, controls, and management of the verification of asbestos. Any advice or recommendations made by the appointed asbestos consultants should be followed and documented. Should monitoring results disclose fibre concentrations approaching the HSE clearance indicator of 0.01f/ml or significantly above background levels, then the remediation contractor should change the procedures for asbestos airborne fibre mitigation measures (such as increased soaking of soils and misting systems) and procedures documented. Where fibre concentrations above the clearance indicator level of 0.01f/ml are present all madeground processing works should cease and the asbestos monitoring consultants are to meet with Coopers, remediation contractors and the developer to assess and revise the mitigation procedures and monitoring requirements.

The contractor must keep an accurate record of soil working on this site. This should include a daily record of soil movements, specifically listing which areas of topsoil impacted by asbestos are subject to excavation, processing and placement. Each monitoring position should be given a daily reference number and marked on a plan in relation to the specific works that day, along with prevalent wind direction.

Asbestos Monitoring Consultant Requirements:

The accredited asbestos monitoring consultants are responsible for recording the monitoring data, technical advice and feedback to the remediation contractor. The monitoring data should include all relevant information to allow correlation of monitoring data, including locations of monitoring in relation to an accurate site plan, weather conditions, sample volumes, fibre count, graticule diameter, number of fields examined, exposed filter diameter, and fibre concentrations.

The air monitoring should work to the minimum detection limits defined within HSG248. For initial monitoring to establish background levels the appointed contractor should attempt to increase sample volumes to as large as reasonably practicable to enable lower fibre concentrations to be appraised.

ACM Removal/Disposal:

The contractor must maintain adequate supervision of the works to disclose the potential presence of ACMs within the madeground. Where potential ACMs are present these will require hand picking and safe removal from site under the supervision of specialist asbestos consultants/contractors with adequate documentation to confirm removal. The asbestos consultants may identify additional measures to be required for the safe segregation and removal and these measures which should be recorded for reference purposes.

All ACM material removed from site should be included in waste transfer documents, detailing the location for intended disposal.

Deep Excavations

It is assumed that the predevelopment earthworks will include deep excavations and adequate methods and safety measures are required to mitigate against destabilising the ground surrounding the site and uncontrolled collapse impacting persons or equipment within the site. The contractor should have adequate management and access to geotechnical advisors to determine any necessary temporary works solutions.

Management and controls to protect surface waters

The site is located adjacent to the terminus of Bealey's Goit. The contractor should determine standoffs and measures to maintain the integrity of the water body and prevent pollution. Specialist care is required to relation to surface runoff from the site, and adequate measures are needed to prevent this entering Bealey's Goit.

Management and controls to protect groundwater

The bedrock and alluvium drift strata are designated as a Secondary A aquifer with the potential for a historical groundwater abstraction well in the south of the site. The contractor will be required to decommission any groundwater abstraction wells (if present) in accordance with EA guidance. If areas of mobile contaminants are identified these are likely to require removal.

Identification of Mobile/Volatile Contaminants

Coopers have not identified the presence of distinct plumes of volatile/mobile contaminants, with localised soils in the area of the former reservoir/settling tanks. In the event that visual/olfactory contaminants are present these should be reported to the geo-environmental consultants for site attendance, classification and testing. The criteria for reuse are provided within Section 6, although no soils with distinct odours should be present within the upper 2m due to the potential to cause nuisance to the future end users.

Hotspot Removal and Validation.

Excavation of any hotspots require supervision by the geoenvironmental consultants. Excavated soils should be stored on bunded impermeable membranes whilst testing is undertaken, prior to either treatment or disposal. The excavation should be inspected and tested to confirm successful removal. Validation testing should be undertaken with sample locations recorded in relation to a survey of the excavations. Testing is required on the sides of the excavation at 10m spacing (min. two samples per face), and the base at 10m^2 area (min 2 samples).)

Testing of Soil for Reuse.

The geotechnical and chemical testing of soils intended for reuse will be subject to the material type, locations of intended use and if imported or site derived. Confirmation of the suitability of the general bulk filling works is required to confirm the soil nature is as previously disclosed. The chemical testing frequency and criteria for use is specified in Section 5.7.

5.3 Outline Earthworks Specification

The excavations to remove remnant substructures and unsuitable materials will require backfilling with suitable materials placement to an agreed specification. The depth of infill requires careful material control and placement to mitigate against adverse settlement. The placement requires consideration of the proposals for foundation construction which include piled foundations, where over compaction or placement of unsuitable materials can limit the proposed construction.

It is recommended that Westchurch Homes hold discussions with the consultants and contractors regarding the following items:

- Material Specification and Performance Criteria for earthworks in areas of the proposed buildings, roads, parking/driveways and gardens/landscaping.

- Discussions on the methods for infilling and determining if uniform or variable placement specification should be completed for different areas of the site (e.g. if roads and plots will be placed to different criteria).
- The requirements for provision of pile mats and suitable underlying ground for the intended piling rig.
- Proposed regrade levels.
- Considerations of the heterogeneity of the materials, and the requirements for material testing at predetermined frequencies, material classification, plant specification for placement, and layer thickness/compaction methods.

THIS IS NOT A DETAILED STRATEGY OR SPECIFICATION AND HAS BEEN PRODUCED AS A GUIDE TO INFORM THE DEVELOPER OF THE CONSIDERATIONS IN RELATION TO EARTHWORKS.

5.4 Remediation Thresholds and Criteria for Reuse

The Coopers site investigation report included thresholds for remediation specific to the intended end use. Tier 1 thresholds for metals, PAH-16, and TPH contaminants are considered applicable for soils intended for reuse within the growing medium of residential gardens/landscaping, a copy of which is contained in Appendix 7.

Specific thresholds were derived for the following forms of contaminants within garden growing mediums, referenced within Section 3 of this report, summarised in Table 30

Table 30: Summary of PCB Human Health Thresholds for End Use

	Residential Gardens (mg/kg)
Perfluorooctanesulfonate (PFOS)	13.0
Perfluoro-n-octanoic acid (PFOA)	7.6

No acceptable amounts of asbestos are permitted within garden/landscaping growing mediums.

5.5 Build Phase Garden/Landscaping - Remediation

The contaminants identified were considered to pose a potential significant risk to human health where chronic exposure to soils occur within garden and landscaping growing mediums. The contamination encountered was present in the shallow madeground across the site, and the contaminants are therefore likely to be site-wide based on the nature of the current/former land use and the ground conditions encountered during the phases of site investigation.

The depths of garden activities and use of the garden area has to be reasonable. It is not feasible to carry out risk assessments regarding extreme land use; therefore, it has been assumed that the majority of domestic gardening occurs within the upper 0.6m of soil. The predominant depth of regular excavation will be up to 0.2m due to the planting of annual and biannual bedding plants with shallow weeding. It is anticipated that the deeper planting will be associated with the planting of deep potted shrubs, and is generally restricted to few occasions over several years.

It is anticipated that the majority of the gardens will comprise lawn and ornamental bedding. Residents may utilise their rear garden as allotments and grow vegetables. It is anticipated that the deepest cropping vegetable will be the potato and generally crops to depths of up to 0.5m (it should be noted that potatoes are generally over dug where by during the growth of the crop soil is piled onto the plant). It is therefore considered that the initial 0.6m depth of garden will be the threshold zone for risk to the resident for non-mobile contaminants. This assessment concurs with the findings of BRE Report 465, Cover Systems for Land Regeneration. It is highly unlikely that the resident will excavate to depths in excess of 0.6m. If this does occur, it will be on the basis of once or possibly twice a year for a very small period of time.

It is highly unlikely that the residents will be planting vegetables for consumption within the front gardens/borders of the houses, and the development layout shows the frontages are primarily parking bays and borders. It should be noted that it is unlikely that clauses will be present within the deeds to restrict this practice; however, we have to assume reasonable practices within these areas of the site. It is traditional to plant lawn and bedding plants, or pave the entire area of the front garden depending upon the resident's proficiency regarding gardening. It is generally assumed that the aesthetic value of having a vegetable patch in the front garden is significantly low, and produce may be lost by theft from passers-by. The potential for human health risk regarding the consumption of vegetables grown in these areas is hence negligible and should not be considered. The assumed typical planting within the plot frontages are therefore designated as 0.45m.

The transporting of soils into the property also poses a risk to the residents. The soils caked on shoes and adhered to clothing due to contact with soils will dry, desiccate and form dust in the houses.

Any excavations associated with the constructing of extensions to the property should only be completed after consulting the Planning Department of Bury Council.

Children may come into contact with soils during unsupervised playtime through direct ingestion and during supervised playtime through inadvertent consumption of soils from toys, which have come into contact with soils. When very young children excavate in soils, it is anticipated the maximum depth will be in the order of 0.2m to 0.3m. It is anticipated that parents will not leave young children unsupervised in garden areas for any significant period of time.

Based upon the conceptual model the proposed reasonable use of the garden growing medium is restricted to 0.6m, and frontages as 0.45m, with consideration of contaminants within this zone requiring remedial actions, discussed in the following sections.

To protect the future residents from exposure to contaminants the madeground can be excavated from the 0.6m growing medium in rear gardens and 0.45m in frontages for replacement with inert subsoil and topsoil. Subject to the proposals for cutting and filling as part of regrading site levels the madeground depth within parts of the site the natural strata may be less than 0.6m deep, where the inert cover would in places remove the entirety of the madeground. Where the madeground is removed prior to the 0.6m inert cover depth the proposed gardens would be as demonstrated in Figure 22. Where madeground is still present at the base of the 0.6m cover layer a high tensile strength geotextile will be placed at the base to prevent inadvertent exposure to the underlying contaminants or cross-mixing. The cover system for the proposed gardens would be as demonstrated in Figure 23.

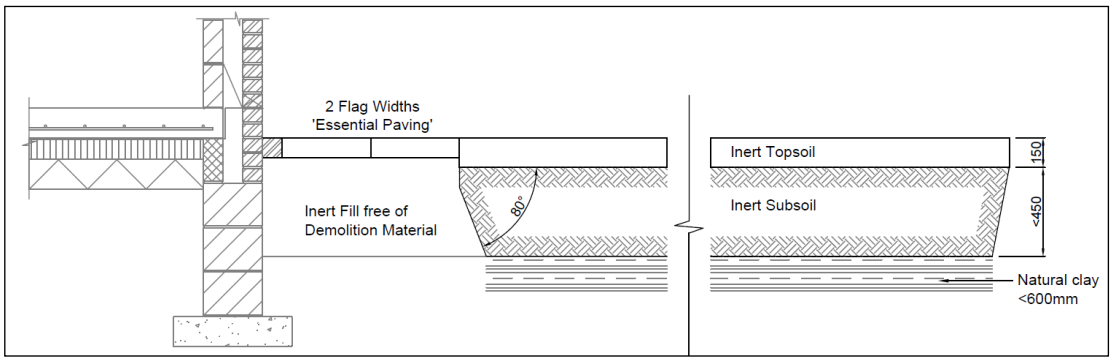


Figure 22: Inert Cover within Proposed Gardens where Contaminants are <600mm in Depth

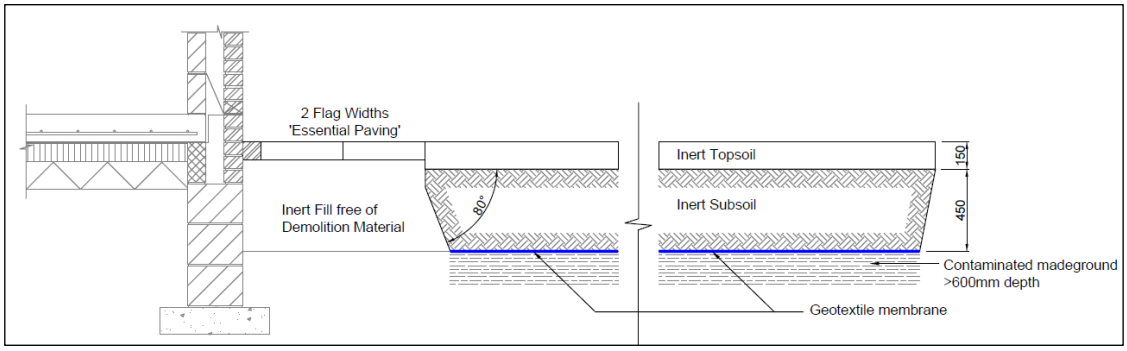


Figure 23: Inert Cover within Proposed Gardens where Contaminants are >600mm in Depth

It is likely that the inert subsoil and topsoil to be placed within the gardens will be inert natural soils imported to site. Verification testing of any soils intended for gardens are required to be considered appropriate to ensure it has not been cross-mixed during generation. Further discussions of soil testing are provided in Section 5.7.

Following placement of the inert subsoil and topsoil the depth of the inert cover will be confirmed via excavation of validation holes, to the full cover depth or natural strata. The validation holes should prove the presence of the geotextile or natural strata at the base of the validation holes. The validation strategy for verification of inert cover systems within gardens is provided in Section 5.6.

5.6 Build Phase Garden/Landscaping - Validation

The remediation for the removal/capping of the madeground from the proposed gardens and landscaping in all parts of the site will be subject to validation. Where the individual gardens are proposed for placement of an inert cover/removal of contaminated soil to natural, the inert cover depth and geotextile/natural strata at the base should be verified via validation holes. The validation of the placement of inert cover growing mediums will consist of:

Upon completion of the gardens to finished level, Coopers are to attend site to excavate validation holes to prove cover thickness of the growing medium. This will be undertaken on a spacing as follows (following guidance by Bury Council):

- 1 No. validation hole per completed 1 No. rear gardens.
- 1 No. validation hole per completed 1 No. front gardens/front landscaped borders.
- Validation holes within public open space on 25m grid.

The procedures for the validation works are as follows:

- Upon completion of gardens/landscaping/POS to finished level, Coopers are to attend site to excavate validation holes to prove cover thickness of the growing medium.

- The validation holes must not be pre-dug and be in locations of Coopers choosing. Placement of pipes and removal to validate depths are not considered as independent validation.
- Photographic evidence to demonstrate the location of the validation hole, the nature of the inert material and the depth of cover (refer to Photographs 1 to 4).
- Appropriate chemical testing certificates will be required to verify suitability for use.
- Upon completion of the validation Coopers will produce a validation completion report to include all photographic records and verification documents required for statutory approvals.




Photographs 1 and 2: Examples of validation photographs demonstrating validation hole location and soils forming inert cover.




Photographs 3 and 4: Examples of validation photographs demonstrating inert cover depth and geotextile.

Upon completion of the development a validation completion report will be produced confirming the remediation requirements have been achieved including testing of all soils.

5.7 Build Phase Garden/Landscaping – Soil Testing

The subsoils and topsoil intended for reuse within the proposed gardens should be stockpiled for testing prior to placement. It is anticipated that the majority or all of the soils for placement within the gardens will be inert natural strata and topsoil from the site. The soils testing during the site investigation and conceptual model indicate no significant risk of contaminants within these strata, unless accidentally cross-mixed during placement.

Should imported soils be required for use within the proposed gardens these will require testing prior to use, with suites and quotas subject to provenance. The source of any imported soils and indicative testing should be provided to Coopers in advance, to determine if appropriate for delivery to site for testing.

Once soils are delivered to site or generated from site and stockpiled the materials should be segregated by source and end use for testing by Coopers. Sample frequencies are provided within Table 31 (below), based upon Bury Council guidance, although all imported soils (including for general filling) will require testing.

Table 31: Sample testing quota and suites by source for reuse in garden growing medium

Strata Type	Origin	Sample quote	Testing Suite
Subsoil	Brownfield / Manufactured / Site Won	1:100m^3 (min. 3 samples)	Standard Metals, PAH-16, TPH-CWG, pH, TOC, and asbestos (other analysis may be required if unverified or specific risks, e.g. PCB, VOC, SVOC suites)
	Greenfield	1:250m^3 (min. 3 samples)	Standard Metals, PAH-16, pH, TOC, and asbestos
Topsoil	Brownfield / Manufactured / Site Won	1:50m^3 (min. 6 samples)	Standard Metals, PAH-16, TPH-CWG, pH, TOC, and asbestos (other analysis may be required if unverified or specific risks, e.g. PCB, VOC, SVOC suites)
	Greenfield	1:250m^3 (min. 3 samples)	Standard Metals, PAH-16, pH, TOC, and asbestos
Imported Crushed Brick/Concrete (if present within inert cover depths)	N/A	1:1000m^3 (min. 3 samples)	Standard Metals, PAH-16, pH, TOC, and asbestos

The criteria for acceptance of soils for use are defined in Coopers Tier 1 thresholds, enclosed to this document.

5.8 Potable Water Supply Pipelines

The appended documents include a UU pipeline risk assessment (Appendix 6) which defines the requirement for source removal to permit Polyethylene pipes within the proposed pipelines based upon ground investigation results. Subject to regrading levels and predevelopment works further testing may redefine the risks.

5.9 Build Phase Gas Mitigation Designs

Introduction

The ground gas assessment has identified areas of residual risk due within the former reservoir/settling tanks which require designs to protect the future residents from ingress of hazardous ground gas into enclosed spaces.

Typical construction details for the gas protection system are included within Appendix 1. The Design System is summarised as below:

Floor Slab Construction:	- Precast Suspended Floor with Subfloor Void (Block and Beam).
Superstructure Build:	Timber Frame
Design Criteria:	Characteristic Situation 2
Coopers Drawing No.	- 8353-LRHHRH-CS2-PC-G-01
Designer:	B. W. Hill, *BSc (Hons), CSci, MIEnvSc, FGS* *Member of British Verification Council – Ground Gas Protection Systems.*

Ground Gas Summary

The refined conceptual model, based upon the gas monitoring, has indicated that there are elevated concentrations of methane associated with the former reservoirs and settling tanks to the paper mill. Remedial works are considered likely to reduce some of the residual risks, however protective measures for the proposed buildings to the equivalent of Characteristic Situation 2 are proposed for residual risk.

Design Summary/Overview

This design report follows the recommended approaches within BS8485:2015+A1:2019 and referenced papers. The ground gas assessments were provided by Coopers (Section 4). The reporting and specification of the gas mitigation measures covered by this report is outlined in Figure 24. The proposals for verification of the gas mitigation measures by Coopers are contained within Section 5.10 and 5.11.

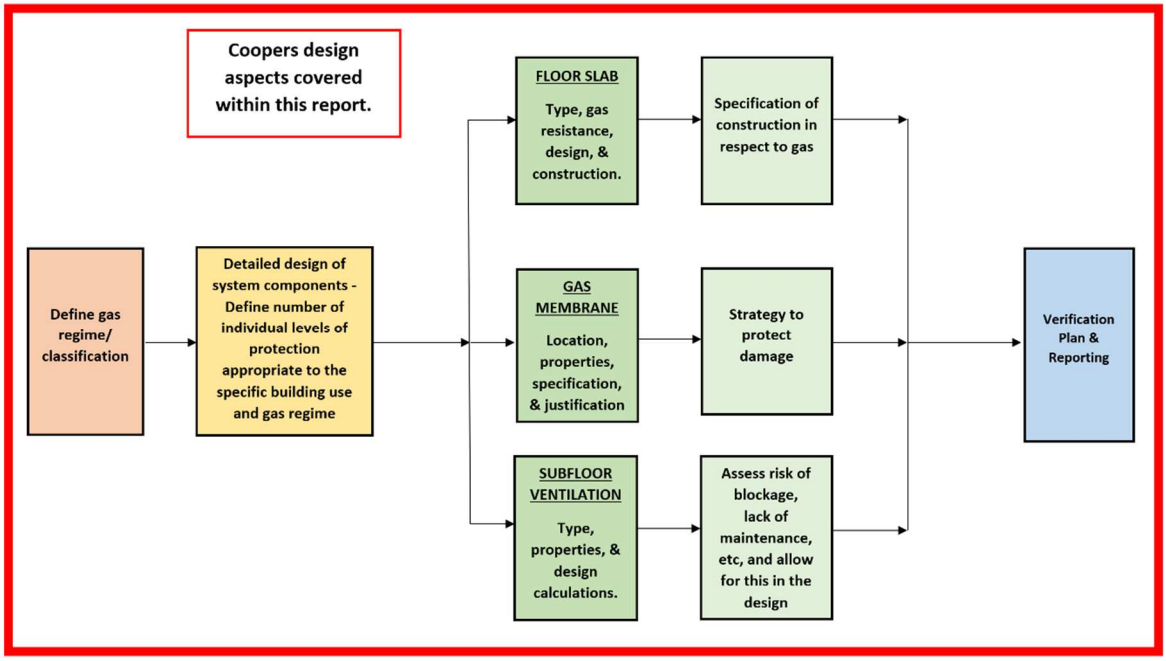


Figure 24: Gas design process

Design Documents

The following documents are contained in Appendices 1, Drawings to this design report:

- Coopers Drawing No. 8353-LRHHRH-CS2-PC-G-01– Characteristic Situation 2 (CS2) Gas Mitigation Measures for Timber Frame Housing and Precast (Block and Beam) Floor with Ventilated Subfloor Void.
- Coopers Gas Mitigation Ventilation Calculation – Print sheets.
- Visqueen Product Specifications – HC Blok (product types may change prior to commencement).

Design Standards/Guidance

The site-specific gas mitigation detail is provided on Coopers Drawing No. 8353-LRHHRH-CS2-PC-G-01 – *Typical Gas Precaution Detail for Characteristic Situation 2 (CS2) Gas Mitigation Measures for Timber Frame Housing and Precast (Block and Beam) Floor with Ventilated Subfloor Void* (Appendix 5).

The designs of gas mitigation measures are commonly more complex than simple 2 dimension sections through buildings, with consideration of the detailing through wall cavities, edges, joints, service penetrations and complex 3D shapes such as corners, door thresholds and transitions to internal garages. Coopers have provided 3D construction guides to demonstrate acceptable methods of the common complex areas of the designs, alternative preformed or construction options are available, however we would advocate that any variation to Coopers designs should be approved prior to construction.

The gas mitigation measures are defined as Characteristic Situation 2 (CS2) following the BS8485 system. The buildings are timber frame construction, with no internal garages. The proposed buildings are intended for domestic end use, and are classified as "Type A" buildings within BS8485, as follows:

Type A building*: private ownership with no building management controls on alterations to the internal structure, the use of rooms, the ventilation of rooms or the structural fabric of the building. Some small rooms present. Probably conventional building construction (rather than civil engineering). Examples include private housing and some retail premises.*

Under the BS8485 points system, for Type A buildings, a design score of 3.5 points is required for a CS2 regime, as per Section 7.1, Table 4, within the standards. The points achieved are via the following:

- Structural Barrier (Floor Slab Construction).
- Gas Resistant Membrane.
- Ventilation Protection Measures.

The points achieved for each component are provided in Table 32 (below), followed by a discussion of each component within the subsequent sections of this report.

Table 32: Summary of Gas Mitigation Designs

Design Component	Type Proposed	Points Allocations
Structural Barrier (Floor Slab Construction)	Precast suspended segmental floor	0 points
Gas Resistant Membrane	Proprietary Gas Membrane with Independent Validation	2 points
Ventilation Protection Measures	Passive sub floor dispersal with very good performance	2.5 points
	TOTAL	4.5 points

Notes to Table 32:
The points allocation above are discussed in relation to each component within the subsequent sections, with an explanation. The points system has not been used to replace the design justification.

Gas Mitigation Design – Characteristic Situation 2 – Structural Barrier

BS8485:2015+A1:2019, Annex A provides informative commentary on floor slab construction in relation to gas ingress and risk values. The developer is proposing the construction of a precast suspended floor slab (block and beam) with a non-structural, reinforced concrete screed finish. Precast suspended floor slabs provide significantly less resistance to gas ingress compared with cast in situ reinforced concrete floors slabs and rafts due to the gaps at the boundary between individual components allowing gas ingress. The reinforced concrete screed will offer some effectiveness to limit gas ingress, however this is relatively thin (subject to design, circa 75mm), non-structural where micro crack widths will allow more gas ingress in comparison to other floor slabs. BS8485 defines the overall very high risk for gas ingress to the proposed buildings through these types of floor slab construction.

Given the design system for the proposed floor slabs the structural barrier is determined as being insufficient to contribute towards the allocated points for gas mitigation.

Gas Mitigation Design – Characteristic Situation 2 – Gas Resistant Membrane

The developer's preferences for construction of the gas membrane is to locate this beneath the insulation to provide separation and protection from the overlying concrete screed. The membrane is to step over party walls and internal faces of party walls for sealing beneath the sole plates of the timber frame (to mitigate slip surfaces). The membrane in this location will be punctured by fixing of the timber frame to the sole plates where specified tapes are required to seal the punctures.

BS8485:2015+A1:2019, Annex C provides informative commentary on the choice and selection of gas resistant membranes on a site specific basis, including the properties of the materials, the reliance on the membrane within the design system, the robustness of the materials to survive construction, the installation methods and the requirements for verification.

The site is designated as a Characteristic Situation 2 (lower gas regime) risk with membrane protection for methane gas ingress. The membrane installation will require taped or welded jointing and verification proposals will be required to include inspection of the membrane.

As previously referenced, the location of the gas membrane conflicts with timber frame construction on external and party walls. The proposed construction location results in the gas membrane being in the location of the fixing sole plates for the timber frame which have fixing bolts which penetrate the gas membrane. In these locations a butyl based double sided tape is required to seal the gas membrane to the bolts. The gas membrane requires separation from the cavity tray on the external wall for moisture release pathways, which will necessitate forming the gas membrane around the cranked vents prior to dropping a single course. The enclosed Coopers gas detail, drawing No. 8353-LRHHRH-CS2-PC-VC-G-01 (Appendix 1) shows a representation of the gas membrane position in 3D.

The gas membrane is not the primary form of protection within the designs (which is the subfloor ventilation layer, discussed in sections below), however should the ventilation layer become blocked in the future, the floor slab offers little resistance to gas ingress and the membrane would need to be sufficient to mitigate gas ingress to the enclosed spaces of the building.

The selected gas membrane for this site consists of a Visqueen NF400, which has a BBA Agrément Certificate, with a mass of >370g/m^2. The membrane has minimum thickness of 0.4mm, meeting the design requirements for this site, and following advice within BS8485. The membrane can be taped or welded at the installation contractor's discretion. All ancillary products and tapes must be from the membrane manufacturer to ensure compatibility for adequate sealing. All sections of formed corners, returns, service entry pipes which are not preformed will require use of detailing tape which includes an aluminium core to mitigate gas transmission.

The membrane is considered to be sufficiently robust to limit methane ingress, of sufficient mass for welding (>370g/m^2) and taped application. The position above the precast floor slab and beneath a screed will not pose high risk of stress from construction, with testing confirming tensile strength, elongation and nail tear resistance following BS EN 12311 with values provided stating these were considered to pass with no significant deterioration.

To achieve the requirements for designation of 2 points within BS8485 independent verification is required in accordance with CIRIA C735.

Gas Mitigation Design – Sub Floor Ventilation

BS8485:2015+A1:2019, Annex B provides informative commentary on performance of different forms of subfloor ventilation, largely based upon the research by Department of the Environment, Transport and the Regions (DETR) Partners in Technology (PiT) (1997) *"Passive Venting of Soil Gases Beneath Buildings Research Report – Volume 1, Guide for Design*" and "*Volume 2, Computational Fluid Dynamics Modelling: Example Output*". Models were based upon limited parameters for small (5m by 5m) and large buildings (30m width) with recommendations for designs based upon the results.

The Coopers referenced typical gas mitigation construction detail includes a minimum 150mm subfloor void, with side ventilation including standard cranked venting/air bricks at 2m centres, and internal walls containing connecting pipe work of 75mm at 1m centres. The subsequent sections detail the calculations and justification for the appropriate designs.

Coopers Designs include

- 150mm sub floor void (min.).
- Cranked external venting to air bricks at 2m spacing on at least 3 sides (frontages commonly not possible where level access is required).
- Internal wall venting pipes of 75mm diameter at 1m spacing.

Venting Performance

- Periscopic ventilation = 6600mm^2 (typical ventilation per periscopic vent, subject to product types)
- Internal cross ventilation connection = 4417.86mm^2 (75mm diameter pipe, area is πr^2)

Ventilation Designs and Calculations

The appended Coopers ventilation calculations (Appendix 5) provides further commentary of the design system and ventilation performance and the suitability of the ventilation proposals for the gas regime.

5.10 Build Phase Gas Mitigation Verification Plan

Introduction

CIRIA C735 details the verification plan should include a brief summary of the ground gas regime, including description of the types of gas/vapour identified, the nature/levels of risk, and the remediation objectives with respect to the gas regime. Further details are provided within C735 that the verification plan should consider the complexity of the designs, the number of plots/buildings, and the installation workforce in relation to the gas regime, summarised in Table 33.

Table 33 – Risk Based Approach to Determine Gas Inspection Programme

Consideration	Assessment Criteria
Gas Regime	Risk based upon Characteristic Situation and levels of protection.
Complexity of Designs	Based upon number of penetrations, building shape, steps in slab levels, etc.
Number of Plots/Buildings	The number of plots; where greater numbers are considered a high risk of variation and build duration.
Installation workforce	NVQ Level 2 qualification or general ground works contractor.

The ground gas regime is discussed in Section 4 of this report.

The buildings are standard residential houses, without basements, lift shafts, or columns, which are relatively simple for construction. There are 3 No. mews buildings proposed for protection such that the risks of incorrect installation are significant but does not allow for variations in verification if consistent personnel are undertaking the installation (as confidence in the installers will not be achieved over the short duration of construction time). The installation workforce is unknown at this stage but are considered likely to be non-specialist installers (ground works contractors) for plots with CS2 protection measures.

5.11 Inspection Regime and Photographs.

As detailed within CIRIA C735, the verification plan should define the following items in respect of the proposed inspection regime:

- Consideration of the need for, and scope of inspection/verification.
- Who will carry out the inspections (in terms of competence and independence).
- Over what period and at what frequency these inspections will take place.
- What elements of the gas protection system will be inspected.
- How the inspections will be recorded and reported (written records, pro forma, photographs, drawings, etc.

Coopers consider that independent inspections (not by the installer/supplier) should be undertaken to confirm the gas mitigation measures were installed in accordance with the designs, which are likely to be required by Bury Council for all plots.

The inspections are to be undertaken by Coopers, as independent of all installers/suppliers, and members of the British Verification Council – Ground Gas Protection Systems (BVC). Coopers have provided guidance on the inspection of ground gas mitigation measures within publications (CIEH). Further experience and details of the verifiers will be provided as part of the verification reporting.

The items to be inspected by Coopers are outlined in Table 34 (below). It is considered that the inspections would be required for the gas membrane installation stage for all plots, as this is when most liable to failures occurring (defects in sealants, sealing to service entry points, corners, damage, etc). Periodic inspection of the subfloor ventilation layers is to vary based upon the gas regime (less sensitive to damage or incorrect application).

Table 34 - Gas Mitigation Measures Inspection Criteria

Inspection Criteria	Detailed Inspection Notes
1. Product Verification	*Confirmation that suitable products have been installed to consist of photographs of product types (manufacturer/name), labels on packaging and delivery tickets. Gas Membrane **AND** tapes*
2. General Condition	*The membrane is to be inspected to ensure there are no tears, punctures or rips. Take photographs of full plot status for each plot being inspected.*
3. Membrane Subgrade	*Commonly either insulation or sand blinding, check no gravel or other items with the potential to puncture when weight is applied.*
4. Jointing/Welds	*Checking the overlaps between membranes are correctly sealed, with correct tapes with sufficient overlaps or a good quality heat sealed weld if this method being utilised. Take photographs of at least one jointing section per plot being inspected to show sufficient overlap and use of tapes.*
5. Creases/folds	*Care must be taken to ensure that creases & folds within the membrane do not span over the jointing sections (bridging) as this provides an unacceptable gas pathway.*
6. Service Entry Points	*Verification of the presence of preformed tophats sealed to the pipe and membrane. If service entries are constructed using detailing strip or equivalent product then ensure adequate seal is achieved. Ensure installation is carried out in accordance with manufacturers guidance. Take photographs of all tophat installations.*
7. Corner Sections	*Not cut and folded where punctures are present but concealed with tapes. Either formed with Detailing Strip or preformed corner units.*
8. Reinforcement Spacers	*Use of metal spacers/ties with potential to puncture the membrane would only be permitted with protection board.*

Table 34 continued on following page

Table 34…continued - Gas Mitigation Measures Inspection Criteria

Inspection Criteria		Detailed Inspection Notes
9. Membrane Dirt/Debris		*Whilst we appreciate the membranes are constructed on a real-world construction site, the membrane must be free of debris such as stones or mortar that would be liable to damage the membrane when weight is applied through subsequent construction. Whilst mud is inevitable on the membrane it must be kept to a minimal level to allow the membrane to be inspected and defects disclosed. If the membrane is not visible due to the amount of mud then it will be failed and need to be cleaned for reinspection.*
10. Puncture Repairs		*Punctures are relatively common and occasional damage with proper repair is not considered to be indicative of defective workmanship. All punctures require a patch that spans the damaged section by at least 150mm on each side.*
11. Party Walls		*The use of temporary blockwork for shuttering commonly involves placing the gas membrane above the blocks for the initial concrete pour. When this is removed we advocate placing the membrane back to run flat through the party wall to allow this to be sealed and inspected on the subsequent plot. Alternative approaches are available but the membrane must not be cut and patched after the second plot is cast (due to additional damage, difficult repairs, and lack of inspection at this stage). Also if robust details adopted the membrane will need to drop through the cavity.*
12. Door Thresholds		*Care is required in relation to gas membrane positions through the wall cavity to the external wall around the door thresholds, closing the cavity, and protection beneath any sills. The use of preformed cloaking units and/or detailing strip protection would be recommended.*
13. Wall Cavity Inspection		*Confirming that proprietary gas membrane or gas DPC spans the external walls. Check for rips across cavity. Check for jointing detail of gas resistant DPC or membrane across cavity to main membrane. Take photographs for all plots inspected.*
14. Internal Garage		*One of the most common problems/defects in construction occur for internal garages where the membrane positions need to account for variations in proposed slab level. If internal garage then **phone office** during the visit to confirm the following items:*
a)	**Sloping Floor**	*Check if the developer has sloping garages, if so these are critical to membrane positioning and requires particular attention to membrane positions.*
b)	**Internal Walls**	*If sloping floor then check the membrane transitions at a low level through the internal wall to the plot to ensure it will not be exposed above the frontage of the sloping garage.*
c)	**External Walls**	*If sloping floor then check the membrane steps up within the external wall cavity of the internal garage to ensure it is not exposed above the fall of the garage.*
d)	**Pillars**	*Check the pillar/garage entrance section for the use of detailed strip to ensure not exposed around the entrance and closure of the cavity – refer to construction guide for details.*
15. Stepped Slab		*Check sufficient overlap of gas membrane to span the step between plots. Particular attention to be paid to the formation of corners to the external walls in line with Plot specific construction detail.*
a)	**Wall Ties**	*Check sealing of wall ties as per plot specific construction detail at approximately 0.9m centres. Take photographs of all wall ties and distances between each ensure detail strip secured to tie – refer to detail.*
16. Timber Frames – 1st Stage Inspection		*High risk, common problems/defects in construction in relation to fixings to masonary through membrane and sealing around external vents. Multiple positions failures can occur. Verify membrane routing and ensure a detailed inspection of every periscopic vent is undertaken.*
a)	**Periscopic Vents**	*Ensure they are formed and sealed with Detailing Strip.*
17. Timber Frames – 2nd Stage Inspection		*Checking the joiners' fixings between the soleplate and the gas membrane ensuring the fixing aligns with the position of the double-sided butyl tape to ensure an adequate seal is formed protecting against a gas pathway.*
a)	**Soleplate fixings**	*Check every fixing usually spaced at 0.60m centres across the soleplate both around the perimeter and internal party walls. Fixing and double-sided butyl tape must align with one another.*
18. External Wall Venting		*Check positioning of vents are on 3 sides of dwelling at approximately 2m centres. Take photographs of vents on external walls for each plot. (May be possible to photograph other plots on site which are at stage of installing vents. Will be useful for these plots later on).*
19. Subfloor Venting Type Checked		*If stone venting then check the stone is single sized, 20-40mm. May need to do this on adjacent plots, stockpile or ask for delivery tickets. Some designs need drains laid in the stone so check the construction details, if dims given then measure with tape and photograph*
20. Subfloor Venting Thickness		*The venting medium (void/stone) is of a designated thickness as shown on the gas design details. Photograph thickness of adjacent plots showing how large the void dimension will be with a staff. If not visible on adjacent plots request this item be provided for future inspection.*
21. Internal/Partition Wall Venting		*Check the spacing and dimensions of any interconnecting pipes between the subfloor venting medium. This can vary by size of building and design approaches so be careful to check against the gas details*

The inspection will be recorded on hand written records at the time of the visit (not retrospective on return from the visit), with pro forma based upon Table 34 (above). These will be provided with plot specific certification, including photographic records, to demonstrate plot specific installation. Example photographic records are provided in Photographs 5 to 17, below.





Photographs 5 and 6: Showing example of pipe layout and spacing. The typical spacing is 1 No. 75mm diameter pipe every 1m. This can change depending upon the pipe diameter (dependent upon site specific construction variations). This may not be able to be directly observed on each plot, depending upon the site-specific design of gas protection measures. If not recorded then observation of other plots under construction or requesting photographs to be taken by construction management can be deemed appropriate depending upon confidence in the construction as site progresses



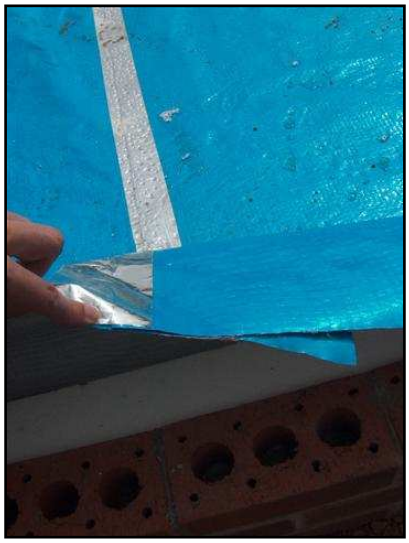


Photographs 7 and 8: Verify presence of cranked vents along the external walls and sufficient spacing. Areas of access points to internal garages or external adjoining garages may not be possible to have cranked venting and alternative construction options should be discussed where necessary

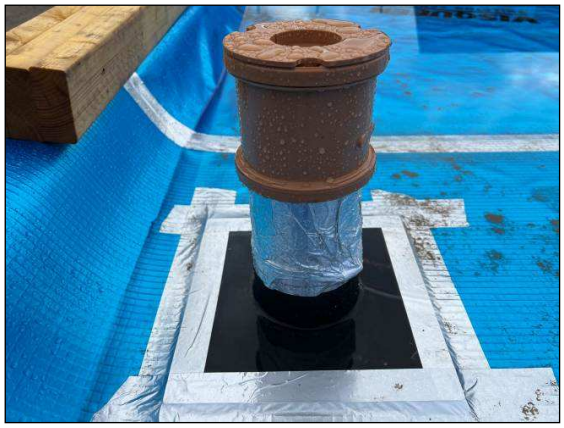


Photograph 9: Check general condition of membrane for punctures/tears etc – take panoramic photograph showing general condition. Note that the membrane colour represented in the photographs is the Visqueen Gas Barrier, not the NF400 (blue on both sides, translucent) for CS2 mitigation



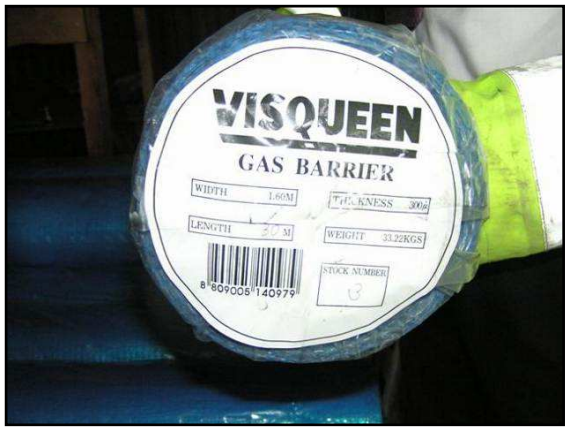


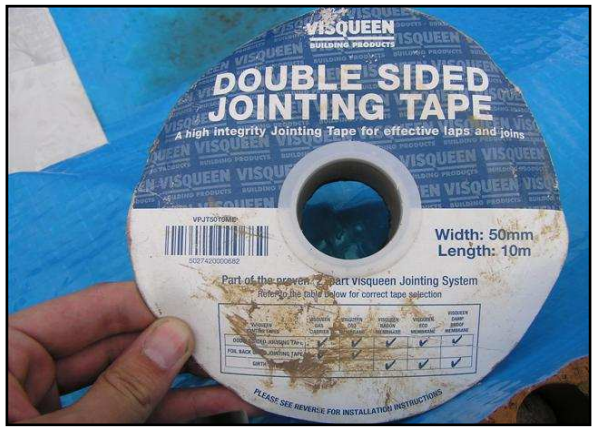
Photographs 10 and 11: Check >150mm overlaps of membranes and proprietary tapes placed and sealed with photographs taken. Note that the membrane colour represented in the photographs is the Visqueen Gas Barrier, not the NF400 (blue on both sides, translucent) for CS2 mitigation.





Photographs 12 and 13: Check tophat is sealed to membrane and pipework with tapes, and Jubilee clip. Note that the membrane colour represented in the photographs is the Visqueen Gas Barrier, not the NF400 (blue on both sides, translucent) for CS2 mitigation.





Photographs 14 and 15: Verify product types through visual inspection. If new delivery of product types is present and copies of supply tickets are not available then inspect product labels to confirm manufacturers and product types. Note that the membrane colour represented in the photographs is the Visqueen Gas Barrier, not the NF400 (blue on both sides, translucent) for CS2 mitigation.



Photograph 16: Showing the presence of double-sided butyl tape in place in the location of the soleplate joint to the gas membrane during the second stage inspection



Photograph 17: Showing the presence of double-sided butyl tape in place in multiple locations of the soleplate joint to the gas membrane during the second stage inspection

5.12 Potable Water Supply Pipelines

A UU pipeline risk assessment is included within Appendix 6, which defines the requirement for source removal to permit Polyethylene pipes within the proposed pipelines based upon ground investigation results. Subject to regrading levels and predevelopment works further testing may redefine the risks.

5.13 Material Management Plans and Exemptions – All Plots.

Soils are considered a commodity which requires careful planning and management to ensure the suitability for reuse as part of a sustainable development policy. The reuse and any direct transfer of soils for use within the site are designated as a waste process, where registrations are recommended to follow the CL:AIRE Definition of Waste – Code of Practice (DoW-CoP) to ensure the soils are not designated as illegally deposited waste.

The Environment Agency have advised the following:

The CL:AIRE Definition of Waste: Development Industry Code of Practice (version 2) provides operators with a framework for determining whether or not excavated material arising from site during remediation and/or land development works is waste or has ceased to be waste. Under the Code of Practice:

- *Excavated materials that are recovered via a treatment operation can be reused on-site providing they are treated to a standard such that they are fit for purpose and unlikely to cause pollution*
- *Ereated materials can be transferred between sites as part of a hub and cluster project*
- *Some naturally occurring clean material can be transferred directly between sites.*

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on-site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

We recommend that developers should refer to:

- *The position statement on the Definition of Waste: Development Industry Code of Practice*
- *The waste management page on GOV.UK*

Coopers and Bury Council's Contaminated Land Department have discussed contractors proposals for material management. Coopers sought a paid consultation with the Environment Agency regarding contaminated land department regarding the ground conditions and material management/reuse, but advised they have temporarily suspended the discretionary consultation service. The response recommends that any assessments or proposals should go via Bury Council Planning Department.

The materials previously deposited within the former reservoir/settling tanks in the 1980s are reported to have originated from demolition works on the site in the 1980's, with no imported soils. Coopers commissioned aggregate testing at the request of the proposed contractors, with results presented in Appendix 4. The results show the amount of soil/stone and non-brick/concrete/stone inclusions varies from 4.6% to 42% across the samples, with majority of the material consisting of brick, concrete or stone.

Where following the DoW-CoP the developer should establish a Material Management Plan (MMP) showing the location of the materials to be stockpiled and progressively used. The proposals should be agreed between the developer and their contractor. Reuse of natural soils on the site of origin are not considered to require an independent suitably Qualified Person (QP) review and completion the declarations for registration under the CL:AIRE system.

If soils are intended for transfer to another site, the MMP should be provided to document the management practices in place prior to generation and the intended transfer. The receiving sites MMP and CL:AIRE registration will then reflect the practices established.

6. Conclusions

6.1 General

The phased ground investigation has identified the presence of areas of elevated metal concentrations, PFAS, petroleum hydrocarbons and asbestos fibres within areas of the site, and presence of hazardous ground gas associated with the infilled reservoir. Remediation and mitigation measures are required to protect the future residents with associated verification. The assessments and proposals included within this correspondence should be agreed with Bury Council.

Further action which Coopers consider will be required could include, but not necessarily be limited to:

- Submit all reports/correspondences to Bury Council for approval.
- Following decommissioning of the electrical substation further testing for PCBs is required.
- Produce Material Management Plan detailing the intended reuse or transfer of soils.
- During earthworks and regarding contractors will be required to remove any identified ACMs, and identify any previously undisclosed contaminants.
- Localised removal of petroleum range hydrocarbon impacted soils from the former reservoir.
- All imported soils to be subject to chemical testing to confirm suitability for use.
- Verification of gas mitigation measures for protection of human health.
- A validation completion report will be required to be submitted to Bury Council upon completion of the development.

Appendix 1

Referenced Drawings

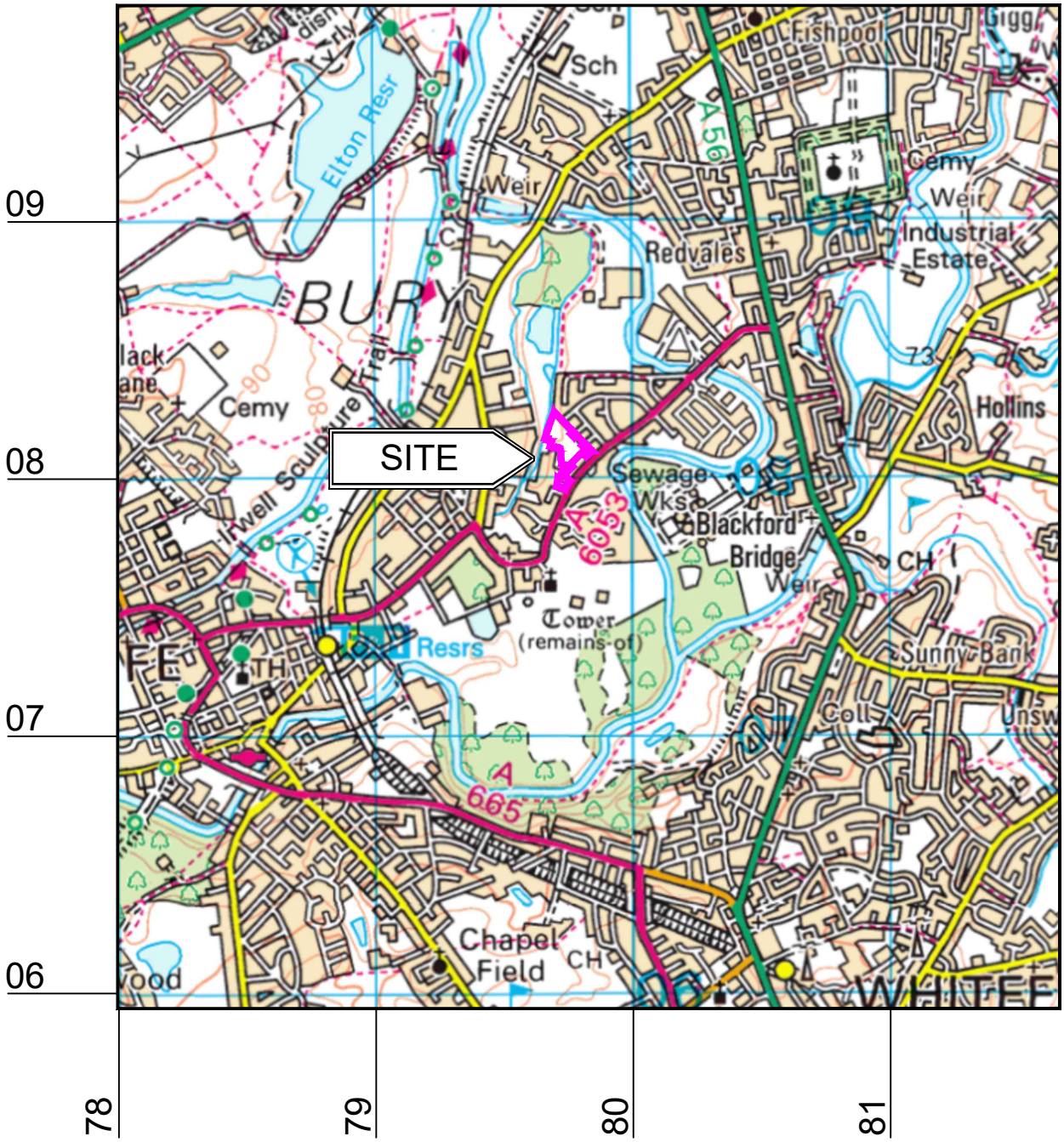
Drawing No.	Revision	Title
8353/L1	A	Site Location Plan
8353/AP	A	Aerial Photograph
8353/01	E	Site Plan
8353/200	-	Hazardous Ground Gas Conceptual Model
8353/Fd/01	-	Foundation Plan (Sheet 1 of 2)
8353/Fd/01	-	Foundation Plan (Sheet 2 of 2)
8353/BPRP	A	Build Phase Remediation Plan
8353/LRH/CS2/PC/PE/G/01	-	Typical Gas Precaution Detail to a Precast Concrete Slab and a Vented Void

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Tel: 01244 684910
Email: admin@coopers.co.uk
Web: http://coopers.co.uk

SCALE	1:25000@A4	Land Adjacent to Bealey Industrial Estate, Radcliffe.			
DATE	17.10.24				
DRAWN	AH	SITE LOCATION PLAN			
CHEK'D	BH	Drg No:	8353 / L1	Rev:	A

NORTH

National Grid reference of the proposed site.	SD 797 081



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0 200 400 600 800 1000 1500 2000

SCALE BAR (m)

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Any black and white reproduction should not be relied upon.

REVISION BOX				
Rev.	Date	Revision	By	Appd.
A	02.04.26	Grid reference corrected.	AH	BH

coopers
chartered consulting engineers
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Chester
CH4 9QU
Tel: 01244 684910
Email: admin@coopers.co.uk
Web: http://coopers.co.uk

SCALE	1:2000 @A4	Land Adjacent to Bealey Industrial Estate, Radcliffe.			
DATE	17.10.24				
DRAWN	AH	AERIAL PHOTOGRAPH			
CHEK'D	BH	Drg No:	8353 / AP	Rev:	A

© Copyright

NORTH

KEY

Site boundary



0 10 20 40 60 80 100 120 140 160 180 200

SCALEBAR (m)

The original of this drawing contained coloured symbols and/or features.
Any black and white reproduction should not be relied upon.

REVISION BOX				
Rev.	Date	Revision	By	Appd.
A	21.04.26	Site boundary updated.	AH	BH

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NORTH

This drawing is to be read in conjunction with the following:-

a) RJP Surveying Consultants Ltd, Proposed Development at Dummers Lane, Radcliffe, Topographical Survey, ref. WH062 / T00, dated January 2024.

b) Westchurch Homes, Bealey Industrial Estate, Radcliffe, Site Location Plan, ref. BIE-LOC-001, dated February 2024.

c) Groundsure Insights, Land Adjacent to Bealey Industrial Estate, Radcliffe, ref. GD-HMJ-3VX-27B-I11_1250 & ref. GS-HMJ-3VX-27B-I11_LS, dated 15 February 2024.

d) Groundsure Enviro+Geo Insight, Land Adjacent to Bealey Industrial Estate, Radcliffe, ref. GS-B5J-QUX-W33-1YT, dated 15 February 2024.

e) Avoin Maa Surveys Ltd, Bealey Industrial Estate, Radcliffe, ref. 0924/WEST/11199, dated 19 September 2024.

AREA OF JAPANESE KNOTWEED

AREA OF JAPANESE KNOTWEED

THIS DRAWING SHOULD ONLY BE PRINTED IN COLOUR

SCALEBAR (m) 0 5 10 15 20 25 30 35 40 45 50

KEY TO EXPLORATORY HOLES

(All positions are approximate unless otherwise stated)

- Surface water sampling locations SWS SE & SWS SW taken by Coopers between 05 - 31 March 2026
- Cable percussive boreholes BH01 - BH03 drilled for Coopers between 09 - 12 February 2026
- Window sample boreholes WS201 - WS212 inc. WS205a drilled for Coopers between 19 - 23 January 2026
- Trial pits excavated by Coopers: TP01 - TP09 on 26 September 2024 TP101 - TP104 on 09 February 2026
- Window sample boreholes WS01 - WS09 drilled for Coopers between 21 & 22 March 2024
- Window sample boreholes WS101 - WS104 drilled for Coopers on 30 September 2024
- Hand dug trial pits excavated by Coopers: HDTP01 - HDTP03 on 30 September 2024 HDP01 on 21 January 2026

KEY TO EXISTING FEATURES

(All positions are approximate unless otherwise stated)

- Surveyed trees (taken from ref. a)
- Surveyed foliage (taken from ref. a)
- Surveyed building (taken from ref. a)
- Surveyed steel containers (taken from ref. a)
- Surveyed temporary structures (taken from ref. a)
- Presence of Japanese Knotweed observed by Coopers between 21 & 22 March 2024
- Flytipping observed by Coopers between 21 & 22 March 2024
- Flytipping of possible asbestos containing materials observed by coopers between 21 & 22 March 2024
- Surveyed telecommunications mask (taken from ref. a)
- Surveyed overhead cable (taken from ref. a)
- Surveyed fence (taken from ref. a)
- Surveyed bottom of bank (taken from ref. a)
- Topographical contours (taken from ref. a)
- Site boundary

KEY TO FORMER FEATURES

(All positions are approximate unless otherwise stated)

- Former electricity substation (taken from ref. c)
- Former reservoir (taken from ref. c)
- Former extent of Bealey's Goit (taken from ref. c)
- Former water feature with flow direction (taken from ref. c)
- W — Former well (taken from ref. c)
- TK. — Former tank (taken from ref. c)
- S-TK. — Former settling tanks (taken from ref. c)
- Former filter beds (taken from ref. c)
- Former tramway (taken from ref. c)
- Former landfill (taken from ref. d)

KEY TO ACCESS

(All positions are approximate unless otherwise stated)

- Area accessible for SI

KEY TO SURVEYED SERVICES

(All positions are approximate unless otherwise stated)
(Taken from ref. e)

- Foul Drainage
- Surface Drainage
- Electricity
- Gas
- Ground Probing Radar
- Water
- Cable Television
- British Telecom
- Pipe
- Unknown
- Electricity (TFR) Taken From Records
- Gas (TFR) Taken From Records
- Water (TFR) Taken From Records

REVISION BOX				
Rev.	Date	Revision	By	Appd.
A	03.10.24	Surveyed services added to plan. Site boundary updated, site re-centered and sheet size updated to A1. Latest Coopers exploratory holes added to plan.	AH/OS	BH
B	27.02.26	Latest Coopers exploratory hole locations added to plan.	AH	BH
C	15.04.26	Key updated.	AH	BH
D	21.04.26	Site boundary updated.	AH	BH
E	22.04.26	Coopers surface water sample locations added to plan.	AH	ST

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Web: http://coopers.co.uk

Client: WESTCHURCH HOMES LTD

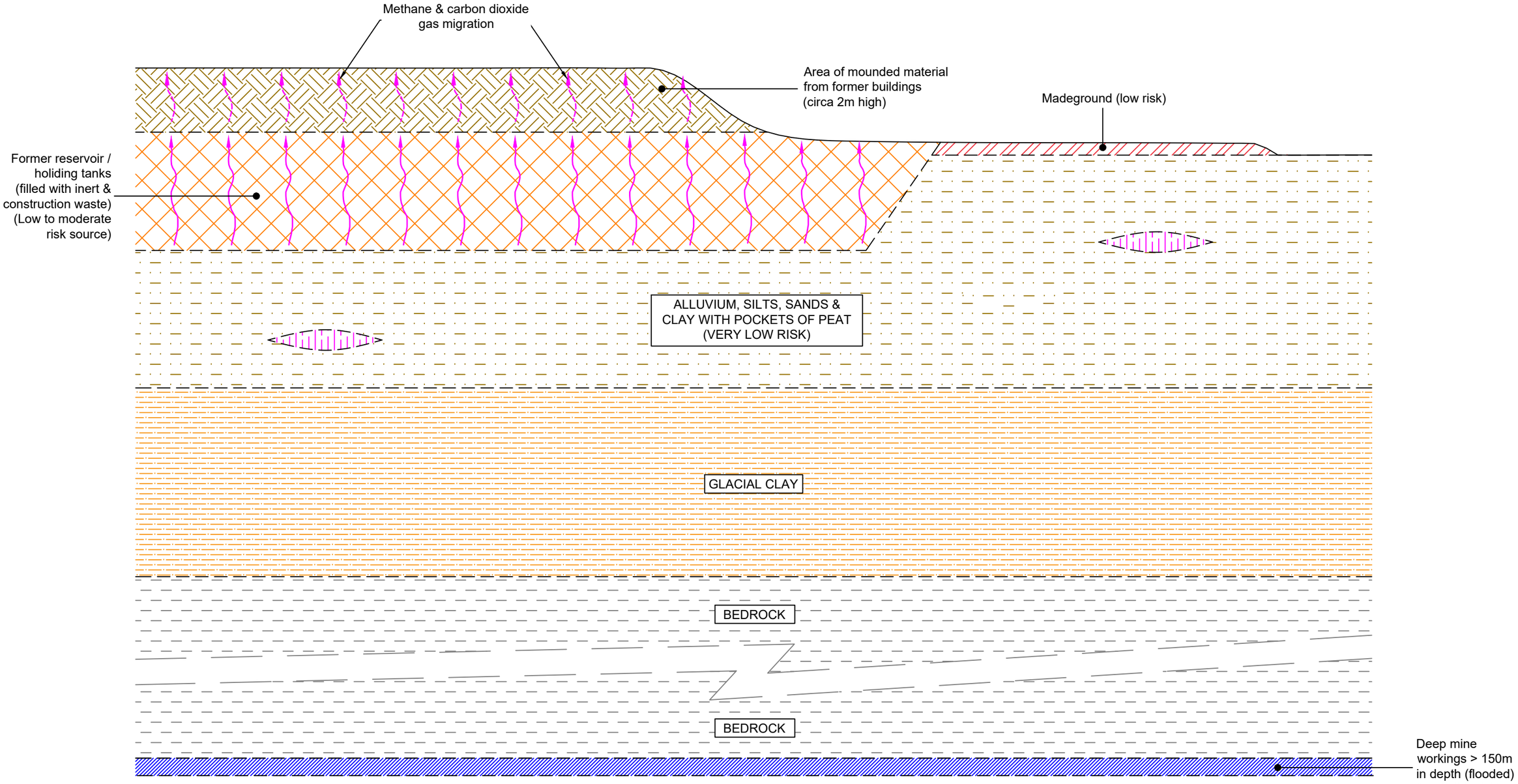
Project: Land Adjacent to Bealey Industrial Estate, Radcliffe.

Title: SITE PLAN

DRAWING NUMBER: 8353 / 01

SCALE at A1	1:500	
DATE	11.04.24	REVISION
DRAWN	OS	E
CHECKED	BH	

DO NOT SCALE



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SCALE	NTS @ A3
DATE	09.10.24
DRAWN	AH
CHEK'D	BH

Rev	Drwn	Date	App'd	Comments

Land Adjacent to Bealey Industrial Estate, Radcliffe.

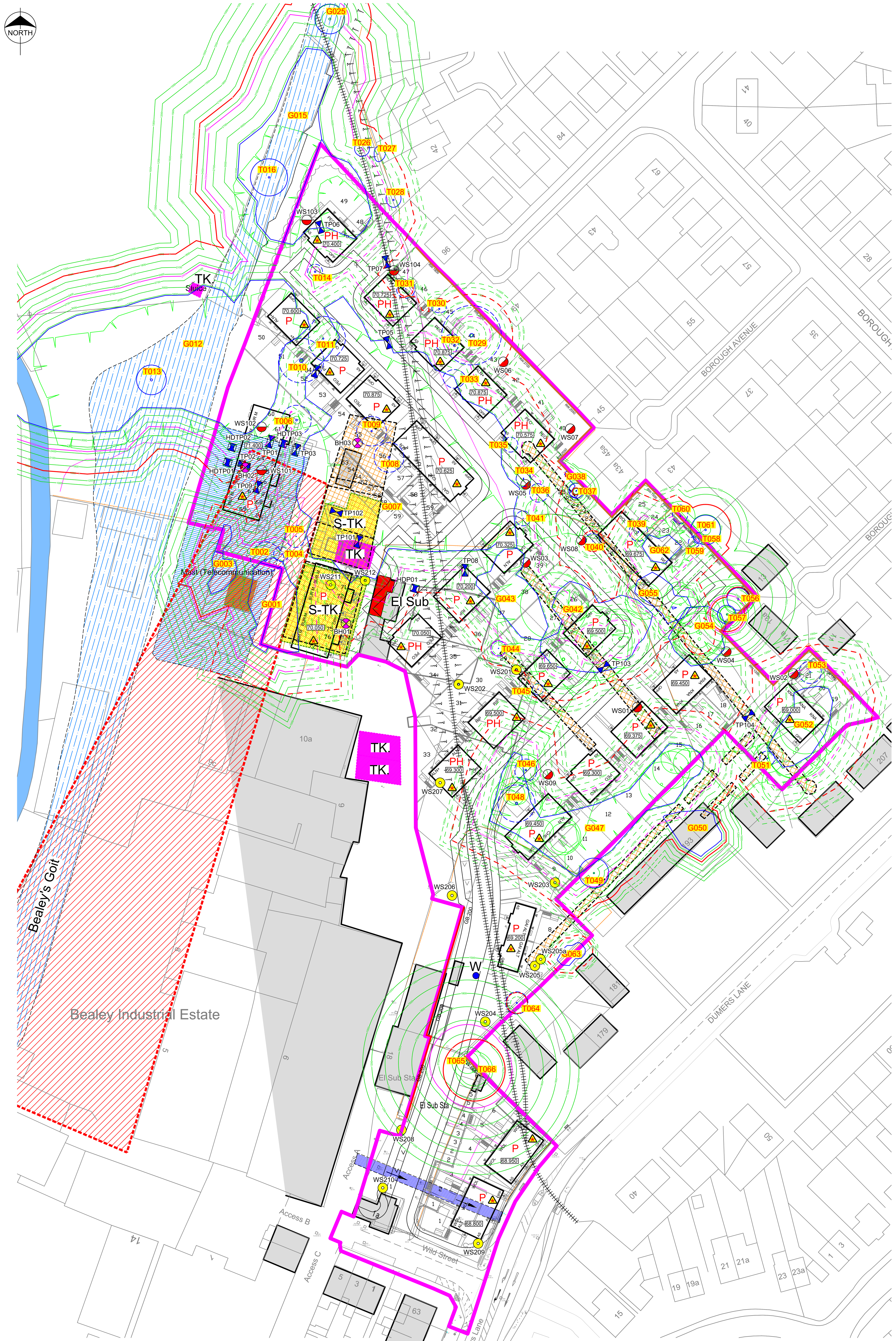
HAZARDOUS GROUND GAS CONCEPTUAL MODEL

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Drawing No. 8353 / 200

Rev. -

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1) SITE PLAN
(Scale 1:500)

SCALEBAR (m)

LEGEND
(All positions are approximate unless otherwise stated)
(All references refer to those stated within General Notes)

KEY TO EXPLORATORY HOLES
(All positions are approximate unless otherwise stated)

- Cable percussive boreholes BH01 - BH03 drilled for Coopers between 09 - 12 February 2026
- Window sample boreholes WS201 - WS212 inc. WS205a drilled for Coopers between 19 - 23 January 2026
- Trial pits excavated by Coopers: TP01 - TP09 on 26 September 2024, TP101 - TP104 on 09 February 2026
- Window sample boreholes WS01 - WS09 drilled for Coopers between 21 & 22 March 2024
- Window sample boreholes WS101 - WS104 drilled for Coopers on 30 September 2024
- Hand dug trial pits excavated by Coopers: HDTP01 - HDTP03 on 30 September 2024, HDP01 on 21 January 2026

KEY TO EXISTING FEATURES
(All positions are approximate unless otherwise stated)

- Hutchinson's Goit (taken from OS tile)
- Surveyed trees (taken from ref. a)
- Surveyed foliage (taken from ref. a)
- Surveyed building (taken from ref. a)
- Surveyed steel containers (taken from ref. a)
- Surveyed temporary structures (taken from ref. a)
- Surveyed telecommunications mask (taken from ref. a)
- Surveyed fence (taken from ref. a)
- Surveyed bottom of bank (taken from ref. a)

KEY TO FORMER FEATURES
(All positions are approximate unless otherwise stated)

- Former electricity substation (taken from ref. c)
- Former reservoir (taken from ref. c)
- Former extent of Bealey's Goit (taken from ref. c)
- Former water feature with flow direction (taken from ref. c)
- W Former well (taken from ref. c)
- TK. Former tank (taken from ref. c)
- S-TK. Former settling tanks (taken from ref. c)
- Former filter beds (taken from ref. c)
- Former tramway (taken from ref. c)
- Former landfill (taken from ref. d)

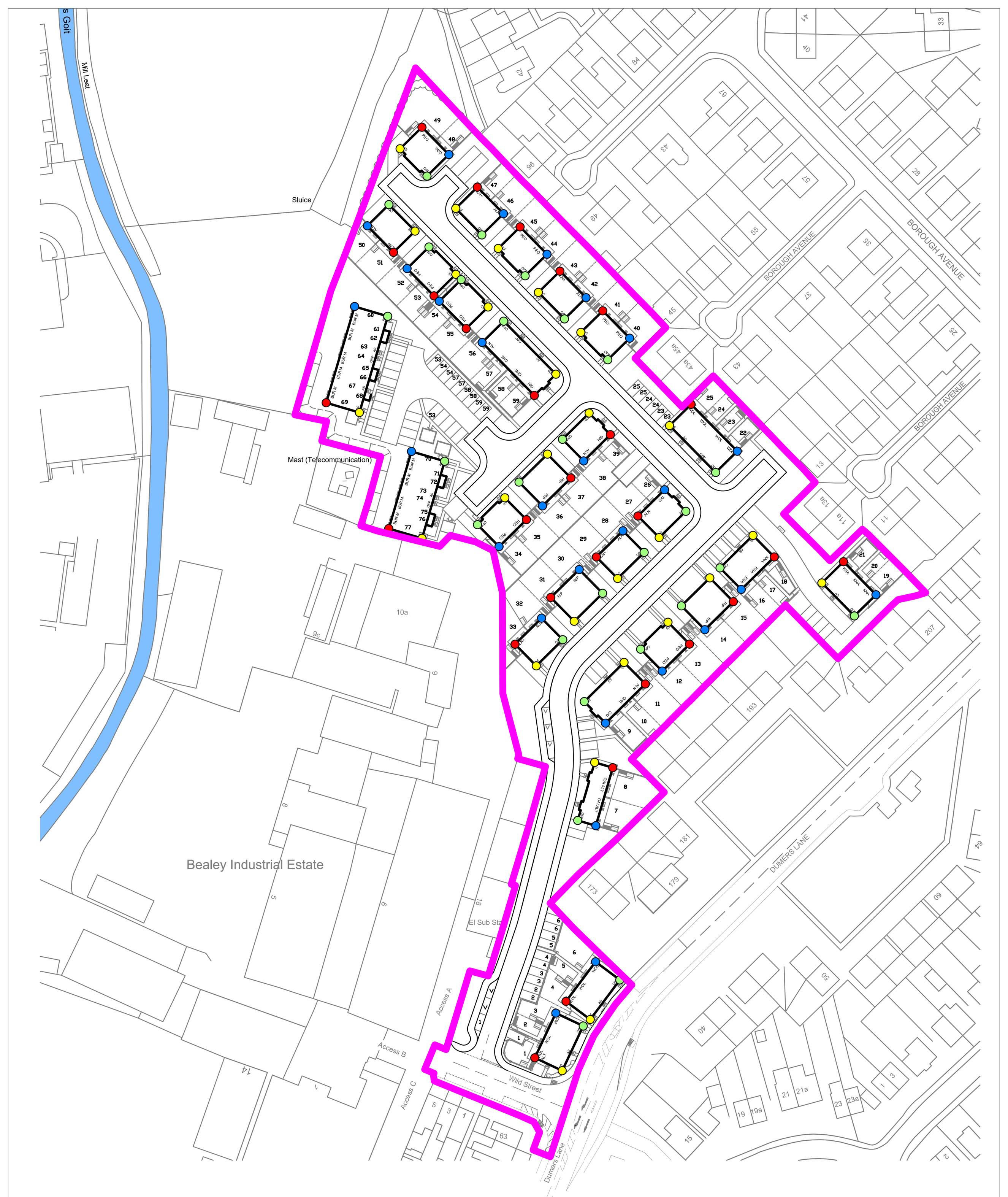
KEY TO PROPOSED FEATURES
(All positions are approximate unless otherwise stated)

- Proposed plot locations (taken from ref. b)
- 69.300 Slab levels (taken from ref. e)
- GB:200 Gravel board and depth (taken from ref. e)
- RW:1350 Retaining wall and height (taken from ref. e)
- Site boundary (taken from ref. b)

KEY TO TREE CONTOURS
(All positions are approximate unless otherwise stated)

- G003 Surveyed group of trees (taken from ref. f)
- T051 Surveyed individual tree (taken from ref. f)
- 1000 / 1200 / 1500 Indicates minimum depth of foundation required in areas affected by existing trees/hedgerows with a CLAY subsoil (TREES RETAINED). Not applicable to foundations in a granular subsoil. Dashed lines indicates tree proposed to be removed (Premier Guarantee Technical Manual 16 - Section 3.6)
- Denotes 1.5m foundation depth contour of existing tree height - for heave precautions. Dashed lines indicates tree proposed to be removed. (Premier Guarantee Technical Manual 16 - Section 3.6)
- 2500 Cast foundations within this zone would require prior agreement with Premier Guarantee, subject to site specific assessments of tree influence >2.5m.

2) CORNER ID PLAN
(Scale 1:1000)



KEY TO CORNERS
- Front left corner (yellow)
- Rear left corner (red)
- Rear right corner (blue)
- Front right corner (green)

GENERAL NOTES

1. This drawing is to be read in conjunction with the following:-
   a) RJP Surveying Consultants Ltd, Proposed Development at Dummers Lane, Radcliffe, Topographical Survey, ref. WH062 / T00, dated January 2024.
   b) Westchurch Homes, Bealey Industrial Estate, Radcliffe, Site Location Plan, ref. BIE-LOC-001, dated February 2024.
   c) Groundsure Insights, Land Adjacent to Bealey Industrial Estate, Radcliffe, ref. GD-HMJ-3VX-27B-I11_1250 & ref. GS-HMJ-3VX-27B-I11_LS, dated 15 February 2024.
   d) Groundsure Enviro+Geo Insight, Land Adjacent to Bealey Industrial Estate, Radcliffe, ref. GS-B5J-QUX-W33-1YT, dated 15 February 2024.
   e) Pell Frischmann, Bealey Lane, Detailed Design, External Works, ref. 110081-PEF-HEW-01-DR-C-00001, rev. P01, dated 08 May 2025.
   f) Enzygo, Dumers Lane, Bury, Arboricultural Impact Assessment, ref. 893.002.ENZ.XX.00.RP.AR.45.102, dated November 2025.
2. The foundation types indicated are based upon the facts established from observations and field tests during the trial pit investigations. It should be recognised that natural strata may vary considerably from point to point and the groundwater regime may be influenced by seasonal or other factors. The foundation types indicated are therefore for 'GUIDANCE PURPOSES ONLY' and should be constantly reviewed in the light of the actual conditions exposed on site during the construction work.
3. The site investigation has identified the shrinkage potential of the clays to be high shrinkage potential as defined within the Premier Guarantee Technical Manual. The foundation designs to accommodate heave are based upon **HIGH** shrinkage potential in accordance with Section 3.6 of Premier Guarantee Technical Manual.
4. Where necessary foundations should be stepped in accordance with current Premier Guarantee recommendations.
5. This drawing should not be relied upon for housetype names / references.

BASIS OF ASSESSMENT AND GUIDANCE ON FOUNDATION CONSTRUCTION:

General
-The foundation types have been proposed based upon the developer's commercial preferences for foundation types with depths.
-It is acknowledged that trench stability can influence the suitability of foundation construction and we would advocate trial excavations with the developer and contractors to appraise the influence, limitations and changes/measures that can be adopted.

Investigation Areas
-Specific features from the historical Ordnance Survey maps have been accurately overlaid to disclose potential abnormal ground conditions. Specific targeting and delineation of these features are required to enable an accurate assessment.
-The remarks section of the foundation schedule details plot specific features likely to be encountered and may include recommendations for further investigation prior to construction.
-Where the ground conditions differ from those indicated in this drawing we would advocate the developer contacts Coopers to confirm or recommend procedures for reappraisals prior to casting the foundations, and may require further ground investigation.

External Works
-The foundation schedule includes specific designs to account for the proposed slab levels and underbuild.
-Where retaining walls are proposed in close proximity to plots, the foundations may need to be constructed at the same time as the plot/garage foundations, and specific discussions with Coopers structural engineers are recommended should potential conflicts be considered.
-The assessments make no account of proposed utilities excavations and should deep excavations be proposed the formation depths should be appraised to determine if these need to be set a lower level.

Tree Influence and Formation Depths
-The tree survey (as referenced in General Note 1d) was current at the time of the original revision of this drawing. The developer should be aware that trees which are <½ mature height may be subject to substantial changes in growth over time and therefore reappraisals of tree heights and foundation depths at the time of construction/felling may be required.
-The tree influence depths in clay strata are recorded on the foundation schedule (where applicable) and must be considered as the minimum foundation depths. Outside of these areas shallower foundations may be possible, subject to engineering approvals.
-The foundations have set minimum formation levels from proposed ground levels in accordance with Premier Guarantee Guidance. These do not include formation depths that account for potential seasonal variations in the shallow ground conditions. Subject to the time of year of the construction, foundation depths may be increased, subject to inspection by Building Control/Insurers.
-Trees or hedgerows which are to be planted must be considered. No allowance has been made for them on this drawing as it is assumed that any proposed trees and or hedgerows will be sited to avoid affecting any proposed dwelling foundation.
-Currently the Premier Guarantee have a cut off for the maximum depth of trenchfill foundation for plots which are impacted by existing trees of 2.50m. Where tree contours take foundations deeper than this depth, piled foundations should be adopted unless agreed otherwise with the Premier Guarantee.
-Coopers assessment of tree influence has followed the approaches discussed in Premier Guarantee Technical Manual 16 - Section 3.6 and online tree calculations. The tree influence depths (accounting for both heave and potential subsidence) are determined as the deeper of: i) current tree height (mature if >50% of mature height) influence depth against current ground level, ii) mature height tree influence (where trees are to remain) against proposed ground level (accounting for underbuild). Heave influence zones are based upon tree influence from current tree height (mature if >50% of mature height) against existing ground level).

3) ANTICIPATED FOUNDATION TYPES

P PILED FOUNDATIONS WITH ASSOCIATED REINFORCED CONCRETE GROUND BEAMS

-Proposed for foundations where depth to suitable bearing strata is >2.5m below proposed FFL.
-Confirmation of the suitability for the proposed piled foundations should be sought from the piling contractor prior to construction.
-The determination of the pile types and lengths is typically determined by the piling contractors. For budget appraisal purposes we would anticipate the pile lengths will be up to be 10-15m in length.
-Piling platform to be designed in accordance with BR470 and subject to the rig specifications.
-Confirmation should sought from the local authority regarding noise or vibration issues associated with driven piles.

FOUNDATION ANOMALIES

Indicates foundations and slabs which may be affected by trial pits, trees / hedges or former features. The foundation and slab type indicated may have to be amended and appropriate foundations and slabs adopted to suit local ground conditions exposed at the time of construction and agreed with Premier Guarantee/Local Authority Inspectors.

PH PILED FOUNDATIONS WITH ASSOCIATED REINFORCED CONCRETE GROUND BEAMS WITH HEAVE PRECAUTIONS

-Proposed for foundations where depth to suitable bearing strata is >2.5m below proposed FFL, with heave influence on the foundation design.
-Compressible material required beneath all ground beams to account for 100mm of compression, and for internal face of ground beams on external walls to account for 25mm of compression.
-Further cable percussive boreholes within areas of proposed piling may be required by piling contractors.
-Confirmation of the suitability for the proposed piled foundations should be sought from the piling contractor prior to construction.
-The determination of the pile types and lengths is typically determined by the piling contractors. For budget appraisal purposes we would anticipate the pile lengths will be up to be 10-15m in length.
-Piling platform to be designed in accordance with BR470 and subject to the rig specifications.
-Confirmation should sought from the local authority regarding noise or vibration issues associated with driven piles.

4) SUB STRUCTURE READY MIX CONCRETE DESIGNATIONS BY END USE

Use as substructure and ground floors	Ready-mixed concrete (designated mix)
General Use:	
· Rough blinding (non-structural)	- GEN1
· Infill	- GEN1
· Unreinforced oversite concrete below timber floors	- GEN1
· Structural blinding and overbreak	- GEN1
· In situ external concrete for drives and paths	- PAV1
· In situ external concrete foundations for precast concrete paving slabs	- GEN1
· Fill to wall cavity	- GEN1
· Solid filling under steps	- GEN1
Floor Slabs	
· House or garage with reinforced concrete floor slab, either suspended or precast.	- RC35
· House with non-reinforced slab (ground bearing) with either:	
a) Permanent finish to be added, e.g. screed or floating floor.	- GEN1
b) No permanent finish to be added, e.g. carpet.	- GEN2
· Garage with non-reinforced slab (ground bearing)	- GEN3
Foundations:	
· Strip foundations	- GEN1
· Trench fill	- GEN1
· Other mass concrete foundations	- GEN1
· Reinforced concrete footing	- RC35

Notes:

1) Worst case sulphate conditions over the entire site are Design Sulphate Class DS-1, ACEC Class AC-1/AC-1s, and Design Chemical Class DC-1.
2) Classification and designation in accordance with BRE Special Digest 1 "Concrete in Aggressive Ground" and BS8500 -1, 2006.
3) The above conditions represent the worst case conditions identified within the testing of soils on the site.
4) Any fill material to be imported onto the site should be tested and should not exceed the classifications given above.

5) SUB-STRUCTURE BRICKWORK / BLOCKWORK AND MORTAR REQUIREMENTS

Brickwork or blockwork below DPC to be in accordance with BS5628 (Part3), Table 12, assuming **Design Sulfate Class, DS-1,** sulfate and acid conditions and **Aggressive Chemical Environment for Concrete, AC-1/AC-1s,** in accordance with BRE Special Digest 1. The developer must provide sulfate class to the manufacturer when ordering products.

Mortar designation below DPC to be in accordance with BS5628 (Part3), Table 12, assuming **Design Sulfate Class, DS-1,** sulfate and acid conditions and **Aggressive Chemical Environment for Concrete, AC-1/AC-1s,** in accordance with BRE Special Digest 1. The developer must provide sulfate class to the supplier when ordering mortar.

Footnotes:

(1) Some autoclaved aerated concrete blocks of a lower compressive strength and density than that quoted in the British Standards above may be suitable for foundations for two storey dwellings where the height of blockwork is less than 1250mm below finished ground level. Subject to the prior approval of Premier Guarantee or submission of a valid Agrément Certificate from the manufacturer.
(2) The developer must obtain written approval from Premier Guarantee before using lower strength and lower density concrete blocks in foundations deeper than 1250mm below finished ground level.

Drainage Pipework Requirements

Drainage Pipework to be in accordance with BS5911, assuming Design Sulfate Class, DS-1, sulfate and acid conditions and Aggressive Chemical Environment for Concrete, AC-1/AC-1s, in accordance with BRE Special Digest. 1.

6) GROUND GAS

Subject to predevelopment remediation works, it is assumed that gas/vapour mitigation measures are required for plots over or close to the historical landfill of the former reservoir/holding tanks.

7) CONTAMINATION

Subject to predevelopment remediation works, it is assumed that all gardens and landscaping will require inert cover systems (0.6m depth, min 0.15m of topsoil) overlying a geotextile.

8) FOUNDATION ANOMALIES

Backfilled trial pits, or historical features (such as recorded former walls) may be encountered during foundation excavations as noted on the plot specific remarks on the table. The following procedures should be adopted where such features are encountered:

1) Start foundation excavations in areas of potential anomaly to locate any features present.
2) When likely foundation anomaly is identified halt the foundation excavation - DO NOT attempt to dig out areas where fills may be deep.
3) Record the location of the feature relative to the proposed footprint and contact Coopers for engineering design. This may include a beam design to span the feature, therefore it is imperative that the deep fills are not excavated prior to confirmation of engineering designs.
4) Do not continue foundation excavations for the plot until directly advised to do so by Westchurch Homes Ltd. Office or Coopers.

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FOR ALL RISKS REFER TO WESTCHURCH HOMES LTD DESIGN RISK ASSESSMENT PACKAGE

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Client: WESTCHURCH HOMES LTD

Project: Land Adjacent to Bealey Industrial Estate, Radcliffe.

Title: FOUNDATION PLAN (SHEET 1 OF 2)

DRAWING NUMBER	SCALE at A0	1:1000, 1:500	REVISION
8353 / Fd / 01	DATE	27.03.26	-
	DRAWN	AH	
	CHECKED	BH	

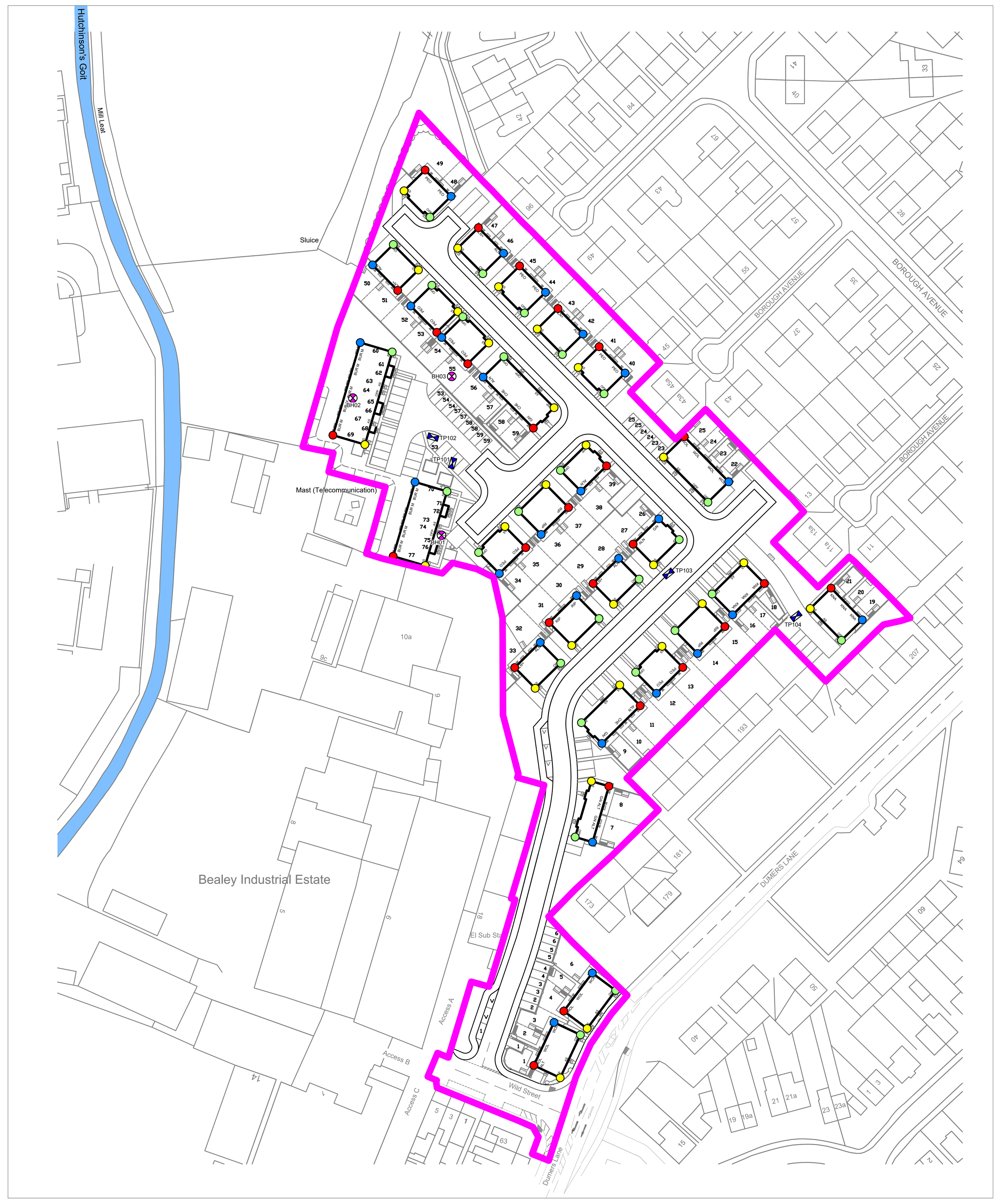
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9) SUMMARY OF ANTICIPATED FOUNDATION AND GROUND FLOOR SLAB REQUIREMENTS

Plot Ref	Existing Ground Level (at time of investigation)				Proposed Slab Level (FFL)	Anticipated Formation Level				Depth from Existing Topography to Formation Level				Depth from Slab Level to Formation Level				Anticipated Slab Requirements	Anticipated Foundation Requirements	Safe Bearing Pressure kN/m²	Anticipated Bearing Strata	Other Remarks
	FLH (mAOD)	RLH (mAOD)	RRH (mAOD)	FRH (mAOD)	(mAOD)	FLH (mAOD)	RLH (mAOD)	RRH (mAOD)	FRH (mAOD)	FLH (m)	RLH (m)	RRH (m)	FRH (m)	FLH (m)	RLH (m)	RRH (m)	FRH (m)					
Plot 1 - 3	68.610	68.490	68.620	68.740	68.800	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	No tree influence, historical referenced location of culverted Bealeys Goit
Plot 4 - 6	68.750	68.590	68.630	68.780	68.950	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	No existing tree influence.
Plot 7 & 8	68.510	68.580	68.650	68.530	69.200	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	No existing tree influence.
Plot 9 - 11	68.210	67.900	68.890	69.030	69.450	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 12 & 13	68.090	68.060	68.050	68.120	69.300	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	Local areas of clay with heave potential.
Plot 14 & 15	68.250	68.270	68.040	68.170	69.375	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	Local areas of clay with heave potential.
Plot 16 - 18	68.350	68.520	68.050	68.250	69.450	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	Local areas of clay with heave potential.
Plot 19 - 21	68.250	67.570	67.590	68.140	69.000	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	Local areas of clay with heave potential.
Plot 22 - 25	67.950	67.950	67.890	68.000	69.675	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 26 & 27	68.080	68.370	68.070	68.000	69.500	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 28 & 29	68.320	68.430	68.500	68.370	69.650	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 30 & 31	68.600	68.490	68.600	68.500	69.500	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 32 & 33	68.840	69.040	68.760	68.620	69.300	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 34 & 35	69.400	69.190	68.880	69.350	70.050	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 36 & 37	68.630	68.750	68.910	69.090	70.200	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 38 & 39	68.270	68.150	68.390	68.510	70.325	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 40 & 41	67.930	67.580	67.920	68.100	70.575	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 42 & 43	68.410	67.590	67.500	68.320	70.875	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 44 & 45	69.850	67.940	67.620	68.000	70.875	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 46 & 47	70.000	70.120	68.110	69.970	70.725	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 48 & 49	70.340	70.180	70.170	70.080	70.400	Piled foundation with associated ground beams including heave precaution measures												Precast (block & beam) with 300mm sub floor void due to heave	PH	N/A	N/A	Local areas of clay with heave potential.
Plot 50 & 51	70.060	70.500	70.470	70.310	70.600	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 52 & 53	70.220	70.540	70.490	70.110	70.725	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 54 & 55	70.850	71.040	70.580	70.290	70.875	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 56 - 59	70.050	70.040	71.000	71.000	70.625	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 60 - 69	74.050	73.990	71.170	71.090	71.400	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.
Plot 70 - 77	69.210	69.920	69.800	71.840	70.050	Piled foundation with associated ground beams												Precast (block & beam)	P	N/A	N/A	All granular strata - no heave precautions.

10) CORNER ID PLAN
(Scale 1:1000)



KEY TO CORNERS
- Front left corner
- Rear left corner
- Rear right corner
- Front right corner

0 5 10 20 30 40 50 60 70 80 90 100
SCALEBAR (m)

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CDM HIGH RISK ASSESSMENT
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GENERAL NOTES

1. This drawing is to be read in conjunction with the following:-
   a) RJP Surveying Consultants Ltd, Proposed Development at Dummers Lane, Radcliffe, Topographical Survey, ref. WH062 / T00, dated January 2024.
   b) Westchurch Homes, Bealey Industrial Estate, Radcliffe, Site Location Plan, ref. BIE-LOC-001, dated February 2024.
   c) Groundsure Insights, Land Adjacent to Bealey Industrial Estate, Radcliffe, ref. GD-HMJ-3VX-27B-I11_1250 & ref. GS-HMJ-3VX-27B-I11_LS, dated 15 February 2024.
   d) Groundsure Enviro+Geo Insight, Land Adjacent to Bealey Industrial Estate, Radcliffe, ref. GS-B5J-QUX-W33-1YT, dated 15 February 2024.
   e) Pell Frischmann, Bealey Lane, Detailed Design, External Works, ref. 110081-PEF-HEW-01-DR-C-00001, rev. P01, dated 08 May 2025.
   f) Enzygo, Dumers Lane, Bury, Arboricultural Impact Assessment, ref. 893.002.ENZ.XX.00.RP.AR.45.102, dated November 2025.
2. The foundation types indicated are based upon the facts established from observations and field tests during the trial pit investigations. It should be recognised that natural strata may vary considerably from point to point and the groundwater regime may be influenced by seasonal or other factors. The foundation types indicated are therefore for 'GUIDANCE PURPOSES ONLY' and should be constantly reviewed in the light of the actual conditions exposed on site during the construction work.
3. The site investigation has identified the shrinkage potential of the clays to be high shrinkage potential as defined within the Premier Guarantee Technical Manual. The foundation designs to accommodate heave are based upon **HIGH** shrinkage potential in accordance with Section 3.6 of Premier Guarantee Technical Manual.
4. Where necessary foundations should be stepped in accordance with current Premier Guarantee recommendations.
5. This drawing should not be relied upon for housetype names / references.

BASIS OF ASSESSMENT AND GUIDANCE ON FOUNDATION CONSTRUCTION:

General
-The foundation types have been proposed based upon the developer's commercial preferences for foundation types with depths.
-It is acknowledged that trench stability can influence the suitability of foundation construction and we would advocate trial excavations with the developer and contractors to appraise the influence, limitations and changes/measures that can be adopted.

Investigation Areas
-Specific features from the historical Ordnance Survey maps have been accurately overlaid to disclose potential abnormal ground conditions. Specific targeting and delineation of these features are required to enable an accurate assessment.
-The remarks section of the foundation schedule details plot specific features likely to be encountered and may include recommendations for further investigation prior to construction.
-Where the ground conditions differ from those indicated in this drawing we would advocate the developer contacts Coopers to confirm or recommend procedures for reappraisals prior to casting the foundations, and may require further ground investigation.

External Works
-The foundation schedule includes specific designs to account for the proposed slab levels and underbuild.
-Where retaining walls are proposed in close proximity to plots, the foundations may need to be constructed at the same time as the plot/garage foundations, and specific discussions with Coopers structural engineers are recommended should potential conflicts be considered.
-The assessments make no account of proposed utilities excavations and should deep excavations be proposed the formation depths should be appraised to determine if these need to be set a lower level.

Tree Influence and Formation Depths
-The tree survey (as referenced in General Note 1d) was current at the time of the original revision of this drawing. The developer should be aware that trees which are <½ mature height may be subject to substantial changes in growth over time and therefore reappraisals of tree heights and foundation depths at the time of construction/felling may be required.
-The tree influence depths in clay strata are recorded on the foundation schedule (where applicable) and must be considered as the minimum foundation depths. Outside of these areas shallower foundations may be possible, subject to engineering approvals.
-The foundations have set minimum formation levels from proposed ground levels in accordance with Premier Guarantee Guidance. These do not include formation depths that account for potential seasonal variations in the shallow ground conditions. Subject to the time of year of the construction, foundation depths may be increased, subject to inspection by Building Control/Insurers.
-Trees or hedgerows which are to be planted must be considered. No allowance has been made for them on this drawing as it is assumed that any proposed trees and or hedgerows will be sited to avoid affecting any proposed dwelling foundation.
-Currently the Premier Guarantee have a cut off for the maximum depth of trenchfill foundation for plots which are impacted by existing trees of 2.50m. Where tree contours take foundations deeper than this depth, piled foundations should be adopted unless agreed otherwise with the Premier Guarantee.
-Coopers assessment of tree influence has followed the approaches discussed in Premier Guarantee Technical Manual 16 - Section 3.6 and online tree calculations. The tree influence depths (accounting for both heave and potential subsidence) are determined as the deeper of: i) current tree height (mature if >50% of mature height) influence depth against current ground level, ii) mature height tree influence (where trees are to remain) against proposed ground level (accounting for underbuild). Heave influence zones are based upon tree influence from current tree height (mature if >50% of mature height) against existing ground level).

11) NOTES TO TABLE 9

1. Gables determined by viewing plots from the road side;
   FLH - Front Left Hand,
   RLH - Rear Left Hand,
   RRH - Rear Right Hand,
   FRH - Front Right Hand.
2. Where slab levels differ between adjacent plots by 600mm or greater the provision of retaining walls between the plots is anticipated. To avoid imposing unnecessary loading on the wall, the foundation for the dwelling on the retained side may have to be deepened. This drawing does NOT take into consideration the potential influence on the foundation level of the anticipated retaining walls. Once retaining wall positions have been finalised the information may have to be reviewed and foundation depths amended to ensure than no footings are not subjected to any additional loadings.
3. The above table does not include an assessment of the proposed house drainage.

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Project
Land Adjacent to Bealey Industrial Estate, Radcliffe.

Title
FOUNDATION PLAN (SHEET 2 OF 2)

DRAWING NUMBER	SCALE at A0	1:1000	
8353 / Fd / 02	DATE	27.03.26	REVISION
	DRAWN	AH	-
	CHECKED	BH	

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NORTH

KEY

(All positions are approximate unless otherwise stated)

- Areas of gardens / landscaping with inert cover:
  Rear gardens = 600mm
  Fronts / borders / open space = 450mm
- Characteristic Situation 2 gas precaution measured required
- Site boundary (taken from ref. a)

Sluice

Mast (Telecommunication)

BOROUGH AVENUE

DUMERS LANE

Access A

Access B

Access C

Wild Street

Dumers Lane

10a

El Sub Sta

ustrial Estate

0 5 10 15 20 25 30 35 40 45 50
SCALEBAR (m)

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This drawing is to be read in conjunction with the following:-

a) Westchurch Homes, Bealey Industrial Estate, Radcliffe, Site Location Plan, ref. BIE-LOC-001, dated February 2024.

REVISION BOX				
Rev.	Date	Revision	By	Appd.
A	29.04.26	Zones updated.	AH	BH

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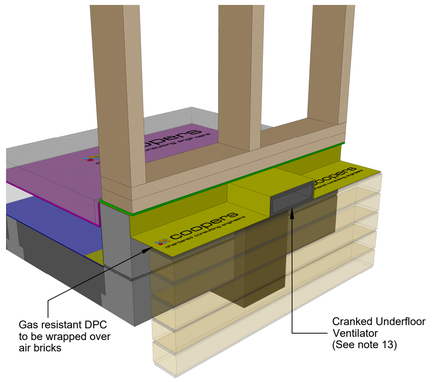
Project
Land Adjacent to Bealey Industrial Estate, Radcliffe.

Title
BUILD PHASE REMEDIATION PLAN

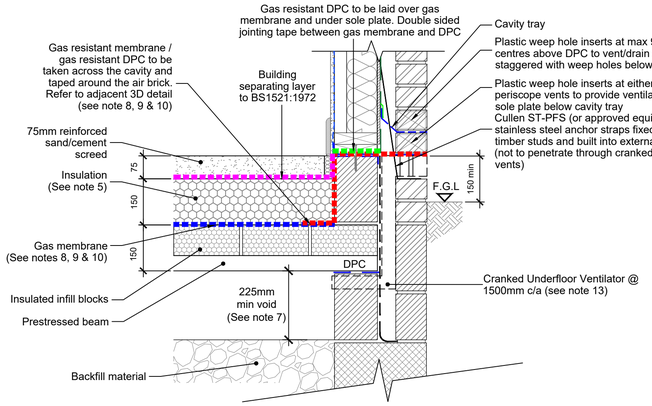
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8353 / BPRP

SCALE at A1	1:500	
DATE	30.03.26	REVISION
DRAWN	AH	A
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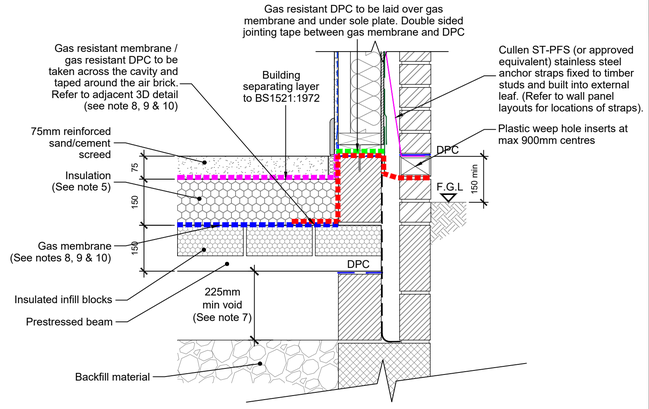
THIS DRAWING MUST BE READ IN CONJUNCTION WITH THE RELEVANT HOUSE TYPE DRAWINGS, FOUNDATION PLAN & SCHEDULE AND THE SITE SPECIFIC GROUND GAS & SITE INVESTIGATION REPORTS



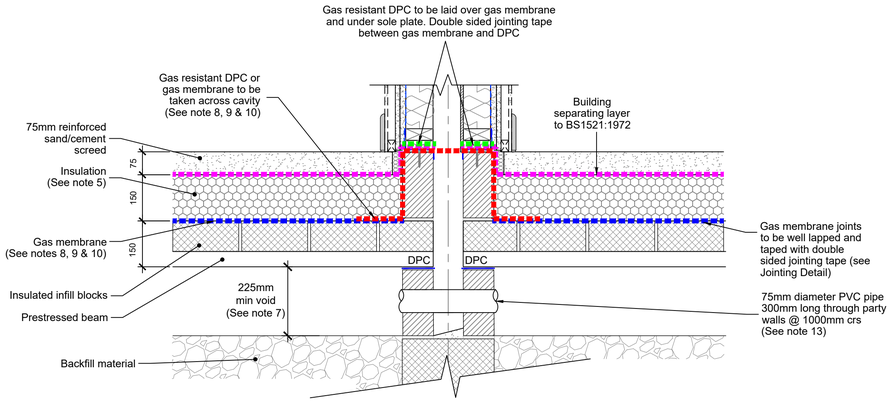
3D FINISH AROUND AIR BRICKS



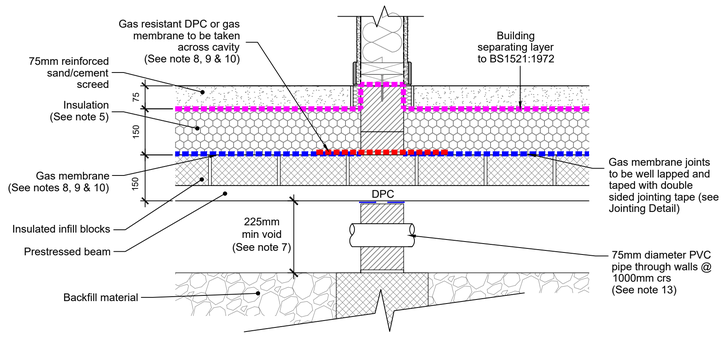
SLAB EDGE DETAIL AT EXTERNAL WALL
SECTION WITH CRANKED UNDERFLOOR VENTILATOR



SLAB EDGE DETAIL AT EXTERNAL WALL
SECTION BETWEEN CRANKED UNDERFLOOR VENTILATOR

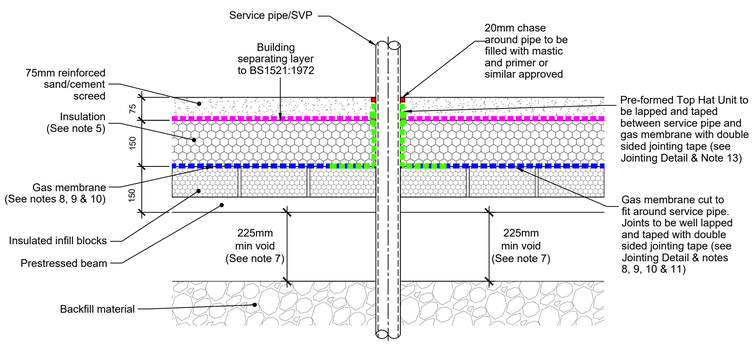


SLAB EDGE DETAIL AT PARTY WALL

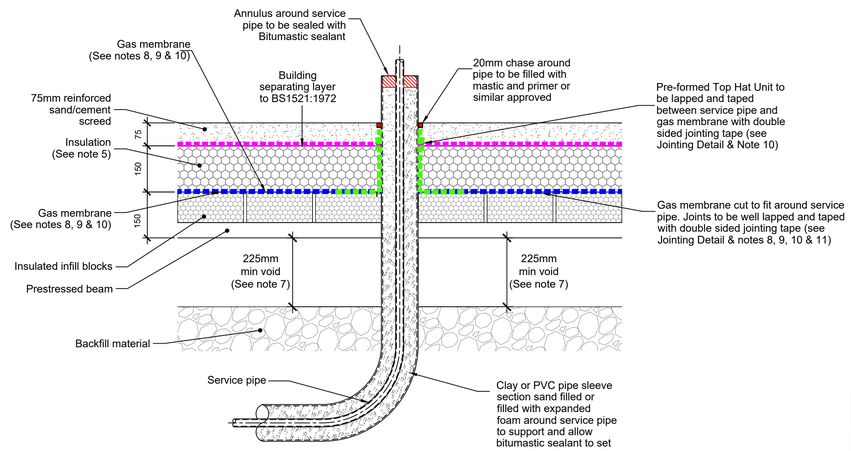


INTERNAL WALL DETAIL

ACCESSIBLE THRESHOLD DETAIL - GROUND
FALLING AWAY FROM DWELLING



SERVICE ENTRY



SLEEVED SERVICE ENTRY

NOTES

1. Coopers take no responsibility for the inappropriate use of this detail on a development. It is the responsibility of the Developer to commission a suitably qualified geo-environmental consultant to assess the relevant ground gas conditions at a development based upon the findings of in situ monitoring and/or qualitative risk assessment.
2. Coopers drawing is in accordance with current best practice with respect to design of measures and specification of membranes for the adequate protection of dwellings from the ingress of harmful ground gases. The details contained on this drawing are generic and for guidance purposes only. Any proposed amendments to the detail due to variations on specific house types should be referred back to Coopers for review and approval prior to implementation on site.
3. This drawing was prepared for the purpose stated. New products, improved practices and legislation may necessitate an alteration to this drawing in whole or in part after its submission. It is recommended that this drawing is referred to Coopers for reappraisal no later than one year from the date on this drawing. Continued use of this drawing beyond this date is at the Developers own risk.
4. Refer to precast slab drawing for relevant house types.
5. Refer to insulation details on specific house type slab drawings.
6. For details of proposed foundations refer to site specific foundation plan and site investigation report.
7. The minimum clear void below the suspended precast concrete ground floor is to be 225mm (plus heave thickness, where applicable) and should be adequately ventilated in accordance with the Westchurch details. The base of the void is to be within 450mm of the outer ground level unless masonry is designed by a structural engineer. The backfill material should be effectively drained.
8. The gas resistant membrane should be a minimum 400µm proprietary gas membrane with min. Methane Transmission rate of <40 ml/m²/day/atm. This membrane must have a low permeability to carbon dioxide and methane and also acts as a damp proof membrane as well as a barrier to radon gas. **The specification of the gas membrane should be submitted to Coopers for approval prior to use.**
9. All gas membranes should be installed to the manufacturers guidelines and recommendations. Special care must be taken to ensure that the gas membrane is not snagged, torn, punctured, stretched or in any way damaged during construction. All damaged areas of the gas membrane must be replaced or repaired to manufacturers recommendations.
10. Joints between sheets of gas membrane should be well lapped (150mm min) and taped between sheets with a double sided butyl based tape in accordance with manufacturers recommendations. Depending on the manufacturer, girth jointing strap can be provided, as shown below, for additional security. If welded joints are to be undertaken this should be agreed in advance.
11. All service entry points should be fitted with pre-formed gas resistant top hats unless agreed in advance. Tophats should be sealed to the pipe and gas membrane using butyl based double sided tape and fixed to the pipe with a jubilee clip.
12. Gas Risk defined in accordance with BS 8485.
13. Coopers designs for sub-floor passive ventilation propose external vents on at least 3 sides of the building and venting through all internal walls. These designs account for a range of potential traditional residential houses and contractors should contact the developer's engineers if the house type specific variations of venting differ from these designs. In the event of any discrepancies between the developers house type drawings and this drawing then Coopers drawing takes precedence unless the developer has calculations to prove that this design meets the minimum requirements in accordance with BS 8485.
14. A protection layer is recommended between the aluminium foil membrane and concrete. In accordance with ICE paper (Lucas & Wilson 2019) this should consist of a "geotextile-non woven needle-punched fleece with a mass per unit area of 300g/m²".
15. It is recommended that the installation of the Gas membrane system is verified by Coopers (or another independent gas-environmental consultant). This will require multiple phases to be agreed upon in the toolbox talk.

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Gas Mitigation Designs:
1) This design detail is specific to the referenced site and must not be transferred or used on other developments.
2) Any changes to the design proposals are subject to prior approval by Coopers. Verifiers should not accept variations to Coopers designs unless taking the role of the designer.
3) Any doctoring or this drawing is strictly prohibited, to do so maybe unlawful.
4) The final issue of this drawing is to be provided with a design report to comply with NHBC NF94 and BS8485. If no report has been provided with this drawing it should be considered as unsuitable for approval and construction.

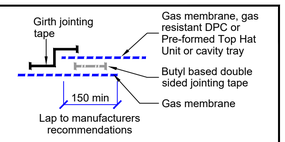
This typical detail is provided as a guide for construction of Gas membrane installation only. House type specific variations are required to account for slopes on garage floor slabs, stepped slab levels, full building level access, party wall temporary shuttering, corner unit construction, cloaking units around doors, piers, and other similar specific considerations. We would advocate the contractors hold pre-construction discussions with Coopers (and the verification consultants if another consultant) on the approaches and considerations for specific house type construction prior to commencing installation. Should variations be constructed without prior consent these will be deemed by Coopers as a defect and not suitable for construction or approval by us or third parties.

This detail was current at the time of issue but should be reviewed by Coopers within 12 months of the date of issue to ensure it meets with current guidance and best practice. Beyond 12 months of issue the developer uses this detail at their own risk.

INSTALLATION, INSPECTION AND TESTING
1. A Ciria C735 compliant verification strategy is likely to be required, subject to approval by the Local Authority and NHBC.

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Note: If intended contracted installer is proposing heat welded joints these can have <150mm overlaps provided joint integrity not compromised.



JOINTING DETAIL
(See note 10)

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Web: http://coopers.co.uk

CLIENT
Westchurch Homes

PROJECT
Land Adjacent to Bealey Industrial Estate, Radcliffe.

TITLE
CHARACTERISTIC SITUATION 2 (CS2) GAS MITIGATION MEASURES FOR TIMBER FRAME HOUSING AND PRECAST (BLOCK AND BEAM) FLOOR WITH VENTILATED SUBFLOOR VOID

DRAWN BY	AH
DATE	29.04.26
SCALE(S)	NTS (A1)

DRAWING NUMBER: 8353-LRHHRH-CS2-PC-G-01
REVISION: -

Appendix 2

Referenced Desk Study Data

Bury Council

DEPARTMENT OF OPERATIONS

Sian Callister
Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Date 21 February 2024
Reference ES897.210224.1

Dear Sian

ENVIRONMENTAL SEARCH REQUEST
Land Adjacent to Bealey Industrial Estate, Radcliffe

Further to your recent enquiry regarding the above site, the Environment Section holds the following information:

The site is approximately 4 hectares in area and is located at National Grid Reference 379725 408182. The current OS plan is attached showing its location.

Please be careful to check the approximate scales on each plan enclosed as some will vary dependant on the search parameters.

Contamination issues at or immediately adjacent to the site

The site is currently mainly occupied by rough grassland and vegetation with yards and storage containers, a carwash, cafe, vehicle storage and a communications mast located in the southern part the site. Previous land uses at the site have included filter beds, settling tanks, reservoirs and tanks associated with a Dumers Paper Works (later Broad Dumers Paper Works), a tramway associated with Radcliffe Bleach and Chemical Works, electricity sub-stations, a garage colony, Bealey's Goit (partially infilled) and open land.

Within the wider area previous land uses have included Eaton Hill Cotton Mill (later a dyeing works, then dyeing and finishing), a gasometer, Dumers Paper Works, Radcliffe Bleach and Chemical Works (later bleaching works), a chemical works, engineering works, infilled reservoirs, areas of waste disposal activity and a sewage works.

This Section holds the following information relating to the ground conditions at the site. The location of these reports is shown on the attached plan.

CL399 – Land at Bury Road / Dumers Lane, Radcliffe

The following report was submitted in support of a proposed commercial development:

- Preliminary Risk Assessment, Leyden Kirby Associates, CL1192, 22 October 2007.
- Ground Investigation and Risk Assessment, Leyden Kirby Associates, CL1192-02, 30 November 2007.

The investigation identified up to 10m of waste within the former Bury Road, Radcliffe Landfill in the north of the site and approximately 1-2m of made ground containing ash/clinker in the southern part of the site. High concentrations of methane were recorded but flow rates were low. The groundwater encountered within the former landfill and the surface waters in Swan Lodge appeared to be in hydraulic continuity. No elevated concentrations of contaminants were found when compared to the then generic assessment criteria for commercial land use. Elevated levels of ammonia were identified in groundwater samples. Further investigation and risk assessment was recommended. No development took place.

Landfill Sites within 250 metres

We are aware of two registered landfills within 250m of the site and a location plan is enclosed (summarised below):

Landfill Name:	**Bury Road, Radcliffe (Crawford Bros)**
File reference:	**C008** **Grid Ref.: 379380 408810**
Site is an old refuse tip and has been filled with domestic, commercial, construction, difficult and non-hazardous industrial waste. The licence was granted to Wimpy Waste Management, Licence No. RD/LIC/0057/76. Filling took place between pre 1949 and late 1980s. We do not know if any landfill containment measures have been implemented at the site.	

Landfill Name:	**Dumers Lane, Radcliffe**
File reference:	**C011** **Grid Ref.: 379700 408130**
The site is a former bleachworks, initially the reservoirs and settling tanks were infilled, then the buildings levelled to raise site levels. The site has been filled with construction and inert waste. It is a pre-licensed site, originally owned by Wimpy Waste Management Limited and then owned by Beazer. Planning permission was given in 1982 for the infilling of the lagoons and in 1989 for raising site levels.	

Please note that the boundaries indicated on the enclosed plan are approximate only and may not reflect the actual extent of fill.

Local areas of landfilling at or within influencing distance of the site may have been carried out for which we hold no records. Please consult historical maps and other sources of information to identify potential areas of filling.

Further information on landfills may be available from the Environment Agency by telephoning 03708 506 506, emailing enquiries@environment-agency.gov.uk or visiting their Website: https://www.gov.uk/government/organisations/environment-agency and completing any on-line enquiry form. Note that the Environment Agency may make a reasonable charge for supplying this information

Sites determined as statutory contaminated land within 250 metres

No areas of land at or near the site have been determined as Contaminated Land under Part 2A of the Environmental Protection Act (EPA) 1990.

As the site has had a previous potentially contaminating land use, the property is considered a potential site of concern. However, the site is not considered a high priority for further investigation under Part 2A of the EPA 1990 and it is considered very unlikely that the site will be investigated in the near future, unless additional evidence that there may be a significant contaminated land issue at the site comes to light.

It would be considered prudent to conduct a detailed desk study, site reconnaissance and historical search to indicate potential problems which may require further investigations and / or remedial action. Extracts from historical mapping have been included for your information.

Historical maps for the site

Extracts from Ordnance Survey historical maps 1848, 1893, 1910, 1930, 1937, 1957 and 1984 are enclosed. Please refer to the maps for details of past uses at the site and surrounding land.

Aerial Photographs for the site

Aerial photography of the site from the 1940s, 1979, 1989, 1997-9, 2000, 2005-6 and 2009-11 surveys are enclosed for your information.

Please note that the quality of the earlier photography is limited, however, they do provide an extra source of information which is generally useful for the site and surrounding land.

Solid & Drift Geology for the site

The following information has been taken from the British Geological Survey 1:50000 scale digital map:

DRIFT	ALLUVIAM	
SOLID	MIDDLE COAL MEASURES FORMATION	PEEL HALL ROCK SANDSTONE

Please note that the 1:50 000 scale data may be used as a guide to the geology at a local level but should not be relied on for site specific geology. If more-detailed information is required then the 1:10000 scale maps, which provide the most-detailed interpretations available, should be consulted.

Aquifers and groundwater vulnerability classification at the site

The Environment Agency designate aquifers based on the Water Framework Directive. The designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems. The aquifer designation data is based on geological mapping provided by the British Geological Survey. Both the bedrock and superficial deposits are classified on the same scale.

Based on these designations, the bedrock beneath the site is classified as **Secondary A** (Middle Coal Measures and Peel Hall Rock Sandstone)**.** Please see below for the descriptions of this classification:

- **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.

The Environment Agency still recommend that the older groundwater vulnerability maps are used to classify soil leaching potential. The site is located over soils classified as **HU**. Please see below for the description of this classification:

- **Soils of High Leaching Potential, HU:** Soils at the site are classified as HU. Soil information for restored mineral workings and urban areas is based on fewer observations than elsewhere. A worst-case vulnerability classification of soils of high leaching potential (H) is assumed, until proved otherwise.

Radon Affected Areas at the site

Part of the site is located within a Category 2 Radon Affected Area, where 1 to 3 percent of homes are likely to be above the Action Level.

The UK Health Security Agency recommends a radon 'Action Level' of 200 Becquerels per cubic metre for the annual average of radon gas concentration in a home. Where 1% or more of homes are estimated to exceed the Action Level, the area should be regarded as a Radon Affected Area.

Further information on Radon can be obtained from the UK Health Security Agency, from the British Geological Survey or at www.ukradon.org.

Environmental Permits at the site

We are not aware of any sites with Integrated Pollution Prevention Control (IPPC) Part A1, or Local Authority Integrated Pollution Prevention and Control (LAIPPC) Part A2 Permits within 250m of the site.

We are aware of three sites with a Local Authority Pollution Prevention and Control (LAPPC) Part B Permits within 250m of the site.

The location of the Permitted Process is indicated on the enclosed plan and information on each is presented in the table below:

PPC Regs Schedule 1	Process Reference	Operator	Grid Ref.	Process (and Pollutants)
Part B	LAPPC04-14	M&S Commercials, Unit 5, Bealey Ind Est, Dumers Lane	379685 407999	Vehicle Respraying (VOCs, Particulates) ACTIVE
Part B	LAPPC10-01	Academy Group, Eton Business Park, Bury Road, Radcliffe, M26 2ZS	379442 408463	Waste Oil Burner <0.4mw (Particulates) REVOKED
Part B	LAPPC10-02	CCP Building Products, Eton Way North, Radcliffe, M26 2ZT	379550 408304	Bulk Cement (Particulates) SURRENDERED

Further information of the above authorisations is available for viewing within the PPC Public Register held at 3 Knowsley Place, Duke Street, Bury. Please contact us to arrange a visit if required.

Please note that other processes that do not fall under these regulations or are exempt may exist within influencing distance of the site of interest and may cause pollution and/or nuisance to new receptors.

Statutory nuisance notices in force at the site

We have searched the Environmental Services Authority database for nuisance and pollution incidents.

No nuisance incidents have been logged against the address supplied within the last 12 months.

No pollution incidents have been logged against the address supplied within the last 12 months.

No Statutory Notices for nuisance have been served against the address supplied or the immediate area within the last 12 months.

Other information on pollution incidents may be held by the Environment Agency (contact details given above), Health & Safety Executive on www.hse.gov.uk or by contacting the Manchester office on 0161 952 8200, Greater Manchester Fire Brigade on www.manchesterfire.gov.uk and Greater Manchester Police on 0161 872 5050 or their website: www.gmp.police.uk.

Ecological designations within 250 metres

We have records of one Site of Biological Importance (SBI) within 250m of the site. The location of each SBI is indicated on the enclosed plan and information on each SBI is presented in the table below:

Map ref.	Site Name	Grid Reference	Site Grade
C28	Swan Lodge	37960 40850	B

There are no Sites of Special Scientific Interest (SSSI) within 250m of the site.

Private Water Supplies within 1000 metres

We are not aware of any private water abstractions regulated under the Private Water Supplies (England) Regulations 2016 within 1000m of the site.

Air Quality Management Area (AQMA) at the site

The site is not located within an area predicted to exceed the national Air Quality Objectives for Nitrogen Dioxide (NO_2) as detailed in the Air Quality (England) Regulations 2015. Therefore in line with the EPUK Guidance, an air quality impact assessment will not be normally be required if the site were to be redeveloped.

However, in line with the principles of Good Practice set out in the EPUK Guidance, we would welcome proposals to mitigate any potential impact of any redevelopment on local air quality through the provision of electric vehicle charging points to encourage the use of low emission vehicles.

Environmental Information Regulations 2004

The Environmental Information Regulations enable individuals and organisations to request environmental information held by public bodies. In the majority of cases, we will endeavour to respond to your request within 20 working days, extended to a maximum of 40 working days should

the request be complex or voluminous. Public Bodies are allowed to make a reasonable charge for supplying the information requested, and we will contact you if a charge is applicable.

You are welcome to have access to any public registers or to examine the information free of charge. If you wish to do so, please contact the Council to arrange viewing.

If you are dissatisfied with your response, you have the right to complain to the Local Authority, who will conduct an internal review to try and resolve any issues or problems. Please complete a 'Report a Problem' complaint form available from our website: www.bury.gov.uk or by contacting customer services on 0161 253 5353. Should you still not be satisfied with your response, you may then appeal to the Information Commissioner. Details can be found on the following website: www.informationcommissioner.gov.uk or by contacting 01625 545 700.

Payment Receipt

I acknowledge your payment of £135.00. Should you require any further information please contact me on the number given above.

Customer Satisfaction Survey

The Environment Section, as part of its commitment to Customer Care, is looking at ways to improve its service. Our commitment is to listen to our customers and offer courteous, helpful advice and assistance.

With regards to your information request I should be grateful if you could complete the enclosed questionnaire to help us assess if we are meeting your needs.

Information collected in the survey will be strictly confidential and will enable us to provide a quality service. Thank you for your co-operation.

Should you require any further information please contact me on the number given above.

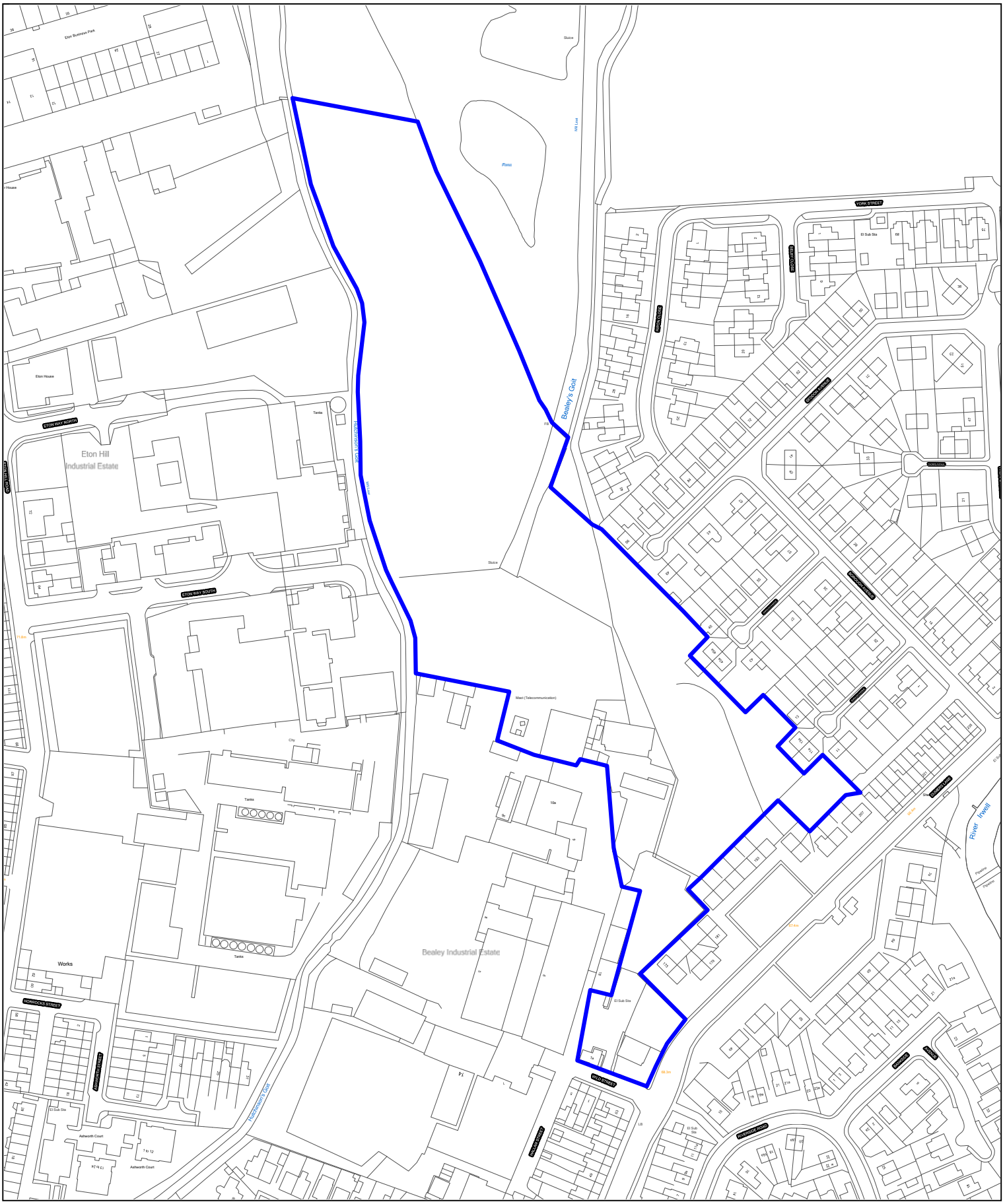
Yours sincerely



Rebecca Jones
Environmental Protection Officer

The above details are based upon records currently held by the Environment Section and are believed to be accurate at the time of printing. However, this Division can accept no responsibility for their accuracy or completeness.

Privacy Policy: Please visit www.bury.gov.uk/privacy to read our recently updated Privacy Policy which explains how Bury Council uses and shares your personal data to give you the best possible experience across our services.



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

Current OS Map

Bury Council

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Ordnance Survey 100023063

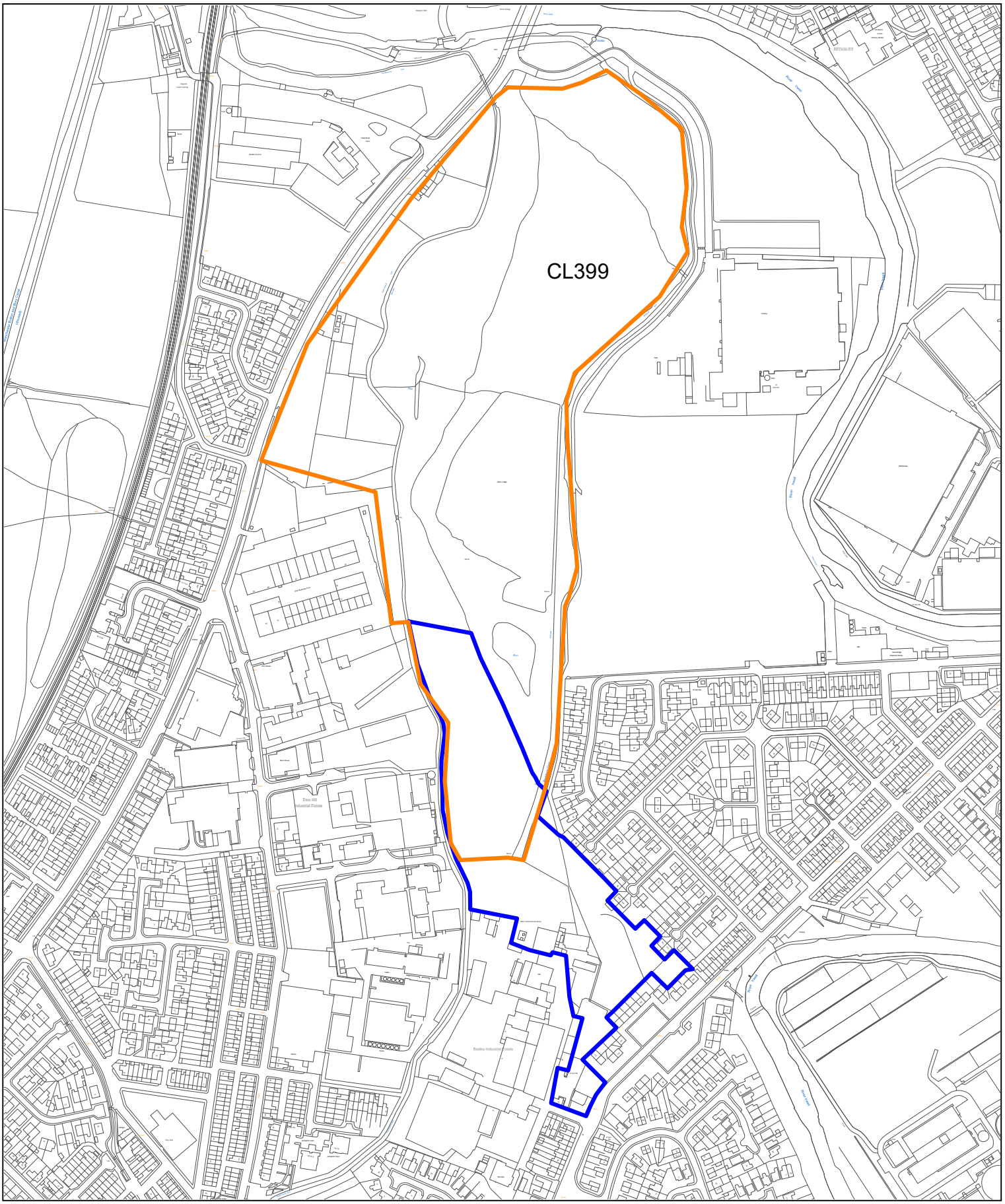
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kilometres

Scale 1:2,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

Site Investigation Reports

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

Site Investigation Reports

Bury Council

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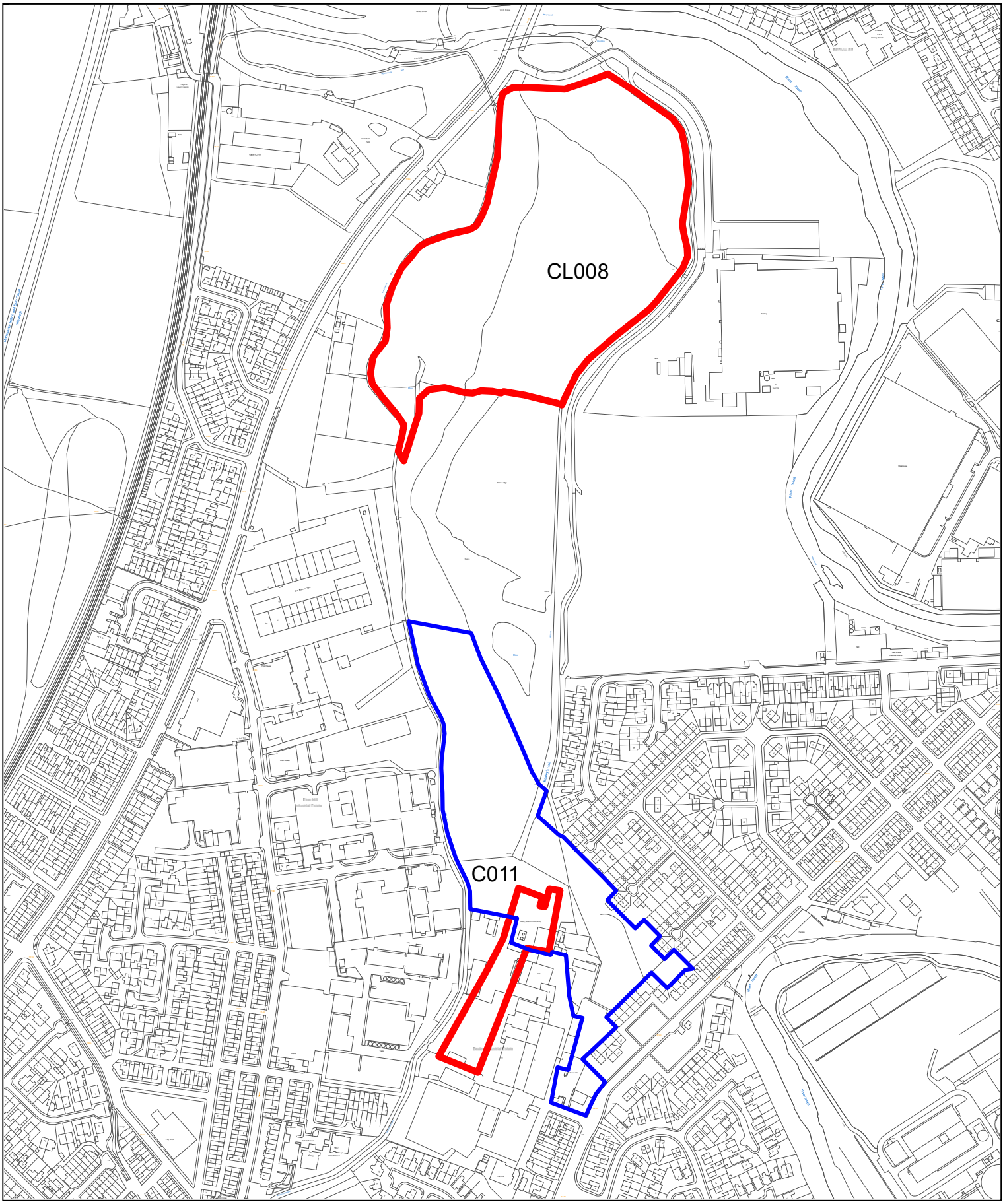
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Scale 1:5,000

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

Landfill Sites

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

Landfill Sites

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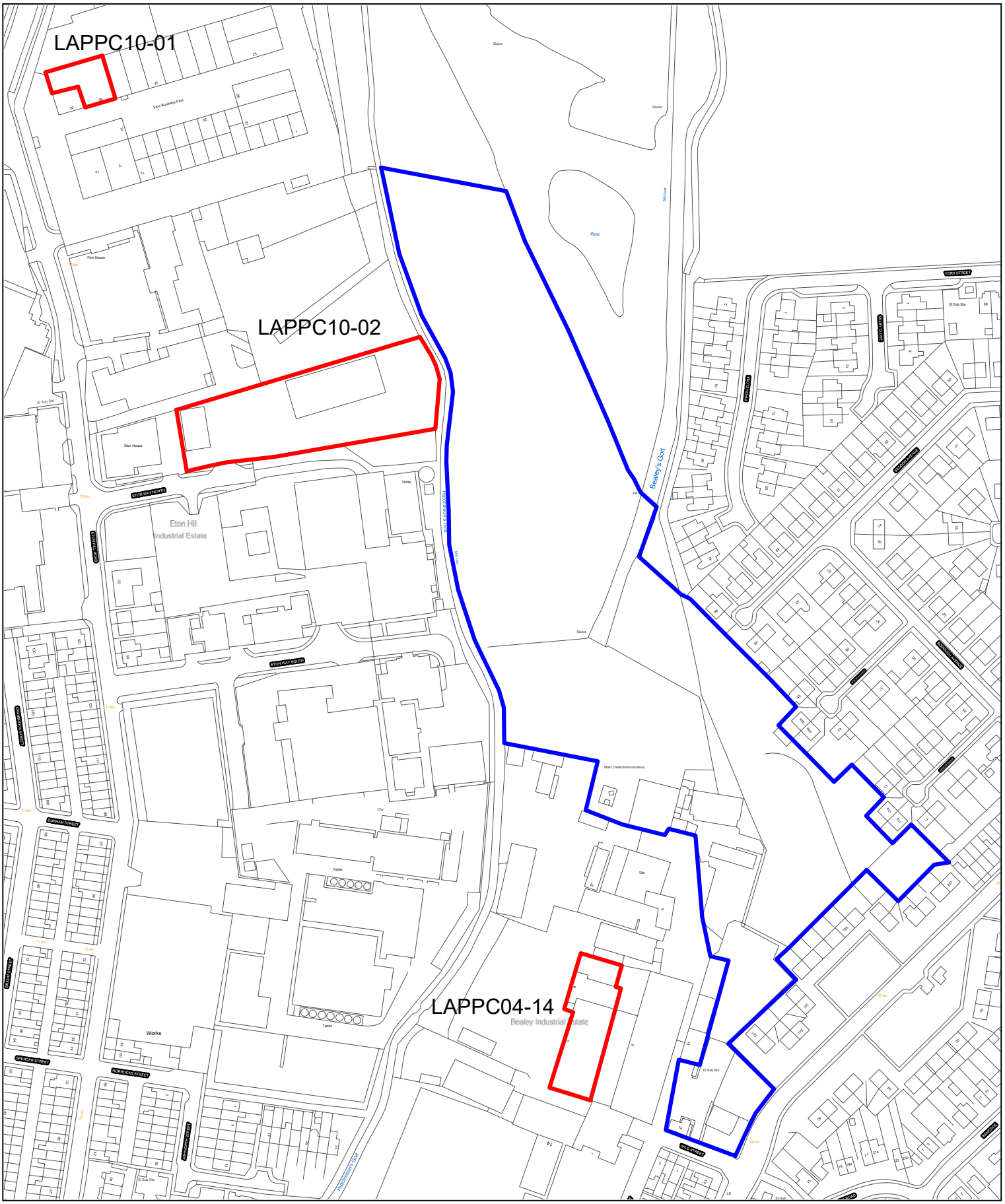
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NGR: 379725 408182

DATE: February 2024



KEY:

- Site Boundary
- Part B Process

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

Environmental Permits

Bury Council

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Ordnance Survey 100023063

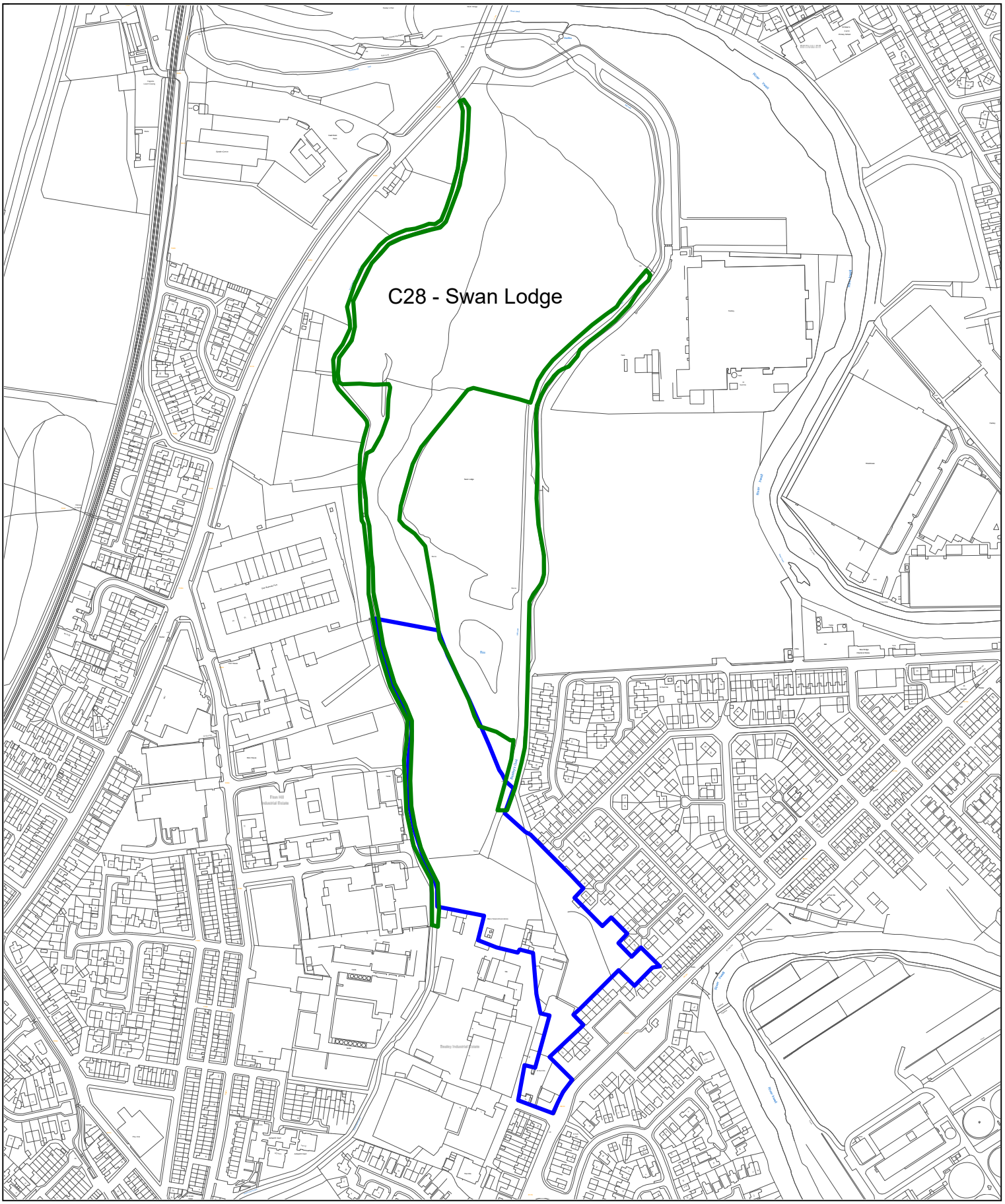
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Scale 1:2,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

Site of Biological Importance

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

Ecological Designations

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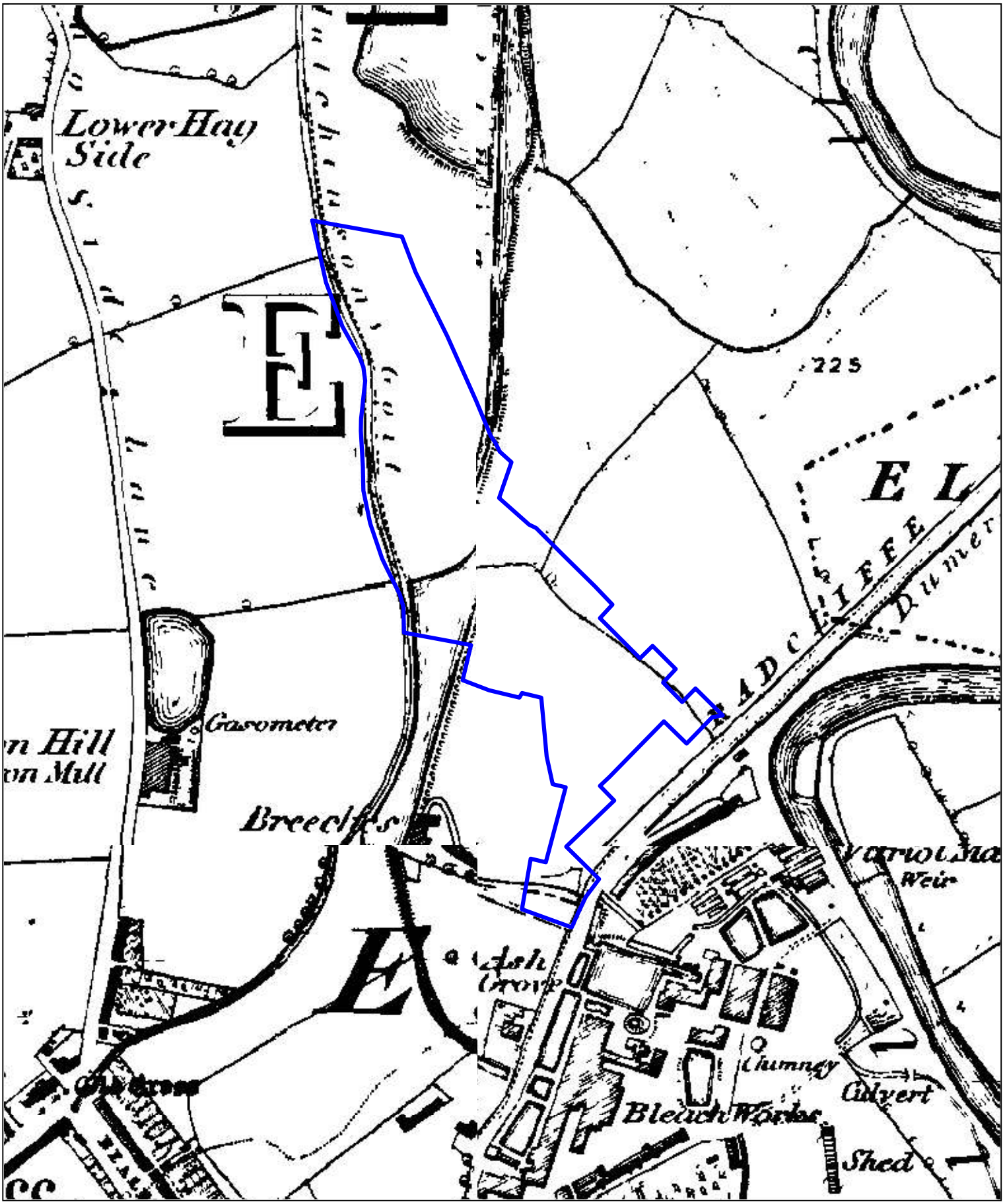
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NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1848 Historical Map Extract

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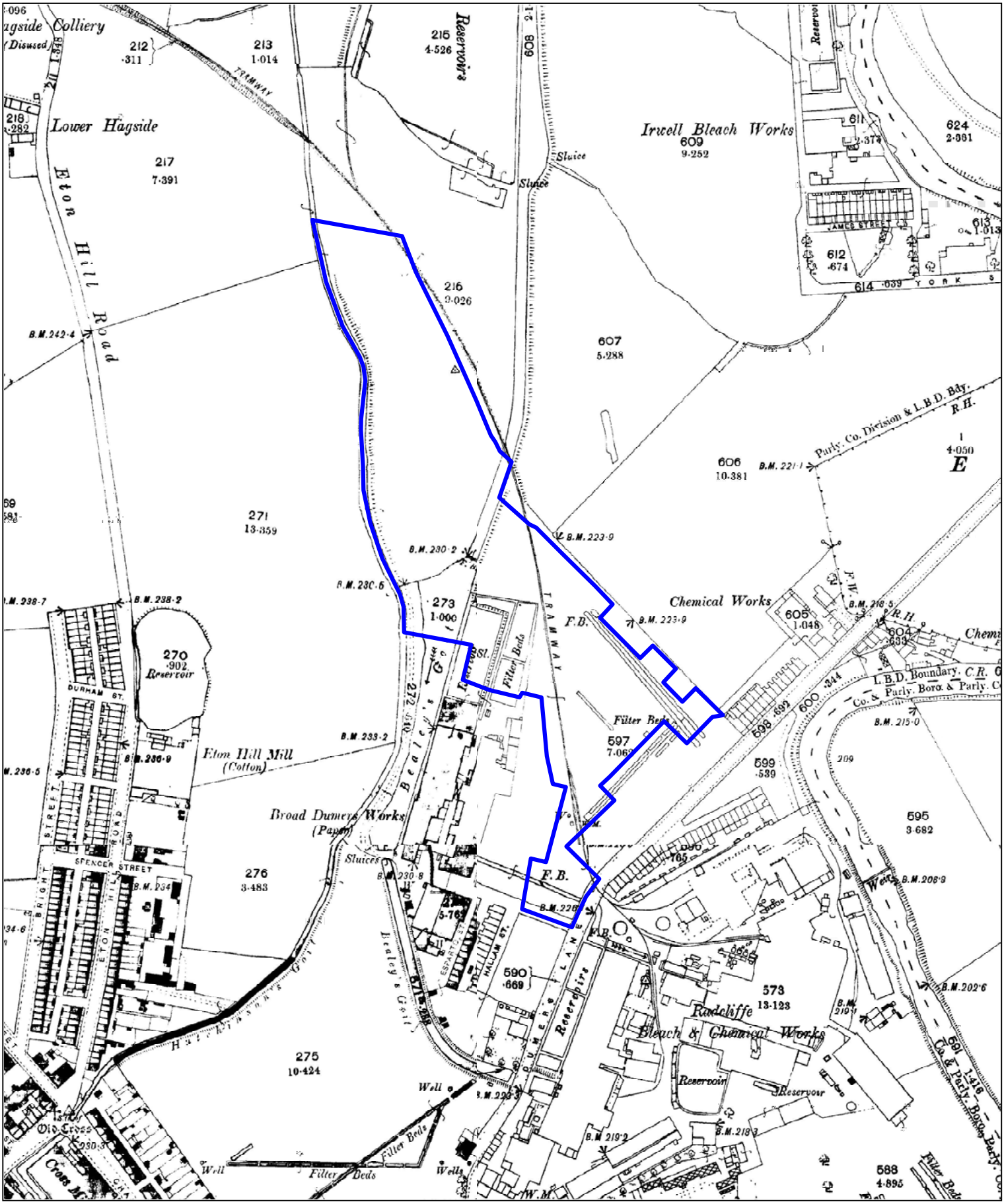
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NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1893 Historical Map Extract

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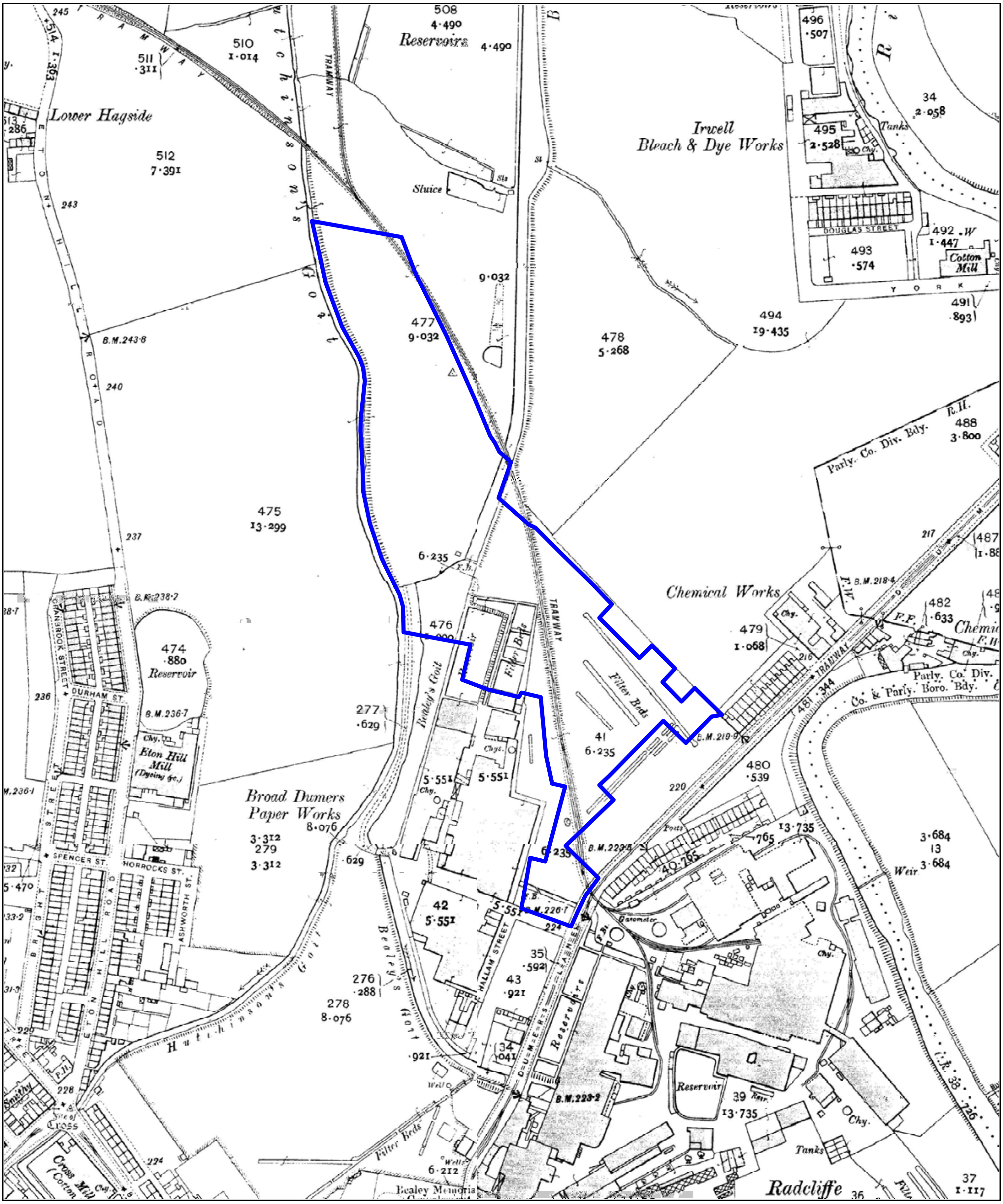
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NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1910 Historical Map Extract

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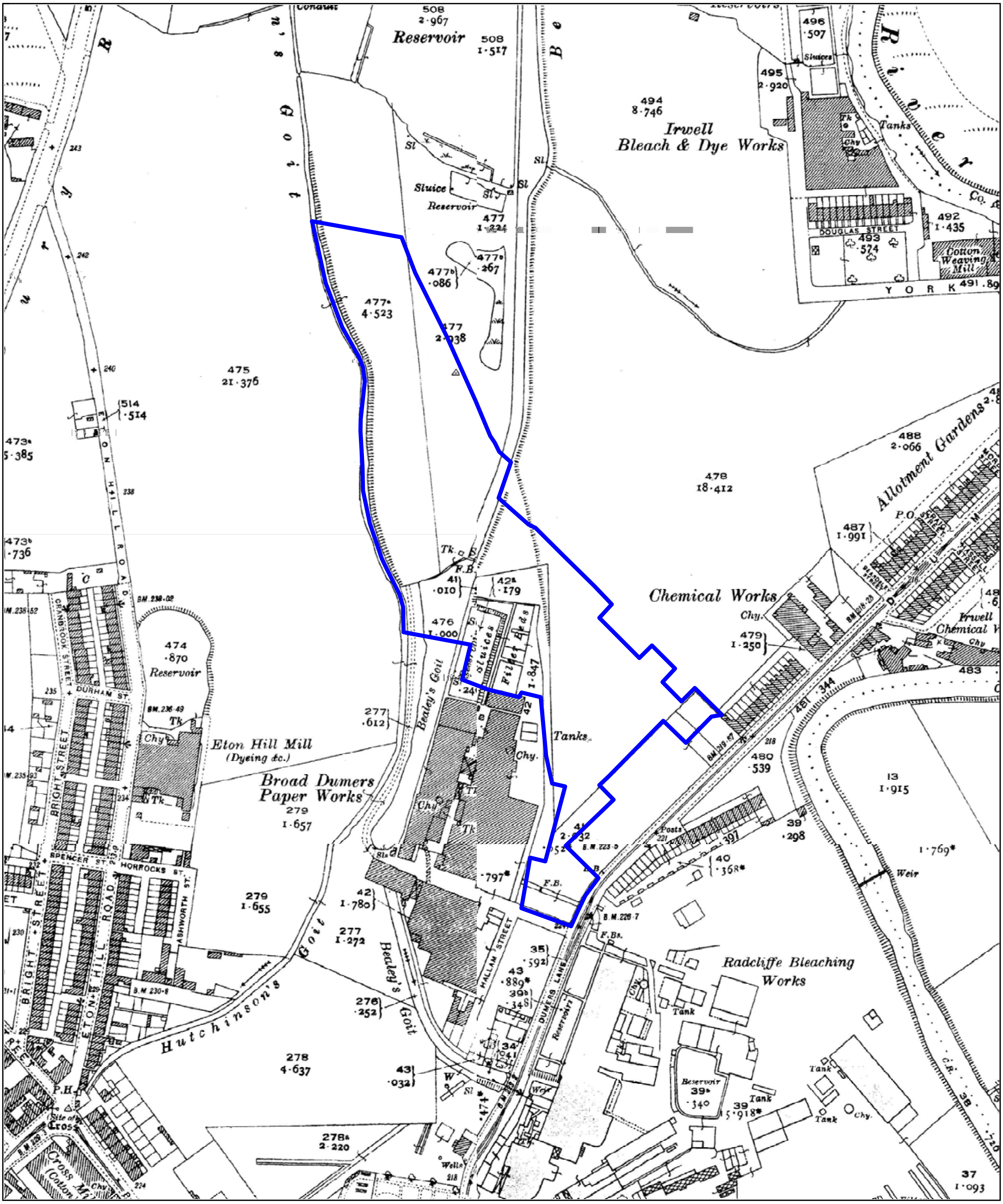
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NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1930 Historical Map Extract

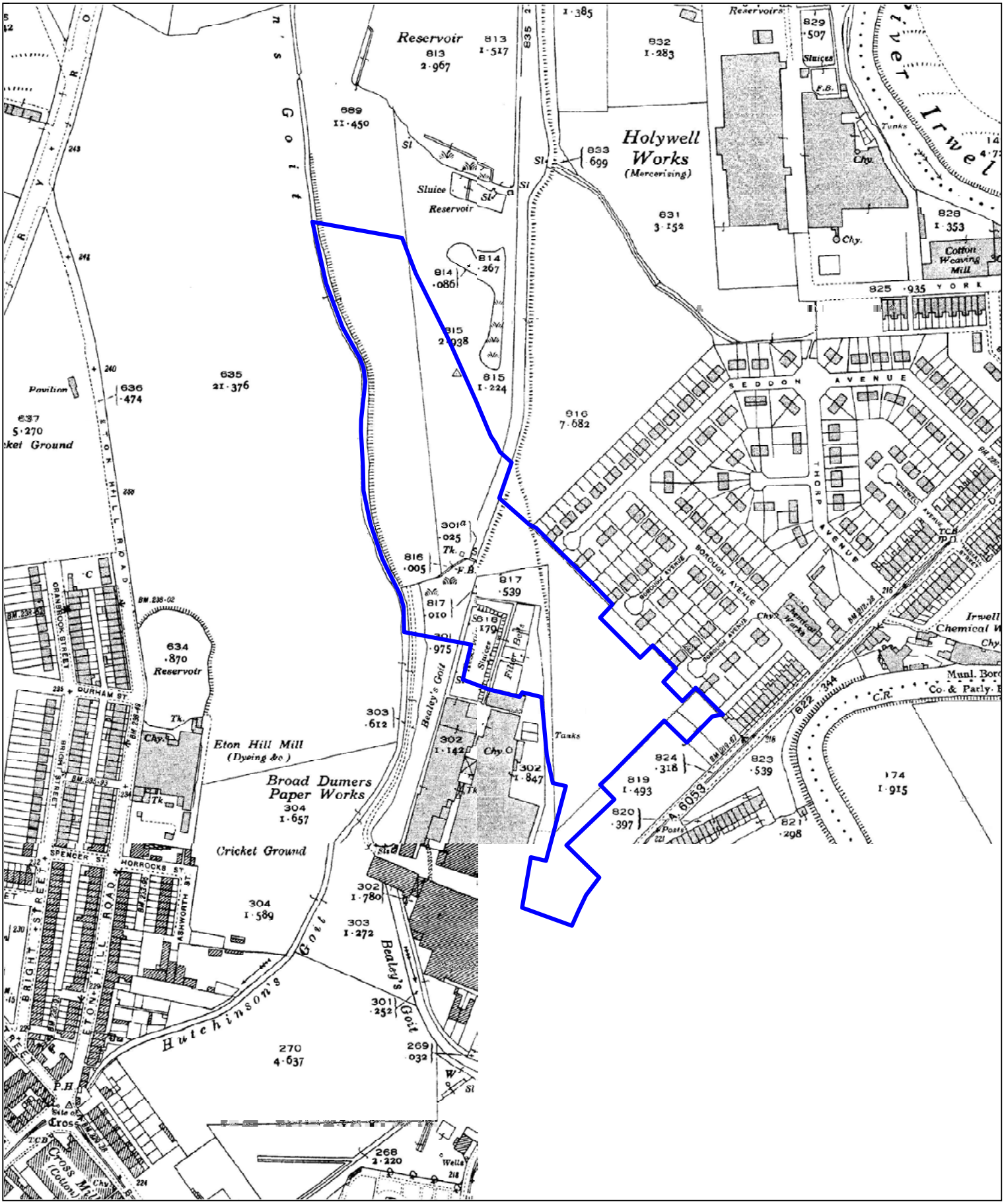
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Scale 1:3,500

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DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1937 Historical Map Extract

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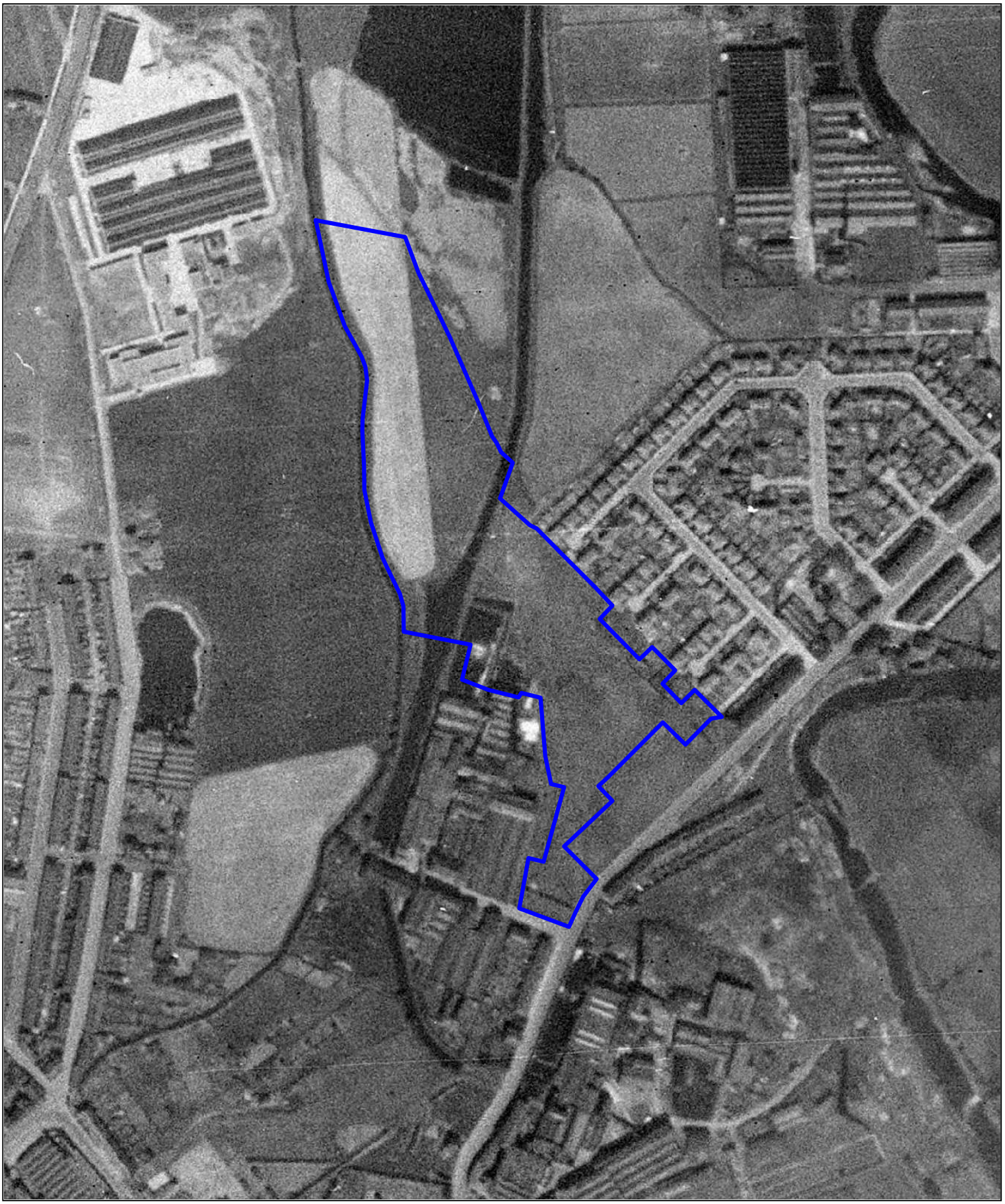
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Scale 1:3,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1940s Aerial Photograph

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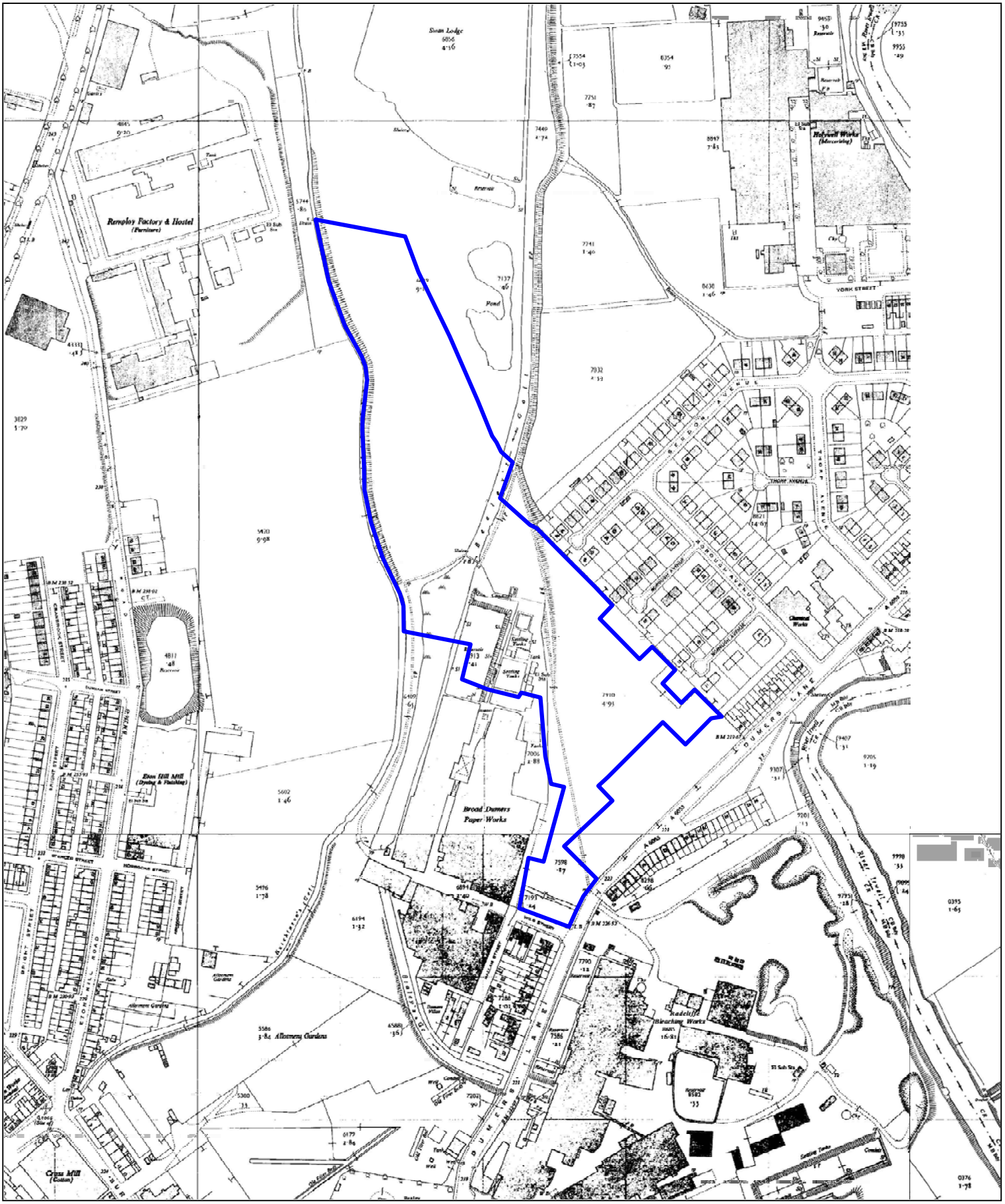
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NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1957 Historical Map Extract

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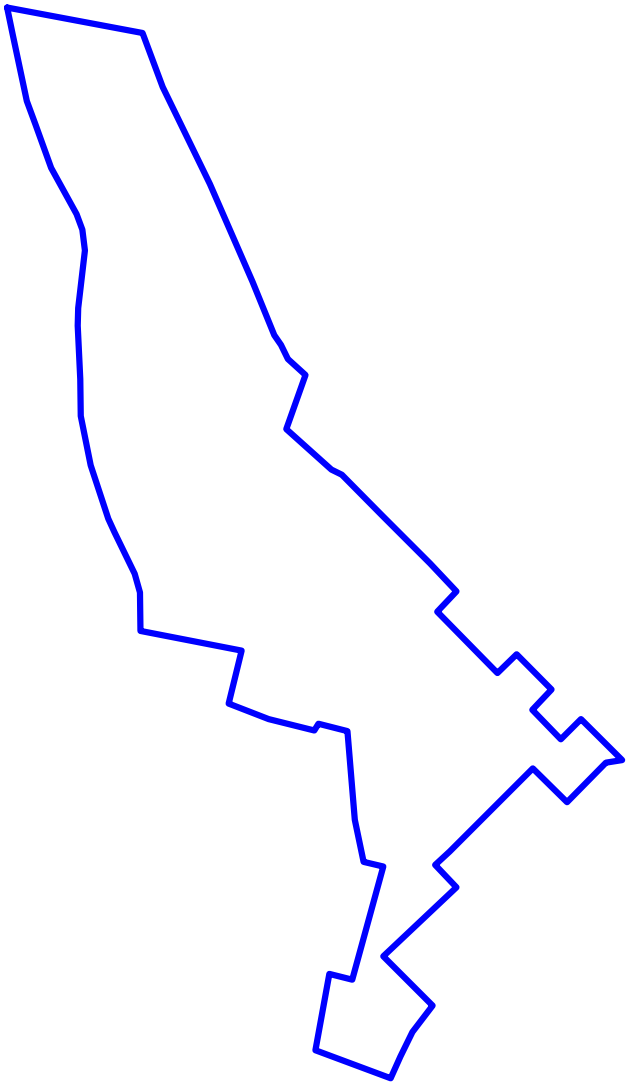
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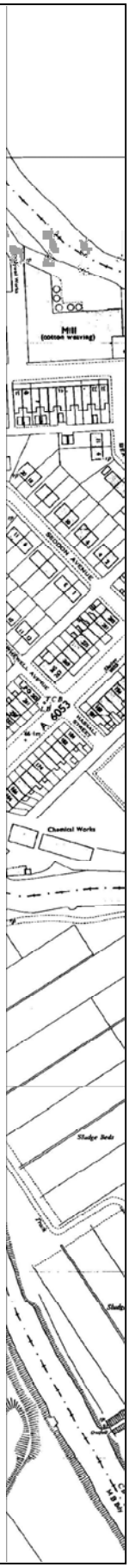
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NGR: 379725 408182

DATE: February 2024





KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1972 Historical Map Extract

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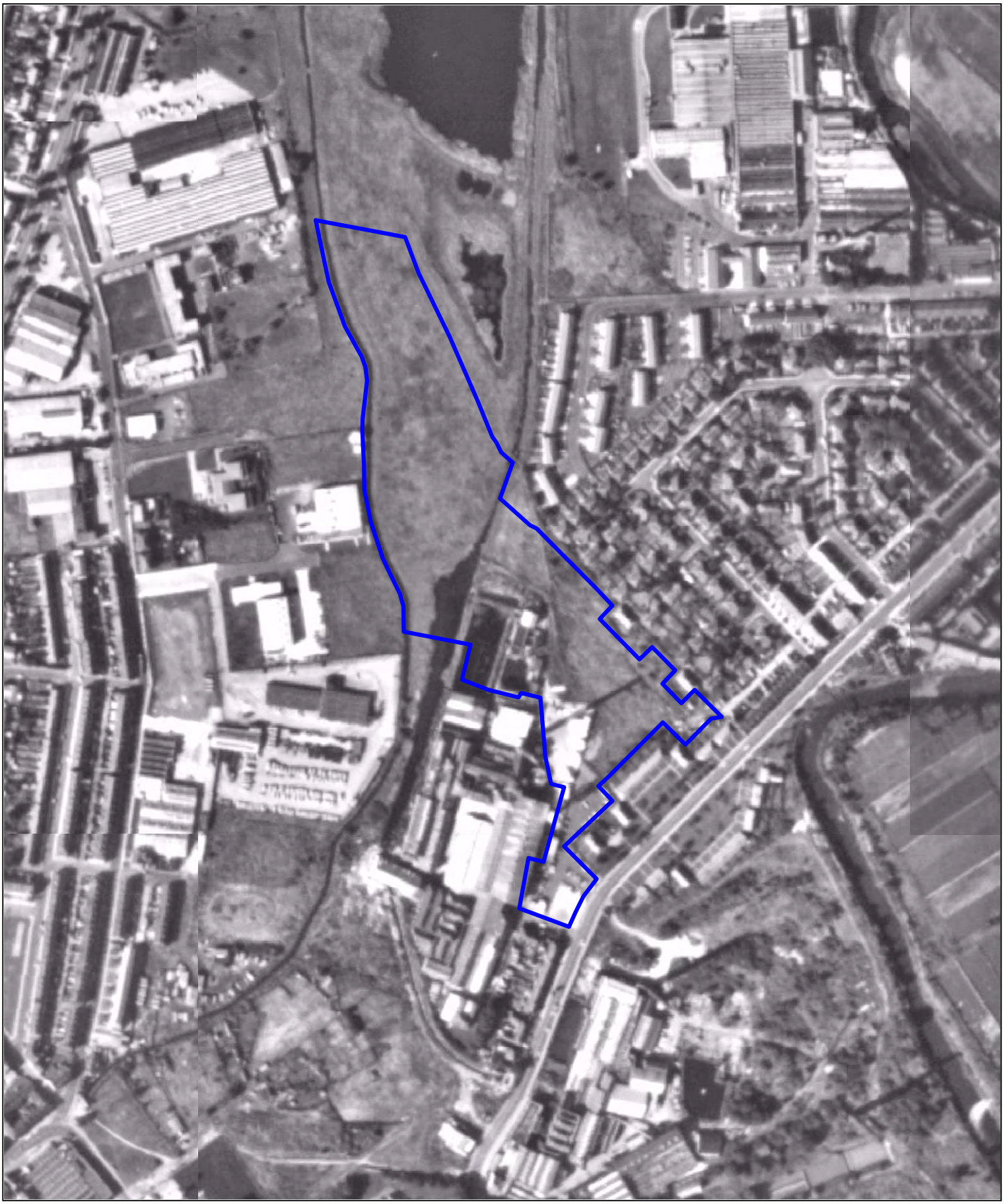
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kilometres

Scale 1:3,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1979 Aerial Photograph

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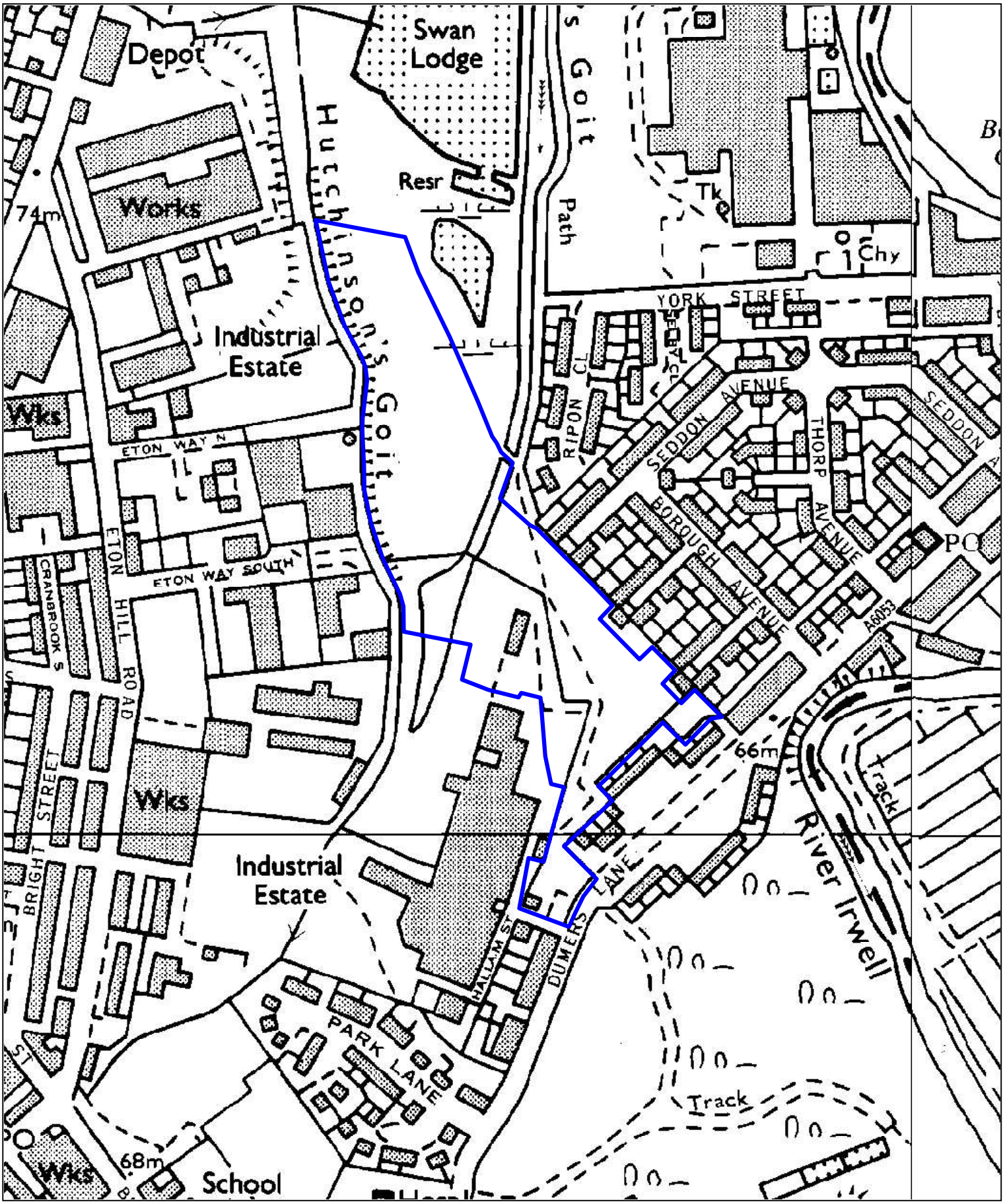
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Scale 1:3,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1984 Historical Map Extract

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0 0.2

kilometres

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NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1989 Aerial Photograph

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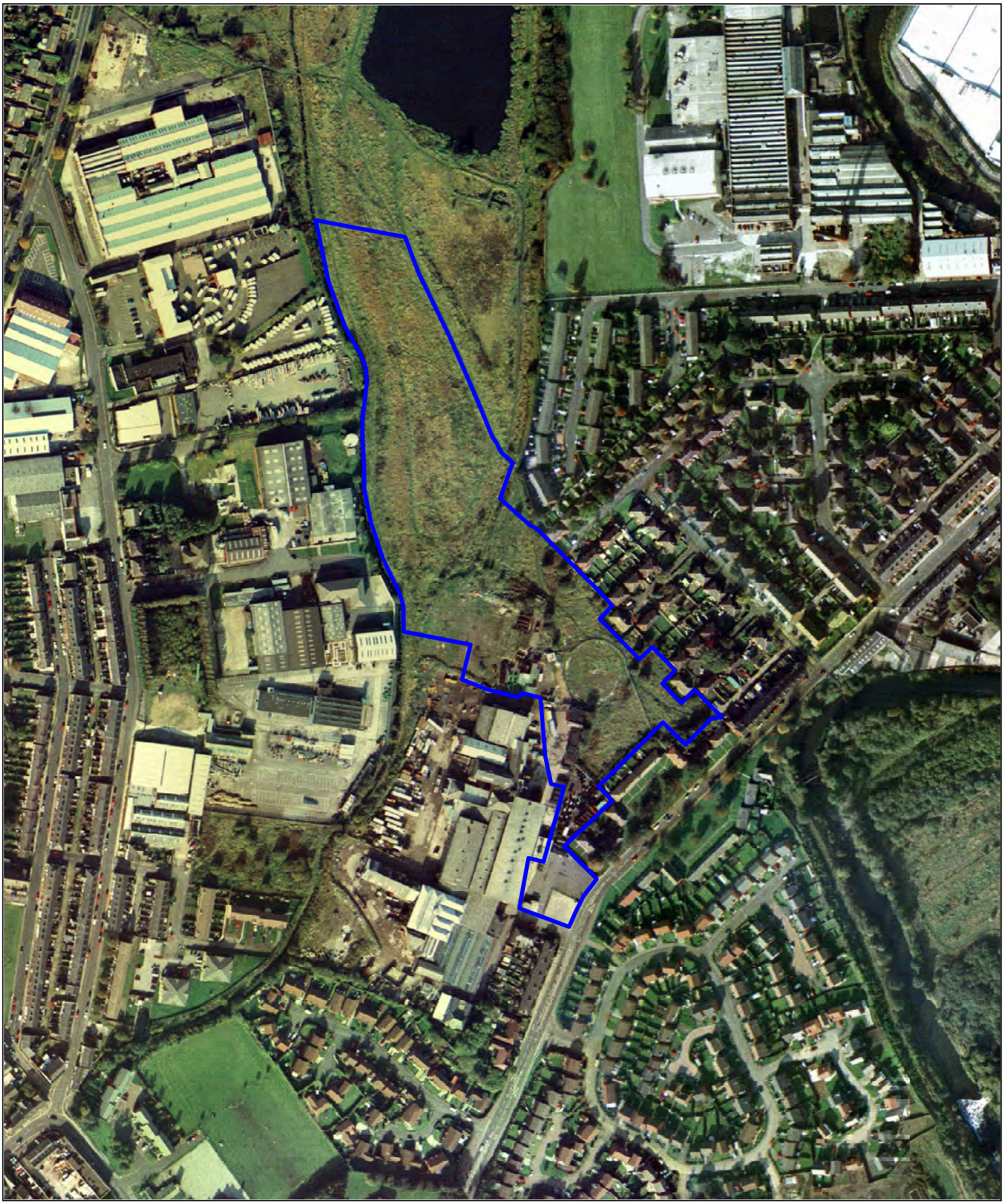
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NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

1997-9 Aerial Photograph

Bury Council

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0 0.2

kilometres

Scale 1:3,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

2000 Aerial Photograph

Bury Council

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0 0.2

kilometres

Scale 1:3,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

2005-6 Aerial Photograph

Bury Council

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0 0.2

kilometres

Scale 1:3,500

NGR: 379725 408182

DATE: February 2024



KEY:

Site Boundary

TITLE:

Land Adjacent to Bealey Industrial Estate, Radcliffe

2007-9 Aerial Photograph

Bury Council

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Ordnance Survey 100023063

0 0.2

kilometres

Scale 1:3,500

NGR: 379725 408182

DATE: February 2024

Dear Requestor

Request for Information - Freedom of Information Act 2000 (FOIA)

FOI2526.1095

In response to your Freedom of Information request, the Council's response to your request is as follows:

Request

I write to request all information held on C/13614/82

Response

Please see the attached document

The supply of information in response to a Freedom of Information request does not confer an automatic right to re-use the information. Under UK copyright law you can use any information supplied for the purpose of private study and non-commercial research without requiring permission. Similarly, information supplied can also be re-used for the purposes of news reporting, an exception to this is photographs.

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If, the copyright is identified as belonging to somebody else, you will need to apply for permission. For information how to obtain permission from a third party, please go to Intellectual Property Office's website at www.ipo.gov.uk

If you are dissatisfied with the handling of your request, you have the right to ask for an internal review. Internal review requests should be submitted within two months of the date of receipt of the response to your original letter and should be addressed to; The FOIA Reviewing Officer, foi@bury.gov.uk

Regards
Policy Compliance Service
Department of Corporate Core Services
www.bury.gov.uk/FOI

Form P2

Town and Country Planning Act 1971

Greater Manchester Council

Planning permission

Name and address of applicant

Law and Bonar PLC,
Bonar House,
Faraday Street,
Dundee,
Scotland DD1 9JA.

Name and address of agent (if any)

Edward Rushton Son & Kenyon,
Kings Court,
Exchange Street,
Manchester M2 3AX.

24 OCT 1982

660

Part I — Particulars of application

Date of application: 5/7/82 Application no. C/13614

Particulars and location of development:

Infilling of reservoir and settling tanks to surrounding ground level on land forming part of former premises of John Wild and Son Limited, Dumers Lane, Radcliffe.

Part II — Particulars of decision

The Greater Manchester County Council hereby give notice in pursuance of the provisions of the Town and Country Planning Act 1971 that permission has been granted for the carrying out of the development referred to in Part I hereof in accordance with the application and plans submitted subject to the following conditions:

1. The development must be begun not later than the expiration of five years beginning with the date of this permission.

2. The materials to be tipped shall be restricted to builders' waste arising within the site: there shall be no importation of material.

3. No working shall take place on the site, on Sundays or Bank Holidays, or on Monday to Friday except between 0800 hours and 1800 hours or on Saturdays except between 0800 hours and 1300 hours.

4. The site shall be tipped level with the surrounding land, and finished with light shale or cinders. No revisions will be permitted without the written agreement of the local planning authority.

(For condition 5 see over)

The reasons for the conditions are:

1. Required to be imposed pursuant to section 41 of the Town and Country Planning Act 1971.

(For reasons 2/5 see over)

Signed _____ on behalf of the Council

Date of decision 13th October, 1982.

Council Offices
County Hall,
Piccadilly Gardens,
Manchester M60 3HP.

Note: This permission refers only to that required under the Town and Country Planning Acts and does not include any consent or approval under any other enactment, byelaw, order or regulation.

Please read notes overleaf

Report by SEB.

Date August 4th 1982.

File cl/13614/82/27.

Subject Former John Wild + Sons Ltd, Dumers Lane Radclyp

~~INDUSTRIAL PROCESS~~ DRAINING + FILLING OF 1 RESERVOIR & 2 SETTLING TANKS.

Discussion and Conclusions

Large industrial premises which are now vacant + becoming derelict.

GMC have spoken to Agent + they have informed me verbally that there will be no importation of materials because the fill will come from the 1907 Brick Chimney when demolished. It is expected to take 3 months.

Remander of consultations + discussions to be undertaken by GMC - is probably debatable whether p.p is required.

Recommendations

~~Appeal~~ No OBJECTIONS.

i) restriction of working hours

ii) provisions to avoid nuisance from dust.

904

Site Visit by SDS

Time 11.45

Date August 4th 1982

File CL 13614/82

Site of ~~426 Wednesbury Rd~~ Former Premises of John Wild + Sons, Demesne Land

TIPPING + FILLING OF RESERVOIR + SETTLING TANKS

Description and Facts

Particularly difficult to obtain access to site.
Large buildings now delapidated.
Tanks + reservoir adjacent to a group of single storey buildings besides the main complex.
Proposal to demolish exg chimney + to use rubble to fill tanks etc. built 1907.
Do not intend to bring any rubble into site

Issues and Arguments

Bungalows fairly distant from the site separated by overgrown land

Conclusions reached on site

APPROVED

4 Particulars of present and previous use of buildings or land

(a) State present use of buildings/land

Vacant buildings & associated land

(b) If vacant state the last previous use and date when last used (if known)

Paper making
Approximately 1980

(c) State which buildings, if any, are to be demolished

None

5 Additional Information

	State YES or NO	
(a) Is the application for industrial, office, warehousing, storage or shopping purposes? (see note 5)	No	If YES, complete Part 2 of the application form as well as Part 1
(b) Does the proposed development involve the felling of any trees?	No	If YES, indicate positions on the plans

(c) Describe method of disposal of surface water (eg. main drains, natural water courses etc.)

To existing goit

(d) Describe method of disposal of foul sewage (eg. existing main sewers, septic tanks etc.)

To existing goit

(e) How many vehicle parking spaces do you intend to provide within the curtilage of the site?

N/A

(f) For applications relating to the erection or extension of structures:
(i) State type and colour of proposed roofing materials

N/A

(ii) State type and colour of proposed exterior wall facings

N/A

(iii) State maximum height of proposed structure N/A

NOTE. The proposed means of enclosure, the materials and colour of walls and roof, landscaping, details etc. should be clearly shown on the submitted plans unless the application is in outline only. Landscaping should normally include all aspects of site treatment ie planting, paving, surfacing, vehicle parking, service area etc

6 Plans and certificate submitted with the application

(a) List of drawings and plans (see notes 8, 9 and 10)

4 No copies of 1:1250 Location Plan

(b) Please indicate the certificate enclosed. (See note 11)

Certificate

Section 27 [X] A [ ] B [ ] C [ ] D interest in land

NOTE: An appropriate certificate under Section 27 must accompany this application unless you are seeking approval of reserved matters. Certificates under Section 28 are required only for certain applications which need to be advertised (See note 12)

I/We hereby apply for

*(a) planning permission to carry out the development described in this application and the accompanying plans, and in accordance therewith.

OR *(b) [illegible]

OR *(c) [illegible]

Signed Edward Pushton Smith Kingston 27th May 1982

*On behalf of Low & Bonar P.L.C.

*Delete where inappropriate

A special application form is necessary for consent under the building regulations.

BURY M.B.C.


Sluice
Conduit
Reservoir
Tanks
Settling Tanks
Sub Sta
Tanks
Broad Oxmore
Paper Works

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Order Details

Date: 15/02/2024

Your ref: 8353_-_PO_9951-BH

Our Ref: GS-B5J-QUX-W33-1YT

Site Details

Location: 379691 408199

Area: 4.05 ha

Authority: Bury Metropolitan Borough Council ↗



Summary of findings p. 2 >

OS MasterMap site plan p.13 >

Aerial image p. 9 >

groundsure.com/insightuserguide ↗

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
14 >	1.1 >	Historical industrial land uses >	25	30	73	101	-
23 >	1.2 >	Historical tanks >	6	9	37	84	-
28 >	1.3 >	Historical energy features >	4	4	10	23	-
30	1.4	Historical petrol stations	0	0	0	0	-
30 >	1.5 >	Historical garages >	0	0	0	3	-
31	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
32 >	2.1 >	Historical industrial land uses >	29	40	100	142	-
44 >	2.2 >	Historical tanks >	12	14	59	172	-
53 >	2.3 >	Historical energy features >	7	12	15	42	-
56	2.4	Historical petrol stations	0	0	0	0	-
56 >	2.5 >	Historical garages >	0	0	0	5	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
58	3.1	Active or recent landfill	0	0	0	0	-
58 >	3.2 >	Historical landfill (BGS records) >	0	0	0	1	-
59 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	1	3	-
59 >	3.4 >	Historical landfill (EA/NRW records) >	1	0	1	1	-
60 >	3.5 >	Historical waste sites >	2	0	1	0	-
61 >	3.6 >	Licensed waste sites >	0	1	0	3	-
62 >	3.7 >	Waste exemptions >	2	0	2	6	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
64 >	4.1 >	Recent industrial land uses >	8	9	31	-	-
67	4.2	Current or recent petrol stations	0	0	0	0	-
68	4.3	Electricity cables	0	0	0	0	-
68	4.4	Gas pipelines	0	0	0	0	-
68	4.5	Sites determined as Contaminated Land	0	0	0	0	-

68 >	4.6 >	Control of Major Accident Hazards (COMAH) >	0	0	1	1	-
69	4.7	Regulated explosive sites	0	0	0	0	-
69 >	4.8 >	Hazardous substance storage/usage >	0	0	1	1	-
69 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	0	3	-
70 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	1	23	-
74 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	3	3	-
75	4.12	Radioactive Substance Authorisations	0	0	0	0	-
75 >	4.13 >	Licensed Discharges to controlled waters >	0	0	10	39	-
82 >	4.14 >	Pollutant release to surface waters (Red List) >	0	0	0	2	-
83	4.15	Pollutant release to public sewer	0	0	0	0	-
83 >	4.16 >	List 1 Dangerous Substances >	0	0	0	4	-
84 >	4.17 >	List 2 Dangerous Substances >	0	0	1	2	-
84 >	4.18 >	Pollution Incidents (EA/NRW) >	2	1	5	2	-
85 >	4.19 >	Pollution inventory substances >	0	0	0	2	-
87 >	4.20 >	Pollution inventory waste transfers >	0	0	0	2	-
92	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
93 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
95 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
97 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
98	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
98	5.5	Groundwater vulnerability- local information	None (within 0m)				
99 >	5.6 >	Groundwater abstractions >	0	0	0	0	17
104 >	5.7 >	Surface water abstractions >	0	0	0	6	16
110 >	5.8 >	Potable abstractions >	0	0	0	0	5
111	5.9	Source Protection Zones	0	0	0	0	-
111	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
112 >	6.1 >	Water Network (OS MasterMap) >	4	1	7	-	-

114 >	6.2 >	Surface water features >	1	2	4	-	-
114 >	6.3 >	WFD Surface water body catchments >	2	-	-	-	-
114 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
115 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
116 >	7.1 >	Risk of flooding from rivers and the sea >	High (within 50m)				
117 >	7.2 >	Historical Flood Events >	1	1	8	-	-
118	7.3	Flood Defences	0	0	0	-	-
118	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
118	7.5	Flood Storage Areas	0	0	0	-	-
119 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
120 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
121 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
123 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
124	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
125	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
125	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
125	10.4	Special Protection Areas (SPA)	0	0	0	0	0
125	10.5	National Nature Reserves (NNR)	0	0	0	0	0
126 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	4
126	10.7	Designated Ancient Woodland	0	0	0	0	0
126	10.8	Biosphere Reserves	0	0	0	0	0
127	10.9	Forest Parks	0	0	0	0	0
127	10.10	Marine Conservation Zones	0	0	0	0	0
127 >	10.11 >	Green Belt >	0	0	1	1	4
127	10.12	Proposed Ramsar sites	0	0	0	0	0

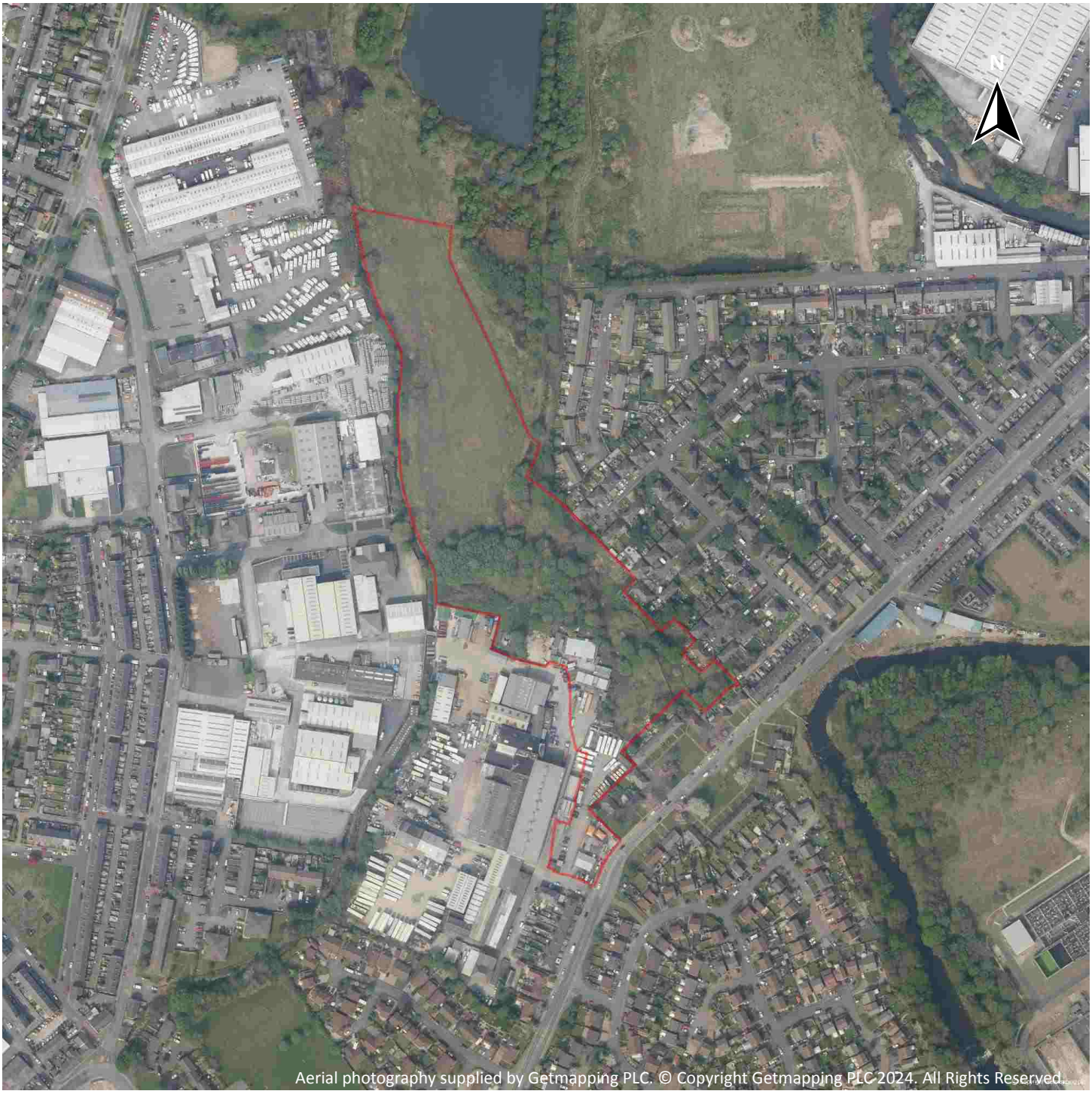
128	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
128	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
128	10.15	Nitrate Sensitive Areas	0	0	0	0	0
128	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
129 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
130	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
131	11.1	World Heritage Sites	0	0	0	-	-
131	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
131	11.3	National Parks	0	0	0	-	-
131	11.4	Listed Buildings	0	0	0	-	-
132	11.5	Conservation Areas	0	0	0	-	-
132	11.6	Scheduled Ancient Monuments	0	0	0	-	-
132	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
133 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
134	12.2	Open Access Land	0	0	0	-	-
134	12.3	Tree Felling Licences	0	0	0	-	-
134	12.4	Environmental Stewardship Schemes	0	0	0	-	-
134	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
135 >	13.1 >	Priority Habitat Inventory >	0	1	11	-	-
136 >	13.2 >	Habitat Networks >	1	1	1	-	-
136	13.3	Open Mosaic Habitat	0	0	0	-	-
137	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
138 >	14.1 >	10k Availability >	Identified (within 500m)				
139 >	14.2 >	Artificial and made ground (10k) >	0	2	2	5	-
141 >	14.3 >	Superficial geology (10k) >	1	1	1	5	-

142	14.4	Landslip (10k)	0	0	0	0	-
143 >	14.5 >	Bedrock geology (10k) >	3	1	8	6	-
144 >	14.6 >	Bedrock faults and other linear features (10k) >	3	2	4	13	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
146 >	15.1 >	50k Availability >	Identified (within 500m)				
147 >	15.2 >	Artificial and made ground (50k) >	0	0	0	2	-
148	15.3	Artificial ground permeability (50k)	0	0	-	-	-
149 >	15.4 >	Superficial geology (50k) >	1	1	0	3	-
150 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
150	15.6	Landslip (50k)	0	0	0	0	-
150	15.7	Landslip permeability (50k)	None (within 50m)				
151 >	15.8 >	Bedrock geology (50k) >	3	1	3	2	-
152 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
152 >	15.10 >	Bedrock faults and other linear features (50k) >	3	2	1	6	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
154 >	16.1 >	BGS Boreholes >	0	1	49	-	-
Page	Section	Natural ground subsidence >					
157 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
158 >	17.2 >	Running sands >	Low (within 50m)				
160 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
162 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
163 >	17.5 >	Landslides >	Very low (within 50m)				
164 >	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
166	18.1	BritPits	0	0	0	0	-
167 >	18.2 >	Surface ground workings >	21	27	62	-	-
171 >	18.3 >	Underground workings >	0	0	1	3	1
171	18.4	Underground mining extents	0	0	0	0	-
172 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	1	-

172	18.6	Non-coal mining	0	0	0	0	0
172 >	18.7 >	JPB mining areas >	Identified (within 0m)				
173	18.8	The Coal Authority non-coal mining	0	0	0	0	-
173	18.9	Researched mining	0	0	0	0	-
173	18.10	Mining record office plans	0	0	0	0	-
173	18.11	BGS mine plans	0	0	0	0	-
174 >	18.12 >	Coal mining >	Identified (within 0m)				
174	18.13	Brine areas	None (within 0m)				
174	18.14	Gypsum areas	None (within 0m)				
174	18.15	Tin mining	None (within 0m)				
174	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
175	19.1	Natural cavities	0	0	0	0	-
175	19.2	Mining cavities	0	0	0	0	0
175	19.3	Reported recent incidents	0	0	0	0	-
175	19.4	Historical incidents	0	0	0	0	-
176	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
177 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
179 >	21.1 >	BGS Estimated Background Soil Chemistry >	5	6	-	-	-
180	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
180	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
181	22.1	Underground railways (London)	0	0	0	-	-
181	22.2	Underground railways (Non-London)	0	0	0	-	-
182	22.3	Railway tunnels	0	0	0	-	-
182 >	22.4 >	Historical railway and tunnel features >	8	1	3	-	-
183	22.5	Royal Mail tunnels	0	0	0	-	-

183	22.6	Historical railways	0	0	0	-	-
183	22.7	Railways	0	0	0	-	-
183	22.8	Crossrail 1	0	0	0	0	-
183	22.9	Crossrail 2	0	0	0	0	-
184	22.10	HS2	0	0	0	0	-

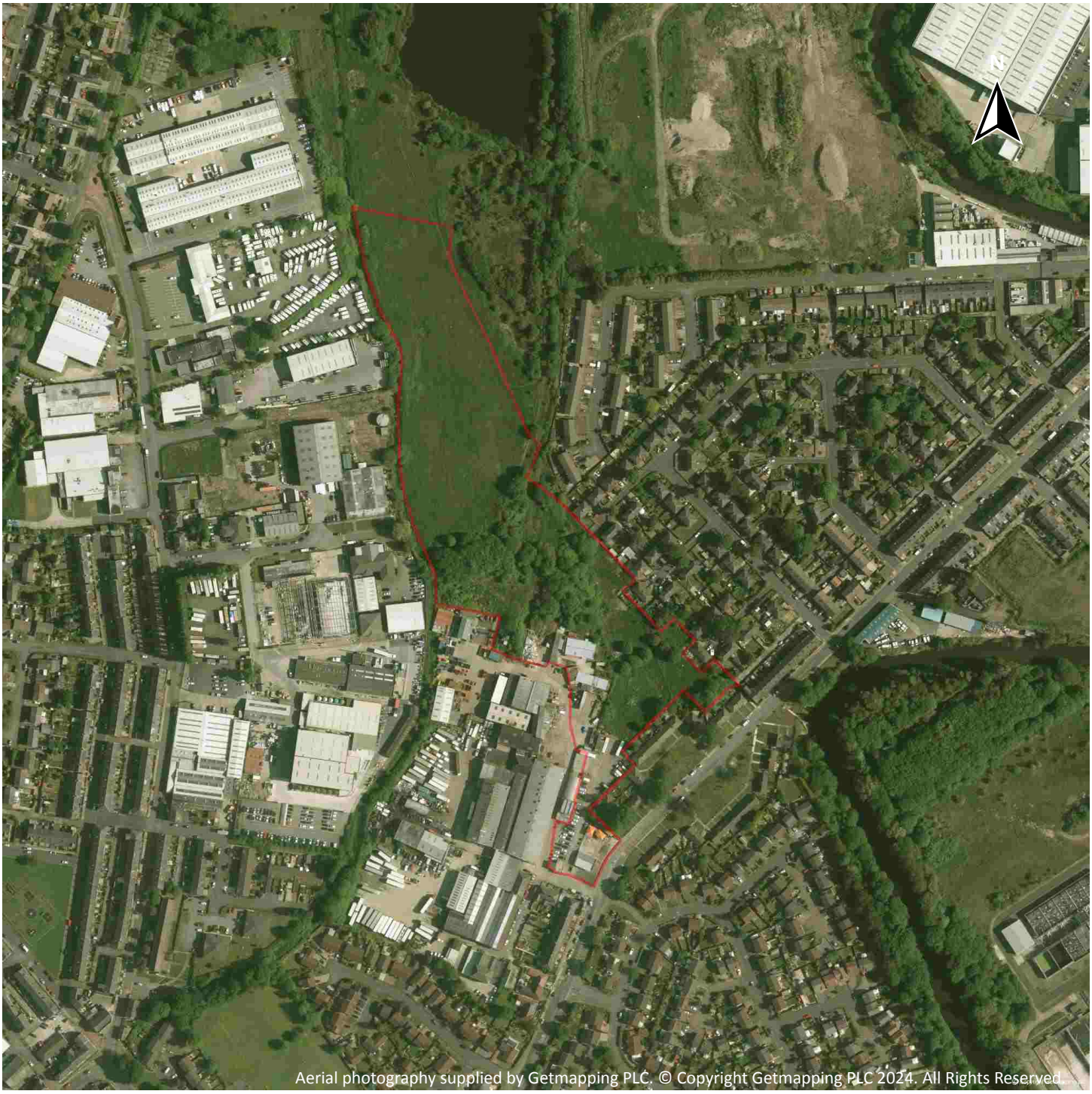
Recent aerial photograph



Capture Date: 23/05/2019

Site Area: 4.05ha

Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 4.05ha

Recent site history - 2011 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 01/05/2011

Site Area: 4.05ha

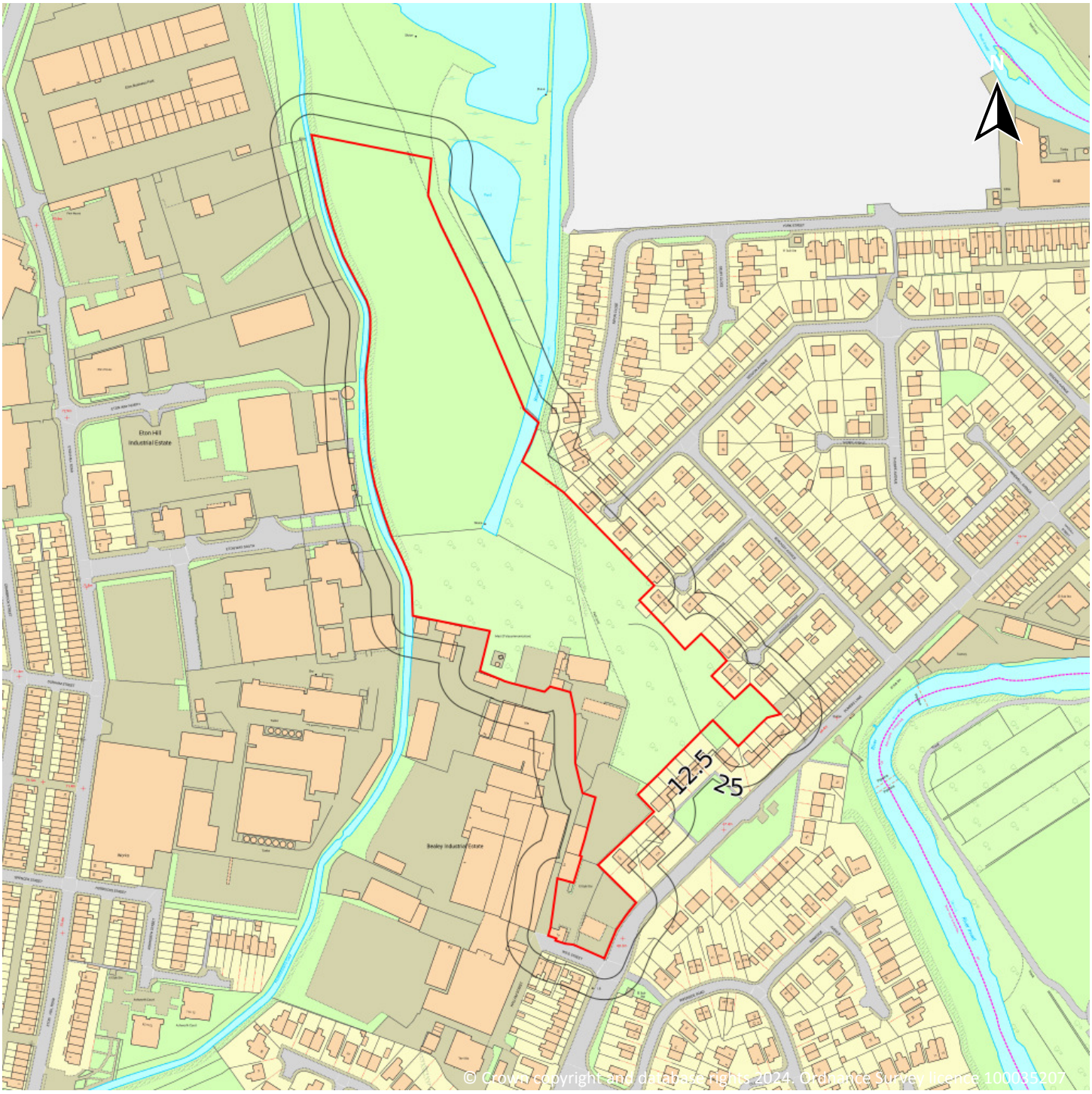
Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

Site Area: 4.05ha

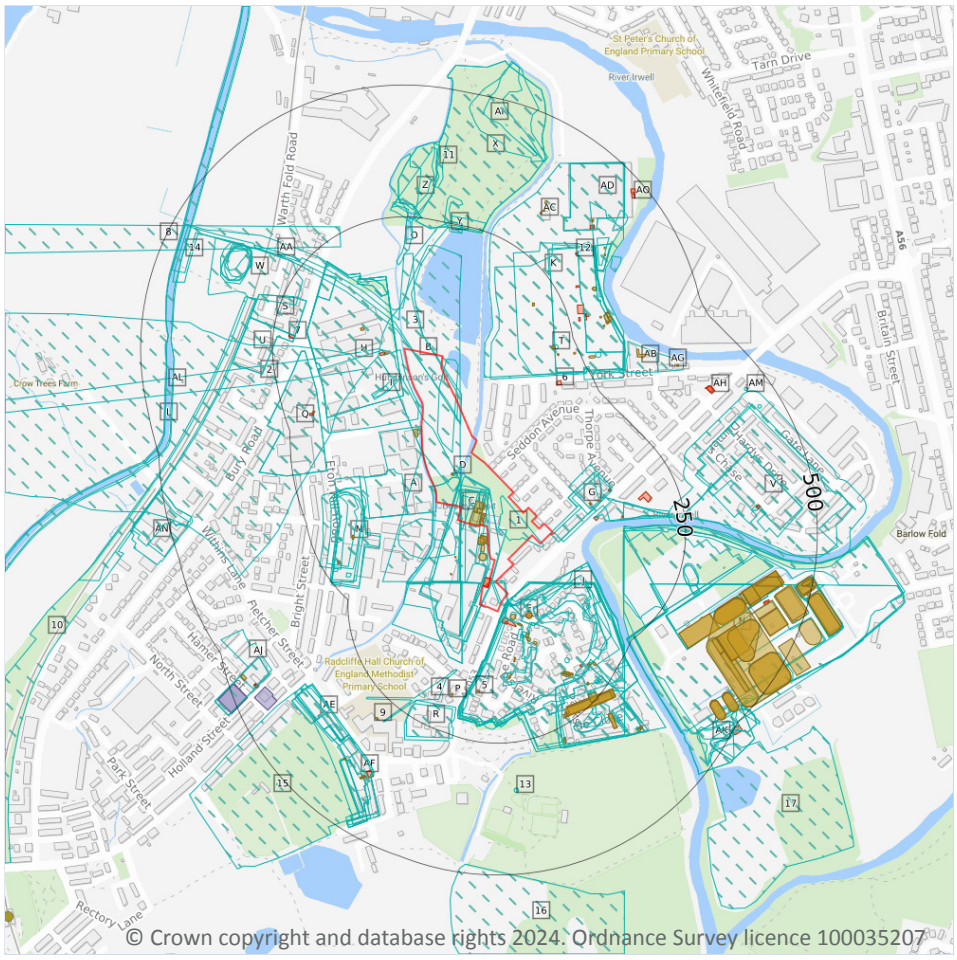
OS MasterMap site plan



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Site Area: 4.05ha

1 Past land use



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1.1 Historical industrial land uses

Records within 500m	229

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 14 >**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Filter Beds**	**1908**	**665809**

ID	Location	Land use	Dates present	Group ID
2	**On site**	**Tramway Sidings**	**1890**	**670775**
3	**On site**	**Tramway Sidings**	**1908**	**760082**
A	**On site**	**Unspecified Commercial/Industrial**	**1991**	**643336**
B	**On site**	**Colliery**	**1890**	**645263**
B	**On site**	**Refuse Heap**	**1890**	**677999**
C	**On site**	**Filter Beds**	**1928**	**665807**
C	**On site**	**Chemical Works**	**1891**	**682692**
C	**On site**	**Paper Works**	**1955**	**714228**
C	**On site**	**Paper Works**	**1908 - 1927**	**717984**
C	**On site**	**Paper Works**	**1938**	**722933**
C	**On site**	**Unspecified Works**	**1965 - 1977**	**725705**
C	**On site**	**Unspecified Commercial/Industrial**	**1928**	**738364**
C	**On site**	**Industrial Estate**	**1988 - 1991**	**746445**
C	**On site**	**Unspecified Commercial/Industrial**	**1890**	**748711**
C	**On site**	**Unspecified Commercial/Industrial**	**1908**	**758297**
C	**On site**	**Filter Beds**	**1928 - 1938**	**767953**
C	**On site**	**Filter Beds**	**1955**	**788270**
D	**On site**	**Unspecified Tank**	**1955**	**674783**
D	**On site**	**Unspecified Tank**	**1927**	**733526**
D	**On site**	**Unspecified Tank**	**1938**	**777880**
E	**On site**	**Railway Sidings**	**1907**	**751453**
E	**On site**	**Railway Sidings**	**1891**	**756383**
F	**On site**	**Tramway Sidings**	**1890**	**776867**
G	**On site**	**Chemical Works**	**1908**	**783716**
C	1m S	Unspecified Tanks	1928 - 1955	733436
G	2m SE	Chemical Works	1891	783345
B	3m NW	Unspecified Tank	1988 - 1991	779255
C	4m S	Unspecified Commercial/Industrial	1907 - 1938	704501

ID	Location	Land use	Dates present	Group ID
C	5m S	Unspecified Tank	1977	674782
H	7m NW	Industrial Estate	1988 - 1991	767287
C	8m S	Unspecified Commercial/Industrial	1932	703963
C	8m S	Unspecified Commercial/Industrial	1915	709107
C	8m S	Unspecified Commercial/Industrial	1923	747453
E	8m S	Wire Works	1938	641134
E	8m S	Bleaching Works	1923	744678
E	8m S	Bleach and Chemical Works	1891	753134
E	8m S	Bleaching Works	1932	763679
E	9m S	Unspecified Works	1965	730389
E	9m S	Bleach and Chemical Works	1907	699288
E	9m S	Bleach and Chemical Works	1915	781398
E	10m S	Bleaching Works	1955	777831
E	13m S	Vitriol Manufactory	1851	675148
E	13m S	Unspecified Works	1977	745660
H	14m NW	Unspecified Works	1991	766276
E	14m S	Bleach Works	1851	658162
H	15m NW	Unspecified Factory	1965	670600
H	15m NW	Unspecified Works	1977	723827
C	21m S	Refuse Heap	1890	678029
E	25m S	Unspecified Tank	1891 - 1907	702569
I	25m NW	Unspecified Ground Workings	1988 - 1991	716820
C	34m S	Unspecified Commercial/Industrial	1891	781088
I	47m NW	Unspecified Ground Workings	1977	763499
A	48m W	Unspecified Works	1977	679066
E	48m SE	Unspecified Tank	1891 - 1907	752478
E	62m S	Unspecified Tank	1977	723357
E	63m S	Unspecified Tank	1907	739491

ID	Location	Land use	Dates present	Group ID
J	65m SE	Refuse Heap	1965	677980
K	66m N	Unspecified Works	1991	782230
G	67m E	Chemical Works	1928	729789
K	75m N	Unspecified Mill	1988	734409
L	77m NW	Colliery	1890	645264
G	82m E	Unspecified Works	1965	679049
G	84m E	Chemical Works	1908 - 1928	734395
E	90m S	Unspecified Ground Workings	1851	648149
F	108m NW	Unspecified Ground Workings	1977 - 1991	748275
F	108m NW	Unspecified Ground Workings	1965	754469
J	109m SE	Railway Sidings	1891	708931
J	110m SE	Railway Sidings	1907	724609
M	122m SW	Unspecified Mill	1965 - 1977	759196
M	125m SW	Unspecified Works	1991	679067
M	129m W	Unspecified Mill	1955	721686
4	130m S	Filter Beds	1891	665808
N	131m E	Sewage Works	1915 - 1955	786107
N	132m E	Sludge Beds	1974	720162
N	132m E	Sewage Works	1974	758926
N	133m E	Unspecified Works	1965	679047
N	133m E	Sewage Works	1981	787106
N	133m E	Sludge Beds	1981	757718
G	135m E	Unspecified Works	1965	679048
M	136m W	Unspecified Mill	1927 - 1938	732313
M	142m W	Unspecified Mill	1908	736511
K	144m NE	Unspecified Mill	1977	702994
J	147m SE	Unspecified Tank	1907	674817
M	147m W	Unspecified Mill	1890	781543

ID	Location	Land use	Dates present	Group ID
E	157m SE	Chimney	1851	684330
O	159m N	Refuse Heap	1908	678000
M	165m W	Cotton Mill	1851	644066
E	168m SE	Unspecified Tank	1932 - 1938	700387
E	169m SE	Unspecified Tanks	1955	666452
F	169m NW	Unspecified Depot	1991	668817
Q	179m NW	Unspecified Commercial/Industrial	1988	643339
Q	179m NW	Unspecified Works	1991	679064
E	181m S	Unspecified Commercial/Industrial	1977	643335
M	193m SW	Gasometer	1851	655145
K	194m NE	Tallow and Candle Works	1955	670839
K	194m NE	Unspecified Works	1955 - 1965	723223
E	198m SE	Unspecified Tank	1915	674818
R	199m S	Hospital	1988 - 1991	745118
E	200m SE	Unspecified Tank	1923	674819
R	204m S	Hospital	1908	779688
S	204m NW	Unspecified Works	1965	679065
S	204m NW	Unspecified Commercial/Industrial	1977	752450
N	207m SE	Sewage Works	1938	701259
O	208m N	Unspecified Ground Workings	1965	747650
U	209m NW	Unspecified Warehouse	1965	652408
U	209m NW	Unspecified Commercial/Industrial	1977 - 1991	705324
N	209m SE	Sewage Works	1907	738790
T	209m NE	Unspecified Tank	1988 - 1991	717653
M	211m SW	Unspecified Tank	1955	674784
E	218m SE	Unspecified Tank	1915 - 1923	762572
V	221m E	Cabinet Works	1955 - 1965	767569
W	222m NW	Colliery	1890	645262

ID	Location	Land use	Dates present	Group ID
M	226m SW	Unspecified Tank	1927 - 1938	789827
E	226m SE	Unspecified Tank	1938	729661
8	227m NW	Cuttings	1890	642632
E	229m SE	Chimney	1965 - 1977	695696
E	229m SE	Unspecified Tank	1907 - 1923	754354
E	231m SE	Shed	1851	659596
E	232m SE	Unspecified Tanks	1907	666451
X	233m N	Refuse Heap	1977	695335
X	233m N	Unspecified Disused Tip	1988 - 1991	784021
Y	235m N	Unspecified Ground Workings	1908 - 1938	704929
V	244m E	Cotton Weaving Mill	1928 - 1938	720424
Z	246m N	Unspecified Heap	1927 - 1938	766137
Z	246m N	Refuse Heap	1908	790849
Y	246m N	Unspecified Pit	1965	691002
V	246m E	Unspecified Commercial/Industrial	1974 - 1981	774222
N	255m SE	Unspecified Heap	1955	775400
N	256m SE	Unspecified Heap	1938	757010
N	256m SE	Unspecified Heap	1928	763138
Z	256m N	Unspecified Ground Workings	1955	698465
E	258m SE	Unspecified Heap	1965 - 1991	707221
AA	258m NW	Tunnel	1908	671553
E	259m SE	Refuse Heap	1938 - 1955	782857
E	261m SE	Refuse Heap	1932	756807
K	262m NE	Bleach Works	1891	658144
K	262m NE	Bleach and Dye works	1908 - 1938	788876
N	264m SE	Filter Beds	1907	746097
N	264m SE	Filter Beds	1923	753518
N	264m SE	Filter Beds	1915	789860

ID	Location	Land use	Dates present	Group ID
N	265m SE	Unspecified Tanks	1965 - 1974	752748
E	270m S	Unspecified Tank	1907 - 1923	708695
T	276m NE	Chimney	1965 - 1991	717375
N	278m SE	Unspecified Heap	1915	778676
E	286m SE	Filter Beds	1915	750653
AA	287m NW	Air Shafts	1908	685376
E	287m SE	Filter Beds	1923	777946
E	293m SE	Filter Beds	1915	768200
10	295m NW	Railway Sidings	1955	768828
L	297m NW	Railway Sidings	1908 - 1938	751945
V	303m E	Weaving Mill	1955	670969
V	305m E	Cotton Weaving Mill	1965	705007
11	312m N	Unspecified Ground Workings	1965	745144
K	313m NE	Unspecified Tank	1977 - 1991	717499
AB	314m NE	Cotton Mill	1908	644065
K	316m NE	Unspecified Tanks	1908 - 1938	715467
W	329m NW	Refuse Heap	1955	789769
AD	331m N	Unspecified Warehouse	1977	716907
AD	331m N	Unspecified Warehouse	1988	770363
W	332m NW	Refuse Heap	1938	743550
W	332m NW	Refuse Heap	1908	774527
W	332m NW	Refuse Heap	1927	782616
W	333m NW	Refuse Heap	1890	742535
N	333m SE	Sewage Tanks	1981	657309
N	333m SE	Unspecified Tanks	1965 - 1974	743387
AD	334m NE	Oil and Tallow Works	1908	652452
AD	337m NE	Tallow and Candle Works	1928	670840
AD	337m NE	Candle Works	1938	691499

ID	Location	Land use	Dates present	Group ID
13	337m S	Unspecified Tank	1923	674816
14	343m NW	Tramway Sidings	1908	782847
AD	344m NE	Unspecified Works	1965	709445
E	344m SE	Unspecified Tank	1932	762255
E	344m SE	Unspecified Tank	1938	789995
AE	346m SW	Unspecified Commercial/Industrial	1977	718948
AE	346m SW	Unspecified Mill	1965	750445
E	346m SE	Unspecified Tank	1915	694415
W	347m NW	Refuse Heap	1965 - 1988	779349
AE	348m SW	Unspecified Mill	1955	696615
AE	348m SW	Unspecified Works	1988 - 1991	728251
E	350m SE	Unspecified Tank	1923	712578
AF	350m SW	Unspecified Works	1965	727566
AF	350m SW	Unspecified Commercial/Industrial	1977	774253
AF	354m SW	Unspecified Works	1988 - 1991	751996
AG	356m NE	Chemical Works	1908	682691
AE	357m SW	Unspecified Mill	1908 - 1938	711306
AE	357m SW	Unspecified Commercial/Industrial	1891	782718
N	360m SE	Sewage Tanks	1981	657312
AD	361m NE	Refuse Heap	1965	677981
N	365m SE	Filter Beds	1907 - 1923	788606
AF	375m S	Tower Works	1955	778655
15	379m SW	Bleach Works	1851	658161
AF	384m S	Unspecified Commercial/Industrial	1908	694693
AF	384m S	Tower Works	1927 - 1938	704950
AF	384m S	Unspecified Commercial/Industrial	1891	771773
N	399m SE	Unspecified Tank	1965	674824
AD	401m NE	Unspecified Heap	1928	650894

ID	Location	Land use	Dates present	Group ID
AI	405m N	Refuse Heap	1965	714403
AJ	414m SW	Unspecified Works	1965	679063
AI	416m N	Refuse Heap	1928 - 1955	725785
AJ	421m SW	Soap Works	1891	682700
AJ	421m SW	Unspecified Commercial/Industrial	1908 - 1927	717282
N	423m SE	Unspecified Tanks	1965 - 1974	722463
N	435m E	Unspecified Tanks	1915 - 1923	767640
AL	437m W	Disused Canal	1977	706247
AL	437m W	Disused Canal	1988 - 1991	788290
AK	442m SE	Unspecified Heap	1932 - 1938	758564
AK	444m SE	Refuse Heap	1955	719870
AM	453m E	Settling Tanks	1938	681805
AN	454m W	Unspecified Mill	1927 - 1955	709866
AN	455m W	Unspecified Mill	1965	781443
AM	455m E	Settling Tanks	1938	681804
AK	458m SE	Refuse Heap	1923	698127
AK	458m SE	Unspecified Heap	1915	739377
AN	462m W	Unspecified Mill	1908	711488
N	464m E	Unspecified Tanks	1907	694169
N	464m E	Unspecified Tanks	1915 - 1932	781203
N	468m E	Unspecified Tanks	1938	743645
N	470m E	Sewage Tanks	1955	657313
AK	470m SE	Unspecified Ground Workings	1907	648151
N	470m E	Unspecified Tanks	1965	734496
N	471m E	Unspecified Tanks	1974	703358
AK	473m SE	Unspecified Heap	1915 - 1923	716003
AK	475m SE	Unspecified Ground Workings	1907	648150
N	481m E	Unspecified Tanks	1908	747584

ID	Location	Land use	Dates present	Group ID
16	483m S	Refuse Heap	1977	787422
17	485m SE	Sludge Lagoons	1981	681460
N	493m E	Unspecified Tanks	1932 - 1938	726516
N	497m E	Sewage Tanks	1955	657314

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**136**

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 14 >**

ID	Location	Land use	Dates present	Group ID
C	**On site**	**Tanks**	**1972**	**87872**
C	**On site**	**Settling Tanks**	**1956 - 1972**	**88914**
C	**On site**	**Tanks**	**1985 - 1992**	**93701**
C	**On site**	**Settling Tanks**	**1956**	**94451**
C	**On site**	**Unspecified Tank**	**1956**	**99752**
D	**On site**	**Unspecified Tank**	**1930 - 1937**	**92083**
C	4m S	Tanks	1956	102405
C	4m S	Tanks	1956	97968
B	7m NW	Tanks	1985 - 1992	96177
C	7m S	Tanks	1972 - 1985	100959
C	7m S	Unspecified Tank	1972	84768
C	8m S	Tanks	1930 - 1937	90813
E	26m S	Unspecified Tank	1893 - 1909	89857
H	32m NW	Unspecified Tank	1992	84771

ID	Location	Land use	Dates present	Group ID
E	45m S	Tanks	1956	103342
E	52m SE	Gasometer	1909	78092
E	52m SE	Unspecified Tank	1893	85025
C	62m S	Unspecified Tank	1930	84769
C	63m S	Unspecified Tank	1930 - 1937	95707
E	69m S	Unspecified Tank	1975 - 1980	90948
E	76m S	Unspecified Tank	1975 - 1980	89663
H	84m NW	Unspecified Tank	1956	96469
G	88m E	Unspecified Tank	1956	88654
E	90m S	Unspecified Tank	1922 - 1932	96774
E	93m S	Tanks	1922	87873
G	105m E	Unspecified Tank	1956	91060
E	121m S	Tanks	1956	98807
G	133m E	Unspecified Tank	1956 - 1985	94629
G	133m E	Unspecified Tank	1956	97001
5	153m S	Unspecified Tank	1922 - 1932	89005
M	169m SW	Unspecified Tank	1930 - 1937	103296
E	169m SE	Unspecified Tank	1922 - 1932	95054
E	170m SE	Unspecified Tank	1956 - 1975	94687
E	170m SE	Unspecified Tank	1980	91980
P	177m S	Unspecified Tank	1956	99256
P	177m S	Unspecified Tank	1956	90569
Q	193m W	Unspecified Tank	1972	84770
K	196m N	Unspecified Tank	1976 - 1992	91665
E	198m SE	Unspecified Tank	1922 - 1932	93363
E	205m SE	Unspecified Tank	1956	93997
T	206m NE	Unspecified Tank	1992	84776
T	210m NE	Tanks	1956	100428

ID	Location	Land use	Dates present	Group ID
M	215m SW	Unspecified Tank	1930 - 1937	102970
E	217m SE	Unspecified Tank	1922	85027
E	223m SE	Settling Tanks	1956 - 1975	99725
E	223m SE	Settling Tanks	1980	92197
E	224m SE	Settling Tanks	1956	91365
E	225m S	Settling Tanks	1932	93153
E	230m S	Tanks	1956	103632
E	232m S	Unspecified Tank	1932	85026
E	234m SE	Tanks	1909	87876
T	239m NE	Unspecified Tank	1992	84772
T	263m NE	Tanks	1992	87156
E	271m S	Unspecified Tank	1909 - 1922	94386
E	286m SE	Tanks	1980	98066
E	287m SE	Tanks	1956 - 1975	90555
9	290m S	Unspecified Tank	1975 - 1998	96640
N	304m SE	Settling Tanks	1956	95997
N	304m SE	Humus Tanks	1968 - 1969	101213
K	307m NE	Unspecified Tank	1930	84774
K	310m NE	Unspecified Tank	1890	84775
K	311m NE	Unspecified Tank	1976 - 1992	94127
K	316m NE	Tanks	1910 - 1937	100450
K	317m NE	Tanks	1956	98251
12	318m NE	Unspecified Tank	1976	84759
K	320m NE	Unspecified Tank	1992	101937
K	321m NE	Unspecified Tank	1956 - 1976	103287
K	322m NE	Unspecified Tank	1956	98149
K	322m NE	Tanks	1956	93468
AC	327m N	Tanks	1976	87154

ID	Location	Land use	Dates present	Group ID
AC	334m N	Tanks	1976	87155
N	340m SE	Settling Tanks	1981 - 1987	99521
N	340m SE	Settling Tanks	1968	99464
N	340m SE	Tanks	1989	101671
N	340m SE	Settling Tanks	1969	103588
N	341m SE	Tanks	1992	104226
AB	345m NE	Tanks	1969 - 1995	104203
E	347m SE	Unspecified Tank	1956 - 1992	95946
E	347m SE	Unspecified Tank	1909 - 1932	95091
E	348m SE	Unspecified Tank	1956 - 1968	93999
AC	349m N	Unspecified Tank	1976	84758
AB	350m NE	Unspecified Tank	1890	84773
N	357m SE	Tanks	1989	100456
AD	362m NE	Unspecified Tank	1930 - 1937	88825
N	362m SE	Settling Tanks	1956 - 1969	95683
N	367m SE	Settlings Tanks	1956	78421
N	367m SE	Humus Tanks	1968 - 1969	98394
N	367m SE	Settling Tanks	1956 - 1987	103088
AD	368m NE	Unspecified Tank	1930 - 1937	90624
N	370m SE	Unspecified Tank	1956	97759
N	370m SE	Settling Tanks	1932	101430
N	373m SE	Aeration Tanks	1981 - 1987	95780
N	374m SE	Aeration Tanks	1956 - 1969	95872
N	374m SE	Settling Tanks	1956	95304
N	381m SE	Tanks	1989	101340
AD	381m NE	Unspecified Tank	1976	84760
AF	387m SW	Unspecified Tank	1956 - 1994	95441
N	389m E	Aeration Tanks	1956	103615

ID	Location	Land use	Dates present	Group ID
AG	389m NE	Unspecified Tank	1970	93129
AG	389m NE	Unspecified Tank	1956	103706
AG	390m NE	Unspecified Tank	1956	91508
AG	390m NE	Unspecified Tank	1969	92411
AG	390m NE	Unspecified Tank	1995	97339
N	390m SE	Aeration Tank	1956 - 1969	93211
AF	391m S	Unspecified Tank	1956 - 1998	94223
AF	391m S	Unspecified Tank	1980 - 1992	101029
N	395m E	Settling Tanks	1930 - 1937	93336
N	397m SE	Unspecified Tank	1956	99296
N	408m SE	Settling Tanks	1956 - 1981	93693
N	411m E	Aeration Tanks	1956 - 1969	97495
N	411m E	Aeration Tanks	1970	90286
N	422m SE	Aeration Tanks	1956 - 1981	96856
N	423m SE	Aeration Tanks	1956 - 1968	92635
N	435m E	Tanks	1922 - 1932	96253
AK	436m SE	Sludge Holding Tanks	1981 - 1987	96323
N	436m E	Settling Tanks	1956	93293
AK	437m SE	Tanks	1989	103834
AK	438m SE	Tanks	1992	96370
AK	442m SE	Sludge Holding Tanks	1981 - 1987	97258
AK	443m SE	Tanks	1989	93906
AK	445m SE	Tanks	1992	89885
N	448m SE	Settling Tanks	1981 - 1987	103131
N	450m SE	Tanks	1989	96403
AJ	464m SW	Unspecified Tank	1929 - 1937	97446
N	471m E	Tanks	1956 - 1969	101963
N	472m E	Tanks	1909 - 1932	89542

ID	Location	Land use	Dates present	Group ID
N	472m E	Settling Tanks	1956 - 1968	93519
N	477m SE	Aeration Tanks	1981	85898
N	481m E	Tanks	1910	91042
N	481m E	Settling Tanks	1930 - 1937	93373
N	493m E	Unspecified Tank	1956	84767
N	497m E	Settling Tanks	1956 - 1969	91208
N	497m SE	Tanks	1956	87874
N	498m E	Settling Tanks	1932	92173
N	498m E	Tanks	1909 - 1922	101507
N	500m E	Tanks	1956 - 1968	94775

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 14 >**

ID	Location	Land use	Dates present	Group ID
C	**On site**	**Electricity Substation**	**1956**	**45637**
C	**On site**	**Electricity Substation**	**1956 - 1972**	**55676**
C	**On site**	**Electricity Substation**	**1980 - 1992**	**57576**
C	**On site**	**Electricity Substation**	**1975**	**57711**
C	0m S	Electricity Substation	1994 - 1998	46895
E	17m S	Electricity Substation	1994 - 1998	53975
E	24m S	Electricity Substation	1992	53935
H	38m NW	Electricity Substation	1956 - 1992	57801

ID	Location	Land use	Dates present	Group ID
E	52m SE	Gasometer	1909	46144
G	81m E	Electricity Substation	1992	45648
G	132m E	Electricity Substation	1985 - 1992	50498
G	132m E	Electricity Substation	1972	59435
G	173m E	Electricity Substation	1995	45649
6	185m NE	Electricity Substation	1992	45670
E	187m SE	Electricity Substation	1956	56825
Q	198m W	Electricity Substation	1987 - 1992	52297
7	208m NW	Electricity Substation	1987 - 1992	50885
M	215m SW	Electricity Substation	1956	55906
K	267m NE	Electricity Substation	1992	45671
K	269m NE	Electricity Substation	1992	45672
K	279m NE	Electricity Substation	1992	52977
K	282m NE	Electricity Substation	1956 - 1985	55173
K	285m NE	Electricity Substation	1992	45673
AD	370m NE	Electricity Substation	1992	45667
AD	374m NE	Electricity Transformer	1976	46545
AF	376m S	Electricity Substation	1956	45638
V	388m E	Electricity Substation	1995	59332
V	388m E	Electricity Substation	1956 - 1970	57139
AF	392m S	Electricity Substation	1956 - 1998	47202
AH	398m E	Electricity Substation	1956 - 1969	52486
AH	400m E	Electricity Substation	1995	50012
AH	400m E	Electricity Substation	1956 - 1970	55428
N	419m SE	Electricity Substation	1989	48208
N	419m SE	Electricity Substation	1992	50559
AJ	446m SW	Electricity Substation	1956 - 1994	57450
AJ	449m SW	Electricity Substation	1985 - 1987	51206

ID	Location	Land use	Dates present	Group ID
AJ	451m SW	Electricity Substation	1956	58081
AO	468m NE	Electricity Substation	1995	45669
AO	473m NE	Electricity Substation	1989	45668
AK	497m SE	Electricity Substation	1987	53466
AK	497m SE	Electricity Substation	1989	47944

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	3

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original 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 14 >**

ID	Location	Land use	Dates present	Group ID
AJ	426m SW	Garage	1987 - 1994	18556
AJ	475m SW	Garage	1956	16941
AJ	475m SW	Garage	1956 - 1966	17769

This data is sourced from Ordnance Survey / Groundsure.

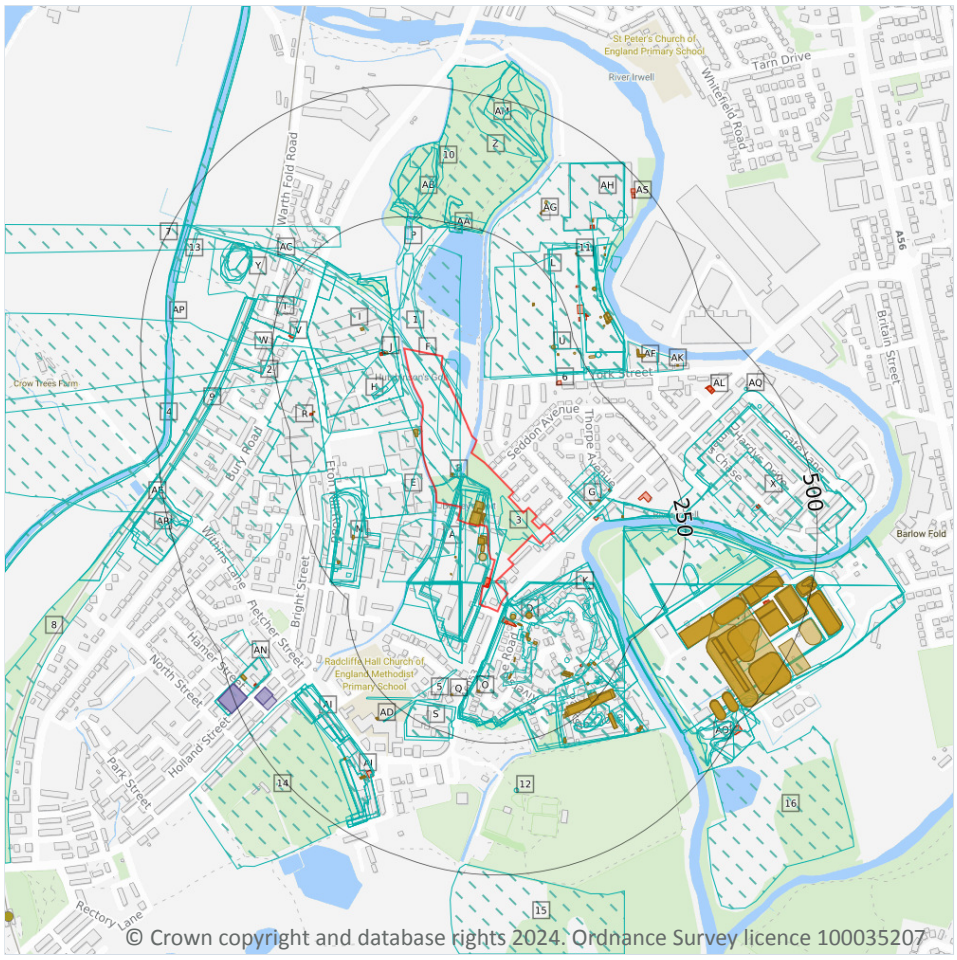
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

2.1 Historical industrial land uses

Records within 500m	311

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 32 >**

ID	Location	Land Use	Date	Group ID
1	On site	Tramway Sidings	1908	760082
2	On site	Tramway Sidings	1890	670775
3	On site	Filter Beds	1908	665809

ID	Location	Land Use	Date	Group ID
A	**On site**	**Paper Works**	**1938**	**722933**
A	**On site**	**Paper Works**	**1927**	**717984**
A	**On site**	**Paper Works**	**1908**	**717984**
A	**On site**	**Unspecified Commercial/Industrial**	**1890**	**748711**
A	**On site**	**Industrial Estate**	**1991**	**746445**
A	**On site**	**Unspecified Works**	**1977**	**725705**
A	**On site**	**Unspecified Works**	**1965**	**725705**
A	**On site**	**Industrial Estate**	**1988**	**746445**
A	**On site**	**Paper Works**	**1955**	**714228**
A	**On site**	**Filter Beds**	**1955**	**788270**
A	**On site**	**Filter Beds**	**1938**	**767953**
A	**On site**	**Chemical Works**	**1891**	**682692**
A	**On site**	**Filter Beds**	**1928**	**767953**
A	**On site**	**Filter Beds**	**1928**	**665807**
A	**On site**	**Unspecified Commercial/Industrial**	**1928**	**738364**
A	**On site**	**Unspecified Commercial/Industrial**	**1908**	**758297**
B	**On site**	**Unspecified Tank**	**1938**	**777880**
B	**On site**	**Unspecified Tank**	**1927**	**733526**
B	**On site**	**Unspecified Tank**	**1955**	**674783**
C	**On site**	**Tramway Sidings**	**1890**	**776867**
D	**On site**	**Railway Sidings**	**1907**	**751453**
D	**On site**	**Railway Sidings**	**1891**	**756383**
E	**On site**	**Unspecified Commercial/Industrial**	**1991**	**643336**
F	**On site**	**Colliery**	**1890**	**645263**
F	**On site**	**Refuse Heap**	**1890**	**677999**
G	**On site**	**Chemical Works**	**1908**	**783716**
A	1m S	Unspecified Tanks	1955	733436
G	2m SE	Chemical Works	1891	783345

ID	Location	Land Use	Date	Group ID
F	3m NW	Unspecified Tank	1991	779255
F	3m NW	Unspecified Tank	1988	779255
A	4m S	Unspecified Commercial/Industrial	1938	704501
A	5m S	Unspecified Tank	1977	674782
H	7m NW	Industrial Estate	1991	767287
A	7m S	Unspecified Tanks	1938	733436
A	7m S	Unspecified Tanks	1928	733436
A	8m S	Unspecified Commercial/Industrial	1915	709107
A	8m S	Unspecified Commercial/Industrial	1907	704501
A	8m S	Unspecified Commercial/Industrial	1932	703963
A	8m S	Unspecified Commercial/Industrial	1923	747453
D	8m S	Bleaching Works	1932	763679
D	8m S	Bleach and Chemical Works	1891	753134
D	8m S	Wire Works	1938	641134
D	9m S	Unspecified Works	1965	730389
D	9m S	Bleach and Chemical Works	1915	781398
D	9m S	Bleach and Chemical Works	1907	699288
D	9m S	Bleaching Works	1923	744678
D	10m S	Bleaching Works	1955	777831
D	13m S	Vitriol Manufactory	1851	675148
D	13m S	Unspecified Works	1977	745660
I	14m NW	Unspecified Works	1991	766276
D	14m S	Bleach Works	1851	658162
I	15m NW	Unspecified Works	1977	723827
I	15m NW	Unspecified Factory	1965	670600
I	15m NW	Industrial Estate	1988	767287
A	21m S	Refuse Heap	1890	678029
D	25m S	Unspecified Tank	1891	702569

ID	Location	Land Use	Date	Group ID
H	25m NW	Unspecified Ground Workings	1991	716820
H	25m NW	Unspecified Ground Workings	1988	716820
D	26m S	Unspecified Tank	1907	702569
A	34m S	Unspecified Commercial/Industrial	1908	704501
A	34m S	Unspecified Commercial/Industrial	1891	781088
A	38m S	Unspecified Commercial/Industrial	1938	704501
A	39m S	Unspecified Commercial/Industrial	1927	704501
H	47m NW	Unspecified Ground Workings	1977	763499
E	48m W	Unspecified Works	1977	679066
D	48m SE	Unspecified Tank	1891	752478
D	51m SE	Unspecified Tank	1907	752478
D	62m S	Unspecified Tank	1977	723357
D	63m S	Unspecified Tank	1907	739491
K	65m SE	Refuse Heap	1965	677980
L	66m N	Unspecified Works	1991	782230
G	67m E	Chemical Works	1928	729789
L	75m N	Unspecified Mill	1988	734409
4	77m NW	Colliery	1890	645264
G	82m E	Unspecified Works	1965	679049
G	84m E	Chemical Works	1908	734395
G	84m E	Chemical Works	1928	734395
D	90m S	Unspecified Ground Workings	1851	648149
C	108m NW	Unspecified Ground Workings	1991	748275
C	108m NW	Unspecified Ground Workings	1977	748275
C	108m NW	Unspecified Ground Workings	1965	754469
C	108m NW	Unspecified Ground Workings	1988	748275
K	109m SE	Railway Sidings	1891	708931
K	110m SE	Railway Sidings	1907	724609

ID	Location	Land Use	Date	Group ID
M	122m SW	Unspecified Mill	1977	759196
M	122m SW	Unspecified Mill	1965	759196
M	125m SW	Unspecified Works	1991	679067
M	129m W	Unspecified Mill	1955	721686
5	130m S	Filter Beds	1891	665808
N	131m E	Sewage Works	1955	786107
N	132m E	Sludge Beds	1974	720162
N	132m E	Sewage Works	1974	758926
N	133m E	Unspecified Works	1965	679047
N	133m E	Sewage Works	1981	787106
N	133m E	Sludge Beds	1981	757718
G	135m E	Unspecified Works	1965	679048
M	136m W	Unspecified Mill	1938	732313
M	136m W	Unspecified Mill	1927	732313
M	142m W	Unspecified Mill	1908	736511
L	144m NE	Unspecified Mill	1977	702994
K	147m SE	Unspecified Tank	1907	674817
M	147m W	Unspecified Mill	1890	781543
D	157m SE	Chimney	1851	684330
P	159m N	Refuse Heap	1908	678000
M	165m W	Cotton Mill	1851	644066
D	168m SE	Unspecified Tank	1932	700387
D	168m SE	Unspecified Tank	1938	700387
C	169m NW	Unspecified Depot	1991	668817
D	169m SE	Unspecified Tanks	1955	666452
R	179m NW	Unspecified Works	1991	679064
R	179m NW	Unspecified Commercial/Industrial	1988	643339
D	181m S	Unspecified Commercial/Industrial	1977	643335

ID	Location	Land Use	Date	Group ID
M	193m SW	Gasometer	1851	655145
L	194m NE	Unspecified Works	1955	723223
L	194m NE	Tallow and Candle Works	1955	670839
D	198m SE	Unspecified Tank	1915	674818
S	199m S	Hospital	1991	745118
S	199m S	Hospital	1988	745118
D	200m SE	Unspecified Tank	1923	674819
S	204m S	Hospital	1908	779688
T	204m NW	Unspecified Commercial/Industrial	1977	752450
T	204m NW	Unspecified Works	1965	679065
N	207m SE	Sewage Works	1932	786107
N	207m SE	Sewage Works	1938	701259
P	208m N	Unspecified Ground Workings	1965	747650
W	209m NW	Unspecified Commercial/Industrial	1991	705324
W	209m NW	Unspecified Commercial/Industrial	1977	705324
W	209m NW	Unspecified Warehouse	1965	652408
W	209m NW	Unspecified Commercial/Industrial	1988	705324
N	209m SE	Sewage Works	1915	786107
N	209m SE	Sewage Works	1907	738790
N	209m SE	Sewage Works	1923	786107
U	209m NE	Unspecified Tank	1991	717653
U	209m NE	Unspecified Tank	1988	717653
M	211m SW	Unspecified Tank	1955	674784
L	215m NE	Unspecified Works	1965	723223
D	218m SE	Unspecified Tank	1915	762572
D	218m SE	Unspecified Tank	1923	762572
X	221m E	Cabinet Works	1965	767569
X	221m E	Cabinet Works	1955	767569

ID	Location	Land Use	Date	Group ID
Y	222m NW	Colliery	1890	645262
M	226m SW	Unspecified Tank	1938	789827
M	226m SW	Unspecified Tank	1927	789827
D	226m SE	Unspecified Tank	1938	729661
7	227m NW	Cuttings	1890	642632
D	229m SE	Chimney	1977	695696
D	229m SE	Chimney	1965	695696
D	229m SE	Unspecified Tank	1915	754354
D	229m SE	Unspecified Tank	1907	754354
D	229m SE	Unspecified Tank	1923	754354
D	231m SE	Shed	1851	659596
D	232m SE	Unspecified Tanks	1907	666451
Z	233m N	Unspecified Disused Tip	1991	784021
Z	233m N	Refuse Heap	1977	695335
Z	233m N	Unspecified Disused Tip	1988	784021
AA	235m N	Unspecified Ground Workings	1938	704929
AA	235m N	Unspecified Ground Workings	1927	704929
AA	235m N	Unspecified Ground Workings	1908	704929
X	244m E	Cotton Weaving Mill	1938	720424
X	244m E	Cotton Weaving Mill	1928	720424
AB	246m N	Unspecified Heap	1938	766137
AB	246m N	Unspecified Heap	1927	766137
AB	246m N	Refuse Heap	1908	790849
AA	246m N	Unspecified Pit	1965	691002
X	246m E	Unspecified Commercial/Industrial	1981	774222
X	246m E	Unspecified Commercial/Industrial	1974	774222
N	255m SE	Unspecified Heap	1955	775400
N	256m SE	Unspecified Heap	1938	757010

ID	Location	Land Use	Date	Group ID
N	256m SE	Unspecified Heap	1928	763138
AB	256m N	Unspecified Ground Workings	1955	698465
D	258m SE	Unspecified Heap	1991	707221
D	258m SE	Unspecified Heap	1977	707221
D	258m SE	Unspecified Heap	1965	707221
D	258m SE	Unspecified Heap	1988	707221
AC	258m NW	Tunnel	1908	671553
D	259m SE	Refuse Heap	1955	782857
D	259m SE	Refuse Heap	1938	782857
D	261m SE	Refuse Heap	1932	756807
L	262m NE	Bleach and Dye works	1938	788876
L	262m NE	Bleach Works	1891	658144
L	262m NE	Bleach and Dye works	1928	788876
L	262m NE	Bleach and Dye works	1908	788876
N	264m SE	Filter Beds	1915	789860
N	264m SE	Filter Beds	1907	746097
N	264m SE	Filter Beds	1923	753518
N	265m SE	Unspecified Tanks	1965	752748
N	265m SE	Unspecified Tanks	1974	752748
D	270m S	Unspecified Tank	1915	708695
D	270m S	Unspecified Tank	1907	708695
D	270m S	Unspecified Tank	1923	708695
U	276m NE	Chimney	1991	717375
U	276m NE	Chimney	1977	717375
U	276m NE	Chimney	1965	717375
U	276m NE	Chimney	1988	717375
N	278m SE	Unspecified Heap	1915	778676
D	286m SE	Filter Beds	1915	750653

ID	Location	Land Use	Date	Group ID
AC	287m NW	Air Shafts	1908	685376
D	287m SE	Filter Beds	1923	777946
D	293m SE	Filter Beds	1915	768200
8	295m NW	Railway Sidings	1955	768828
9	297m NW	Railway Sidings	1938	751945
AE	299m NW	Railway Sidings	1927	751945
AE	299m NW	Railway Sidings	1908	751945
X	303m E	Weaving Mill	1955	670969
X	305m E	Cotton Weaving Mill	1965	705007
10	312m N	Unspecified Ground Workings	1965	745144
L	313m NE	Unspecified Tank	1991	717499
L	313m NE	Unspecified Tank	1977	717499
L	313m NE	Unspecified Tank	1988	717499
AF	314m NE	Cotton Mill	1908	644065
L	316m NE	Unspecified Tanks	1938	715467
L	316m NE	Unspecified Tanks	1928	715467
L	316m NE	Unspecified Tanks	1908	715467
Y	329m NW	Refuse Heap	1955	789769
AH	331m N	Unspecified Warehouse	1977	716907
AH	331m N	Unspecified Warehouse	1988	770363
Y	332m NW	Refuse Heap	1938	743550
Y	332m NW	Refuse Heap	1908	774527
Y	332m NW	Refuse Heap	1927	782616
Y	333m NW	Refuse Heap	1890	742535
N	333m SE	Sewage Tanks	1981	657309
N	333m SE	Unspecified Tanks	1974	743387
N	333m SE	Unspecified Tanks	1965	743387
AH	334m NE	Oil and Tallow Works	1908	652452

ID	Location	Land Use	Date	Group ID
AH	337m NE	Candle Works	1938	691499
AH	337m NE	Tallow and Candle Works	1928	670840
12	337m S	Unspecified Tank	1923	674816
13	343m NW	Tramway Sidings	1908	782847
AH	344m NE	Unspecified Works	1965	709445
D	344m SE	Unspecified Tank	1932	762255
D	344m SE	Unspecified Tank	1938	789995
AI	346m SW	Unspecified Commercial/Industrial	1977	718948
AI	346m SW	Unspecified Mill	1965	750445
D	346m SE	Unspecified Tank	1915	694415
Y	347m NW	Refuse Heap	1977	779349
Y	347m NW	Refuse Heap	1965	779349
Y	347m NW	Refuse Heap	1988	779349
AI	348m SW	Unspecified Mill	1955	696615
AI	348m SW	Unspecified Works	1991	728251
AI	348m SW	Unspecified Works	1988	728251
D	350m SE	Unspecified Tank	1923	712578
AJ	350m SW	Unspecified Commercial/Industrial	1977	774253
AJ	350m SW	Unspecified Works	1965	727566
AJ	354m SW	Unspecified Works	1991	751996
AJ	354m SW	Unspecified Works	1988	751996
AK	356m NE	Chemical Works	1908	682691
AI	357m SW	Unspecified Mill	1938	711306
AI	357m SW	Unspecified Mill	1927	711306
AI	357m SW	Unspecified Mill	1908	711306
AI	357m SW	Unspecified Commercial/Industrial	1891	782718
N	360m SE	Sewage Tanks	1981	657312
AH	361m NE	Refuse Heap	1965	677981

ID	Location	Land Use	Date	Group ID
N	365m SE	Filter Beds	1915	788606
N	365m SE	Filter Beds	1907	788606
N	365m SE	Filter Beds	1923	788606
AJ	375m S	Tower Works	1955	778655
14	379m SW	Bleach Works	1851	658161
AJ	384m S	Tower Works	1938	704950
AJ	384m S	Tower Works	1927	704950
AJ	384m S	Unspecified Commercial/Industrial	1908	694693
AJ	384m S	Unspecified Commercial/Industrial	1891	771773
N	399m SE	Unspecified Tank	1965	674824
AH	401m NE	Unspecified Heap	1928	650894
AM	405m N	Refuse Heap	1965	714403
AN	414m SW	Unspecified Works	1965	679063
AM	416m N	Refuse Heap	1955	725785
AM	419m N	Refuse Heap	1938	725785
AM	419m N	Refuse Heap	1928	725785
AN	421m SW	Unspecified Commercial/Industrial	1927	717282
AN	421m SW	Unspecified Commercial/Industrial	1908	717282
AN	421m SW	Soap Works	1891	682700
N	423m SE	Unspecified Tanks	1974	722463
N	424m SE	Unspecified Tanks	1965	722463
N	435m E	Unspecified Tanks	1915	767640
AP	437m W	Disused Canal	1991	788290
AP	437m W	Disused Canal	1977	706247
AP	437m W	Disused Canal	1988	788290
N	437m E	Unspecified Tanks	1923	767640
AO	442m SE	Unspecified Heap	1932	758564
AO	442m SE	Unspecified Heap	1938	758564

ID	Location	Land Use	Date	Group ID
AO	444m SE	Refuse Heap	1955	719870
AQ	453m E	Settling Tanks	1938	681805
AR	454m W	Unspecified Mill	1955	709866
AR	455m W	Unspecified Mill	1965	781443
AQ	455m E	Settling Tanks	1938	681804
AO	458m SE	Unspecified Heap	1915	739377
AO	458m SE	Refuse Heap	1923	698127
AR	462m W	Unspecified Mill	1938	709866
AR	462m W	Unspecified Mill	1927	709866
AR	462m W	Unspecified Mill	1908	711488
N	464m E	Unspecified Tanks	1915	781203
N	464m E	Unspecified Tanks	1907	694169
N	464m E	Unspecified Tanks	1923	781203
N	468m E	Unspecified Tanks	1932	781203
N	468m E	Unspecified Tanks	1938	743645
N	470m E	Sewage Tanks	1955	657313
AO	470m SE	Unspecified Ground Workings	1907	648151
N	470m E	Unspecified Tanks	1965	734496
N	471m E	Unspecified Tanks	1974	703358
AO	473m SE	Unspecified Heap	1915	716003
AO	473m SE	Unspecified Heap	1923	716003
AO	475m SE	Unspecified Ground Workings	1907	648150
N	481m E	Unspecified Tanks	1908	747584
15	483m S	Refuse Heap	1977	787422
16	485m SE	Sludge Lagoons	1981	681460
N	493m E	Unspecified Tanks	1932	726516
N	493m E	Unspecified Tanks	1938	726516
N	497m E	Sewage Tanks	1955	657314

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	257

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 32 >**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Settling Tanks**	**1956**	**94451**
A	**On site**	**Unspecified Tank**	**1956**	**99752**
A	**On site**	**Settling Tanks**	**1956**	**88914**
A	**On site**	**Settling Tanks**	**1972**	**88914**
A	**On site**	**Tanks**	**1972**	**87872**
A	**On site**	**Unspecified Tank**	**1956**	**99752**
A	**On site**	**Settling Tanks**	**1956**	**88914**
A	**On site**	**Settling Tanks**	**1956**	**94451**
A	**On site**	**Tanks**	**1985**	**93701**
A	**On site**	**Tanks**	**1992**	**93701**
B	**On site**	**Unspecified Tank**	**1930**	**92083**
B	**On site**	**Unspecified Tank**	**1937**	**92083**
A	4m S	Tanks	1956	102405
A	4m S	Tanks	1956	97968
F	7m NW	Tanks	1985	96177
A	7m S	Tanks	1972	100959
F	7m NW	Tanks	1992	96177
A	7m S	Unspecified Tank	1972	84768
A	8m S	Tanks	1985	100959
A	8m S	Tanks	1930	90813
A	8m S	Tanks	1937	90813
D	26m S	Unspecified Tank	1893	89857
D	26m S	Unspecified Tank	1909	89857

ID	Location	Land Use	Date	Group ID
J	32m NW	Unspecified Tank	1992	84771
D	45m S	Tanks	1956	103342
D	45m S	Tanks	1956	103342
D	52m SE	Unspecified Tank	1893	85025
D	52m SE	Gasometer	1909	78092
A	62m S	Unspecified Tank	1930	84769
A	63m S	Unspecified Tank	1930	95707
A	63m S	Unspecified Tank	1937	95707
D	69m S	Unspecified Tank	1975	90948
D	69m S	Unspecified Tank	1980	90948
D	76m S	Unspecified Tank	1975	89663
D	76m S	Unspecified Tank	1980	89663
I	84m NW	Unspecified Tank	1956	96469
I	85m NW	Unspecified Tank	1956	96469
G	88m E	Unspecified Tank	1956	88654
G	88m E	Unspecified Tank	1956	88654
D	90m S	Unspecified Tank	1922	96774
D	90m S	Unspecified Tank	1932	96774
D	93m S	Tanks	1922	87873
G	105m E	Unspecified Tank	1956	91060
G	105m E	Unspecified Tank	1956	91060
D	121m S	Tanks	1956	98807
D	121m S	Tanks	1956	98807
G	133m E	Unspecified Tank	1985	94629
G	133m E	Unspecified Tank	1956	97001
G	133m E	Unspecified Tank	1956	94629
G	133m E	Unspecified Tank	1972	94629
O	153m S	Unspecified Tank	1922	89005

ID	Location	Land Use	Date	Group ID
O	153m S	Unspecified Tank	1932	89005
M	169m SW	Unspecified Tank	1930	103296
M	169m SW	Unspecified Tank	1937	103296
D	169m SE	Unspecified Tank	1922	95054
D	169m SE	Unspecified Tank	1932	95054
D	170m SE	Unspecified Tank	1975	94687
D	170m SE	Unspecified Tank	1956	94687
D	170m SE	Unspecified Tank	1980	91980
D	170m SE	Unspecified Tank	1956	94687
Q	177m S	Unspecified Tank	1956	99256
Q	177m S	Unspecified Tank	1956	90569
R	193m W	Unspecified Tank	1972	84770
L	196m N	Unspecified Tank	1992	91665
L	197m N	Unspecified Tank	1976	91665
D	198m SE	Unspecified Tank	1922	93363
D	198m SE	Unspecified Tank	1932	93363
D	205m SE	Unspecified Tank	1956	93997
D	205m SE	Unspecified Tank	1956	93997
U	206m NE	Unspecified Tank	1992	84776
U	210m NE	Tanks	1956	100428
U	210m NE	Tanks	1956	100428
M	215m SW	Unspecified Tank	1930	102970
M	215m SW	Unspecified Tank	1937	102970
D	217m SE	Unspecified Tank	1922	85027
D	223m SE	Settling Tanks	1975	99725
D	223m SE	Settling Tanks	1956	99725
D	223m SE	Settling Tanks	1980	92197
D	224m SE	Settling Tanks	1956	91365

ID	Location	Land Use	Date	Group ID
D	225m S	Settling Tanks	1932	93153
D	230m S	Tanks	1956	103632
D	231m S	Tanks	1956	103632
D	232m S	Unspecified Tank	1932	85026
D	234m SE	Tanks	1909	87876
U	239m NE	Unspecified Tank	1992	84772
U	263m NE	Tanks	1992	87156
D	271m S	Unspecified Tank	1909	94386
D	271m S	Unspecified Tank	1922	94386
D	286m SE	Tanks	1980	98066
D	287m SE	Tanks	1956	90555
D	287m SE	Tanks	1975	90555
D	287m SE	Tanks	1956	90555
AD	290m S	Unspecified Tank	1980	96640
AD	290m S	Unspecified Tank	1987	96640
AD	290m S	Unspecified Tank	1992	96640
AD	290m S	Unspecified Tank	1996	96640
AD	290m S	Unspecified Tank	1994	96640
AD	290m S	Unspecified Tank	1998	96640
AD	290m S	Unspecified Tank	1975	96640
N	304m SE	Settling Tanks	1956	95997
N	304m SE	Humus Tanks	1968	101213
N	304m SE	Humus Tanks	1969	101213
N	304m SE	Settling Tanks	1956	95997
L	307m NE	Unspecified Tank	1930	84774
L	310m NE	Unspecified Tank	1890	84775
L	311m NE	Unspecified Tank	1992	94127
L	313m NE	Unspecified Tank	1976	94127

ID	Location	Land Use	Date	Group ID
L	316m NE	Tanks	1910	100450
L	316m NE	Tanks	1930	100450
L	316m NE	Tanks	1937	100450
L	317m NE	Tanks	1956	98251
L	318m NE	Tanks	1956	98251
11	318m NE	Unspecified Tank	1976	84759
L	320m NE	Unspecified Tank	1992	101937
L	321m NE	Unspecified Tank	1956	103287
L	321m NE	Unspecified Tank	1976	103287
L	322m NE	Unspecified Tank	1956	98149
L	322m NE	Tanks	1956	93468
L	323m NE	Tanks	1956	93468
AG	327m N	Tanks	1976	87154
AG	334m N	Tanks	1976	87155
N	340m SE	Settling Tanks	1981	99521
N	340m SE	Settling Tanks	1987	99521
N	340m SE	Settling Tanks	1968	99464
N	340m SE	Tanks	1989	101671
N	340m SE	Tanks	1989	101671
N	340m SE	Settling Tanks	1969	103588
N	341m SE	Tanks	1992	104226
AF	345m NE	Tanks	1970	104203
AF	345m NE	Tanks	1969	104203
AF	345m NE	Tanks	1995	104203
D	347m SE	Unspecified Tank	1981	95946
D	347m SE	Unspecified Tank	1987	95946
D	347m SE	Unspecified Tank	1909	95091
D	347m SE	Unspecified Tank	1922	95091

ID	Location	Land Use	Date	Group ID
D	347m SE	Unspecified Tank	1932	95091
D	348m SE	Unspecified Tank	1992	95946
D	348m SE	Unspecified Tank	1956	93999
D	348m SE	Unspecified Tank	1968	93999
D	348m SE	Unspecified Tank	1989	95946
D	348m SE	Unspecified Tank	1989	95946
D	348m SE	Unspecified Tank	1969	95946
D	348m SE	Unspecified Tank	1956	95946
AG	349m N	Unspecified Tank	1976	84758
AF	350m NE	Unspecified Tank	1890	84773
N	357m SE	Tanks	1989	100456
N	357m SE	Tanks	1989	100456
AH	362m NE	Unspecified Tank	1930	88825
AH	362m NE	Unspecified Tank	1937	88825
N	362m SE	Settling Tanks	1969	95683
N	362m SE	Settling Tanks	1956	95683
N	363m SE	Settling Tanks	1956	95683
N	363m SE	Settling Tanks	1968	95683
N	367m SE	Humus Tanks	1969	98394
N	367m SE	Settlings Tanks	1956	78421
N	367m SE	Settling Tanks	1956	103088
N	367m SE	Humus Tanks	1968	98394
AH	368m NE	Unspecified Tank	1930	90624
AH	368m NE	Unspecified Tank	1937	90624
N	370m SE	Unspecified Tank	1956	97759
N	370m SE	Unspecified Tank	1956	97759
N	370m SE	Settling Tanks	1932	101430
N	373m SE	Aeration Tanks	1981	95780

ID	Location	Land Use	Date	Group ID
N	373m SE	Aeration Tanks	1987	95780
N	374m SE	Aeration Tanks	1968	95872
N	374m SE	Settling Tanks	1956	95304
N	374m SE	Settling Tanks	1956	95304
N	375m SE	Aeration Tanks	1969	95872
N	381m SE	Tanks	1989	101340
N	381m SE	Tanks	1989	101340
AH	381m NE	Unspecified Tank	1976	84760
N	383m SE	Settling Tanks	1987	103088
AJ	387m SW	Unspecified Tank	1966	95441
AJ	387m SW	Unspecified Tank	1956	95441
AJ	387m SW	Unspecified Tank	1985	95441
AJ	387m SW	Unspecified Tank	1987	95441
AJ	388m SW	Unspecified Tank	1994	95441
N	389m E	Aeration Tanks	1956	103615
AK	389m NE	Unspecified Tank	1956	103706
AK	389m NE	Unspecified Tank	1970	93129
N	389m E	Aeration Tanks	1956	95872
AK	390m NE	Unspecified Tank	1956	91508
AK	390m NE	Unspecified Tank	1969	92411
AK	390m NE	Unspecified Tank	1995	97339
N	390m SE	Aeration Tank	1956	93211
N	390m SE	Aeration Tank	1968	93211
N	391m SE	Aeration Tank	1969	93211
N	391m SE	Aeration Tank	1956	93211
AJ	391m S	Unspecified Tank	1956	94223
AJ	391m S	Unspecified Tank	1980	101029
AJ	391m S	Unspecified Tank	1987	101029

ID	Location	Land Use	Date	Group ID
AJ	391m S	Unspecified Tank	1992	101029
AJ	392m S	Unspecified Tank	1975	94223
AJ	392m S	Unspecified Tank	1956	94223
AJ	392m S	Unspecified Tank	1996	94223
AJ	392m S	Unspecified Tank	1994	94223
AJ	392m S	Unspecified Tank	1998	94223
N	395m E	Settling Tanks	1930	93336
N	395m E	Settling Tanks	1937	93336
N	397m SE	Unspecified Tank	1956	99296
N	397m SE	Unspecified Tank	1956	99296
N	408m SE	Settling Tanks	1981	93693
N	409m SE	Settling Tanks	1956	93693
N	409m SE	Settling Tanks	1968	93693
N	410m SE	Settling Tanks	1969	93693
N	410m SE	Settling Tanks	1956	93693
N	411m E	Aeration Tanks	1956	97495
N	411m E	Aeration Tanks	1969	97495
N	411m E	Aeration Tanks	1956	95872
N	411m E	Aeration Tanks	1970	90286
N	422m SE	Aeration Tanks	1981	96856
N	423m SE	Aeration Tanks	1969	96856
N	423m SE	Aeration Tanks	1956	96856
N	423m SE	Aeration Tanks	1956	92635
N	423m SE	Aeration Tanks	1968	92635
N	435m E	Tanks	1922	96253
N	435m E	Tanks	1932	96253
AO	436m SE	Sludge Holding Tanks	1981	96323
AO	436m SE	Sludge Holding Tanks	1987	96323

ID	Location	Land Use	Date	Group ID
N	436m E	Settling Tanks	1956	93293
AO	437m SE	Tanks	1989	103834
AO	437m SE	Tanks	1989	103834
AO	438m SE	Tanks	1992	96370
N	438m E	Settling Tanks	1956	93293
AO	442m SE	Sludge Holding Tanks	1981	97258
AO	442m SE	Sludge Holding Tanks	1987	97258
AO	443m SE	Tanks	1989	93906
AO	443m SE	Tanks	1989	93906
AO	445m SE	Tanks	1992	89885
N	448m SE	Settling Tanks	1981	103131
N	448m SE	Settling Tanks	1987	103131
N	450m SE	Tanks	1989	96403
N	450m SE	Tanks	1989	96403
AN	464m SW	Unspecified Tank	1929	97446
AN	464m SW	Unspecified Tank	1937	97446
N	471m E	Tanks	1969	101963
N	471m E	Tanks	1956	101963
N	472m E	Tanks	1909	89542
N	472m E	Tanks	1922	89542
N	472m E	Tanks	1932	89542
N	472m E	Settling Tanks	1956	93519
N	472m E	Settling Tanks	1968	93519
N	477m SE	Aeration Tanks	1981	85898
N	481m E	Tanks	1910	91042
N	481m E	Settling Tanks	1930	93373
N	481m E	Settling Tanks	1937	93373
N	493m E	Unspecified Tank	1956	84767

ID	Location	Land Use	Date	Group ID
N	497m E	Settling Tanks	1969	91208
N	497m E	Settling Tanks	1956	91208
N	497m SE	Tanks	1956	87874
N	497m E	Settling Tanks	1956	91208
N	497m E	Settling Tanks	1968	91208
N	498m E	Tanks	1909	101507
N	498m E	Tanks	1922	101507
N	498m E	Settling Tanks	1932	92173
N	500m E	Tanks	1956	94775
N	500m E	Tanks	1968	94775

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**76**

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 32 >**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Electricity Substation**	**1956**	**55676**
A	**On site**	**Electricity Substation**	**1972**	**55676**
A	**On site**	**Electricity Substation**	**1975**	**57711**
A	**On site**	**Electricity Substation**	**1956**	**45637**
A	**On site**	**Electricity Substation**	**1980**	**57576**
A	**On site**	**Electricity Substation**	**1987**	**57576**
A	**On site**	**Electricity Substation**	**1992**	**57576**
A	0m S	Electricity Substation	1996	46895
A	0m S	Electricity Substation	1994	46895
A	0m S	Electricity Substation	1998	46895

ID	Location	Land Use	Date	Group ID
D	17m S	Electricity Substation	1996	53975
D	17m S	Electricity Substation	1994	53975
D	17m S	Electricity Substation	1998	53975
D	24m S	Electricity Substation	1992	53935
J	38m NW	Electricity Substation	1956	57801
J	38m NW	Electricity Substation	1956	57801
J	38m NW	Electricity Substation	1972	57801
J	38m NW	Electricity Substation	1992	57801
J	39m NW	Electricity Substation	1985	57801
D	52m SE	Gasometer	1909	46144
G	81m E	Electricity Substation	1992	45648
G	132m E	Electricity Substation	1985	50498
G	132m E	Electricity Substation	1972	59435
G	133m E	Electricity Substation	1992	50498
G	173m E	Electricity Substation	1995	45649
6	185m NE	Electricity Substation	1992	45670
D	187m SE	Electricity Substation	1956	56825
D	187m SE	Electricity Substation	1956	56825
R	198m W	Electricity Substation	1992	52297
R	199m W	Electricity Substation	1987	52297
V	208m NW	Electricity Substation	1992	50885
V	209m NW	Electricity Substation	1987	50885
M	215m SW	Electricity Substation	1956	55906
M	216m SW	Electricity Substation	1956	55906
L	267m NE	Electricity Substation	1992	45671
L	269m NE	Electricity Substation	1992	45672
L	279m NE	Electricity Substation	1992	52977
L	282m NE	Electricity Substation	1985	55173

ID	Location	Land Use	Date	Group ID
L	283m NE	Electricity Substation	1956	55173
L	284m NE	Electricity Substation	1956	55173
L	284m NE	Electricity Substation	1972	55173
L	285m NE	Electricity Substation	1992	45673
AH	370m NE	Electricity Substation	1992	45667
AH	374m NE	Electricity Transformer	1976	46545
AJ	376m S	Electricity Substation	1956	45638
X	388m E	Electricity Substation	1995	59332
X	388m E	Electricity Substation	1956	57139
X	388m E	Electricity Substation	1969	57139
X	388m E	Electricity Substation	1956	57139
X	388m E	Electricity Substation	1970	57139
AJ	392m S	Electricity Substation	1980	47202
AJ	392m S	Electricity Substation	1987	47202
AJ	392m S	Electricity Substation	1992	47202
AJ	392m S	Electricity Substation	1975	47202
AJ	392m S	Electricity Substation	1956	47202
AJ	392m S	Electricity Substation	1996	47202
AJ	392m S	Electricity Substation	1994	47202
AJ	392m S	Electricity Substation	1998	47202
AL	398m E	Electricity Substation	1969	52486
AL	400m E	Electricity Substation	1995	50012
AL	400m E	Electricity Substation	1956	55428
AL	400m E	Electricity Substation	1970	55428
AL	400m E	Electricity Substation	1956	52486
N	419m SE	Electricity Substation	1989	48208
N	419m SE	Electricity Substation	1989	48208
N	419m SE	Electricity Substation	1992	50559

ID	Location	Land Use	Date	Group ID
AN	446m SW	Electricity Substation	1956	57450
AN	449m SW	Electricity Substation	1994	57450
AN	449m SW	Electricity Substation	1985	51206
AN	449m SW	Electricity Substation	1987	51206
AN	451m SW	Electricity Substation	1956	58081
AS	468m NE	Electricity Substation	1995	45669
AS	473m NE	Electricity Substation	1989	45668
AO	497m SE	Electricity Substation	1987	53466
AO	497m SE	Electricity Substation	1989	47944
AO	497m SE	Electricity Substation	1989	47944

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	**5**

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'.

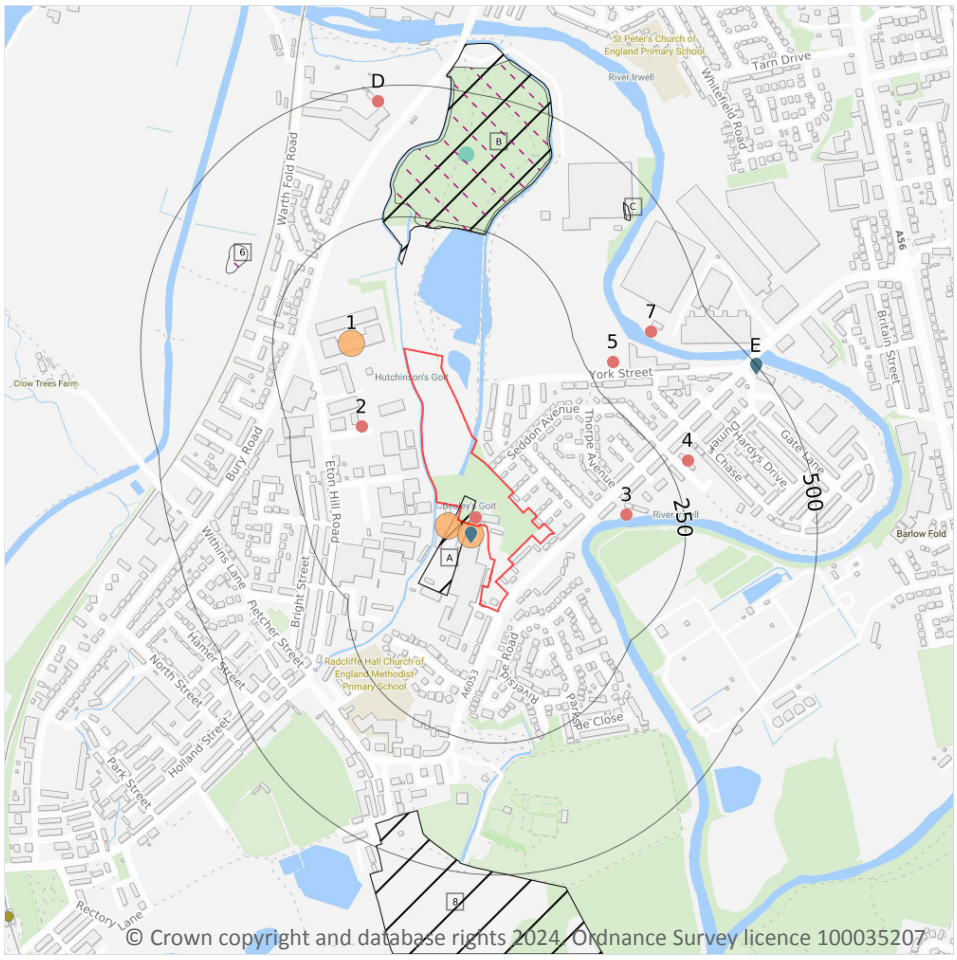
Features are displayed on the Past land use - un-grouped map on **page 32 >**

ID	Location	Land Use	Date	Group ID
AN	426m SW	Garage	1994	18556
AN	428m SW	Garage	1987	18556
AN	475m SW	Garage	1956	16941

ID	Location	Land Use	Date	Group ID
AN	475m SW	Garage	1966	17769
AN	475m SW	Garage	1956	17769

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Historical landfill (BGS)

Historical landfill (LA/OS)

Historical waste sites

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	1

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.

Features are displayed on the Waste and landfill map on **page 58 >**

ID	Location	Address	BGS Number	Risk	Waste Type
B	382m N	Crawford Bros Ltd, Bury Rd, Radcliffe, Manchester	1678	No risk to aquifer	N/A

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 58 >**

ID	Location	Site address	Source	Data type
B	233m N	Refuse Tip	1975 mapping	Polygon
6	344m NW	Refuse Tip	1964 mapping	Polygon
C	433m NE	Refuse Tip	1969 mapping	Polygon
C	435m NE	Refuse Tip	1969 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	**3**

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 58 >**

ID	Location	Details		
A	**On site**	**Site Address: Land off Dumers Lane, Radcliffe, Bury, Greater Manchester** **Licence Holder Address: -**	**Waste Licence: -** **Site Reference: C011** **Waste Type: Inert** **Environmental Permitting Regulations (Waste) Reference: -** **Licence Issue: -** **Licence Surrender: -**	**Operator: -** **Licence Holder: -** **First Recorded -** **Last Recorded: -**

ID	Location	Details		
B	159m N	Site Address: Land At Bury Road, Radcliffe, Bury, Greater Manchester Licence Holder Address: Gunnersbury House, Chiswick High Road, London	Waste Licence: Yes Site Reference: C008,RD/LIC/057/76 Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 13/07/1978 Licence Surrender: 21/03/1991	Operator: Crawford Brothers Limited Licence Holder: Wimpey Waste Management Limited First Recorded - Last Recorded: -
8	407m S	Site Address: Tower Farm, Off Church Street East, Radcliffe, Bury, Greater Manchester Licence Holder Address: The Octagon, 143, Derby Road, Nottingham	Waste Licence: Yes Site Reference: C010, RD/LIC/201/80, RD/LIC/018/76 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 13/06/1978 Licence Surrender: 10/03/1993	Operator: - Licence Holder: P D Pollution Control Limited First Recorded 31/12/1980 Last Recorded: 31/12/1992

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

3.5 Historical waste sites

Records within 500m **3**

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 58 >**

ID	Location	Address	Further Details	Date
A	**On site**	**Site Address: Bealley Industrial Estate, MANCHESTER, Greater Manchester, M26 2BD**	**Type of Site: Waste Transfer Unit Planning application reference: 32752/96 Description: No Buildings. An application (ref: 32752/96) for Detailed Planning permission was submitted to Bury M.B.C. on 13th December 1996. Data source: Historic Planning Application Data Type: Point**	**-**
A	**On site**	**Site Address: 10A, Bealey Industrial Estate, Dumers Lane, Radcliffe, Manchester, Greater Manchester, M26 2BD**	**Type of Site: Waste Transfer Station Planning application reference: 56753 Description: Scheme comprises change of use to indoor waste transfer station for recycling non-hazardous household, commercial and industrial skip waste. Data source: Historic Planning Application Data Type: Point**	**18/12/2013**

ID	Location	Address	Further Details	Date
1	75m NW	Site Address: Remploy Ltd, Eton Hill Road, Radcliffe, MANCHESTER, Greater Manchester, M26 2XS	Type of Site: Recycling Storage (Conversion) Planning application reference: 49849 Description: Scheme comprises change of use to include the reception, storage and treatment to recycle electrical and electronic equipment. An application (ref: 49849) for detailed planning permission was granted by Bury M.B.C. Planning decision obtained Data source: Historic Planning Application Data Type: Point	-

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 58 >**

ID	Location	Details		
A	19m S	Site Name: Abbey Skip Hire Ltd Site Address: Unit 10a Bealey Industrial Estate, Dumers Lane, Radcliffe, Bury, Lancashire, M26 2BD Correspondence Address: -	Type of Site: 75kte HCl Waste TS + treatment Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 642023 EPR reference: EA/EPR/BB3703GM Operator: Abbey Skip Hire Limited Waste Management licence No: 401511 Annual Tonnage: 0	Issue Date: 14/08/2014 Effective Date: 14/08/2014 Modified: - Surrendered Date: 14/08/2014 Expiry Date: - Cancelled Date: - Status: Surrendered
E	497m E	Site Name: Royden Polythene (exports) Ltd Site Address: Unit B, Dumers Lane, Radcliffe, Bury, Lancashire, M26 2QJ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROY001 EPR reference: EA/EPR/AP3698CD/S002 Operator: Royden Polythene (Exports) Ltd Waste Management licence No: 50101 Annual Tonnage: 0	Issue Date: 19/11/2002 Effective Date: - Modified: - Surrendered Date: Apr 23 2007 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered

ID	Location	Details		
E	497m E	Site Name: Royden Polythene (exports) Ltd Site Address: Unit B, Dumers Lane, Radcliffe, Bury, Lancashire, M26 2QJ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ROY001 EPR reference: EA/EPR/AP3698CD/S002 Operator: Royden Polythene (exports) Ltd Waste Management licence No: 50101 Annual Tonnage: 0	Issue Date: 19/11/2002 Effective Date: - Modified: - Surrendered Date: Apr 23 2007 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered
E	497m E	Site Name: Royden Polythene (exports) Ltd Site Address: Unit B, Dumers Lane, Radcliffe, Bury, Lancashire, M26 2QJ Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 632483 EPR reference: EA/EPR/AP3698CD Operator: Royden Polythene (Exports) Limited Waste Management licence No: 50101 Annual Tonnage: 0	Issue Date: 19/11/2002 Effective Date: 19/11/2002 Modified: - Surrendered Date: - 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.

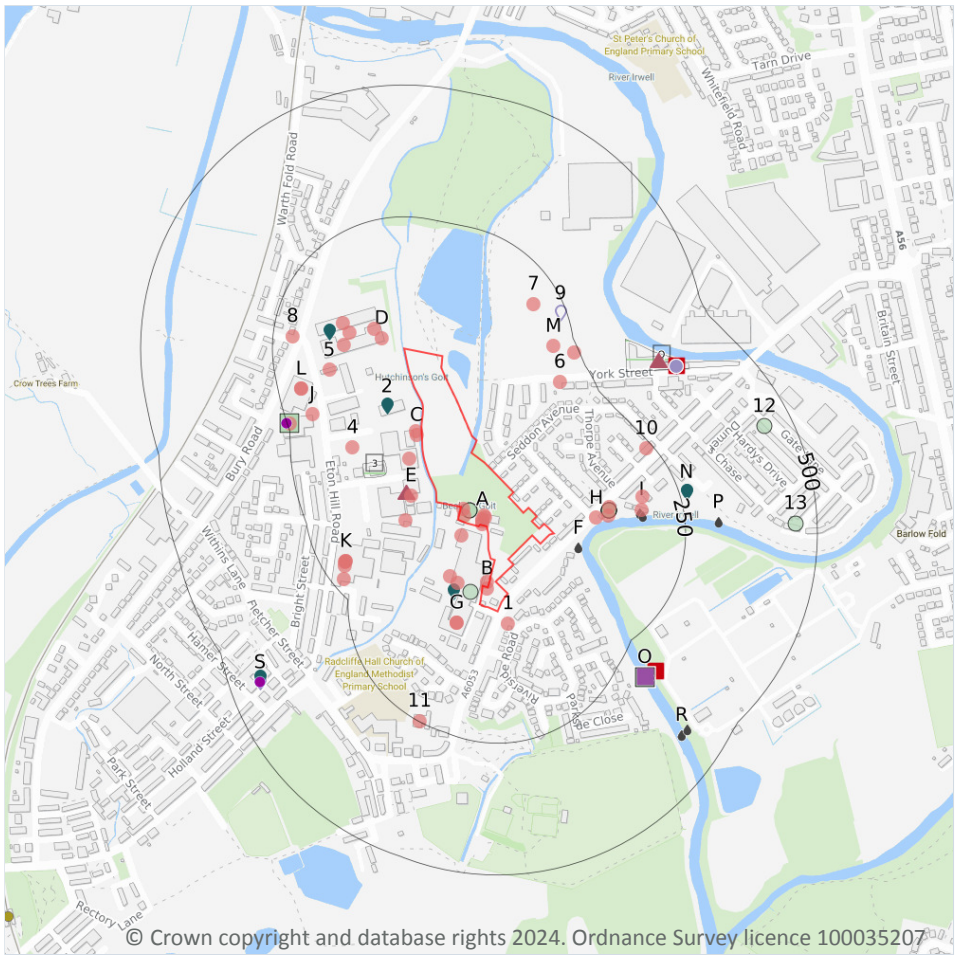
Features are displayed on the Waste and landfill map on **page 58 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	**On site**	**Bealey Industrial Estate Yard opposite 10a Dumers Lane MANCHESTER M26 2BD**	**EPR/GF0307SS /A001**	**Storing waste exemption**	**Non-Agricultural Waste Only**	**Storage of waste in secure containers**
A	**On site**	**Bealey Industrial Estate Yard opposite 10a Dumers Lane MANCHESTER M26 2BD**	**EPR/GF0307SS /A001**	**Storing waste exemption**	**Non-Agricultural Waste Only**	**Storage of waste in a secure place**

ID	Location	Site	Reference	Category	Sub-Category	Description
2	115m NW	Country Supplies Eton Way North Manchester M26 2AB	EPR/PE5588YH /A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction
3	142m E	-	WEX219320	Using waste exemption	Not on a farm	Use of waste in construction
4	288m E	Radcliffe & Radvales FRMS Phase 1, Morris Street, off Dumers Lane, Radcliffe, M262HF	WEX178612	Using waste exemption	Not on a farm	Use of waste in construction
5	297m NE	-	WEX208933	Using waste exemption	Not on a farm	Use of waste in construction
7	389m NE	-	WEX208936	Using waste exemption	Not on a farm	Use of waste in construction
D	470m N	-	WEX348669	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
D	470m N	-	WEX348669	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	470m N	-	WEX348669	Treating waste exemption	Not on a farm	Sorting mixed waste

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

4 Current industrial land use



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4.1 Recent industrial land uses

Records within 250m	48

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 64 >**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Tank**	**Greater Manchester, M26**	**Tanks (Generic)**	**Industrial Features**
A	**On site**	**Tank**	**Greater Manchester, M26**	**Tanks (Generic)**	**Industrial Features**
A	**On site**	**Tank**	**Greater Manchester, M26**	**Tanks (Generic)**	**Industrial Features**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Tank**	**Greater Manchester, M26**	**Tanks (Generic)**	**Industrial Features**
A	**On site**	**Tank**	**Greater Manchester, M26**	**Tanks (Generic)**	**Industrial Features**
A	**On site**	**Pylon**	**Greater Manchester, M26**	**Electrical Features**	**Infrastructure and Facilities**
A	**On site**	**Mast (Telecommunication)**	**Greater Manchester, M26**	**Telecommunications Features**	**Infrastructure and Facilities**
B	**On site**	**Electricity Sub Station**	**Greater Manchester, M26**	**Electrical Features**	**Infrastructure and Facilities**
B	5m S	Tranzcare Travel	Gate House 1b Bealey Industrial Estate, Hallam Street, Radcliffe, Greater Manchester, M26 2BD	Vehicle Hire and Rental	Hire Services
C	10m NW	Tank	Greater Manchester, M26	Tanks (Generic)	Industrial Features
C	11m NW	Tank	Greater Manchester, M26	Tanks (Generic)	Industrial Features
A	25m S	Glosta Engineering	Unit 9c Bealey Industrial Estate, Hallam Street, Radcliffe, Greater Manchester, M26 2BD	Packaging	Industrial Products
C	28m W	Champion Mouldings Ltd	Eton Hill Industrial Estate, Eton Way South, Radcliffe, Greater Manchester, M26 2ZT	Rubber, Silicones and Plastics	Industrial Products
1	30m S	Electricity Sub Station	Greater Manchester, M26	Electrical Features	Infrastructure and Facilities
D	47m NW	I T Parts & Spares Ltd	Unit 1, Eton Business Park, Eton Hill Road, Radcliffe, Greater Manchester, M26 2ZS	Electronic Equipment	Industrial Products
E	47m W	Fragrance Oils International Ltd	-, Eton Hill Road, Radcliffe, Greater Manchester, M26 2FR	Cosmetics, Toiletries and Perfumes	Consumer Products
B	48m S	M & S Commercials Ltd	Unit 5 Bealey Industrial Estate, Hallam Street, Radcliffe, Greater Manchester, M26 2BD	Vehicle Repair, Testing and Servicing	Repair and Servicing
G	56m S	Norlift Ltd	Unit 1c Bealey Industrial Estate, Hallam Street, Radcliffe, Greater Manchester, M26 2BD	Lifting and Handling Equipment	Industrial Products
G	56m S	Wax on Wax Off Car Wash	Unit 1c Bealey Industrial Estate, Hallam Street, Radcliffe, Greater Manchester, M26 2BD	Vehicle Cleaning Services	Personal, Consumer and Other Services

ID	Location	Company	Address	Activity	Category
B	65m S	Bealey Industrial Estate	Greater Manchester, M26	Business Parks and Industrial Estates	Industrial Features
D	68m NW	Poole Projects Ltd	Unit 28 Eton Business Park, Eton Hill Road, Radcliffe, Greater Manchester, M26 2ZS	Wood Products Including Charcoal, Paper, Card and Board	Industrial Products
E	69m SW	Chimney	Greater Manchester, M26	Chimneys	Industrial Features
H	86m E	Electricity Sub Station	Greater Manchester, M26	Electrical Features	Infrastructure and Facilities
H	108m E	Works	Greater Manchester, M26	Unspecified Works Or Factories	Industrial Features
D	108m NW	Eton Business Park	Greater Manchester, M26	Business Parks and Industrial Estates	Industrial Features
D	115m NW	Mossglade Fabrics Ltd	Unit 20 Eton Business Park, Eton Hill Road, Radcliffe, Greater Manchester, M26 2ZS	Lingerie and Hosiery	Consumer Products
H	116m E	M N D Recovery Service	Irwell Bank Business Park 150-160, Dumers Lane, Radcliffe, Greater Manchester, M26 2GF	Scrap Metal Merchants	Recycling Services
D	126m NW	Tottington Motor Company	Unit 35, Eton Business Park, Eton Hill Road, Radcliffe, Greater Manchester, M26 2ZS	Secondhand Vehicles	Motoring
4	132m W	Industrial Estate	Greater Manchester, M26	Business Parks and Industrial Estates	Industrial Features
5	148m NW	Conservatory Insulations	Eton House, Eton Hill Road, Radcliffe, Greater Manchester, M26 2ZT	Construction Completion Services	Construction Services
I	173m E	Works	Greater Manchester, BL9	Unspecified Works Or Factories	Industrial Features
I	183m E	Electricity Sub Station	Greater Manchester, BL9	Electrical Features	Infrastructure and Facilities
6	193m NE	Electricity Sub Station	Greater Manchester, M26	Electrical Features	Infrastructure and Facilities
7	199m N	Tank	Greater Manchester, M26	Tanks (Generic)	Industrial Features
J	200m W	Electricity Sub Station	Greater Manchester, M26	Electrical Features	Infrastructure and Facilities
K	205m SW	McKenzie Martin	Eton Hill Works, Eton Hill Road, Radcliffe, Greater Manchester, M26 2US	Cooling and Refrigeration	Industrial Products

ID	Location	Company	Address	Activity	Category
K	205m SW	Displad Ltd	Eton Hill Works, Eton Hill Road, Radcliffe, Greater Manchester, M26 2DL	Office and Shop Equipment	Industrial Products
L	207m NW	J Rosenthal & Son	Britannia House 158, Bury Road, Radcliffe, Greater Manchester, M26 2JR	Beds and Bedding	Consumer Products
L	207m NW	J Rosenthal & Son	Britannia House 158, Bury Road, Radcliffe, Greater Manchester, M26 2JR	Textiles, Fabrics, Silk and Machinery	Industrial Products
K	208m SW	G J Plastics	Unit 2 Department 1 Eton Hill Works, Eton Hill Road, Radcliffe, Manchester, Greater Manchester, M26 2US	Office and Shop Equipment	Industrial Products
M	210m NE	Tank	Greater Manchester, M26	Tanks (Generic)	Industrial Features
K	212m SW	Banners N Display	Unit 2 Eton Hill Works, Eton Hill Road, Radcliffe, Manchester, Greater Manchester, M26 2US	Signs	Industrial Products
8	213m NW	Electricity Sub Station	Greater Manchester, M26	Electrical Features	Infrastructure and Facilities
K	228m SW	Works	Greater Manchester, M26	Unspecified Works Or Factories	Industrial Features
10	239m E	Georgina's Cakery	277, Dumers Lane, Radcliffe, Greater Manchester, M26 2GN	Baking and Confectionery	Foodstuffs
M	241m NE	Tank	Greater Manchester, M26	Tanks (Generic)	Industrial Features
J	246m W	B E P	Eton Hill Road, Radcliffe, Manchester, Greater Manchester, M26 2ZT	Industrial Coatings and Finishings	Industrial Products
11	248m S	Bealey Community Hospital	-, Dumers Lane, Radcliffe, Greater Manchester, M26 2QD	Hospitals	Health Practitioners and Establishments

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	2

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.

Features are displayed on the Current industrial land use map on **page 64 >**

ID	Location	Company	Address	Operational status	Tier
3	73m W	Fragrance Oils (International) Limited	Fragrance Oils (International) Limited, Radcliffe, Eton Hill Industrial Estate, Eton Hill Road, Radcliffe, Bury, Lancashire, M26 2FR	Current COMAH Site	COMAH Lower Tier Operator
Q	313m NE	J and W Whewell Limited	J and W Whewell Limited, Newbridge Chemical Works, York Street, Radcliffe, Bury, Greater Manchester, M26 2GL	Historical COMAH Site	COMAH Lower Tier Operator

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	2

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.

Features are displayed on the Current industrial land use map on **page 64 >**

ID	Location	Details	
E	52m W	Application reference number: No Details Application status: Approved Application date: No Details Address: Fragrance Oils International Ltd, Eton Hill Road, Radcliffe, Bury, Manchester, M26 2FR	Details: No Details Enforcement: No Details Date of enforcement: No Details Comment: No Details
Q	370m NE	Application reference number: No Details Application status: Approved Application date: No Details Address: J and W Whewell Ltd, Newbridge Chemical Works, York Street, Radcliffe, Bury, Manchester, England, M26 2GL	Details: No Details Enforcement: No Details Date of enforcement: No Details Comment: No Details

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	3

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.

Features are displayed on the Current industrial land use map on **page 64 >**

ID	Location	Details	
Q	388m NE	Operator: J and W Whewell Ltd Address: New Bridge Chemical Works, York Street, Radcliffe, Manchester, M26 2GL Process: Acid Processes Permit Number: AZ7432	Original Permit Number: IPCAPP Date Approved: 30-7-1998 Effective Date: 1-8-1998 Status: Superseded By Variation
Q	388m NE	Operator: J and W Whewell Ltd Address: New Bridge Chemical Works, York Street, Radcliffe, Manchester, M26 2GL Process: Acid Processes Permit Number: BE1224	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
Q	388m NE	Operator: J and W Whewell Ltd Address: New Bridge Chemical Works, York Street, Radcliffe, Manchester, M26 2GL Process: Acid Processes Permit Number: BU4350	Original Permit Number: IPCMINVAR Date Approved: 16-5-2003 Effective Date: 26-5-2003 Status: Revoked - Now Ippc

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m **24**

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 64 >**

ID	Location	Details	
9	238m NE	Operator: Unifi dyed yarns Limited Installation Name: UNIFI DYED YARNS Process: COATING, PRINTING AND TEXTILES; PRE-TREATING BY WASHING ETC >10T/DAY Permit Number: BX0393IP Original Permit Number: BP9684IP	EPR Reference: - Issue Date: 21/01/2004 Effective Date: 01/02/2004 Last date noted as effective: 21/03/2023 Status: Revoked
J	252m W	Operator: BEP SURFACE TECHNOLOGIES LIMITED Installation Name: Eton Hill Road EPR/BX2914IK Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: BX2914IK Original Permit Number: BX2914IK	EPR Reference: EPR/BX2914IK Issue Date: 26/07/2017 Effective Date: 26/07/2017 Last date noted as effective: 23/11/2023 Status: Effective

ID	Location	Details	
J	252m W	Operator: BEP SURFACE TECHNOLOGIES LIMITED Installation Name: Eton Hill Road EPR/BX2914IK Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: BX2914IK Original Permit Number: BX2914IK	EPR Reference: EPR/BX2914IK Issue Date: 26/07/2017 Effective Date: 26/07/2017 Last date noted as effective: 23/11/2023 Status: Effective
J	252m W	Operator: BEP Surface Technologies Ltd Installation Name: BEP SURFACE TECHNOLOGIES Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: NP3631MQ Original Permit Number: BX2914IK	EPR Reference: - Issue Date: 12/07/2007 Effective Date: 23/07/2007 Last date noted as effective: 21/03/2023 Status: Superceded
J	252m W	Operator: BEP Surface Technologies Ltd Installation Name: Eton Hill Road EPR/BX2914IK Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: NP3833CY Original Permit Number: BX2914IK	EPR Reference: - Issue Date: 26/07/2017 Effective Date: 26/07/2017 Last date noted as effective: 21/03/2023 Status: Effective
J	252m W	Operator: BEP Surface Technologies Ltd Installation Name: Eton Hill Road EPR/BX2914IK Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: NP3833CY Original Permit Number: BX2914IK	EPR Reference: - Issue Date: 26/07/2017 Effective Date: 26/07/2017 Last date noted as effective: 21/03/2023 Status: Effective
Q	388m NE	Operator: Sulfo Surfactants Limited Installation Name: New Bridge Chemical Works - EPR/BM0044IW Process: ASSOCIATED PROCESS Permit Number: BM0044IW Original Permit Number: BM0044IW	EPR Reference: EPR/BM0044IW Issue Date: 25/05/2023 Effective Date: 25/05/2023 Last date noted as effective: 23/11/2023 Status: Effective
Q	388m NE	Operator: Sulfo Surfactants Limited Installation Name: New Bridge Chemical Works - EPR/BM0044IW Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BM0044IW Original Permit Number: BM0044IW	EPR Reference: EPR/BM0044IW Issue Date: 25/05/2023 Effective Date: 25/05/2023 Last date noted as effective: 23/11/2023 Status: Effective
Q	388m NE	Operator: Sulfo Surfactants Limited Installation Name: New Bridge Chemical Works - EPR/BM0044IW Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BM0044IW Original Permit Number: BM0044IW	EPR Reference: EPR/BM0044IW Issue Date: 25/05/2023 Effective Date: 25/05/2023 Last date noted as effective: 23/11/2023 Status: Effective

ID	Location	Details	
Q	388m NE	Operator: Sulfo Surfactants Limited Installation Name: New Bridge Chemical Works - EPR/BM0044IW Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: BM0044IW Original Permit Number: BM0044IW	EPR Reference: EPR/BM0044IW Issue Date: 25/05/2023 Effective Date: 25/05/2023 Last date noted as effective: 23/11/2023 Status: Effective
Q	388m NE	Operator: Sulfo Surfactants Limited Installation Name: New Bridge Chemical Works - EPR/BM0044IW Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BM0044IW Original Permit Number: BM0044IW	EPR Reference: EPR/BM0044IW Issue Date: 25/05/2023 Effective Date: 25/05/2023 Last date noted as effective: 23/11/2023 Status: Effective
Q	388m NE	Operator: J AND W WHEWELL LTD Installation Name: - Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: BM0044 Original Permit Number: BM0044	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
Q	388m NE	Operator: J AND W WHEWELL LTD Installation Name: - Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BM0044 Original Permit Number: BM0044	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
Q	388m NE	Operator: J AND W WHEWELL LTD Installation Name: - Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BM0044 Original Permit Number: BM0044	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
S	442m SW	Operator: COLOUR ANODISING LIMITED Installation Name: Anotec Works EPR/BN5386IN Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: BN5386IN Original Permit Number: BN5386IN	EPR Reference: EPR/BN5386IN Issue Date: 15/06/2017 Effective Date: 15/06/2017 Last date noted as effective: 23/11/2023 Status: Effective
S	442m SW	Operator: COLOUR ANODISING LIMITED Installation Name: Anotec Works EPR/BN5386IN Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BN5386IN Original Permit Number: BN5386IN	EPR Reference: EPR/BN5386IN Issue Date: 15/06/2017 Effective Date: 15/06/2017 Last date noted as effective: 23/11/2023 Status: Effective

ID	Location	Details	
S	442m SW	Operator: COLOUR ANODISING LIMITED Installation Name: Anotec Works EPR/BN5386IN Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: BN5386IN Original Permit Number: BN5386IN	EPR Reference: EPR/BN5386IN Issue Date: 15/06/2017 Effective Date: 15/06/2017 Last date noted as effective: 23/11/2023 Status: Effective
S	442m SW	Operator: COLOUR ANODISING LTD Installation Name: ANOTEC WORKS EPR/BN5386IN Process: SOLVENT EMISSIONS DIRECTVE; ACTIVITIES EXCEEDING SOLVENT THRESHOLD Permit Number: WP3234YA Original Permit Number: BN5386IN	EPR Reference: - Issue Date: 15/06/2017 Effective Date: 15/06/2017 Last date noted as effective: 28/09/2020 Status: EFFECTIVE
S	442m SW	Operator: COLOUR ANODISING LTD Installation Name: COLOUR ANODISING RADCLIFFE Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: QP3634AD Original Permit Number: BN5386IN	EPR Reference: - Issue Date: 02/11/2015 Effective Date: 02/11/2015 Last date noted as effective: 21/03/2023 Status: Superceded
S	442m SW	Operator: COLOUR ANODISING LTD Installation Name: Anotec Works EPR/BN5386IN Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: WP3234YA Original Permit Number: BN5386IN	EPR Reference: - Issue Date: 15/06/2017 Effective Date: 15/06/2017 Last date noted as effective: 21/03/2023 Status: Effective
S	442m SW	Operator: COLOUR ANODISING LTD Installation Name: COLOUR ANODISING RADCLIFFE Process: SOLVENT EMISSIONS DIRECTVE; ACTIVITIES EXCEEDING SOLVENT THRESHOLD Permit Number: QP3634AD Original Permit Number: BN5386IN	EPR Reference: - Issue Date: 02/11/2015 Effective Date: 02/11/2015 Last date noted as effective: 21/03/2023 Status: Superceded
S	442m SW	Operator: COLOUR ANODISING LTD Installation Name: Anotec Works EPR/BN5386IN Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: WP3234YA Original Permit Number: BN5386IN	EPR Reference: - Issue Date: 15/06/2017 Effective Date: 15/06/2017 Last date noted as effective: 21/03/2023 Status: Effective
S	442m SW	Operator: COLOUR ANODISING LTD Installation Name: COLOUR ANODISING RADCLIFFE Process: SOLVENT EMISSIONS DIRECTVE; ACTIVITIES EXCEEDING SOLVENT THRESHOLD Permit Number: BN5386IN Original Permit Number: BN5386IN	EPR Reference: - Issue Date: 23/11/2004 Effective Date: 23/11/2004 Last date noted as effective: 21/03/2023 Status: Superceded

ID	Location	Details	
S	442m SW	Operator: COLOUR ANODISING LTD Installation Name: Anotec Works EPR/BN5386IN Process: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M Permit Number: WP3234YA Original Permit Number: BN5386IN	EPR Reference: - Issue Date: 15/06/2017 Effective Date: 15/06/2017 Last date noted as effective: 21/03/2023 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	**6**

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 64 >**

ID	Location	Address	Details	
B	53m S	M & S Commercials, Unit 5, Bealy Industrial Estate, Dumers Lane, Radcliffe, M26 2BD	Process: Coating Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
2	62m NW	Country Concrete Products (Formerly Country Supplies), Eton Way North, Radcliffe, M26 2ZT	Process: Use of Bulk Cement Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
D	145m NW	Academy Group, Eton Business Park, Bury Road, Radcliffe, M26 2ZS	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
N	263m E	Funeralcare, Morris St, Radcliffe, M26 2GH	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
N	263m E	Funeralcare, Morris Street, Radcliffe, M26 2GH	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
S	439m SW	Anodising & Plating Ltd, Holland St, M26 2RH	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements 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	49

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 64 >**

ID	Location	Address	Details	
F	53m SE	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: NPSWQD010892 Permit Version: 2 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 24/10/2012 Effective Date: 31/03/2013 Revocation Date: 01/11/2018
F	53m SE	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: NPSWQD010892 Permit Version: 2 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 24/10/2012 Effective Date: 31/03/2013 Revocation Date: 01/11/2018
F	53m SE	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: NPSWQD010892 Permit Version: 3 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 02/11/2018 Effective Date: 02/11/2018 Revocation Date: -
F	53m SE	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: NPSWQD010892 Permit Version: 3 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 02/11/2018 Effective Date: 02/11/2018 Revocation Date: -
I	166m E	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 016982087 Permit Version: 1 Receiving Water: RIVER IRWELL	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1900 Revocation Date: 01/01/1900

ID	Location	Address	Details	
I	166m E	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0060 Permit Version: 2 Receiving Water: RIVER IRWELL	Status: SURRENDERED UNDER EPR 2010 Issue date: 14/04/2009 Effective Date: 14/04/2009 Revocation Date: 02/07/2013
I	166m E	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0026 Permit Version: 1 Receiving Water: -	Status: REVOKED - UNSPECIFIED Issue date: 01/04/1991 Effective Date: 01/04/1991 Revocation Date: 31/12/1994
I	166m E	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 01BRY0060 Permit Version: 1 Receiving Water: RIVER IRWELL	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 13/04/2009
I	171m E	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01BRY0026 Permit Version: 2 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 01/01/1995 Effective Date: 01/01/1995 Revocation Date: 22/03/2010
I	171m E	DUMERS LANE PUMPING STATION, OPPOSITE 201 DUMERS LANE, RADCLIFFE, BURY, M26 2GE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: NPSWQD010892 Permit Version: 1 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 23/03/2010 Effective Date: 23/03/2010 Revocation Date: 30/03/2013
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 2 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 31/01/1985 Revocation Date: 29/08/1989
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 4 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 13/02/1990 Revocation Date: 30/06/1990

ID	Location	Address	Details	
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 1 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 12/01/1980 Revocation Date: 30/01/1985
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 7 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/12/2000 Effective Date: 01/04/2004 Revocation Date: 14/12/2008
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 7 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/12/2000 Effective Date: 01/04/2004 Revocation Date: 14/12/2008
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 5 Receiving Water: RIVER IRWELL	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/07/1990 Revocation Date: 30/12/2000
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 1 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 12/01/1980 Revocation Date: 30/01/1985
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 8 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 15/12/2008 Effective Date: 15/12/2008 Revocation Date: 30/12/2008
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 3 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 30/08/1989 Revocation Date: 12/02/1990

ID	Location	Address	Details	
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 5 Receiving Water: RIVER IRWELL	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/07/1990 Revocation Date: 30/12/2000
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 10 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 14/10/2008 Effective Date: 01/01/2010 Revocation Date: 07/02/2019
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 3 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 30/08/1989 Revocation Date: 12/02/1990
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 2 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 31/01/1985 Revocation Date: 29/08/1989
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 6 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/12/2000 Effective Date: 31/12/2000 Revocation Date: 31/03/2004
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 4 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 13/02/1990 Revocation Date: 30/06/1990
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 6 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/12/2000 Effective Date: 31/12/2000 Revocation Date: 31/03/2004

ID	Location	Address	Details	
O	304m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 9 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 15/12/2008 Effective Date: 31/12/2008 Revocation Date: 31/12/2009
P	312m E	MORRIS STREET CSO (BRY0137), OUTSIDE 2 MORRIS STREET, RADCLIFFE, BURY, M26 2HF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: EPRJB3893EY Permit Version: 1 Receiving Water: RIVER IRWELL	Status: NEW ISSUED UNDER EPR 2010 Issue date: 14/05/2021 Effective Date: 14/05/2021 Revocation Date: 13/05/2022
P	312m E	MORRIS STREET CSO (BRY0137), OUTSIDE 2 MORRIS STREET, RADCLIFFE, BURY, M26 2HF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: EPRJB3893EY Permit Version: 2 Receiving Water: RIVER IRWELL	Status: NEW ISSUED UNDER EPR 2010 Issue date: 14/05/2021 Effective Date: 14/05/2022 Revocation Date: -
O	312m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 12 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 08/02/2019 Effective Date: 08/12/2021 Revocation Date: 09/12/2021
O	312m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 13 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 10/12/2021 Effective Date: 10/12/2021 Revocation Date: 31/03/2022
O	312m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 14 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 10/12/2021 Effective Date: 01/04/2022 Revocation Date: 30/05/2023
O	312m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 11 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 08/02/2019 Effective Date: 08/02/2019 Revocation Date: 07/12/2021

ID	Location	Address	Details	
O	312m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 016950033 Permit Version: 15 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 24/05/2023 Effective Date: 31/05/2023 Revocation Date: -
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 3 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 30/08/1989 Revocation Date: 12/02/1990
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 6 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/12/2000 Effective Date: 31/12/2000 Revocation Date: 31/03/2004
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 5 Receiving Water: RIVER IRWELL	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/07/1990 Revocation Date: 30/12/2000
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 2 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 31/01/1985 Revocation Date: 29/08/1989
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 7 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/12/2000 Effective Date: 01/04/2004 Revocation Date: 14/12/2008

ID	Location	Address	Details	
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 9 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 15/12/2008 Effective Date: 31/12/2008 Revocation Date: 31/12/2009
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 1 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 12/01/1980 Revocation Date: 30/01/1985
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 4 Receiving Water: RIVER IRWELL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 13/02/1990 Revocation Date: 30/06/1990
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 8 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 15/12/2008 Effective Date: 15/12/2008 Revocation Date: 30/12/2008
R	420m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 10 Receiving Water: RIVER IRWELL	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 14/10/2008 Effective Date: 01/01/2010 Revocation Date: 07/02/2019
R	423m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 11 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 08/02/2019 Effective Date: 08/02/2019 Revocation Date: 07/12/2021

ID	Location	Address	Details	
R	423m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 13 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 10/12/2021 Effective Date: 10/12/2021 Revocation Date: 31/03/2022
R	423m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016950033 Permit Version: 12 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 08/02/2019 Effective Date: 08/12/2021 Revocation Date: 09/12/2021
R	423m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 14 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 10/12/2021 Effective Date: 01/04/2022 Revocation Date: 30/05/2023
R	423m SE	BURY WASTEWATER TREATMENT WORKS, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER, BL9 9TF	Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 016950033 Permit Version: 15 Receiving Water: RIVER IRWELL	Status: VARIED UNDER EPR 2010 Issue date: 24/05/2023 Effective Date: 31/05/2023 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	**2**

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

Features are displayed on the Current industrial land use map on **page 64 >**

ID	Location	Address	Details	
O	304m SE	UNITED UTILITIES WATER PLC, BURY STW, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER	Permit Number: 016950033 Permit Version: 7 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Discharge Type: Sewage Disposal Works - water company	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 01/04/2004
O	304m SE	UNITED UTILITIES WATER PLC, BURY STW, CROSSFIELD STREET, BLACKFORD BRIDGE, BURY, GREATER MANCHESTER	Permit Number: 016950033 Permit Version: 6 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Discharge Type: Sewage Disposal Works - water company	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31/12/2000

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	**4**

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.

Features are displayed on the Current industrial land use map on **page 64 >**

ID	Location	Name	Status	Receiving Water	Authorised Substances
O	304m SE	Bury Stw	Active	-	-
O	304m SE	Bury Stw	Not Active	River Irwell, Manchester Ship Canal	Pentachlorophenol
O	317m SE	Bridgehall Dyeing And Finishing Company Ltd.	Active	River Irwell, Manchester Ship Canal	Pentachlorophenol
Q	388m NE	J & W Whewell Ltd	Active	-	Mercury (other)

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 64 >**

ID	Location	Name	Status	Receiving Water	Authorised Substances
J	246m W	Bep Surface Technologies	Active	-	Chromium, Copper
O	304m SE	Georgia-pacific Gb Limited	Active	-	Pentachlorophenol - ARCHIVE (List 1)
O	304m SE	Bury Wwtw (north West Water Ltd)	Active	River Irwell	Chromium, Copper, Iron, Lead, Nickel, pH, Zinc, Atrazine & Simazine

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	10

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 64 >**

ID	Location	Details	
A	**On site**	**Incident Date: 01/07/2002** **Incident Identification: 88496** **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)**
A	**On site**	**Incident Date: 01/07/2002** **Incident Identification: 88496** **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)**
B	20m S	Incident Date: 26/09/2001 Incident Identification: 33139 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Location	Details	
H	113m E	Incident Date: 21/02/2003 Incident Identification: 138296 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)
H	113m E	Incident Date: 03/01/2003 Incident Identification: 128987 Pollutant: Sewage Materials Pollutant Description: Process Effluent	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
H	113m E	Incident Date: 02/09/2002 Incident Identification: 104722 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)
H	113m E	Incident Date: 23/06/2003 Incident Identification: 168205 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
H	113m E	Incident Date: 17/01/2003 Incident Identification: 131615 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
12	448m E	Incident Date: 04/10/2001 Incident Identification: 34642 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
13	458m E	Incident Date: 29/05/2003 Incident Identification: 161572 Pollutant: Other Pollutant Pollutant Description: Other	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	**2**

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.

Features are displayed on the Current industrial land use map on **page 64 >**

ID: J, Location: 252m W, Permit: BX2914IK
Operator: BEP Surface Technologies Ltd
Activity: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M
Address: BEP SURFACE TECHNOLOGIES Eton Hill Road Radcliffe Lancashire M26 2ZT
Sector: Metals, Sub-sector: Surface treatment
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Particulate matter - PM2.5	1000kg	Below Reporting Threshold
Wastewater	Nickel	20kg	Below Reporting Threshold
Air	Particulate matter - total	10000kg	Below Reporting Threshold
Air	Hydrogen cyanide	100kg	Below Reporting Threshold
Air	Carbon dioxide	10000000kg	Below Reporting Threshold
Air	Chromium	10kg	Below Reporting Threshold
Air	Copper	10kg	Below Reporting Threshold
Air	Nickel	10kg	Below Reporting Threshold
Wastewater	Chromium	20kg	Below Reporting Threshold
Wastewater	Copper	20kg	Below Reporting Threshold
Air	Particulate matter - PM10	1000kg	Below Reporting Threshold

ID: S, Location: 443m SW, Permit: BN5386IN
Operator: COLOUR ANODISING LTD
Activity: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M
Address: Anotec Works Holland Street Lancashire M26 2RH
Sector: Metals, Sub-sector: Surface treatment
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Nickel	20kg	Below Reporting Threshold
Wastewater	Zinc	100kg	Below Reporting Threshold
Air	Sulphur oxides (SO2 and SO3) as SO2	100000kg	Below Reporting Threshold
Air	Carbon dioxide	10000000kg	Below Reporting Threshold
Air	Nitrous oxide	10000kg	Below Reporting Threshold
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	Below Reporting Threshold

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Chromium	20kg	Below Reporting Threshold
Wastewater	Copper	20kg	Below Reporting Threshold
Wastewater	Lead	20kg	Below Reporting Threshold

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

4.20 Pollution inventory waste transfers

Records within 500m	**2**

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.

Features are displayed on the Current industrial land use map on **page 64 >**

ID: J, Location: 252m W, Permit: BX2914IK
Operator: BEP Surface Technologies Ltd
Activity: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M
Address: BEP SURFACE TECHNOLOGIES Eton Hill Road Radcliffe Lancashire M26 2ZT
Sector: Metals, Sub-sector: Surface treatment
Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R4	Recycling/reclamation of metals and metal compounds	2.8	absolute value	20 01 01	paper and cardboard	No
R1	Use principally as a fuel or other means to generate energy	4.4265	absolute value	20 03 01	mixed municipal waste	No
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	2.4	absolute value	12 01 17	waste blasting material other than those mentioned in 12 01 16	No

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.06	absolute value	16 03 06	organic wastes other than those mentioned in 16 03 05	No
R4	Recycling/reclamation of metals and metal compounds	4.564	absolute value	20 01 40	metals	No
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.42	absolute value	20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	No
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.08	absolute value	15 02 02	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.48	absolute value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	1.275	absolute value	12 01 08	machining emulsions and solutions containing halogens	Yes

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	14.2	absolute value	11 01 09	sludges and filter cakes containing dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.209	absolute value	20 01 14	acids	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	1.04	absolute value	16 03 03	inorganic wastes containing dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.16	absolute value	06 03 13	solid salts and solutions containing heavy metals	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.05	absolute value	06 01 06	other acids	Yes

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.195	absolute value	13 02 05	mineral-based non-chlorinated engine, gear and lubricating oils	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	4	absolute value	11 02 05	wastes from copper hydrometallurgical processes containing dangerous substances	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.42	absolute value	20 01 35	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components (6)	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	8	absolute value	12 01 09	machining emulsions and solutions free of halogens	Yes

ID: S, Location: 443m SW, Permit: BN5386IN
Operator: COLOUR ANODISING LTD
Activity: SURFACE TREATING METALS AND PLASTICS; ELECTROLYTIC/CHEMICAL >30 CU M
Address: Anotec Works Holland Street Lancashire M26 2RH
Sector: Metals, Sub-sector: Surface treatment
Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R5	Recycling/reclamation of other inorganic materials	15.5	absolute value	20 03 01	mixed municipal waste	No

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R4	Recycling/reclamation of metals and metal compounds	2.5	absolute value	20 01 40	metals	No
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	3	absolute value	06 02 04	sodium and potassium hydroxide	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	0.2	absolute value	11 01 05	pickling acids	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	94.08	absolute value	11 01 06	acids not otherwise specified	Yes
D9	Physio-chemical treatment not specified elsewhere in this Table which results in final compounds or mixtures which are discarded by means of any of the operations numberes D1 to D12 (eg evaporation, drying, calcination, etc.)	10.6	absolute value	11 01 07	pickling bases	Yes
D5	Specially engineered landfill (eg placement into lined discrete cells which are capped and isolated from one another and the environment, etc)	42	absolute value	11 01 09	sludges and filter cakes containing dangerous substances	Yes
R4	Recycling/reclamation of metals and metal compounds	0.033	absolute value	20 01 21	fluorescent tubes and other mercury-containing waste	Yes
R5	Recycling/reclamation of other inorganic materials	5.05	absolute value	16 03 03	inorganic wastes containing dangerous substances	Yes

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

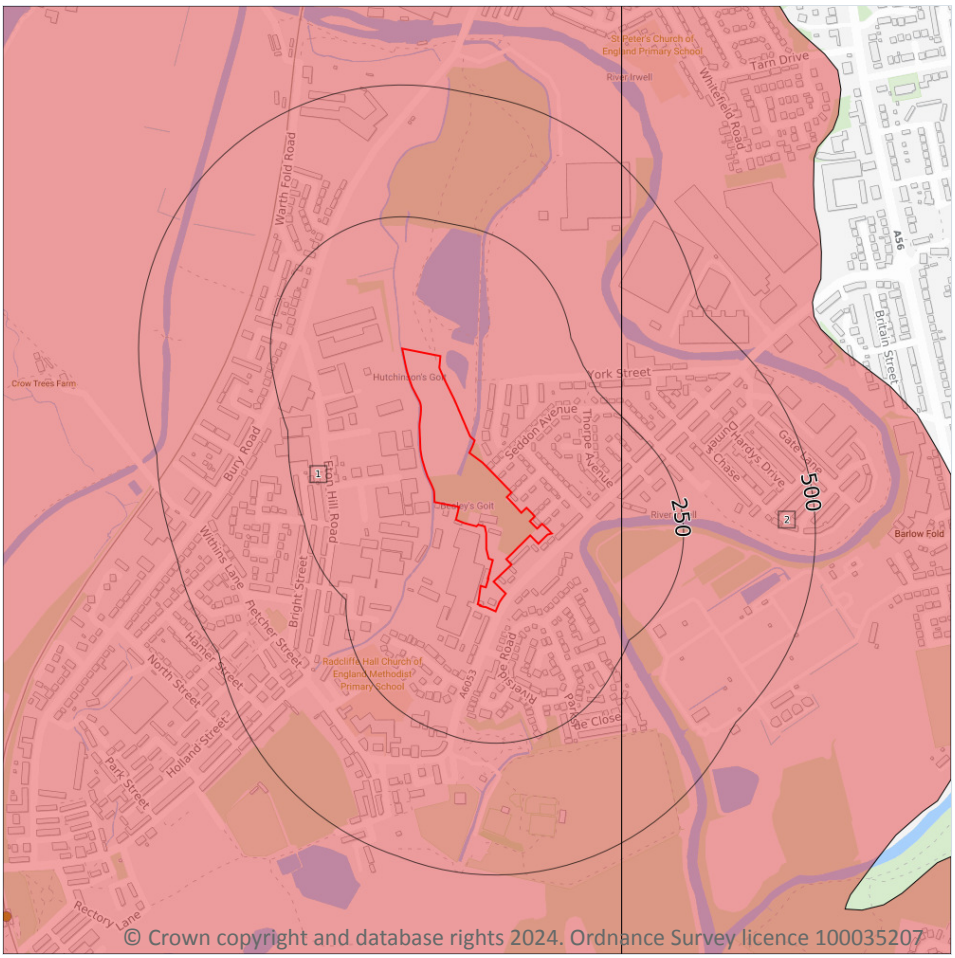
4.21 Pollution inventory radioactive waste

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

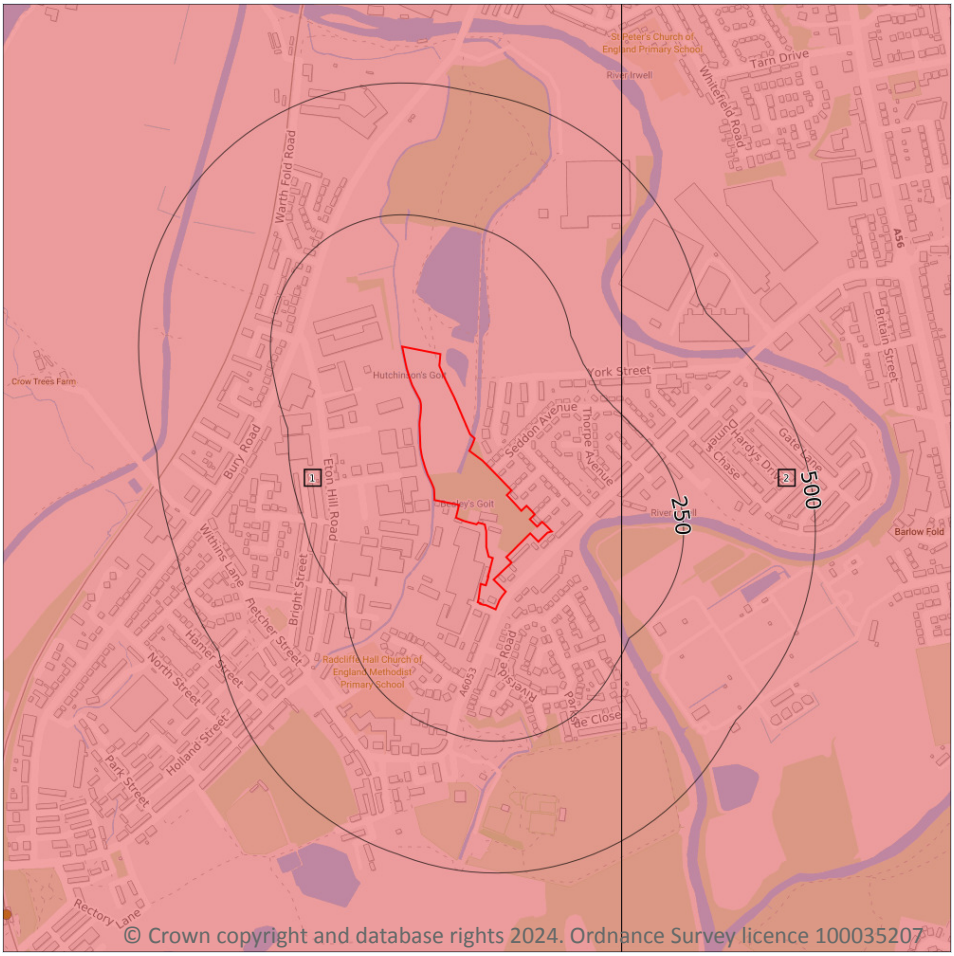
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 93 >**

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	132m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



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5.2 Bedrock aquifer

Records within 500m	2

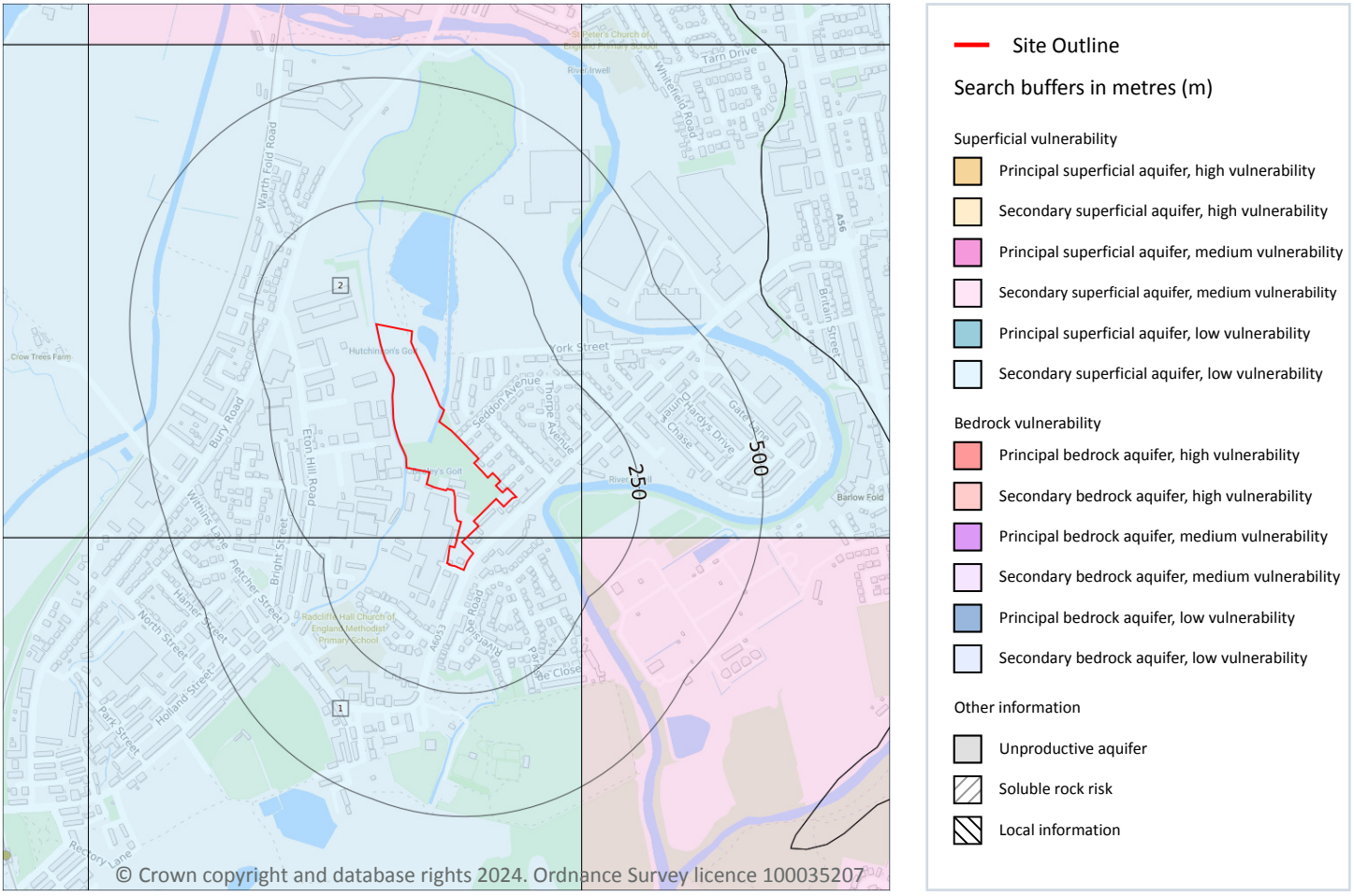
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 95 >**

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	132m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	2

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

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

Features are displayed on the Groundwater vulnerability map on **page 97 >**

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

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

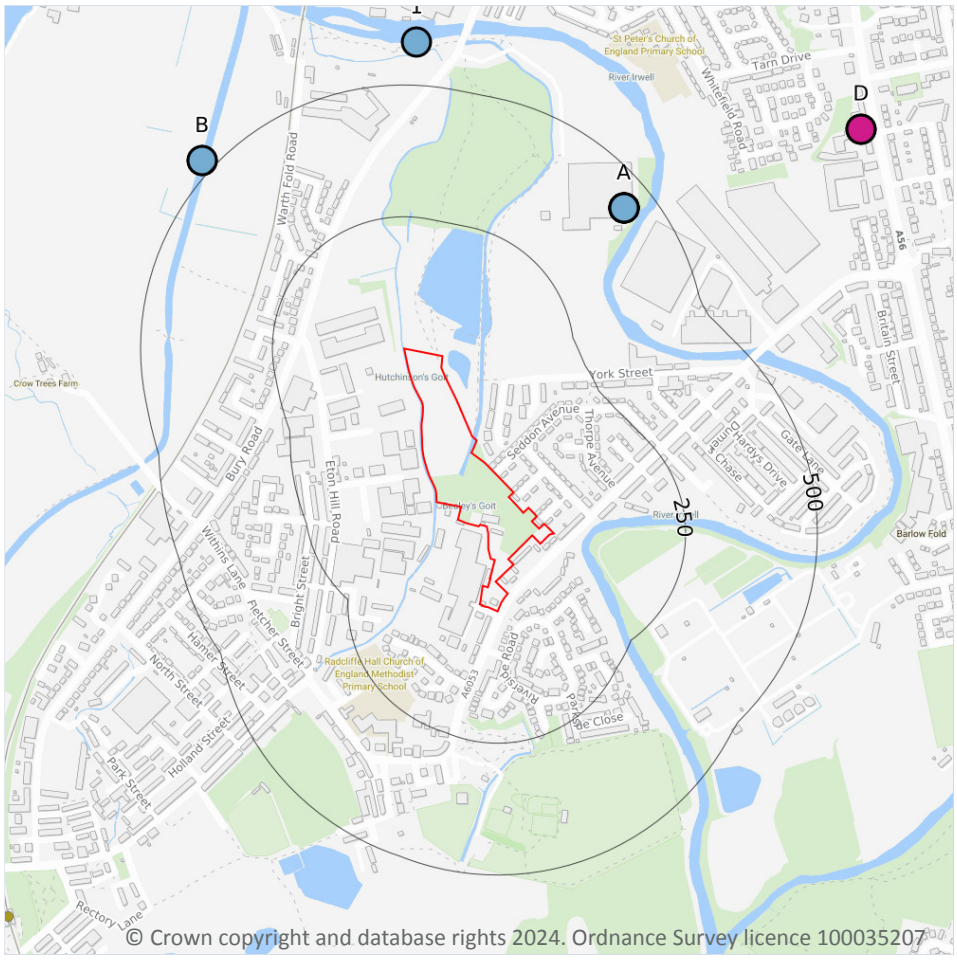
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- 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	17

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 99 >**

ID	Location	Details	
D	903m NE	Status: Historical Licence No: 2569001258 Details: Pollution Remediation Direct Source: Ground Water - North West Region Point: "WELL POINT SYSTEM AT MANCHESTER ROAD, BURY" Data Type: Point Name: TOTALFINAELF UK LTD Easting: 380450 Northing: 408850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/06/2002 Expiry Date: - Issue No: 1 Version Start Date: 12/06/2002 Version End Date: -
D	903m NE	Status: Historical Licence No: 2569001258 Details: Pollution Remediation Direct Source: Ground Water - North West Region Point: WELL POINT SYSTEM AT MANCHESTER ROAD, BURY Data Type: Point Name: TOTALFINAELF UK LTD Easting: 380450 Northing: 408850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/06/2002 Expiry Date: - Issue No: 1 Version Start Date: 12/06/2002 Version End Date: -
-	1169m SE	Status: Active Licence No: 2569002264R02 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: Bury Golf Club Limited Easting: 380963 Northing: 407673	Annual Volume (m^3): 7000 Max Daily Volume (m^3): 50 Original Application No: NPS/WR/016967 Original Start Date: 01/04/2015 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2015 Version End Date: -
-	1169m SE	Status: Historical Licence No: 2569002264R1 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: RAYMOND ADAMS Easting: 380963 Northing: 407673	Annual Volume (m^3): 7000 Max Daily Volume (m^3): 50 Original Application No: - Original Start Date: 01/06/2007 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
-	1177m SE	Status: Historical Licence No: 2569002264 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY" Data Type: Point Name: BURY GOLF CLUB Easting: 380970 Northing: 407670	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/04/1997 Expiry Date: 16-Apr-07 Issue No: 100 Version Start Date: 17/04/1997 Version End Date: -
-	1177m SE	Status: Historical Licence No: 2569002264 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: RAYMOND ADAMS Easting: 380970 Northing: 407670	Annual Volume (m^3): 9000 Max Daily Volume (m^3): 55 Original Application No: - Original Start Date: 17/04/1997 Expiry Date: 16/04/2007 Issue No: 101 Version Start Date: 27/01/2004 Version End Date: 16/04/2007
-	1177m SE	Status: Historical Licence No: 2569002264R1 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: A BOREHOLE AT BURY GOLF CLUB, BLACKFORD BRIDGE, BURY Data Type: Point Name: RAYMOND ADAMS Easting: 380970 Northing: 407670	Annual Volume (m^3): 7000 Max Daily Volume (m^3): 50 Original Application No: - Original Start Date: 01/06/2007 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 01/04/2008 Version End Date: -
-	1642m S	Status: Historical Licence No: 2569004030 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "WELLPOINT SYSTEM AT PREMISES, RADCLIFFE" Data Type: Point Name: JAMES HALSTEAD LTD Easting: 379600 Northing: 406300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 24/01/1995 Version End Date: -

ID	Location	Details	
-	1642m S	Status: Historical Licence No: 2569004030 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: WELLPOINT SYSTEM AT PREMISES, RADCLIFFE Data Type: Point Name: POLYFLOR LTD Easting: 379600 Northing: 406300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
-	1642m S	Status: Historical Licence No: 2569004030 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: WELL POINT SYSTEM AT PREMISES RADCLIFFE Data Type: Point Name: POLYFLOR LTD Easting: 379600 Northing: 406300	Annual Volume (m^3): 68200 Max Daily Volume (m^3): 382 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
-	1699m S	Status: Historical Licence No: NW/069/0004/004 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT WHITEFIELD, MANCHESTER Data Type: Point Name: Total Fitness Health Clubs Limited Easting: 380450 Northing: 406381	Annual Volume (m^3): 24000 Max Daily Volume (m^3): 166 Original Application No: - Original Start Date: 29/01/2014 Expiry Date: 31/03/2020 Issue No: 1 Version Start Date: 29/01/2014 Version End Date: -
-	1700m S	Status: Historical Licence No: 2569004056 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: LAND AT TOTAL FITNESS, BURY NEW ROAD, WHITEFIELD, BURY Data Type: Point Name: TOTAL FITNESS UK LTD Easting: 380450 Northing: 406380	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: 31/03/2011 Issue No: 1 Version Start Date: 17/02/2005 Version End Date: -

ID	Location	Details	
-	1700m S	Status: Historical Licence No: 2569004056 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: LAND AT TOTAL FITNESS BURY NEW ROAD WHITEFIELD BURY Data Type: Point Name: TOTAL FITNESS UK LTD Easting: 380450 Northing: 406380	Annual Volume (m^3): 24000 Max Daily Volume (m^3): 166 Original Application No: - Original Start Date: 17/02/2005 Expiry Date: 31/03/2011 Issue No: 1 Version Start Date: 17/02/2005 Version End Date: -
-	1914m E	Status: Historical Licence No: 2569002272 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, PILSWORTH, BURY" Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -
-	1914m E	Status: Historical Licence No: 2569002272 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, PILSWORTH, BURY Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -
-	1992m SE	Status: Active Licence No: 2569004042 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, STANLEY ROAD, WHITEFIELD Data Type: Point Name: DANISH CROWN UK LIMITED Easting: 380900 Northing: 406300	Annual Volume (m^3): 7000 Max Daily Volume (m^3): 21 Original Application No: 2396B Original Start Date: 18/07/1973 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2008 Version End Date: -

ID	Location	Details	
-	1992m SE	Status: Historical Licence No: 2569004042 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, STANLEY ROAD, WHITEFIELD" Data Type: Point Name: DANISH BACON INDEPENDENT DBI LTD Easting: 380900 Northing: 406300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/07/1973 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1986 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m **22**

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 99 >**

ID	Location	Details	
A	444m NE	Status: Historical Licence No: 2569001245 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
A	444m NE	Status: Historical Licence No: 2569001245 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -

ID	Location	Details	
A	444m NE	Status: Historical Licence No: 2569001245 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
A	444m NE	Status: Historical Licence No: 2569001245 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
A	444m NE	Status: Historical Licence No: 2569001245 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -
A	444m NE	Status: Historical Licence No: 2569001245 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: UNIFI DYED YARNS LTD Easting: 380000 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 23/11/1993 Expiry Date: - Issue No: 101 Version Start Date: 01/03/2000 Version End Date: -

ID	Location	Details	
B	524m NW	Status: Historical Licence No: 2569004054 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "THE MANCHESTER, BOLTON AND BURY CANAL AT BANK TOP, BURY" Data Type: Point Name: BRITISH WATERWAYS Easting: 379200 Northing: 408790	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 04/12/1998 Version End Date: -
B	524m NW	Status: Historical Licence No: 2569004054 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: THE MANCHESTER, BOLTON AND BURY CANAL AT BANK TOP, BURY Data Type: Point Name: BRITISH WATERWAYS BOARD Easting: 379200 Northing: 408790	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 04/12/1998 Version End Date: -
1	582m N	Status: Historical Licence No: NW/069/0001/004 Details: Hydroelectric Power Generation Direct Source: Surface, Non-Tidal - North West Region Point: RIVER IRWELL AT BEALEY'S WEIR Data Type: Point Name: Resolution Hydro Limited Easting: 379607 Northing: 409015	Annual Volume (m^3): 80000000 Max Daily Volume (m^3): 259200 Original Application No: NPS/WR/004482 Original Start Date: 20/12/2010 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/04/2019 Version End Date: -
-	691m N	Status: Historical Licence No: 2569001158 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -

ID	Location	Details	
-	691m N	Status: Historical Licence No: 2569001158 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT RADCLIFFE, MANCHESTER" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -
-	691m N	Status: Historical Licence No: 2569001158 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m^3): 3636800 Max Daily Volume (m^3): 14183.52 Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -
-	691m N	Status: Historical Licence No: 2569001158 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT RADCLIFFE, MANCHESTER Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 379400 Northing: 409100	Annual Volume (m^3): 3636800 Max Daily Volume (m^3): 14183.52 Original Application No: - Original Start Date: 29/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -
-	911m SW	Status: Historical Licence No: 2569004004 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RESERVOIR FED BY SURFACE DRAINAGE ATRADCLIFFE Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378800 Northing: 407800	Annual Volume (m^3): 40004.8 Max Daily Volume (m^3): 109.104 Original Application No: - Original Start Date: 28/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 05/05/2001 Version End Date: -

ID	Location	Details	
-	1019m NW	Status: Historical Licence No: 2569004019 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1019m NW	Status: Historical Licence No: 2569004019 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW" Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1019m NW	Status: Historical Licence No: 2569004019 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1019m NW	Status: Historical Licence No: 2569004019 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOIR, FED BY & O/FLOW TO UNNAMED TRIB OF R IRW Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -

ID	Location	Details	
-	1019m NW	Status: Historical Licence No: 2569004019 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOR FED BY UNNAMED TRIBUTARY OF RIVER IRWELL Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m^3): 270000 Max Daily Volume (m^3): 8728.32 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1019m NW	Status: Historical Licence No: 2569004019 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: WITHINS RESERVOR FED BY UNNAMED TRIBUTARY OF RIVER IRWELL Data Type: Point Name: ST REGIS PAPER COMPANY U K LTD Easting: 378600 Northing: 408700	Annual Volume (m^3): 270000 Max Daily Volume (m^3): 8728.32 Original Application No: - Original Start Date: 20/01/1966 Expiry Date: - Issue No: 102 Version Start Date: 05/05/2001 Version End Date: -
-	1423m N	Status: Historical Licence No: 2569001056 Details: Dust suppression Direct Source: "Surface, Non-Tidal - North West Region" Point: "THE RIVER IRWELL AT HINDS LANE, BURY" Data Type: Point Name: J B SKIPS & SERVICES LTD Easting: 379450 Northing: 409850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1997 Version End Date: -
-	1423m N	Status: Historical Licence No: 2569001056 Details: Dust suppression Direct Source: Surface, Non-Tidal - North West Region Point: THE RIVER IRWELL AT HINDS LANE, BURY Data Type: Point Name: J B SKIPS & SERVICES LTD Easting: 379450 Northing: 409850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1997 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	5

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 99 >**

ID	Location	Details	
-	1699m S	Status: Historical Licence No: NW/069/0004/004 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT WHITEFIELD, MANCHESTER Data Type: Point Name: Total Fitness Health Clubs Limited Easting: 380450 Northing: 406381	Annual Volume (m^3): 24000 Max Daily Volume (m^3): 166 Original Application No: - Original Start Date: 29/01/2014 Expiry Date: 31/03/2020 Issue No: 1 Version Start Date: 29/01/2014 Version End Date: -
-	1700m S	Status: Historical Licence No: 2569004056 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: LAND AT TOTAL FITNESS, BURY NEW ROAD, WHITEFIELD, BURY Data Type: Point Name: TOTAL FITNESS UK LTD Easting: 380450 Northing: 406380	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: 31/03/2011 Issue No: 1 Version Start Date: 17/02/2005 Version End Date: -
-	1700m S	Status: Historical Licence No: 2569004056 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: LAND AT TOTAL FITNESS BURY NEW ROAD WHITEFIELD BURY Data Type: Point Name: TOTAL FITNESS UK LTD Easting: 380450 Northing: 406380	Annual Volume (m^3): 24000 Max Daily Volume (m^3): 166 Original Application No: - Original Start Date: 17/02/2005 Expiry Date: 31/03/2011 Issue No: 1 Version Start Date: 17/02/2005 Version End Date: -

ID	Location	Details	
-	1914m E	Status: Historical Licence No: 2569002272 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, PILSWORTH, BURY" Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -
-	1914m E	Status: Historical Licence No: 2569002272 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, PILSWORTH, BURY Data Type: Point Name: CASTLEBROOK WATER CO. LTD Easting: 381680 Northing: 408700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 10/04/2000 Expiry Date: - Issue No: 3 Version Start Date: 10/09/2002 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	0

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

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

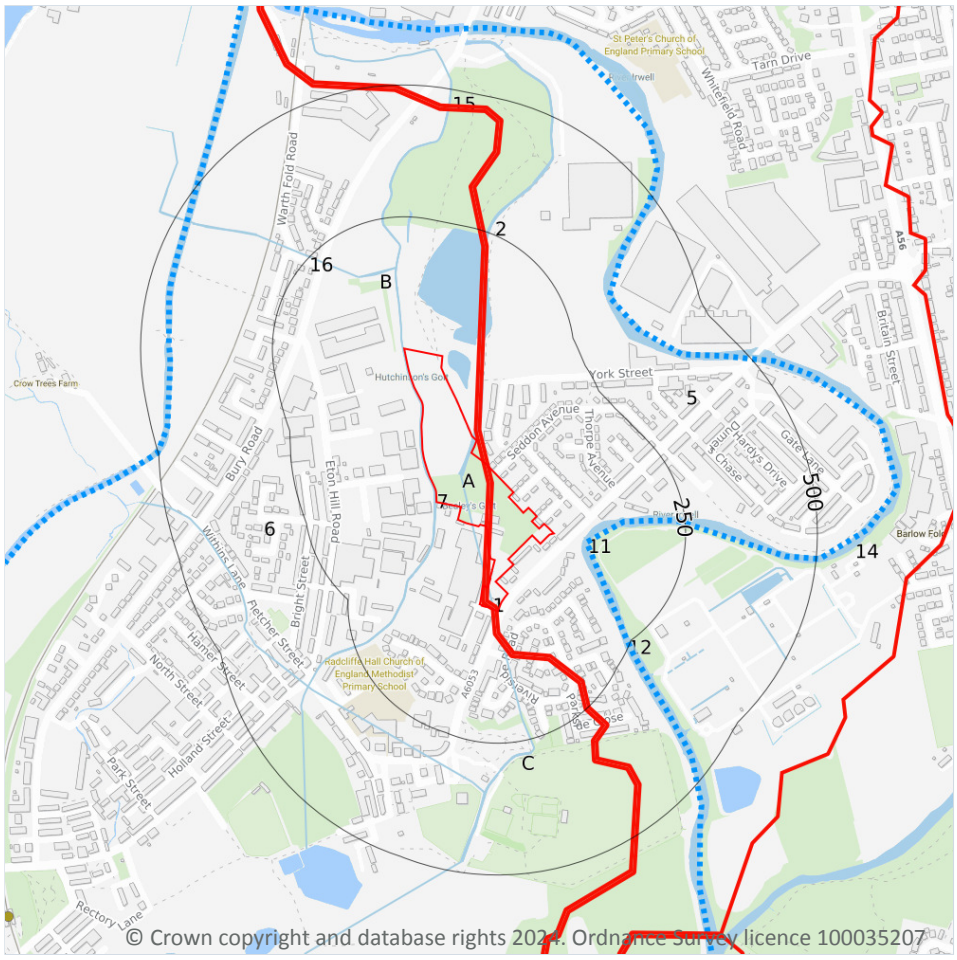
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS 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	12

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 112 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**Bealey's Goit**

ID	Location	Type of water feature	Ground level	Permanence	Name
2	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**Bealey's Goit**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**Bealey's Goit**
7	1m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hutchinson's Goit
11	57m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
12	64m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Irwell
14	65m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Irwell
B	150m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
15	153m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Hutchinson's Goit
16	161m NW	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
C	208m S	Manmade watercourse for water transfer.	On ground surface	Watercourse contains water year round (in normal circumstances)	Bealey's Goit

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	7

Covering rivers, streams and lakes (some overlap with OS 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 112 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	2

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 112 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
5	**On site**	**River**	**Irwell (Rossendale STW to Roch)**	**GB112069064620**	**Croal Irwell**	**Irwell**
6	**On site**	**River**	**Irwell (Roch to Croal)**	**GB112069060840**	**Croal Irwell**	**Irwell**

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

6.4 WFD Surface water bodies

Records identified	2

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 112 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
13	64m SE	River	Irwell (Rossendale STW to Roch)	GB112069064620 ↗	Moderate	Fail	Moderate	2019
-	766m SE	River	Irwell (Roch to Croal)	GB112069060840 ↗	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**

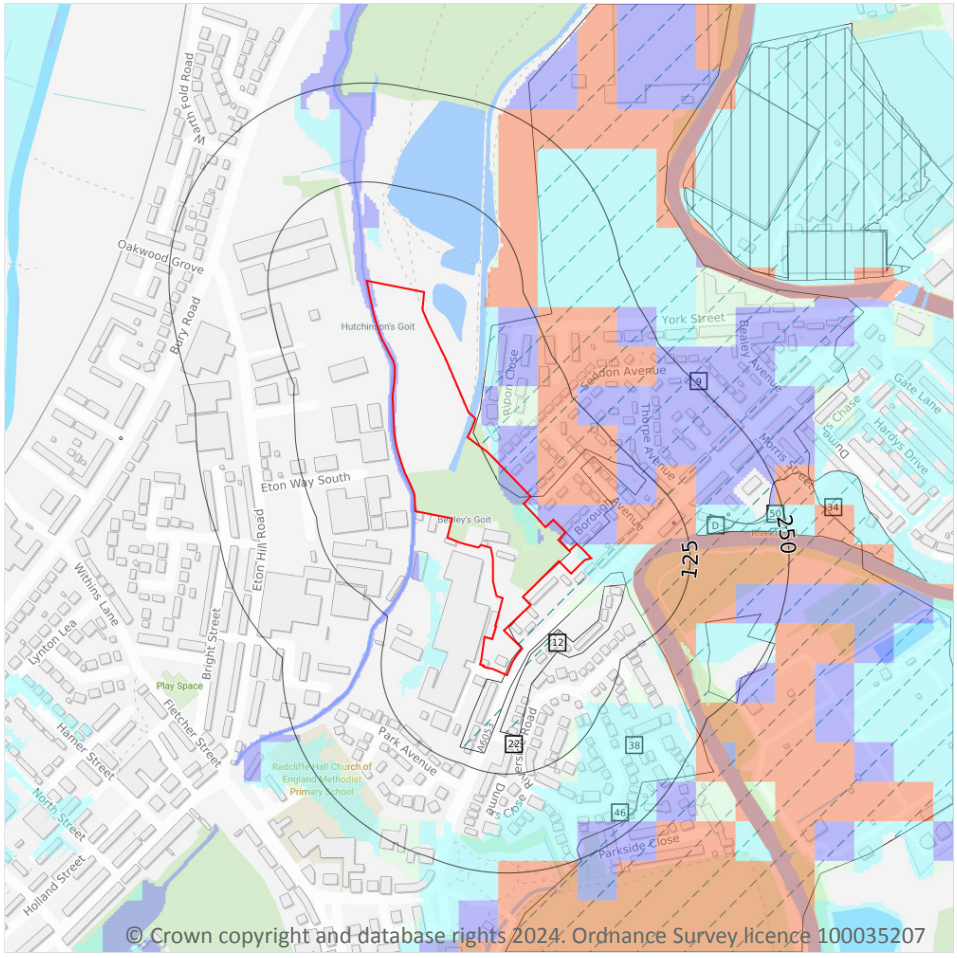
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 112 >**

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

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

7 River and coastal flooding



7.1 Risk of flooding from rivers and the sea

Records within 50m	19

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 116 >**

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

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

7.2 Historical Flood Events

Records within 250m	**10**

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 116 >**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
9	**On site**	**Radcliffe And Redvales**	**2015-12-26 2015-12-26**	**Main river**	**Channel capacity exceeded (no raised defences)**	**Fluvial**
12	13m S	Radcliffe And Redvales	2015-12-26 2015-12-26	Main river	Channel capacity exceeded (no raised defences)	Fluvial
22	85m S	Ea01313_21 January 2008_Bealey's Goyt_Blackford Br	2008-01-21 2008-01-22	Main river	Unknown	Fluvial
B	112m E	Ea01313_14 June 2002_River Irwell_Clavergateltd	2002-06-14 2002-06-15	Ordinary watercourse	Channel capacity exceeded (no raised defences)	No data
D	136m E	Irwe	2002-06-14 2002-06-15	Main river	Channel capacity exceeded (no raised defences)	Fluvial
34	154m E	Ea01313_22_June_2012_Morris street	2012-06-22 2012-06-22	Main river	Channel capacity exceeded (no raised defences)	Fluvial
D	180m E	Irwe	1991-12-21 1991-12-22	Unknown	Other	No data
38	182m SE	Ea01313_21 January 2008_River Irwell_Blackford Bri	2008-01-21 2008-01-22	Main river	Unknown	Fluvial
46	223m SE	Ea01313_21 January 2008_Bealey's Goyt_Blackford Br	2008-01-21 2008-01-22	Main river	Unknown	Fluvial
50	238m E	Irwe	1995-01-28 1995-01-29	Unknown	Other	No data

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

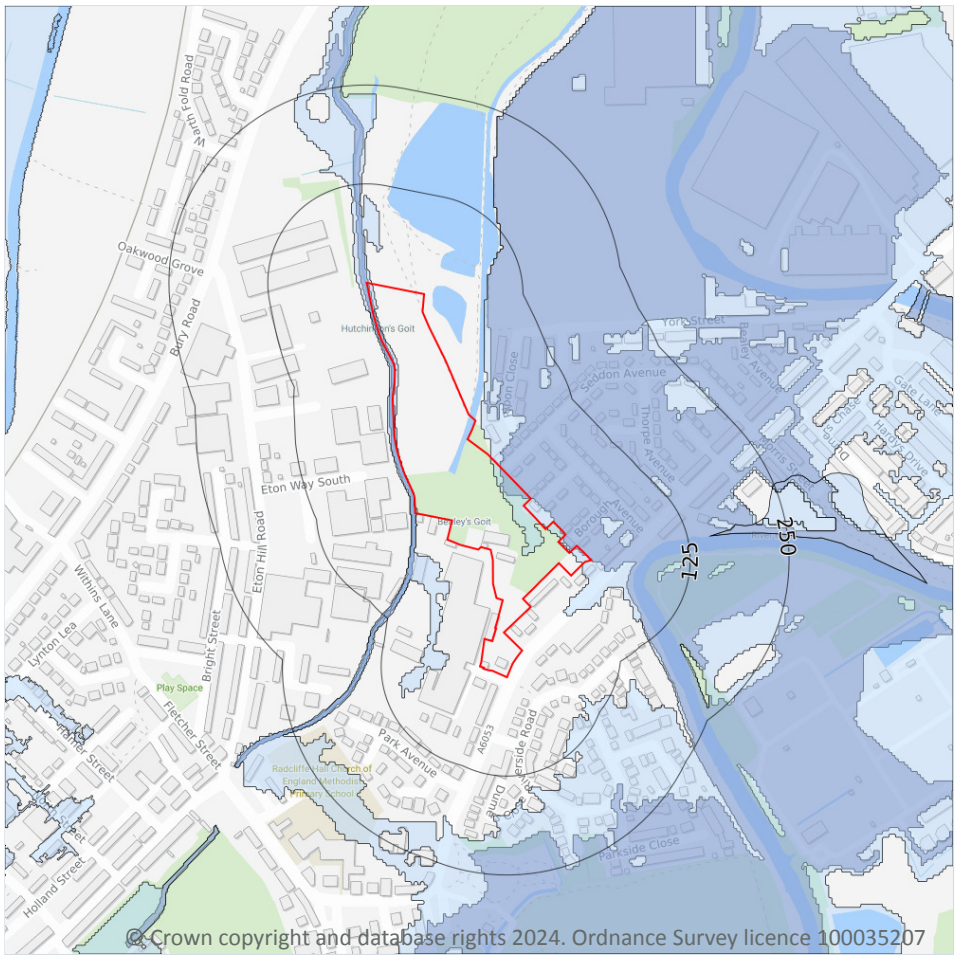
7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones



7.6 Flood Zone 2

Records within 50m	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 116 >**

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

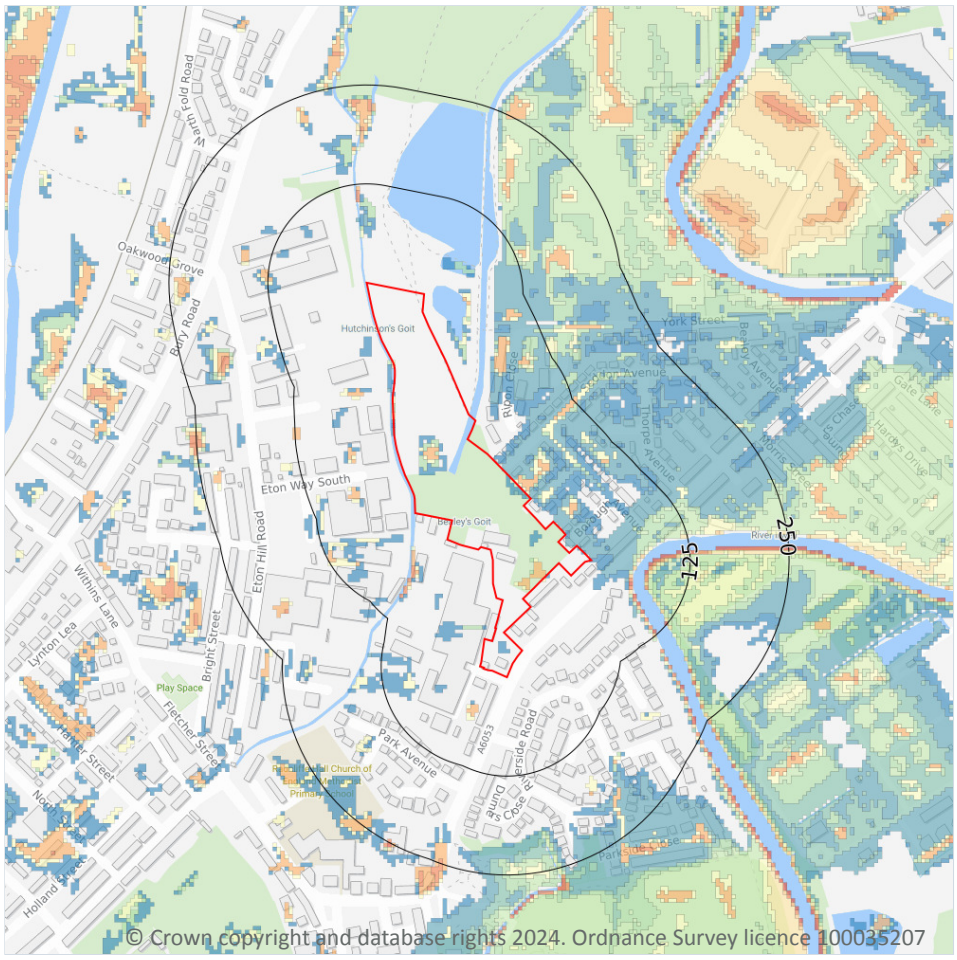
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 116 >**

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

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

8 Surface water flooding



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8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.1m - 0.3m**
Highest risk within 50m	**1 in 30 year, 0.1m - 0.3m**

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

Features are displayed on the Surface water flooding map on **page 121 >**

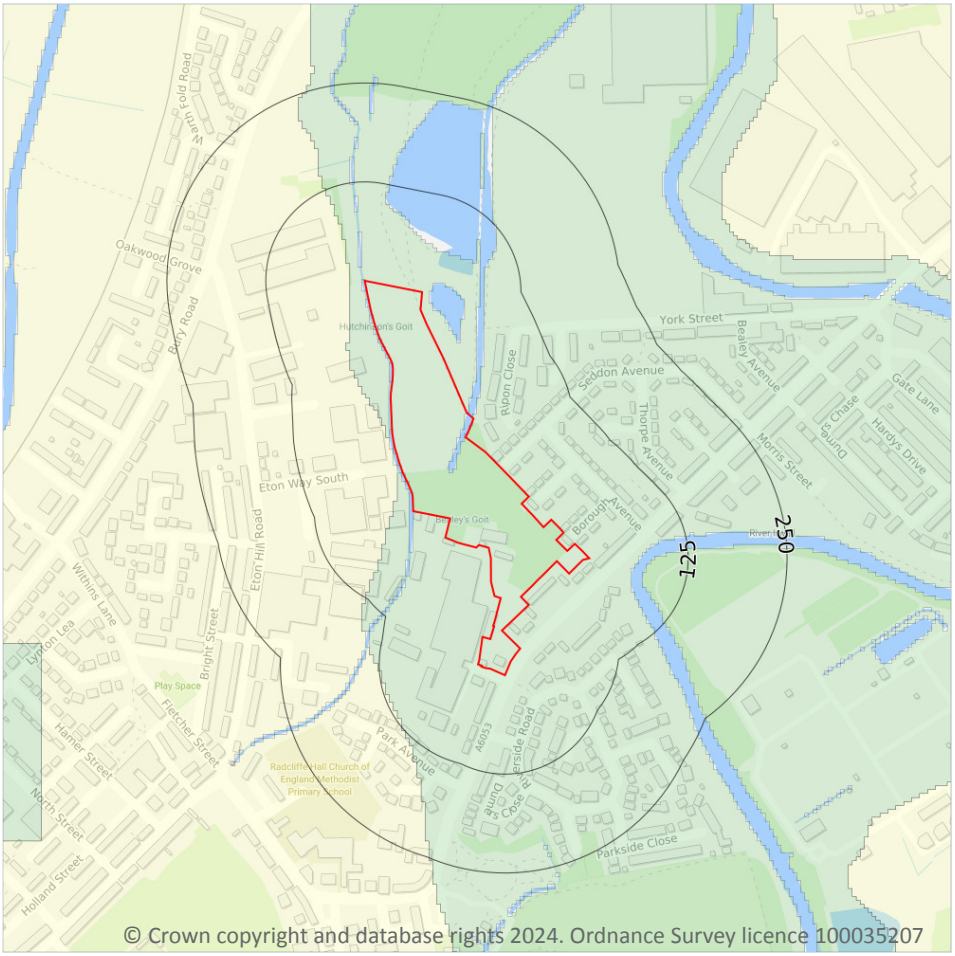
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site	**Low**
Highest risk within 50m	**Moderate**

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

Features are displayed on the Groundwater flooding map on **page 123 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



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Site Outline

Search buffers in metres (m)

Local Nature Reserves (LNR)

Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	4

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 124 >**

ID	Location	Name	Data source
-	1532m E	Hollins Vale	Natural England
-	1703m SW	Chapelfield	Natural England
-	1721m SW	Chapelfield	Natural England
-	1753m SW	Chapelfield	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	0

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

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	6

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

Features are displayed on the Environmental designations map on **page 124 >**

ID	Location	Name	Local Authority name
1	56m SE	Merseyside and Greater Manchester	Bury
2	303m NW	Merseyside and Greater Manchester	Bury
3	975m SE	Merseyside and Greater Manchester	Bury
-	1591m S	Merseyside and Greater Manchester	Bury
6	1671m NW	Merseyside and Greater Manchester	Bury
8	1823m NW	Merseyside and Greater Manchester	Bury

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

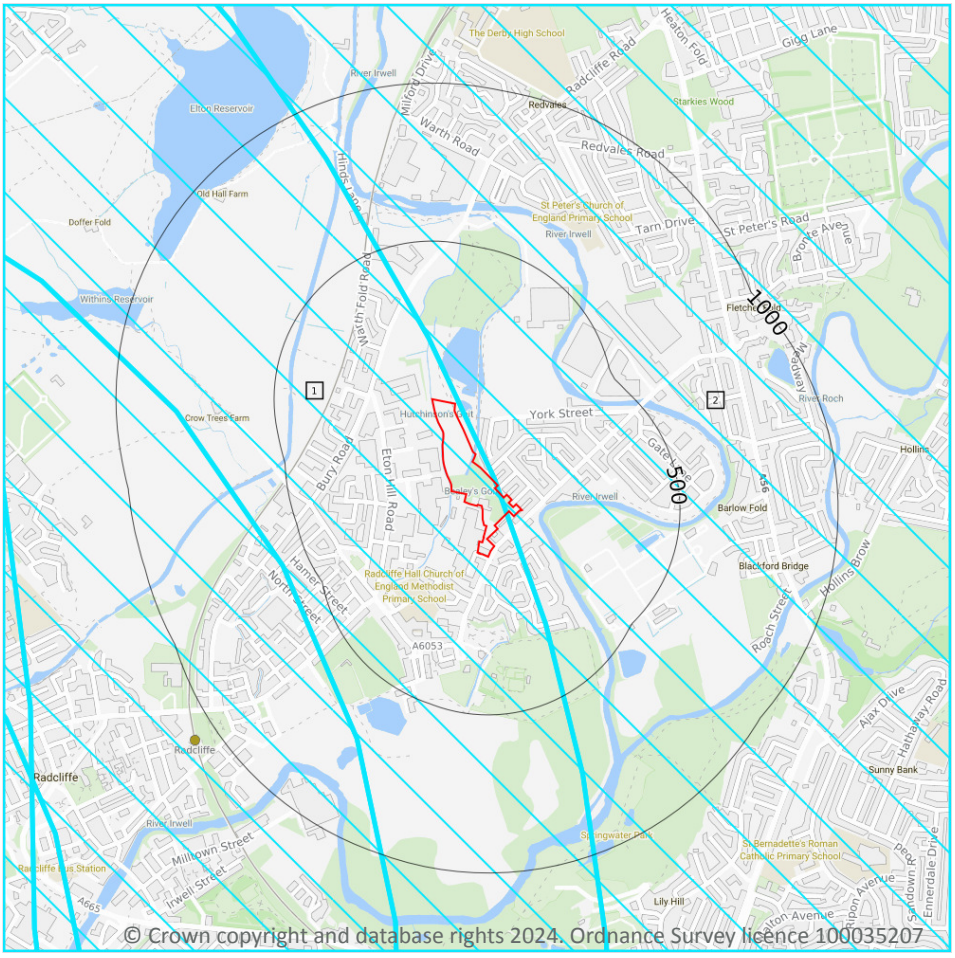
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	2

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

Features are displayed on the SSSI Impact Zones and Units map on **page 129 >**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Airports, helipads and other aviation proposals. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t. 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 - Airports, helipads and other aviation proposals. 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.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

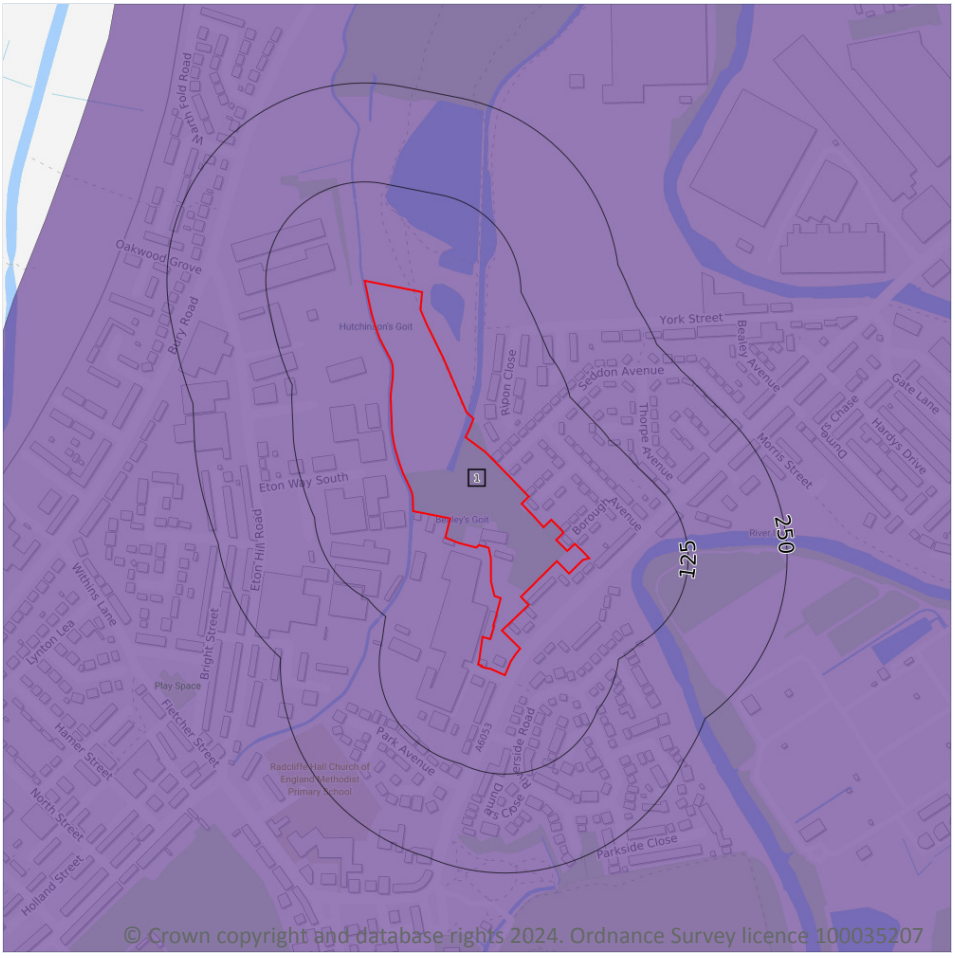
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



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 133 >**

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.

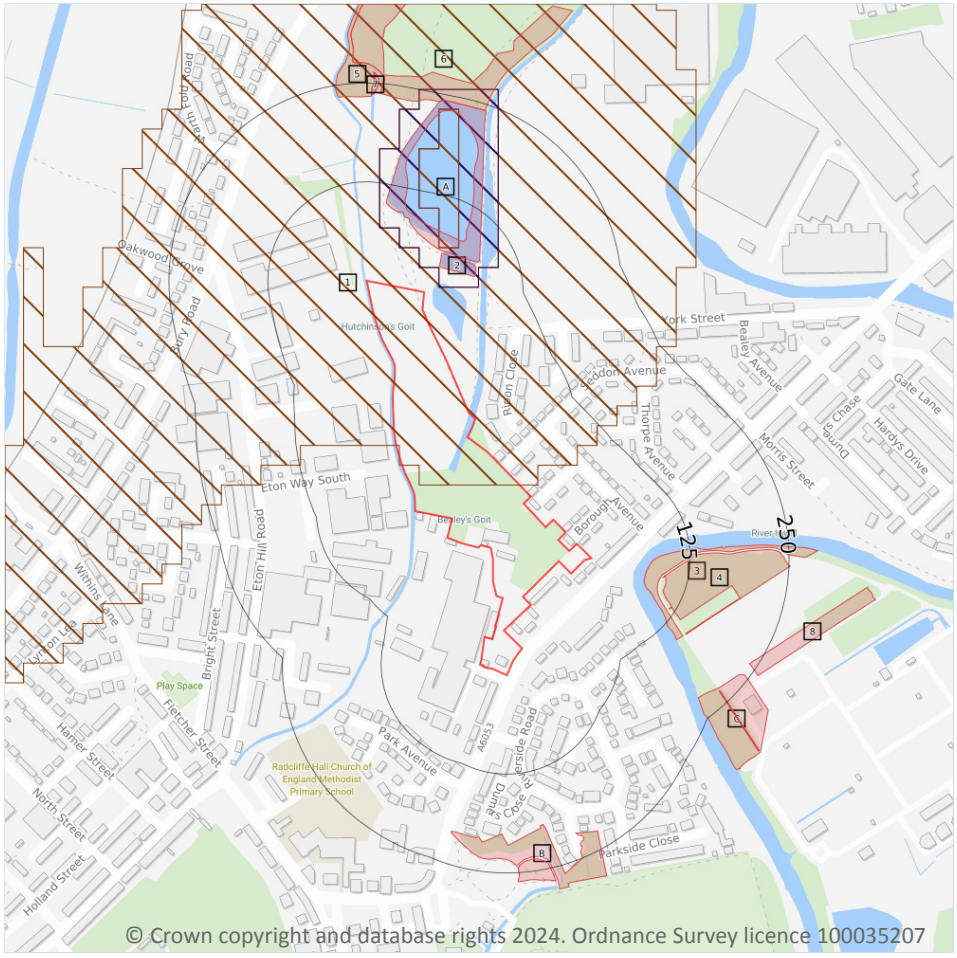
12.5 Countryside Stewardship Schemes

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



13.1 Priority Habitat Inventory

Records within 250m	12

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 135 >**

ID	Location	Main Habitat	Other habitats
2	38m N	Lowland fens	Main habitat: LFENS (INV > 50%)
A	57m N	Lowland fens	Main habitat: LFENS (INV > 50%)
3	72m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	94m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
B	194m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	222m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	233m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	233m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	234m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	234m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	235m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	241m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	**3**

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

Features are displayed on the Habitat designations map on **page 135 >**

ID	Location	Type	Habitat
1	**On site**	**Network Enhancement Zone 2**	**Not specified**
A	20m N	Primary Habitat	Lowland fens
A	59m N	Network Enhancement Zone 2	Not specified

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	**0**

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m	2

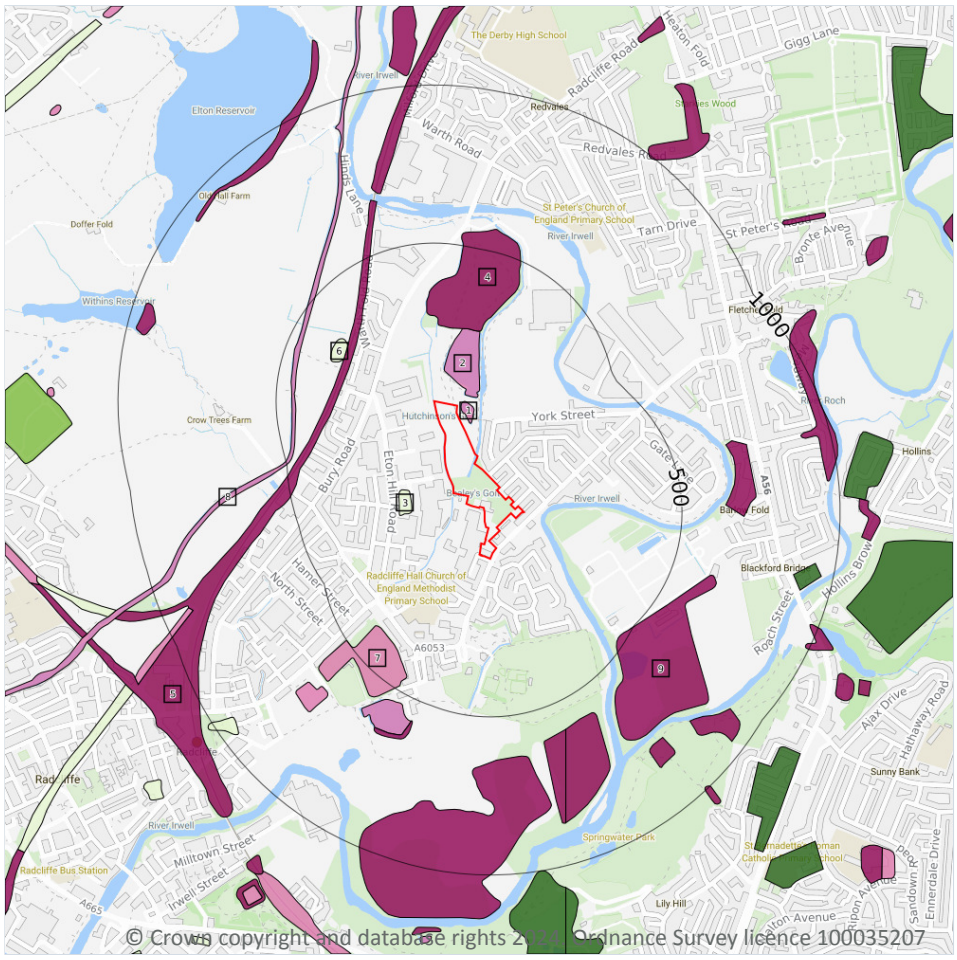
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 138 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SD70NE**
2	132m E	Full	Full	Full	Full	SD80NW

This data is sourced from the British Geological Survey.

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



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14.2 Artificial and made ground (10k)

Records within 500m	9

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

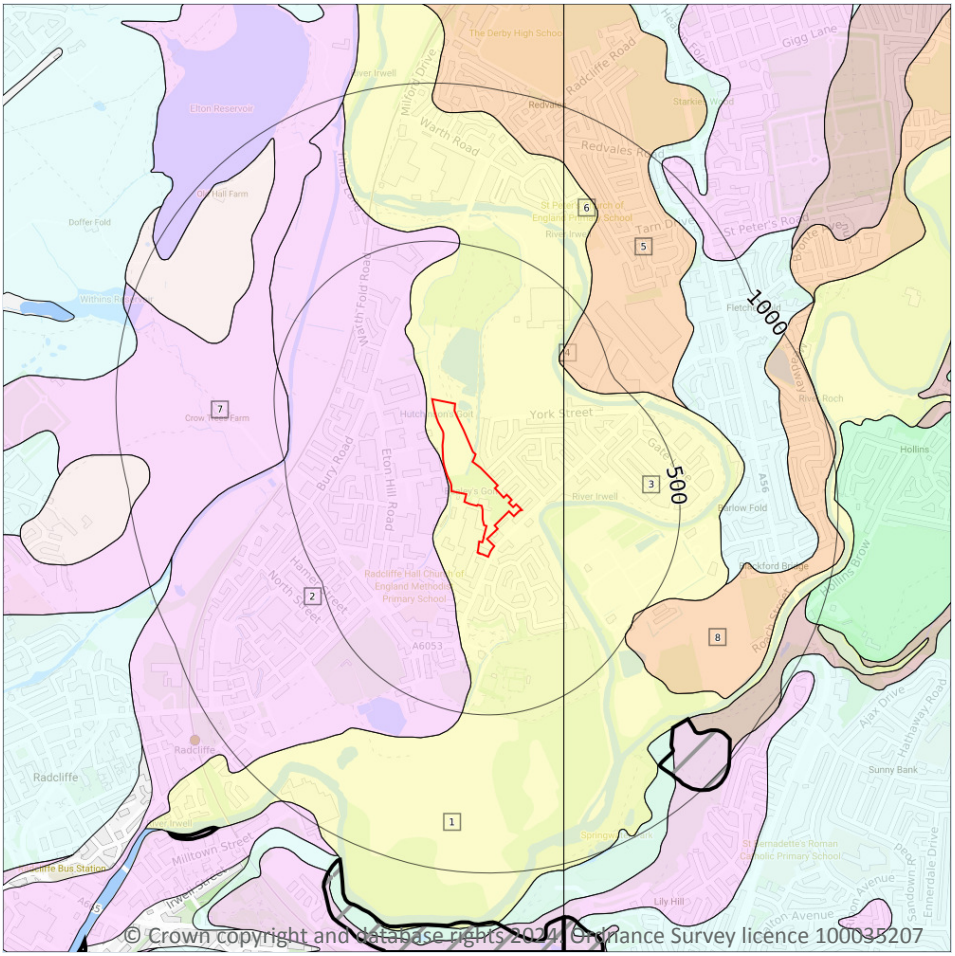
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 139 >**

ID	Location	LEX Code	Description	Rock description
1	13m N	WGR-VOID	Worked Ground (Undivided)	Void
2	43m N	WGR-VOID	Worked Ground (Undivided)	Void
3	133m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	237m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
5	289m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	315m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
7	388m SW	WGR-VOID	Worked Ground (Undivided)	Void
8	438m W	WGR-VOID	Worked Ground (Undivided)	Void
9	476m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



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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 **8**

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 141 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**ALV-XCZSV**	**Alluvium - Clay, Silt, Sand And Gravel**	**Clay, Silt, Sand And Gravel**
2	4m W	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
3	132m E	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
4	356m NE	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel

ID	Location	LEX Code	Description	Rock description
5	362m NE	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel
6	385m NE	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
7	455m W	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
8	487m SE	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

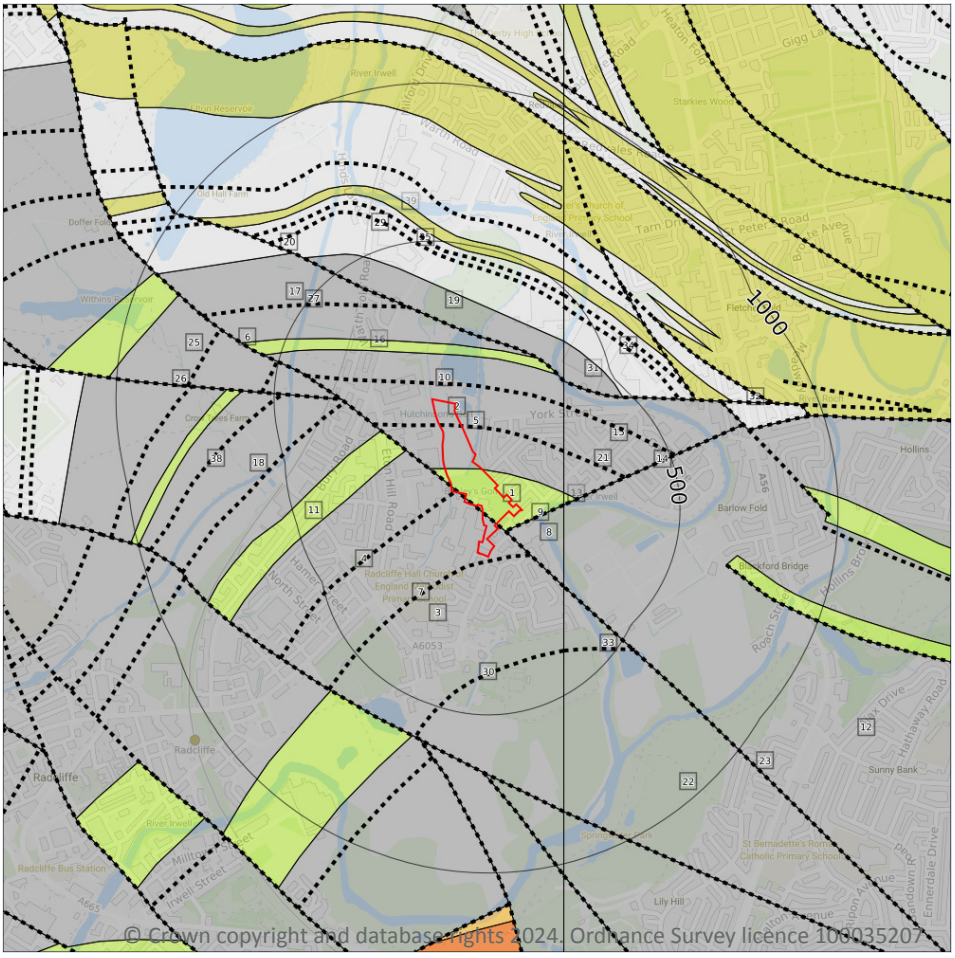
14.4 Landslip (10k)

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m **18**

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 143 >**

ID	Location	LEX Code	Description	Rock age
1	On site	PR-SDST	Peel Hall Rock - Sandstone	Duckmantian Sub-age
2	On site	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
3	On site	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age

ID	Location	LEX Code	Description	Rock age
8	25m SE	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
11	116m W	PR-SDST	Peel Hall Rock - Sandstone	Duckmantian Sub-age
12	132m E	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
13	133m E	PR-SDST	Peel Hall Rock - Sandstone	Duckmantian Sub-age
15	143m E	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
16	144m N	PMCM-SDST	Pennine Middle Coal Measures Formation - Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
17	177m N	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
18	180m NW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
19	225m N	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
22	254m SE	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
25	287m NW	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
29	320m N	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
31	351m NE	PMCM-MDSS	Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone	Bolsovian Sub-age - Duckmantian Sub-age
34	397m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
39	479m N	PLCM-SDST	Pennine Lower Coal Measures Formation - 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	**22**

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 143 >**

ID	Location	Category	Description
4	**On site**	**ROCK**	**Coal seam, inferred**
5	**On site**	**ROCK**	**Coal seam, inferred**
6	**On site**	**FAULT**	**Normal fault, inferred; crossmarks on downthrow side**
7	14m S	ROCK	Coal seam, inferred
9	25m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side
10	51m N	ROCK	Coal seam, inferred
14	133m E	FAULT	Normal fault, inferred; crossmarks on downthrow side
20	225m N	FAULT	Normal fault, inferred; crossmarks on downthrow side
21	226m E	ROCK	Coal seam, inferred
23	254m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side
24	276m NW	ROCK	Coal seam, inferred
26	287m NW	FAULT	Normal fault, inferred; crossmarks on downthrow side
27	302m N	ROCK	Coal seam, inferred
28	319m NE	ROCK	Coal seam, inferred
30	347m S	ROCK	Coal seam, inferred
32	351m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
33	381m SE	ROCK	Coal seam, inferred
35	431m N	ROCK	Coal seam, inferred
36	455m N	ROCK	Coal seam, inferred
37	461m NE	ROCK	Coal seam, inferred
38	473m NW	ROCK	Coal seam, inferred
40	487m NE	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

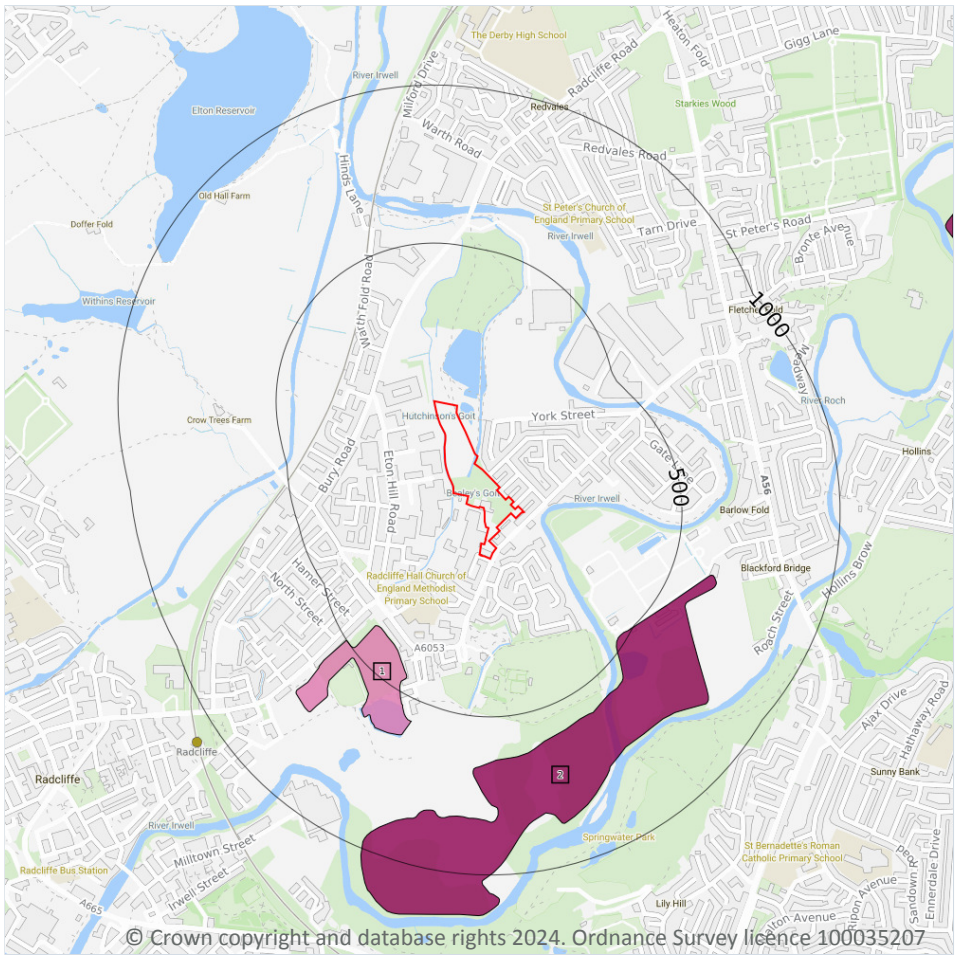
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 146 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**No coverage**	**EW085_manchester_v4**

This data is sourced from the British Geological Survey.

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



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Site Outline

Search buffers in metres (m)

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

15.2 Artificial and made ground (50k)

Records within 500m	2

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 147 >**

ID	Location	LEX Code	Description	Rock description
1	388m SW	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID
2	476m SE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

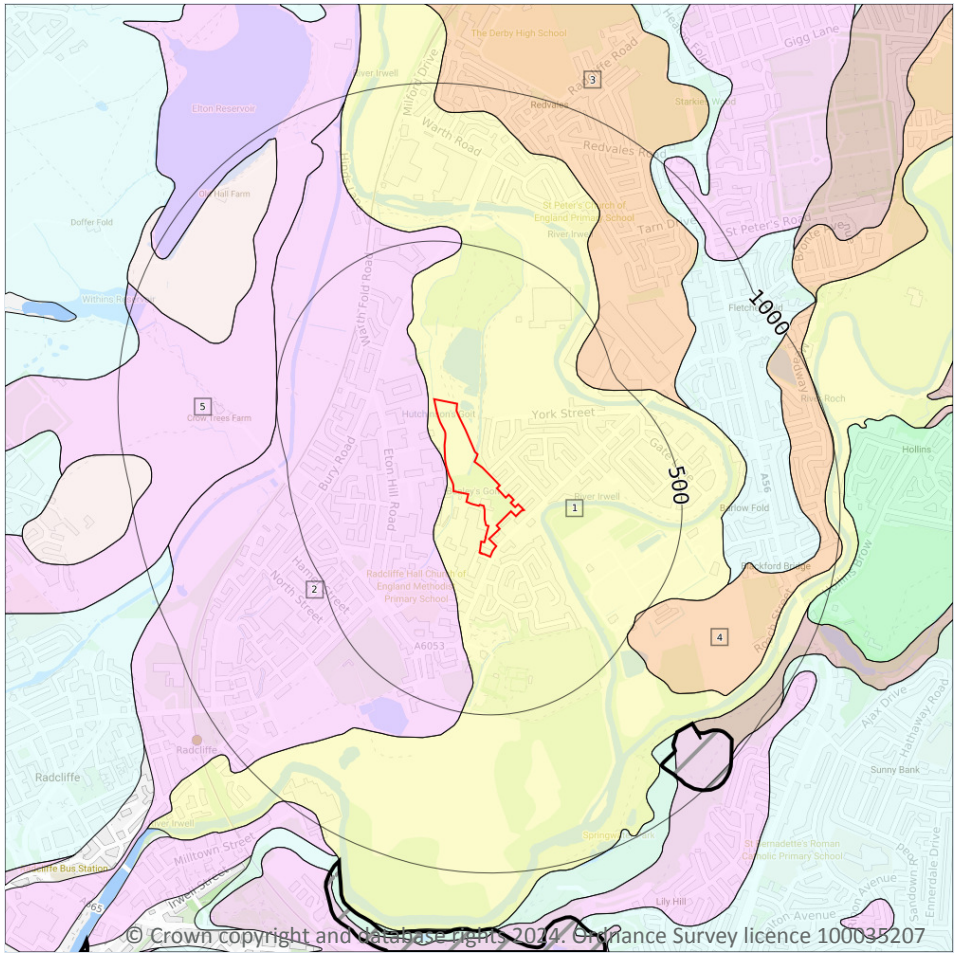
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m **5**

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 149 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**ALV-XCZSV**	**ALLUVIUM**	**CLAY, SILT, SAND AND GRAVEL**
2	3m W	GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
3	392m NE	RTD1-XSV	RIVER TERRACE DEPOSITS, 1	SAND AND GRAVEL
4	488m SE	RTD1-XSV	RIVER TERRACE DEPOSITS, 1	SAND AND GRAVEL

ID	Location	LEX Code	Description	Rock description
5	497m W	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

This data is sourced from the British Geological Survey.

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**High**	**Very Low**
3m W	Intergranular	Very High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

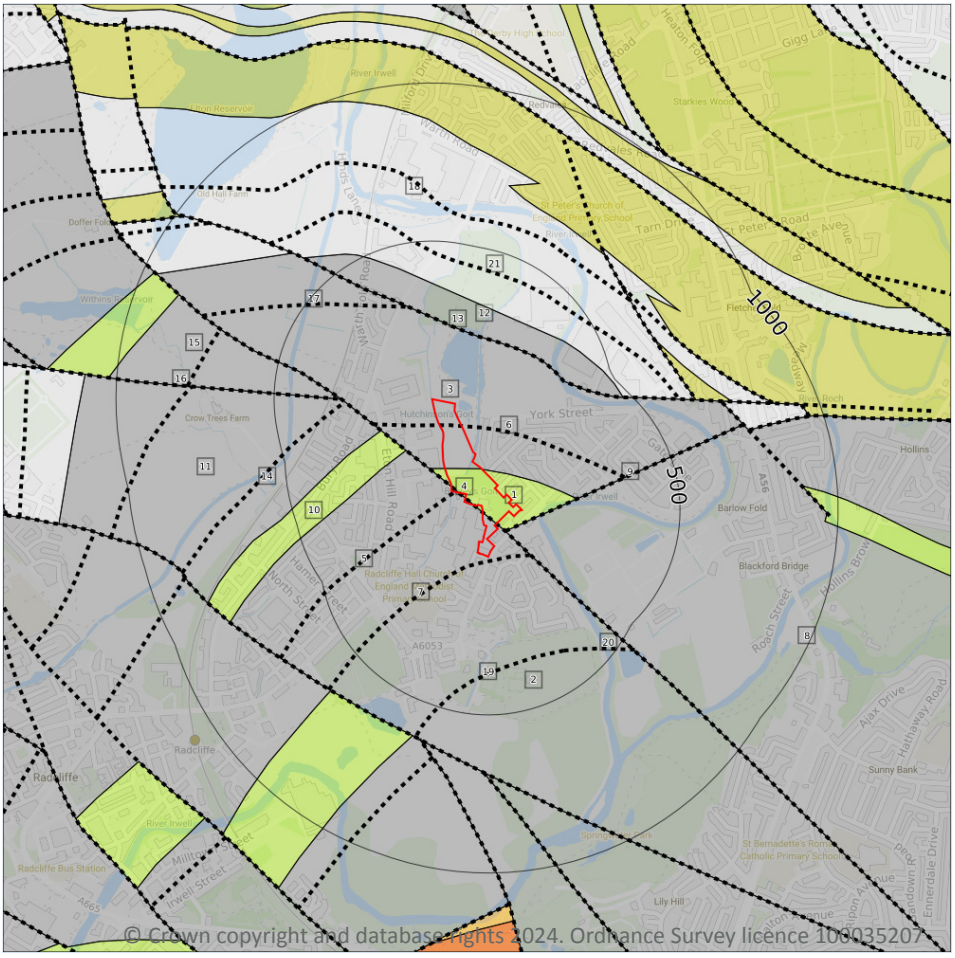
15.7 Landslip permeability (50k)

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	9

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 151 >**

ID	Location	LEX Code	Description	Rock age
1	On site	PR-SDST	PEEL HALL ROCK - SANDSTONE	WESTPHALIAN
2	On site	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
3	On site	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
8	25m SE	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	116m W	PR-SDST	PEEL HALL ROCK - SANDSTONE	WESTPHALIAN
11	180m NW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
12	225m N	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
15	287m NW	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
18	320m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m **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**
On site	**Fracture**	**High**	**Moderate**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **12**

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.

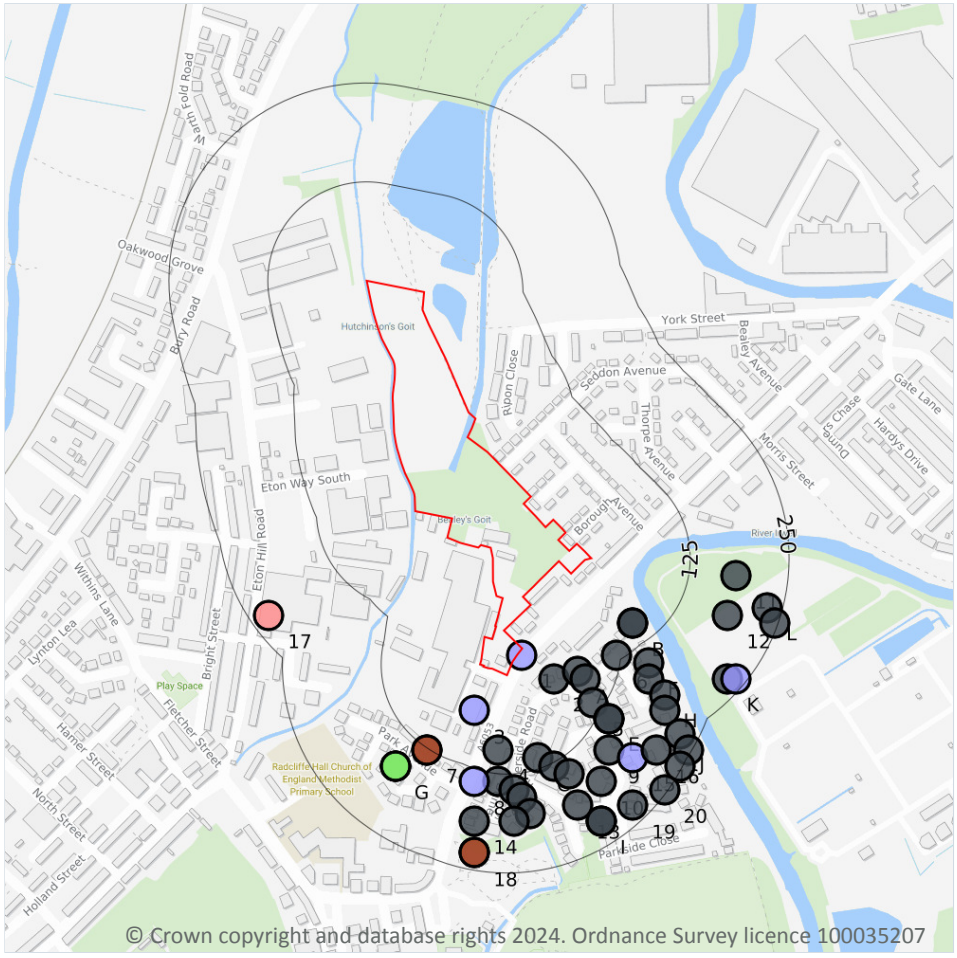
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 151 >**

ID	Location	Category	Description
4	**On site**	**FAULT**	**Fault, inferred**
5	**On site**	**ROCK**	**Coal seam, inferred**

ID	Location	Category	Description
6	**On site**	**ROCK**	**Coal seam, inferred**
7	14m S	ROCK	Coal seam, inferred
9	25m SE	FAULT	Fault, inferred
13	225m N	FAULT	Fault, inferred
14	277m NW	ROCK	Coal seam, inferred
16	287m NW	FAULT	Fault, inferred
17	302m N	ROCK	Coal seam, inferred
19	348m S	ROCK	Coal seam, inferred
20	381m SE	ROCK	Coal seam, inferred
21	431m N	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



16.1 BGS Boreholes

Records within 250m	50

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 154 >**

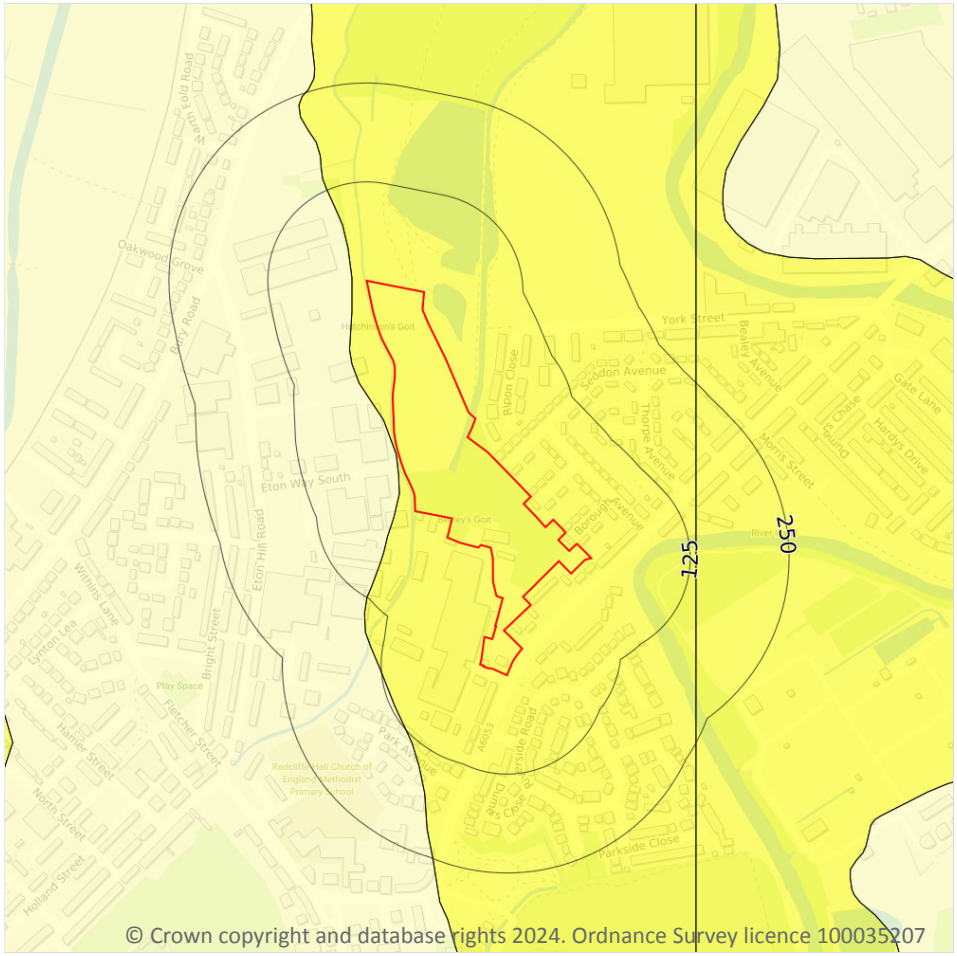
ID	Location	Grid reference	Name	Length	Confidential	Web link
1	5m S	379780 407960	RADCLIFFE BLEACHWORKS	9.14	N	18767 ↗
2	55m SE	379820 407930	DUMERS LANE RADCLIFFE 14	-	Y	N/A
3	56m S	379720 407890	DUMERS LANE BH4	3.5	N	18756 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	75m SE	379850 407940	DUMERS LANE RADCLIFFE TP 12	-	Y	N/A
A	89m SE	379860 407930	DUMERS LANE RADCLIFFE 18	-	Y	N/A
4	95m S	379750 407840	DUMERS LANE RADCLIFFE TP 20	-	Y	N/A
B	98m SE	379920 408000	DUMERS LANE RADCLIFFE 3A	-	Y	N/A
B	98m SE	379920 408000	DUMERS LANE RADCLIFFE 3	-	Y	N/A
C	112m S	379800 407830	DUMERS LANE RADCLIFFE 13	-	Y	N/A
5	113m SE	379870 407900	DUMERS LANE RADCLIFFE TP 14	-	Y	N/A
6	118m SE	379900 407960	DUMERS LANE RADCLIFFE TP 13	-	Y	N/A
7	127m S	379660 407840	RADCLIFFE BLEACHWORKS	-1.0	N	18771 ↗
C	129m S	379820 407820	DUMERS LANE RADCLIFFE 11	-	Y	N/A
D	135m S	379750 407800	DUMERS LANE RADCLIFFE TP 19	-	Y	N/A
E	140m SE	379890 407880	DUMERS LANE RADCLIFFE 15	-	Y	N/A
E	140m SE	379890 407880	DUMERS LANE RADCLIFFE 15A	-	Y	N/A
8	141m S	379720 407800	DUMERS LANE BH3	3.5	N	18755 ↗
D	145m S	379770 407790	DUMERS LANE RADCLIFFE TP 18	-	Y	N/A
C	148m S	379840 407810	DUMERS LANE RADCLIFFE TP 21	-	Y	N/A
F	150m SE	379940 407950	DUMERS LANE RADCLIFFE TP 11	-	Y	N/A
D	156m S	379780 407780	DUMERS LANE RADCLIFFE 12	-	Y	N/A
9	160m SE	379890 407840	DUMERS LANE RADCLIFFE TP 15	-	Y	N/A
F	164m SE	379940 407930	DUMERS LANE RADCLIFFE 17	-	Y	N/A
G	167m S	379620 407820	DUMMERS LANE RADCLIFFE 1	42.0	N	18757 ↗
G	167m S	379620 407820	DUMMERS LANE RADCLIFFE 2	34.0	N	18758 ↗
G	167m S	379620 407820	DUMMERS LANE RADCLIFFE 3	30.0	N	18759 ↗
D	177m S	379790 407760	DUMERS LANE RADCLIFFE TP 17	-	Y	N/A
10	180m SE	379880 407800	DUMERS LANE RADCLIFFE 10	-	Y	N/A
11	184m E	380050 408060	PROPOSED SLUDGE DIGESTION PLANTS BURY AND ROCHDALE BPB7	-	Y	N/A
D	185m S	379770 407750	DUMERS LANE RADCLIFFE TP 1	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
12	187m SE	380040 408010	PROPOSED SLUDGE DIGESTION PLANTS BURY AND ROCHDALE BPB2	-	Y	N/A
13	187m S	379850 407770	DUMERS LANE RADCLIFFE 21	-	Y	N/A
H	189m SE	379960 407910	DUMERS LANE RADCLIFFE TP 10	-	Y	N/A
14	189m S	379720 407750	DUMERS LANE RADCLIFFE 1	-	Y	N/A
15	190m SE	379920 407830	RADCLIFFE BLEACHWORKS	9.14	N	18768 ↗
H	196m SE	379960 407890	DUMERS LANE RADCLIFFE 16	-	Y	N/A
16	211m SE	379950 407840	DUMERS LANE RADCLIFFE 19	-	Y	N/A
I	220m S	379880 407750	DUMERS LANE RADCLIFFE 4	-	Y	N/A
I	220m S	379880 407750	DUMERS LANE RADCLIFFE 6	-	Y	N/A
17	227m SW	379460 408010	ELTON HILL DYEING CO ELTON HILL LANE	76.2	N	18403 ↗
J	227m SE	379980 407860	DUMERS LANE RADCLIFFE TP 9	-	Y	N/A
18	228m S	379720 407710	RADCLIFFE BLEACHWORKS	-1.0	N	18783 ↗
19	229m SE	379920 407770	DUMERS LANE RADCLIFFE 9	-	Y	N/A
K	230m SE	380040 407930	PROPOSED SLUDGE DIGESTION PLANTS BURY AND ROCHDALE BPB1	-	Y	N/A
L	231m SE	380090 408020	PROPOSED SLUDGE DIGESTION PLANTS BURY AND ROCHDALE BPD2	-	Y	N/A
K	238m SE	380050 407930	RADCLIFFE BLEACH WORKS NO. 6	9.14	N	27572 ↗
J	246m SE	379990 407840	DUMERS LANE RADCLIFFE TP 7	-	Y	N/A
20	246m SE	379960 407790	DUMERS LANE RADCLIFFE 8	-	Y	N/A
L	247m SE	380100 408000	PROPOSED SLUDGE DIGESTION PLANTS BURY AND ROCHDALE BPB4	-	Y	N/A
J	247m SE	379980 407820	DUMERS LANE RADCLIFFE TP 5	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	2

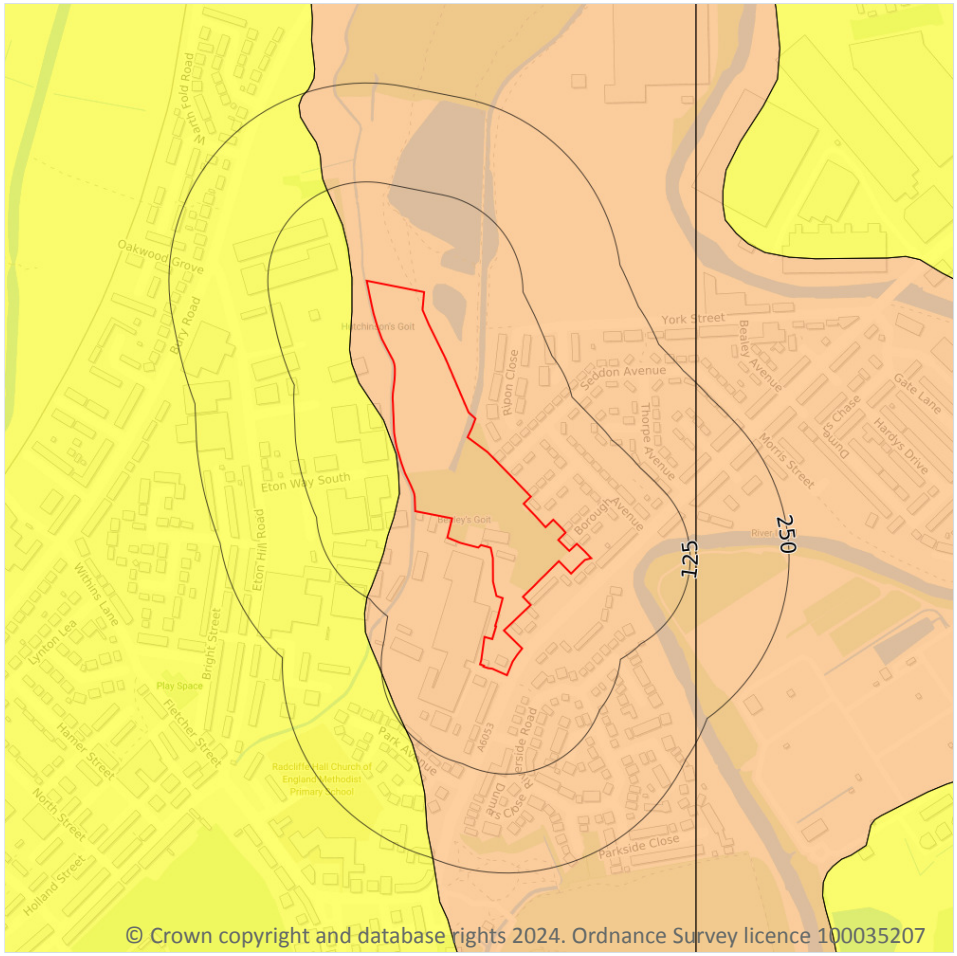
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 157 >**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**
3m W	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	2

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

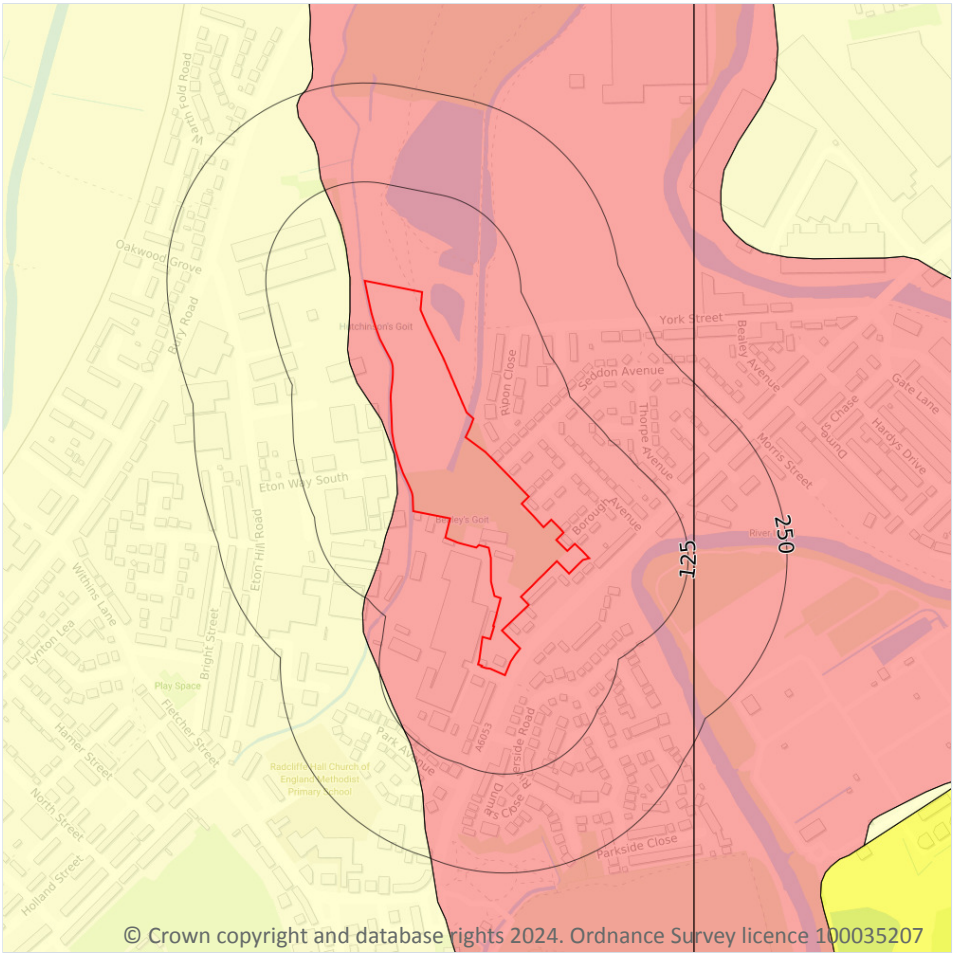
Features are displayed on the Natural ground subsidence - Running sands map on **page 158 >**

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.**

Location	Hazard rating	Details
3m W	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	2

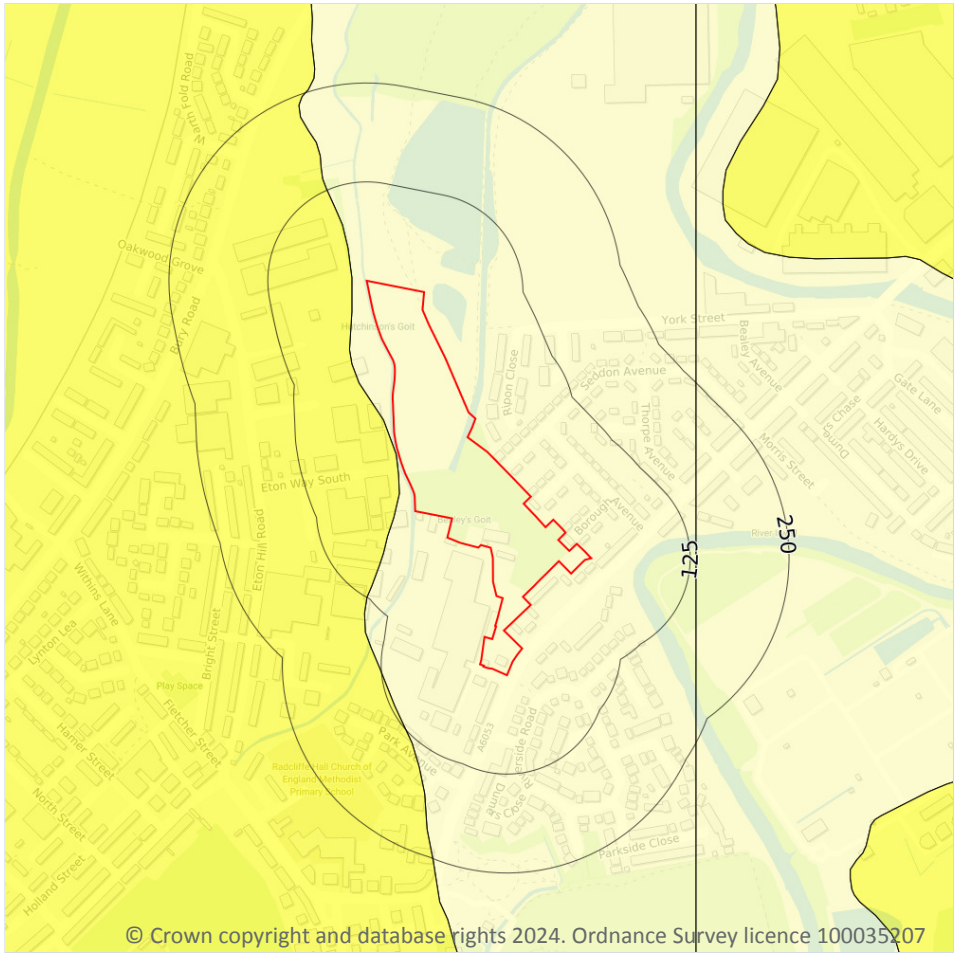
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 160 >**

Location	Hazard rating	Details
On site	**Moderate**	**Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.**
3m W	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

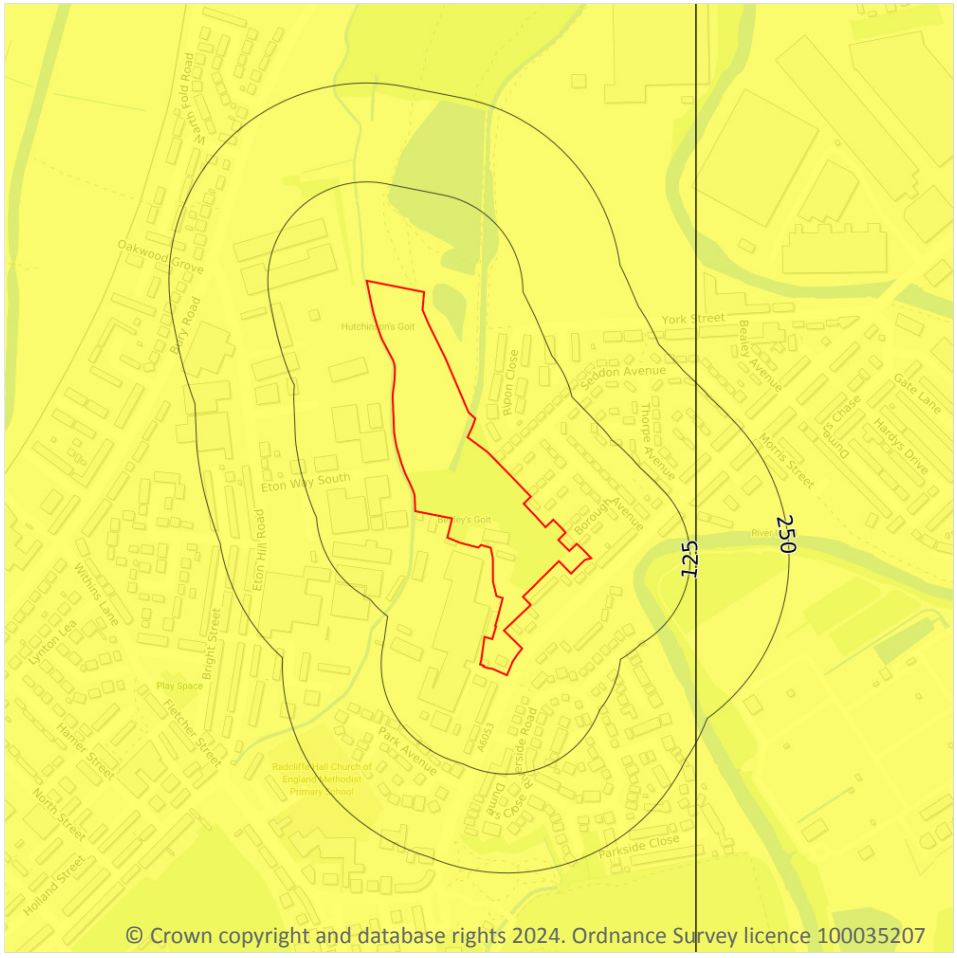
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 162 >**

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**
3m W	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	1

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 163 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



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

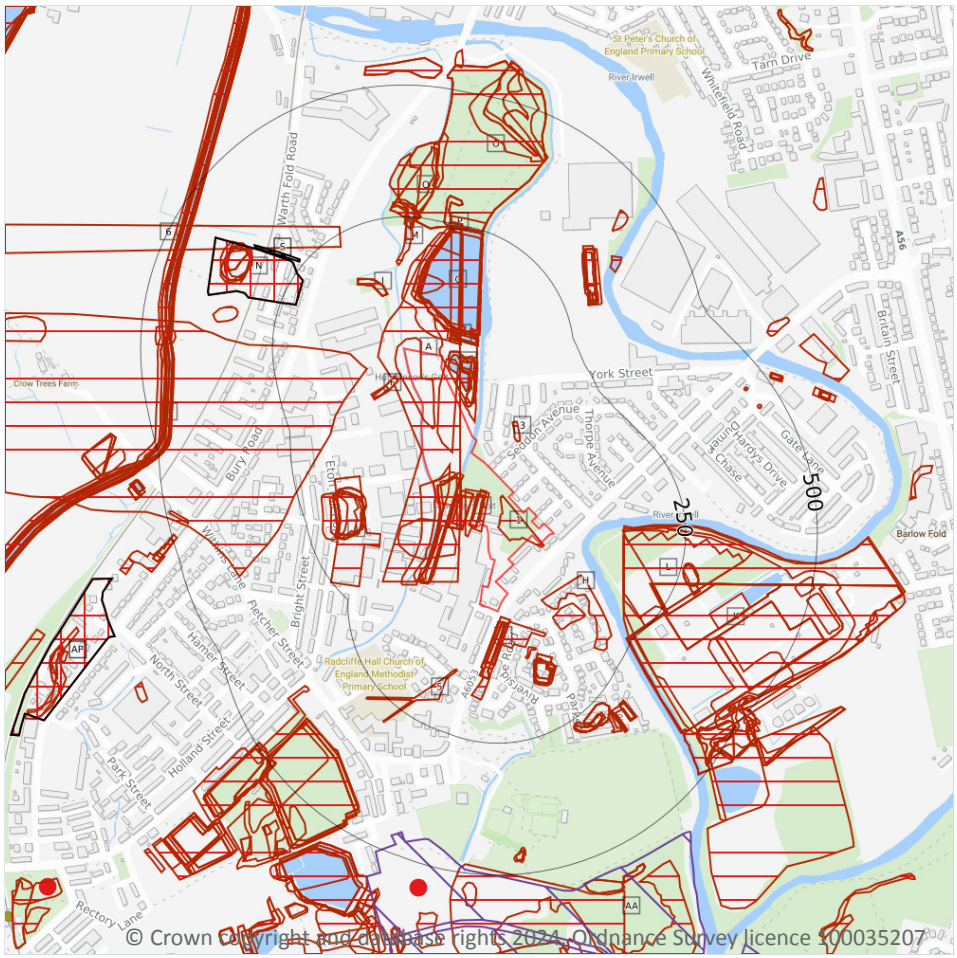
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 164 >**

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	0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	110

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 166 >**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Filter Beds**	**1908**	**1:10560**
2	**On site**	**Pond**	**1890**	**1:10560**
A	**On site**	**Colliery**	**1890**	**1:10560**
A	**On site**	**Refuse Heap**	**1890**	**1:10560**
B	**On site**	**Filter Beds**	**1928**	**1:10560**
B	**On site**	**Filter Beds**	**1928**	**1:10560**
B	**On site**	**Reservoir**	**1977**	**1:10000**
B	**On site**	**Pond**	**1965**	**1:10560**
B	**On site**	**Pond**	**1955**	**1:10560**
B	**On site**	**Pond**	**1891**	**1:10560**
B	**On site**	**Pond**	**1938**	**1:10560**
B	**On site**	**Water Body**	**1938**	**1:10560**
B	**On site**	**Water Body**	**1927**	**1:10560**
B	**On site**	**Pond**	**1927**	**1:10560**
B	**On site**	**Ponds**	**1908**	**1:10560**
B	**On site**	**Water Body**	**1890**	**1:10560**
B	**On site**	**Filter Beds**	**1955**	**1:10560**
B	**On site**	**Pond**	**1908**	**1:10560**
B	**On site**	**Filter Beds**	**1938**	**1:10560**
B	**On site**	**Pond**	**1851**	**1:10560**
C	**On site**	**Ponds**	**1977**	**1:10000**
D	12m N	Pond	1991	1:10000
D	12m N	Pond	1988	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
E	12m S	Ponds	1977	1:10000
E	12m S	Ponds	1965	1:10560
D	13m N	Pond	1965	1:10560
D	14m N	Pond	1938	1:10560
D	14m N	Pond	1928	1:10560
D	14m N	Reservoir	1955	1:10560
E	19m S	Ponds	1932	1:10560
E	19m S	Pond	1891	1:10560
E	19m S	Pond	1938	1:10560
E	20m S	Ponds	1915	1:10560
E	20m S	Ponds	1907	1:10560
B	21m S	Refuse Heap	1890	1:10560
E	22m S	Ponds	1923	1:10560
F	25m NW	Unspecified Ground Workings	1991	1:10000
F	25m NW	Unspecified Ground Workings	1988	1:10000
E	25m S	Ponds	1851	1:10560
C	32m N	Pond	1851	1:10560
G	32m N	Reservoir	1938	1:10560
G	32m N	Reservoir	1927	1:10560
C	36m N	Reservoirs	1890	1:10560
G	38m N	Reservoir	1955	1:10560
C	41m N	Reservoir	1991	1:10000
C	41m N	Reservoir	1988	1:10000
C	44m N	Pond	1965	1:10560
F	47m NW	Unspecified Ground Workings	1977	1:10000
C	51m N	Reservoir	1938	1:10560
C	51m N	Reservoir	1927	1:10560
C	51m N	Reservoir	1908	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
C	55m N	Water Body	1851	1:10560
C	58m N	Reservoir	1955	1:10560
H	65m SE	Refuse Heap	1965	1:10560
3	72m NE	Pond	1891	1:10560
4	77m NW	Colliery	1890	1:10560
E	90m S	Unspecified Ground Workings	1851	1:10560
H	97m SE	Ponds	1851	1:10560
C	108m N	Pond	1890	1:10560
I	108m NW	Unspecified Ground Workings	1991	1:10000
I	108m NW	Unspecified Ground Workings	1977	1:10000
I	108m NW	Unspecified Ground Workings	1965	1:10560
I	108m NW	Unspecified Ground Workings	1988	1:10000
E	111m S	Reservoir	1977	1:10000
E	111m S	Pond	1965	1:10560
E	116m S	Reservoir	1955	1:10560
E	117m S	Reservoir	1932	1:10560
E	117m S	Water Body	1891	1:10560
E	117m S	Reservoir	1938	1:10560
E	118m S	Reservoir	1915	1:10560
E	118m S	Pond	1907	1:10560
E	118m S	Reservoir	1923	1:10560
E	118m S	Pond	1851	1:10560
J	122m SW	Pond	1988	1:10000
J	129m W	Reservoir	1955	1:10560
5	130m S	Filter Beds	1891	1:10560
K	131m E	Sewage Works	1955	1:10560
K	132m E	Sewage Works	1974	1:10000
L	132m E	Sludge Beds	1974	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
J	132m W	Reservoir	1977	1:10000
J	132m W	Pond	1965	1:10560
J	132m W	Reservoir	1988	1:10000
K	133m E	Sewage Works	1981	1:10000
L	133m E	Sludge Beds	1981	1:10000
J	136m W	Reservoir	1938	1:10560
J	136m W	Reservoir	1927	1:10560
J	142m W	Reservoir	1908	1:10560
J	147m W	Reservoir	1890	1:10560
M	159m N	Refuse Heap	1908	1:10560
J	165m W	Pond	1851	1:10560
K	207m SE	Sewage Works	1938	1:10560
K	207m SE	Sewage Works	1932	1:10560
M	208m N	Unspecified Ground Workings	1965	1:10560
K	209m SE	Sewage Works	1923	1:10560
K	209m SE	Sewage Works	1915	1:10560
K	209m SE	Sewage Works	1907	1:10560
N	222m NW	Colliery	1890	1:10560
M	227m N	Pond	1991	1:10000
M	227m N	Pond	1988	1:10000
6	227m NW	Cuttings	1890	1:10560
O	233m N	Unspecified Disused Tip	1991	1:10000
O	233m N	Refuse Heap	1977	1:10000
O	233m N	Unspecified Disused Tip	1988	1:10000
P	235m N	Unspecified Ground Workings	1938	1:10560
P	235m N	Unspecified Ground Workings	1927	1:10560
P	235m N	Unspecified Ground Workings	1908	1:10560
Q	246m N	Unspecified Heap	1938	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
Q	246m N	Unspecified Heap	1927	1:10560
Q	246m N	Refuse Heap	1908	1:10560
P	246m N	Unspecified Pit	1965	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	**5**

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 166 >**

ID	Location	Land Use	Year of mapping	Mapping scale
N	222m NW	Colliery	1890	1:10560
S	258m NW	Tunnel	1908	1:10560
S	287m NW	Air Shafts	1908	1:10560
S	311m NW	Air Shaft	1908	1:10560
AP	632m W	Colliery	1891	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 166 >**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
AA	452m S	Close Park	Sand and gravel	Surface mineral working	Valid	23/1/51

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	1

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

Location	Details
On site	**In addition to being located inside an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property which may supplement this information. Please note, the plans held by JPB may also relate to non-mining records. Further details and a quote for services (if appropriate) can be obtained by emailing this report to enquiries.gs@jpb.co.uk ↗.**

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	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

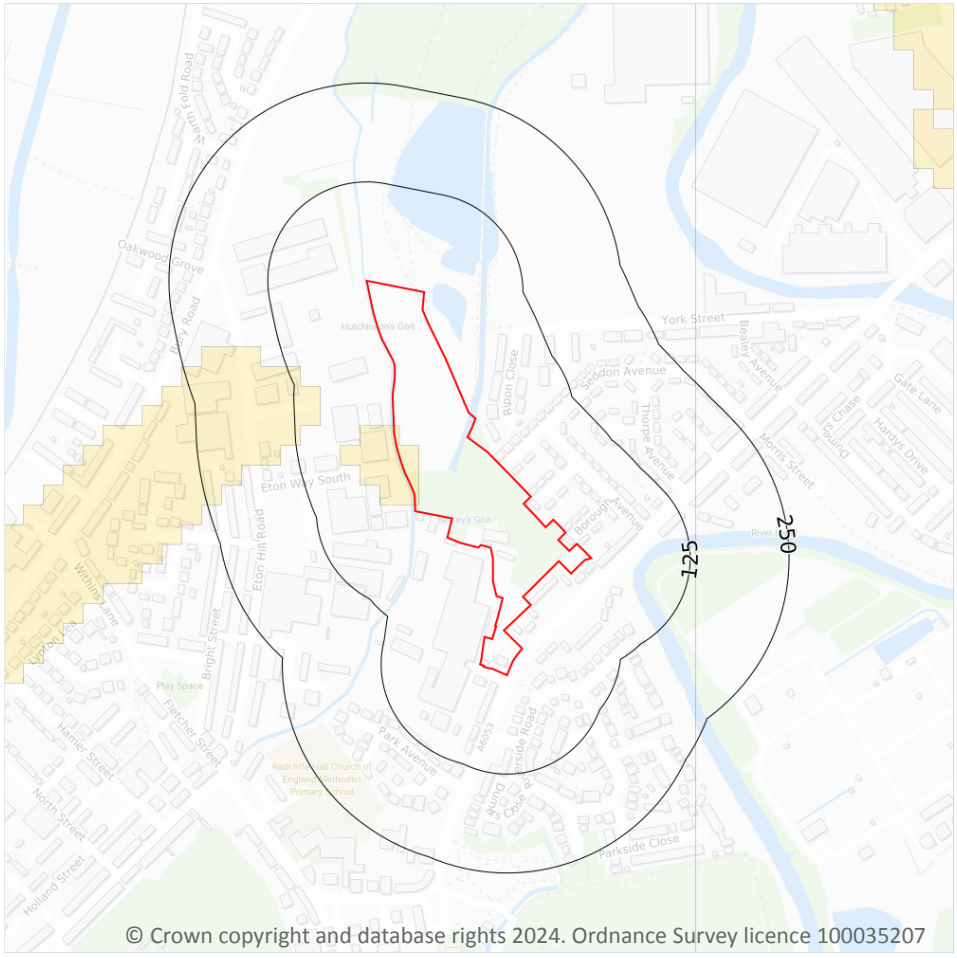
This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

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 177 >**

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	11

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**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**40 - 60 mg/kg**	**15 - 30 mg/kg**
7m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
19m SE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
19m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
28m W	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
31m W	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
32m W	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects



22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	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 181 >**

Location	Land Use	Year of mapping	Mapping scale
On site	**Tramway Sidings**	**1890**	**2500**
On site	**Tramway Sidings**	**1910**	**2500**
On site	**Tramway Sidings**	**1893**	**2500**
On site	**Railway Sidings**	**1909**	**2500**
On site	**Railway Sidings**	**1907**	**10560**
On site	**Railway Sidings**	**1891**	**10560**
On site	**Tramway Sidings**	**1908**	**10560**
On site	**Tramway Sidings**	**1890**	**10560**
14m N	Tramway Sidings	1910	2500
109m SE	Railway Sidings	1891	10560
110m SE	Railway Sidings	1907	10560
114m SE	Railway Sidings	1909	2500

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 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.

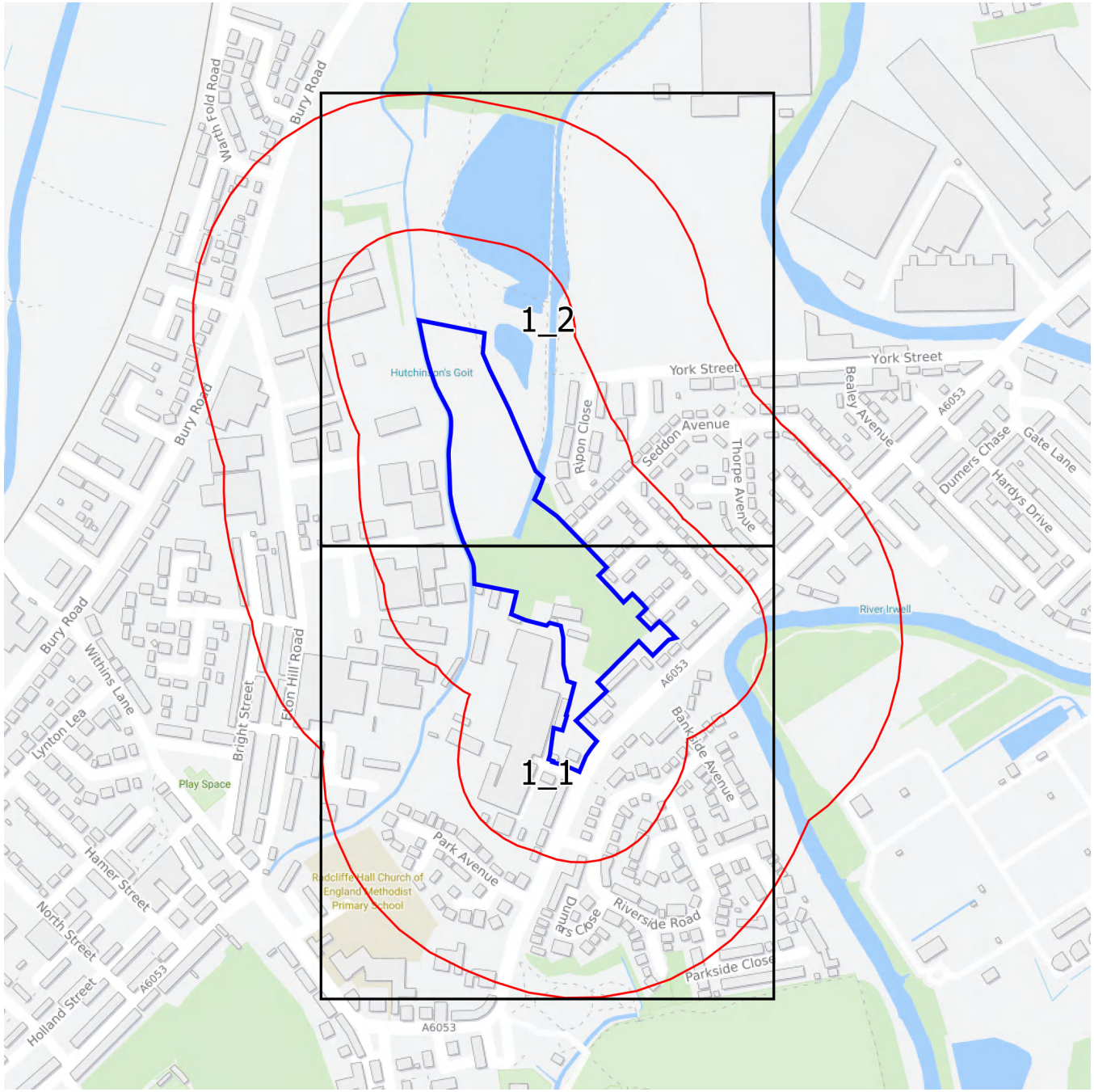
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Data providers

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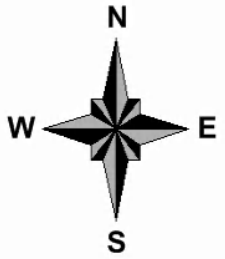
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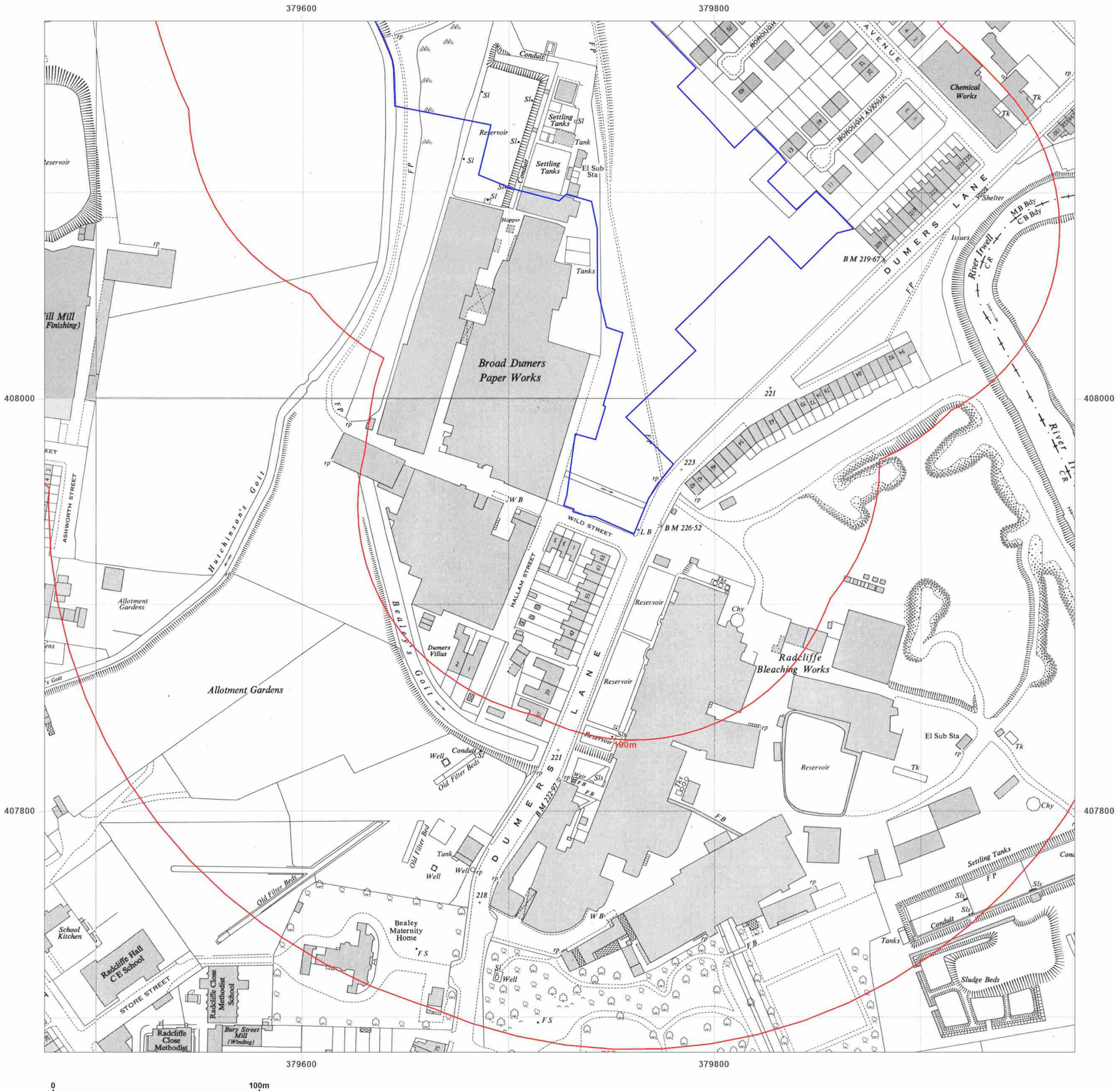
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1:1,250 Scale Grid Index





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Grid Ref: 379725, 407933

Map Name: National Grid

Map date: **1956**

Scale: 1:1,250

Printed at: 1:2,000

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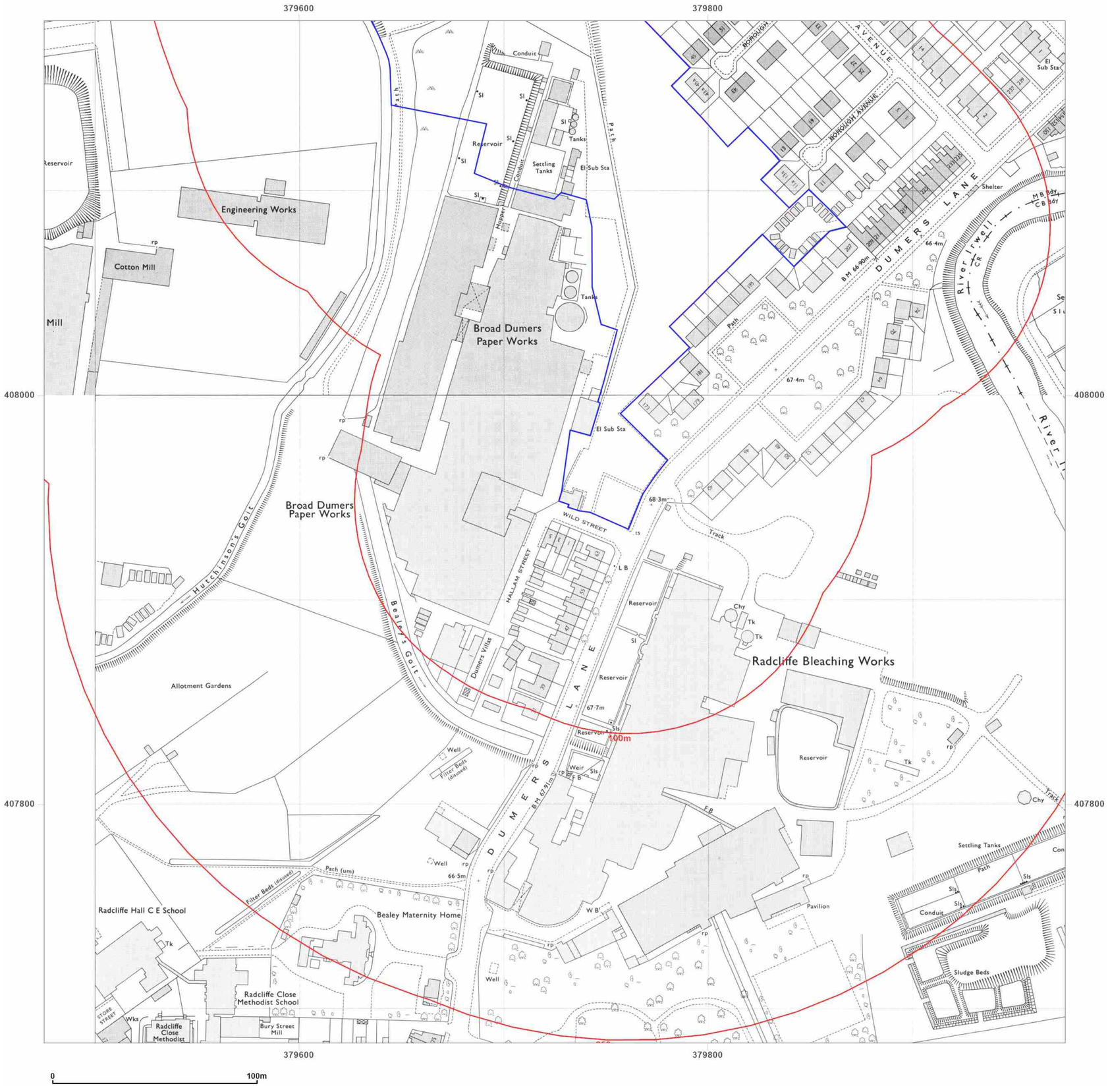
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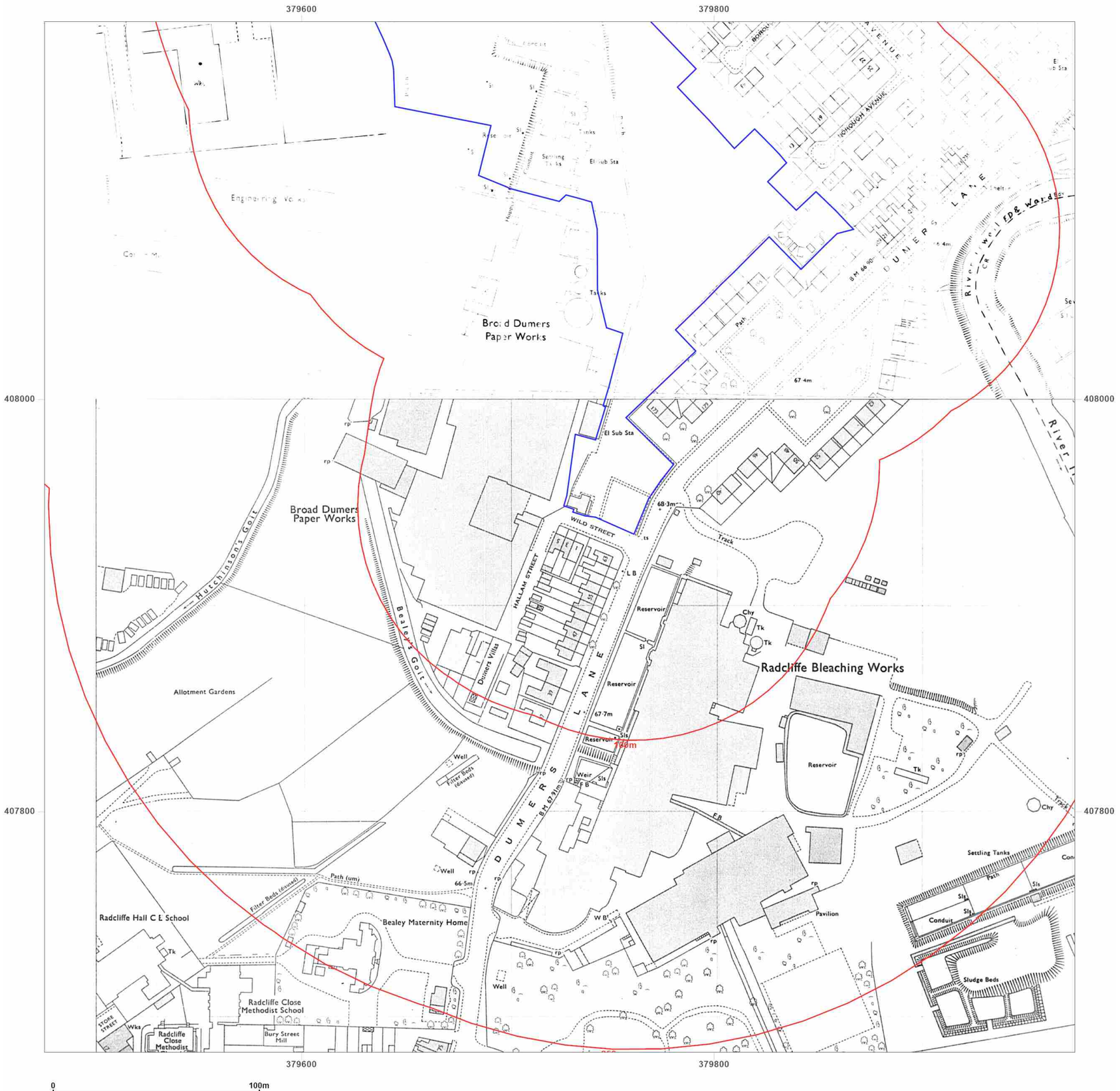
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Grid Ref: 379725, 407933

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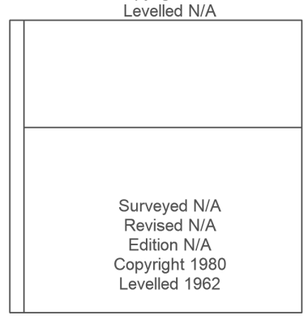
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Map Name: National Grid

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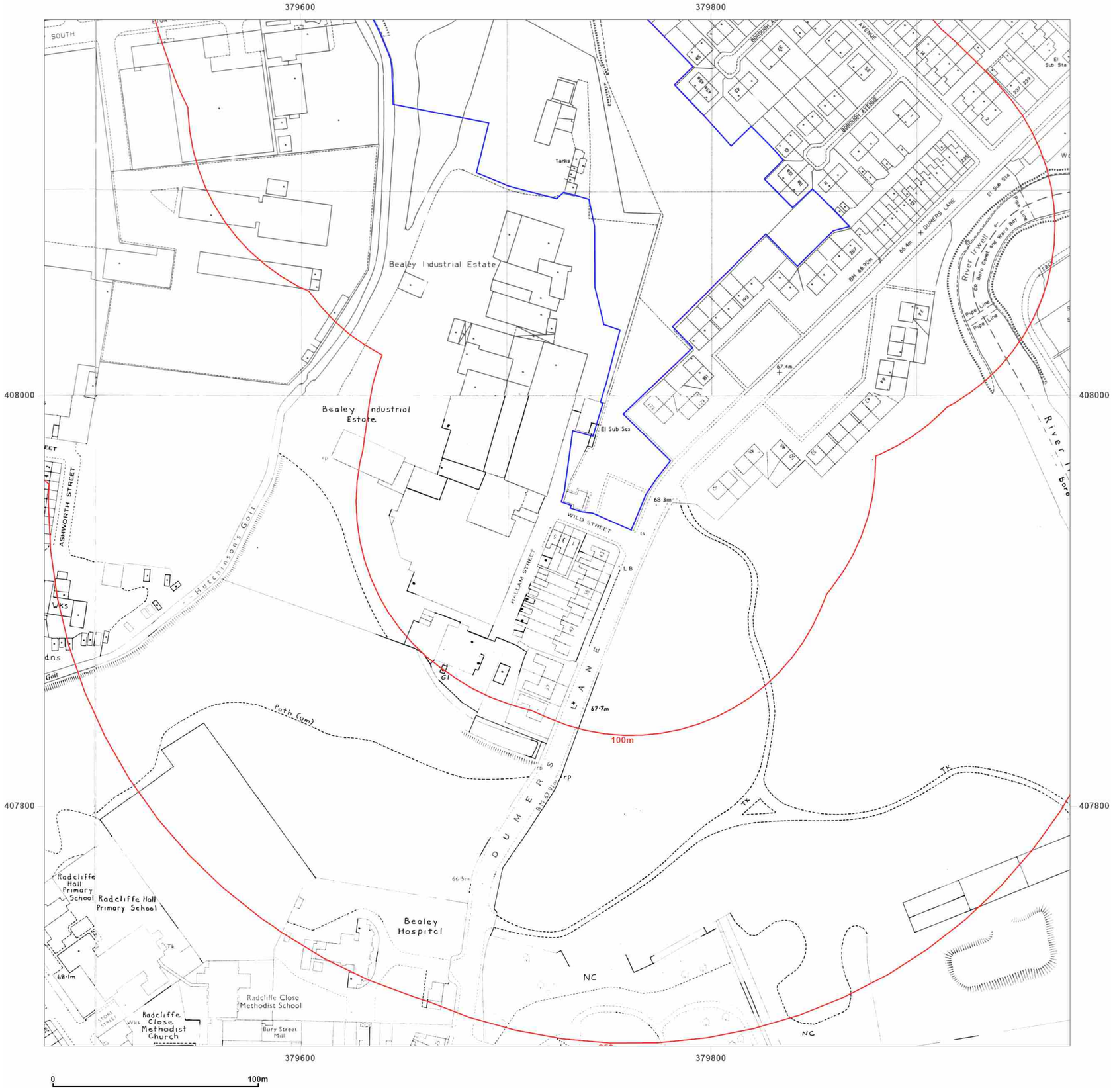
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Map Name: National Grid

Map date: **1987-1992**

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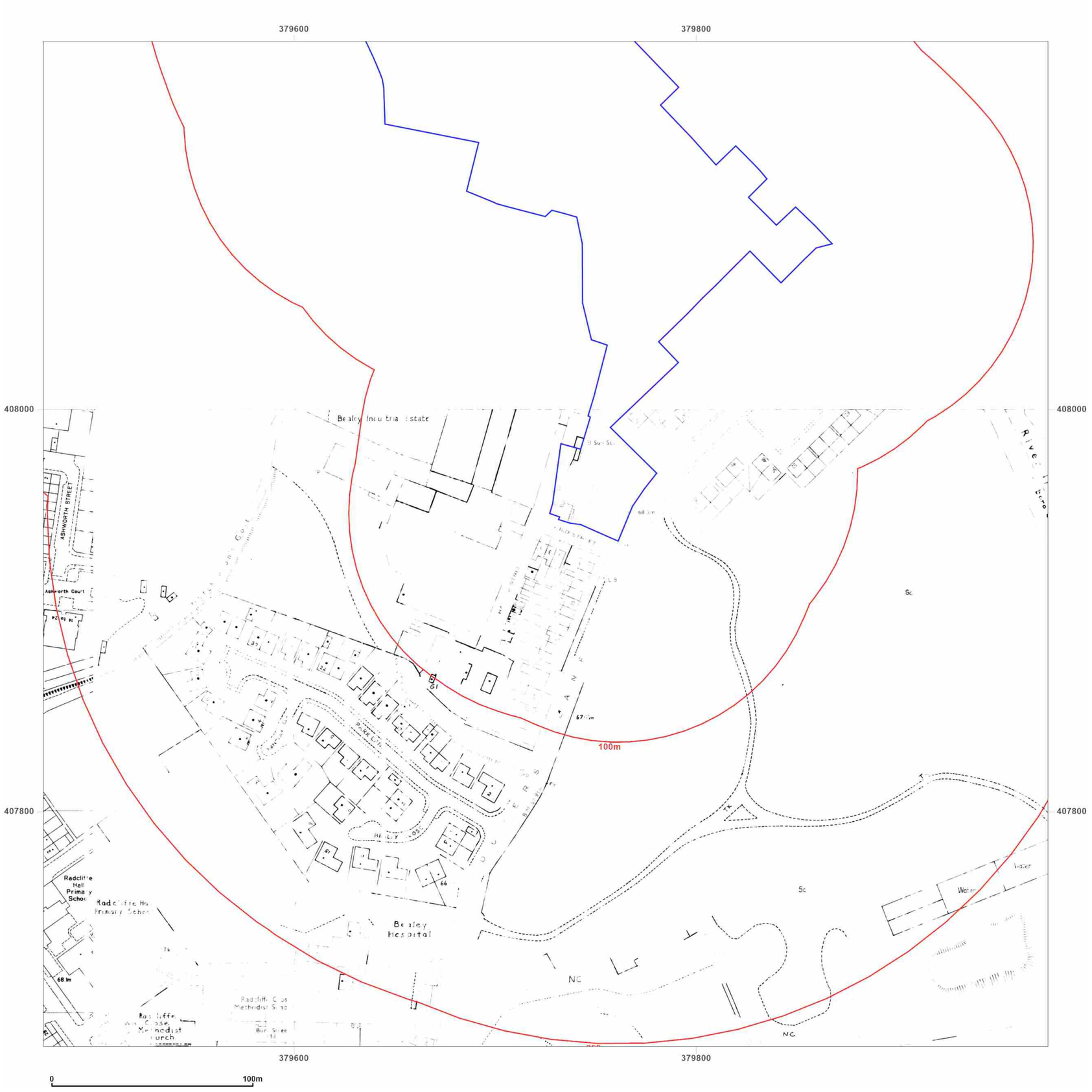
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Grid Ref: 379725, 407933

Map Name: National Grid
Map date: **1991-1992**
Scale: 1:1,250
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Report Ref: GS-HMJ-3VX-27B-I11_1250_1_1
Grid Ref: 379725, 407933

Map Name: National Grid

Map date: **1994**

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Grid Ref: 379725, 407933

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

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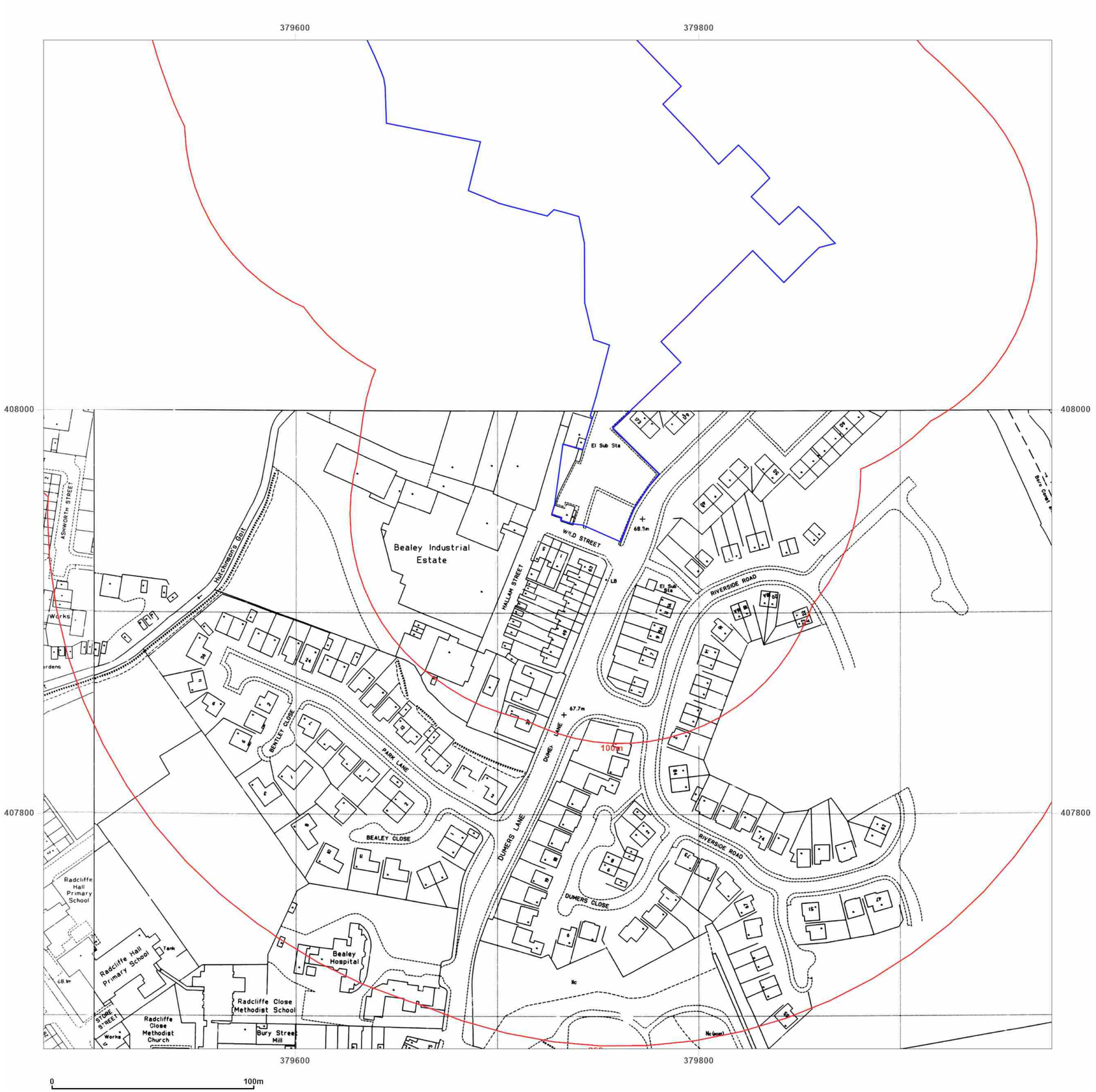
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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_1
Grid Ref: 379725, 407933

Map Name: National Grid

Map date: **1992-1994**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1994	Surveyed 1992
Revised N/A	Revised N/A
Edition N/A	Edition N/A
Copyright 1994	Copyright 1992
Levelled N/A	Levelled N/A

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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_1
Grid Ref: 379725, 407933

Map Name: National Grid

Map date: **1992-1994**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1994	Surveyed 1992
Revised 1994	Revised 1992
Edition N/A	Edition N/A
Copyright N/A	Copyright 1992
Levelled N/A	Levelled N/A

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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_1
Grid Ref: 379725, 407933

Map Name: National Grid

Map date: **1994-1995**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1995	Surveyed 1994
Revised 1995	Revised N/A
Edition N/A	Edition N/A
Copyright 1995	Copyright 1994
Levelled N/A	Levelled N/A

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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_1
Grid Ref: 379725, 407933

Map Name: National Grid

Map date: **1994-1995**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1995	Surveyed 1994
Revised N/A	Revised N/A
Edition N/A	Edition N/A
Copyright 1995	Copyright 1994
Levelled N/A	Levelled N/A

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Groundsure INSIGHTS

Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_2
Grid Ref: 379725, 408433

Map Name: National Grid

Map date: **1956**

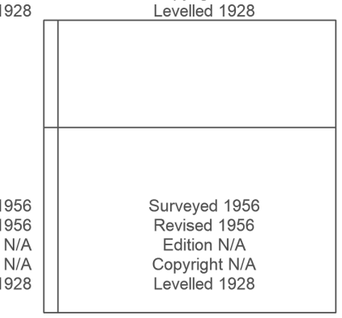
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Surveyed 1956
Revised 1956
Edition N/A
Copyright N/A
Levelled 1928

Surveyed 1956
Revised 1956
Edition N/A
Copyright N/A
Levelled 1928



Surveyed 1956
Revised 1956
Edition N/A
Copyright N/A
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Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_2
Grid Ref: 379725, 408433

Map Name: National Grid

Map date: **1972-1976**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1956
Revised 1975
Edition N/A
Copyright 1976
Levelled 1962

Surveyed 1956
Revised 1972
Edition N/A
Copyright 1972
Levelled 1962

Surveyed 1956
Revised 1972
Edition N/A
Copyright 1972
Levelled 1962

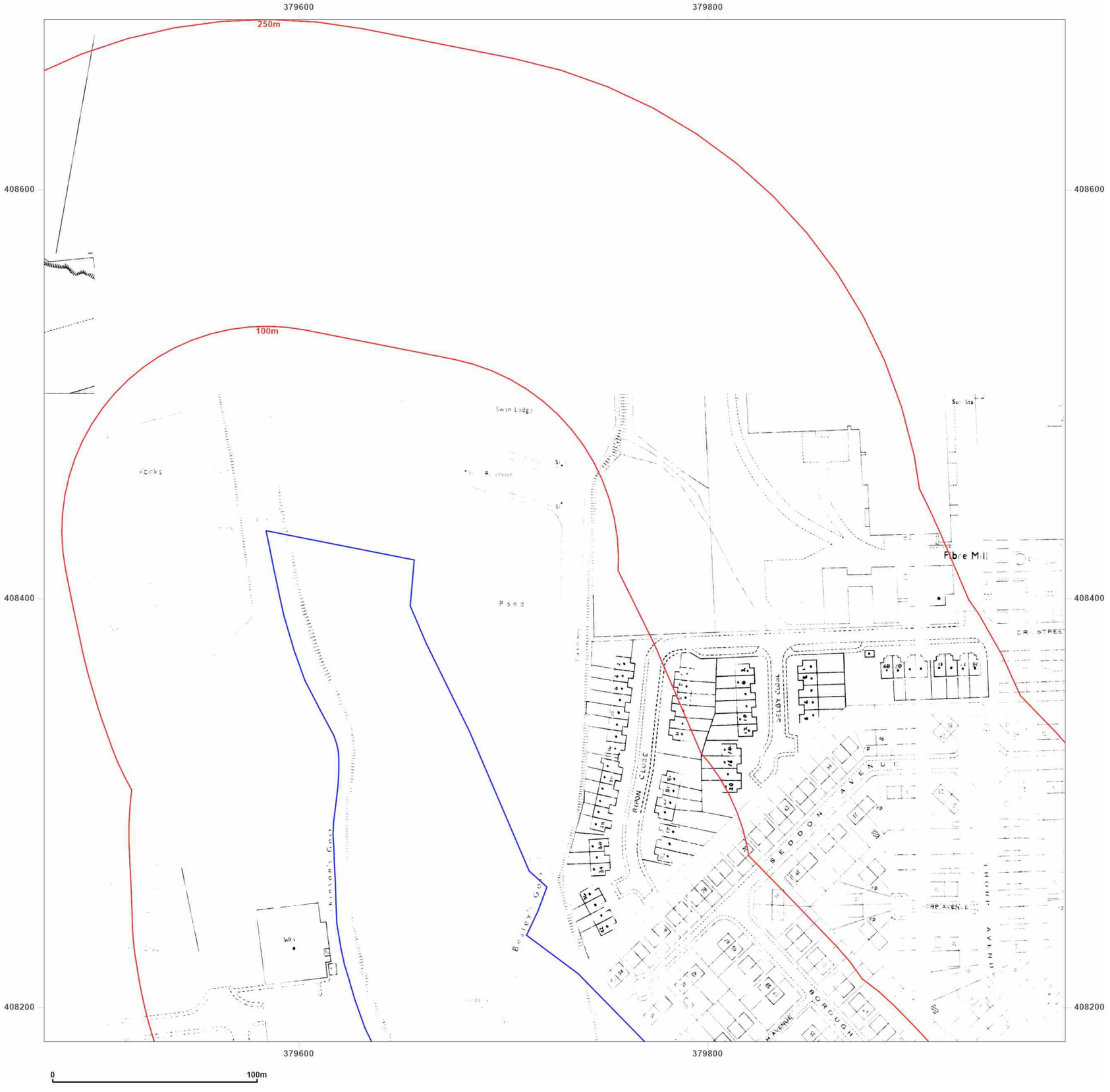
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Site Details:

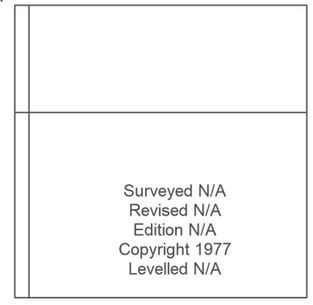
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_2
Grid Ref: 379725, 408433

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
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Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_2
Grid Ref: 379725, 408433

Map Name: National Grid

Map date: **1985**

Scale: 1:1,250

Printed at: 1:2,000

N
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Revised 1985
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_1250_1_2
Grid Ref: 379725, 408433

Map Name: National Grid

Map date: **1987-1992**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1992 Revised 1992 Edition N/A Copyright N/A Levelled N/A	Surveyed 1992 Revised 1992 Edition N/A Copyright N/A Levelled N/A
Surveyed 1962 Revised 1987 Edition N/A Copyright 1987 Levelled 1962	Surveyed 1992 Revised 1992 Edition N/A Copyright N/A Levelled N/A

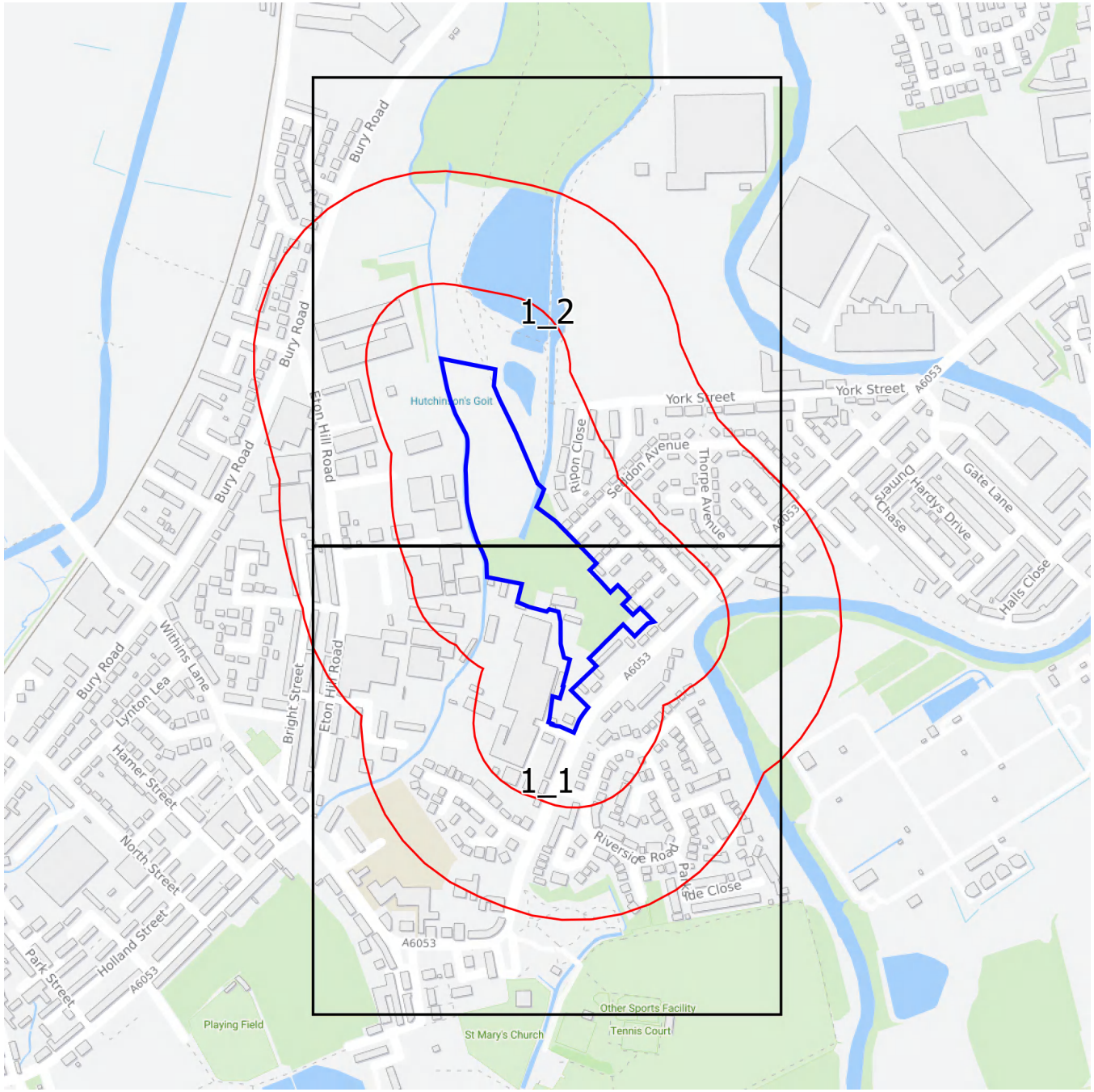
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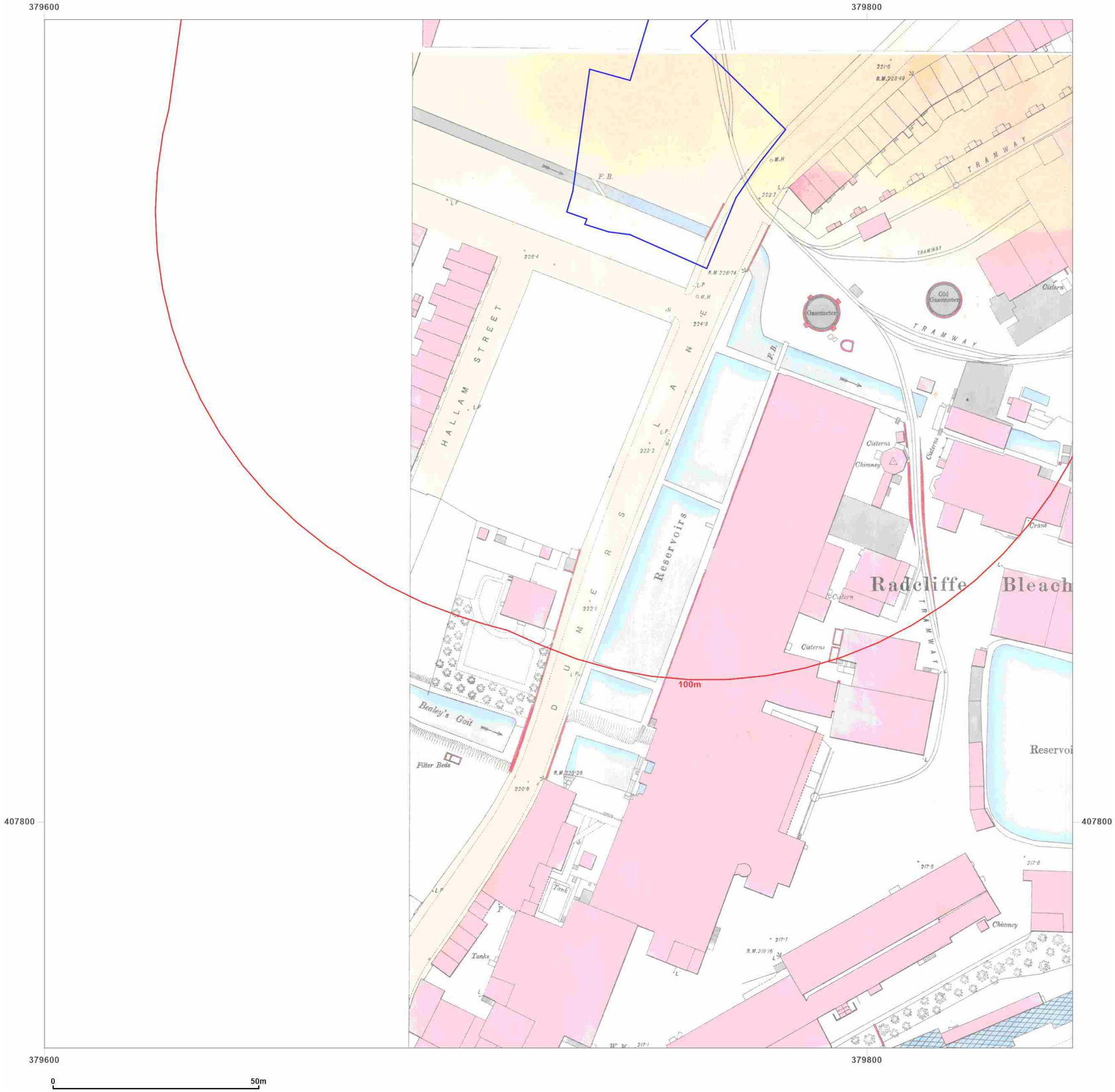
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Groundsure INSIGHTS

1:2,500 Scale Grid Index

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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_1
Grid Ref: 379725, 407870

Map Name: County Series Town Plan

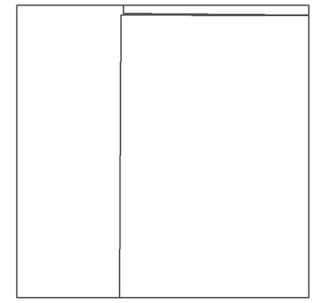
Map date: **1891**

Scale: 1:500

Printed at: 1:1,000

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



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

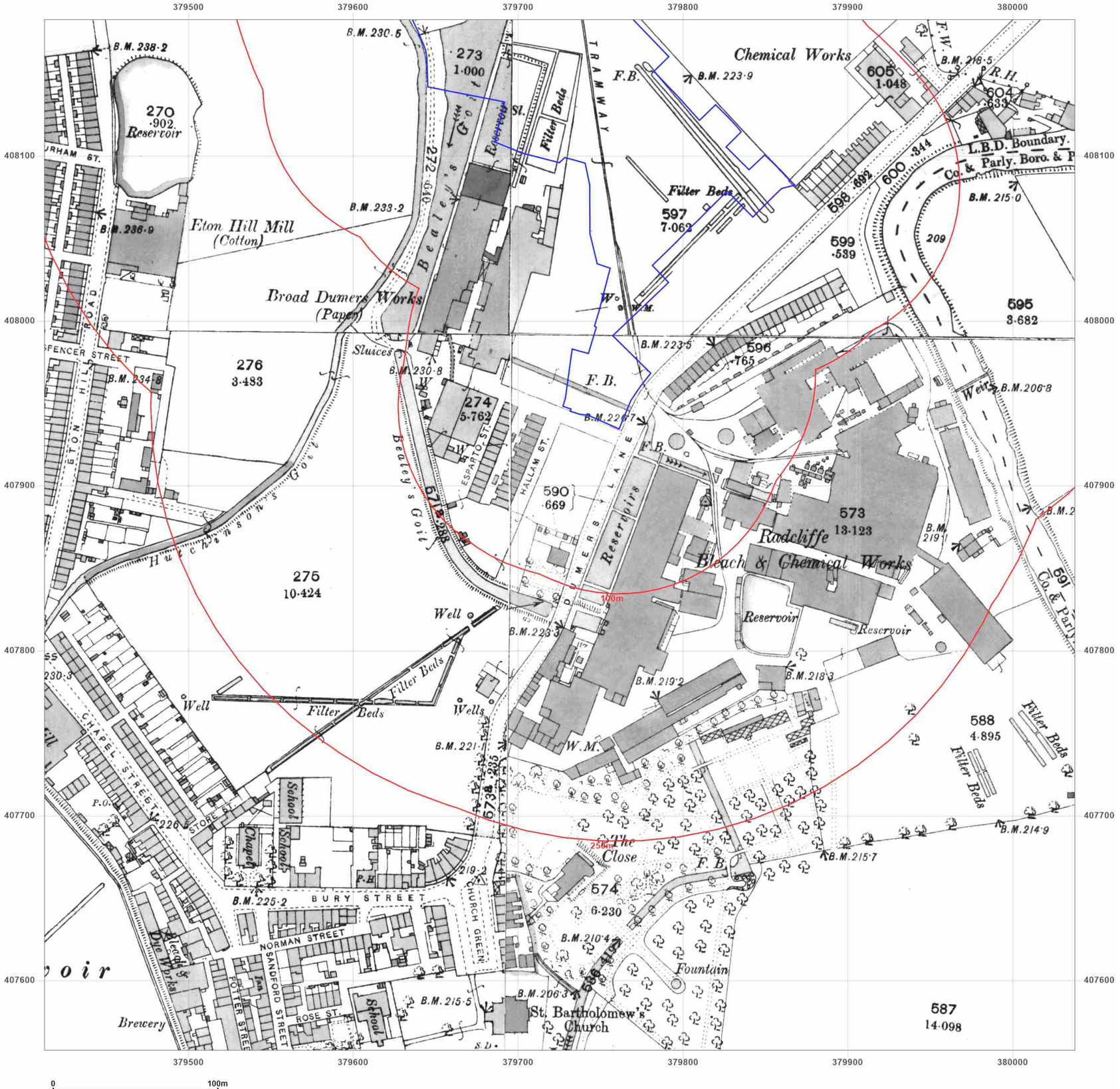
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Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_1
Grid Ref: 379725, 407870

Map Name: County Series

Map date: **1890-1893**

Scale: 1:2,500

Printed at: 1:2,500

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

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

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

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

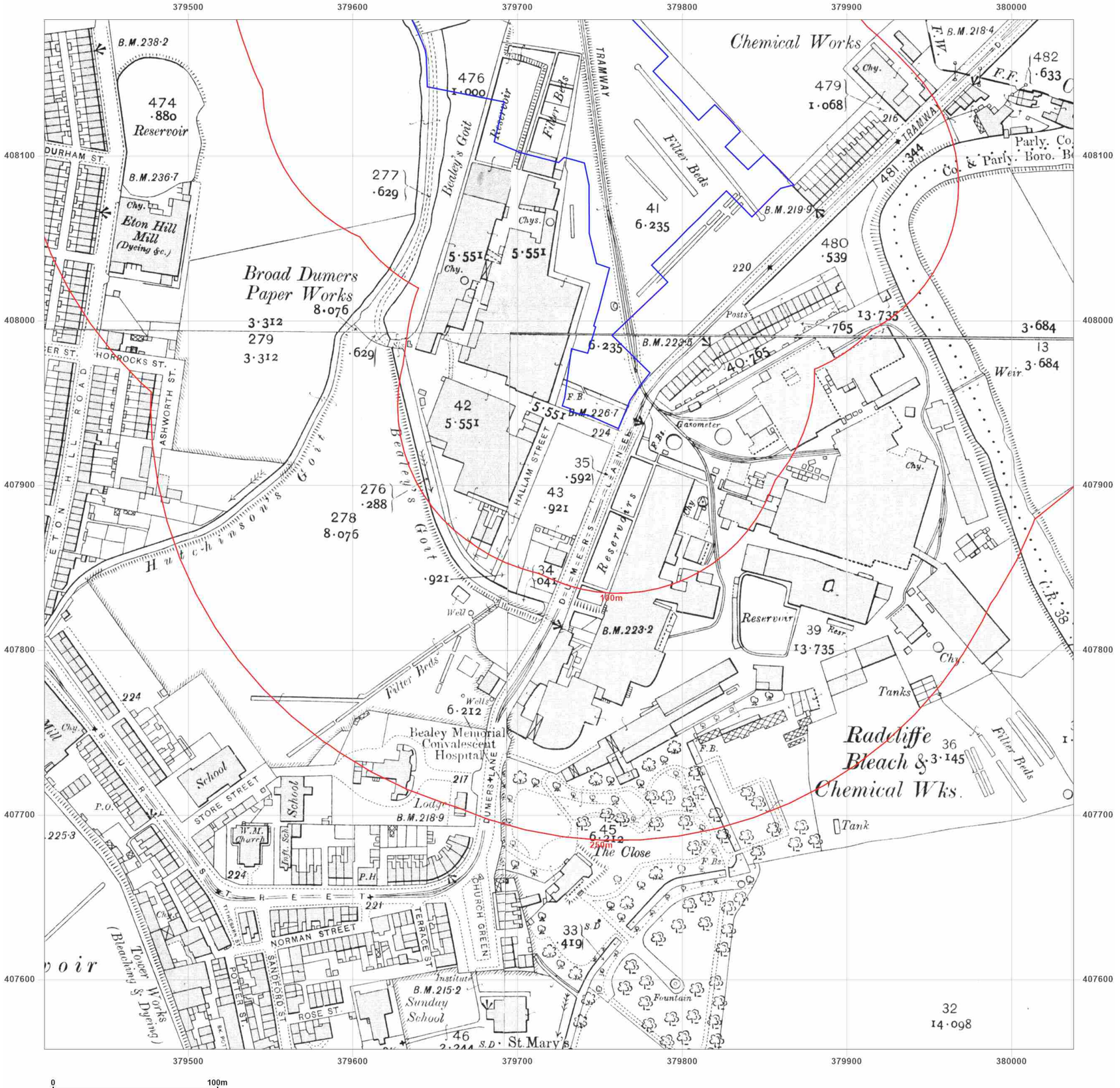
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Site Details:

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Industrial Estate, Radcliffe, M26
2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_1
Grid Ref: 379725, 407870

Map Name: County Series

Map date: **1909-1910**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1910
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1910
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1909
Revised 1909
Edition N/A
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Revised 1909
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_1
Grid Ref: 379725, 407870

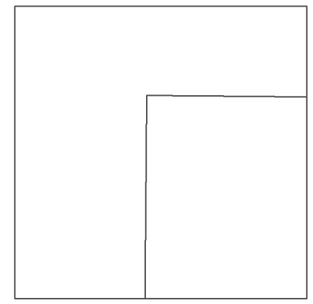
Map Name: County Series

Map date: **1922**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1922
Revised 1922
Edition N/A
Copyright N/A
Levelled N/A

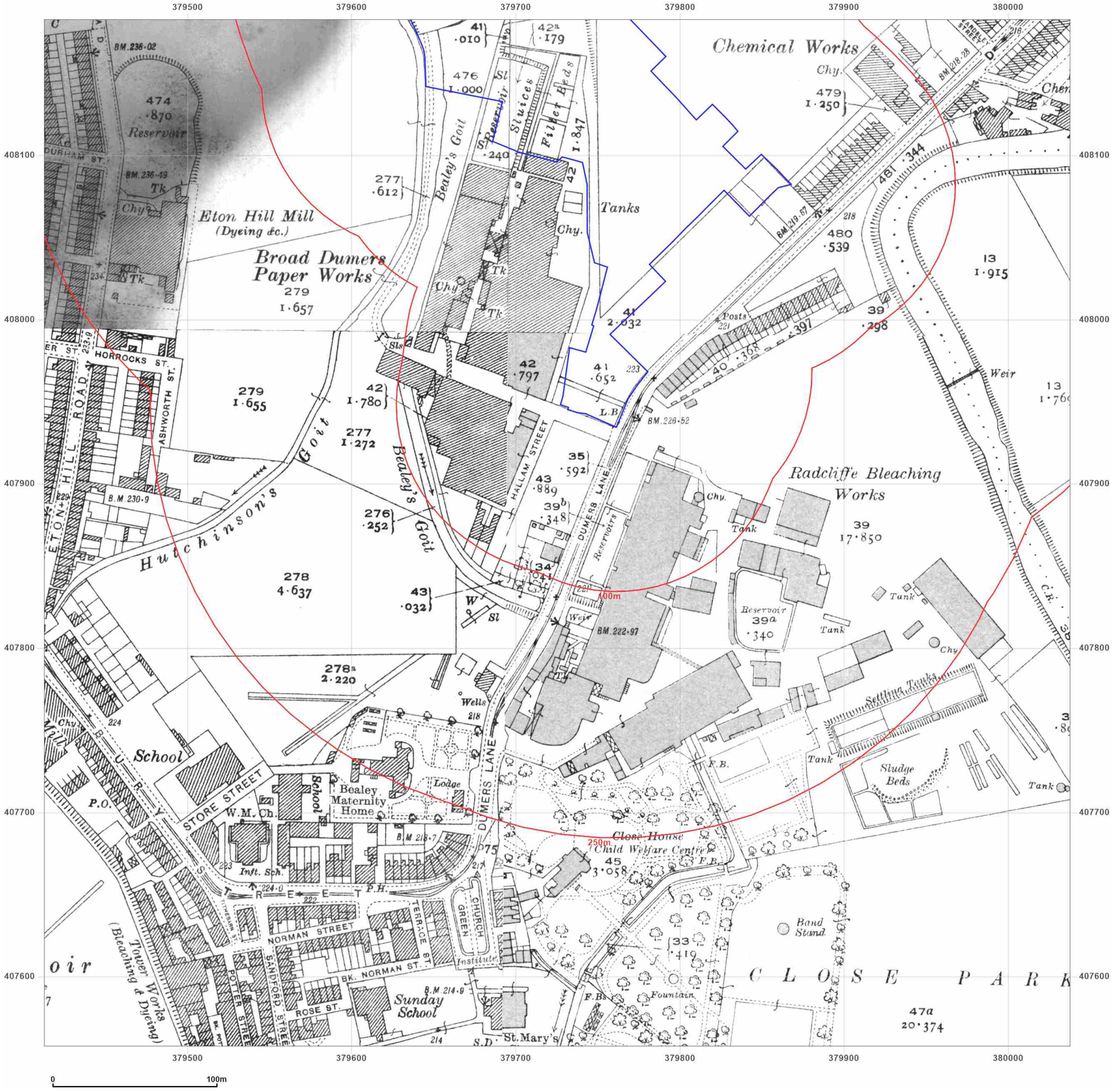
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Site Details:

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2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_1
Grid Ref: 379725, 407870

Map Name: County Series

Map date: **1929-1932**

Scale: 1:2,500

Printed at: 1:2,500

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

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

Surveyed 1929
Revised 1929
Edition N/A
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Surveyed 1932
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Site Details:

Land Adjacent to Bealey
Industrial Estate, Radcliffe, M26
2BD

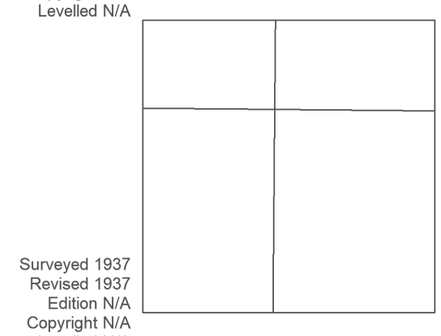
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Report Ref: GS-HMJ-3VX-27B-I11_LS_1_1
Grid Ref: 379725, 407870

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

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

Surveyed 1937
Revised 1937
Edition N/A
Copyright N/A
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Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_1
Grid Ref: 379725, 407870

Map Name: National Grid

Map date: **1956**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1956
Edition 1957
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Levelled 1928

Surveyed 1956
Revised 1956
Edition 1957
Copyright N/A
Levelled 1928

Surveyed 1956
Revised 1956
Edition 1957
Copyright N/A
Levelled 1927

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Revised 1956
Edition 1957
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Levelled 1927

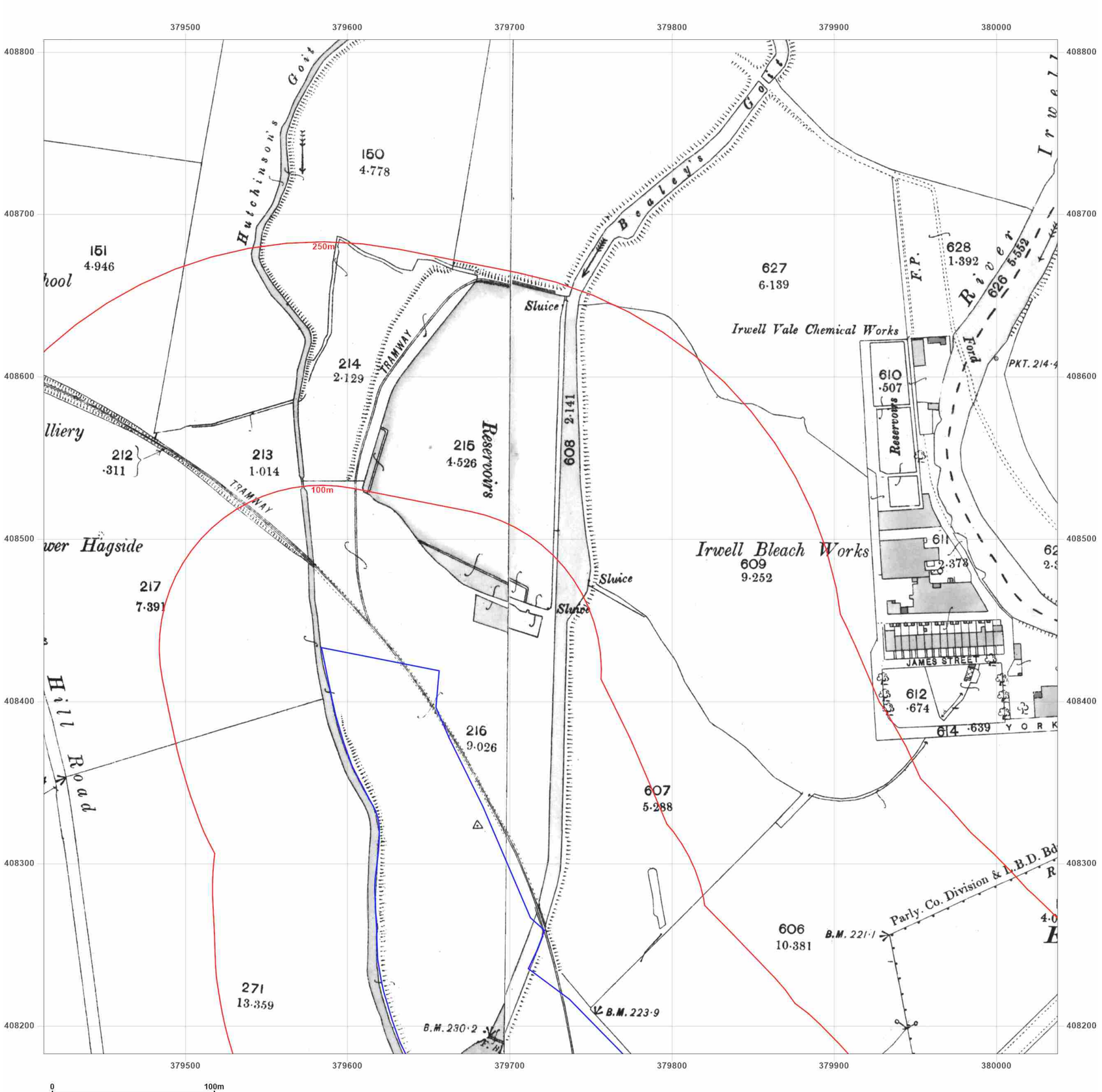
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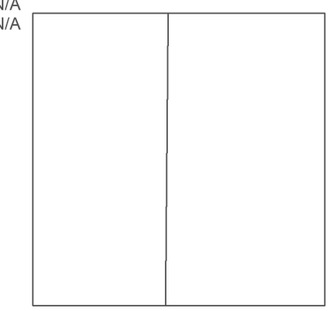
Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_2
Grid Ref: 379725, 408495

Map Name: County Series
Map date: **1890**
Scale: 1:2,500
Printed at: 1:2,500

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



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

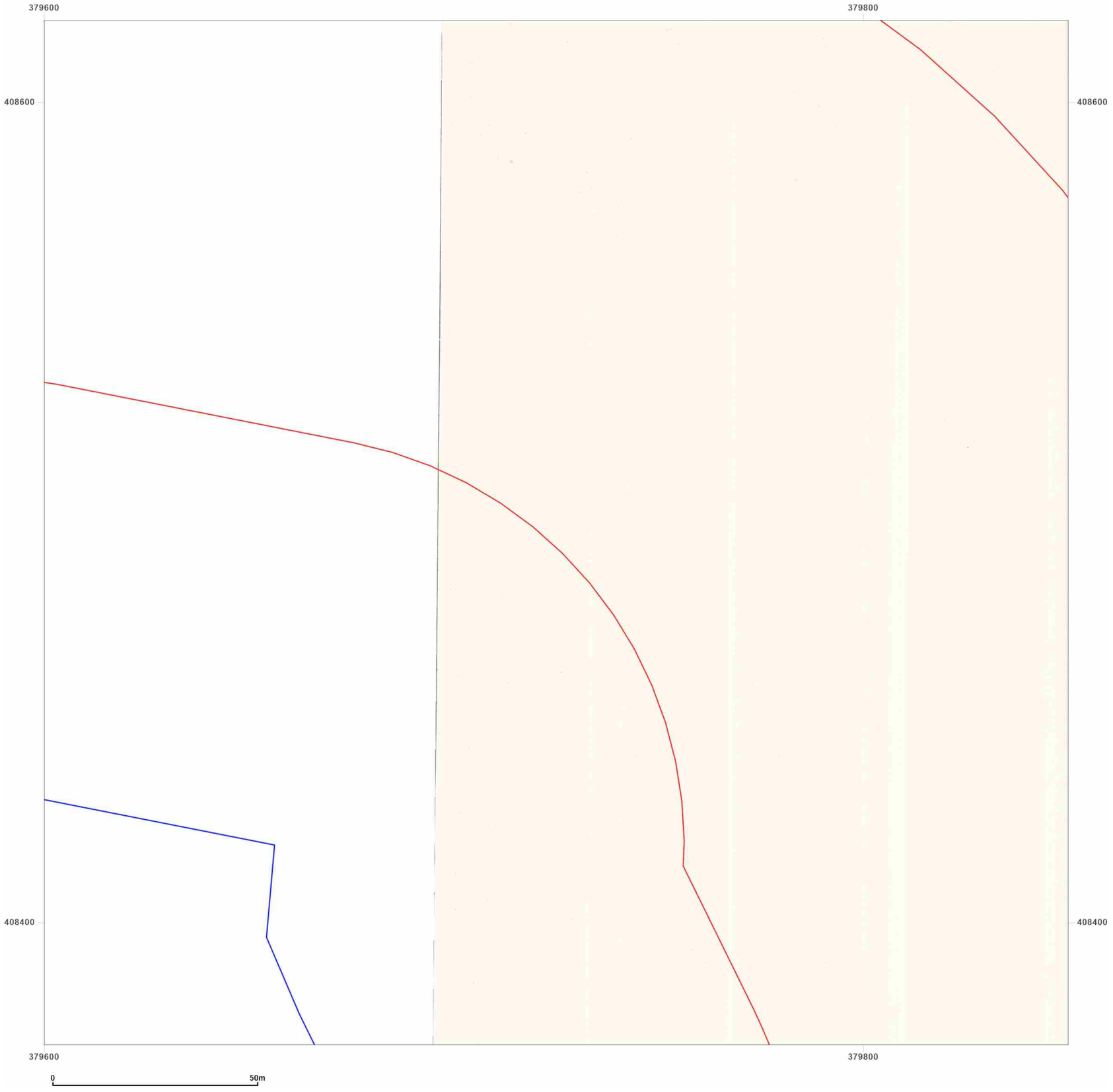
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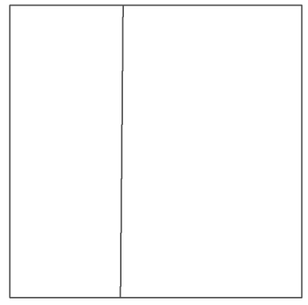
Site Details:

Land Adjacent to Bealey
Industrial Estate, Radcliffe, M26
2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_2
Grid Ref: 379725, 408495

Map Name: County Series Town Plan
Map date: **1891**
Scale: 1:500
Printed at: 1:1,000

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

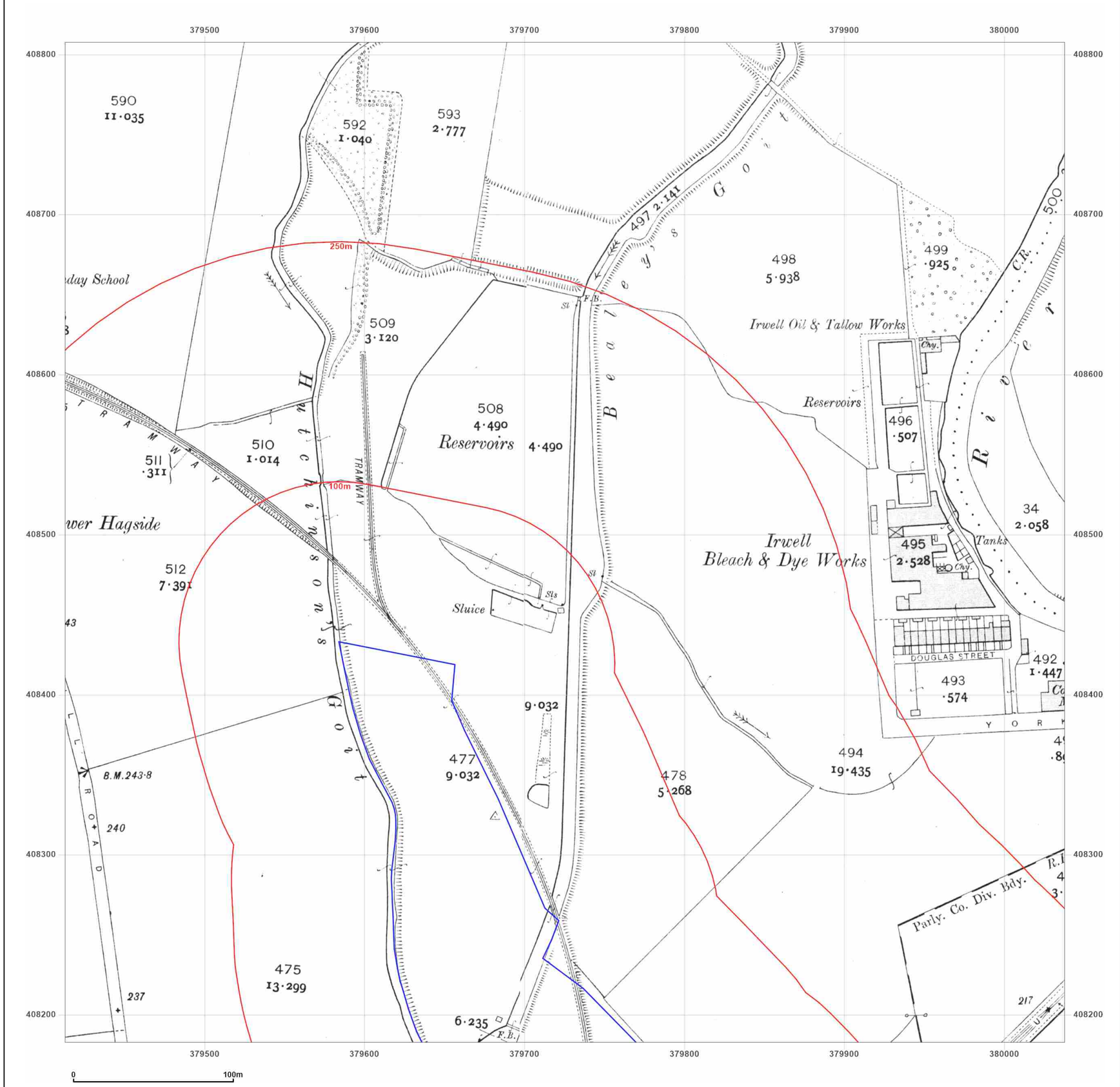
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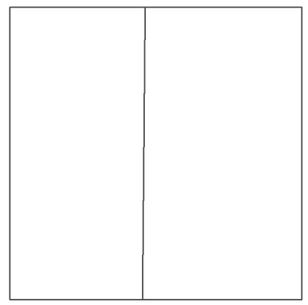
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_2
Grid Ref: 379725, 408495

Map Name: County Series
Map date: **1910**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1910
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1910
Revised 1910
Edition N/A
Copyright N/A
Levelled N/A

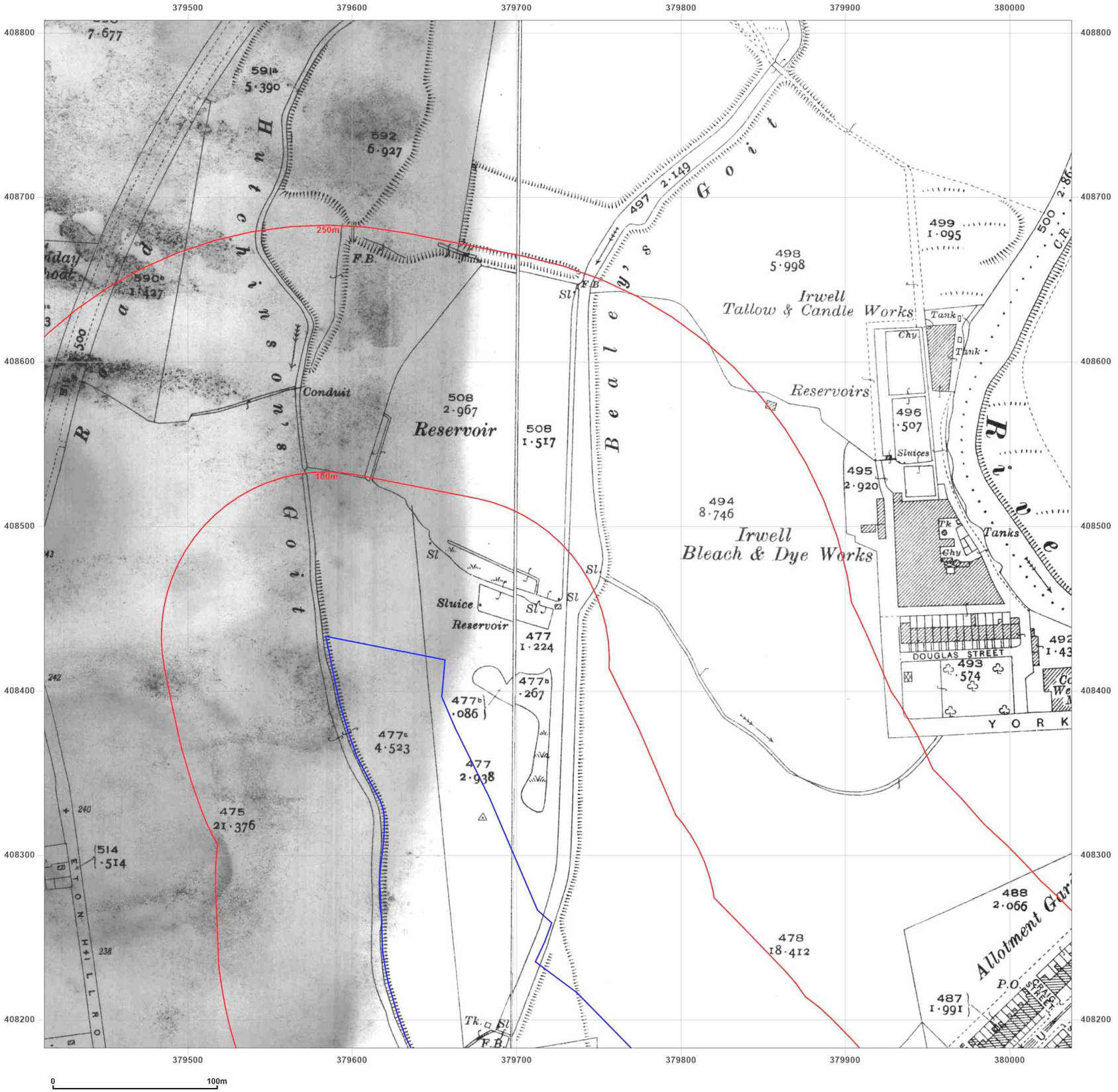
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Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

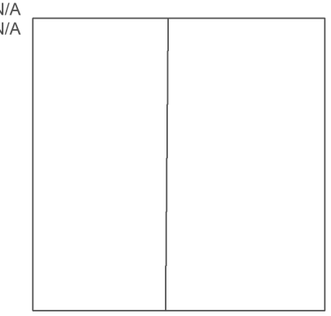
Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_2
Grid Ref: 379725, 408495

Map Name: County Series
Map date: **1930**
Scale: 1:2,500
Printed at: 1:2,500

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

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



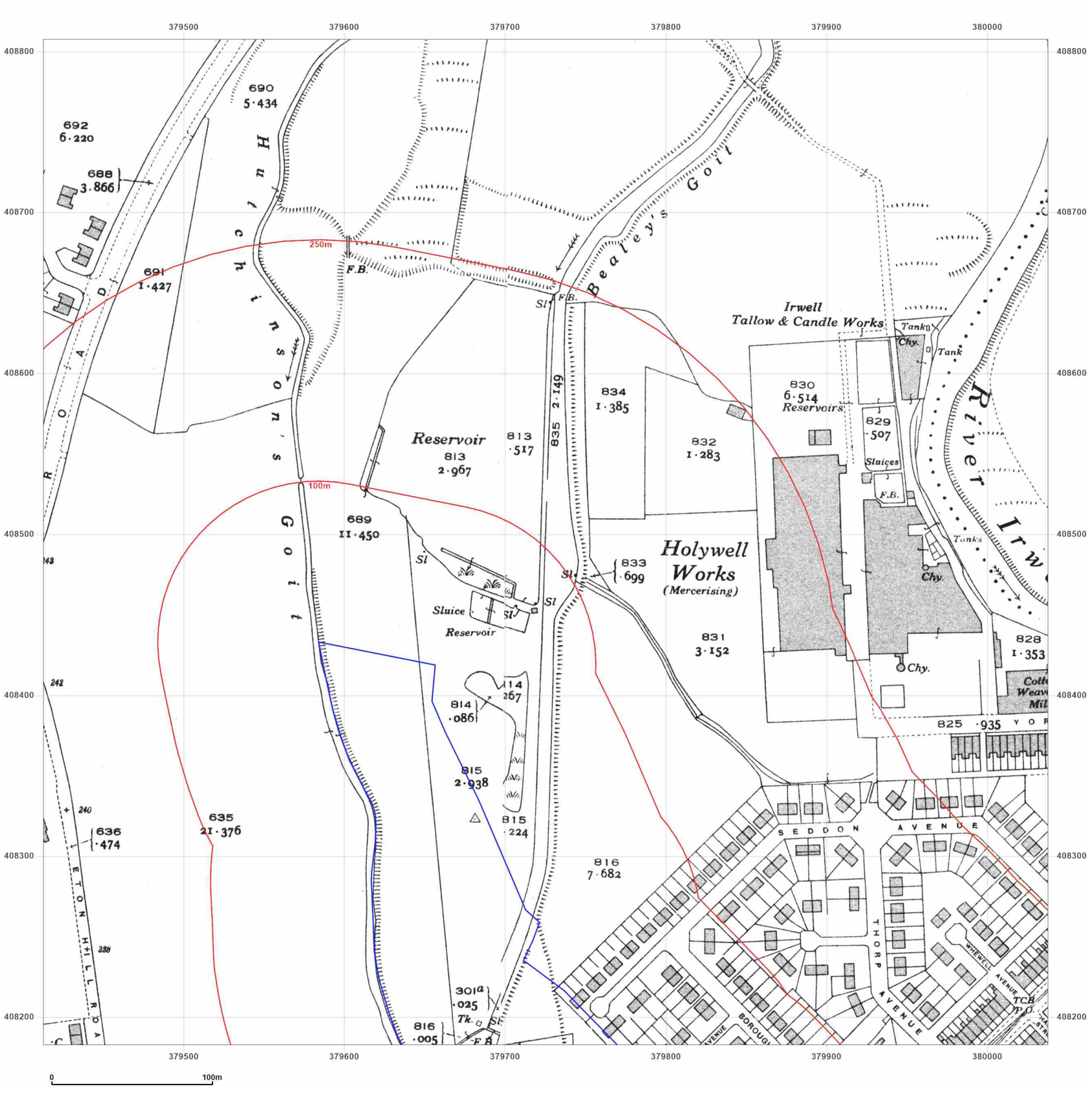
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Site Details:

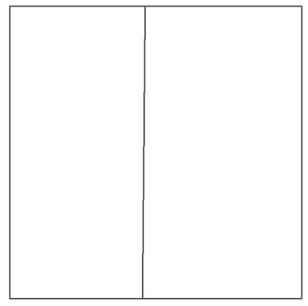
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_2
Grid Ref: 379725, 408495

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

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



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Revised 1937
Edition N/A
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Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_LS_1_2
Grid Ref: 379725, 408495

Map Name: National Grid

Map date: **1956**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1956
Revised 1956
Edition 1957
Copyright N/A
Levelled 1928

Surveyed 1956
Revised 1956
Edition 1957
Copyright N/A
Levelled 1928

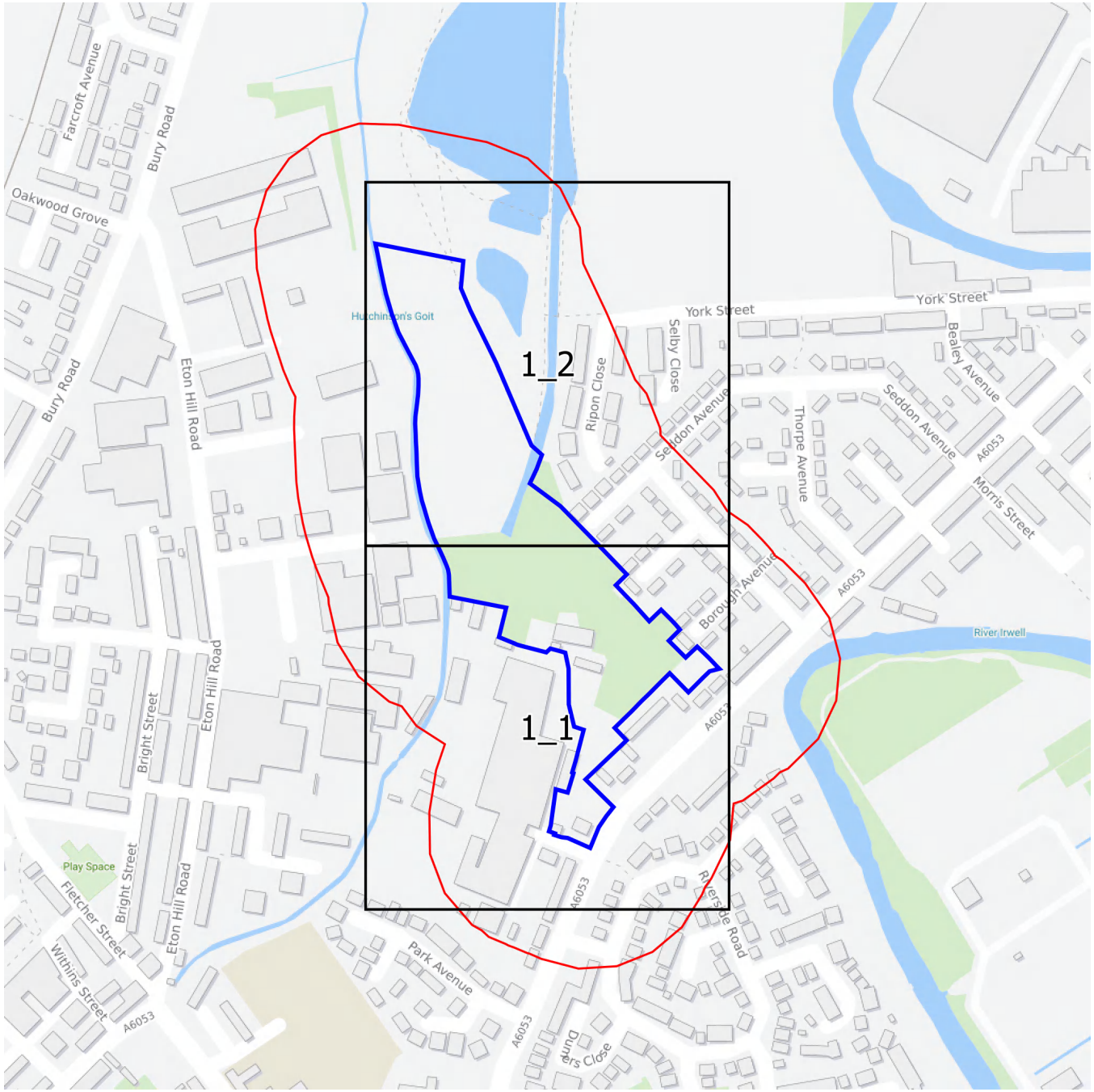
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Groundsure INSIGHTS

Landline Scale Grid Index

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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey
Industrial Estate, Radcliffe, M26
2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_Landline_1_1
Grid Ref: 379725, 408033

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

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2003

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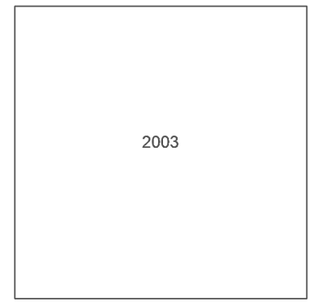
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Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11_Landline_1_2
Grid Ref: 379725, 408333

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

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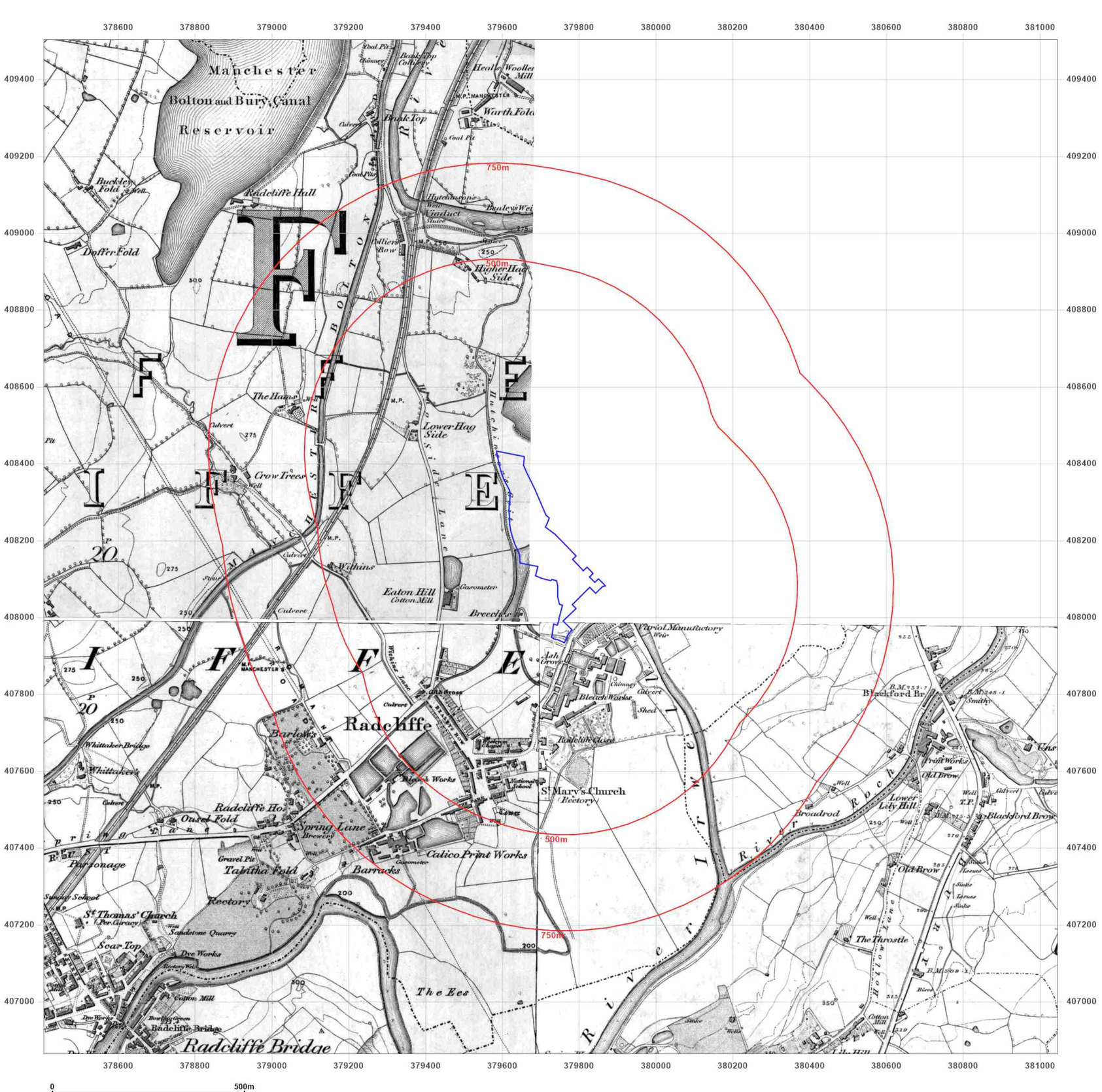
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Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: County Series
Map date: **1848-1850**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1847
Revised N/A
Edition 1850
Copyright N/A
Levelled N/A

Surveyed 1846
Revised N/A
Edition 1850
Copyright N/A
Levelled N/A

Surveyed 1845
Revised N/A
Edition 1848
Copyright N/A
Levelled N/A

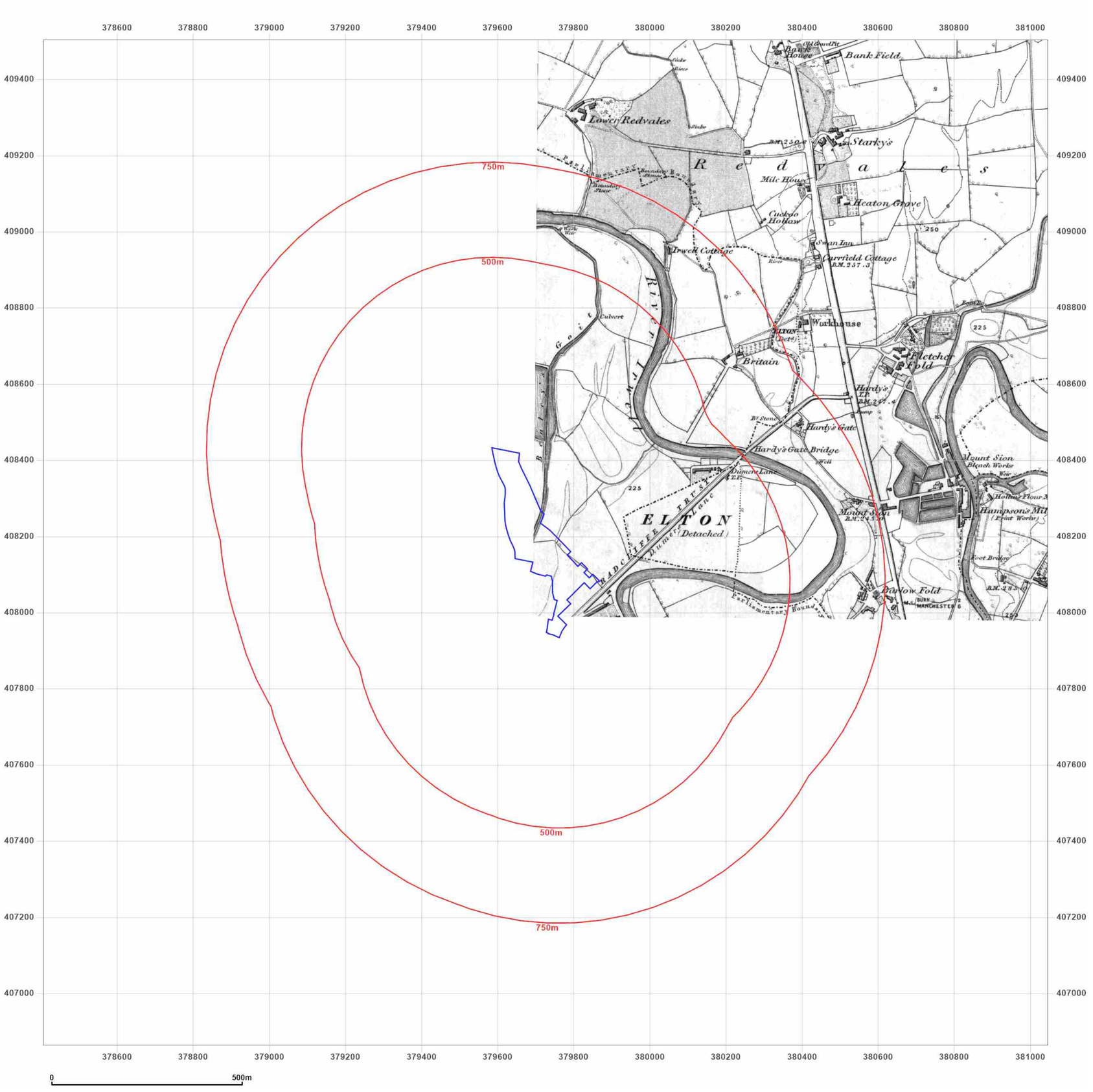
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Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: County Series

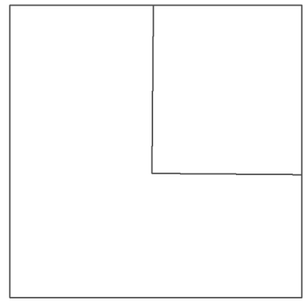
Map date: **1851**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1847
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A



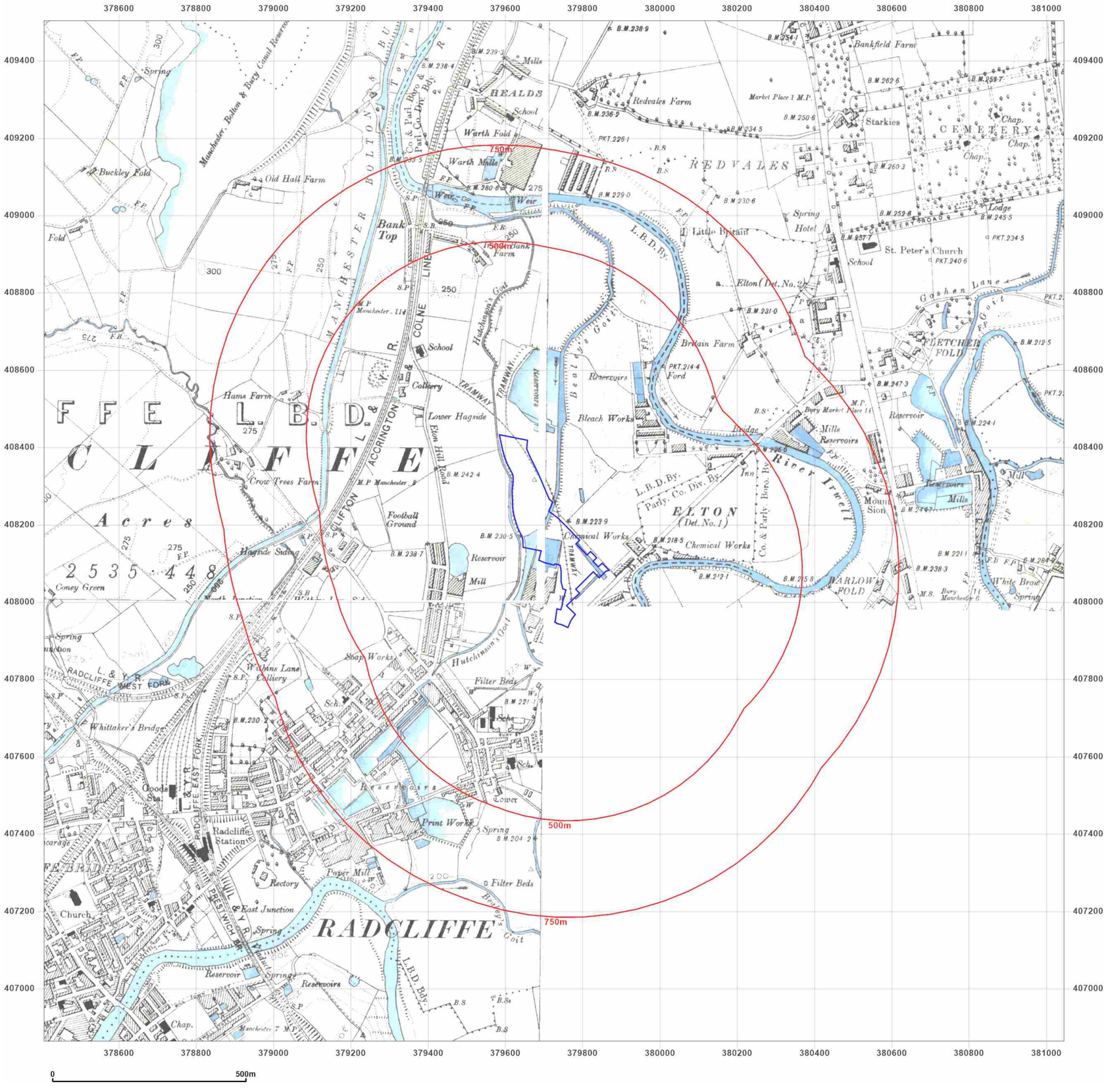
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: County Series

Map date: **1890-1891**

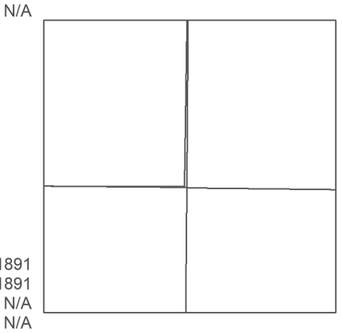
Scale: 1:10,560

Printed at: 1:10,560

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

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



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

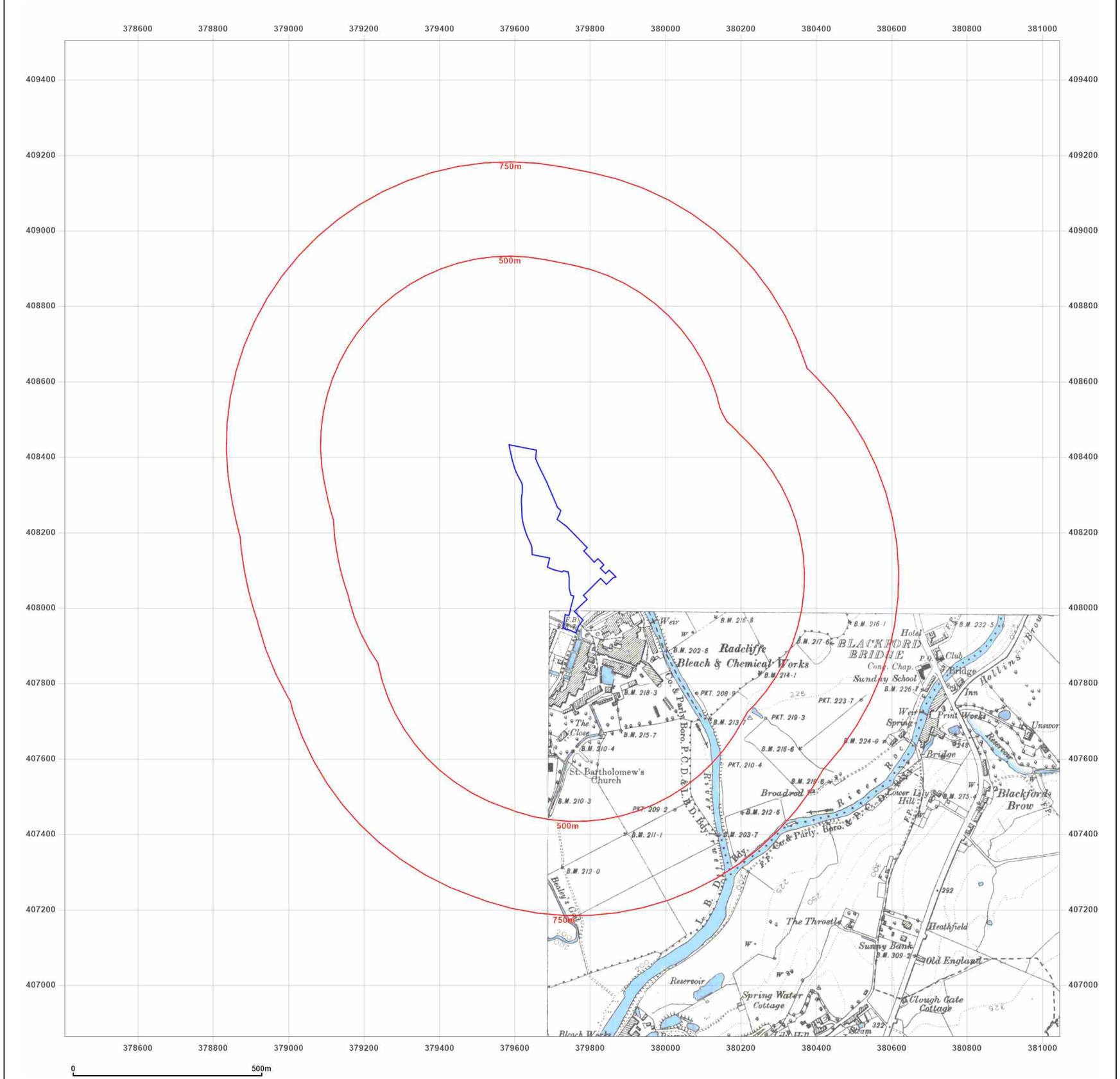
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

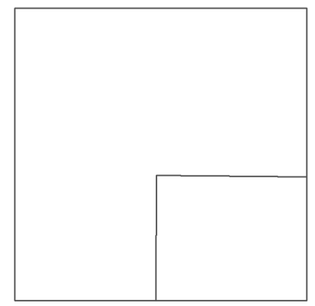
Map Name: County Series

Map date: **1891**

Scale: 1:10,560

Printed at: 1:10,560

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

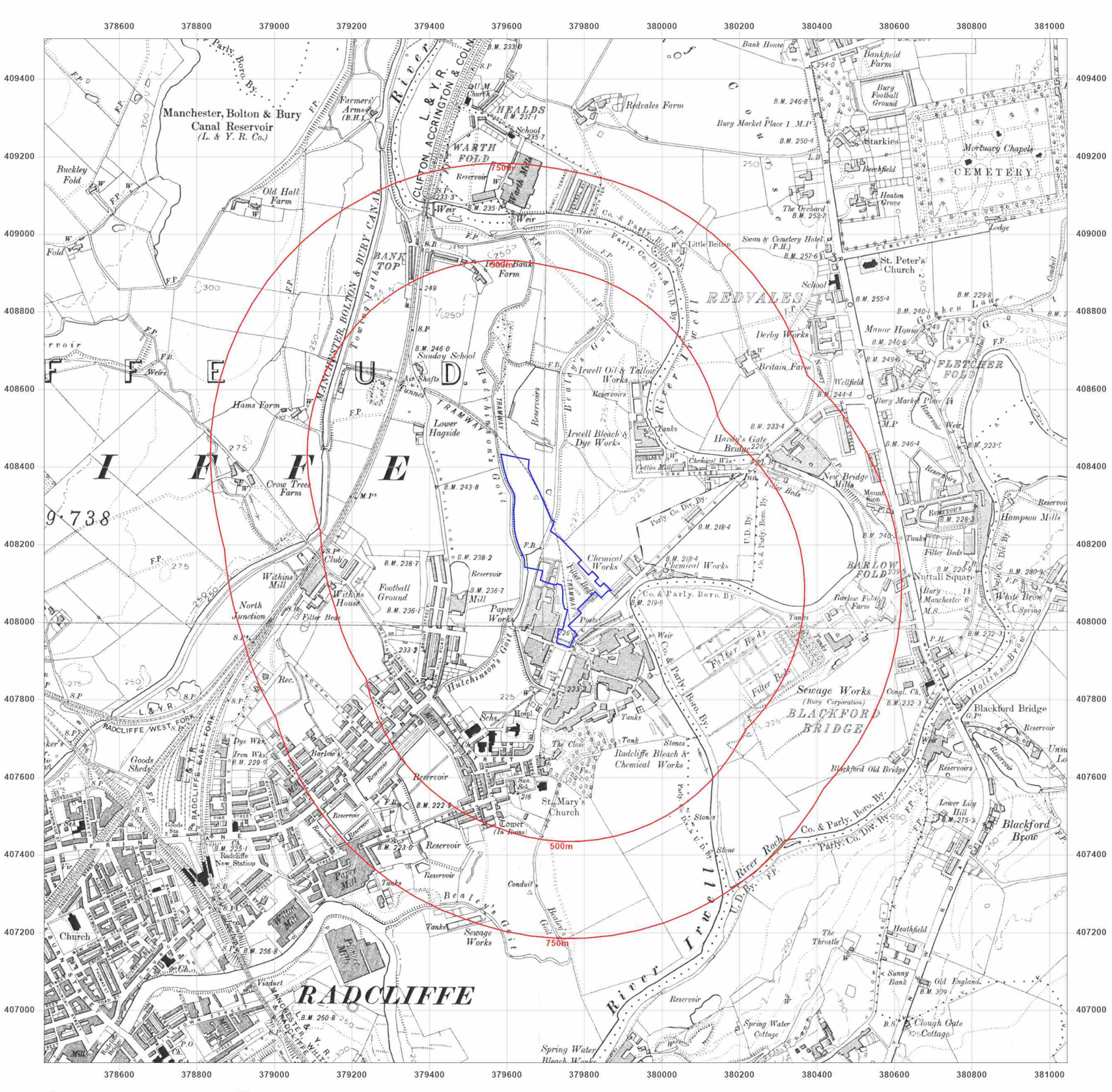
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: County Series

Map date: **1907-1908**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1907
Edition N/A
Copyright N/A
Levelled N/A

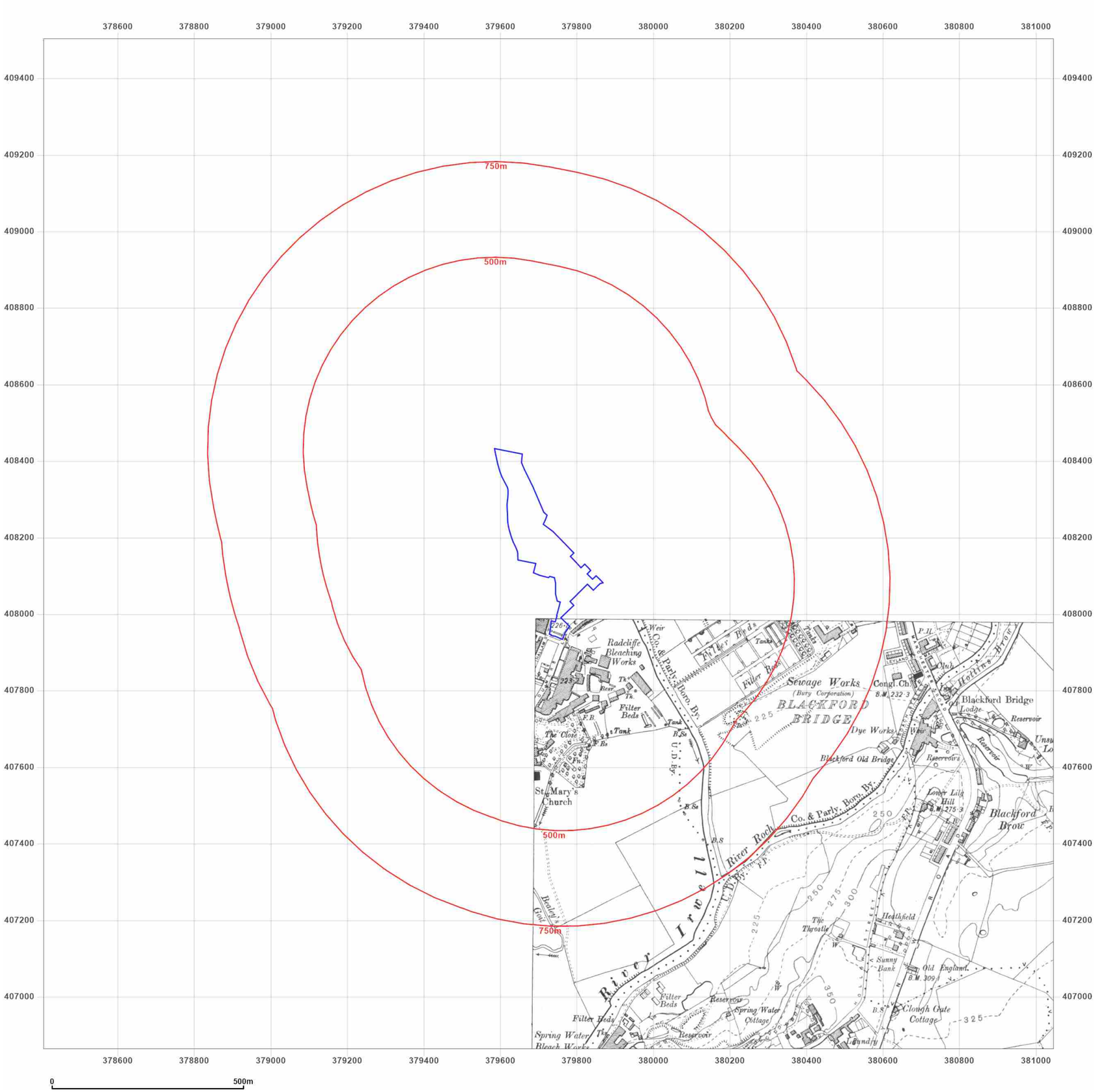
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

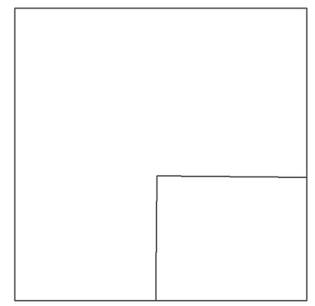
Map Name: County Series

Map date: **1915**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1844
Revised 1915
Edition N/A
Copyright N/A
Levelled N/A

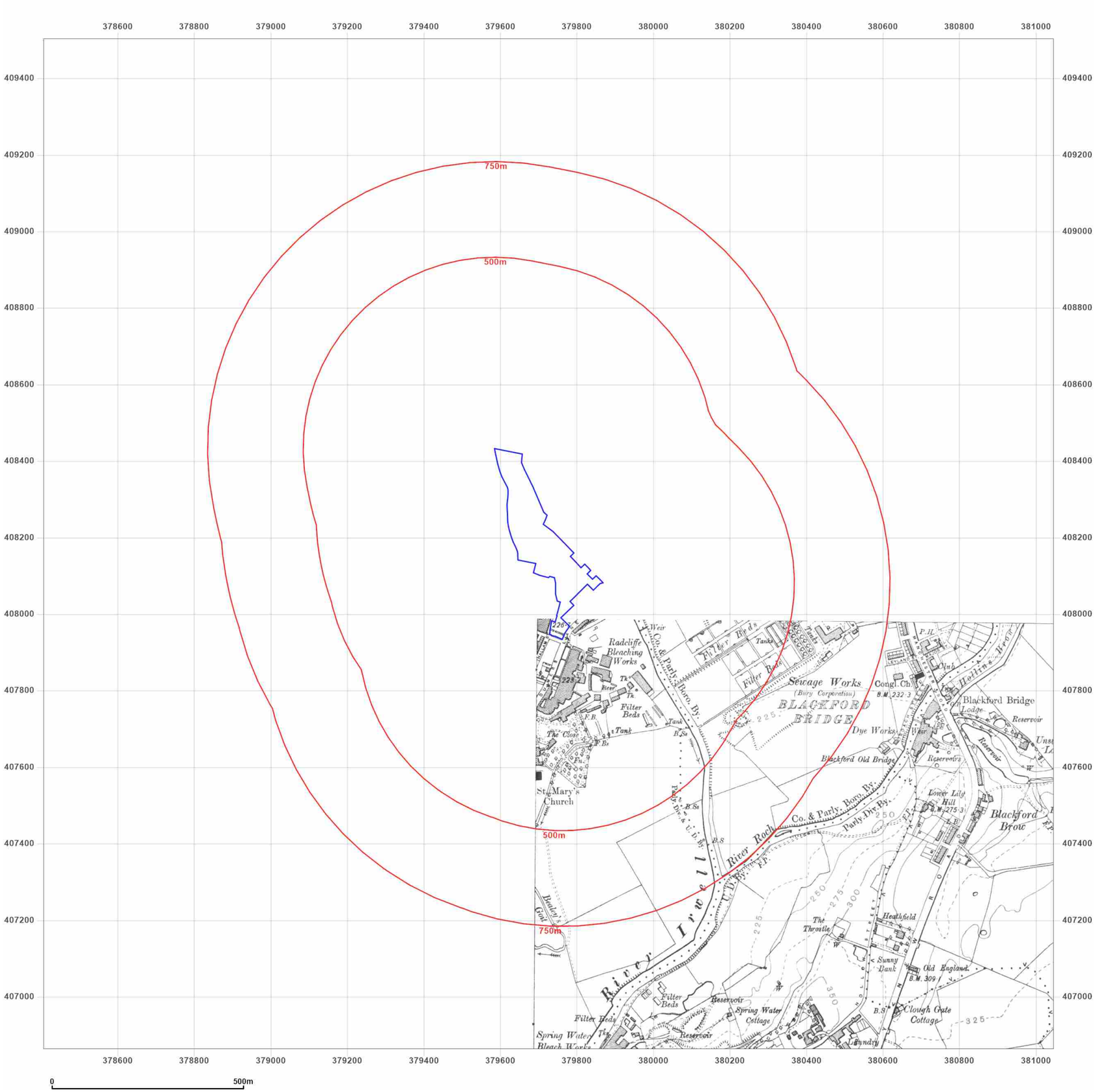
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

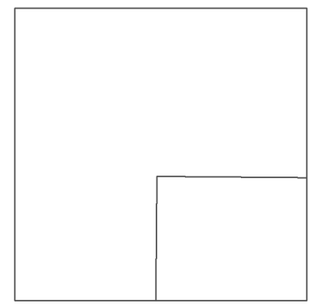
Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1844
Revised 1923
Edition N/A
Copyright N/A
Levelled N/A

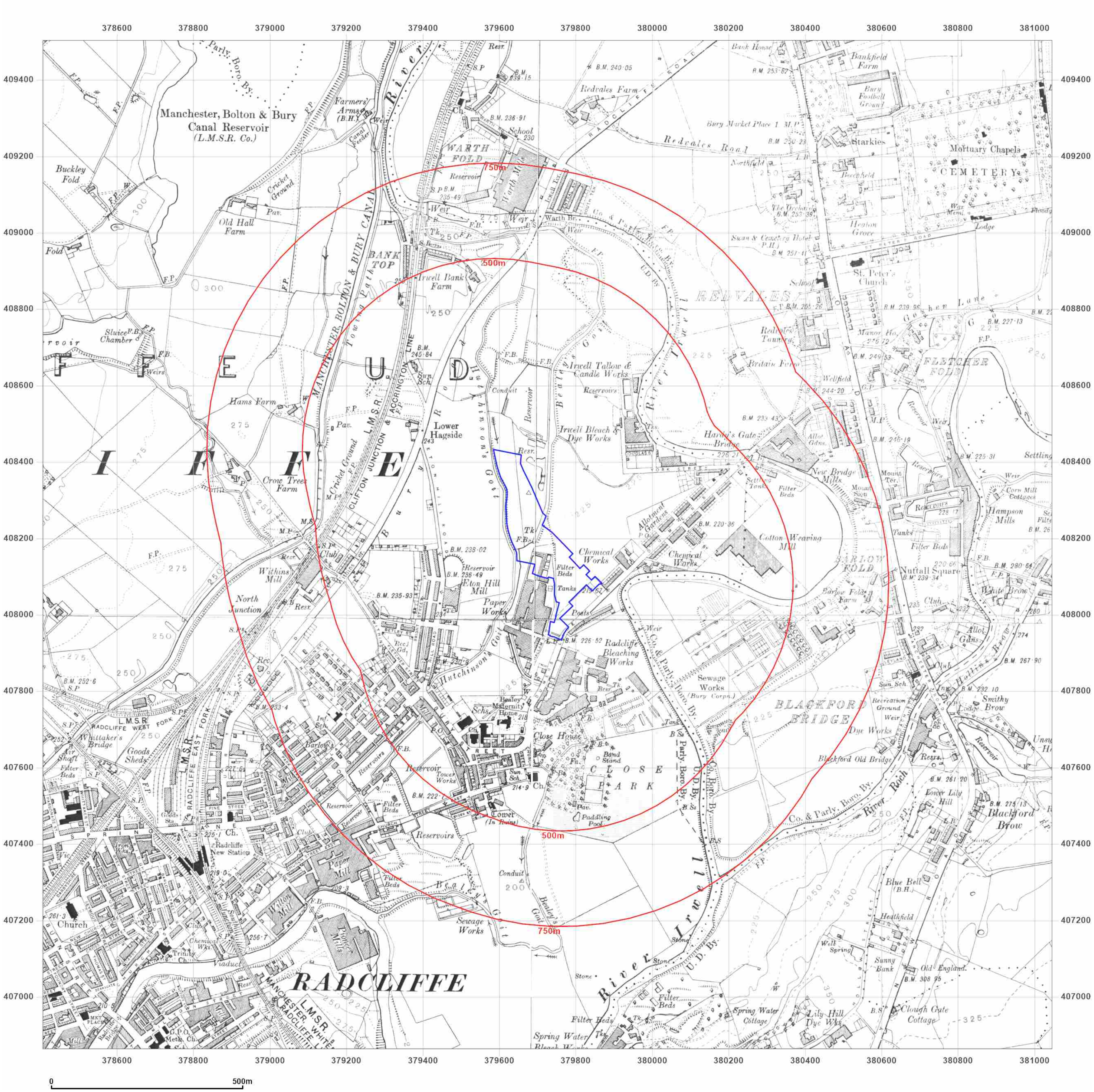
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: County Series

Map date: **1927-1932**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1844
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1932
Edition N/A
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1844
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

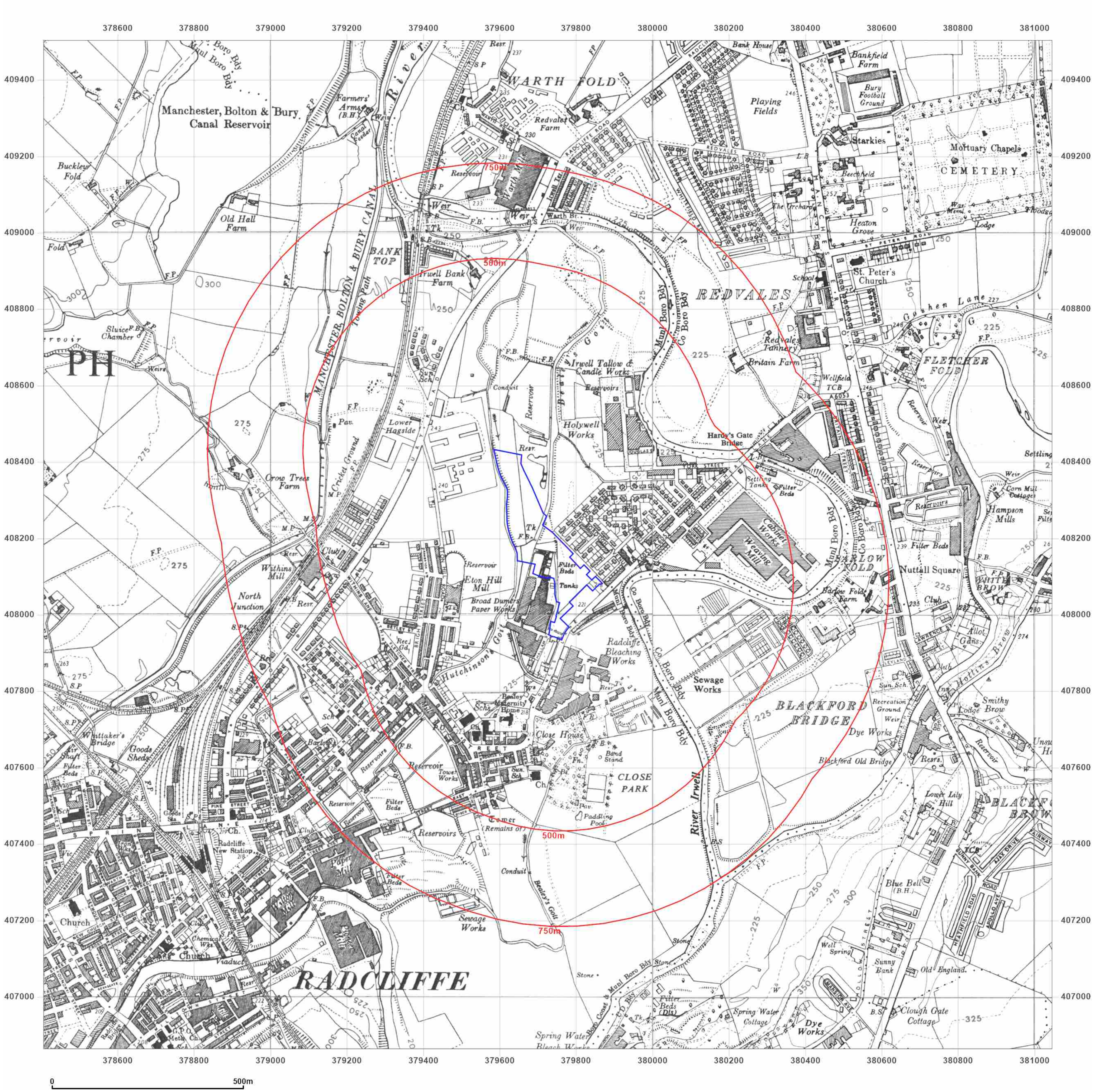
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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: Provisional

Map date: **1955**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1950
Revised 1955
Edition 1955
Copyright N/A
Levelled N/A

Surveyed 1949
Revised 1955
Edition 1955
Copyright N/A
Levelled N/A

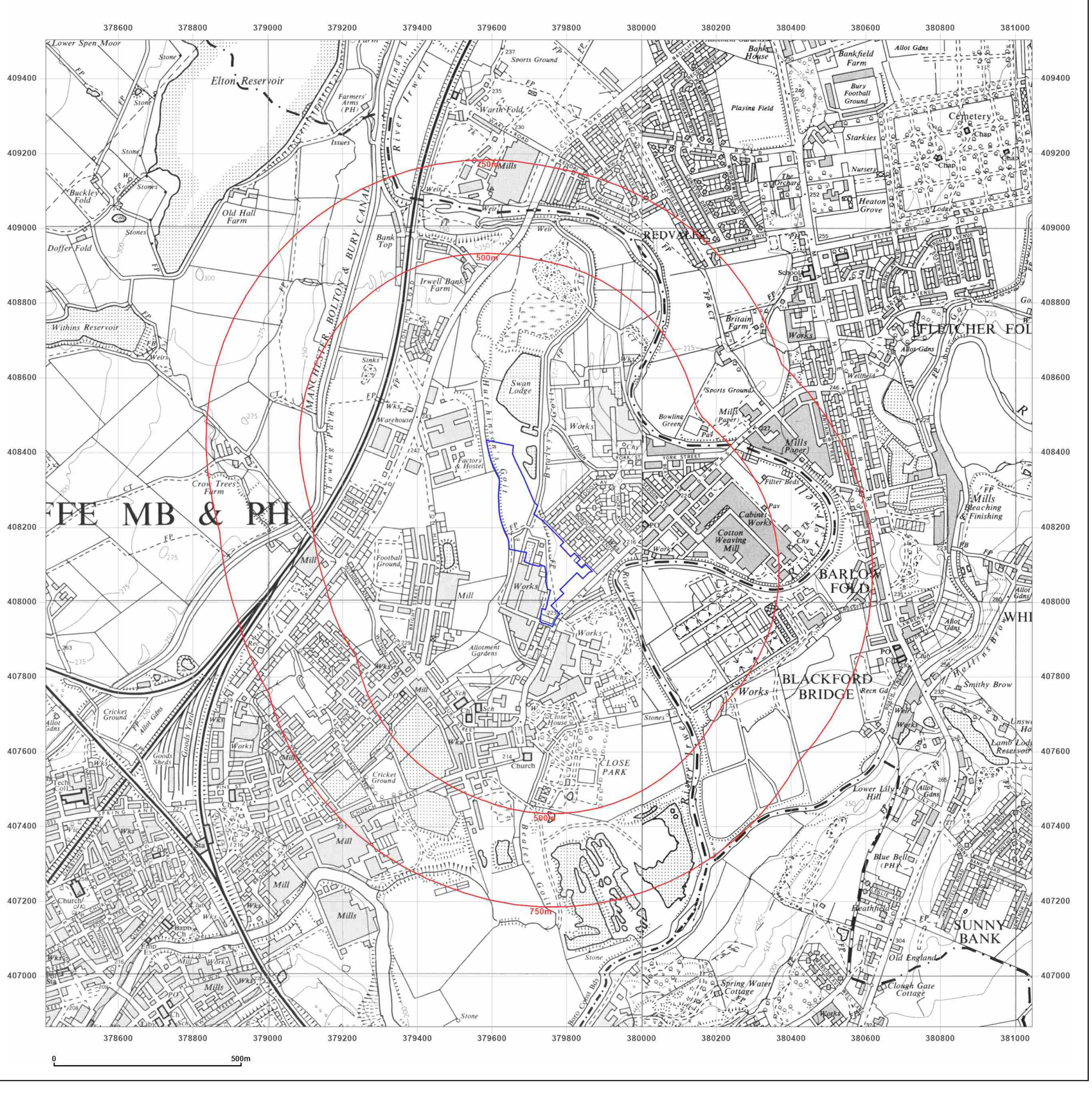
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Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: Provisional

Map date: **1965**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

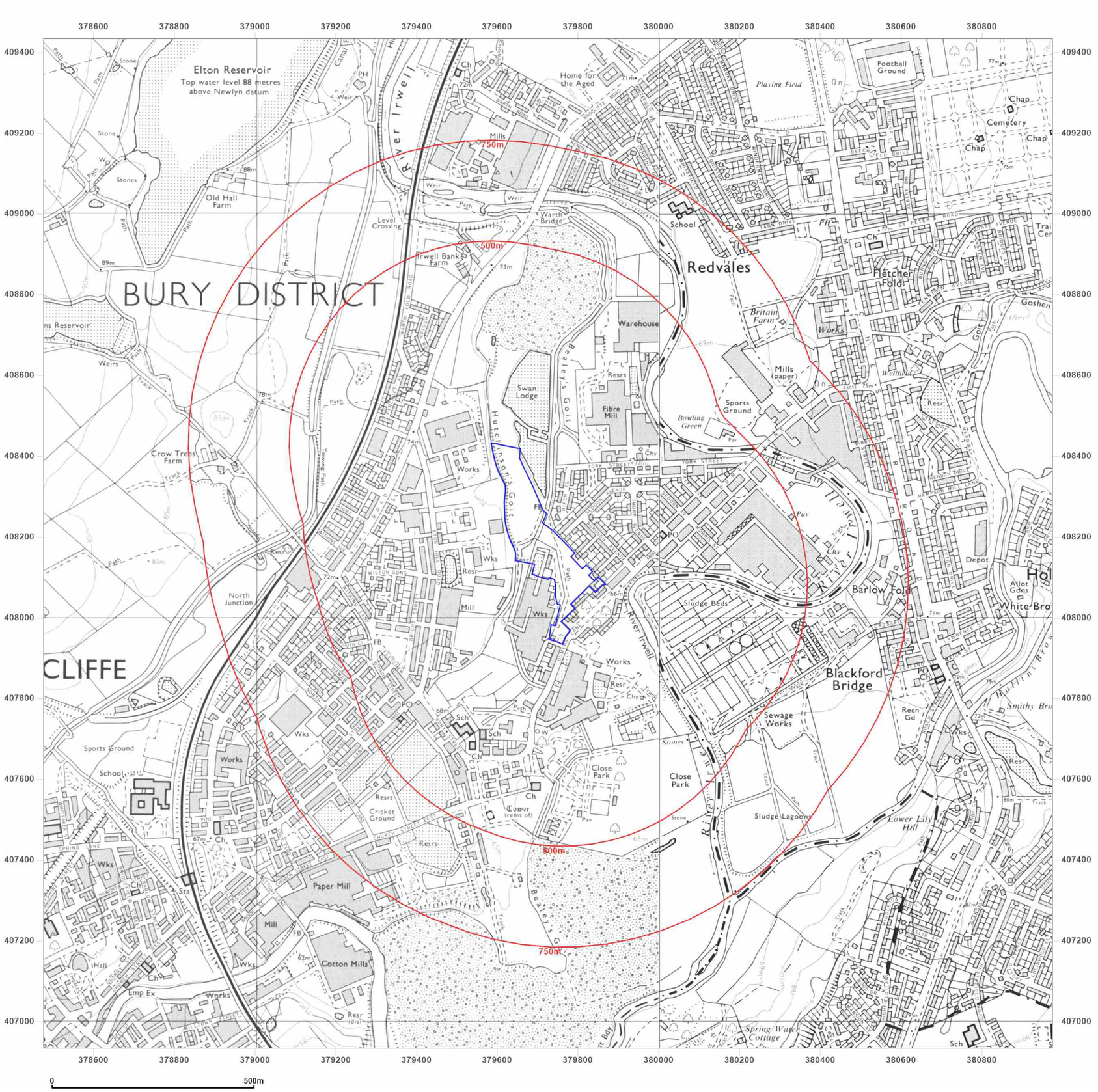
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Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: National Grid

Map date: **1974-1977**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1976
Revised 1977
Edition N/A
Copyright N/A
Levelled N/A

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

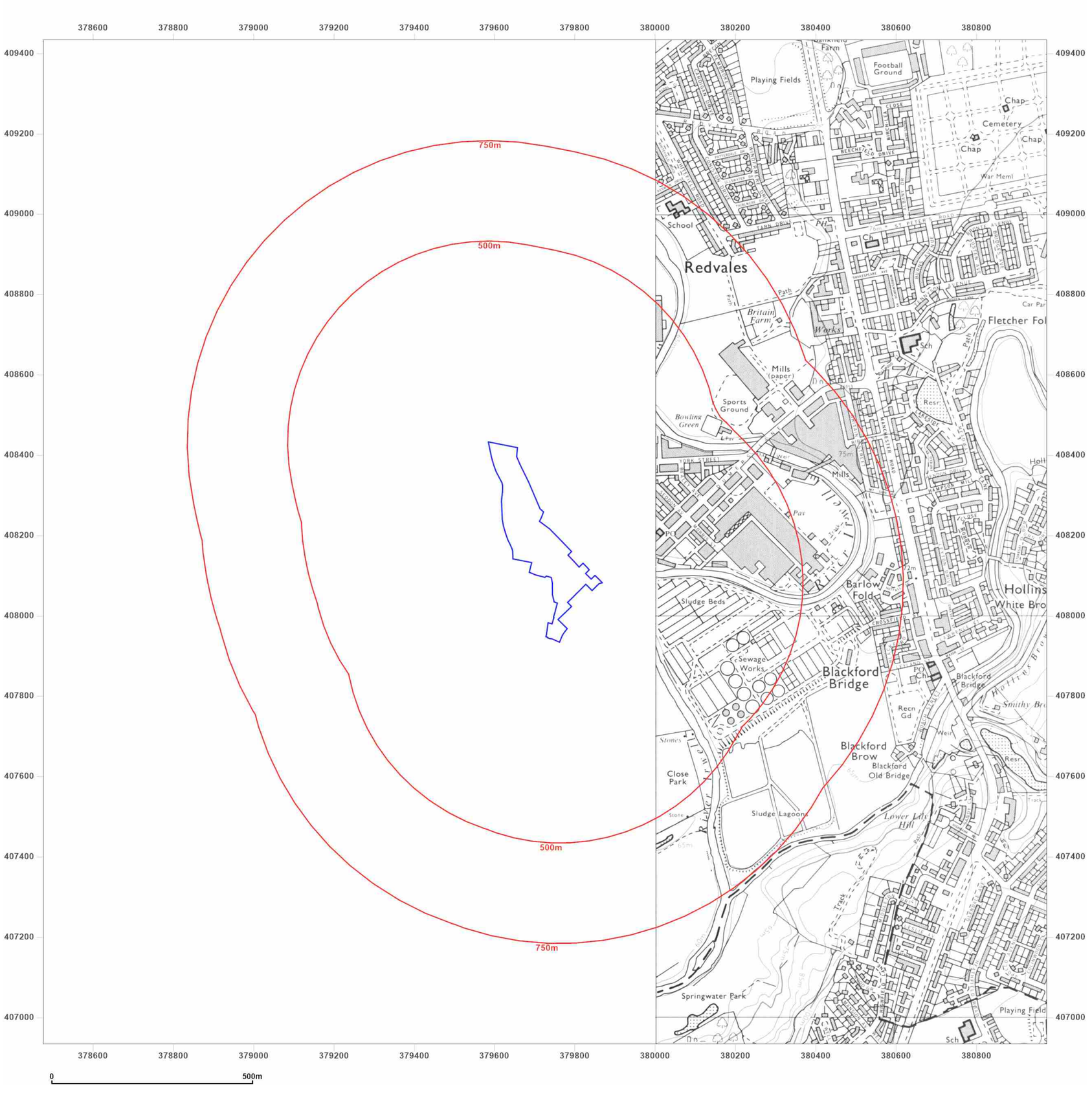
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Groundsure INSIGHTS

Site Details:

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Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: National Grid

Map date: **1981**

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

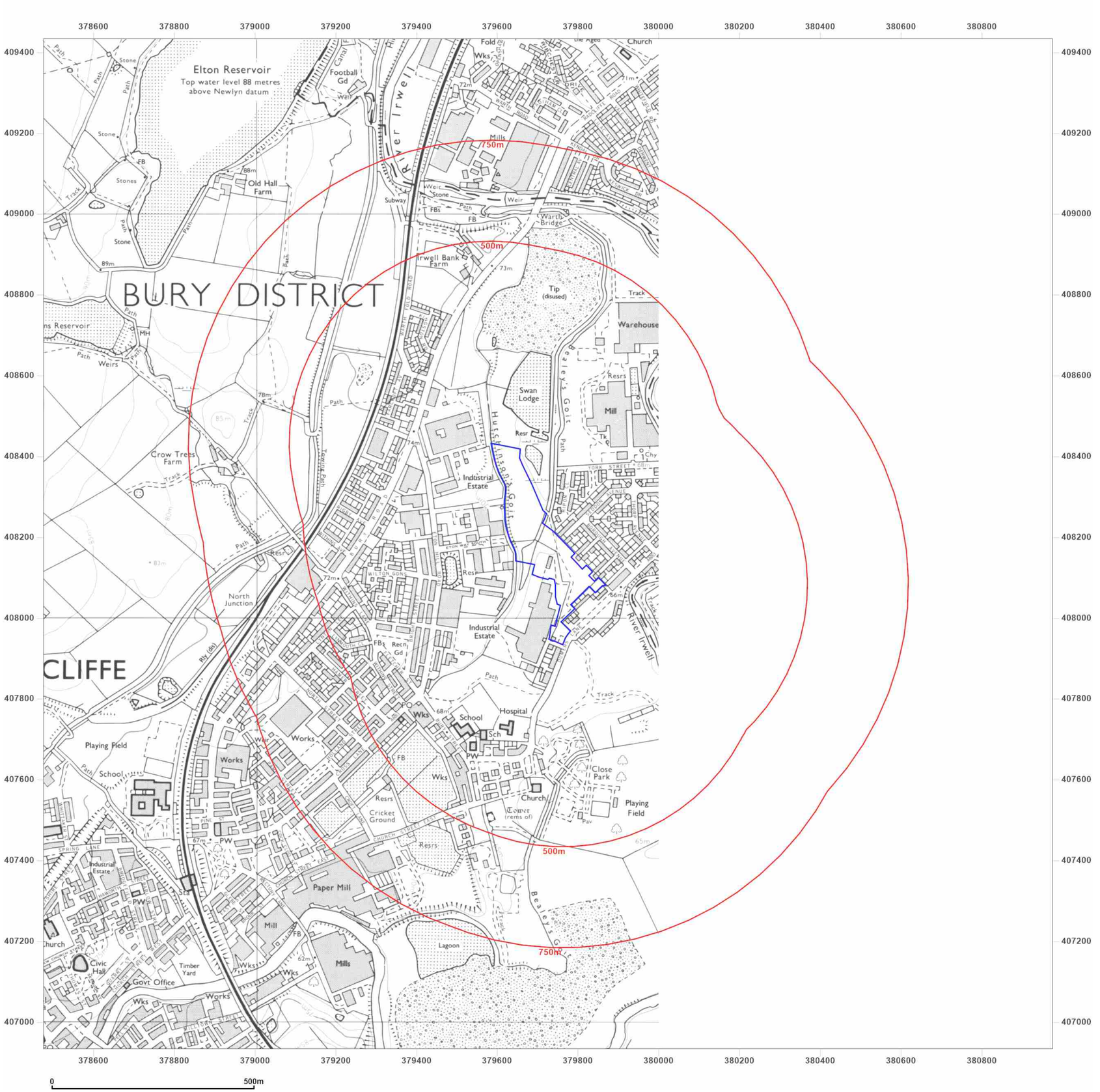
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Production date: 15 February 2024

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: National Grid

Map date: **1988**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

Surveyed 1985
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

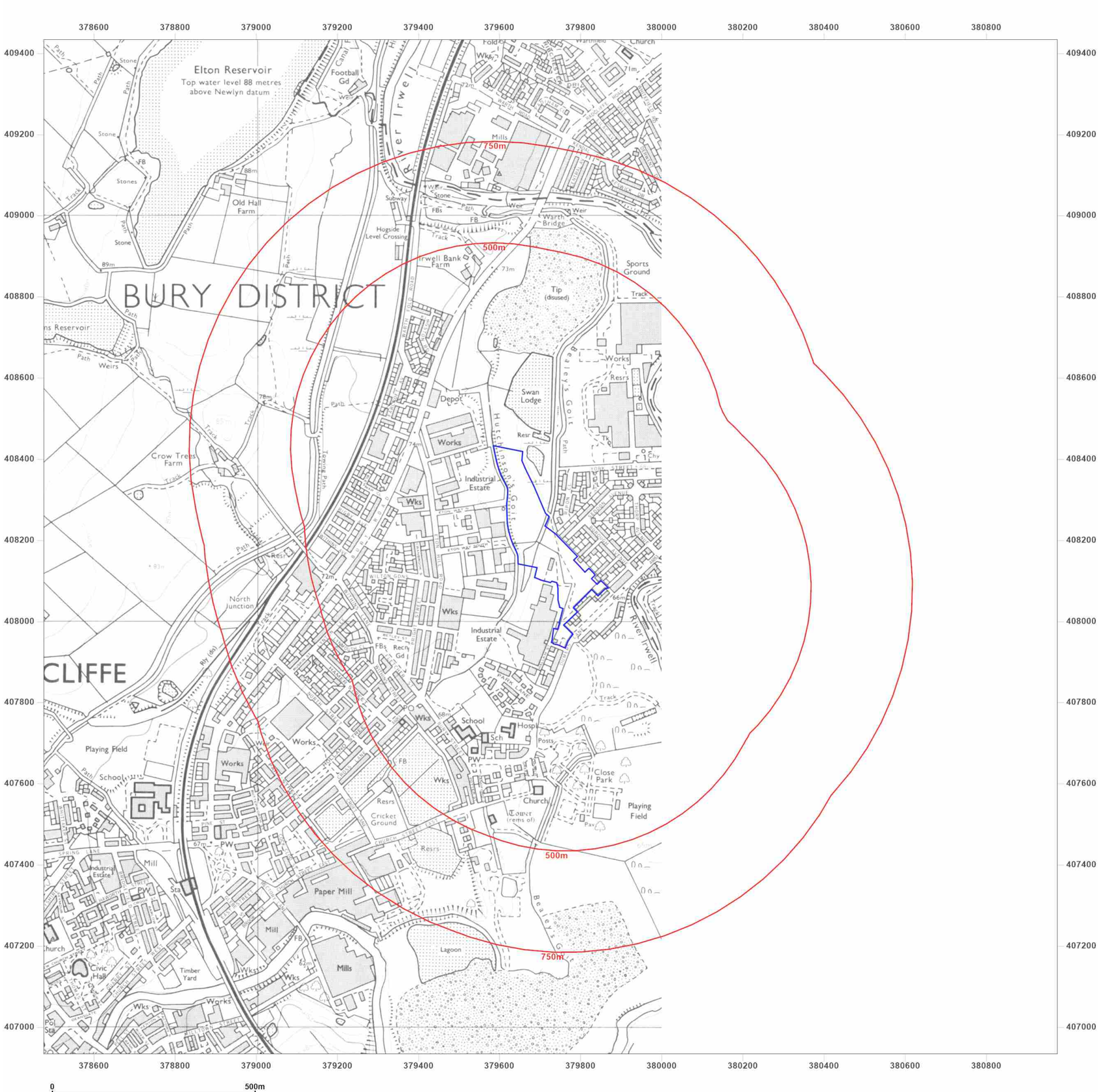
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Production date: 15 February 2024

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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: National Grid

Map date: **1991**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1987
Revised 1991
Edition N/A
Copyright N/A
Levelled N/A

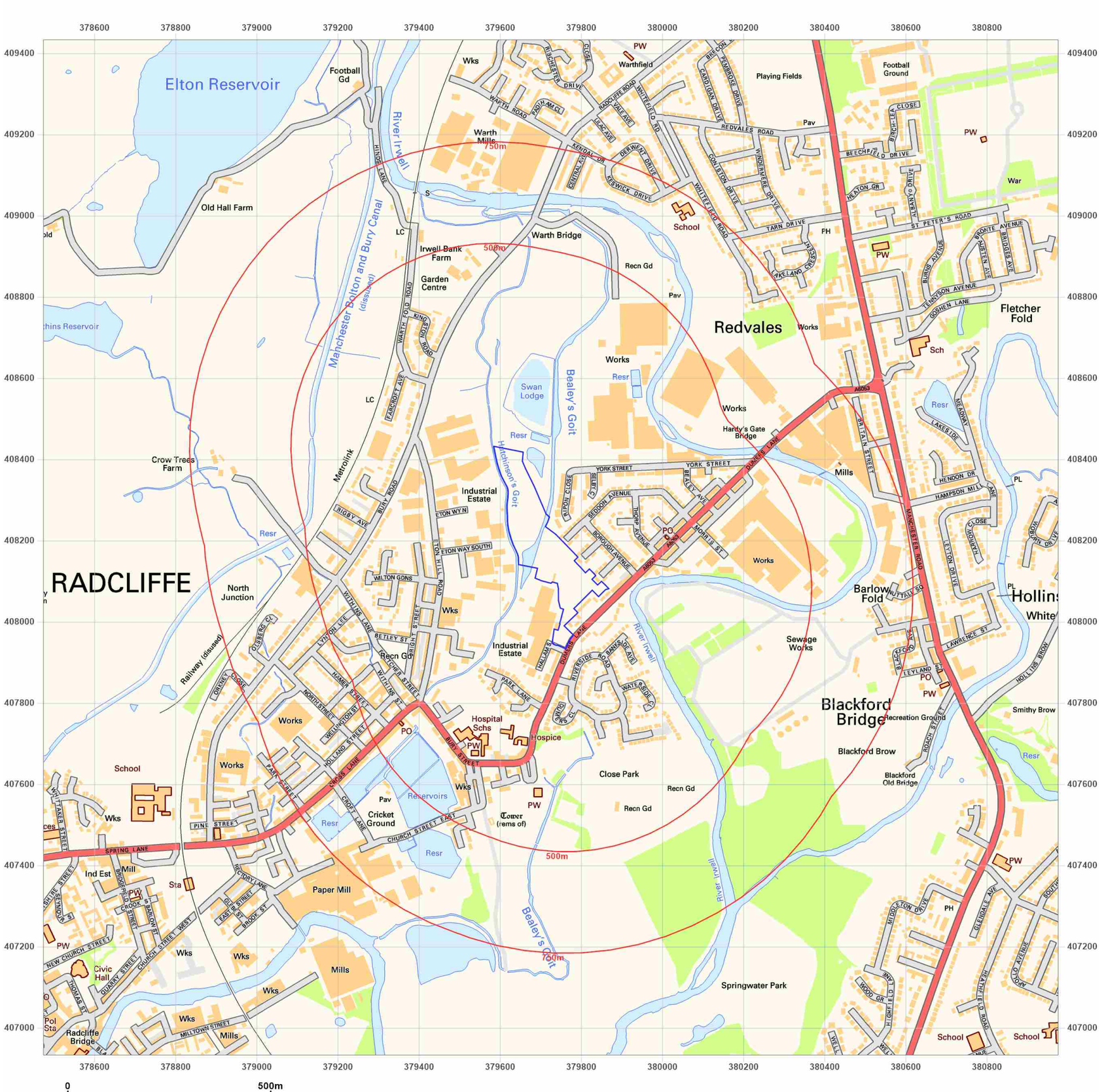
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Production date: 15 February 2024

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2001

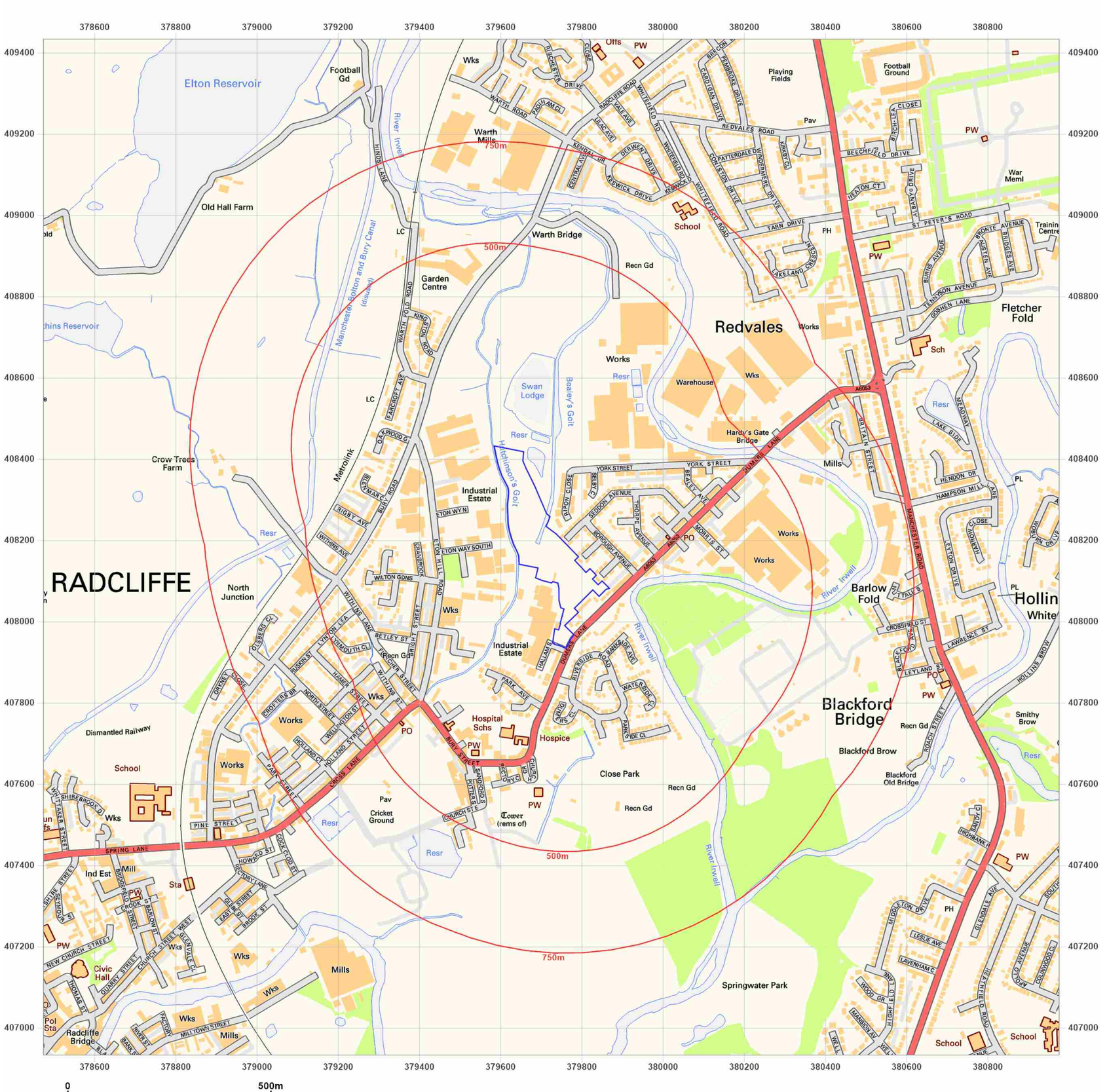
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Production date: 15 February 2024

Map legend available at:
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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2010

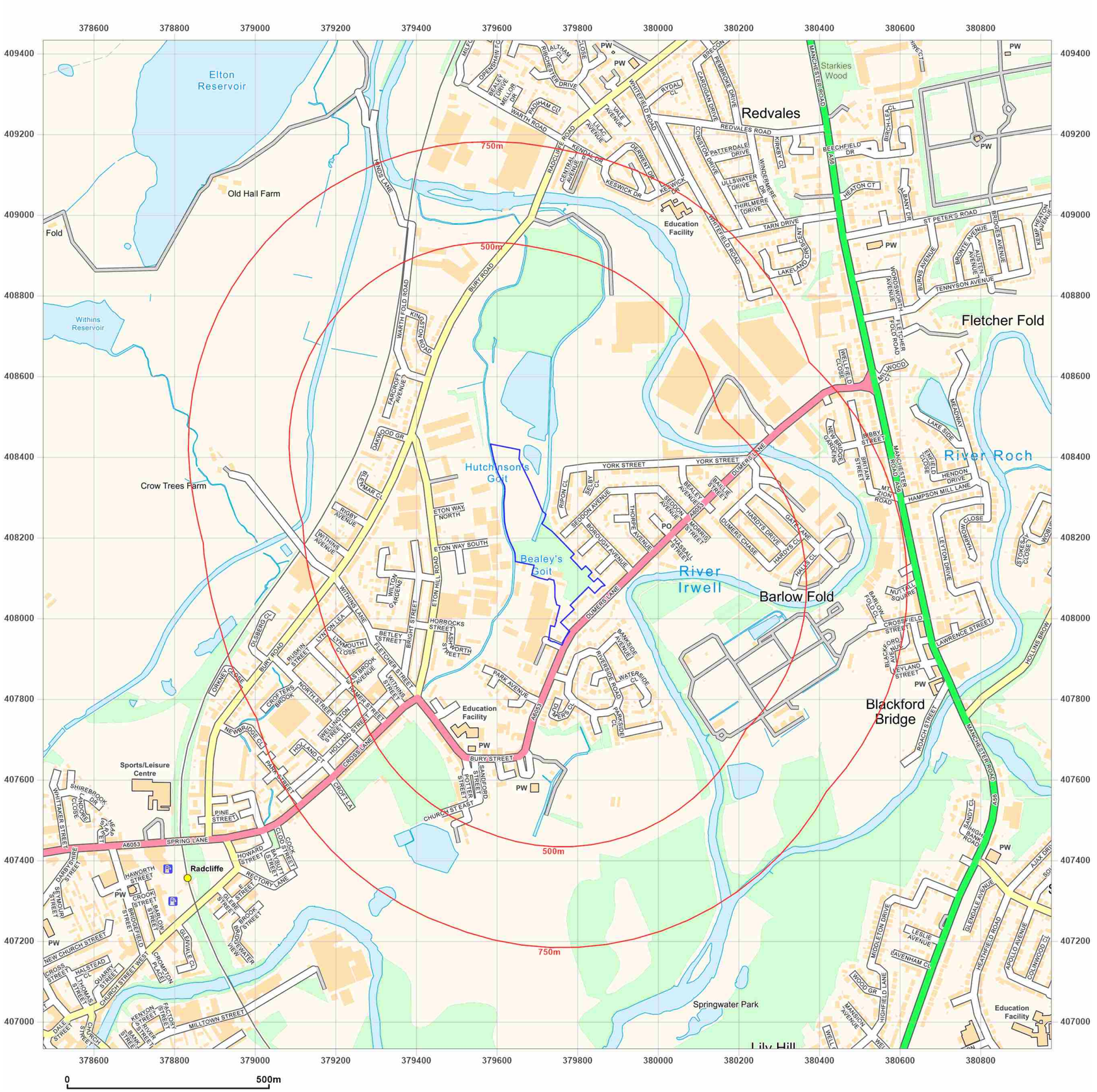
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Production date: 15 February 2024

Map legend available at:
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Groundsure INSIGHTS

Site Details:

Land Adjacent to Bealey Industrial Estate, Radcliffe, M26 2BD

Client Ref: 8353_-_PO_9951-BH
Report Ref: GS-HMJ-3VX-27B-I11
Grid Ref: 379725, 408183

Map Name: National Grid

Map date: **2024**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2024

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Production date: 15 February 2024

Map legend available at:
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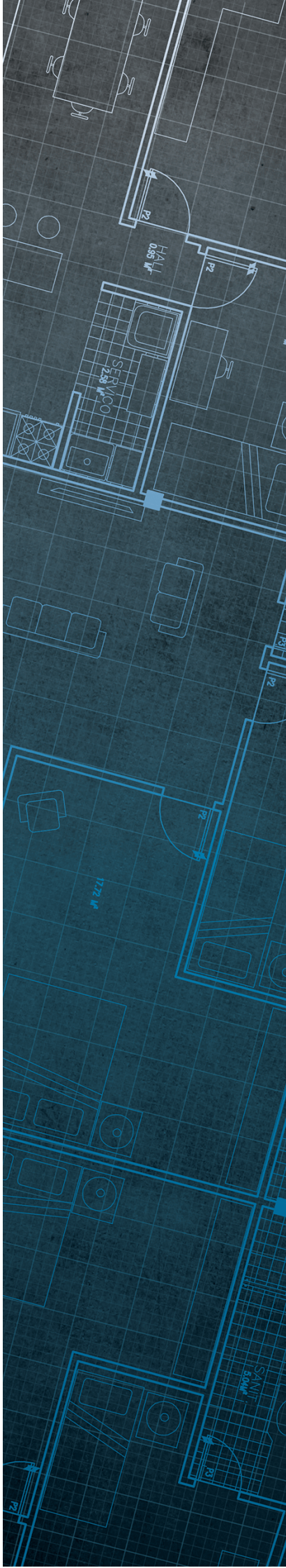
The Coal Authority

Consultants

Coal Mining Report

Land Adjacent To Bealey Industrial
Estate
Radcliffe
Bury
M26 2BD

Date of enquiry:	**15 February 2024**
Date enquiry received:	**15 February 2024**
Issue date:	**15 February 2024**
Our reference:	**51003405517001**
Your reference:	**8353 - PO 9952-BH**



Consultants

Coal Mining Report

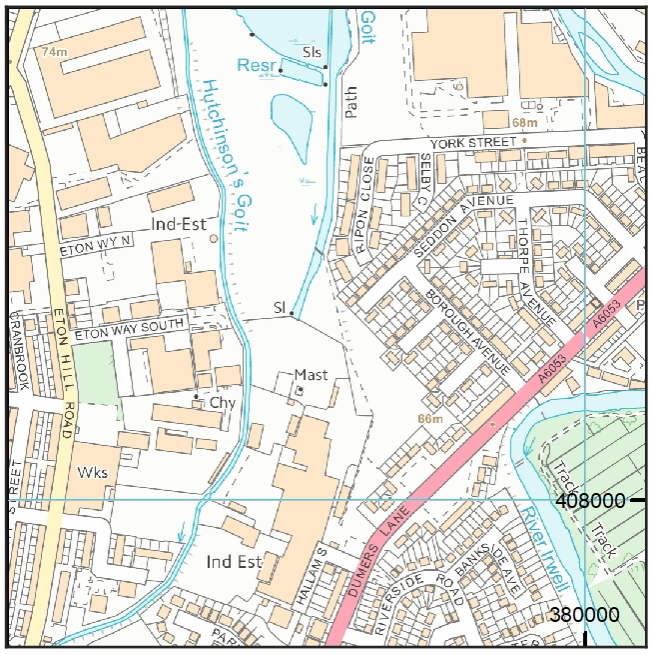
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

COOPERS

Enquiry address

Land Adjacent To Bealey Industrial Estate
Radcliffe
Bury
M26 2BD



Approximate position of property

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How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	DOE	Coal	3YN6	195	West	6.3	South-East	100	1887
unnamed	CANNEL	Coal	3XN8	261	Beneath Property	9.5	South	130	1894
unnamed	CANNEL	Coal	3Y5P	267	Beneath Property	9.5	South	130	1894
unnamed	CANNEL	Coal	3YPC	280	West	9.5	South	130	1894
unnamed	WIGAN FIVE FEET	Coal	3Y7S	299	South-West	13.0	East	120	1887
unnamed	CANNEL	Coal	3Y50	332	West	9.5	South-East	130	1893
unnamed	CANNEL	Coal	3YPB	368	South-West	9.5	South-East	130	1893

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NW1556	2055	16820
3001A	3001	

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

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Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
RAMS	Coal	Yes	Within	N/A	235
WHITE	Coal	Yes	Within	N/A	91
WHITE	Coal	Yes	20.4	North-East	276

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Faults under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

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Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations
None recorded within 50 metres of the enquiry boundary.

Remediated sites
None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas
None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes
None recorded within 500 metres of the enquiry boundary.

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Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

Section 46 notices
No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

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Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

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Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

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Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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The Coal Authority

Summary of findings

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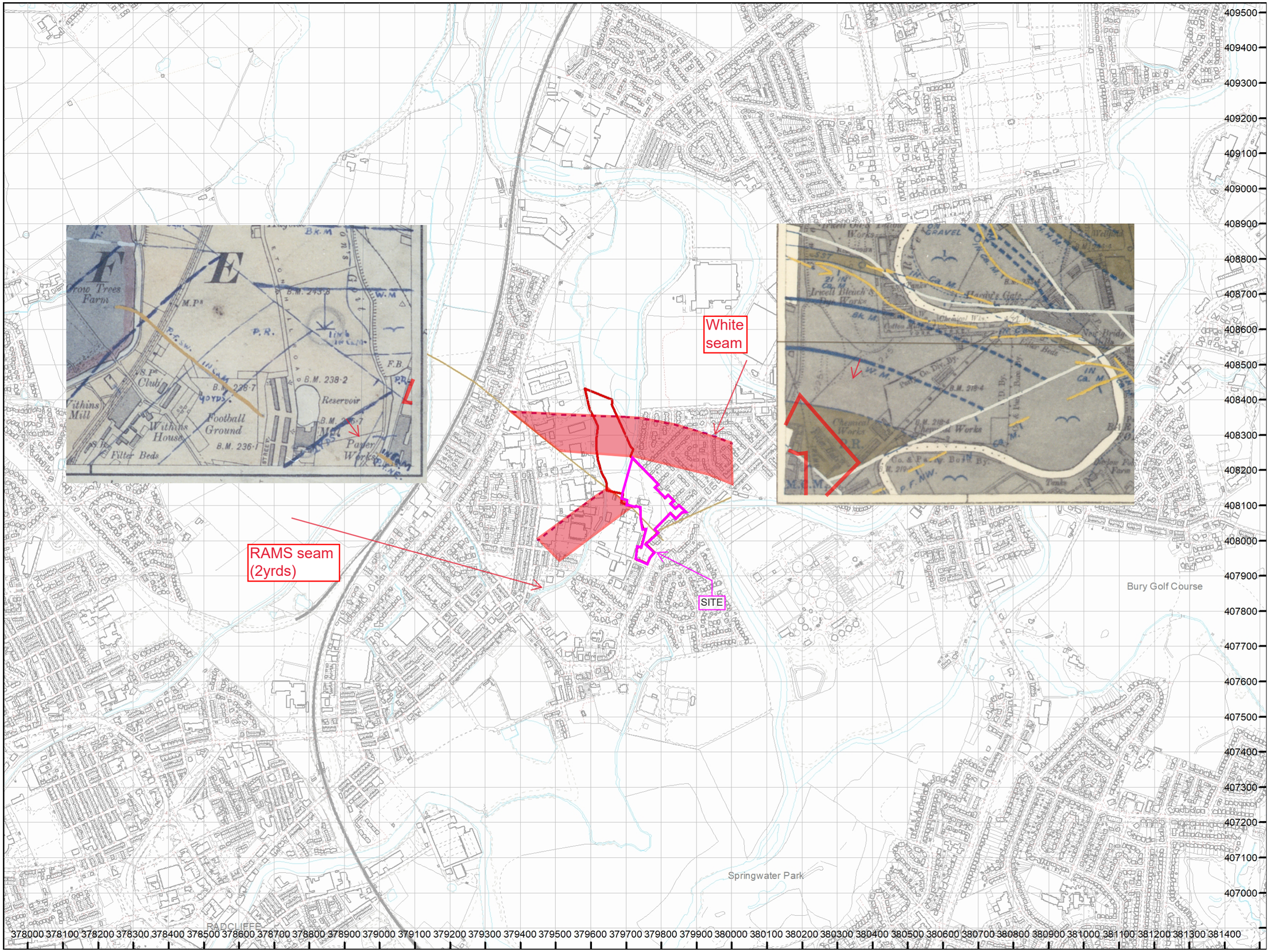
The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown

Outcrop (Conjectured)

Geological faults



How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

Appendix 3

Exploratory Hole Logs

coopers
chartered consulting engineers

Coopers (Chester) Ltd
tel: 01244 684 910
web: www.coopers.co.uk
email: admin@coopers.co.uk

Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP01

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.00 x 0.60 x 0.40m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.40)	MADEGROUND (similar to topsoil). Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, concrete, glass and plastic.		
0.40	B				0.40	At 0.40m: Cobbles of brick. Possible ACM - corrugated sheet		
						Complete at 0.40m		



Remarks

Location CAT scanned prior to excavation.
Sides stable during excavation.
No groundwater encountered during excavation.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit terminated due to the presence of possible ACMs.
Trial pit location shown on Coopers Drawing No. 8353/01.
Backfilled with arisings upon completion.

North	Scale (approx)	Logged By	Checked By
↓	1:25	LP	PRS

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coopers
chartered consulting engineers

Coopers (Chester) Ltd
tel: 01244 684 910
web: www.coopers.co.uk
email: admin@coopers.co.uk

Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP02

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 3.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.60)	MADEGROUND (similar to topsoil). Grass over dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, concrete and plastic. Contains frequent roots and rootlets. Occasional cobbles of brick. *Assumed as loose.		
0.70	JV				0.60 (1.00)	MADEGROUND. Brown. Slightly silty, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick and concrete. Contains occasional boulders of concrete. *Assumed as loose to medium dense.		
1.40	JV					At 1.40m: Possibole hydrocarbon odour		
1.80	JV				1.60 (1.00)	MADEGROUND. Orangish brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies. Contains occasional cobbles of concrete. *Assumed as loose to medium dense.		
						At 2.10m: Cobble of coal tar		
2.70	JV				2.60 (0.40)	MADEGROUND. Firm, dark greyish brown, slightly sandy, slightly gravelly, silty CLAY. Gravel is angular to sub-angular, fine to coarse of various lithologies. Sand is fine to medium. Possible hydrocarbon odour.		
					3.00	Complete at 3.00m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - 2.60m.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
Backfilled with arisings upon completion.

North	Scale (approx)	Logged By	Checked By
	1:25	LP	PRS

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coopers
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Coopers (Chester) Ltd
tel: 01244 684 910
web: www.coopers.co.uk
email: admin@coopers.co.uk

Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP03

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.70m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	JV				(1.10)	MADEGROUND. Dark brown, slightly silty, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, concrete and plastic. Contains occasional cobbles and rare boulders of concrete. *Assumed as loose to medium dense. At 0.30m: Becoming clayey		
0.50	JV					At 0.50m: Possible hydrocarbon odour		
1.20	JV				1.10	MADEGROUND. Firm ,orangish brown, slightly gravelly, slightly silty, very sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.		
					(1.60)	At 1.50m: Sandy		
2.50	B				2.70	At 2.40m: Soft in places		
						Complete at 2.70m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - 1.10m.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
During extension of trial pit - metal pipe uncovered at 0.60m in south of trial pit. Trial pit terminated.
Backfilled with arisings upon completion.

North	Scale (approx)	Logged By	Checked By
	1:25	LP	PRS

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Coopers (Chester) Ltd
tel: 01244 684 910
web: www.coopers.co.uk
email: admin@coopers.co.uk

Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP04

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.70m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.30)	MADEGROUND. Dark brown, sandy, gravelly SILT. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick and concrete. Contains rare cobbles and boulders of concrete.		
					0.30	MADEGROUND. Light brown, slightly silty, gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including brick and concrete. *Assumed as loose to medium dense.		
0.70	JV					At 0.70m: Becoming brown		
					(2.00)			
1.80	B							
2.20	JV					At 2.20m: Pocket of firm, orangish brown CLAY with inclusions of ash and clinker		
					2.30			
2.40	JV				(0.20)	MADEGROUND. Firm, greyish brown, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.		
					2.50			
2.60	B		Perched water(1) at 2.60m.		(0.20)			▽1
					2.70	Greyish brown, slightly silty, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies. Sand is fine to medium.		
						Complete at 2.70m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - 2.30m.
Perched water at 2.60m during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
Backfilled with arisings upon completion.

North	Scale (approx)	Logged By	Checked By
	1:25	LP	PRS

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP05

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.80m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.05	JV				(0.10) 0.10	MADEGROUND (similar to topsoil). Dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse of various lithologies.		
0.20	JV				(0.20) 0.30	MADEGROUND. Brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies.		
0.40	JV					MADEGROUND. Dark reddish brown, slightly silty, clayey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, ash and clinker. *Assumed as very loose to loose. At 0.60m: Pocket of reddish brown very sandy CLAY		
1.40	JV				(1.80) 2.10			
2.20	JV				(0.70) 2.80	Soft, dark greyish brown, slightly gravelly, slightly silty, sandy CLAY. Possible hydrocarbon odour. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.		
						Complete at 2.80m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - 2.10m.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
Backfilled with arisings upon completion.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP06

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.70m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
Coopers (Chester) Ltd

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1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.05	B				(0.10) 0.10	MADEGROUND (similar to topsoil). Grass over dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse, angular to sub-angular of various lithologies.		
0.15	JV				(0.10) 0.20			
0.40	JV				(0.70)	MADEGROUND. Orangish brown, slightly gravelly, slightly silty, very clayey, fine to medium SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies. *Assumed as loose to medium dense.		
					0.90	MADEGROUND. Dark reddish brown, clayey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, concrete, ash and clinker. *Assumed as very loose.		
1.00	JV				(0.40)	MADEGROUND. Firm, orangish brown, slightly gravelly, slightly silty, very sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.		
					1.30	MADEGROUND. Dark reddish brown, clayey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, ash and clinker. *Assumed as very loose.		
1.50	JV				(1.30)			
2.65	JV				2.60 (0.10) 2.70	MADEGROUND. Firm, orangish brown, slightly gravelly, slightly silty, very sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.		
						Complete at 2.70m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - to base.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
Backfilled with arisings upon completion.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP07

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 1.70m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.05 0.15	B JV				(0.10) 0.10 (0.10) 0.20	MADEGROUND (similar to topsoil). Vegetation over dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse of various lithologies.		
						MADEGROUND. Brown, sightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is angular to sub-rounded, fine to coarse of various lithologies. *Assumed as loose to medium dense.		
					(0.80)	MADEGROUND. Reddish brown, slightly silty, clayey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick and concrete. *Assumed as very loose to medium dense.		
0.90	JV					At 0.90m: Wooden sleeper, approximately 1.30m x 0.25m x 0.20m		
1.10	JV				1.00	Brown, slightly silty SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse of various lithologies. Contains occasional cobbles. *Assumed as loose.		
					(0.70)			
					1.70	Complete at 1.70m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - to base.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
Backfilled with arisings upon completion.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP08

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.70m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
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Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.05	B				(0.10) 0.10	MADEGROUND (similar to topsoil). Vegetation over dark brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is fine to coarse of various lithologies.		
0.20	JV				(0.50)	MADEGROUND. Brown, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including limestone, brick and concrete.		
0.70	JV				0.60 (0.60)	Brown mottled orangish brown, slightly gravelly, slightly silty, very clayey, fine to medium SAND. Gravel is angular to sub-rounded, fine to coarse of various lithologies. *Assumed as very loose to medium dense.		
1.30	JV				1.20 (1.50)	Orangish brown, slightly silty SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to sub-rounded, fine to coarse of various lithologies. * Assumed as loose to medium dense.		
					2.70	Complete at 2.70m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - 1.20m during excavation. Sides collapsing from 1.20m - 1.70m.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP09

Machine : 5 Tonne Rubber Tracked Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.20m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
26/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
1.00	JV				(2.20)	MADEGROUND (similar to topsoil). Vegetation over dark brown, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including brick, concrete and car tyre. Contains rare boulders of concrete. * Assumed as loose to medium dense.		
					2.20	Complete at 2.20m		



Remarks

Location CAT scanned prior to excavation.
Spalling from 0.00m - to base.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Trial pit undertaken into earth bund, 2.20m above existing ground level.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/01.
Backfilled with arisings upon completion.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP101

Machine : 4 Tonne Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.20m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
09/02/2026

Engineer
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Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10 0.20	PF JV				(0.50)	MADEGROUND. Grass over dark brown, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, plastic and ceramic.		
0.60 0.80	PF JV				0.50 (1.70)	MADEGROUND. Greyish brown, slightly clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, ceramic, slate, tarmac, glass, metal, plastic, carpet, plaster board, natural stone and possible ACM. Moderate cobble and boulder (upto 700mm diameter) content of masonry brick, concrete, bags of cement and glass. *Assumed as loose to medium dense.		
					2.20	Complete at 2.20m		



Remarks

Location CAT scanned prior to excavation.
Spalling throughout.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/500.
Trial pit terminated due to possible ACM.
Backfilled with arisings upon completion.

Scale (approx)	Logged By	Checked By
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP102

Machine : 4 Tonne Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 1.70m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
09/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	PF				(1.70)	MADEGROUND. Dark brown, clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, ceramic, metal, plastic, carpet, glass, slate, tarmac, ash and clinker, miscellaneous slag. Moderate cobble and boulder (upto 700mm diameter) content, brick and plastic. *Assumed as loose to medium dense.		
0.90	JV				1.70	Complete at 1.70m		



Remarks

Location CAT scanned prior to excavation.
Spalling throughout.
No groundwater encountered during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/500.
Trial pit excavated in tank, terminated at 1.70m as could not dig deeper.
Backfilled with arisings upon completion.

Scale (approx)	Logged By	Checked By
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP103

Machine : 4 Tonne Excavator
Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.50m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
09/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.10) 0.10	MADEGROUND (similar to topsoil). Grass over dark brown, slightly gravelly, silty, fine to coarse SAND. Gravel is angular to sub-angular, fine to medium of various lithologies including brick and plaster.		
0.40	B				(0.70)	Soft, light brown, slightly gravelly, very sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies. Contains rare organic matter (stems, roots).		
0.90	B				0.80			
					(0.50)	Light brown, slightly silty, slightly gravelly, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. *Assumed as loose to medium dense.		
1.50	B				1.30			
					(1.20)	Light brown, slightly clayey, very gravelly, fine to coarse SAND. Gravel is angular to sub-rounded, fine to coarse of various lithologies. Moderate cobble content. *Assumed as loose to medium dense.		
			Moderate inflow(1) at 2.20m.			Below 2.20m: Loose		▽1
					2.50	Complete at 2.50m		



Remarks

Location CAT scanned prior to excavation.
Spalling below 1.10m. Collapsing below 2.20m almost immediately due to water ingress.
Moderate inflow at 2.20m during excavation.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/500.
Unable to take shear vane from 0.10m - 0.80m; too sandy.
Backfilled with arisings upon completion.

Scale (approx)	Logged By	Checked By
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
TP104

Machine : 4 Tonne Excavator

Method : Mechanical Excavation

Dimensions
2.50 x 0.60 x 2.80m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
09/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10 0.10	B JV				(0.40)	MADEGROUND (similar to topsoil). Grass over dark greyish brown, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including metal, brick, slate, ceramic, plastic and glass. Low cobble content of metal wire fence and brick.		
0.60 0.60	B JV				0.40 (1.30)	*MADEGROUND. Dark grey, slightly clayey, very gravelly, fine to coarse SAND. Gravel is angular to sub-rounded, fine to coarse of various lithologies including natural stone, brick, ceramic, metal, plastic, miscellaneous slag, ash and clinker. **Assumed as loose to medium dense.		
1.90	B				1.70 (1.10)	Brown, with occasional black staining, slightly clayey, very sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse. Moderate cobble content. **Assumed as loose to medium dense.		
					2.80	Complete at 2.80m		



Remarks

Location CAT scanned prior to excavation.
Sides stable during excavation.
No groundwater encountered during excavation.
*0.60m on the edge of trial pit.
**Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit location shown on Coopers Drawing No. 8353/500.
Backfilled with arisings upon completion.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Trial Pit Number
HDP01

Machine : Hand Excavated
Method : Manual Excavation

Dimensions
0.30 x 0.30 x 0.65m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/01/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.20) 0.20	MADEGROUND. Greyish brown, slightly clayey, very gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick fragments, concrete, timber, metal and plastic.		
0.30	JV				(0.20) 0.40	MADEGROUND. Light grey and reddish brown, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, limestone and concrete. Sand is fine to coarse.		
0.55	JV				(0.25) 0.65	MADEGROUND. Dark grey, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including ash and clinker, brick, miscellaneous slag, metal fragments and timber.		
						Complete at 0.65m		



Remarks

Location CAT scanned prior to excavation.
No groundwater encountered during excavation.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Terminated on obstruction at 0.65m.
Hand excavated trial pit location shown on Coopers Drawing No. 8353/01 - Revision B.
Backfilled with arisings upon completion.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS01

Machine : Archway Dart
Method : Drive-in Windowless Sampler

Dimensions
100mm to 5.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/03/2024

Engineer
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Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.40	B				(0.40)	Grass over dark brown, slightly gravelly, sandy, silty TOPSOIL.			
0.40-1.60	B				0.40	Orangish brown, slightly gravelly, slightly silty, very clayey, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
1.00-1.45	SPT N=5		1,1/2,1,1,1		(1.20)	At 1.00m: Loose			
1.60-2.20	B				1.60	Firm, medium strength, orangish brown mottled grey, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.			
1.70	SV *40kPa		Medium vane		(0.60)				
2.00-2.45	SPT N=14		5,4/4,3,3,4 Water strike(1) at 2.10m.					▽1	
2.20-3.50	B				2.20	Orangish brown, slightly gravelly, silty, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
3.00-3.45	SPT N=0		1,2/0,0,0,0			At 3.00m: Very loose			
3.50-5.00	B				(3.25)	At 3.80m: Gravelly			
4.00-4.45	SPT N=12		3,3/2,3,4,3			At 4.00m: Medium dense			
5.00-5.45	SPT N=21		4,4/4,5,6,6			At 4.90m: Becoming grey			
					5.45	Complete at 5.45m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 2.10m
From 2.00m - 3.00m: 60% Recovery. From 3.00m - 4.00m: 50% Recovery. SPT at 4.00m: No Recovery.
*Spurious shear vane result, sample breaking apart during testing due to sand content. SV No. 6 used.
Monitoring well installed from ground level to 1.60m comprising 0.50m plain pipe, 1.10m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.
Logged in accordance BS5930:2015

Scale (approx) 1:40
Logged By LP
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS02

Machine : Archway Dart
Method : Drive-in Windowless Sampler

Dimensions
100mm to 5.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/03/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
0.00-0.30	B				(0.30)	MADEGROUND (similar to topsoil). Grass over dark brown, slightly gravelly, sandy SILT. Inclusions of ash and brick fragments.
0.20	JV				0.30	
0.30-0.80	B				(0.50)	Firm, brown, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium. Contains inclusions of rootlets.
0.80-1.70	B				0.80	
1.00-1.45	SPT N=6		0,0/2,1,1,2		(0.90)	Firm, orangish brown, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.
						At 1.50m: Very sandy
1.70-3.50	B				1.70	Orangish brown, slightly gravelly, slightly silty, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.
			Water strike(1) at 2.00m.			At 2.00m: Medium dense
2.00-2.45	SPT N=12		4,2/4,3,2,3			At 2.20m: Gravelly
					(1.80)	
3.00-3.45	SPT N=11		3,1/2,4,3,2			At 3.00m: Slightly clayey, very gravelly
3.50-5.00	B				3.50	Firm, greyish brown, slightly gravelly, slightly sandy, silty CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.
4.00-4.45	SPT N=17		5,4/4,4,4,5			
					(1.95)	
5.00-5.45	SPT N=27		7,5/7,7,6,7			
					5.45	Complete at 5.45m

Legend

Water ▽1

Instr

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 2.00m
From 2.00m - 3.00m: 80% Recovery. From 3.00m - 4.00m: 70% Recovery. From 4.00m - 5.00m: 30% Recovery.
Monitoring well installed from ground level to 3.00m comprising 1.00m plain pipe, 2.00m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334. Window sample locations shown on Coopers Drawing No. 8353/01.

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Scale (approx) 1:40

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS03

Machine : Archway Dart

Method : Drive-in Windowless Sampler

Dimensions
100mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/03/2024

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.30)	MADEGROUND (similar to topsoil). Grass over dark brown, sandy SILT.			
0.20	JV				0.30				
0.30-1.00	B					MADEGROUND. Dark greyish brown, slightly silty, gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies with inclusions of ash and clinker.			
0.60	JV				(0.70)				
1.00-1.45	SPT N=25		3,6/5,6,7,7		1.00	Medium dense, orangish brown, slightly silty, very sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse.			
1.00-3.50	B								
2.00-2.45	SPT N=22		5,6/6,4,6,6 Water strike(1) at 2.10m.		(2.50)			▽1	
3.00-3.45	SPT N=11		4,4/3,3,2,3						
3.50-4.00	B				3.50	Stiff, brown, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.			
4.00-4.45	SPT N=40		4,5/10,10,10,10		(0.95)				
					4.45	Complete at 4.45m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 2.10m
From 3.00m - 4.00m: 70% Recovery.
Monitoring well installed from ground level to 1.00m, comprising 0.50m plain pipe, 0.50m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS04

Machine : Archway Dart
Method : Drive-in Windowless Sampler

Dimensions
100mm to 5.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/03/2024

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	JV				(0.40)	MADEGROUND (similar to topsoil). Grass over dark brown, sandy SILT with inclusions of brick and glass fragments.			
0.40-0.80	B				0.40				
					(0.40)	Orangish brown, slightly silty, clayey, gravelly, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
0.80-2.00	B				0.80				
1.00-1.45	SPT N=13		4,4/3,3,3,4			Orangish brown, slightly silty, very sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse. At 1.00m: Medium dense			
2.00-2.45	SPT N=15		5,5/5,4,3,3						
2.00-4.50	B								
					(3.70)				
			Water strike(1) at 3.00m.					▽1	
3.00-3.45	SPT N=27		10,9/10,8,5,4						
4.00-4.45	SPT N=13		3,2/2,5,4,2						
4.50-5.00	B				4.50				
4.70	SV *42kPa		Medium vane			Stiff, brown, slightly gravelly, slightly sandy, slightly silty CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
5.00-5.45	SPT N=27		4,5/6,7,7,7		(0.95)				
					5.45				
						Complete at 5.45m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 3.00m
From 1.00m - 2.00m: 80% Recovery. From 2.00m - 3.00m: 50% Recovery. From 3.00m - 4.00m: 50% Recovery. SPT at 5.00m: No Recovery.
Monitoring well installed from ground level to 2.00m comprising 1.00m plain pipe, 1.00m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
*Spurious shear vane result, sample breaking apart during testing. SV No. 6 used. Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS05

Machine : Archway Dart
Method : Drive-in Windowless Sampler

Dimensions
100mm to 2.25m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
22/03/2024

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30) 0.30	Grass over dark brown, slightly clayey, sandy, silty TOPSOIL.			
0.30-1.00	B				(0.70) 1.00	Orangish brown, slightly gravelly, slightly silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
1.00-1.45	SPT N=10		3,3/3,3,2,2						
1.00-2.00	B				(1.25)	Medium dense, orangish brown, slightly silty, sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse.		▽1	
			Water strike(1) at 2.00m.						
2.00-2.26	SPT 49/105		8,8/27,22		2.25				
						Complete at 2.25m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 2.00m
Monitoring well installed from ground level to 1.50m comprising 0.50m plain pipe, 1.00m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01. Borehole terminated due to refusal in SPT at 2.25m.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS06

Machine : Archway Dart

Method : Drive-in Windowless Sampler

Dimensions
100mm to 4.15m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
22/03/2024

Engineer
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Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30)	MADEGROUND (similar to topsoil). Grass over dark brown, slightly clayey, sandy SILT.			
0.30-0.60	B				0.30 (0.30)	MADEGROUND. Firm, orangish brown, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies. Sand is fine to medium.			
0.60-1.10	B		Water strike(1) at 0.60m.		0.60			▽1	
0.80	JV				(0.50)	MADEGROUND. Dark greyish brown, slightly silty, very gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies with inclusions of ash and clinker and brick fragments. At 1.00m: Very loose			
1.00-1.45	SPT N=0		0,0/0,0,0,0		1.10				
1.10-1.60	B				(0.50)				
1.60-2.00	B				1.60 (0.40)	Soft, greyish brown, slightly gravelly, sandy, silty CLAY. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies. Sand is fine to medium.			
2.00-2.45	SPT N=34		1,6/7,10,8,9		2.00	Dark brown, silty, sandy, fibrous PEAT. Faint organic odour. Inclusions of plant matter throughout.			
2.00-2.30	B				(0.30)				
2.30-3.70	B				2.30	Dark grey brown, slightly gravelly, slightly clayey, sandy SILT. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies. At 2.00m: Dense			
3.00-3.45	SPT N=32		6,5/8,8,7,9		(1.85)	Dense, greyish brown, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies. At 3.00m: Becoming gravelly			
3.70-4.15	SPT N=48		7,8/11,12,12,13		4.15	Complete at 4.15m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 0.60m.
From 2.00m - 3.00m: 80% Recovery.
Monitoring well installed from ground level to 1.10m, comprising 0.50m plain pipe, 0.60m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS07

Machine : Archway Dart
Method : Drive-in Windowless Sampler

Dimensions
100mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
22/03/2024

Engineer
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Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					(0.40)	MADEGROUND (similar to topsoil). Grass over dark brown, sandy, SILT with inclusions of glass fragment.			
0.20	JV				0.40				
0.40-0.70	B				(0.30)	Orangish brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
0.70-2.00	B				0.70				
0.80	SV *40kPa		Medium vane			Firm, orangish brown, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
1.00-1.45	SPT N=2		0,0/0,0,0,2			At 0.80m: Low to medium strength			
			Water strike(1) at 1.40m.					▽1	
1.70	SV *38kPa		Medium vane						
2.00-2.45	SPT N=10		4,3/3,3,2,2		(2.80)				
2.00-3.50	B					At 2.30m: Gravelly			
						At 2.50m: Stiff, becoming brown. No longer sandy			
2.70	SV *78kPa		Medium vane			At 2.70m: High strength			
3.00-3.45	SPT N=19		0,3/4,5,5,5						
3.50-4.00	B				3.50	Brown, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
4.00-4.45	SPT N=50		4,5/12,13,13,12		(0.95)	At 4.00m: Dense			
					4.45	Complete at 4.45m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 1.40m.
From 1.00m - 2.00m: 50% Recovery. From 2.00m - 3.00m: 80% Recovery. From 3.00m - 4.00m: 90% Recovery.
*Spurious shear vane result, sample breaking apart during testing. SV No. 6 used.
Monitoring well installed from ground level to 3.00m comprising 1.00m plain pipe, 2.00m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS08

Machine : Archway Dart
Method : Drive-in Windowless Sampler

Dimensions
100mm to 3.70m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
22/03/2024

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.30	B				(0.30)	Grass over dark brown, sandy, silty TOPSOIL.			
0.30-1.00	B				0.30 (0.70)	Orangish brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
1.00-1.45 1.00-3.70	SPT N=26 B		2,3/6,7,5,8		1.00	Medium dense, orangish brown, slightly silty, sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse.			
2.00-2.45	SPT N=37		Water strike(1) at 2.00m. 13,11/11,10,8,8		(2.40)			▽1	
3.00-3.45	SPT N=14		10,6/5,3,3,3		3.40 (0.30) 3.70	Firm, brown, slightly gravelly, slightly sandy, slightly silty CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.			
						Complete at 3.70m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 2.00m.
SPT at 2.00m: No Recovery. From 2.00m - 3.00m: 70% Recovery.
Monitoring well installed from ground level to 1.80m comprising 1.00m plain pipe, 0.80m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.
Borehole terminated at 3.70m due to obstruction from large cobble.
Logged in accordance BS5930:2015

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS09

Machine : Archway Dart
Method : Drive-in Windowless Sampler

Dimensions
100mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
22/03/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	JV				(0.60)	MADEGROUND (similar to topsoil). Dark brown, sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including brick fragments, plastic and concrete.			
0.60-1.90	B				0.60	Orangish brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
1.00-1.45	SPT N=6		1,1/1,2,1,2			At 1.00m: Loose			
					(1.50)				
1.90-2.10	B					At 1.90m: No longer clayey			
2.00-2.45	SPT N=6		3,2/2,1,2,1						
2.10-4.00	B				2.10	Loose, orangish brown, slightly silty, sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse.			
			Water strike(1) at 3.00m.					▽1	
3.00-3.45	SPT N=9		4,2/3,2,2,2						
					(2.35)				
4.00-4.45	SPT N=6		2,2/2,2,1,1						
					4.45	Complete at 4.45m			

Remarks
Location CAT scanned prior to drilling. Hand dug service pit to 1.00m for service clearance. Water strike at 3.00m.
From 2.00m - 3.00m: 30% Recovery. From 3.00m - 4.00m: 60% Recovery.
Monitoring well installed from ground level to 2.50m comprising 1.00m plain pipe, 1.50m slotted pipe with inert free draining gravel surround, bentonite seal above and below response zone.
Borehole drilled by G.P. Drilling. SPT Energy Ratio = 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS101

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
100mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
30/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40	JV				(1.10)	MADEGROUND. Dark brown, slightly clayey, slightly silty, gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including brick, concrete and plastic.		
1.20-1.65	SPT N=27		1,3/6,8,7,6		1.10	MADEGROUND. Brown, slightly silty, slightly sandy, very clayey, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, concrete and timber. Sand is fine to coarse.		
1.50	JV							
2.00-2.45	SPT N=6		4,3/1,2,1,2		(1.90)			
2.00-3.00	JV							
3.00-3.44	SPT 25*/135 N=29		2,23/15,8,3,3		3.00	MADEGROUND. Dark greyish brown, slightly silty, slightly clayey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick. Sand is fine to coarse.		
3.00-4.00	JV				(1.45)			
4.00-4.45	SPT N=4		1,1/2,1,0,1		4.45	Complete at 4.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.20m for service clearance.
From 2.00m - 3.00m 40% recovery, From 3.00m - 4.00m 30% recovery.
Monitoring well installed from ground level to 3.50m, comprising 1.00m pain pipe and 2.50m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone.
Borehole drilled by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS102

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
100mm to 0.90m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
30/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.90)	MADEGROUND. Dark brown, slightly silty, very gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick and concrete.		
0.70	JV				0.90	Complete at 0.90m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 0.90m for service clearance.
Borehole drilled by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.
Terminated at 0.90m due to obstruction.

Scale (approx)
1:40

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS103

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
100mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
30/09/2024

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.05 0.20	JV JV				(0.40) 0.40	MADEGROUND (similar to topsoil). Grass over dark brown, slightly gravelly, slightly silty, gravelly, fine to medium SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies.		
0.70	JV				(0.70) 1.10	MADEGROUND. Orangish brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies.		
1.20-1.65 1.50	SPT N=2 JV		1,0/0,0,1,1		(1.30)	MADEGROUND. Dark reddish brown, slightly silty, clayey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, concrete, ash and clinker. Sand is fine to coarse.		
2.00-2.45 2.00-3.80	SPT N=0 B		1,1/0,0,0,0		2.40			
2.80 2.80 3.00-3.45	SV *20kPa JV SPT N=2		Medium vane 1,1/1,0,1,0		(1.40)	Soft, dark greyish brown, slightly gravelly, slightly sandy, silty CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium. At 2.70m: Becoming light brown At 2.80m: Low strength		
3.60 3.80-4.00 4.00-4.45	SV *30kPa B SPT N=27		Medium vane 3,3/8,8,6,5		3.80 (0.65) 4.45	Greyish brown, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. At 4.00m: Medium dense		
						Complete at 4.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.20m for service clearance.
From 1.00m - 2.00m 40% recovery, From 2.00m - 3.00m 80% recovery. *Spurious shear vane results; sample breaking apart during testing. SV10 used.
Monitoring well installed from ground level to 2.50m, comprising 1.00m pain pipe and 1.50m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone.
Borehole drilled by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS104

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
1.00mm to 4.44m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
30/09/2024

Engineer
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Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	B				(0.20) 0.20	MADEGROUND (similar to topsoil). Grass over dark brown, slightly gravelly, slightly silty, gravelly, fine to medium SAND. Gravel is angular to sub-rounded, fine to coarse of various lithologies.		
0.25	JV				(0.10) 0.30			
0.70	JV					MADEGROUND. Brown, slightly gravelly, slightly silty, clayey, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.		
1.20-1.65	SPT N=13		3,2/4,3,3,3		(1.20)	MADEGROUND. Reddish brown, slightly silty, clayey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, glass, ash and clinker. Sand is fine to coarse.		
1.50-2.00	B				1.50	Brown, slightly silty, SAND and GRAVEL. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to coarse.		
1.70	JV							
2.00-2.45	SPT N=5		3,2/2,1,1,1		(0.90)	At 2.00m: Loose		
2.00-3.50	B				2.40			
2.60	JV					Firm (soft in places), orangish brown, slightly gravelly, slightly silty, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Sand is fine to medium.		
3.00-3.45	SPT N=15		Water strike(1) at 3.00m. 3,4/6,4,3,2		(1.10)			▽1
3.50-3.70	B				3.50			
3.70-4.00	B				(0.20) 3.70	Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.		
4.00-4.44	SPT 50/290		14,11/15,10,10,15		(0.74)	Orangish brown, slightly silty, slightly gravelly, clayey, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. At 4.00m: Dense		
					4.44	Complete at 4.44m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.00m for service clearance.
Water strike at 3.00m.
Monitoring well installed from ground level to 1.50m, comprising 0.50m pain pipe and 1.00m slotted pipe with inert free draining gravel surround and bentonite seal above and below response zone.
Borehole drilled by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS201

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 5.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
19/01/2026

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Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.30)	MADEGROUND. Grey, slightly clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, ceramic, concrete, metal, glass and miscellaneous slag.		
0.40	JV				0.30			
0.70	JV				(0.30)	MADEGROUND. Dark brown, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, ceramic, burnt shale and ash and clinker.		
1.20-1.65	SPT N=15		0,1/3,3,4,5		0.60	Brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including coal. From 1.20m: Medium dense		
1.30	B				(1.10)			
1.80	B				1.70	Medium dense, light brown, slightly clayey, very gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including quartz, mudstone and sandstone.		
2.00-2.45	SPT N=19		11,6/4,5,4,6					
2.50	B							
			Seepage/wet(1) at 2.80m.					▽1
3.00-3.45	SPT N=5		2,2/1,1,1,2			From 3.00m: Loose		
3.60	B				(2.90)			
4.00-4.45	SPT N=12		2,2/2,3,3,4			From 4.00m: Medium dense.		
4.40	B							
			At time of backfill(2) at 4.60m.		4.60	Firm, grey, slightly sandy, slightly gravelly, silty CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.		▽2
4.80	B				(0.85)			
					5.45	Complete at 5.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.00m for service clearance.
Seepage/wet from 2.80m - 4.60m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS202

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 5.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
19/01/2026

Engineer
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Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.13) 0.13	MADEGROUND. Concrete.		
0.20	PF				(0.17) 0.30	MADEGROUND. Light greyish brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular of various lithologies including concrete and brick.		
0.25	JV							
0.40	PF							
0.60	JV				(0.60)	MADEGROUND. Dark brown, slightly clayey, very sandy, angular to sub-angular, fine to coarse of various lithologies including brick, ceramic, burnt shale, ash and clinker, concrete and natural stone. Low cobble content of brick.		
					0.90			
1.00	PF					Firm, brown, slightly gravelly, silty, very sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including coal.		
1.10	JV					From 1.30m: Soft, medium strength		
1.20-1.65	SPT N=1		0,0/0,0,0,1					
1.30	SV 48kPa		Large vane					
					(1.80)			
1.80	SV 44kPa		Large vane					
1.80	B		Large vane			From 1.90m: Firm		
1.90	SV 56kPa							
2.00-2.45	SPT N=9		0,0/0,3,3,3					
2.60	B				2.70	Light brown, slightly silty, sub-angular to sub-rounded, fine to coarse SAND and GRAVEL of various lithologies. Low cobble content. Wet.		
			Seepage(1) at 2.90m.			From 3.00m: Medium dense		▽1
3.00-3.45	SPT N=14		2,3/2,4,4,4					
3.50	B				(2.00)			
4.00-4.45	SPT N=15		2,3/3,2,5,5					
4.40	B							
			At time of backfill(2) at 4.70m.		4.70			▽2
4.80	B					Stiff, grey, slightly sandy, gravelly, silty CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.		
5.00-5.45	SPT N=27		4,5/6,6,7,8		(0.75)			
					5.45	Complete at 5.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.00m for service clearance.
Seepage from 2.90m - 4.70m.
Shear vane SV05 used. Unable to take shear vanes below 2.00; poor recovery, too sandy.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Monitoring well installed from 0.00m - 4.00m, comprising 1.00m of 50mm diameter plain pipe and 3.00m of 50mm diameter slotted pipe with gravel surround. Finished with flush cover and concrete surround. 0.50m of bentonite seals at top and bottom of well.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS203

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 5.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
19/01/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.20) 0.20	MADEGROUND. Light brown and greyish brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, concrete and timber. Low cobble content of concrete.		
0.40	JV				(0.30) 0.50			
0.60	JV				(0.40) 0.90	MADEGROUND. Dark brown, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, concrete, rubber, plastic, ceramic, ash and clinker and metal.		
1.00	JV					MADEGROUND. Dark greyish brown, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, ceramic, metal, glass, ash and clinker, slate, coal and mudstone.		
1.20-1.65	SPT N=4		1,1/1,1,1,1					
1.40	B					Light brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Contains pockets of clay throughout.		
1.60	B				(1.90)	From 1.20m: Loose		
2.00-2.45	SPT N=16		4,3/3,4,4,5			From 2.00m: Medium dense		
2.50	B					From 2.50m: Gravelly		
2.80-3.25	SPT N=25		6,5/5,6,7,7 Seepage/wet(1) at 3.00m.		2.80	Medium dense, light orangish brown, slightly clayey, very sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse.		▽1
3.60	B							
4.00-4.45	SPT N=11		2,1/1,2,3,5		(2.65)			
4.70	B							
5.00-5.45	SPT N=19		4,4/4,4,5,6		5.45	Complete at 5.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.00m for service clearance.
Seepage/wet at 3.00m.
Shear vane SV05 used. Poor recovery from 1.00m - 1.30m, from 2.00m - 2.45m and from 3.00m - 3.45m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Shear vanes attempted at 1.70m and 1.90m but sample shattered upon attempt. Spurious readings not recorded.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS204

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 5.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
19/01/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.20)	MADEGROUND. Greyish brown and grey, slightly clayey, very gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including tarmac, concrete and ceramic.		
0.30	JV				0.20			
0.70	JV				(0.40)	MADEGROUND. Dark brown, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, roots, ceramic, plastic, glass and concrete.		
1.20-1.65	SPT N=5		0,0/1,1,1,2		0.60			
1.50	SV 38kPa		Large vane		(0.80)	Brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including quartz and coal. From 1.20m: Loose		
1.60	B				1.40			
1.80	SV 44kPa		Large vane		(0.50)	Soft, brown, slightly gravelly, silty, very sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded fine to coarse of various lithologies. From 1.50m: Low strength From 1.80m: Medium strength		
2.00-2.45	SPT N=18		1,2/3,4,5,6		1.90			
2.60	B				(0.90)	Light orangish brown, clayey, gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including quartz and mudstone. From 2.00m: Medium dense		
3.00-3.45	SPT N=8		Seepage/wet(1) at 3.00m. 2,1/1,1,3,3		2.80	Light brown, slightly silty, sub-angular to sub-rounded, fine to coarse SAND and GRAVEL of various lithologies. Wet. From 3.00m: Loose		▽1
3.70	B							
4.00-4.45	SPT N=0		1,1/0,0,0,0		(2.65)	From 4.00m: Very loose		
4.30	B							
5.00-5.45	SPT N=9		4,2/2,2,2,3			From 5.00m: Loose		
					5.45	Complete at 5.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.00m for service clearance.
Seepage/wet at 3.00m.
Shear vane SV05 used. Poor recovery from 1.00m - 1.30m, from 2.00m - 2.45m and from 3.00m - 3.45m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS205A

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/01/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.20) 0.20	MADEGROUND. Greyish brown and dark grey, slightly clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, concrete, limestone, timber, metal fragments and ash. Low cobble content of concrete.		
0.50	JV				(0.60)			
0.90	JV				0.80 (0.40)	MADEGROUND. Dark greyish brown, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, ash and clinker, glass, ceramic, metal, concrete, timber and rubber.		
1.20-1.65	SPT N=4		1,0/1,0,1,2		1.20	Brown, slightly gravelly, clayey, fine to coarse (predominantly fine to medium) SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.		
1.40	B				(0.65)			
1.60	SV 42kPa		Large vane			Soft to firm, brown, slightly gravelly, silty, sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.		
1.70	B					From 1.20m: Loose		
1.80	SV 48kPa		Large vane		1.85	From 1.60m: Medium strength		▽1
2.00-2.45	SPT N=28		Seepage/wet(1) at 2.00m. 5,7/5,7,7,9			Light brown, slightly clayey, sub-angular to sub-rounded, fine to coarse SAND and GRAVEL. From 2.00m: Medium dense		
2.60	B							
3.00-3.45	SPT N=26		5,6/6,5,6,9		(2.60)			
3.50	B							
4.00-4.45	SPT N=11		4,2/2,2,3,4		4.45	Complete at 4.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.00m for service clearance.
Seepage/wet at 2.00m.
Shear vane SV05 used. No recovery from 2.00m - 2.40m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS206

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/01/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.10	JV				(0.20)	MADEGROUND. Dark greyish brown, slightly clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including limestone, concrete, brick fragments, ash and clinker and metal fragments.		
0.10	PF				0.20			
0.30	PF				(0.40)			
0.40	JV				0.60	MADEGROUND. Dark brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick fragments, ash and clinker and metal fragments.		
0.70	JV				(0.60)			
1.20-1.65	SPT N=6		0,0/1,1,2,2		1.20	Brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies.		
1.40	SV 44kPa		Large vane		(0.40)	Soft to firm, brown, slightly gravelly, sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies including coal and mudstone.		
1.50	B				1.60	From 1.40m,: Medium strength		
1.80	B							
2.00-2.45	SPT N=29		4,7/7,7,7,8			Light brown, slightly clayey, very gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies including quartz and mudstone. Wet. From 2.00m: Medium dense		
2.60	B							
			Seepage/wet(1) at 2.80m.					▽1
3.00-3.45	SPT N=16		4,4/4,4,3,5		(2.85)			
4.00-4.45	SPT N=11		5,2/1,3,3,4		4.45	Complete at 4.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug to 1.00m for service clearance.
Seepage/wet at 2.80m.
Shear vane SV05 used. No recovery from 2.00m - 2.40m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Monitoring well installed from 0.00m - 3.00m, comprising 1.00m of 50mm diameter plain pipe with flush cover and concrete surround and 2.00m of 50mm diameter slotted pipe with inert, free draining gravel surround and bentonite seals.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

Scale (approx)
1:40

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS207

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 5.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/01/2026

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Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.15) 0.15	MADEGROUND. Concrete.		
0.20	PF				(0.15) 0.30	MADEGROUND. Grey, very gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies, predominantly tarmac.		
0.25	JV							
0.40	PF				(0.40)			
0.60	JV				0.70	MADEGROUND. Grey and greyish brown, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, concrete, plastic and ceramic. High cobble content of brick and concrete.		
0.80	PF				(0.20) 0.90			
0.85	JV				(0.20) 1.10	MADEGROUND. Dark brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, ceramic and metal fragments.		
0.95	JV							
1.20-1.65	SPT N=3		0,0/0,1,1,1					
1.30	B					Brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies.		
1.50	SV 40kPa		Large vane					
1.70	B							
2.00-2.45	SPT N=3		0,0/0,1,1,1		(1.90)	Soft to firm, brown, slightly gravelly, silty, sandy CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies. From 1.50m: Medium strength		
2.70	B							
2.80	SV 44kPa		Large vane					
			Seepage/wet(1) at 3.00m.		3.00			▽1
3.00-3.45	SPT N=20		2,3/3,6,5,6			Medium dense, light brown, slightly clayey, very sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse. Wet.		
3.50	B							
					(1.70)			
4.00-4.45	SPT N=6		3,2/2,1,1,2			From 4.00m: Loose		
4.60	B				4.70			
4.90	B				(0.30) 5.00	Light greyish brown, slightly clayey, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded of various lithologies. Wet.		
						Complete at 5.00m		

Remarks
Location CAT scanned prior to drilling. Hand dug inspection pit to 1.00m for service clearance.
Seepage/wet at 3.00m.
Shear vane SV05 used.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Monitoring well installed from 0.00m - 3.00m, comprising 1.00m of 50mm diameter plain pipe with flush cover and concrete surround and 2.00m of 50mm diameter slotted pipe with inert, free draining gravel surround and bentonite seals.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS208

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
21/01/2026

Engineer
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Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					0.05			
0.10	B				(0.10)	MADEGROUND. Tarmac.		
					0.15			
0.30	JV				(0.30)	MADEGROUND. Limestone hardcore.		
					0.45			
0.60	JV				(0.70)	MADEGROUND. Dark grey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, metal, ash and clinker and timber.		
						MADEGROUND. Dark greyish brown, clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, concrete, timber, ash and clinker and limestone.		
					1.15			
1.20-1.65	SPT N=5		0,0/1,1,1,2			Brown, soft to firm, slightly gravelly, sandy, silty CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to medium of various lithologies including mudstone and organic matter. From 1.50m: Low to medium strength		
1.40	JV							
1.50	SV 38kPa		Large vane					
1.60	B							
1.70	SV 49kPa		Large vane					
1.90	SV 40kPa		Large vane					
1.95	B				(1.85)			
2.00-2.45	SPT N=4		1,1/1,1,1,1					
2.40	B							
2.80	B							
					3.00			▽1
3.00-3.44	SPT 25*/135 N=40		Seepage/wet(1) at 3.00m. 9,16/14,12,8,6			Dense, light brown, slightly clayey, very sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Sand is fine to coarse. Wet.		
					(1.45)			
					4.45	Complete at 4.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug inspection pit to 1.00m for service clearance.
Seepage/wet at 3.00m.
Shear vane SV05 used. Poor recovery from 1.00m - 1.40m. No recovery from 3.00m - 4.00m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Monitoring well installed from 0.00m - 3.00m, comprising 1.20m of 50mm diameter plain pipe with flush cover and concrete surround and 1.80m of 50mm diameter slotted pipe with inert, free draining gravel surround and bentonite seals.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS209

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 5.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
23/01/2026

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADEGROUND. Concrete.		
0.30	JV				(0.50) 0.70	MADEGROUND. Dark grey and black, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick fragments, plastic, metal fragments, ash, glass, ceramic and mudstone. Sand is fine to coarse. *Assumed as loose to medium dense.		
0.80	JV				(0.80) 1.50	MADEGROUND. Brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-rounded, fine to coarse of various lithologies including brick, concrete, coal, tarmac and natural stone.		▽1
1.20-1.65	SPT N=9		Seepage/wet(1) at 1.20m. 1,1/1,3,3,2					
1.30	JV							
1.60	JV							
1.80	B							
2.00-2.45	SPT N=10		3,2/2,2,2,4			From 2.00m: Medium dense		
2.70	B				(2.30) 3.80			
3.00-3.45	SPT N=0		1,2/0,0,0,0			From 3.00m: Very loose		
3.90	B							
4.00-4.45	SPT N=11		3,2/2,3,2,4			Soft, grey, slightly clayey, very sandy SILT. Sand is fine to medium.		
4.90	B				(1.20) 5.00			
						Complete at 5.00m		

Remarks
Location CAT scanned prior to drilling. Hand dug inspection pit to 1.00m for service clearance.
Seepage/wet at 1.20m.
Poor recovery from 4.00m - 4.80m. No recovery in final SPT.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS210

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 4.45m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
23/01/2026

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.20) 0.20	MADEGROUND. Tarmac and limestone hardcore.		
0.30 0.40	PF JV				(0.50) 0.70	MADEGROUND. Dark grey, slightly clayey, very gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, ash and clinker, metal, plastic, concrete, coal, tarmac and glass.		
0.80 0.90	PF JV		Seepage/wet(1) at 1.00m.		(0.80) 1.50	MADEGROUND. Dark greyish brown, very gravelly, fine to coarse SAND with pockets of soft, dark grey clay. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, concrete, ash and clinker and sandstone.		▽1
1.20-1.65 1.20	SPT N=1 JV		1,0/0,1,0,0					
1.60 1.80	PF JV					MADEGROUND. Grey, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, timber and mudstone.		
2.00-2.45	SPT N=50		5,9/11,11,12,16		(1.30) 2.80			
2.60	JV							
2.90 3.00-3.45	JV SPT N=15		4,3/4,4,4,3			Light brown, slightly clayey, very gravelly, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Wet. From 3.00m: Medium dense		
4.00-4.45	SPT N=12		3,3/3,3,2,4		(1.65) 4.45			
						Complete at 4.45m		

Remarks
Location CAT scanned prior to drilling. Hand dug inspection pit to 1.00m for service clearance.
Seepage/wet at 1.00m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Monitoring well installed from 0.00m - 2.70m, comprising 0.50m of 50mm diameter plain pipe with flush cover and concrete surround and 2.20m of 50mm diameter slotted pipe with inert, free draining gravel surround and bentonite seals.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS211

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 2.40m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
23/01/2026

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	MADEGROUND. Concrete.		
					0.30			
0.50	PF					MADEGROUND. Demolition rubble. Grey and brown, slightly clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, sandstone, concrete, plastic and metal.		
0.60	JV							
0.90	B		Seepage/wet(1) at 1.00m.					▽1
1.20-1.65	SPT N=25		8,7/10,5,4,6		(2.10)			
1.90	B							
2.00-2.45	SPT N=17		6,5/6,5,4,2					
					2.40			
2.40	B					Complete at 2.40m		

Remarks
Location CAT scanned prior to drilling. Hand dug inspection pit to 1.00m for service clearance.
Seepage/wet at 1.00m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.
Terminated due to difficult drilling.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Number
WS212

Machine : Archway Dart 334

Method : Drive-in Windowless Sampler

Dimensions
102-65mm to 5.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
23/01/2026

Engineer
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Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.60)	MADEGROUND. Dark grey, sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick and concrete.		
0.40	PF							
0.50	JV				0.60			
0.70	JV		Seepage/wet(1) at 0.80m.			MADEGROUND. Dark grey and black, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, coal, ash and fused material. Strong, weathered, hydrocarbon odour and sheen.		▽1
0.90	PF				(0.80)			
1.20-1.65	SPT N=0		0,0/0,0,0,0					
					1.40			
1.50	PF					MADEGROUND. Light greyish brown, slightly gravelly, clayey, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick and natural stone.		
1.70	JV							
2.00-2.45	SPT N=27		5,7/7,9,5,6		(1.20)			
					2.60			
2.70	JV					Light brown, slightly clayey, very sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies including quartz and mudstone. Sand is fine to coarse.		
2.80	B							
3.00-3.45	SPT N=23		14,8/6,6,5,5,6			From 3.00m: Medium dense		
					(2.40)			
					5.00			
						Complete at 5.00m		

Remarks
Location CAT scanned prior to drilling. Hand dug inspection pit to 1.00m for service clearance.
Seepage/wet at 0.80m.
Borehole drilled uncased by GP Drilling. SPT Energy Ratio: 67%. Rig Ref: Archway Dart 334.
Monitoring well installed from 0.00m - 2.50m, comprising 0.50m of 50mm diameter plain pipe with flush cover and concrete surround and 2.00m of 50mm diameter slotted pipe with inert, free draining gravel surround and bentonite seals.
Borehole backfilling after 4.00m, unable to take SPT below this depth.
Window sample location shown on Coopers Drawing No. 8353/01 - Revision B.

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Borehole Number
BH01

Boring Method
Cable Percussion

Casing Diameter
150mm cased to 10.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
09/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.20	B					(0.15)	MADEGROUND. Concrete.			
0.20	PF					0.15	MADEGROUND. Demolition rubble. Grey and brown, slightly clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including brick, concrete, tarmac, metal, plastic, timber, glass, plasterboard, carpet and rubber. Moderate cobble content of brick and concrete.			
0.50	JV								▼1	
1.20-1.65	SPT N=9	1.20	DRY	9,5/3,2,2,2			From 1.20m: Loose			
1.20-1.65	B								▽1	
1.20-1.65	D	1.20	DRY	Moderate inflow(1) at 1.40m, rose to 0.90m in 20 mins, sealed at 4.90m.						
1.40	PF									
2.00-2.45	SPT(C) N=34	2.00	1.70	10,14/7,10,12,5			From 2.00m: Dense			
2.00-2.45	B									
2.00-2.45	D									
2.20	PF					(4.55)				
3.00-3.45	SPT(C) N=25	3.00	2.50	7,7/6,10,5,4			From 3.00m: Medium dense			
3.00-3.45	B	3.00	2.50							
3.50	D									
3.50	PF									
4.00-4.45	SPT(C) N=24	4.00	3.00	10,6/5,7,6,6						
4.00-4.45	B	4.00	3.00							
4.50	D								▼2	
4.70	D					4.70	Soft to firm, grey, slightly gravelly, sandy, silty CLAY. Sand is fine to medium. Gravel is sub-angular to sub-rounded, fine to coarse of various lithololgies.			
4.80	JV									
5.00-5.45	SPT N=13	5.00	DRY	7,5/3,3,4,3						
5.00-5.45	B									
5.00-5.45	D	4.50	DRY							
6.00-6.45	SPT N=16	5.80	DRY	4,7/7,3,3,3						
6.00-6.45	B		DRY			(2.80)				
6.00-6.45	D	5.80	DRY							
7.50-7.95	SPT N=20	7.50	DRY	3,3/5,5,5,5		7.50	Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Low cobble content.			
7.50-7.95	B									
7.50-7.95	D	7.50	DRY							

Remarks
Location CAT scanned prior to drilling.
Hand dug inspection pit to 1.20m for service clearance.
Water strike at 1.40m. Cased at 1.20m. Sealed at 1.90m. Depth at 4.90m after 20 minutes.
Water strike at 9.50m. Cased at 9.00m. Not sealed. Depth at 4.60m after 20 minutes.
Borehole cased to 10.00m.
All logs supplemented by drillers logs. Drilling Contractor: Lundy Site Investigation. SPT Energy Ratio = 71%. Rig Ref: LS158
Bentonite seal from 0.00m - 1.00m with inert free draining gravel surround from 1.00m - 5.50m. Bentonite seal from 5.50m - 6.50m. Flush cover. Backfilled upon completion.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Borehole Number
BH01

Boring Method
Cable Percussion

Casing Diameter
150mm cased to 10.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
09/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
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Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						(2.95)	Medium dense, light brown, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Low cobble content.			
9.00-9.45	SPT N=20	9.00	DRY	3,4/5,6,5,4					▽2	
9.00-9.45	B									
9.00-9.45	D	9.00	DRY							
				Moderate inflow(2) at 9.50m, rose to 4.60m in 20 mins.						
10.00-10.45	SPT N=19	10.00	4.60	4,4/4,5,4,6						
10.00-10.45	D	10.00	4.60							
						10.45	Complete at 10.45m			

Remarks
Location CAT scanned prior to drilling.
Hand dug inspection pit to 1.20m for service clearance.
Water strike at 1.40m. Cased at 1.20m. Sealed at 1.90m. Depth at 4.90m after 20 minutes.
Water strike at 9.50m. Cased at 9.00m. Not sealed. Depth at 4.60m after 20 minutes.
Borehole cased to 10.00m.
All logs supplemented by drillers logs. Drilling Contractor: Lundy Site Investigation. SPT Energy Ratio = 71%. Rig Ref: LS158
Bentonite seal from 0.00m - 1.00m with inert free draining gravel surround from 1.00m - 5.50m. Bentonite seal from 5.50m - 6.50m. Flush cover.
Backfilled upon completion.

Scale (approx)
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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Borehole Number
BH02

Boring Method
Cable Percussion

Casing Diameter
150mm cased to 10.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

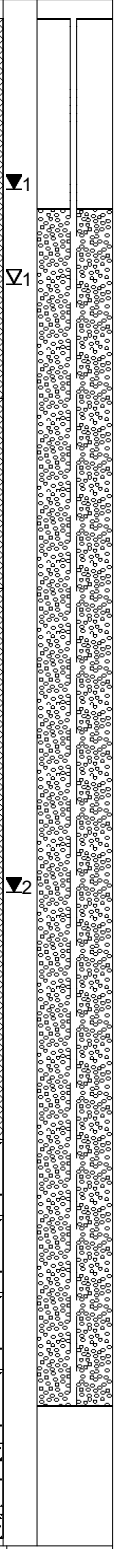
Location (Observed measurements)

Dates
09/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description
0.00-1.20	B						MADEGROUND. Greyish brown, clayey, very sandy, angular to sub-angular GRAVEL of various lithologies including brick, concrete, slate, miscellaneous slags, metal, glass and plastic. Low cobble content of brick and concrete.
0.20	PF						
0.40	JV						
						(2.00)	
1.20-1.65	SPT(C) N=9		DRY	3,2/2,2,2,3			From 1.20m: Loose
1.20-1.65	B		DRY				
				Moderate inflow(1) at 1.40m, rose to 0.90m in 20 mins, sealed at 4.90m.			
1.70	D		DRY				
						2.00	
2.00-2.45	SPT(C) N=5	1.50	DRY	1,1/2,1,1,1			MADEGROUND. Loose, dark grey, clayey, very gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including brick, ceramic, plastic, metals, ash and fused material. Low cobble content of brick.
2.00-2.45	B	1.50	DRY				
2.10	PF						
						(1.00)	
2.50	D						
2.50	JV						
						3.00	
3.00-3.45	SPT(C) N=2	3.00	DRY	1,1/0,0,1,1			MADEGROUND. Soft, black and dark grey, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of various lithologies including metal, brick and plastic. Weathered hyrocarbon odour.
3.00-3.45	B	3.00	DRY				
3.30	PF						
3.40	JV						
3.50	D						
4.00-4.45	SPT(C) N=0	4.00	DRY	1,0/0,0,0,0			
4.00-4.45	B	4.00	DRY				
						(2.90)	
4.50	D						
4.50	PF						
5.00-5.45	SPT(C) N=6	5.00	DRY	1,1/1,1,1,3			
5.00-5.45	B	5.00	DRY				
5.50	D		DRY				
						5.90	
5.90	D	5.60	DRY				Greyish brown, slightly clayey, sandy, sub-angular to sub-rounded, fine to coarse GRAVEL of various lithologies. Moderate cobble content.
6.00	JV						
6.50-6.95	SPT(C) N=20	6.50	3.30	2,5/5,4,6,5			From 6.50m: Medium dense
6.50-6.95	B	6.50	3.30				
						(1.60)	
7.00	D						
7.40	D						
						7.50	
8.00-8.45	SPT N=20	8.00	DRY	2,3/4,4,5,7			Grey, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.



Remarks
Location CAT scanned prior to drilling.
Hand dug inspection pit to 1.20m for service clearance.
Water strike at 3.10m. Cased at 2.80m. Sealed at 3.60m. Depth at 2.60m after 20 minutes.
Water strike at 5.90m. Cased at 5.60m. Sealed at 7.50m. Depth at 2.90m after 20 minutes.
Borehole cased to 10.00m.
All logs supplemented by drillers logs. Drilling Contractor: Lundy Site Investigation. SPT Energy Ratio = 71%. Rig Ref: LS158
Bentonite seal from 0.00m - 1.00m with inert free draining gravel surround from 1.00m - 7.30m. Bentonite seal from 7.50m - 8.30m. Backfilled with spoil to 10.00m.

Scale (approx)
1:40

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coopers
chartered consulting engineers

Coopers (Chester) Ltd
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email: admin@coopers.co.uk

Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Borehole Number
BH02

Boring Method
Cable Percussion

Casing Diameter
150mm cased to 10.00m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
09/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.00-8.45	D	8.00	DRY				From 8.00m: Medium dense Grey, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
8.50	B		DRY			(2.50)				
9.50-9.95	B	9.50	DRY	Moderate inflow(2) at 9.50m, rose to 4.60m in 20 mins.					▽2	
9.50-9.95	D	9.50	DRY							
9.50-9.95	SPT N=22		DRY	4,4/4,6,6,6		10.00	Complete at 10.45m			

Remarks
Location CAT scanned prior to drilling.
Hand dug inspection pit to 1.20m for service clearance.
Water strike at 3.10m. Cased at 2.80m. Sealed at 3.60m. Depth at 2.60m after 20 minutes.
Water strike at 5.90m. Cased at 5.60m. Sealed at 7.50m. Depth at 2.90m after 20 minutes.
Borehole cased to 10.00m.
All logs supplemented by drillers logs. Drilling Contractor: Lundy Site Investigation. SPT Energy Ratio = 71%. Rig Ref: LS158
Bentonite seal from 0.00m - 1.00m with inert free draining gravel surround from 1.00m - 7.30m. Bentonite seal from 7.50m - 8.30m. Backfilled with spoil to 10.00m.

Scale (approx)
1:40

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email: admin@coopers.co.uk

Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Borehole Number
BH03

Boring Method
Cable Percussion

Casing Diameter
200mm cased to 7.50m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
11/02/2026-
12/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.20	B						MADEGROUND. Dark brown, clayey, very sandy, angular to sub-angular, fine to coarse GRAVEL of various lithologies including ceramic, brick, concrete, plastic, metal, carpet, timber, miscellaneous slag material, moderate cobble and boulder content of brick, fire brick and concrete.			
0.20 0.30	PF JV									
1.20-1.65 1.20-1.65 1.40	SPT(C) N=13 B PF		DRY DRY	9,4/4,3,4,2		(2.90)	From 1.20m: Medium dense			
1.70	D		DRY							
2.00-2.45 2.00-2.45 2.20	SPT(C) N=7 B PF	2.00 2.00	DRY DRY	3,2/2,2,2,1			From 2.00m: Loose			
2.50	D		DRY							
2.90	D		DRY			2.90	MADEGROUND. Orangish brown and brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of various lithologies including natural stone, brick and timber. Low cobble content of timber.			
3.00-3.45 3.00 3.00-3.45 3.00-3.45 3.20	SPT N=11 PF B B JV	3.00 3.00	DRY DRY DRY	4,2/3,2,3,3			From 3.00m: Medium dense		▼1 ▽1	
4.00-4.45	B	4.00	DRY	Seepage(1) at 3.80m, rose to 3.20m in 20 mins, sealed at 7.10m.		(2.10)	From 4.00m: Very loose			
4.00-4.45	SPT(C) N=2	4.00	DRY	2,2/1,0,1,0						
4.50	D		DRY							
5.00-5.45 5.00-5.45 5.10	SPT(C) N=17 B JV	5.00 5.00	DRY DRY	2,3/4,4,3,6		5.00	Medium dense, light brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies. Low cobble content.			
5.50	D					(1.30)				
6.50-6.95 6.50-6.95 6.50-6.95	SPT N=17 B D	6.50 6.50	DRY DRY DRY	2,2/3,4,4,6		6.30	Grey, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
							From 6.50m: Meduim dense			
8.00-8.45	SPT N=20	7.50	7.80	3,3/5,5,5,5						

Remarks
Location CAT scanned prior to drilling.
Hand dug inspection pit to 1.20m for service clearance.
Water strike at 3.80m. Cased at 3.60m. Sealed at 7.10m. Depth at 3.20m after 20 minutes.
Borehole cased to 10.00m.
All logs supplemented by drillers logs. Drilling Contractor: Lundy Site Investigation. SPT Energy Ratio = 71%. Rig Ref: LS158
Bentonite seal from 0.00m - 1.00m with inert free draining gravel surround from 1.00m - 6.30m. Bentonite seal from 6.30m - 7.30m. Backfilled with spoil to 10.00m.
Backfilled upon completion.

Scale (approx)
1:40

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Site
LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Borehole Number
BH03

Boring Method
Cable Percussion

Casing Diameter
200mm cased to 7.50m

Ground Level (mOD)

Client
Westchurch Homes Ltd

Job Number
8353

Location (Observed measurements)

Dates
11/02/2026-
12/02/2026

Engineer
Coopers (Chester) Ltd

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.00-8.45	D	7.50	7.80			(3.70)	Grey, slightly gravelly, silty, fine to medium SAND. Gravel is sub-angular to sub-rounded, fine to coarse of various lithologies.			
9.50-9.95	SPT N=22	9.50	9.50	2,4/4,6,6,6		10.00	Complete at 10.00m			

Remarks
Location CAT scanned prior to drilling.
Hand dug inspection pit to 1.20m for service clearance.
Water strike at 3.80m. Cased at 3.60m. Sealed at 7.10m. Depth at 3.20m after 20 minutes.
Borehole cased to 10.00m.
All logs supplemented by drillers logs. Drilling Contractor: Lundy Site Investigation. SPT Energy Ratio = 71%. Rig Ref: LS158
Bentonite seal from 0.00m - 1.00m with inert free draining gravel surround from 1.00m - 6.30m. Bentonite seal from 6.30m - 7.30m. Backfilled with spoil to 10.00m.
Backfilled upon completion.

Scale (approx)
1:40

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Appendix 4

Chemical Test Data



Geotechnical Test Data

Certificate of Analysis

Certificate Number	24-06432	*Issued:*	11-Apr-24

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	24-06432
Client Reference ~	8353
Order No ~	P/O10002
Contract Title ~	LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE
Description	12 Soil samples.
Date Received	27-Mar-24
Date Started	27-Mar-24
Date Completed	11-Apr-24
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

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THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

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UKAS TESTING
2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Sample ID	Depth	Lab No	Completed	Matrix Description
WS01	0.00-0.40	2317961	11/04/2024	Dark brown gravelly, sandy CLAY including odd rootlets
WS02	0.30-0.80	2317962	11/04/2024	Brown sandy CLAY
WS03	0.6	2317964	11/04/2024	Dark brown gravelly, sandy CLAY including odd rootlets (Possible made ground - slag)
WS04	0.2	2317965	11/04/2024	Dark brown gravelly, sandy CLAY including numerous rootlets
WS05	0.00-0.30	2317966	11/04/2024	Dark brown gravelly, sandy CLAY including odd rootlets
WS06	0.30-0.60	2317967	11/04/2024	Brown sandy CLAY including odd rootlets
WS06	0.8	2317968	11/04/2024	Dark brown very gravelly SAND (Possible made ground - slag)
WS06	1.60-2.00	2317969	11/04/2024	Dark brown slightly gravelly, sandy CLAY including odd rootlets
WS07	0.2	2317970	11/04/2024	Dark brown gravelly, sandy CLAY including odd rootlets (Possible made ground - plastic)
WS08	0.30-1.00	2317971	11/04/2024	Brown sandy CLAY including odd rootlets
WS09	0.2	2317972	11/04/2024	Dark brown gravelly, sandy CLAY including odd rootlets (Possible made ground - glass)

Summary of Chemical Analysis
Soil Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

			Lab No	2317961	2317962	2317964	2317965	2317966	2317967	2317968
			Sample ID ~	WS01	WS02	WS03	WS04	WS05	WS06	WS06
			Depth ~	0.00-0.40	0.30-0.80	0.60	0.20	0.00-0.30	0.30-0.60	0.80
			Other ID ~							
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	21/03/2024	22/03/2024	22/03/2024	22/03/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	49	140	130	120	45	35	60
Beryllium	DETSC 2301#	0.2	mg/kg	0.4	0.6	2.8	0.6	0.9	0.8	1.8
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	0.4	0.5	0.3	0.3	0.7	2.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.7	0.2	0.4	0.4	1.2
Chromium	DETSC 2301#	0.15	mg/kg	63	63	23	130	33	29	14
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	84	76	440	73	73	120	200
Lead	DETSC 2301#	0.3	mg/kg	160	160	230	210	160	300	220
Mercury	DETSC 2325#	0.05	mg/kg	0.22	0.15	0.86	0.50	0.31	0.24	0.18
Nickel	DETSC 2301#	1	mg/kg	13	16	66	21	19	22	41
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	0.8	< 0.5	1.1	< 0.5	3.4
Vanadium	DETSC 2301#	0.8	mg/kg	20	23	73	25	32	26	53
Zinc	DETSC 2301#	1	mg/kg	100	87	180	79	130	110	110
Inorganics										
pH	DETSC 2008#		pH	5.3	6.9	6.3	5.2	4.9	6.6	6.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.8	0.5	0.2	1.6	0.7	11	1.5
FOC	DETSC 2084#	0.001			0.018					
FOC	DETSC 2002	0.001		0.015		0.053	0.017	0.028	0.011	0.061
Total Organic Carbon	DETSC 2084#	0.5	%		1.8					
Total Organic Carbon	DETSC 2002	0.1	%	1.5		5.3	1.7	2.8	1.1	6.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	31	14	85	11	17	25	160
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.11	0.05	0.16	0.08	0.09	0.05	0.12
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg				< 0.01			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg				< 0.01			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01			< 0.01
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg				< 1.50			< 1.50
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg				< 1.20			< 1.20
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg				< 1.50			< 1.50
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40			< 3.40
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40			< 3.40
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40			< 3.40
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00			< 10.00
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg				< 10.00			< 10.00
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00			< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg				< 0.01			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg				< 0.01			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01			< 0.01
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg				< 0.90			< 0.90
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg				< 0.50			< 0.50
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg				0.74			< 0.60

Summary of Chemical Analysis
Soil Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

			Lab No	2317961	2317962	2317964	2317965	2317966	2317967	2317968
			Sample ID ~	WS01	WS02	WS03	WS04	WS05	WS06	WS06
			Depth ~	0.00-0.40	0.30-0.80	0.60	0.20	0.00-0.30	0.30-0.60	0.80
			Other ID ~							
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	21/03/2024	22/03/2024	22/03/2024	22/03/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg				< 1.40			< 1.40
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg				< 1.40			< 1.40
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg				< 1.40			< 1.40
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00			< 10.00
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00			< 10.00
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg				< 10.00			< 10.00
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00			< 10.00
Benzene	DETSC 3321#	0.01	mg/kg				< 0.01			< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg				< 0.01			< 0.01
Toluene	DETSC 3321#	0.01	mg/kg				< 0.01			< 0.01
Xylene	DETSC 3321#	0.01	mg/kg				< 0.01			< 0.01
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03	0.11	0.10	0.09	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	< 0.03	0.15	0.16	0.16	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.13	< 0.03	0.16	0.15	0.15	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.06	0.05	0.05	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.05	< 0.03	0.07	0.06	0.06	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.06	0.06	0.05	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	0.03	0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.48	< 0.10	0.65	0.57	0.56	< 0.10	< 0.10
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	0.3	0.6	< 0.3	1.2

Summary of Chemical Analysis
Soil Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL EST

			Lab No	2317969	2317970	2317971	2317972
			Sample ID ~	WS06	WS07	WS08	WS09
			Depth ~	1.60-2.00	0.20	0.30-1.00	0.20
			Other ID ~				
			Sample Type ~	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	22/03/2024	22/03/2024	22/03/2024	22/03/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	8.2	24	10	23
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	1.7	0.3	0.7
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.3	0.6	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.5	0.1	0.5
Chromium	DETSC 2301#	0.15	mg/kg	9.5	26	16	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	15	73	18	65
Lead	DETSC 2301#	0.3	mg/kg	17	110	25	160
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.16	< 0.05	1.1
Nickel	DETSC 2301#	1	mg/kg	9.5	25	11	17
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	13	35	19	26
Zinc	DETSC 2301#	1	mg/kg	48	180	63	310
Inorganics							
pH	DETSC 2008#		pH	6.3	7.3	6.1	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.7	0.9	0.4	0.6
FOC	DETSC 2084#	0.001		0.11		0.014	
FOC	DETSC 2002	0.001			0.044		0.045
Total Organic Carbon	DETSC 2084#	0.5	%	11		1.4	
Total Organic Carbon	DETSC 2002	0.1	%		4.4		4.5
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	380	73	< 10	24
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.20	0.09	0.05	0.07
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50		
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg		< 1.20		
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50		
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40		
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40		
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40		
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg		< 0.90		
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg		< 0.50		
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg		2.68		

Summary of Chemical Analysis
Soil Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL EST

			Lab No	2317969	2317970	2317971	2317972
			Sample ID ~	WS06	WS07	WS08	WS09
			Depth ~	1.60-2.00	0.20	0.30-1.00	0.20
			Other ID ~				
			Sample Type ~	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	22/03/2024	22/03/2024	22/03/2024	22/03/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg		1.92		
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		6.46		
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		4.54		
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01		
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01		
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01		
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01		
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.26	< 0.03	0.15
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.05	< 0.03	0.06
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.67	< 0.03	0.24
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.65	< 0.03	0.23
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.27	< 0.03	0.13
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.34	< 0.03	0.14
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.40	< 0.03	0.16
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14	< 0.03	0.09
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.30	< 0.03	0.14
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14	< 0.03	0.11
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.18	0.03	0.13
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	3.4	< 0.10	1.7
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.9	25	0.7	0.8

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

			Lab No	2317963	2317964
			Sample ID ~	WS03	WS03
			Depth ~	0.20	0.60
			Other ID ~		
			Sample Type ~	SOIL	SOIL
			Sampling Date ~	21/03/2024	21/03/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

			Lab No	2317963	2317964
			Sample ID ~	WS03	WS03
			Depth ~	0.20	0.60
			Other ID ~		
			Sample Type ~	SOIL	SOIL
			Sampling Date ~	21/03/2024	21/03/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg	< 0.01	
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
SVOCs					
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3433	0.1	mg/kg	< 0.1	
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg	< 0.1	
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3433	0.1	mg/kg	< 0.1	

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

			Lab No	2317963	2317964
			Sample ID ~	WS03	WS03
			Depth ~	0.20	0.60
			Other ID ~		
			Sample Type ~	SOIL	SOIL
			Sampling Date ~	21/03/2024	21/03/2024
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg	0.4	
Anthracene	DETSC 3433	0.1	mg/kg	< 0.1	
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	0.3	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg	0.7	
Pyrene	DETSC 3433	0.1	mg/kg	0.6	
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg	0.3	
Chrysene	DETSC 3433	0.1	mg/kg	0.3	
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	0.3	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg	0.5	
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg	0.1	
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg	0.4	
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg	0.3	
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg	0.2	
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-06432
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2317961	WS01 0.00-0.40	SOIL	NAD	none	Pierce Booth
2317964	WS03 0.60	SOIL	NAD	none	Pierce Booth
2317965	WS04 0.20	SOIL	NAD	none	Pierce Booth
2317966	WS05 0.00-0.30	SOIL	NAD	none	Pierce Booth
2317967	WS06 0.30-0.60	SOIL	NAD	none	Pierce Booth
2317968	WS06 0.80	SOIL	NAD	none	Pierce Booth
2317970	WS07 0.20	SOIL	NAD	none	Pierce Booth
2317972	WS09 0.20	SOIL	NAD	none	Pierce Booth

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

Information in Support of the Analytical Results

Our Ref 24-06432
Client Ref ~ 8353
Contract ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2317961	WS01 0.00-0.40 SOIL	21/03/24	PG		
2317962	WS02 0.30-0.80 SOIL	21/03/24	PG		
2317963	WS03 0.20 SOIL	21/03/24	GJ 250ml x2, GJ 60ml		
2317964	WS03 0.60 SOIL	21/03/24	GJ 250ml x2, GJ 60ml		
2317965	WS04 0.20 SOIL	21/03/24	GJ 250ml x2, GJ 60ml		
2317966	WS05 0.00-0.30 SOIL	22/03/24	PG		
2317967	WS06 0.30-0.60 SOIL	22/03/24	PG		
2317968	WS06 0.80 SOIL	22/03/24	GJ 250ml x2, GJ 60ml		
2317969	WS06 1.60-2.00 SOIL	22/03/24	PG		
2317970	WS07 0.20 SOIL	22/03/24	GJ 250ml x2, GJ 60ml		
2317971	WS08 0.30-1.00 SOIL	22/03/24	PG		
2317972	WS09 0.20 SOIL	22/03/24	GJ 250ml x2, GJ 60ml		

Key: P-Plastic G-Bag G-Glass J-Jar

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

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

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

Disposal

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

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

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-07560	*Issued:*	17-Apr-24

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	24-07560
Client Reference ~	8353
Order No ~	P/O10002
Contract Title ~	LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE
Description	6 Leachate prepared by DETS samples.
Date Received	27-Mar-24
Date Started	12-Apr-24
Date Completed	17-Apr-24
Test Procedures	Identified by prefix DETSn (details on request).
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-07560
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

			Lab No	2324235	2324236	2324237	2324238	2324239	2324240
			Sample ID ~	WS02	WS03	WS04	WS06	WS06	WS09
			Depth ~	0.30-0.80	0.60	0.20	0.30-0.60	0.80	0.20
			Other ID ~						
			Sample Type ~	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
			Sampling Date ~	21/03/2024	21/03/2024	21/03/2024	22/03/2024	22/03/2024	22/03/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Preparation									
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y	Y	Y	Y
Metals									
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	7.1	2.0	2.4		1.2	
Copper, Dissolved	DETSC 2306	0.4	ug/l		2.8				
Lead, Dissolved	DETSC 2306	0.09	ug/l				3.4		
Zinc, Dissolved	DETSC 2306	1.3	ug/l						12
Inorganics									
Cyanide, Total	DETSC 2130	40	ug/l				< 40		

Information in Support of the Analytical Results

Our Ref 24-07560
Client Ref ~ 8353
Contract ~ LAND ADJACENT TO BEALEY INDUSTRIAL ESTATE, RADCLIFFE

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2324235	WS02 0.30-0.80 LEACHATE	21/03/24	PG		
2324236	WS03 0.60 LEACHATE	21/03/24	GJ 250ml x2, GJ 60ml		
2324237	WS04 0.20 LEACHATE	21/03/24	GJ 250ml x2, GJ 60ml		
2324238	WS06 0.30-0.60 LEACHATE	22/03/24	PG		
2324239	WS06 0.80 LEACHATE	22/03/24	GJ 250ml x2, GJ 60ml		
2324240	WS09 0.20 LEACHATE	22/03/24	GJ 250ml x2, GJ 60ml		

Key: P-Plastic G-Bag G-Glass J-Jar

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-20913	*Issued:*	08-Oct-24

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	24-20913
Client Reference ~	8353
Order No ~	10200-LP
Contract Title ~	LAND ADJACENT TO BEALEY INDUSTRIAL
Description	15 Soil samples, 1 Misc sample.
Date Received	01-Oct-24
Date Started	01-Oct-24
Date Completed	08-Oct-24
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Kirk Bridgewood
General Manager

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Summary of Chemical Analysis
Matrix Descriptions

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Sample ID	Depth	Lab No	Completed	Matrix Description
TP01	0.1	2402143	08/10/2024	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)
TP02	0.7	2402146	08/10/2024	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)
TP03	0.2	2402148	08/10/2024	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)
TP03	1.2	2402150	08/10/2024	Dark brown slightly gravelly, sandy CLAY including odd rootlets
TP04	0.1	2402151	08/10/2024	Dark brown gravelly, sandy CLAY including odd rootlets
TP05	0.4	2402152	08/10/2024	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)
TP06	1	2402154	08/10/2024	Brown slightly gravelly, sandy CLAY
TP08	0.2	2402157	08/10/2024	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - glass) (Possible made ground - brick)
TP09	1	2402158	08/10/2024	Dark brown gravelly, sandy CLAY including odd rootlets

Summary of Chemical Analysis
Soil/Misc Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

				Lab No	2402143	2402145	2402146	2402147	2402148	2402149
				Sample ID ~	TP01	TP02	TP02	TP02	TP03	TP03
				Depth ~	0.10	0.10	0.70	2.70	0.20	0.50
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	14		28		16	
Beryllium	DETSC 2301#	0.2	mg/kg	1.1		0.9		0.8	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5		0.9		1.1	
Cadmium	DETSC 2301#	0.1	mg/kg	0.5		0.6		0.9	
Chromium	DETSC 2301#	0.15	mg/kg	21		64		32	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	41		110		100	
Lead	DETSC 2301#	0.3	mg/kg	83		260		170	
Mercury	DETSC 2325#	0.05	mg/kg	0.09		0.49		0.17	
Nickel	DETSC 2301#	1	mg/kg	13		32		23	
Selenium	DETSC 2301#	0.5	mg/kg	4.7		< 0.5		< 0.5	
Vanadium	DETSC 2301#	0.8	mg/kg	24		33		26	
Zinc	DETSC 2301#	1	mg/kg	120		220		230	
Inorganics										
pH	DETSC 2008#		pH	10.0		9.5		9.0	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4		0.5		0.6	
FOC	DETSC 2002	0.001		0.027		0.035		0.022	
Total Organic Carbon	DETSC 2002	0.1	%	2.7		3.5		2.2	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	49		230		100	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.27		0.13		0.09	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg				1.89		2.56
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg				< 1.20		1.64
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg				< 1.50		< 1.50
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40		< 3.40
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40		4.42
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40		4.42
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg				< 0.90		< 0.90
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg				< 0.50		< 0.50
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg				< 0.60		< 0.60
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg				2.58		2.40

Summary of Chemical Analysis
Soil/Misc Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

			Lab No	2402143	2402145	2402146	2402147	2402148	2402149
			Sample ID ~	TP01	TP02	TP02	TP02	TP03	TP03
			Depth ~	0.10	0.10	0.70	2.70	0.20	0.50
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg				8.98		2.40
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg				6.41		< 1.40
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg				10.88		11.03
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		0.08		0.04	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		0.04		< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.09		0.31		0.17	
Fluorene	DETSC 3303	0.03	mg/kg	0.05		0.23		0.13	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.58		1.9		1.1	
Anthracene	DETSC 3303	0.03	mg/kg	0.13		0.48		0.29	
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.2		2.7		2.4	
Pyrene	DETSC 3303#	0.03	mg/kg	1.1		2.6		2.3	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.45		1.0		0.89	
Chrysene	DETSC 3303	0.03	mg/kg	0.50		0.95		0.81	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.56		1.2		1.1	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.21		0.43		0.33	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.42		0.96		0.79	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.19		0.40		0.36	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05		0.12		0.10	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.24		0.54		0.45	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.7		14		11	
PCBs									
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 77	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 81	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 105	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 114	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01				
PCB 123	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 126	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 156	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 157	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 167	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 169	DETSC 3401*	0.01	mg/kg		< 0.01				
PCB 189	DETSC 3401*	0.01	mg/kg		< 0.01				
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6		< 0.3		0.4	

Summary of Chemical Analysis
Soil/Misc Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

				Lab No	2402150	2402151	2402152	2402153	2402154	2402155
				Sample ID ~	TP03	TP04	TP05	TP05	TP06	TP07
				Depth ~	1.20	0.10	0.40	2.20	1.00	0.90
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg	29	43	150		24	
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	1.1	2.8		0.8	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.5	0.6		0.3	
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.8	0.3		0.4	
Chromium	DETSC 2301#	0.15	mg/kg	24	32	20		19	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	31	140	170		53	
Lead	DETSC 2301#	0.3	mg/kg	52	310	250		78	
Mercury	DETSC 2325#	0.05	mg/kg	0.08	0.98	0.37		0.26	
Nickel	DETSC 2301#	1	mg/kg	28	25	80		22	
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	0.8	3.2		1.4	
Vanadium	DETSC 2301#	0.8	mg/kg	23	34	69		22	
Zinc	DETSC 2301#	1	mg/kg	75	200	170		120	
Inorganics										
pH	DETSC 2008#		pH	7.7	8.1	6.1		7.9	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.4	0.3		0.1	
FOC	DETSC 2002	0.001		0.016	0.039	0.076		0.017	
Total Organic Carbon	DETSC 2002	0.1	%	1.6	3.9	7.6		1.7	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	60	20	140		32	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.05	0.08	0.26		0.04	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg				3.18		3.81
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg				2.13		2.34
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg				< 1.50		< 1.50
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40		< 3.40
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40		< 3.40
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg				< 3.40		< 3.40
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg				< 0.01		< 0.01
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg				< 0.90		< 0.90
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg				< 0.50		< 0.50
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg				< 0.60		< 0.60
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg				2.74		3.13

Summary of Chemical Analysis
Soil/Misc Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

				Lab No	2402150	2402151	2402152	2402153	2402154	2402155
				Sample ID ~	TP03	TP04	TP05	TP05	TP06	TP07
				Depth ~	1.20	0.10	0.40	2.20	1.00	0.90
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024	26/09/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg				2.74		3.13
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg				< 1.40		< 1.40
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg				< 10.00		< 10.00
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08	< 0.03		< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03		< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.31	< 0.03		< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.24	< 0.03		< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.4	0.04		< 0.03	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.65	< 0.03		< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	3.7	0.07		< 0.03	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	3.3	0.07		< 0.03	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.3	0.04		< 0.03	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	1.1	0.05		< 0.03	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.6	0.04		< 0.03	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.52	< 0.03		< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.2	< 0.03		< 0.03	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.51	< 0.03		< 0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.13	< 0.03		< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.65	< 0.03		< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	18	0.31		< 0.10	
PCBs										
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 77	DETSC 3401*	0.01	mg/kg						
PCB 81	DETSC 3401*	0.01	mg/kg						
PCB 105	DETSC 3401*	0.01	mg/kg						
PCB 114	DETSC 3401*	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 123	DETSC 3401*	0.01	mg/kg						
PCB 126	DETSC 3401*	0.01	mg/kg						
PCB 156	DETSC 3401*	0.01	mg/kg						
PCB 157	DETSC 3401*	0.01	mg/kg						
PCB 167	DETSC 3401*	0.01	mg/kg						
PCB 169	DETSC 3401*	0.01	mg/kg						
PCB 189	DETSC 3401*	0.01	mg/kg						
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.6	< 0.3		< 0.3	

Summary of Chemical Analysis
Soil/Misc Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

			Lab No	2402156	2402157	2402158
			Sample ID ~	TP08	TP08	TP09
			Depth ~	0.05	0.20	1.00
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	26/09/2024	26/09/2024	26/09/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg		17	25
Beryllium	DETSC 2301#	0.2	mg/kg		0.7	1.1
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg		0.4	0.2
Cadmium	DETSC 2301#	0.1	mg/kg		0.7	0.8
Chromium	DETSC 2301#	0.15	mg/kg		29	41
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg		100	87
Lead	DETSC 2301#	0.3	mg/kg		150	190
Mercury	DETSC 2325#	0.05	mg/kg		0.19	0.28
Nickel	DETSC 2301#	1	mg/kg		22	31
Selenium	DETSC 2301#	0.5	mg/kg		< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg		24	32
Zinc	DETSC 2301#	1	mg/kg		240	180
Inorganics						
pH	DETSC 2008#		pH		10.9	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.3	0.3
FOC	DETSC 2002	0.001			0.015	0.048
Total Organic Carbon	DETSC 2002	0.1	%		1.5	4.8
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		130	50
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.12	0.07
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg			2.94
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg			1.83
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg			< 1.50
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg			< 3.40
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg			< 3.40
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg			< 3.40
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg			< 10.00
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg			< 10.00
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg			< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg			< 0.90
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg			< 0.50
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg			2.23
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg			5.65

Summary of Chemical Analysis
Soil/Misc Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

	Lab No	2402156	2402157	2402158
	Sample ID ~	TP08	TP08	TP09
	Depth ~	0.05	0.20	1.00
	Other ID ~			
	Sample Type ~	SOIL	SOIL	SOIL
	Sampling Date ~	26/09/2024	26/09/2024	26/09/2024
	Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg			69.55
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg			63.90
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg			71.78
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg			71.78
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg			90.17
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg			76.55
PAHs						
Naphthalene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.05
Fluorene	DETSC 3303	0.03	mg/kg		< 0.03	0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.06	0.31
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03	0.07
Fluoranthene	DETSC 3303#	0.03	mg/kg		0.15	0.54
Pyrene	DETSC 3303#	0.03	mg/kg		0.17	0.51
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		0.07	0.19
Chrysene	DETSC 3303	0.03	mg/kg		0.07	0.18
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		0.07	0.24
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03	0.08
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		0.05	0.18
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03	0.09
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		0.04	0.12
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		0.68	2.6
PCBs						
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01
PCB 77	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 81	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 105	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 114	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01		< 0.01
PCB 123	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 126	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 156	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 157	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 167	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 169	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
PCB 189	DETSC 3401*	0.01	mg/kg	< 0.01		< 0.01
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		0.4	0.5

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

			Lab No	2402147	2402149	2402153	2402155
			Sample ID ~	TP02	TP03	TP05	TP07
			Depth ~	2.70	0.50	2.20	0.90
			Other ID ~				
			Sample Type ~	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
VOCs							
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

			Lab No	2402147	2402149	2402153	2402155
			Sample ID ~	TP02	TP03	TP05	TP07
			Depth ~	2.70	0.50	2.20	0.90
			Other ID ~				
			Sample Type ~	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs							
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg	< 0.1	0.9	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

			Lab No	2402147	2402149	2402153	2402155
			Sample ID ~	TP02	TP03	TP05	TP07
			Depth ~	2.70	0.50	2.20	0.90
			Other ID ~				
			Sample Type ~	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	26/09/2024	26/09/2024	26/09/2024	26/09/2024
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3433	0.1	mg/kg	< 0.1	0.7	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg	< 0.1	3.8	< 0.1	0.1
Anthracene	DETSC 3433	0.1	mg/kg	0.1	1.2	< 0.1	0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg	0.3	2.7	< 0.1	0.2
Pyrene	DETSC 3433	0.1	mg/kg	0.3	2.3	< 0.1	0.2
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	0.1	0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	1.0	< 0.1	0.2
Chrysene	DETSC 3433	0.1	mg/kg	< 0.1	1.0	< 0.1	0.2
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	0.4	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	0.6	< 0.1	< 0.1
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	0.4	< 0.1	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-20913
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Lab No	Sample ID	Sample Location	Material Type*	Result	Comment*
2402143	TP01 0.10		SOIL	NAD	none
2402144	TP01 0.40		Cement	Chrysotile	none
2402146	TP02 0.70		SOIL	Amosite	Amosite present as fibre bundles
2402148	TP03 0.20		SOIL	Amosite	Amosite present as fibre bundles
2402150	TP03 1.20		SOIL	NAD	none
2402151	TP04 0.10		SOIL	NAD	none
2402152	TP05 0.40		SOIL	NAD	none
2402154	TP06 1.00		SOIL	NAD	none
2402157	TP08 0.20		SOIL	NAD	none
2402158	TP09 1.00		SOIL	Amosite Chrysotile	Amosite and Chrysotile present as fibre bundles

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of A are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbesto sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -no laboratory scope of accreditation.

Analyst
Vicky Convery
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Information in Support of the Analytical Results

Our Ref 24-20913
Client Ref ~ 8353
Contract ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2402143	TP01 0.10 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402144	TP01 0.40 MISC	26/09/24	PG		
2402145	TP02 0.10 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402146	TP02 0.70 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402147	TP02 2.70 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402148	TP03 0.20 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402149	TP03 0.50 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402150	TP03 1.20 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402151	TP04 0.10 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402152	TP05 0.40 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402153	TP05 2.20 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402154	TP06 1.00 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402155	TP07 0.90 SOIL	26/09/24	PG		BTEX / C5-C10, EPH/Aliphatic/Aromatic + Cleanup, SVOC
2402156	TP08 0.05 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402157	TP08 0.20 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2402158	TP09 1.00 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		

Key: G-Glass J-Jar P-Plastic G-Bag

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-21167	*Issued:*	14-Oct-24
Client	Coopers (Chester) Ltd Park House Sandpiper Court Chester Business Park Chester CH4 9QU		
Our Reference	24-21167		
Client Reference ~	8353		
Order No ~	10203-LP		
Contract Title ~	LAND ADJACENT TO BEALEY INDUSTRIAL		
Description	5 Soil samples.		
Date Received	03-Oct-24		
Date Started	03-Oct-24		
Date Completed	14-Oct-24		
Test Procedures	Identified by prefix DETSn (details on request).		
Notes	Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.		

Approved By

Kirk Bridgewood
General Manager

2139

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 24-21167
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Sample ID	Depth	Lab No	Completed	Matrix Description
WS101	0.4	2403425	14/10/2024	Dark brown very gravelly, sandy CLAY (Possible made ground - brick)
WS101	3.00-4.00	2403426	14/10/2024	Dark brown very gravelly, sandy CLAY (Possible made ground - brick)
WS102	0.7	2403427	14/10/2024	Dark brown very gravelly, sandy CLAY (Possible made ground - brick)
WS103	0.2	2403428	14/10/2024	Brown gravelly, sandy CLAY
WS104	0.7	2403429	14/10/2024	Black slightly clayey, very gravelly SAND (Possible made ground - brick)

Summary of Chemical Analysis
Soil Samples

Our Ref 24-21167
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

				Lab No	2403425	2403426	2403427	2403428	2403429
				Sample ID ~	WS101	WS101	WS102	WS103	WS104
				Depth ~	0.40	3.00-4.00	0.70	0.20	0.70
				Other ID ~					
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	41	7.1	11	15	34
Beryllium	DETSC 2301#	0.2	mg/kg	1.1	2.4	0.6	0.6	2.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.8	0.5	0.4	< 0.2	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	0.8	0.8	0.3	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	62	21	28	16	19
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	140	33	210	100	130
Lead	DETSC 2301#	0.3	mg/kg	350	110	230	67	53
Mercury	DETSC 2325#	0.05	mg/kg	0.73	0.06	0.72	0.07	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	17	24	15	59
Selenium	DETSC 2301#	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	59	42	29	24	66
Zinc	DETSC 2301#	1	mg/kg	290	89	290	58	49
Inorganics									
pH	DETSC 2008#		pH	8.3	11.7	10.5	6.7	7.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.1	0.2	0.6	0.2	< 0.1
FOC	DETSC 2002	0.001		0.026	0.022	0.027	0.017	0.099
Total Organic Carbon	DETSC 2002	0.1	%	2.6	2.2	2.7	1.7	9.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	64	56	120	46	130
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.08	0.16	0.09	0.04	0.11
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01			
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01			
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01			
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg		< 15.00			
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg		15.12			
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg		< 15.00			
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg		< 34.00			
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40			
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 34.00			
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 76.00			
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 110.00			
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		49.19			
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01			
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01			
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01			
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg		< 9.00			
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg		468.4			
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg		1760			
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg		449.1			

Summary of Chemical Analysis
Soil Samples

Our Ref 24-21167
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

	Lab No	2403425	2403426	2403427	2403428	2403429
	Sample ID ~	WS101	WS101	WS102	WS103	WS104
	Depth ~	0.40	3.00-4.00	0.70	0.20	0.70
	Other ID ~					
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	30/09/2024	30/09/2024	30/09/2024	30/09/2024	30/09/2024
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		1362			
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		912.8			
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		3600			
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		3590			
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		3664			
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg		3649			
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01			
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01			
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01			
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01			
PAHs								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.56	< 1.00	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.30	< 1.00	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.04	11	< 1.00	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	11	< 1.00	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.30	57	3.0	< 0.03	0.12
Anthracene	DETSC 3303	0.03	mg/kg	0.06	13	< 1.00	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.59	38	4.9	0.05	0.34
Pyrene	DETSC 3303#	0.03	mg/kg	0.54	29	4.1	0.04	0.41
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.28	6.4	2.3	0.04	0.28
Chrysene	DETSC 3303	0.03	mg/kg	0.29	5.1	2.5	< 0.03	0.32
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.41	3.9	3.4	0.03	0.44
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.15	1.8	1.5	< 0.03	0.17
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.29	3.1	3.2	< 0.03	0.34
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.13	1.1	1.3	< 0.03	0.15
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.44	< 1.00	< 0.03	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.17	1.3	1.8	< 0.03	0.21
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.3	180	28	0.13	2.8
Phenols								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	0.9	0.5	0.3	0.9

Summary of Asbestos Analysis
Soil Samples

Our Ref 24-21167
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2403425	WS101 0.40	SOIL	NAD	none	Pierce Booth
2403426	WS101 3.00-4.00	SOIL	NAD	none	Pierce Booth
2403427	WS102 0.70	SOIL	Chrysotile	Chrysotile present in microscopic cement fragment	Pierce Booth
2403428	WS103 0.20	SOIL	NAD	none	Pierce Booth
2403429	WS104 0.70	SOIL	NAD	none	Pierce Booth

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

Information in Support of the Analytical Results

Our Ref 24-21167
Client Ref ~ 8353
Contract ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2403425	WS101 0.40 SOIL	30/09/24	GJ 250ml x2, GJ 60ml		
2403426	WS101 3.00-4.00 SOIL	30/09/24	GJ 250ml x2, GJ 60ml		
2403427	WS102 0.70 SOIL	30/09/24	GJ 250ml x2, GJ 60ml		
2403428	WS103 0.20 SOIL	30/09/24	GJ 250ml x2, GJ 60ml		
2403429	WS104 0.70 SOIL	30/09/24	GJ 250ml x2, GJ 60ml		

Key: G-Glass J-Jar

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-22201	*Issued:*	22-Oct-24

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	24-22201
Client Reference ~	8353
Order No ~	10200-LP
Contract Title ~	LAND ADJACENT TO BEALEY INDUSTRIAL
Description	3 Soil samples, 3 Leachate prepared by DETS samples.
Date Received	01-Oct-24
Date Started	16-Oct-24
Date Completed	22-Oct-24
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Kirk Bridgewood
General Manager

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-22201
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

			Lab No	2409990	2409991	2409994
			Sample ID ~	TP04	TP05	TP02
			Depth ~	0.10	0.40	0.70
			Other ID ~			
			Sample Type ~	LEACHATE	LEACHATE	LEACHATE
			Sampling Date ~	26/09/2024	26/09/2024	26/09/2024
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Preparation						
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.7	2.3	
Copper, Dissolved	DETSC 2306	0.4	ug/l		1.5	
Lead, Dissolved	DETSC 2306	0.09	ug/l	1.9	1.3	2.9

Summary of Asbestos Analysis

Samples

Our Ref 24-22201
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst

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

Summary of Asbestos Quantification Analysis
Soil Samples

Our Ref 24-22201
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Lab No		2409988	2409989	2409992
Sample ID ~		TP02	TP03	TP09
Depth ~		0.70	0.20	1.00
Other ID ~				
Sample Type ~				
Sampling Date ~		26/09/2024	26/09/2024	26/09/2024
Sampling Time ~				
Test	**Method**	**Units**		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %		**0.003**	**0.002**	**0.004**
Gravimetric Quantification (a)	DETSC 1102	Mass %		na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %		0.003	0.002	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %		na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g		na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g		23.01	27.80	23.05
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %		0.003	0.002	0.003
% Chrysotile bundles in sample		Mass %		na	na	0.002
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %		na	na	na
% Chrysotile fibres in sample		Mass %		na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g		na	na	na
Chrysotile fibres		Fibres/g		na	na	na

* Denotes test or material description outside of UKAS accreditation.
% asbestos in Asbestos Containing Materials (ACMs) is determined by
by reference to HSG 264.
Recommended sample size for quantification is approximately 1kg
denotes deviating sample

Information in Support of the Analytical Results

Our Ref 24-22201
Client Ref ~ 8353
Contract ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2409988	TP02 0.70 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2409989	TP03 0.20 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2409990	TP04 0.10 LEACHATE	26/09/24	GJ 250ml x2, GJ 60ml		
2409991	TP05 0.40 LEACHATE	26/09/24	GJ 250ml x2, GJ 60ml		
2409992	TP09 1.00 SOIL	26/09/24	GJ 250ml x2, GJ 60ml		
2409994	TP02 0.70 LEACHATE	26/09/24	GJ 250ml x2, GJ 60ml		

Key: G-Glass J-Jar

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	24-22203	*Issued:*	22-Oct-24

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference 24-22203

Client Reference ~ 8353

Order No ~ 10203-LP

Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Description 1 Soil sample, 3 Leachate prepared by DETS samples.

Date Received 03-Oct-24

Date Started 16-Oct-24

Date Completed 22-Oct-24

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

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

Approved By

Kirk Bridgewood
General Manager

ilac-MRA UKAS TESTING 2139

Summary of Chemical Analysis
Leachate Samples

Our Ref 24-22203
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

	Lab No	2409995	2409996	2409998
	Sample ID ~	WS101	WS101	WS102
	Depth ~	0.40	3.00-4.00	0.70
	Other ID ~			
	Sample Type ~	LEACHATE	LEACHATE	LEACHATE
	Sampling Date ~	30/09/2024	30/09/2024	30/09/2024
	Sampling Time ~	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	< 0.16		
Copper, Dissolved	DETSC 2306	0.4	ug/l			2.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.22		1.3
PAHs						
Naphthalene	DETSC 3304	0.05	ug/l		0.08	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l		0.66	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l		16	0.02
Fluorene	DETSC 3304	0.01	ug/l		3.6	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l		0.39	0.02
Anthracene	DETSC 3304	0.01	ug/l		0.51	0.01
Fluoranthene	DETSC 3304	0.01	ug/l		3.5	0.04
Pyrene	DETSC 3304	0.01	ug/l		2.5	0.05
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l		0.32	0.03
Chrysene	DETSC 3304	0.01	ug/l		0.23	0.03
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		0.26	0.06
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		0.12	0.02
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		0.25	0.05
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		0.11	0.04
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		< 0.01	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		0.12	0.05
PAH Total	DETSC 3304	0.2	ug/l		29	0.41

Summary of Asbestos Analysis

Samples

Our Ref 24-22203
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst

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

Summary of Asbestos Quantification Analysis
Soil Samples

Our Ref 24-22203
Client Ref ~ 8353
Contract Title ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Lab No		2409997
Sample ID ~		WS102
Depth ~		0.70
Other ID ~		
Sample Type ~		
Sampling Date ~		30/09/2024
Sampling Time ~		

Test	**Method**	**Units**		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %		**0.035**
Gravimetric Quantification (a)	DETSC 1102	Mass %		0.035
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %		na
Quantification by PCOM (c)	DETSC 1102	Mass %		na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g		na
Breakdown of Gravimetric Analysis (a)				
Mass of Sample		g		13.26
ACMs present*		type		Cement
Mass of ACM in sample		g		0.0309
% ACM by mass		%		0.233
% asbestos in ACM		%		15
% asbestos in sample		%		0.035
Breakdown of Detailed Gravimetric Analysis (b)				
% Amphibole bundles in sample		Mass %		na
% Chrysotile bundles in sample		Mass %		na
Breakdown of PCOM Analysis (c)				
% Amphibole fibres in sample		Mass %		na
% Chrysotile fibres in sample		Mass %		na
Breakdown of Potentially Respirable Fibre Analysis (d)				
Amphibole fibres		Fibres/g		na
Chrysotile fibres		Fibres/g		na

* Denotes test or material description outside of UKAS accreditation.
% asbestos in Asbestos Containing Materials (ACMs) is determined by
by reference to HSG 264.
Recommended sample size for quantification is approximately 1kg
denotes deviating sample

Information in Support of the Analytical Results

Our Ref 24-22203
Client Ref ~ 8353
Contract ~ LAND ADJACENT TO BEALEY INDUSTRIAL

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2409995	WS101 0.40 LEACHATE	30/09/24	GJ 250ml x2, GJ 60ml		
2409996	WS101 3.00-4.00 LEACHATE	30/09/24	GJ 250ml x2, GJ 60ml		
2409997	WS102 0.70 SOIL	30/09/24	GJ 250ml x2, GJ 60ml		
2409998	WS102 0.70 LEACHATE	30/09/24	GJ 250ml x2, GJ 60ml		

Key: G-Glass J-Jar

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	26-01654	*Issued:*	16-Feb-26

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	26-01654
Client Reference ~	8353
Order No ~	10619-ST
Contract Title ~	Land Adjacent to Bealey Industrial Estate, Radcliffe
Description	19 Soil samples.
Date Received	26-Jan-26
Date Started	26-Jan-26
Date Completed	16-Feb-26
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Reyhan Irfan
Operations Manager

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Summary of Chemical Analysis
Matrix Descriptions

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Sample ID	Depth	Lab No	Completed	Matrix Description
WS201	0.1	2630872	16/02/2026	Brown gravelly, sandy CLAY
WS202	0.6	2630874	16/02/2026	Brown gravelly, sandy CLAY
WS203	0.4	2630875	16/02/2026	Brown gravelly, sandy CLAY
WS204	0.3	2630878	16/02/2026	Brown gravelly, sandy CLAY
WS205A	0.1	2630880	16/02/2026	Brown gravelly, sandy CLAY
WS206	0.4	2630883	16/02/2026	Brown sandy CLAY
WS207	0.25	2630884	16/02/2026	Brown gravelly, clayey SAND
WS208	0.3	2630887	16/02/2026	Brown very gravelly, clayey SAND
HDP01	0.1	2630889	16/02/2026	Brown gravelly, sandy CLAY

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630872	2630873	2630874	2630875	2630876	2630877
			Sample ID ~	WS201	WS201	WS202	WS203	WS203	WS204
			Depth ~	0.10	0.40	0.60	0.40	0.60	0.10
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	7.6		12	31		
Beryllium	DETSC 2301#	0.2	mg/kg	0.3		0.4	0.9		
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5		0.4	1.4		
Cadmium	DETSC 2301#	0.1	mg/kg	0.6		0.5	0.8		
Chromium	DETSC 2301#	0.15	mg/kg	31		19	35		
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0		
Copper	DETSC 2301#	0.2	mg/kg	170		62	210		
Lead	DETSC 2301#	0.3	mg/kg	120		60	150		
Mercury	DETSC 2325#	0.05	mg/kg	0.12		0.27	0.25		
Nickel	DETSC 2301#	1	mg/kg	21		17	22		
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5	< 0.5		
Vanadium	DETSC 2301#	0.8	mg/kg	24		18	28		
Zinc	DETSC 2301#	1	mg/kg	180		110	200		
Inorganics									
pH	DETSC 2008#		pH	9.8		9.0	8.1		
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1	< 0.1		
FOC	DETSC 2002	0.001		0.011		0.009	0.043		
Total Organic Carbon	DETSC 2002	0.1	%	1.1		0.9	4.3		
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	160		70	75		
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.19		0.07	0.09		
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50			< 1.50	< 1.50
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg		< 1.20			< 1.20	< 1.20
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50			< 1.50	< 1.50
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40			< 3.40	< 3.40
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40			< 3.40	< 3.40
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40			< 3.40	< 3.40
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00	< 10.00
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00	< 10.00
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00	< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg		< 0.90			< 0.90	< 0.90
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg		< 0.50			< 0.50	5.35
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg		2.83			3.68	8.73
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg		2.10			2.70	10.51
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		2.10			2.70	88.99

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630872	2630873	2630874	2630875	2630876	2630877
			Sample ID ~	WS201	WS201	WS202	WS203	WS203	WS204
			Depth ~	0.10	0.40	0.60	0.40	0.60	0.10
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		< 1.40			< 1.40	78.48
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00	103.1
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00	103.1
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00	118.4
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00	103.1
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.07		< 0.03	< 0.03		
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03		
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.09		< 0.03	0.04		
Fluorene	DETSC 3303	0.03	mg/kg	0.04		< 0.03	< 0.03		
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.22		0.11	0.34		
Anthracene	DETSC 3303	0.03	mg/kg	0.05		< 0.03	0.08		
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.40		0.22	0.79		
Pyrene	DETSC 3303#	0.03	mg/kg	0.36		0.21	0.73		
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.15		0.10	0.31		
Chrysene	DETSC 3303	0.03	mg/kg	0.17		0.11	0.32		
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.16		0.12	0.50		
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.07		0.04	0.16		
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.13		0.09	0.38		
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07		0.05	0.20		
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	0.05		
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.09		0.07	0.25		
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	2.1		1.1	4.2		
PCBs									
PCB 77	DETSC 3401*	0.01	mg/kg						
PCB 81	DETSC 3401*	0.01	mg/kg						
PCB 105	DETSC 3401*	0.01	mg/kg						
PCB 114	DETSC 3401*	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 123	DETSC 3401*	0.01	mg/kg						
PCB 126	DETSC 3401*	0.01	mg/kg						
PCB 156	DETSC 3401*	0.01	mg/kg						
PCB 157	DETSC 3401*	0.01	mg/kg						
PCB 167	DETSC 3401*	0.01	mg/kg						
PCB 169	DETSC 3401*	0.01	mg/kg						
PCB 189	DETSC 3401*	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.3		< 0.3	0.9		

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

	Lab No	2630872	2630873	2630874	2630875	2630876	2630877
	Sample ID ~	WS201	WS201	WS202	WS203	WS203	WS204
	Depth ~	0.10	0.40	0.60	0.40	0.60	0.10
	Other ID ~						
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Per- and Polyfluoroalkyl substances (							
Perfluoro-n-butanoic acid (PFBA)	DETSC 3443*	0.7	ug/kg				
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3443*	0.2	ug/kg				
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3443*	0.3	ug/kg				
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3443*	0.7	ug/kg				
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3443*	0.4	ug/kg				
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3443*	0.3	ug/kg				
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3443*	0.7	ug/kg				
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3443*	0.2	ug/kg				
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3443*	0.2	ug/kg				
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3443*	0.6	ug/kg				
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3443*	1	ug/kg				
Perfluoro-n-octanoic acid (PFOA)	DETSC 3443*	0.3	ug/kg				
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3443*	0.3	ug/kg				
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3443*	0.2	ug/kg				
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3443*	0.8	ug/kg				
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3443*	0.6	ug/kg				
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3443*	1.1	ug/kg				
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3443*	0.3	ug/kg				
Perfluoro-n-decanoic acid (PFDA)	DETSC 3443*	0.3	ug/kg				
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.5	ug/kg				
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3443*	0.3	ug/kg				
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3443*	0.3	ug/kg				
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg				
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3443*	0.4	ug/kg				
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3443*	0.5	ug/kg				
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3443*	0.2	ug/kg				
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3443*	0.3	ug/kg				
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3443*	0.3	ug/kg				
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3443*	0.3	ug/kg				
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3443*	0.3	ug/kg				
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3443*	0.3	ug/kg				

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No		2630872	2630873	2630874	2630875	2630876	2630877
Sample ID ~		WS201	WS201	WS202	WS203	WS203	WS204
Depth ~		0.10	0.40	0.60	0.40	0.60	0.10
Other ID ~							
Sample Type ~		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~		19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026	19/01/2026
Sampling Time ~		n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3443*	0.1	ug/kg				
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3443*	0.2	ug/kg				
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3443*	0.3	ug/kg				
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3443*	0.6	ug/kg				
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.2	ug/kg				
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.4	ug/kg				
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.2	ug/kg				
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg				
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3443*	0.1936	ug/kg				

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630878	2630880	2630881	2630882	2630883	2630884
			Sample ID ~	WS204	WS205A	WS205A	WS206	WS206	WS207
			Depth ~	0.30	0.10	0.50	0.30	0.40	0.25
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	19/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	120	11			42	8.4
Beryllium	DETSC 2301#	0.2	mg/kg	1.2	0.5			1.3	1.0
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.3			0.6	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.4			0.5	0.3
Chromium	DETSC 2301#	0.15	mg/kg	20	14			39	17
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0			< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	320	68			100	50
Lead	DETSC 2301#	0.3	mg/kg	290	93			150	470
Mercury	DETSC 2325#	0.05	mg/kg	0.56	0.49			0.71	0.10
Nickel	DETSC 2301#	1	mg/kg	26	18			28	22
Selenium	DETSC 2301#	0.5	mg/kg	1.2	< 0.5			< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	37	20			45	30
Zinc	DETSC 2301#	1	mg/kg	150	120			280	150
Inorganics									
pH	DETSC 2008#		pH	7.5	8.6			8.1	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.7			0.6	0.7
FOC	DETSC 2002	0.001		0.038	0.021			0.040	0.011
Total Organic Carbon	DETSC 2002	0.1	%	3.8	2.1			4.0	1.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	43	61			33	34
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.07	0.07			0.16	0.26
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			< 0.01			
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			< 0.01			
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01			
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg			< 1.50			
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg			< 1.20			
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg			< 1.50			
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg			< 3.40			
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg			< 3.40			
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg			< 3.40			
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg			< 10.00			
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg			< 10.00			
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg			< 10.00			
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			< 0.01			
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			< 0.01			
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01			
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg			< 0.90			
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg			2.52			
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg			3.73			
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg			< 1.40			
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg			< 1.40			

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630878	2630880	2630881	2630882	2630883	2630884
			Sample ID ~	WS204	WS205A	WS205A	WS206	WS206	WS207
			Depth ~	0.30	0.10	0.50	0.30	0.40	0.25
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	19/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg			< 1.40			
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg			< 10.00			
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg			< 10.00			
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg			< 10.00			
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg			< 10.00			
Benzene	DETSC 3321#	0.01	mg/kg			< 0.01			
Ethylbenzene	DETSC 3321#	0.01	mg/kg			< 0.01			
Toluene	DETSC 3321#	0.01	mg/kg			< 0.01			
Xylene	DETSC 3321#	0.01	mg/kg			< 0.01			
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.04	0.06			< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03			< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03			< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03			< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.25	0.20			0.22	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.04	0.05			0.05	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.36	0.25			0.69	0.06
Pyrene	DETSC 3303#	0.03	mg/kg	0.31	0.25			0.68	0.06
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.09			0.37	0.04
Chrysene	DETSC 3303	0.03	mg/kg	0.12	0.09			0.35	0.05
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	0.14			0.60	0.06
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.05			0.20	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.10			0.47	0.05
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03	0.05			0.22	0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03			0.06	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	0.07			0.27	0.04
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.5	1.4			4.2	0.32
PCBs									
PCB 77	DETSC 3401*	0.01	mg/kg						
PCB 81	DETSC 3401*	0.01	mg/kg						
PCB 105	DETSC 3401*	0.01	mg/kg						
PCB 114	DETSC 3401*	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 123	DETSC 3401*	0.01	mg/kg						
PCB 126	DETSC 3401*	0.01	mg/kg						
PCB 156	DETSC 3401*	0.01	mg/kg						
PCB 157	DETSC 3401*	0.01	mg/kg						
PCB 167	DETSC 3401*	0.01	mg/kg						
PCB 169	DETSC 3401*	0.01	mg/kg						
PCB 189	DETSC 3401*	0.01	mg/kg						
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.6	0.7			< 0.3	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	2630878	2630880	2630881	2630882	2630883	2630884
Sample ID ~	WS204	WS205A	WS205A	WS206	WS206	WS207
Depth ~	0.30	0.10	0.50	0.30	0.40	0.25
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	19/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Per- and Polyfluoroalkyl substances (									
Perfluoro-n-butanoic acid (PFBA)	DETSC 3443*	0.7	ug/kg				< 0.70		
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3443*	0.2	ug/kg				0.43		
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3443*	0.3	ug/kg				< 0.30		
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3443*	0.7	ug/kg				< 0.70		
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3443*	0.4	ug/kg				< 0.40		
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3443*	0.3	ug/kg				< 0.30		
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3443*	0.7	ug/kg				< 0.70		
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3443*	0.2	ug/kg				< 0.20		
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3443*	0.2	ug/kg				< 0.20		
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3443*	0.6	ug/kg				< 0.60		
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3443*	1	ug/kg				< 1.0		
Perfluoro-n-octanoic acid (PFOA)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3443*	0.2	ug/kg				< 0.20		
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3443*	0.8	ug/kg				33		
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3443*	0.6	ug/kg				< 0.60		
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3443*	1.1	ug/kg				< 1.1		
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-n-decanoic acid (PFDA)	DETSC 3443*	0.3	ug/kg				< 0.30		
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.5	ug/kg				< 0.50		
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3443*	0.3	ug/kg				< 0.30		
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg				< 0.40		
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3443*	0.4	ug/kg				0.87		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3443*	0.5	ug/kg				< 0.50		
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3443*	0.2	ug/kg				< 0.20		
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3443*	0.3	ug/kg				< 0.30		
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3443*	0.3	ug/kg				< 0.30		

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

	Lab No	2630878	2630880	2630881	2630882	2630883	2630884
	Sample ID ~	WS204	WS205A	WS205A	WS206	WS206	WS207
	Depth ~	0.30	0.10	0.50	0.30	0.40	0.25
	Other ID ~						
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	19/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3443*	0.1	ug/kg				< 0.10		
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3443*	0.2	ug/kg				< 0.20		
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3443*	0.3	ug/kg				3.6		
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3443*	0.6	ug/kg				29		
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.2	ug/kg				< 0.20		
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.4	ug/kg				< 0.40		
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.2	ug/kg				< 0.20		
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg				< 0.40		
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3443*	0.1936	ug/kg				< 0.19		

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2630885	2630886	2630887	2630888	2630889	2630890
				Sample ID ~	WS207	WS207	WS208	WS208	HDP01	HDP01
				Depth ~	0.80	0.85	0.30	0.60	0.10	0.55
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic	DETSC 2301#	0.2	mg/kg			21		7.7	
Beryllium	DETSC 2301#	0.2	mg/kg			1.8		0.5	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg			0.5		0.7	
Cadmium	DETSC 2301#	0.1	mg/kg			0.4		0.9	
Chromium	DETSC 2301#	0.15	mg/kg			18		11	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg			< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg			91		41	
Lead	DETSC 2301#	0.3	mg/kg			42		80	
Mercury	DETSC 2325#	0.05	mg/kg			< 0.05		0.99	
Nickel	DETSC 2301#	1	mg/kg			40		11	
Selenium	DETSC 2301#	0.5	mg/kg			< 0.5		< 0.5	
Vanadium	DETSC 2301#	0.8	mg/kg			61		15	
Zinc	DETSC 2301#	1	mg/kg			77		110	
Inorganics										
pH	DETSC 2008#		pH			8.3		10.8	
Cyanide, Total	DETSC 2130#	0.1	mg/kg			< 0.1		< 0.1	
FOC	DETSC 2002	0.001				0.027		0.007	
Total Organic Carbon	DETSC 2002	0.1	%			2.7		0.7	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			33		75	
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.07		< 0.01	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01				
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01				
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01				
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50				
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg		< 1.20				
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50				
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40				
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40				
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40				
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00				
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00				
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00				
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01				
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01				
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01				
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg		< 0.90				
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg		< 0.50				
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg		2.46				
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg		< 1.40				
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		< 1.40				

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630885	2630886	2630887	2630888	2630889	2630890
			Sample ID ~	WS207	WS207	WS208	WS208	HDP01	HDP01
			Depth ~	0.80	0.85	0.30	0.60	0.10	0.55
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		< 1.40				
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00				
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00				
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00				
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00				
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01				
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01				
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01				
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01				
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg			0.70		< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg			< 0.03		< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg			0.88		0.03	
Fluorene	DETSC 3303	0.03	mg/kg			0.76		0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg			5.6		0.35	
Anthracene	DETSC 3303	0.03	mg/kg			1.1		0.09	
Fluoranthene	DETSC 3303#	0.03	mg/kg			3.9		0.78	
Pyrene	DETSC 3303#	0.03	mg/kg			3.2		0.84	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg			1.2		0.43	
Chrysene	DETSC 3303	0.03	mg/kg			1.3		0.40	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg			1.2		0.60	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg			0.41		0.22	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg			0.85		0.46	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg			0.38		0.27	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg			0.12		0.07	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg			0.48		0.33	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg			22		4.9	
PCBs									
PCB 77	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 81	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 105	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 114	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg				< 0.01		< 0.01
PCB 123	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 126	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 156	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 157	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 167	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 169	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
PCB 189	DETSC 3401*	0.01	mg/kg				< 0.01		< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg			< 0.3		< 0.3	

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

	Lab No	2630885	2630886	2630887	2630888	2630889	2630890
	Sample ID ~	WS207	WS207	WS208	WS208	HDP01	HDP01
	Depth ~	0.80	0.85	0.30	0.60	0.10	0.55
	Other ID ~						
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Per- and Polyfluoroalkyl substances (							
Perfluoro-n-butanoic acid (PFBA)	DETSC 3443*	0.7	ug/kg	< 0.70			
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3443*	0.2	ug/kg	< 0.20			
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3443*	0.3	ug/kg	< 0.30			
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3443*	0.7	ug/kg	< 0.70			
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3443*	0.4	ug/kg	< 0.40			
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3443*	0.3	ug/kg	< 0.30			
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3443*	0.7	ug/kg	< 0.70			
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3443*	0.2	ug/kg	< 0.20			
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3443*	0.2	ug/kg	< 0.20			
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3443*	0.6	ug/kg	< 0.60			
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3443*	1	ug/kg	< 1.0			
Perfluoro-n-octanoic acid (PFOA)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3443*	0.2	ug/kg	< 0.20			
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3443*	0.8	ug/kg	< 0.80			
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3443*	0.6	ug/kg	< 0.60			
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3443*	1.1	ug/kg	< 1.1			
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-n-decanoic acid (PFDA)	DETSC 3443*	0.3	ug/kg	< 0.30			
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.5	ug/kg	< 0.50			
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3443*	0.3	ug/kg	< 0.30			
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg	< 0.40			
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3443*	0.4	ug/kg	< 0.40			
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3443*	0.5	ug/kg	< 0.50			
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3443*	0.2	ug/kg	< 0.20			
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3443*	0.3	ug/kg	< 0.30			
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3443*	0.3	ug/kg	< 0.30			

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No				2630885	2630886	2630887	2630888	2630889	2630890
Sample ID ~				WS207	WS207	WS208	WS208	HDP01	HDP01
Depth ~				0.80	0.85	0.30	0.60	0.10	0.55
Other ID ~									
Sample Type ~				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~				21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026	21/01/2026
Sampling Time ~				n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3443*	0.1	ug/kg	< 0.10					
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3443*	0.2	ug/kg	< 0.20					
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3443*	0.3	ug/kg	< 0.30					
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3443*	0.6	ug/kg	< 0.60					
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.2	ug/kg	< 0.20					
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.4	ug/kg	< 0.40					
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.2	ug/kg	< 0.20					
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg	< 0.40					
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3443*	0.1936	ug/kg	< 0.19					

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630873	2630876	2630877	2630881	2630886
			Sample ID ~	WS201	WS203	WS204	WS205A	WS207
			Depth ~	0.40	0.60	0.10	0.50	0.85
			Other ID ~					
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	19/01/2026	19/01/2026	19/01/2026	21/01/2026	21/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
VOCs								
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630873	2630876	2630877	2630881	2630886
			Sample ID ~	WS201	WS203	WS204	WS205A	WS207
			Depth ~	0.40	0.60	0.10	0.50	0.85
			Other ID ~					
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	19/01/2026	19/01/2026	19/01/2026	21/01/2026	21/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
TAME	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs								
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2630873	2630876	2630877	2630881	2630886
			Sample ID ~	WS201	WS203	WS204	WS205A	WS207
			Depth ~	0.40	0.60	0.10	0.50	0.85
			Other ID ~					
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	19/01/2026	19/01/2026	19/01/2026	21/01/2026	21/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Fluorene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg	0.1	0.4	0.2	0.2	< 0.1
Anthracene	DETSC 3433	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	0.1	0.2	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg	0.3	0.9	0.3	0.5	0.2
Pyrene	DETSC 3433	0.1	mg/kg	0.3	0.8	0.3	0.4	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Chrysene	DETSC 3433	0.1	mg/kg	0.2	0.5	0.2	0.3	0.2
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	0.3	0.2	0.2	0.1
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg	< 0.1	0.2	0.1	0.1	< 0.1
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	0.3	0.2	0.2	< 0.1
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	0.1	< 0.1	0.1	< 0.1
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg	< 0.1	0.3	< 0.1	0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis
Soil Samples

Our Ref 26-01654
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2630872	WS201 0.10	SOIL	Chrysotile	Chrysotile present as fibre bundles	Jason Barsby
2630874	WS202 0.60	SOIL	NAD	none	Jason Barsby
2630875	WS203 0.40	SOIL	Amosite Chrysotile	Amosite Chrysotile present as fibre bundles	Jason Barsby
2630878	WS204 0.30	SOIL	NAD	none	Jason Barsby
2630879	WS205 0.10	SOIL	NAD	none	Jason Barsby
2630880	WS205A 0.10	SOIL	Chrysotile	Chrysotile present as fibre bundles	Jason Barsby
2630883	WS206 0.40	SOIL	NAD	none	Jason Barsby
2630884	WS207 0.25	SOIL	NAD	none	Jason Barsby
2630887	WS208 0.30	SOIL	NAD	none	Jason Barsby
2630889	HDP01 0.10	SOIL	Chrysotile	Chrysotile present as fibre bundles	Jason Barsby

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

Information in Support of the Analytical Results

Our Ref 26-01654
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2630872	WS201 0.10 SOIL	19/01/26	GJ 250ml x2, GJ 30ml x2		
2630873	WS201 0.40 SOIL	19/01/26	GJ 250ml x2, GJ 30ml x2		
2630874	WS202 0.60 SOIL	19/01/26	GJ 250ml x2, GJ 30ml x2		
2630875	WS203 0.40 SOIL	19/01/26	GJ 250ml x2, GJ 30ml x2		
2630876	WS203 0.60 SOIL	19/01/26	GJ 250ml x2, GJ 30ml x2		
2630877	WS204 0.10 SOIL	19/01/26	GJ 250ml x2, GJ 30ml x2		
2630878	WS204 0.30 SOIL	19/01/26	GJ 250ml x2, GJ 30ml x2		
2630879	WS205 0.10 SOIL	21/01/26	PG		
2630880	WS205A 0.10 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630881	WS205A 0.50 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630882	WS206 0.30 SOIL	21/01/26	P(other) x2		
2630883	WS206 0.40 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630884	WS207 0.25 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630885	WS207 0.80 SOIL	21/01/26	P(other) x2		
2630886	WS207 0.85 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630887	WS208 0.30 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630888	WS208 0.60 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630889	HDP01 0.10 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		
2630890	HDP01 0.55 SOIL	21/01/26	GJ 250ml x2, GJ 30ml x2		

Key: G-Glass J-Jar P-Plastic G-Bag

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

Information in Support of the Analytical Results

Our Ref 26-01654
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	26-01999	*Issued:*	16-Feb-26

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	26-01999
Client Reference ~	8353
Order No ~	P/O-10623BH
Contract Title ~	Land Adjacent to Bealey Industrial Estate, Radcliffe
Description	9 Soil samples.
Date Received	29-Jan-26
Date Started	29-Jan-26
Date Completed	16-Feb-26
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Reyhan Irfan
Operations Manager

2139

Sample Deviations present. See Deviation Table Section for details.

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Sample ID	Depth	Lab No	Completed	Matrix Description
WS209	0.3	2632904	16/02/2026	Brown very gravelly, clayey SAND
WS210	0.9	2632906	16/02/2026	Brown very gravelly, clayey SAND
WS212	0.5	2632910	16/02/2026	Brown SAND
WS212	0.7	2632911	16/02/2026	Brown SAND
WS212	1.7	2632912	16/02/2026	Brown sandy CLAY

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2632904	2632905	2632906	2632907	2632908	2632909	2632910
				Sample ID ~	WS209	WS209	WS210	WS210	WS210	WS211	WS212
				Depth ~	0.30	0.80	0.90	1.60	1.80	0.50	0.50
				Other ID ~							
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**								
Metals											
Arsenic	DETSC 2301#	0.2	mg/kg	13		34				52
Beryllium	DETSC 2301#	0.2	mg/kg	0.8		1.8				1.6
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3		0.5				0.3
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1		1.2				0.3
Chromium	DETSC 2301#	0.15	mg/kg	33		30				23
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0				< 1.0
Copper	DETSC 2301#	0.2	mg/kg	20		110				110
Lead	DETSC 2301#	0.3	mg/kg	14		370				180
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05		0.13				0.20
Nickel	DETSC 2301#	1	mg/kg	20		41				36
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5		< 0.5				< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	54		52				57
Zinc	DETSC 2301#	1	mg/kg	55		240				90
Inorganics										
pH	DETSC 2008#		pH	5.6		6.4				5.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1		< 0.1				< 0.1
FOC	DETSC 2002	0.001		< 0.001		0.024				0.016
Total Organic Carbon	DETSC 2002	0.1	%	< 0.1		2.4				1.6
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	30		92				50
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04		0.05				0.09
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01		
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01		
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01		
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50			< 1.50		
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg		< 1.20			< 1.20		
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50			< 1.50		
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40			< 3.40		
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40			< 3.40		
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40			< 3.40		
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00		
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00		
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00		
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01		
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01		
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01			< 0.01		
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg		< 0.90			< 0.90		
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg		< 0.50			< 0.50		
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg		0.92			0.86		
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg		< 1.40			< 1.40		
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		< 1.40			< 1.40		

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2632904	2632905	2632906	2632907	2632908	2632909	2632910
			Sample ID ~	WS209	WS209	WS210	WS210	WS210	WS211	WS212
			Depth ~	0.30	0.80	0.90	1.60	1.80	0.50	0.50
			Other ID ~							
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		< 1.40			< 1.40		
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00		
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00		
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00		
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00			< 10.00		
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01		
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01		
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01		
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01			< 0.01		
PAHs										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03				0.15
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03				< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.06		0.05				0.06
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03		< 0.03				0.40
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.40		0.37				0.17
Anthracene	DETSC 3303	0.03	mg/kg	0.06		0.05				< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.80		0.63				0.06
Pyrene	DETSC 3303#	0.03	mg/kg	0.74		0.59				0.18
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.30		0.22				< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.32		0.24				0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.35		0.25				< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.14		0.09				< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.25		0.17				< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.11		0.07				< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03				< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.15		0.10				< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.7		2.8				1.0
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		0.4				< 0.3
Per- and Polyfluoroalkyl subst										
Perfluoro-n-butanoic acid (PFBA)	DETSC 3443*	0.7	ug/kg				< 0.70		< 0.70	
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3443*	0.7	ug/kg				< 0.70		< 0.70	
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3443*	0.4	ug/kg				< 0.40		< 0.40	
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3443*	0.7	ug/kg				< 0.70		< 0.70	
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	2632904	2632905	2632906	2632907	2632908	2632909	2632910	
Sample ID ~	WS209	WS209	WS210	WS210	WS210	WS211	WS212	
Depth ~	0.30	0.80	0.90	1.60	1.80	0.50	0.50	
Other ID ~								
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
Sampling Date ~	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	
Test	**Method**	**LOD**	**Units**					
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3443*	0.6	ug/kg				< 0.60		< 0.60	
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3443*	1	ug/kg				< 1.0		< 1.0	
Perfluoro-n-octanoic acid (PFOA)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3443*	0.8	ug/kg				< 0.80		3.4	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3443*	0.6	ug/kg				< 0.60		< 0.60	
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3443*	1.1	ug/kg				< 1.1		< 1.1	
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-n-decanoic acid (PFDA)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.5	ug/kg				< 0.50		< 0.50	
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg				< 0.40		< 0.40	
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3443*	0.4	ug/kg				< 0.40		< 0.40	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3443*	0.5	ug/kg				< 0.50		< 0.50	
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3443*	0.3	ug/kg				< 0.30		< 0.30	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3443*	0.1	ug/kg				0.17		< 0.10	
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3443*	0.3	ug/kg				< 0.30		0.67	
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3443*	0.6	ug/kg				< 0.60		2.8	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.4	ug/kg				< 0.40		< 0.40	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.2	ug/kg				< 0.20		< 0.20	

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No		2632904	2632905	2632906	2632907	2632908	2632909	2632910
Sample ID ~		WS209	WS209	WS210	WS210	WS210	WS211	WS212
Depth ~		0.30	0.80	0.90	1.60	1.80	0.50	0.50
Other ID ~								
Sample Type ~		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~		23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026	23/01/2026
Sampling Time ~		n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg				< 0.40		< 0.40	
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3443*	0.1936	ug/kg				< 0.19		< 0.19	

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Ra

			Lab No	2632911	2632912
			Sample ID ~	WS212	WS212
			Depth ~	0.70	1.70
			Other ID ~		
			Sample Type ~	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	63	32
Beryllium	DETSC 2301#	0.2	mg/kg	0.5	0.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.5
Chromium	DETSC 2301#	0.15	mg/kg	53	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	69	35
Lead	DETSC 2301#	0.3	mg/kg	270	71
Mercury	DETSC 2325#	0.05	mg/kg	0.14	0.07
Nickel	DETSC 2301#	1	mg/kg	19	18
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	17	21
Zinc	DETSC 2301#	1	mg/kg	150	130
Inorganics					
pH	DETSC 2008#		pH	6.7	7.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.2
FOC	DETSC 2002	0.001		0.008	0.009
Total Organic Carbon	DETSC 2002	0.1	%	0.8	0.9
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	480	57
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.15	0.05
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg	18.32	
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg	132.5	
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg	354.5	
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg	109.8	
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg	172.7	
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg	62.94	
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg	678.0	
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg	678.0	
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg	678.0	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg	19.05	
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg	145.8	
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg	110.3	
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg	15.82	
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg	26.75	

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Ra

			Lab No	2632911	2632912
			Sample ID ~	WS212	WS212
			Depth ~	0.70	1.70
			Other ID ~		
			Sample Type ~	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg	10.92	
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg	302.0	
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg	302.0	
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg	302.0	
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg	979.9	
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	
PAHs					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
Phenols					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3
Per- and Polyfluoroalkyl subst					
Perfluoro-n-butanoic acid (PFBA)	DETSC 3443*	0.7	ug/kg		
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3443*	0.2	ug/kg		
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3443*	0.3	ug/kg		
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3443*	0.7	ug/kg		
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3443*	0.4	ug/kg		
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3443*	0.3	ug/kg		
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3443*	0.7	ug/kg		
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3443*	0.2	ug/kg		
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3443*	0.2	ug/kg		

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Ra

			Lab No	2632911	2632912
			Sample ID ~	WS212	WS212
			Depth ~	0.70	1.70
			Other ID ~		
			Sample Type ~	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3443*	0.6	ug/kg		
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3443*	1	ug/kg		
Perfluoro-n-octanoic acid (PFOA)	DETSC 3443*	0.3	ug/kg		
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3443*	0.3	ug/kg		
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3443*	0.2	ug/kg		
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3443*	0.8	ug/kg		
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3443*	0.6	ug/kg		
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3443*	1.1	ug/kg		
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3443*	0.3	ug/kg		
Perfluoro-n-decanoic acid (PFDA)	DETSC 3443*	0.3	ug/kg		
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.5	ug/kg		
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3443*	0.3	ug/kg		
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3443*	0.3	ug/kg		
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg		
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3443*	0.4	ug/kg		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3443*	0.5	ug/kg		
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3443*	0.2	ug/kg		
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3443*	0.3	ug/kg		
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3443*	0.3	ug/kg		
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3443*	0.3	ug/kg		
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3443*	0.3	ug/kg		
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3443*	0.3	ug/kg		
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3443*	0.1	ug/kg		
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3443*	0.2	ug/kg		
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3443*	0.3	ug/kg		
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3443*	0.6	ug/kg		
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.2	ug/kg		
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.4	ug/kg		
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.2	ug/kg		

Summary of Chemical Analysis
Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Ra

			Lab No	2632911	2632912
			Sample ID ~	WS212	WS212
			Depth ~	0.70	1.70
			Other ID ~		
			Sample Type ~	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s
Test	**Method**	**LOD**	**Units**		
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3443*	0.4	ug/kg		
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3443*	0.1936	ug/kg		

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2632905	2632908	2632911
			Sample ID ~	WS209	WS210	WS212
			Depth ~	0.80	1.80	0.70
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
VOCs						
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2632905	2632908	2632911
			Sample ID ~	WS209	WS210	WS212
			Depth ~	0.80	1.80	0.70
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Naphthalene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
TAME	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
SVOCs						
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3433	0.1	mg/kg	0.2	< 0.1	
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis
Soil VOC/SVOC Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2632905	2632908	2632911
			Sample ID ~	WS209	WS210	WS212
			Depth ~	0.80	1.80	0.70
			Other ID ~			
			Sample Type ~	SOIL	SOIL	SOIL
			Sampling Date ~	23/01/2026	23/01/2026	23/01/2026
			Sampling Time ~	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**			
Fluorene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3433	0.1	mg/kg	0.8	0.2	
Anthracene	DETSC 3433	0.1	mg/kg	0.3	< 0.1	
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg	1.2	0.2	
Pyrene	DETSC 3433	0.1	mg/kg	1.1	0.2	
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg	0.4	< 0.1	
Chrysene	DETSC 3433	0.1	mg/kg	0.6	0.1	
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg	0.3	< 0.1	
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg	0.2	< 0.1	
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg	0.3	< 0.1	
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	
Benzo(ghi)perylene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 26-01999
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2632904	WS209 0.30	SOIL	NAD	none	Pierce Booth
2632906	WS210 0.90	SOIL	NAD	none	Pierce Booth
2632910	WS212 0.50	SOIL	NAD	none	Pierce Booth
2632911	WS212 0.70	SOIL	NAD	none	Pierce Booth
2632912	WS212 1.70	SOIL	NAD	none	Pierce Booth

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

Information in Support of the Analytical Results

Our Ref 26-01999
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2632904	WS209 0.30 SOIL	23/01/26	GJ 250ml x2, GJ 30ml x2		
2632905	WS209 0.80 SOIL	23/01/26	GJ 250ml x2, GJ 30ml x2		
2632906	WS210 0.90 SOIL	23/01/26	GJ 250ml x2, GJ 30ml x2		
2632907	WS210 1.60 SOIL	23/01/26	P(other) x2		PFAS Over temperature
2632908	WS210 1.80 SOIL	23/01/26	GJ 250ml x2, GJ 30ml x2		
2632909	WS211 0.50 SOIL	23/01/26	P(other) x2		PFAS Over temperature
2632910	WS212 0.50 SOIL	23/01/26	GJ 250ml x2, GJ 30ml x2		
2632911	WS212 0.70 SOIL	23/01/26	GJ 250ml x2, GJ 30ml x2		
2632912	WS212 1.70 SOIL	23/01/26	GJ 250ml x2, GJ 30ml x2		

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

envirolab
Hattersley Science & Technology Park
Stockport Road, Hattersley, SK14 3QU

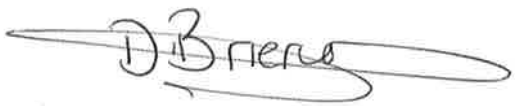
FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 26/02897
Issue Number: 1 **Date:** 13 March, 2026

Client:
Murray Rix (Northern) Ltd
Andrew House
Hadfield Street
Dukinfield
SK16 4QX

Project Manager: Enquires/Owain Davies
Project Name: Land Adjacent to Bealey Industrial Estate
Project Ref: 8353
Order No: 26/107
Date Samples Received: 06/03/26
Date Instructions Received: 11/03/26
Date Analysis Completed: 13/03/26

Approved by:



Danielle Brierley
Client Services Supervisor

UKAS TESTING
1247

Envirolab Job Number: 26/02897

Client Project Name: Land Adjacent to Bealey Industrial Estate

Client Project Ref: 8353

Lab Sample ID	26/02897/1	26/02897/2	26/02897/3	26/02897/4	26/02897/5			Units	Limit of Detection	Method ref
Client Sample No	6044101	6044102	6044103	6044104	6044105					
Client Sample ID	BH1	BH2	BH2	BH3	BH3					
Depth to Top	0.0	0.0	3.0	0.0	3.0					
Depth To Bottom	4.45	1.65	5.45	2.45	4.45					
Date Sampled										
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B	SOIL - B					
Sample Matrix Code	4A	4AE	4AE	4AE	4A					
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil$_D$#	Chrysotile	NAD	Chrysotile	Chrysotile	NAD					A-T-045
Asbestos Matrix (visual)$_D$	-	-	-	-	-					A-T-045
Asbestos Matrix (microscope)$_D$	Loose Insulation & Loose Fibres	-	Loose Fibres	Loose Fibres	-					A-T-045
Asbestos ACM - Suitable for Water Absorption Test?$_D$	N/A	N/A	N/A	N/A	N/A					A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing)$_D$	0.003	-	0.003	<0.001	-			% w/w	0.001	A-T-054

Report Notes

General

•This report shall not be reproduced, except in full, without written approval from Envirolab.
•The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
•The results reported herein relate only to the material supplied to the laboratory.
•The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
•Analytical results reflect the quality of the sample at the time of analysis only.
•Opinions and Interpretations expressed are outside our scope of accreditation.
•A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
•If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
•Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "D" on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript "^"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis
"Trace Asbestos Identified" will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs
Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.					

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

TPH by method A-T-007:
For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:
EPH CWG results have humics mathematically subtracted through instrument calculation.
Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:
Results greater than 12900µS/cm @ 25^0C / 11550µS/cm @ 20^0C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Murray Rix (Northern) Ltd, Andrew House , Hadfield Street, Dukinfield, SK16 4QX

Project: Land Adjacent to Bealey Industrial Estate

Clients Project No: 8353

Project No: 26/02897

Date Received: 11/03/2026 (am)

Cool Box Temperatures (°C): 11.3

Lab Sample ID	26/02897/1	26/02897/2	26/02897/3	26/02897/4	26/02897/5
Client Sample No	6044101	6044102	6044103	6044104	6044105
Client Sample ID/Depth	BH1 0.0-4.45	BH2 0.0-1.65	BH2 3.0-5.45	BH3 0.0-2.45	BH3 3.0-4.45
Date Sampled					
Deviation Code					
E (no date)	✓	✓	✓	✓	✓

Key
E (no date) *No sampling date provided (all results affected if not provided)*

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	26/02897/1	26/02897/2	26/02897/3	26/02897/4	26/02897/5
Client Sample No	6044101	6044102	6044103	6044104	6044105
Client Sample ID/Depth	BH1 0.0-4.45	BH2 0.0-1.65	BH2 3.0-5.45	BH3 0.0-2.45	BH3 3.0-4.45
Date Sampled					
A-T-045	12/03/2026	12/03/2026	12/03/2026	12/03/2026	12/03/2026
A-T-054	13/03/2026		13/03/2026	13/03/2026	

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Certificate of Analysis

Certificate Number	26-03725-1	*Issued:*	05-Mar-26

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	26-03725-1
Client Reference ~	8353
Order No ~	10623-BH
Contract Title ~	Land Adjacent to Bealey Industrial Estate, Radcliffe
Description	7 Soil samples.
Date Received	17-Feb-26
Date Started	17-Feb-26
Date Completed	05-Mar-26
Test Procedures	Identified by prefix DETSn (details on request).

Notes **This report supersedes 26-03725; Sample info updated at client request**

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

Approved By

Louise Cook
Contracts Manager

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Sample Deviations present. See Deviation Table Section for details.

Summary of Chemical Analysis
Matrix Descriptions

Our Ref 26-03725-1
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Sample ID	Depth	Lab No	Completed	Matrix Description
TP101	0.2	2642980	04/03/2026	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)
TP101	0.8	2642981	04/03/2026	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)
BH03	0.3	2642985	04/03/2026	Dark brown very gravelly, sandy CLAY including odd rootlets (Possible made ground - brick)

Summary of Chemical Analysis
Soil Samples

Our Ref 26-03725-1
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2642980	2642981	2642982	2642983	2642984	2642985	2642987
				Sample ID ~	TP101	TP101	BH01	BH02	BH02	BH03	BH03
				Depth ~	0.20	0.80	2.20	3.40	4.50	0.30	5.10
				Other ID ~							
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	09/02/2026	09/02/2026	09/02/2026	10/02/2026	10/02/2026	10/02/2026	10/02/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**								
Metals											
Arsenic	DETSC 2301#	0.2	mg/kg	14	22				13	
Beryllium	DETSC 2301#	0.2	mg/kg	1.0	0.8				0.8	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.7	0.7				0.3	
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.8				1.1	
Chromium	DETSC 2301#	0.15	mg/kg	30	37				26	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0				< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	73	65				80	
Lead	DETSC 2301#	0.3	mg/kg	130	210				170	
Mercury	DETSC 2325#	0.05	mg/kg	0.20	0.40				0.22	
Nickel	DETSC 2301#	1	mg/kg	23	27				22	
Selenium	DETSC 2301#	0.5	mg/kg	0.9	< 0.5				0.5	
Vanadium	DETSC 2301#	0.8	mg/kg	36	28				30	
Zinc	DETSC 2301#	1	mg/kg	160	160				170	
Inorganics										
pH	DETSC 2008#		pH	8.2	9.6				11.5	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	0.3				0.5	
FOC	DETSC 2002	0.001		0.027	0.020				0.022	
Total Organic Carbon	DETSC 2002	0.1	%	2.7	2.0				2.1	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	95	440				82	
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.10	0.23				0.19	
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Aliphatic >EC10-EC12 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50		< 1.50			< 1.50
Aliphatic >EC12-EC16 Cleanup	DETSC 3521*	1.2	mg/kg		< 1.20		< 1.20			< 1.20
Aliphatic >EC16-EC21 Cleanup	DETSC 3521*	1.5	mg/kg		< 1.50		< 1.50			< 1.50
Aliphatic >EC21-EC24 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40		< 3.40			< 3.40
Aliphatic >EC21-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40		< 3.40			< 3.40
Aliphatic >EC24-EC35 Cleanup	DETSC 3521*	3.4	mg/kg		< 3.40		< 3.40			< 3.40
Aliphatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		< 10.00			< 10.00
Aliphatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		< 10.00			< 10.00
Aliphatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		< 10.00		< 10.00			< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Aromatic >EC10-EC12 Cleanup	DETSC 3521*	0.9	mg/kg		< 0.90		< 0.90			< 0.90
Aromatic >EC12-EC16 Cleanup	DETSC 3521*	0.5	mg/kg		5.79		< 0.50			< 0.50
Aromatic >EC16-EC21 Cleanup	DETSC 3521*	0.6	mg/kg		33.20		3.58			< 0.60
Aromatic >EC21-EC24 Cleanup	DETSC 3521*	1.4	mg/kg		29.57		< 1.40			< 1.40
Aromatic >EC21-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		216.3		< 1.40			< 1.40

Summary of Chemical Analysis
Soil Samples

Our Ref 26-03725-1
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2642980	2642981	2642982	2642983	2642984	2642985	2642987
				Sample ID ~	TP101	TP101	BH01	BH02	BH02	BH03	BH03
				Depth ~	0.20	0.80	2.20	3.40	4.50	0.30	5.10
				Other ID ~							
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	09/02/2026	09/02/2026	09/02/2026	10/02/2026	10/02/2026	10/02/2026	10/02/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**								
Aromatic >EC24-EC35 Cleanup	DETSC 3521*	1.4	mg/kg		186.8		< 1.40			< 1.40
Aromatic C5-C35 Cleanup	DETSC 3521*	10	mg/kg		255.3		< 10.00			< 10.00
Aromatic >EC10-EC35 Cleanup	DETSC 3521*	10	mg/kg		255.3		< 10.00			< 10.00
Aromatic >EC10-EC40 Cleanup	DETSC 3521*	10	mg/kg		326.8		< 10.00			< 10.00
TPH Ali/Aro Total C5-C35 Cleanup	DETSC 3521*	10	mg/kg		255.3		< 10.00			< 10.00
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01			< 0.01
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01		< 0.01			< 0.01
PAHs											
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03				0.39	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03				< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03				0.82	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03				0.54	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.24	0.24				3.6	
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.08				0.84	
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.46	0.81				5.1	
Pyrene	DETSC 3303#	0.03	mg/kg	0.44	0.87				5.2	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.18	0.42				2.2	
Chrysene	DETSC 3303	0.03	mg/kg	0.18	0.25				1.8	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.21	0.48				2.3	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.07	0.16				0.75	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.16	0.38				1.7	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.08	0.19				0.68	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05				0.20	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.09	0.23				0.78	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	2.2	4.2				27	
Phenols											
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	1.0	1.8				1.4	
Per- and Polyfluoroalkyl subst											
Perfluoro-n-butanoic acid (PFBA)	DETSC 3443*	0.7	ug/kg			< 0.70		< 0.70		
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20		
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30		
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3443*	0.7	ug/kg			< 0.70		< 0.70		
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3443*	0.4	ug/kg			< 0.40		< 0.40		
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30		
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3443*	0.7	ug/kg			< 0.70		< 0.70		
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20		
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20		

Summary of Chemical Analysis
Soil Samples

Our Ref 26-03725-1
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No		2642980	2642981	2642982	2642983	2642984	2642985	2642987
Sample ID ~		TP101	TP101	BH01	BH02	BH02	BH03	BH03
Depth ~		0.20	0.80	2.20	3.40	4.50	0.30	5.10
Other ID ~								
Sample Type ~		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~		09/02/2026	09/02/2026	09/02/2026	10/02/2026	10/02/2026	10/02/2026	10/02/2026
Sampling Time ~		n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3443*	0.6	ug/kg			< 0.60		< 0.60
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3443*	1	ug/kg			< 1.0		< 1.0
Perfluoro-n-octanoic acid (PFOA)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3443*	0.8	ug/kg			< 0.80		< 0.80
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3443*	0.6	ug/kg			< 0.60		< 0.60
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3443*	1.1	ug/kg			< 1.1		< 1.1
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-n-decanoic acid (PFDA)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.5	ug/kg			< 0.50		< 0.50
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA total)	DETSC 3443*	0.4	ug/kg			< 0.40		0.56
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3443*	0.4	ug/kg			< 0.40		< 0.40
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3443*	0.5	ug/kg			< 0.50		< 0.50
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3443*	0.1	ug/kg			0.18		< 0.10
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3443*	0.3	ug/kg			< 0.30		< 0.30
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3443*	0.6	ug/kg			< 0.60		< 0.60
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443*	0.4	ug/kg			< 0.40		< 0.40
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA branch	DETSC 3443*	0.2	ug/kg			< 0.20		< 0.20

Summary of Chemical Analysis
Soil Samples

Our Ref 26-03725-1
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No			2642980	2642981	2642982	2642983	2642984	2642985	2642987
Sample ID ~			TP101	TP101	BH01	BH02	BH02	BH03	BH03
Depth ~			0.20	0.80	2.20	3.40	4.50	0.30	5.10
Other ID ~									
Sample Type ~			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~			09/02/2026	09/02/2026	09/02/2026	10/02/2026	10/02/2026	10/02/2026	10/02/2026
Sampling Time ~			n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA Linear	DETSC 3443*	0.4	ug/kg			< 0.40		0.47		
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3443*	0.1936	ug/kg			< 0.19		< 0.19		

Summary of Asbestos Analysis
Soil Samples

Our Ref 26-03725-1
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2642980	TP101 0.20	SOIL	NAD	none	Lee Kerridge
2642981	TP101 0.80	SOIL	NAD	none	Lee Kerridge
2642985	BH03 0.30	SOIL	Chrysotile	Chrysotile bundles present	Lee Kerridge

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

Information in Support of the Analytical Results

Our Ref 26-03725-1
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2642980	TP101 0.20 SOIL	09/02/26	GJ 250ml x2, GJ 60ml x2	pH + Conductivity (7 days)	
2642981	TP101 0.80 SOIL	09/02/26	GJ 250ml x2, GJ 60ml x2	pH + Conductivity (7 days)	
2642982	BH01 2.20 SOIL	09/02/26	P(other) x2		PFAS Over temperature
2642983	BH02 3.40 SOIL	10/02/26	GJ 250ml x2, GJ 60ml x2		
2642984	BH02 4.50 SOIL	10/02/26	P(other) x2		PFAS Over temperature
2642985	BH03 0.30 SOIL	10/02/26	GJ 250ml x2, GJ 60ml x2		
2642987	BH03 5.10 SOIL	10/02/26	GJ 250ml x2, GJ 60ml x2		

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO4	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC 2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC 2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC 2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC 2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC 2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 2311	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO4	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	As Received	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3321	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3321	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3521	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3521	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3521	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3521	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3521	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3521	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Certificate of Analysis

Certificate Number	26-05668	*Issued:*	25-Mar-26

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	26-05668
Client Reference ~	8353
Order No ~	10670-ST
Contract Title ~	Land Adjacent to Bealey Industrial Estate, Radcliffe
Description	1 Soil sample.
Date Received	10-Mar-26
Date Started	10-Mar-26
Date Completed	25-Mar-26
Test Procedures	Identified by prefix DETSn (details on request).

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

Approved By

Reyhan Irfan
Operations Manager

2139

Sample Deviations present. See Deviation Table Section for details.

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

Summary of Chemical Analysis
Soil Samples

Our Ref 26-05668
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	2653609
Sample ID ~	BH03
Depth ~	2.20
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	11/02/2026
Sampling Time ~	n/s

Test	Method	LOD	Units	
Per- and Polyfluoroalkyl substances (				
Perfluoro-n-butanoic acid (PFBA)	DETSC 3443	0.7	ug/kg	< 0.70
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3443	0.2	ug/kg	< 0.20
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3443	0.3	ug/kg	< 0.30
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3443*	0.7	ug/kg	< 0.70
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3443	0.4	ug/kg	< 0.40
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3443	0.3	ug/kg	< 0.30
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3443	0.7	ug/kg	< 0.70
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3443	0.2	ug/kg	< 0.20
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3443	0.2	ug/kg	< 0.20
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3443	0.6	ug/kg	< 0.60
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3443*	1	ug/kg	< 1.0
Perfluoro-n-octanoic acid (PFOA)	DETSC 3443	0.3	ug/kg	0.36
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3443	0.3	ug/kg	< 0.30
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3443	0.2	ug/kg	< 0.20
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3443	0.8	ug/kg	3.1
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3443*	0.6	ug/kg	< 0.60
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3443*	1.1	ug/kg	< 1.1
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3443	0.3	ug/kg	< 0.30
Perfluoro-n-decanoic acid (PFDA)	DETSC 3443	0.3	ug/kg	< 0.30
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443	0.5	ug/kg	< 0.50
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3443	0.3	ug/kg	< 0.30
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3443	0.3	ug/kg	< 0.30
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA total)	DETSC 3443	0.4	ug/kg	< 0.40
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3443	0.4	ug/kg	< 0.40
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3443*	0.5	ug/kg	< 0.50
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3443	0.2	ug/kg	< 0.20
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3443	0.3	ug/kg	< 0.30
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3443	0.3	ug/kg	< 0.30
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3443*	0.3	ug/kg	< 0.30
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3443	0.3	ug/kg	< 0.30
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3443*	0.3	ug/kg	< 0.30

Summary of Chemical Analysis
Soil Samples

Our Ref 26-05668
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	2653609
Sample ID ~	BH03
Depth ~	2.20
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	11/02/2026
Sampling Time ~	n/s

Test	Method	LOD	Units	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3443	0.1	ug/kg	< 0.10
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3443	0.2	ug/kg	< 0.20
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3443	0.3	ug/kg	0.40
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3443	0.6	ug/kg	2.7
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443	0.2	ug/kg	< 0.20
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3443	0.4	ug/kg	< 0.40
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA branch	DETSC 3443	0.2	ug/kg	< 0.20
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA Linear	DETSC 3443	0.4	ug/kg	< 0.40
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3443*	0.1936	ug/kg	< 0.19

Information in Support of the Analytical Results

Our Ref 26-05668
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2653609	BH03 2.20 SOIL	11/02/26	P(other) x2	PFAS Soil (14 days)	PFAS Over temperature

Key: P-Plastic

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

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 250µm sieve
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report Ver 26.03.15

Certificate of Analysis

Certificate Number 26-05674 *Issued:* 24-Mar-26

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference 26-05674

Client Reference ~ 8353

Order No ~ 10666-ST

Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Description 12 Water No Information Supplied samples.

Date Received 10-Mar-26

Date Started 10-Mar-26

Date Completed 24-Mar-26

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

Notes The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Reyhan Irfan
Operations Manager

Sample Deviations present. See Deviation Table Section for details.

Summary of Chemical Analysis
Water Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

	Lab No	2653614	2653615	2653616	2653617	2653618	2653619
	Sample ID ~	BH01 PFAS	BH01 LF2	BH02 PFAS	BH02 LF2	BH03 PFAS	BH03 LF2
	Depth ~	1.32	1.32	3.54	3.54	3.20	3.20
	Other ID ~						
	Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
	Sampling Date ~	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l		1.13		1.48		2.49
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l		< 0.10		< 0.10		< 0.10
Boron, Dissolved	DETSC 2306*	12	ug/l		128.2		171.5		117.9
Cadmium, Dissolved	DETSC 2306	0.03	ug/l		0.05		< 0.03		< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l		< 0.25		0.29		0.31
Copper, Dissolved	DETSC 2306	0.4	ug/l		1.68		< 0.40		0.42
Lead, Dissolved	DETSC 2306	0.09	ug/l		0.32		1.96		0.79
Mercury, Dissolved	DETSC 2306	0.01	ug/l		< 0.01		< 0.01		0.02
Nickel, Dissolved	DETSC 2306	0.5	ug/l		3.41		2.28		4.23
Selenium, Dissolved	DETSC 2306	0.25	ug/l		0.40		< 0.25		1.64
Vanadium, Dissolved	DETSC 2306	0.6	ug/l		0.63		< 0.60		< 0.60
Zinc, Dissolved	DETSC 2306	1.3	ug/l		126.6		69.54		76.88
Inorganics									
pH	DETSC 2008		pH		7.4		7.4		7.1
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l		410		650		410
Alkalinity as CaCO3 (Manual)	DETSC 2030	10	mg/l		410		650		410
Cyanide, Total	DETSC 2130	40	ug/l		< 40		< 40		< 40
Dissolved Organic Carbon	DETSC 2085	2	mg/l		3.7		7.7		4.7
Sulphate as SO4	DETSC 2055	0.1	mg/l		170		270		25
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l		< 10		< 10		< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l		< 10		< 10		< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l		< 10		< 10		< 10
PAHs									
Naphthalene	DETSC 3304	0.05	ug/l		< 0.05		< 0.25		0.16
Acenaphthylene	DETSC 3304	0.01	ug/l		< 0.01		0.19		0.02

Summary of Chemical Analysis
Water Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2653614	2653615	2653616	2653617	2653618	2653619
				Sample ID ~	BH01 PFAS	BH01 LF2	BH02 PFAS	BH02 LF2	BH03 PFAS	BH03 LF2
				Depth ~	1.32	1.32	3.54	3.54	3.20	3.20
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Acenaphthene	DETSC 3304	0.01	ug/l		< 0.01		3.1		0.22
Fluorene	DETSC 3304	0.01	ug/l		< 0.01		2.0		0.10
Phenanthrene	DETSC 3304	0.01	ug/l		0.04		2.3		0.54
Anthracene	DETSC 3304	0.01	ug/l		0.02		0.71		0.13
Fluoranthene	DETSC 3304	0.01	ug/l		0.06		5.0		0.99
Pyrene	DETSC 3304	0.01	ug/l		0.07		3.9		0.95
Benzo(a)anthracene	DETSC 3304	0.01	ug/l		0.03		0.29		0.52
Chrysene	DETSC 3304	0.01	ug/l		0.04		1.4		0.57
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		0.05		1.7		0.86
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		0.02		0.67		0.31
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		0.04		1.5		0.70
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		0.03		1.0		0.54
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		< 0.01		0.15		0.09
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		0.05		1.1		0.52
PAH Total	DETSC 3304	0.2	ug/l		0.46		25		7.2
Phenols										
Phenol - Monohydric	DETSC 2130	100	ug/l		< 100		< 100		< 100
Per- and Polyfluoroalkyl substances (										
Perfluoro-n-butanoic acid (PFBA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3444*	3	ng/l	9.2		< 3.0		< 3.0	
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3444*	3	ng/l	3.9		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3444*	3	ng/l	8.0		< 3.0		< 3.0	
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonamide (FBSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3444*	3	ng/l	6.7		3.1		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-octanoic acid (PFOA)	DETSC 3444*	3	ng/l	43		43		32	
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-hexanesulfonamide (FHxSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	

Summary of Chemical Analysis
Water Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No				2653614		2653615		2653616		2653617	
Sample ID ~				BH01 PFAS		BH01 LF2		BH02 PFAS		BH02 LF2	
Depth ~				1.32		1.32		3.54		3.54	
Other ID ~											
Sample Type ~				WATER UNKNOWN		WATER UNKNOWN		WATER UNKNOWN		WATER UNKNOWN	
Sampling Date ~				05/03/2026		05/03/2026		05/03/2026		05/03/2026	
Sampling Time ~				n/s		n/s		n/s		n/s	
Test	**Method**	**LOD**	**Units**								
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-n-decanoic acid (PFDA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10		< 10	
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3444*	9.68	ng/l	< 9.7		< 9.7		< 9.7		< 9.7	

Summary of Chemical Analysis
Water Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No				2653620		2653621	2653622	2653623	2653624	2653625	
Sample ID ~				WS212 PFAS		WS212 LF2	SWSNE PFAS	SWSNE 1	SWSSW PFAS	SWSSW 1	
Depth ~				1.39		1.50					
Other ID ~											
Sample Type ~				WATER UNKNOWN		WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	
Sampling Date ~				05/03/2026		05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	
Sampling Time ~				n/s		n/s	n/s	n/s	n/s	n/s	
Test	**Method**	**LOD**	**Units**								
Metals											
Arsenic, Dissolved	DETSC 2306	0.16	ug/l			1.58		3.34		2.70	
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l			< 0.10		< 0.10		< 0.10	
Boron, Dissolved	DETSC 2306*	12	ug/l			98.01		54.62		56.61	
Cadmium, Dissolved	DETSC 2306	0.03	ug/l			< 0.03		< 0.03		< 0.03	
Chromium, Dissolved	DETSC 2306	0.25	ug/l			0.74		0.90		0.55	
Copper, Dissolved	DETSC 2306	0.4	ug/l			0.59		1.69		1.33	
Lead, Dissolved	DETSC 2306	0.09	ug/l			0.12		0.84		0.20	
Mercury, Dissolved	DETSC 2306	0.01	ug/l			< 0.01		< 0.01		< 0.01	
Nickel, Dissolved	DETSC 2306	0.5	ug/l			7.07		2.10		2.05	
Selenium, Dissolved	DETSC 2306	0.25	ug/l			0.85		0.49		0.41	
Vanadium, Dissolved	DETSC 2306	0.6	ug/l			< 0.60		< 0.60		< 0.60	
Zinc, Dissolved	DETSC 2306	1.3	ug/l			87.92		69.54		59.38	
Inorganics											
pH	DETSC 2008		pH			6.9		7.2		7.1	
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l			270		110		110	
Alkalinity as CaCO3 (Manual)	DETSC 2030	10	mg/l			270		110		17	
Cyanide, Total	DETSC 2130	40	ug/l			< 40		< 40		< 40	
Dissolved Organic Carbon	DETSC 2085	2	mg/l			4.4		< 2.0		4.3	
Sulphate as SO4	DETSC 2055	0.1	mg/l			16		23		22	
Petroleum Hydrocarbons											
Aliphatic C5-C6	DETSC 3322	0.1	ug/l			< 0.1		< 0.1		< 0.1	
Aliphatic C6-C8	DETSC 3322	0.1	ug/l			< 0.1		< 0.1		< 0.1	
Aliphatic C8-C10	DETSC 3322	0.1	ug/l			< 0.1		< 0.1		< 0.1	
Aliphatic C10-C12	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aliphatic C12-C16	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aliphatic C16-C21	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aliphatic C21-C35	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aliphatic C5-C35	DETSC 3072*	10	ug/l			< 10		< 10		< 10	
Aromatic C5-C7	DETSC 3322	0.1	ug/l			< 0.1		< 0.1		< 0.1	
Aromatic C7-C8	DETSC 3322	0.1	ug/l			< 0.1		< 0.1		< 0.1	
Aromatic C8-C10	DETSC 3322	0.1	ug/l			< 0.1		< 0.1		< 0.1	
Aromatic C10-C12	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aromatic C12-C16	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aromatic C16-C21	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aromatic C21-C35	DETSC 3072*	1	ug/l			< 1.0		< 1.0		< 1.0	
Aromatic C5-C35	DETSC 3072*	10	ug/l			< 10		< 10		< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l			< 10		< 10		< 10	
PAHs											
Naphthalene	DETSC 3304	0.05	ug/l			1.6		< 0.05		< 0.05	
Acenaphthylene	DETSC 3304	0.01	ug/l			0.74		< 0.01		< 0.01	

Summary of Chemical Analysis
Water Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2653620	2653621	2653622	2653623	2653624	2653625
				Sample ID ~	WS212 PFAS	WS212 LF2	SWSNE PFAS	SWSNE 1	SWSSW PFAS	SWSSW 1
				Depth ~	1.39	1.50				
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Acenaphthene	DETSC 3304	0.01	ug/l		1.7		< 0.01		< 0.01
Fluorene	DETSC 3304	0.01	ug/l		4.4		< 0.01		< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l		5.4		0.01		< 0.01
Anthracene	DETSC 3304	0.01	ug/l		< 0.05		< 0.01		< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l		3.7		0.01		< 0.01
Pyrene	DETSC 3304	0.01	ug/l		5.2		0.01		< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l		2.2		< 0.01		< 0.01
Chrysene	DETSC 3304	0.01	ug/l		1.8		< 0.01		< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		3.2		< 0.01		< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		1.2		< 0.01		< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		2.8		< 0.01		< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		2.2		< 0.01		< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		0.50		< 0.01		< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		2.1		0.01		< 0.01
PAH Total	DETSC 3304	0.2	ug/l		39		< 0.20		< 0.20
Phenols										
Phenol - Monohydric	DETSC 2130	100	ug/l		< 100		< 100		< 100
Per- and Polyfluoroalkyl substances (										
Perfluoro-n-butanoic acid (PFBA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3444*	3	ng/l	3.4		< 3.0		< 3.0	
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonamide (FBSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3444*	3	ng/l	3.1		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-octanoic acid (PFOA)	DETSC 3444*	3	ng/l	53		32		31	
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-hexanesulfonamide (FHxSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	

Summary of Chemical Analysis
Water Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

	Lab No	2653620	2653621	2653622	2653623	2653624	2653625	
	Sample ID ~	WS212 PFAS	WS212 LF2	SWSNE PFAS	SWSNE 1	SWSSW PFAS	SWSSW 1	
	Depth ~	1.39	1.50					
	Other ID ~							
	Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	
	Sampling Date ~	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	
Test	**Method**	**LOD**	**Units**					
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-decanoic acid (PFDA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3444*	9.68	ng/l	< 9.7		< 9.7		< 9.7	

Summary of Chemical Analysis
Water VOC Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2653615	2653617	2653619	2653621	2653623	2653625
				Sample ID ~	BH01 LF2	BH02 LF2	BH03 LF2	WS212 LF2	SWSNE 1	SWSSW 1
				Depth ~	1.32	3.54	3.20	1.50		
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
VOCs										
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Summary of Chemical Analysis
Water VOC Samples

Our Ref 26-05674
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2653615	2653617	2653619	2653621	2653623	2653625
			Sample ID ~	BH01 LF2	BH02 LF2	BH03 LF2	WS212 LF2	SWSNE 1	SWSSW 1
			Depth ~	1.32	3.54	3.20	1.50		
			Other ID ~						
			Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
			Sampling Date ~	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026	05/03/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
TAME	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Information in Support of the Analytical Results

Our Ref 26-05674
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2653614	BH01 PFAS 1.32 WATER UNKNOWN	05/03/26	P(other) x2		PFAS Over temperature
2653615	BH01 LF2 1.32 WATER UNKNOWN	05/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2653616	BH02 PFAS 3.54 WATER UNKNOWN	05/03/26	P(other) x2		PFAS Over temperature
2653617	BH02 LF2 3.54 WATER UNKNOWN	05/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2653618	BH03 PFAS 3.20 WATER UNKNOWN	05/03/26	P(other) x2		PFAS Over temperature
2653619	BH03 LF2 3.20 WATER UNKNOWN	05/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2653620	WS212 PFAS 1.39 WATER UNKNOWN	05/03/26	P(other) x2		PFAS Over temperature
2653621	WS212 LF2 1.50 WATER UNKNOWN	05/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2653622	SWSNE PFAS WATER UNKNOWN	05/03/26	P(other) x2		PFAS Over temperature
2653623	SWSNE 1 WATER UNKNOWN	05/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2653624	SWSSW PFAS WATER UNKNOWN	05/03/26	P(other) x2		PFAS Over temperature
2653625	SWSSW 1 WATER UNKNOWN	05/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	

Key: P-Plastic G-Glass B-Bottle V-Vial

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).

Symbol key at end of report

Information in Support of the Analytical Results

Our Ref 26-05674
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report Ver 26.03.15

Certificate of Analysis

Certificate Number 26-06843 *Issued:* 08-Apr-26

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference 26-06843

Client Reference ~ 8353

Order No ~ 10690-ST

Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Description 12 Water No Information Supplied samples.

Date Received 23-Mar-26

Date Started 23-Mar-26

Date Completed 08-Apr-26

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

Notes The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Reyhan Irfan
Operations Manager

Sample Deviations present. See Deviation Table Section for details.

Summary of Chemical Analysis
Water Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2659895	2659896	2659897	2659898	2659899	2659900
				Sample ID ~	BH01 PFAS	BH01 LF2	BH02 PFAS	BH02LF2	BH03 PFAS	BH03LF2
				Depth ~	1.40	1.40	3.56	3.56	3.17	3.17
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l		0.59		0.61		1.33
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l		< 0.10		< 0.10		< 0.10
Boron, Dissolved	DETSC 2306*	12	ug/l		140.3		174.0		119.1
Cadmium, Dissolved	DETSC 2306	0.03	ug/l		0.07		< 0.03		< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l		< 0.25		0.27		0.85
Copper, Dissolved	DETSC 2306	0.4	ug/l		1.08		< 0.40		< 0.40
Lead, Dissolved	DETSC 2306	0.09	ug/l		0.13		0.10		0.10
Mercury, Dissolved	DETSC 2306	0.01	ug/l		< 0.01		< 0.01		< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l		3.43		1.39		2.53
Selenium, Dissolved	DETSC 2306	0.25	ug/l		< 0.25		< 0.25		< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l		< 0.60		< 0.60		< 0.60
Zinc, Dissolved	DETSC 2306	1.3	ug/l		135.6		73.30		93.47
Inorganics										
pH	DETSC 2008		pH		6.9		7.0		6.8
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l		430		560		410
Cyanide, Total	DETSC 2130	40	ug/l		< 40		< 40		< 40
Dissolved Organic Carbon	DETSC 2085	2	mg/l		4.2		6.3		4.3
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l		481		672		388
Sulphate as SO4	DETSC 2055	0.1	mg/l		200		270		150
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l		< 10.0		68		< 10.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l		< 10.0		870		< 10.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l		< 10.0		14		< 10.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l		< 40.3		< 966.6		< 40.3
Aromatic C5-C7	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C12-C16	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C16-C21	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C21-C35	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C5-C35	DETSC 3072*	10	ug/l		< 40.3		< 40.3		< 40.3
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l		< 80.6		< 1006.9		< 80.6
PAHs										
Naphthalene	DETSC 3304	0.05	ug/l		< 0.05		< 0.05		2.1
Acenaphthylene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		0.65
Acenaphthene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		3.1

Summary of Chemical Analysis
Water Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2659895	2659896	2659897	2659898	2659899	2659900
				Sample ID ~	BH01 PFAS	BH01 LF2	BH02 PFAS	BH02LF2	BH03 PFAS	BH03LF2
				Depth ~	1.40	1.40	3.56	3.56	3.17	3.17
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Fluorene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		2.0
Phenanthrene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		43
Anthracene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		3.5
Fluoranthene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		70
Pyrene	DETSC 3304	0.01	ug/l		0.01		< 0.01		64
Benzo(a)anthracene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		45
Chrysene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		41
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		51
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		34
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		44
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		32
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		2.9
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		32
PAH Total	DETSC 3304	0.2	ug/l		< 0.20		< 0.20		470
Phenols										
Phenol - Monohydric	DETSC 2130	100	ug/l		< 100		< 100		< 100
Per- and Polyfluoroalkyl substances (										
Perfluoro-n-butanoic acid (PFBA)	DETSC 3444*	10	ng/l	< 10		51		< 10	
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3444*	3	ng/l	17		4.7		< 3.0	
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3444*	3	ng/l	8.5		3.2		< 3.0	
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonamide (FBSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3444*	3	ng/l	5.0		3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-octanoic acid (PFOA)	DETSC 3444*	3	ng/l	4.4		6.9		5.1	
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-hexanesulfonamide (FHxSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	

Summary of Chemical Analysis
Water Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No			2659895	2659896	2659897	2659898	2659899	2659900
Sample ID ~			BH01 PFAS	BH01 LF2	BH02 PFAS	BH02LF2	BH03 PFAS	BH03LF2
Depth ~			1.40	1.40	3.56	3.56	3.17	3.17
Other ID ~								
Sample Type ~			WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~			18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Sampling Time ~			n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-decanoic acid (PFDA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3444*	9.68	ng/l	< 9.7		< 9.7		< 9.7	

Summary of Chemical Analysis
Water Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2659901	2659902	2659903	2659904	2659905	2659906
				Sample ID ~	WS212PFAS	WS212LF2	SWSNE	SWSNE1	SWSSWPFA	SWSSW1
				Depth ~	1.52	1.54				
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l		2.90		2.02		1.92
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l		< 0.10		< 0.10		< 0.10
Boron, Dissolved	DETSC 2306*	12	ug/l		132.5		44.20		47.28
Cadmium, Dissolved	DETSC 2306	0.03	ug/l		0.13		< 0.03		< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l		0.44		0.97		0.73
Copper, Dissolved	DETSC 2306	0.4	ug/l		1.65		1.91		1.46
Lead, Dissolved	DETSC 2306	0.09	ug/l		0.13		1.24		0.48
Mercury, Dissolved	DETSC 2306	0.01	ug/l		< 0.01		< 0.01		< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l		3.57		1.72		1.71
Selenium, Dissolved	DETSC 2306	0.25	ug/l		0.30		< 0.25		< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l		< 0.60		< 0.60		< 0.60
Zinc, Dissolved	DETSC 2306	1.3	ug/l		74.34		62.67		75.50
Inorganics										
pH	DETSC 2008		pH		6.8		7.1		7.0
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l		290		94		94
Cyanide, Total	DETSC 2130	40	ug/l		< 40		< 40		< 40
Dissolved Organic Carbon	DETSC 2085	2	mg/l		4.6		4.0		4.2
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l		298		81.6		87.9
Sulphate as SO4	DETSC 2055	0.1	mg/l		140		26		23
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l		< 40.3		< 40.3		< 40.3
Aromatic C5-C7	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C12-C16	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C16-C21	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C21-C35	DETSC 3072*	1	ug/l		< 10.0		< 10.0		< 10.0
Aromatic C5-C35	DETSC 3072*	10	ug/l		< 40.3		< 40.3		< 40.3
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l		< 80.6		< 80.6		< 80.6
PAHs										
Naphthalene	DETSC 3304	0.05	ug/l		0.27		< 0.05		< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l		0.34		< 0.01		< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l		0.23		< 0.01		< 0.01

Summary of Chemical Analysis
Water Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2659901	2659902	2659903	2659904	2659905	2659906
				Sample ID ~	WS212PFAS	WS212LF2	SWSNE	SWSNE1	SWSSWPFA	SWSSW1
				Depth ~	1.52	1.54				
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Fluorene	DETSC 3304	0.01	ug/l		0.38		< 0.01		< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l		0.44		< 0.01		< 0.01
Anthracene	DETSC 3304	0.01	ug/l		< 0.05		< 0.01		< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l		0.64		< 0.01		< 0.01
Pyrene	DETSC 3304	0.01	ug/l		0.75		< 0.01		< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l		0.38		< 0.01		< 0.01
Chrysene	DETSC 3304	0.01	ug/l		0.27		< 0.01		< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		0.68		< 0.01		< 0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		0.32		< 0.01		< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		0.54		< 0.01		< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		0.43		< 0.01		< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		0.13		0.01		< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		0.43		< 0.01		< 0.01
PAH Total	DETSC 3304	0.2	ug/l		6.3		< 0.20		< 0.20
Phenols										
Phenol - Monohydric	DETSC 2130	100	ug/l		< 100		< 100		< 100
Per- and Polyfluoroalkyl substances (										
Perfluoro-n-butanoic acid (PFBA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3444*	3	ng/l	6.6		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3444*	3	ng/l	3.2		< 3.0		< 3.0	
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonamide (FBSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3444*	3	ng/l	3.5		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-octanoic acid (PFOA)	DETSC 3444*	3	ng/l	7.6		3.2		< 3.0	
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-hexanesulfonamide (FHxSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	

Summary of Chemical Analysis
Water Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No			2659901	2659902	2659903	2659904	2659905	2659906
Sample ID ~			WS212PFAS	WS212LF2	SWSNE	SWSNE1	SWSSWPFA	SWSSW1
Depth ~			1.52	1.54				
Other ID ~								
Sample Type ~			WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~			18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
Sampling Time ~			n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-decanoic acid (PFDA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3444*	9.68	ng/l	< 9.7		< 9.7		< 9.7	

Summary of Chemical Analysis
Water VOC Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

	Lab No	2659896	2659898	2659900	2659902	2659904	2659906
	Sample ID ~	BH01 LF2	BH02LF2	BH03LF2	WS212LF2	SWSNE1	SWSSW1
	Depth ~	1.40	3.56	3.17	1.54		
	Other ID ~						
	Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
	Sampling Date ~	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
VOCs								
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Summary of Chemical Analysis
Water VOC Samples

Our Ref 26-06843
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2659896	2659898	2659900	2659902	2659904	2659906
			Sample ID ~	BH01 LF2	BH02LF2	BH03LF2	WS212LF2	SWSNE1	SWSSW1
			Depth ~	1.40	3.56	3.17	1.54		
			Other ID ~						
			Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
			Sampling Date ~	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026	18/03/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
TAME	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Information in Support of the Analytical Results

Our Ref 26-06843
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2659895	BH01 PFAS 1.40 WATER UNKNOWN	18/03/26	P(other)		PFAS Over temperature
2659896	BH01 LF2 1.40 WATER UNKNOWN	18/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2659897	BH02 PFAS 3.56 WATER UNKNOWN	18/03/26	P(other)		PFAS Over temperature
2659898	BH02LF2 3.56 WATER UNKNOWN	18/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2659899	BH03 PFAS 3.17 WATER UNKNOWN	18/03/26	P(other)		PFAS Over temperature
2659900	BH03LF2 3.17 WATER UNKNOWN	18/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2659901	WS212PFAS 1.52 WATER UNKNOWN	18/03/26	P(other)		PFAS Over temperature
2659902	WS212LF2 1.54 WATER UNKNOWN	18/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2659903	SWSNE PFAS WATER UNKNOWN	18/03/26	P(other)		PFAS Over temperature
2659904	SWSNE1 WATER UNKNOWN	18/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2659905	SWSSWPFAS WATER UNKNOWN	18/03/26	P(other)		PFAS Over temperature
2659906	SWSSW1 WATER UNKNOWN	18/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).

Information in Support of the Analytical Results

Our Ref 26-06843
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report Ver 26.03.15

Certificate of Analysis

Certificate Number	26-07988	*Issued:*	20-Apr-26

Client Coopers (Chester) Ltd
Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Our Reference	26-07988
Client Reference ~	8353
Order No ~	10708-ST
Contract Title ~	Land Adjacent to Bealey Industrial Estate, Radcliffe
Description	12 Water No Information Supplied samples.
Date Received	02-Apr-26
Date Started	02-Apr-26
Date Completed	20-Apr-26
Test Procedures	Identified by prefix DETSn (details on request).
Notes	The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By



Reyhan Irfan
Operations Manager

Sample Deviations present. See Deviation Table Section for details.

Summary of Chemical Analysis
Water Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2666056	2666057	2666058	2666059	2666060	2666061
				Sample ID ~	BH01 PFAS	BH01 LF2	WS212 PFAS	WS212 LF2	BH02 PFAS	BH02 LF2
				Depth ~	1.30	1.30	1.48	1.48	3.54	3.54
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l		0.92		1.95		0.92
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l		< 0.10		< 0.10		< 0.10
Boron, Dissolved	DETSC 2306*	12	ug/l		115.8		113.1		147.4
Cadmium, Dissolved	DETSC 2306	0.03	ug/l		0.06		0.14		< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l		0.28		0.33		0.42
Copper, Dissolved	DETSC 2306	0.4	ug/l		3.29		1.33		0.48
Lead, Dissolved	DETSC 2306	0.09	ug/l		0.19		0.10		0.43
Mercury, Dissolved	DETSC 2306	0.01	ug/l		< 0.01		< 0.01		< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l		3.21		3.94		2.55
Selenium, Dissolved	DETSC 2306	0.25	ug/l		0.37		0.39		0.29
Vanadium, Dissolved	DETSC 2306	0.6	ug/l		1.12		< 0.60		< 0.60
Zinc, Dissolved	DETSC 2306	1.3	ug/l		163.1		100.3		94.71
Inorganics										
pH	DETSC 2008		pH		7.2		7.0		7.2
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l		280		630		350
Cyanide, Total	DETSC 2130	40	ug/l		< 40		< 40		< 40
Dissolved Organic Carbon	DETSC 2085	2	mg/l		5.9		5.1		14
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l		407		290		620
Sulphate as SO4	DETSC 2055	0.1	mg/l		160		140		240
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l		< 10		< 10		< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l		< 10		< 10		< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l		< 10		< 10		< 10
PAHs										
Naphthalene	DETSC 3304	0.05	ug/l		0.18		< 0.05		0.07
Acenaphthylene	DETSC 3304	0.01	ug/l		0.08		< 0.01		< 0.01

Summary of Chemical Analysis
Water Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2666056	2666057	2666058	2666059	2666060	2666061
				Sample ID ~	BH01 PFAS	BH01 LF2	WS212 PFAS	WS212 LF2	BH02 PFAS	BH02 LF2
				Depth ~	1.30	1.30	1.48	1.48	3.54	3.54
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Acenaphthene	DETSC 3304	0.01	ug/l		0.07		0.02		26
Fluorene	DETSC 3304	0.01	ug/l		0.06		0.01		3.1
Phenanthrene	DETSC 3304	0.01	ug/l		0.56		0.03		0.38
Anthracene	DETSC 3304	0.01	ug/l		0.19		< 0.01		0.18
Fluoranthene	DETSC 3304	0.01	ug/l		2.2		< 0.01		0.97
Pyrene	DETSC 3304	0.01	ug/l		2.2		< 0.01		0.72
Benzo(a)anthracene	DETSC 3304	0.01	ug/l		0.77		< 0.01		0.13
Chrysene	DETSC 3304	0.01	ug/l		0.89		< 0.01		0.16
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		2.2		0.01		0.19
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		0.51		< 0.01		0.06
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		1.0		< 0.01		0.13
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		0.93		< 0.01		0.11
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		0.17		< 0.01		0.02
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		1.0		< 0.01		0.12
PAH Total	DETSC 3304	0.2	ug/l		13		< 0.20		33
Phenols										
Phenol - Monohydric	DETSC 2130	100	ug/l		< 100		< 100		< 100
Per- and Polyfluoroalkyl substances (										
Perfluoro-n-butanoic acid (PFBA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3444*	3	ng/l	4.4		< 3.0		3.5	
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3444*	3	ng/l	< 3.0		4.1		< 3.0	
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3444*	3	ng/l	4.6		3.1		< 3.0	
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonamide (FBSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3444*	3	ng/l	3.7		3.3		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-octanoic acid (PFOA)	DETSC 3444*	3	ng/l	32		30		35	
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-hexanesulfonamide (FHxSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	

Summary of Chemical Analysis
Water Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No		2666056	2666057	2666058	2666059	2666060	2666061
Sample ID ~		BH01 PFAS	BH01 LF2	WS212 PFAS	WS212 LF2	BH02 PFAS	BH02 LF2
Depth ~		1.30	1.30	1.48	1.48	3.54	3.54
Other ID ~							
Sample Type ~		WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
Sampling Date ~		31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026
Sampling Time ~		n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-decanoic acid (PFDA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3444*	9.68	ng/l	< 9.7		< 9.7		< 9.7	

Summary of Chemical Analysis
Water Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2666062	2666063	2666064	2666065	2666066	2666067
				Sample ID ~	BH03 PFAS	BH03 LF2	SWSNE PFAS	SWSNE LF2	SWSSW PFAS	SWSSW LF2
				Depth ~	3.18	3.18				
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Metals										
Arsenic, Dissolved	DETSC 2306	0.16	ug/l		0.67		1.80		1.58
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l		< 0.10		< 0.10		< 0.10
Boron, Dissolved	DETSC 2306*	12	ug/l		89.23		49.60		72.26
Cadmium, Dissolved	DETSC 2306	0.03	ug/l		< 0.03		< 0.03		< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l		< 0.25		1.20		0.75
Copper, Dissolved	DETSC 2306	0.4	ug/l		0.70		2.35		1.69
Lead, Dissolved	DETSC 2306	0.09	ug/l		0.12		1.08		0.45
Mercury, Dissolved	DETSC 2306	0.01	ug/l		< 0.01		< 0.01		< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l		2.65		1.95		1.91
Selenium, Dissolved	DETSC 2306	0.25	ug/l		< 0.25		< 0.25		< 0.25
Vanadium, Dissolved	DETSC 2306	0.6	ug/l		< 0.60		0.66		0.70
Zinc, Dissolved	DETSC 2306	1.3	ug/l		105.1		76.72		69.60
Inorganics										
pH	DETSC 2008		pH		7.1		7.4		7.3
Alkalinity as CaCO3 (Automated)	DETSC 2030	10	mg/l		88		88		200
Cyanide, Total	DETSC 2130	40	ug/l		< 40		< 40		< 40
Dissolved Organic Carbon	DETSC 2085	2	mg/l		3.9		5.5		6.3
Total Hardness as CaCO3	DETSC 2303	0.1	mg/l		310		84.3		104
Sulphate as SO4	DETSC 2055	0.1	mg/l		120		25		21
Petroleum Hydrocarbons										
Aliphatic C5-C6	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l		< 1.0		6.5		< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l		< 1.0		16		< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l		< 1.0		37		< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l		< 1.0		12		< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l		< 10		< 71.4		< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l		< 0.1		< 0.1		< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C12-C16	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l		< 1.0		< 1.0		< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l		< 10		< 10		< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	ug/l		< 10		< 71.7		< 10
PAHs										
Naphthalene	DETSC 3304	0.05	ug/l		< 0.05		< 0.05		< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l		< 0.01		< 0.01		< 0.01

Summary of Chemical Analysis
Water Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

				Lab No	2666062	2666063	2666064	2666065	2666066	2666067
				Sample ID ~	BH03 PFAS	BH03 LF2	SWSNE PFAS	SWSNE LF2	SWSSW PFAS	SWSSW LF2
				Depth ~	3.18	3.18				
				Other ID ~						
				Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
				Sampling Date ~	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Acenaphthene	DETSC 3304	0.01	ug/l		0.13		< 0.01		< 0.01
Fluorene	DETSC 3304	0.01	ug/l		0.02		< 0.01		< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l		0.10		0.02		0.02
Anthracene	DETSC 3304	0.01	ug/l		0.03		< 0.01		< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l		0.20		< 0.01		< 0.01
Pyrene	DETSC 3304	0.01	ug/l		0.20		< 0.01		< 0.01
Benzo(a)anthracene	DETSC 3304	0.01	ug/l		0.09		< 0.01		< 0.01
Chrysene	DETSC 3304	0.01	ug/l		0.12		< 0.01		< 0.01
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l		0.17		< 0.01		0.01
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l		0.06		< 0.01		< 0.01
Benzo(a)pyrene	DETSC 3304	0.01	ug/l		0.11		< 0.01		< 0.01
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l		0.11		< 0.01		< 0.01
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l		0.02		< 0.01		< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l		0.11		< 0.01		< 0.01
PAH Total	DETSC 3304	0.2	ug/l		1.5		< 0.20		< 0.20
Phenols										
Phenol - Monohydric	DETSC 2130	100	ug/l		< 100		< 100		< 100
Per- and Polyfluoroalkyl substances (										
Perfluoro-n-butanoic acid (PFBA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-pentanoic acid (PFPeA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonate (PFBS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-hexanesulfonate (4-2 FTSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-hexanoic acid (PFHxA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-pentanesulfonate (PFPeS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Tetrafluoro-2-(heptafluoropropoxy)-propanoic acid (HFPO-DA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-butanesulfonamide (FBSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-heptanoic acid (PFHpA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Dodecafluoro-3H-4,8-dioxanonanoate (DONA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
1H,1H,2H,2H-perfluoro-1-octanesulfonate (6-2 FTS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-octanoic acid (PFOA)	DETSC 3444*	3	ng/l	30		27		24	
Perfluoro-1-heptanesulfonate (PFHpS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-1-hexanesulfonamide (FHxSA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluoro-n-nonanoic acid (PFNA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear+Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	

Summary of Chemical Analysis
Water Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Lab No	2666062	2666063	2666064	2666065	2666066	2666067	
Sample ID ~	BH03 PFAS	BH03 LF2	SWSNE PFAS	SWSNE LF2	SWSSW PFAS	SWSSW LF2	
Depth ~	3.18	3.18					
Other ID ~							
Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	
Sampling Date ~	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	
Test	**Method**	**LOD**	**Units**				
1H,1H,2H,2H-perfluoro-1-decanesulfonate (8-2 FTSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-nonanesulfonate (PFNS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-decanoic acid (PFDA)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-decanesulfonate (PFDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-undecanoic acid (PFUdA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-octanesulfonamide (PFOSA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonate (L-PFUdS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-dodecanoic acid (PFDoA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-dodecanesulfonate (L-PFDoS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tridecanoic acid (PFTrDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-tridecanesulfonate (L-PFTrDS)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-n-tetradecanoic acid (PFTDA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluorohexanesulfonate (PFHxS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorohexanesulfonate (PFHxS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Branched)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
Perfluorooctanesulfonate (PFOS) (Linear)	DETSC 3444*	3	ng/l	< 3.0		< 3.0		< 3.0	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	DETSC 3444*	10	ng/l	< 10		< 10		< 10	
Perfluoro-1-undecanesulfonic acid (L-PFUdS)	DETSC 3444*	9.68	ng/l	< 9.7		< 9.7		< 9.7	

Summary of Chemical Analysis
Water VOC Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2666057	2666059	2666061	2666063	2666065	2666067
			Sample ID ~	BH01 LF2	WS212 LF2	BH02 LF2	BH03 LF2	SWSNE LF2	SWSSW LF2
			Depth ~	1.30	1.48	3.54	3.18		
			Other ID ~						
			Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
			Sampling Date ~	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
VOCs									
Dichlorodifluoromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichlorofluoromethane	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Methylene Chloride	DETSC 3432*	27	ug/l	< 27	< 27	< 27	< 27	< 27	< 27
Trans-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Cis-1,2-dichloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2,2-dichloropropane	DETSC 3432*	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
Bromochloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	DETSC 3432	1	ug/l	< 1	1	< 1	4	< 1	< 1
1,1,1-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethylene	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	DETSC 3432	4	ug/l	< 4	< 4	< 4	< 4	< 4	< 4
cis-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Toluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-dichloropropene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-trichloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tetrachloroethylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromoethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Chlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
m+p-Xylene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
o-Xylene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Isopropylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-tetrachloroethane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Summary of Chemical Analysis
Water VOC Samples

Our Ref 26-07988
Client Ref ~ 8353
Contract Title ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

			Lab No	2666057	2666059	2666061	2666063	2666065	2666067
			Sample ID ~	BH01 LF2	WS212 LF2	BH02 LF2	BH03 LF2	SWSNE LF2	SWSSW LF2
			Depth ~	1.30	1.48	3.54	3.18		
			Other ID ~						
			Sample Type ~	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN	WATER UNKNOWN
			Sampling Date ~	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026	31/03/2026
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Bromobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-propylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1
TAME	DETSC 3432*	1	ug/l	< 1	< 1	< 1	< 1	< 1	< 1

Information in Support of the Analytical Results

Our Ref 26-07988
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Incorrect container for tests
2666056	BH01 PFAS 1.30 WATER UNKNOWN	31/03/26	P(other) x2		
2666057	BH01 LF2 1.30 WATER UNKNOWN	31/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2666058	WS212 PFAS 1.48 WATER UNKNOWN	31/03/26	P(other) x2		
2666059	WS212 LF2 1.48 WATER UNKNOWN	31/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2666060	BH02 PFAS 3.54 WATER UNKNOWN	31/03/26	P(other) x2		
2666061	BH02 LF2 3.54 WATER UNKNOWN	31/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2666062	BH03 PFAS 3.18 WATER UNKNOWN	31/03/26	P(other) x2		
2666063	BH03 LF2 3.18 WATER UNKNOWN	31/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2666064	SWSNE PFAS WATER UNKNOWN	31/03/26	P(other) x2		
2666065	SWSNE LF2 WATER UNKNOWN	31/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	
2666066	SWSSW PFAS WATER UNKNOWN	31/03/26	P(other) x2		
2666067	SWSSW LF2 WATER UNKNOWN	31/03/26	GB 1L, GV, PB 1L	pH/Cond (1 days)	

Key: P-Plastic G-Glass B-Bottle V-Vial

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

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
-MCERTS (accreditation only applies if report carries the MCERTS logo).

Information in Support of the Analytical Results

Our Ref 26-07988
Client Ref ~ 8353
Contract ~ Land Adjacent to Bealey Industrial Estate, Radcliffe

$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report Ver 26.03.15

MURRAY RIX

CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client Coopers (Chester) Ltd

Address Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Contract 8353 -
Land Adjacent to Bealey Industrial Estate, Radcliffe

Order Number 8353 (10007-LP)
Job Number MRN 24064/8
Date of Issue 03 May 2024
Page 1 of 6

Approved Signatories

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

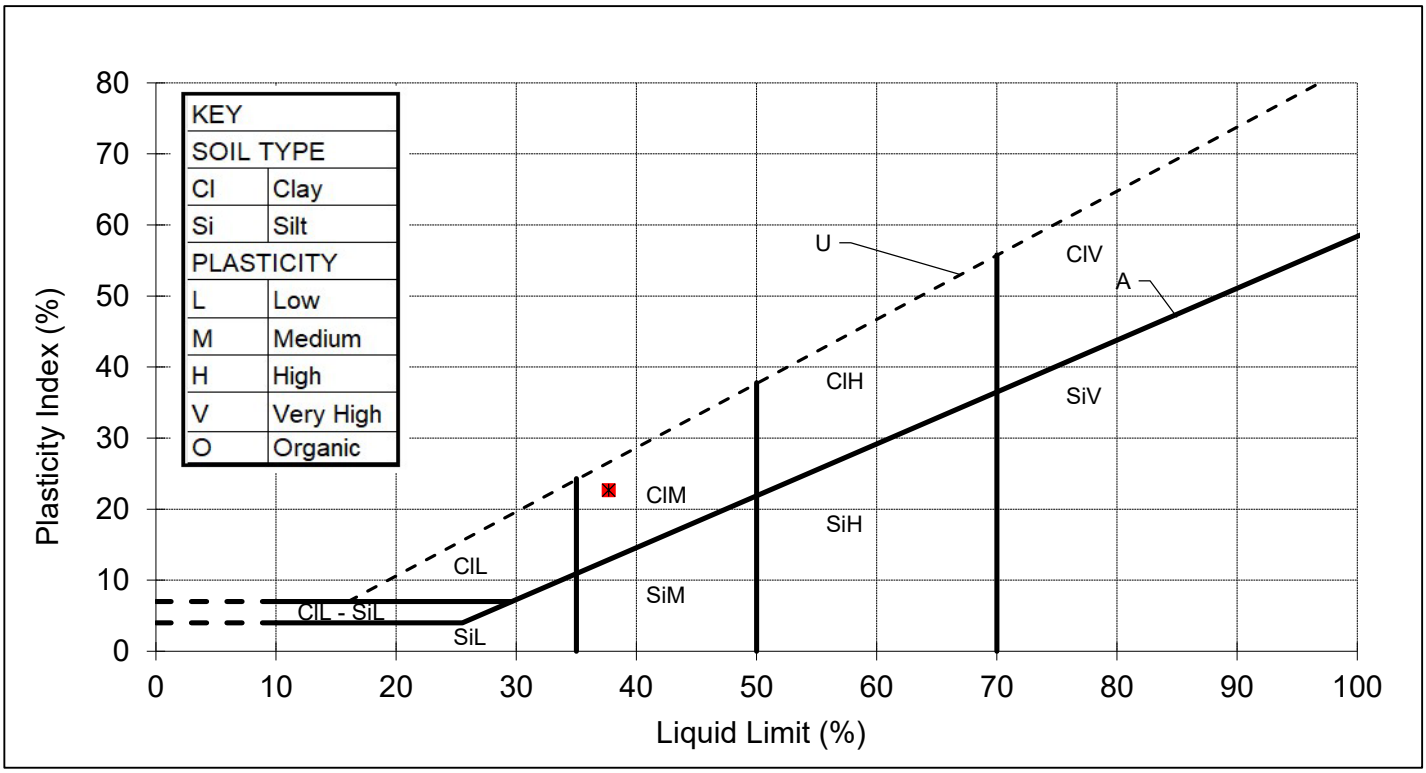
CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land Adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 24064/8

SAMPLE LABEL	WS01 1.6-2.2m (B)	DATE SAMPLED	21-Mar-24
SAMPLE No.	450601	DATE RECEIVED	08-Apr-24
DATE TESTED	16-Apr-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy CLAY.		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Hand Picked

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.3	36.8	1.027	
Determination 2 (avg)	18.7	36.6		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
26.0	38	15	23	98



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 03-May-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

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PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

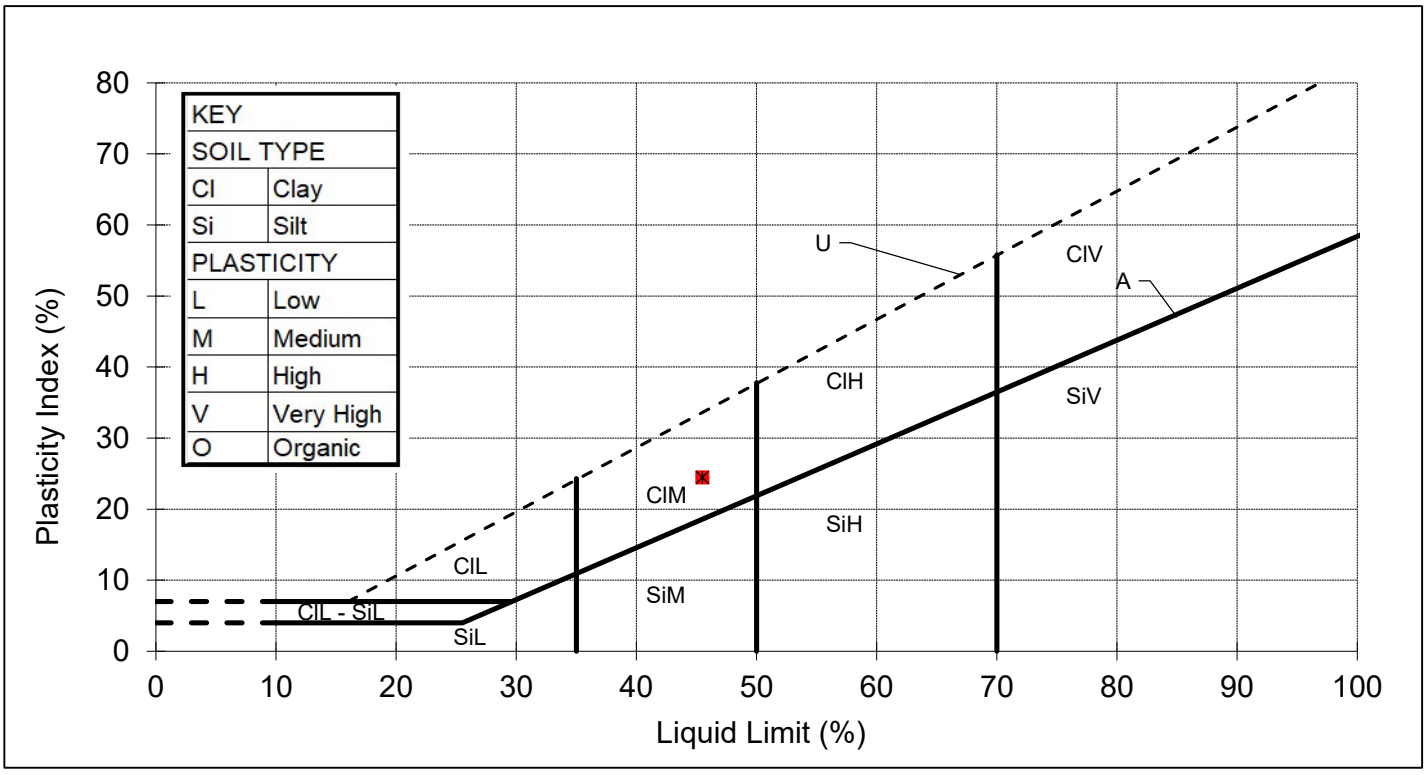
CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land Adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 24064/8

SAMPLE LABEL	WS02 0.8-1.70m (B)	DATE SAMPLED	21-Mar-24
SAMPLE No.	450602	DATE RECEIVED	08-Apr-24
DATE TESTED	16-Apr-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY.		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Hand Picked

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	18.5	44.6	1.025	
Determination 2 (avg)	18.7	44.2		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
34.6	45	21	24	89



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 03-May-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

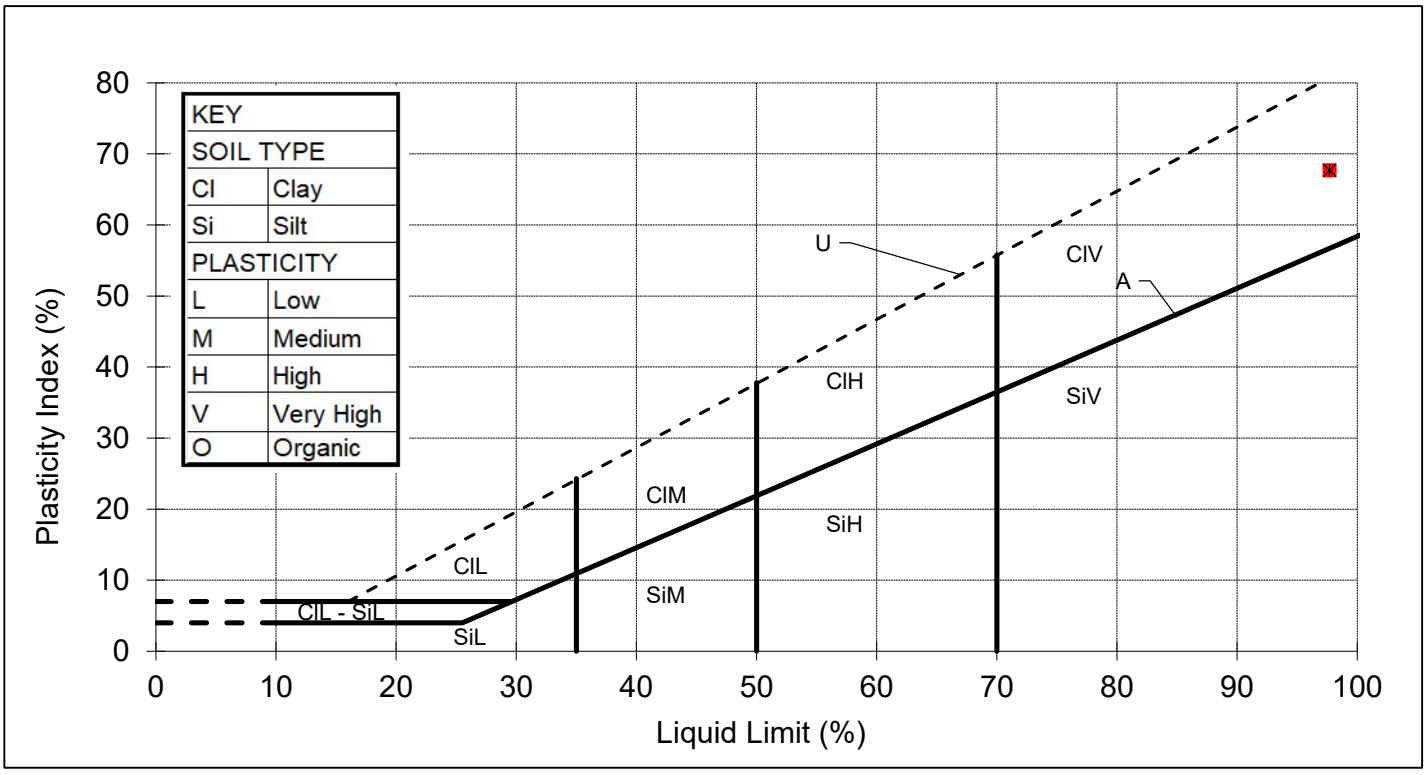
CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land Adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 24064/8

SAMPLE LABEL	WS06 1.1-1.60m (B)	DATE SAMPLED	22-Mar-24
SAMPLE No.	450603	DATE RECEIVED	08-Apr-24
DATE TESTED	16-Apr-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly organic CLAY.		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Hand Picked

Test Readings mm (average)		Moisture Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	24.2	105.6	0.926	
Determination 2 (avg)	24.1	105.4		

Natural Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
63.2	98	30	68	99



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 03-May-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

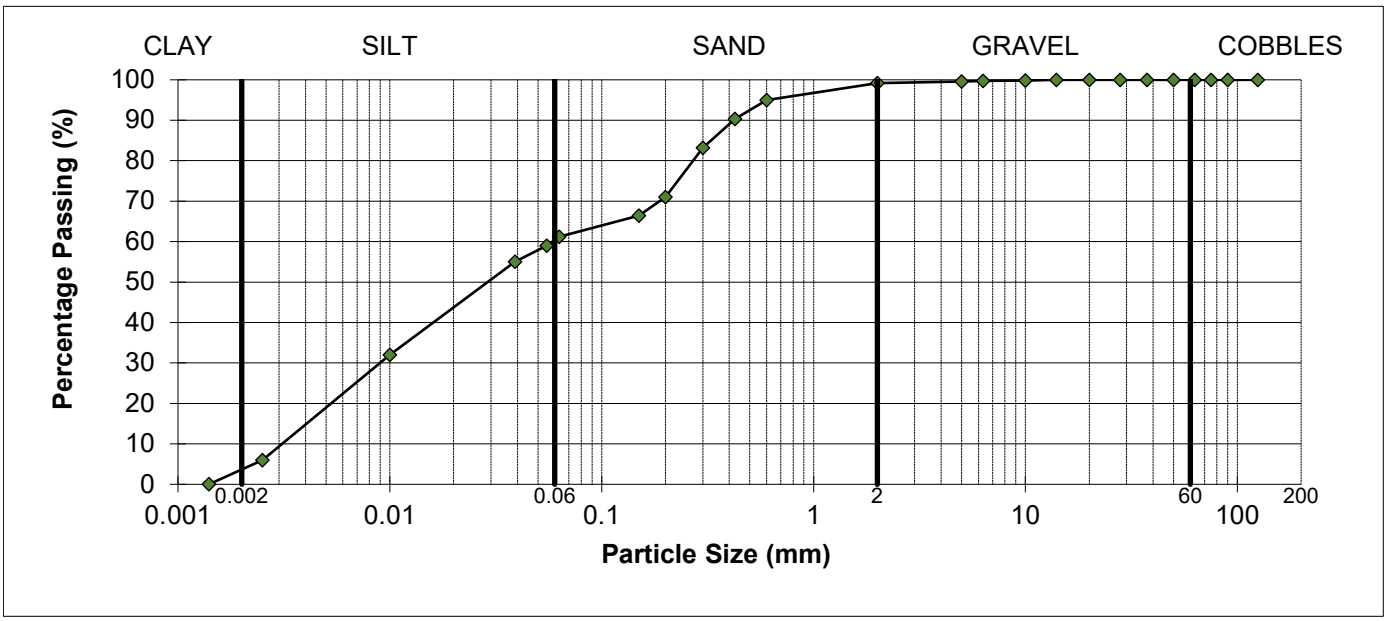
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land Adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 24064/8

SAMPLE LABEL	WS06 2.00-2.30m (B)	DATE SAMPLED	22-Mar-24
LAB SAMPLE No	450604	DATE RECEIVED	08-Apr-24
DATE TESTED	18-Apr-24	SAMPLED BY	Client

MATERIAL	Brown clayey sandy slightly gravelly SILT.
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	99	
90	100		0.6	95	
75	100		0.425	90	
63	100		0.3	83	
50	100		0.2	71	
37.5	100		0.15	66	
28	100		0.063	61	
20	100		0.055	59	
14	100		0.039	55	
10	100		0.01	32	
6.3	100		0.0025	6	
5	100		0.0014	0	



REMARKS
As received water content = 73.4%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 03-May-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

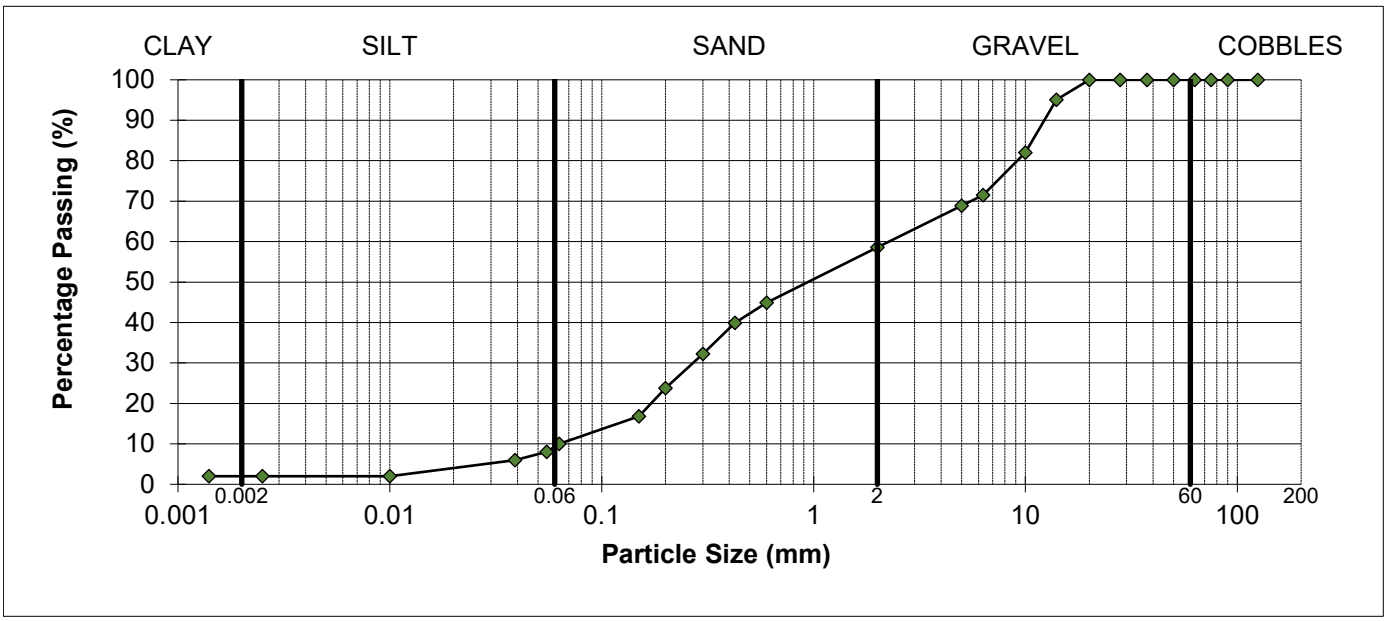
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land Adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 24064/8

SAMPLE LABEL	WS09 0.6-1.9m (B)	DATE SAMPLED	22-Mar-24
LAB SAMPLE No	450605	DATE RECEIVED	08-Apr-24
DATE TESTED	18-Apr-24	SAMPLED BY	Client

MATERIAL	Brown silty gravelly SAND.
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100		2	59	
90	100		0.6	45	
75	100		0.425	40	
63	100		0.3	32	
50	100		0.2	24	
37.5	100		0.15	17	
28	100		0.063	10	
20	100		0.055	8	
14	95		0.039	6	
10	82		0.01	2	
6.3	72		0.0025	2	
5	69		0.0014	2	



REMARKS
As received water content = 24.8%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 03-May-24

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client Coopers (Chester) Ltd

Address Park House
Sandpiper Court
Chester Business Park
Chester
CH4 9QU

Contract 8353 -
Land adjacent to Bealey Industrial Estate, Radcliffe

Order Number 10661-ST
Job Number MRN 26099/7
Date of Issue 26 March 2026
Page 1 of 6

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

3 Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation.

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

DETERMINATION OF CONSTITUENTS OF COARSE RECYCLED AGGREGATE

BS EN 933-11:2009

CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 26099/7

SAMPLE DETAILS

Laboratory sample number	:	6044101
Site mark	:	BH1 0.0-4.45m
Advised source	:	As Client & Site above
Material	:	MADE GROUND
Certificate of sampling received	:	No
Date and time of sampling	:	Not advised
Date received at Laboratory	:	04-Mar-26
Date of start of test	:	06-Mar-26
Sampling Location	:	Site
Method of sampling	:	BS EN 932-1 : 1997
Sampled by	:	Client
Mass of dry sample tested	:	50 kg
Drying Temperature	:	110 ± 5°C

RESULT

Constituent	Description	Proportion (%)
Rc	Concrete, Concrete products, Mortar, Concrete masonry units	**15**
Ru	Unbound aggregate, Natural stone, Hydraulically bound aggregate	**54**
Rb	Clay masonry units (i.e. bricks & tiles), Calcium silicate masonry units, Aerated non-floating concrete	**8.7**
Ra	Bituminous materials	**0.0**
Rg	Glass	**0.0**
X	Other: Cohesive (i.e. clay & soil), Metals (ferrous & non-ferrous), Non-floating wood, plastic & rubber, Gypsum plaster	**23**
FL	Floating Particles (cm^3/kg)	**0.8**

Comment
Class X was mainly seen to be cohesive material.

SIGNED

NAME O.P. Davies BA (Hons) DATE 26-Mar-26
(Director / Head of Laboratory)

M U R R A Y R I X

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TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

DETERMINATION OF CONSTITUENTS OF COARSE RECYCLED AGGREGATE

BS EN 933-11:2009

CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 26099/7

SAMPLE DETAILS

Laboratory sample number	:	6044102
Site mark	:	BH2 0.0-1.65m
Advised source	:	As Client & Site above
Material	:	MADE GROUND
Certificate of sampling received	:	No
Date and time of sampling	:	Not advised
Date received at Laboratory	:	04-Mar-26
Date of start of test	:	06-Mar-26
Sampling Location	:	Site
Method of sampling	:	BS EN 932-1 : 1997
Sampled by	:	Client
Mass of dry sample tested	:	50 kg
Drying Temperature	:	110 ± 5°C

RESULT

Constituent	Description	Proportion (%)
Rc	Concrete, Concrete products, Mortar, Concrete masonry units	**7.2**
Ru	Unbound aggregate, Natural stone, Hydraulically bound aggregate	**1.8**
Rb	Clay masonry units (i.e. bricks & tiles), Calcium silicate masonry units, Aerated non-floating concrete	**52**
Ra	Bituminous materials	**0.0**
Rg	Glass	**0.0**
X	Other: Cohesive (i.e. clay & soil), Metals (ferrous & non-ferrous), Non-floating wood, plastic & rubber, Gypsum plaster	**39**
FL	Floating Particles (cm^3/kg)	**0.2**

Comment
Class X was mainly seen to be cohesive material.

SIGNED

NAME O.P. Davies BA (Hons) DATE 26-Mar-26
(Director / Head of Laboratory)

M U R R A Y R I X

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TEL 0161 475 0870

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TEST CERTIFICATE

DETERMINATION OF CONSTITUENTS OF COARSE RECYCLED AGGREGATE

BS EN 933-11:2009

CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 26099/7

SAMPLE DETAILS

Laboratory sample number	:	6044103
Site mark	:	BH2 3.0-5.45m
Advised source	:	As Client & Site above
Material	:	MADE GROUND
Certificate of sampling received	:	No
Date and time of sampling	:	Not advised
Date received at Laboratory	:	04-Mar-26
Date of start of test	:	06-Mar-26
Sampling Location	:	Site
Method of sampling	:	BS EN 932-1 : 1997
Sampled by	:	Client
Mass of dry sample tested	:	50 kg
Drying Temperature	:	110 ± 5°C

RESULT

Constituent	Description	Proportion (%)
Rc	Concrete, Concrete products, Mortar, Concrete masonry units	**32**
Ru	Unbound aggregate, Natural stone, Hydraulically bound aggregate	**24**
Rb	Clay masonry units (i.e. bricks & tiles), Calcium silicate masonry units, Aerated non-floating concrete	**1.8**
Ra	Bituminous materials	**0.0**
Rg	Glass	**0.0**
X	Other: Cohesive (i.e. clay & soil), Metals (ferrous & non-ferrous), Non-floating wood, plastic & rubber, Gypsum plaster	**42**
FL	Floating Particles (cm^3/kg)	**0.0**

Comment
Class X was mainly seen to be cohesive material.

SIGNED

NAME O.P. Davies BA (Hons) DATE 26-Mar-26
(Director / Head of Laboratory)

M U R R A Y R I X

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TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

DETERMINATION OF CONSTITUENTS OF COARSE RECYCLED AGGREGATE

BS EN 933-11:2009

CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 26099/7

SAMPLE DETAILS

Laboratory sample number	:	6044104
Site mark	:	BH3 0.0-2.45m
Advised source	:	As Client & Site above
Material	:	MADE GROUND
Certificate of sampling received	:	No
Date and time of sampling	:	Not advised
Date received at Laboratory	:	04-Mar-26
Date of start of test	:	06-Mar-26
Sampling Location	:	Site
Method of sampling	:	BS EN 932-1 : 1997
Sampled by	:	Client
Mass of dry sample tested	:	50 kg
Drying Temperature	:	110 ± 5°C

RESULT

Constituent	Description	Proportion (%)
Rc	Concrete, Concrete products, Mortar, Concrete masonry units	**16**
Ru	Unbound aggregate, Natural stone, Hydraulically bound aggregate	**51**
Rb	Clay masonry units (i.e. bricks & tiles), Calcium silicate masonry units, Aerated non-floating concrete	**9.6**
Ra	Bituminous materials	**0.0**
Rg	Glass	**0.0**
X	Other: Cohesive (i.e. clay & soil), Metals (ferrous & non-ferrous), Non-floating wood, plastic & rubber, Gypsum plaster	**24**
FL	Floating Particles (cm^3/kg)	**0.2**

Comment
Class X was mainly seen to be cohesive material.

SIGNED

NAME O.P. Davies BA (Hons) DATE 26-Mar-26
(Director / Head of Laboratory)

M U R R A Y R I X

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

DETERMINATION OF CONSTITUENTS OF COARSE RECYCLED AGGREGATE

BS EN 933-11:2009

CLIENT	Coopers (Chester) Ltd
SITE	8353 - Land adjacent to Bealey Industrial Estate, Radcliffe
JOB NUMBER	MRN 26099/7

SAMPLE DETAILS

Laboratory sample number	:	6044103
Site mark	:	BH2 3.0-5.45m
Advised source	:	As Client & Site above
Material	:	MADE GROUND
Certificate of sampling received	:	No
Date and time of sampling	:	Not advised
Date received at Laboratory	:	04-Mar-26
Date of start of test	:	06-Mar-26
Sampling Location	:	Site
Method of sampling	:	BS EN 932-1 : 1997
Sampled by	:	Client
Mass of dry sample tested	:	50 kg
Drying Temperature	:	110 ± 5°C

RESULT

Constituent	Description	Proportion (%)
Rc	Concrete, Concrete products, Mortar, Concrete masonry units	**0.0**
Ru	Unbound aggregate, Natural stone, Hydraulically bound aggregate	**95**
Rb	Clay masonry units (i.e. bricks & tiles), Calcium silicate masonry units, Aerated non-floating concrete	**0.0**
Ra	Bituminous materials	**0.0**
Rg	Glass	**0.0**
X	Other: Cohesive (i.e. clay & soil), Metals (ferrous & non-ferrous), Non-floating wood, plastic & rubber, Gypsum plaster	**4.6**
FL	Floating Particles (cm^3/kg)	**0.0**

Comment
Class X was mainly seen to be cohesive material.

SIGNED

NAME O.P. Davies BA (Hons) DATE 26-Mar-26
(Director / Head of Laboratory)

Appendix 5

Ground Gas Monitoring Results

Gas Monitor Calibration Certificates

Gas Ventilation Calculations

Gas Membrane Product Specification

coopers

chartered consulting engineers

Project Name: Land Adjacent to Bealey Industrial Estate, Radcliffe
Project No. 8353
Prepared by: LP
Checked by: BH

Date of Production: 03/04/2024

GROUND GAS MONITORING RECORD SUMMARY SHEET

Borehole Reference	Response Depth (m-bgl)	Date	Time	Temp (°c)	Gas Analyser	Weather Conditions	CH_4 (peak) (%)	CH_4 (steady) (%)	CO_2 (peak) (%)	CO_2 (steady) (%)	O_2 (min.) (%)	O_2 (steady) (%)	H_2S (peak) (ppm)	CO (peak) (ppm)	Flow (initial) (l/hr)	Flow (steady) (l/hr)	TWL (m - bgl)	Atmos. Pressure (mbar)	Remarks
WS01	0.50-1.6m	02/04/2024	15:03:38	13	GA5000	Sunny/Cloudy	0.0	0.0	2.6	2.6	18.1	18.1	0	1	0.1	0.3	Dry	997	Monitored successfully
		05/04/2024	10:24:35	14	GA5000	Overcast/Rain	0.1	0.1	3.3	3.3	17.0	17.0	0	2	0.2	0.3	Dry	991	Monitored successfully
		10/05/2024	12:23:16	21	GA5000	Sunny	0.1	0.1	5.0	5.0	15.8	15.9	0	2	0.0	0.1	Dry	1020	Monitored successfully
		14/06/2024	13:17:43	17	GA5000	Overcast	0.0	0.0	5.8	5.7	15.0	15.0	0	0	0.1	0.2	Dry	993	Monitored successfully
		21/06/2024	10:01:38	18	GA5000	Sunny	0.0	0.0	6.1	6.0	14.6	14.7	0	0	0.1	0.3	Dry	1007	Monitored successfully
		28/06/2024	10:11:00	16	GA5000	Overcast/rain	0.0	0.0	5.2	5.1	17.6	17.7	0	1	0.1	0.3	Dry	1008	Monitored successfully
WS02	1.00-3.00m	02/04/2024	14:00:29	13	GA5000	Sunny/Cloudy	0.0	0.0	2.1	2.1	19.5	19.5	0	1	0.1	0.3	2.02	998	Monitored successfully
		05/04/2024	12:13:18	14	GA5000	Overcast/Rain	0.1	0.1	2.6	2.6	19.0	19.0	0	1	0.1	0.3	2.02	992	Monitored successfully
		10/05/2024	12:36:49	21	GA5000	Sunny	0.1	0.1	3.3	3.3	17.2	17.3	0	2	0.0	0.0	2.31	1020	Monitored successfully
		14/06/2024	15:05:31	17	GA5000	Overcast	0.0	0.0	3.8	3.8	17.6	17.6	0	1	0.0	0.2	2.35	993	Monitored successfully
		21/06/2024	11:59:19	18	GA5000	Sunny	0.0	0.0	3.8	3.8	18.1	18.1	0	2	0.0	0.2	2.39	1008	Monitored successfully
		28/06/2024	11:49:00	16	GA5000	Overcast/rain	0.0	0.0	3.4	3.1	18.9	19.2	0	1	0.1	0.4	2.37	1009	Monitored successfully
WS03	0.50-1.00m	02/04/2024	13:12:21	13	GA5000	Sunny/Cloudy	0.1	0.1	1.4	1.4	20.5	20.5	0	1	0.1	0.2	Dry	998	Monitored successfully
		05/04/2024	10:37:29	14	GA5000	Overcast/Rain	0.1	0.0	1.7	1.6	19.2	19.3	0	1	0.1	0.3	Dry	991	Monitored successfully
		10/05/2024	12:09:12	21	GA5000	Sunny	0.1	0.1	1.8	1.7	18.6	18.7	1	2	0.1	0.2	Dry	1020	Monitored successfully
		14/06/2024	13:38:10	17	GA5000	Overcast	0.0	0.0	2.6	2.6	18.4	18.4	0	1	0.1	0.2	Dry	993	Monitored successfully
		21/06/2024	10:19:52	18	GA5000	Sunny	0.0	0.0	2.8	2.7	17.8	17.9	0	1	0.1	0.3	Dry	1007	Monitored successfully
		28/06/2024	10:27:00	16	GA5000	Overcast/rain	0.0	0.0	2.9	2.8	19.0	19.1	0	1	0.1	0.3	Dry	1008	Monitored successfully
WS04	1.00-2.00m	02/04/2024	14:13:58	13	GA5000	Sunny/Cloudy	0.0	0.0	1.6	1.5	20.0	20.0	0	1	0.0	0.1	Dry	998	Monitored successfully
		05/04/2024	11:42:07	14	GA5000	Overcast/Rain	0.1	0.1	2.1	2.1	19.3	19.4	0	1	0.1	0.4	Dry	992	Monitored successfully
		10/05/2024	12:48:33	21	GA5000	Sunny	0.1	0.0	2.4	2.4	19.2	19.2	0	2	0.0	0.0	Dry	1020	Monitored successfully
		14/06/2024	15:24:03	17	GA5000	Overcast	0.0	0.0	3.0	3.0	17.9	18.2	0	1	0.1	0.3	Dry	993	Monitored successfully
		21/06/2024	12:34:43	18	GA5000	Sunny	0.0	0.0	0.1	3.0	21.4	18.7	0	1	0.0	0.2	Dry	1008	Monitored successfully
		28/06/2024	12:02:00	16	GA5000	Overcast/rain	0.0	0.0	3.0	2.9	19.5	19.6	0	1	0.1	0.3	Dry	1009	Monitored successfully
WS05	0.50-1.50m	02/04/2024	12:57:51	13	GA5000	Sunny/Cloudy	0.1	0.1	2.2	2.2	18.8	18.8	0	1	0.0	0.0	Dry	998	Monitored successfully
		05/04/2024	11:02:44	14	GA5000	Overcast/Rain	0.0	0.0	3.0	2.9	17.1	17.2	0	1	0.0	0.0	Dry	992	Monitored successfully
		10/05/2024	11:47:01	21	GA5000	Sunny	0.1	0.1	3.3	3.3	16.7	16.8	1	1	0.0	0.0	Dry	1020	Monitored successfully
		14/06/2024	14:18:00	17	GA5000	Overcast	0.0	0.0	3.9	3.9	16.1	16.2	0	1	0.1	0.2	Dry	993	Monitored successfully
		21/06/2024	10:51:51	18	GA5000	Sunny	0.0	0.0	4.0	3.9	15.3	15.4	1	2	0.0	0.1	Dry	1008	Monitored successfully
		28/06/2024	11:03:00	16	GA5000	Overcast/rain	0.0	0.0	4.2	4.0	17.4	17.6	0	1	0.1	0.3	Dry	1009	Monitored successfully
WS06	0.50-1.10m	02/04/2024	12:38:14	13	GA5000	Sunny/Cloudy	0.1	0.1	0.3	0.3	20.9	21.0	0	3	0.1	0.1	0.67	997	Monitored successfully
		05/04/2024	11:56:36	14	GA5000	Overcast/Rain	0.1	0.1	0.4	0.4	21.5	21.5	0	2	0.4	2.1	0.67	991	Monitored successfully
		10/05/2024	11:17:14	21	GA5000	Sunny	0.2	0.1	5.6	5.4	10.7	10.7	1	2	0.0	0.0	0.82	1019	Monitored successfully
		14/06/2024	14:46:32	17	GA5000	Overcast	0.0	0.0	6.4	6.2	13.9	14.1	0	0	0.0	0.0	0.76	993	Monitored successfully
		21/06/2024	11:25:00	18	GA5000	Sunny	0.0	0.0	7.1	6.9	11.6	11.7	0	2	0.0	0.0	0.99	1008	Monitored successfully
		28/06/2024	11:35:00	16	GA5000	Overcast/rain	0.0	0.0	8.3	8.0	11.8	11.8	0	1	0.0	0.0	0.77	1009	Monitored successfully
WS07	1.00-3.00m	02/04/2024	12:16:39	13	GA5000	Sunny/Cloudy	0.1	0.1	2.8	2.7	17.3	17.3	0	1	0.0	0.0	1.33	997	Monitored successfully
		05/04/2024	11:24:03	14	GA5000	Overcast/Rain	0.0	0.0	3.0	3.0	16.6	16.6	0	1	0.1	0.3	1.21	992	Monitored successfully
		10/05/2024	11:32:13	21	GA5000	Sunny	0.1	0.1	4.2	4.1	16.3	16.5	1	1	0.0	0.2	1.55	1020	Monitored successfully
		14/06/2024	14:32:24	17	GA5000	Overcast	0.0	0.0	4.6	4.5	16.8	16.9	0	1	0.1	0.3	1.59	993	Monitored successfully
		21/06/2024	11:05:23	18	GA5000	Sunny	0.0	0.0	4.8	4.6	15.9	16.2	0	2	0.0	0.1	1.55	1008	Monitored successfully
		28/06/2024	11:19:00	16	GA5000	Overcast/rain	0.0	0.0	4.4	4.2	18.7	18.8	0	1	0.0	0.1	1.52	1009	Monitored successfully
WS08	1.00-1.80m	02/04/2024	13:30:26	13	GA5000	Sunny/Cloudy	0.1	0.1	3.0	2.9	17.9	18.0	0	1	0.0	0.1	Dry	998	Monitored successfully
		05/04/2024	10:49:16	14	GA5000	Overcast/Rain	0.0	0.0	3.1	3.0	16.9	17.1	0	1	0.1	0.2	Dry	991	Monitored successfully
		10/05/2024	11:58:25	21	GA5000	Sunny	0.1	0.1	3.6	3.4	16.9	17.1	1	1	0.0	0.0	Dry	1020	Monitored successfully
		14/06/2024	13:57:46	17	GA5000	Overcast	0.0	0.0	4.6	4.3	16.2	16.5	0	1	0.1	0.2	Dry	993	Monitored successfully
		21/06/2024	10:32:10	18	GA5000	Sunny	0.0	0.0	4.6	4.3	15.5	15.6	0	2	0.0	0.0	Dry	1008	Monitored successfully
		28/06/2024	10:44:00	16	GA5000	Overcast/rain	0.0	0.0	4.5	4.3	18.1	18.3	0	1	0.1	0.4	Dry	1009	Monitored successfully
WS09	1.00-2.45m	02/04/2024	14:36:08	13	GA5000	Sunny/Cloudy	0.0	0.0	2.9	2.9	17.2	17.3	0	1	0.1	0.2	Dry	999	Monitored successfully
		05/04/2024	10:09:13	14	GA5000	Overcast/Rain	0.1	0.1	3.0	2.5	17.3	17.9	0	1	0.0	0.0	Dry	990	Monitored successfully
		10/05/2024	13:02:03	21	GA5000	Sunny	0.1	0.1	4.4	4.2	15.8	16	0	2	0	0.1	Dry	1019	Monitored successfully
		14/06/2024	13:00:23	17	GA5000	Overcast	0	0	5.1	4.6	16.4	16.9	0	0	0.1	0.3	Dry	992	Monitored successfully
		21/06/2024	09:47:18	18	GA5000	Sunny	0	0	5.3	5	15.7	15.9	0	1	0.1	0.3	Dry	1008	Monitored successfully
		28/06/2024	09:58:00	16	GA5000	Overcast/rain	0	0	4.8	4.6	17.2	17.4	0	1	0.1	0.3	Dry	1008	Monitored successfully

Visit Conditions Summary

Visit Date	Temperature	Atmos Pressure	Pressure Trend	Weather
02/04/2024	13	997	Rising	Sunny/Cloudy
05/04/2024	14	991	Rising	Overcast/Rain
10/05/2024	21	1020	Steady	Sunny
14/06/2024	17	993	Rising	Overcast
21/06/2024	18	1007	Rising	Sunny
28/06/2024	16	1008	Rising	Overcast/rain

coopers

chartered consulting engineers

Project Name: Land Adjacent to Bealey Industrial Estate, Radcliffe
Project No. 8353
Prepared by: LP
Checked by: BH

Date of Production:
15/10/2024

GROUND GAS MONITORING RECORD SUMMARY SHEET

Borehole Reference	Response Depth (m-bgl)	Date	Time	Temp (°c)	Gas Analyser	Weather Conditions	CH_4 (peak) (%)	CH_4 (steady) (%)	CO_2 (peak) (%)	CO_2 (steady) (%)	O_2 (min.) (%)	O_2 (steady) (%)	H_2S (peak) (ppm)	CO (peak) (ppm)	Flow (initial) (l/hr)	Flow (steady) (l/hr)	TWL (m - bgl)	Atmos. Pressure (mbar)	Remarks
WS101	1.00-3.50m	08/10/2024	15:46:00	15	GA5000	Cloudy/Light Rain	1.4	1.4	4.9	4.8	0.5	0.9	0	4	0.0	0.1	3.20	985	Monitored successfully
		06/11/2024	10:57:00	11	GA5000	Cloudy	0.1	0.1	0.1	0.1	21.3	21.4	0	1	0.0	0.0	3.20	1025	Monitored successfully after replacing gas bung on arrival
		20/11/2024	11:04:29	2	GA5000	Overcast	1.5	1.5	5.4	5.4	0.5	0.5	0	0	0.1	0.2	Dry	1005	Monitored successfully
		04/12/2024	10:56:06	7	GA5000	Overcast	1.8	1.7	5.3	5.2	0.8	0.8	0	4	0.0	0.1	Dry	1014	Monitored successfully
		18/12/2024	11:16:00	11	GA5000	Overcast / Light rain	1.6	1.5	4.9	4.8	0.8	0.8	0	3	0.0	0.2	Dry	994	Monitored successfully
		06/01/2025	10:17:16	2	GA5000	Overcast	2.0	1.9	5.1	5.0	0.7	0.7	0	0	0.0	0.0	3.18	972	Monitored successfully
WS103	1.00-2.50m	08/10/2024	15:30:00	15	GA5000	Cloudy/Light Rain	0.1	0.1	1.7	1.7	19.1	19.1	0	3	0.1	0.3	Dry	986	Monitored successfully
		06/11/2024	10:17:00	11	GA5000	Cloudy	0.1	0.1	2.8	2.7	16.1	16.2	0	1	0.0	0.2	Dry	1025	Monitored successfully
		20/11/2024	11:24:30	2	GA5000	Overcast	0.1	0.1	3.0	3.0	17.5	17.5	0	1	0.0	0.1	Dry	1005	Monitored successfully
		04/12/2024	11:16:28	7	GA5000	Overcast	0.2	0.2	3.0	3.0	16.7	16.7	0	0	0.0	0.1	Dry	1015	Monitored successfully
		18/12/2024	11:31:00	11	GA5000	Overcast / Light rain	0.1	0.1	2.7	2.7	18.7	18.8	0	0	0.0	0.1	Dry	995	Monitored successfully
		06/01/2025	10:39:07	2	GA5000	Overcast	0.3	0.3	2.3	2.3	19.0	19.0	0	0	0.0	0.0	Dry	973	Monitored successfully
WS104	0.50-1.50m	08/10/2024	15:06:00	15	GA5000	Cloudy/Light Rain	0.1	0.1	1.4	1.4	19.5	19.5	0	2	0.1	0.2	Dry	986	Monitored successfully
		06/11/2024	10:33:00	11	GA5000	Cloudy	0.1	0.1	2.2	2.2	19.0	19.0	0	1	0.0	0.1	Dry	1026	Monitored successfully
		20/11/2024	11:42:00	2	GA5000	Overcast	0.2	0.1	1.6	1.6	21.7	21.7	0	0	0.1	0.3	Dry	1005	Monitored successfully
		04/12/2024	11:37:37	7	GA5000	Overcast	0.2	0.1	1.9	1.9	19.1	19.2	0	1	0.0	0.1	Dry	1015	Monitored successfully
		18/12/2024	11:48:00	11	GA5000	Overcast / Light rain	0.1	0.1	2.1	2.1	19.0	19.0	0	0	0.0	0.0	Dry	995	Monitored successfully
		06/01/2025	10:53:38	2	GA5000	Overcast	0.3	0.3	1.9	1.8	19.7	19.7	0	0	0.0	0.0	Dry	973	Monitored successfully

Visit Conditions Summary

Visit Date	Temperature	Atmos Pressure	Pressure Trend	Weather
08/10/2024	15	985	Falling	Cloudy/Light Rain
06/11/2024	11	1025	Rising	Cloudy
20/11/2024	2	1005	Steady	Overcast
04/12/2024	7	1014	Rising	Overcast
18/12/2024	11	994	Rising	Overcast / Light rain
06/01/2025	2	972	Rising	Overcast

Park House, Sandpiper Court,
Chester Business Park,
Chester, CH4 9QU

COOPERS is the trading name of Coopers (Chester) Limited.
Company registered in England & Wales. Company number 09730429.
Registered office Park House, Sandpiper Court, Chester, CH4 9QU

tel: 01244 684 910
web: www.coopers.co.uk
email: admin@coopers.co.uk

CERTIFICATION OF CALIBRATION

4533

Date Of Calibration: 26-Sep-2022

Certificate Number: G501314_2/31282

Issued by: QED Environmental Systems Ltd.

Customer: **Coopers**
Park House Sandpiper Court Chester Business Park
CHESTER CH4 9QU UNITED KINGDOM

Description: Gas Analyser

Model: GA5000

Serial Number: G501314

UKAS Accredited results:

Results after adjustment :

Methane (CH_4)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
5.0	4.9	0.072
15.0	14.9	0.13
60.0	59.7	0.42

Carbon Dioxide (CO_2)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
5.0	5.0	0.074
15.0	15.0	0.13
40.0	40.0	0.29

Oxygen (O_2)		
Certified Gas (%)	**Instrument Reading (%)**	**Uncertainty (%)**
21.2	21.3	0.25

The inwards assessment was carried out 16-Sep-2022.
The maximum adjustment is larger than the specification limit.
Inwards assessment data is available if requested.

All concentrations are molar.

CH_4, CO_2 readings recorded at : 31.7 °C ± 2.5 °C

O2 readings recorded at : 22.2 °C ± 2.5 °C

Barometric Pressure : 0991 mbar ± 4 mbar

Method of Test : The analyser is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure LP004.

Instrument has passed calibration as the measurement result is within the specification limit. The specification limit takes into account the measurement uncertainty.
The results relate only to the item calibrated

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance:114 IGC Instance:114

www.qedenv.com +44 (0) 333 800 0088 sales@qedenv.co.uk

QED Environmental Systems Ltd. Cyan Park - Unit 3, Jimmy Hill Way, Coventry, CV2 4QP, UNITED KINGDOM

Registered in England and Wales 1898734

CERTIFICATION OF CALIBRATION

4533

Date Of Calibration: 26-Sep-2022

Certificate Number: G501314_2/31282

Issued by: QED Environmental Systems Ltd.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Calibrations marked 'Non-UKAS Accredited results' on this certificate have been included for completeness.

Non-UKAS accredited results after adjustment:

Barometer (mbar)	
Reference	**Instrument Reading**
991	991

Additional Gas Cells		
Gas	**Certified Gas (ppm)**	**Instrument Reading (ppm)**
CO	499	499
H_2S	260	260

Internal Flow	
Applied (l/hr)	**Instrument Reading (l/hr)**
5.0	5.2
10.0	10.2

Date of Issue : 29-Sep-2022 **Approved by Signatory**

Laura McBride

Laboratory Inspection

End of Certificate

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Calibration Instance:114 IGC Instance:114

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QED Environmental Systems Ltd. Cyan Park - Unit 3, Jimmy Hill Way, Coventry, CV2 4QP, UNITED KINGDOM

Registered in England and Wales 1898734

Service Interval Statement

Service scheme for analyser G501314 has been changed from a 12-month service to 24-months. Next service will be due 26th September 2024.

Signed for and on behalf of:



Name: Leanne Yates

Position: Customer Service Manager

Date: 29th February 2024

QED Environmental Systems

USA office

QED Environmental Systems Inc.
2355 Bishop Circle W. Ann Arbor, MI 48108-3726, UNITED STATES

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CERTIFICATION OF CALIBRATION

PJLA Calibration
No. 66916

Date Of Calibration: 12-Nov-2024

Certificate Number: G510501_1/37077

Issued by: QED Environmental Systems Inc.

Customer: **COOPERS**
PARK HOUSE SANDPIPER COURT CHESTER BUISNESS PARK CHESTER, CH4 9QU
GB

Description:

Model: GA5000

Serial Number: G510501

Accredited Results:

Methane (CH4)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	4.8	0.42
15.0	14.8	0.66
60.0	59.7	1.03

Carbon Dioxide (CO2)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
5.0	4.9	0.43
15.0	14.9	0.71
39.9	40.0	1.19

Oxygen (O2)

Certified Gas (%)	Instrument Reading (%)	Uncertainty (%)
21.6	21.7	0.25

Gas cylinders are traceable and details can be provided if requested.

CH4, CO2 readings recorded at: 33.3 °C/92.0 °F

Barometric Pressure: 0995 mbar/29.39 "Hg

O2 readings recorded at: 24.6 °C/76.3 °F

Method of Test : The analyzer is calibrated in a temperature controlled chamber using a series of reference gases, in compliance with procedure ISP17.

Instrument has passed calibration as the measurement result is within the specification limit. The specification limit takes into account the measurement uncertainty.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with NIST requirements.

The calibration results published in this certificate were obtained using equipment capable of producing results that are traceable through NIST to the International System of Units (SI). Certification only applies to results shown. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

www.qedenv.com (800) 624-2026 info@qedenv.com

QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

Unit 7-8 Hawarden Business Park
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Deeside
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Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Cooper Associates
Park House
Sandpiper Court
Chester Business Park
Chester
Cheshire
CH4 9QU

Attention: Cooper Geotech

CERTIFICATE OF ANALYSIS

Date of report Generation:	21 October 2024
Customer:	Cooper Associates
Sample Delivery Group (SDG):	241014-53
Your Reference:	8353
Location:	Land Adjacent to Bealey Industrial Estate, Radelif
Report No:	744244
Order Number:	10221-LP

We received 3 samples on Monday October 14, 2024 and 3 of these samples were scheduled for analysis which was completed on Monday October 21, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Lauren Ellis
General Manager Western Europe Environmental

CERTIFICATE OF ANALYSIS

SDG: 241014-53 **Report Number:** 744244 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30514862	GRESHAM TUBE 01 WS04			08/10/2024
30514863	GRESHAM TUBE 02 WS03			08/10/2024
30514864	GRESHAM TUBE 03 WS01			08/10/2024

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241014-53 **Report Number:** 744244 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			30514862	30514863	30514864
Customer Sample Reference			GRESHAM TUBE 01 WS04	GRESHAM TUBE 02 WS03	GRESHAM TUBE 03 WS01
AGS Reference					
Depth (m)					
Container			Gresham Tube	Gresham Tube	Gresham Tube
Sample Type			G	G	G
Bulk Gas	All	NDPs: 0 Tests: 3	X	X	X

Validated

CERTIFICATE OF ANALYSIS

SDG: 241014-53 **Report Number:** 744244 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Bulk Gas

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	GRESHAM TUBE 01 WS04	GRESHAM TUBE 02 WS03	GRESHAM TUBE 03 WS01			
			Depth (m)	.	.	.			
			Sample Type	Gas (G)	Gas (G)	Gas (G)			
			Date Sampled	08/10/2024	08/10/2024	08/10/2024			
			Sample Time	.	.	.			
			Date Received	14/10/2024	14/10/2024	14/10/2024			
			SDG Ref	241014-53	241014-53	241014-53			
			Lab Sample No.(s)	30514862	30514863	30514864			
			AGS Reference						
Carbon monoxide(ppm)	<1 ppm	TM053		<1	<1	<1			
Hydrogen sulphide	<1 ppm	TM053		<1	<1	<1			
Hydrogen	<0.5 %	TM053		<0.5 @	<0.5 @	<0.5 @			
Oxygen	<0.5 %	TM053		18.5 @	18.1 @	1.86 @			
Nitrogen	<1 %	TM053		80.3 @	80.5 @	93.2 @			
Carbon monoxide	<0.05 %	TM053		<0.05 @	<0.05 @	<0.05 @			
Methane	<0.05 %	TM053		<0.05 @	<0.05 @	0.908 @			
Carbon dioxide	<0.05 %	TM053		1.18 @	1.43 @	4.02 @			
Bulk gas, Total	%	TM053		100 @	100 @	100 @			

Table of Results - Appendix

Method No	Description
TM053	Determination of Bulk Gas Composition

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 241014-53 **Report Number:** 744244 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Test Completion Dates

Lab Sample No(s)	30514862	30514863	30514864
Customer Sample Ref.	GRESHAM TUBE 01 WS04	GRESHAM TUBE 02 WS03	GRESHAM TUBE 03 WS01
AGS Ref.			
Depth			
Type	Gas (G)	Gas (G)	Gas (G)
Bulk Gas	21-Oct-2024	21-Oct-2024	21-Oct-2024

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Unit 7-8 Hawarden Business Park
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Deeside
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Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Cooper Associates
Park House
Sandpiper Court
Chester Business Park
Chester
Cheshire
CH4 9QU

Attention: Cooper Geotech

CERTIFICATE OF ANALYSIS

Date of report Generation:	21 November 2024
Customer:	Cooper Associates
Sample Delivery Group (SDG):	241113-125
Your Reference:	8353
Location:	Land Adjacent to Bealey Industrial Estate, Radelif
Report No:	747372
Order Number:	8353

We received 3 samples on Wednesday November 13, 2024 and 3 of these samples were scheduled for analysis which was completed on Thursday November 21, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Lauren Ellis
General Manager Western Europe Environmental

CERTIFICATE OF ANALYSIS

SDG: 241113-125 **Report Number:** 747372 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30664610	WS01			06/11/2024
30664611	WS03			06/11/2024
30664612	WS04			06/11/2024

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241113-125 **Report Number:** 747372 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			30664610	30664611	30664612
Customer Sample Reference			WS01	WS03	WS04
AGS Reference					
Depth (m)					
Container			Gresham Tube	Gresham Tube	Gresham Tube
Sample Type			G	G	G
Bulk Gas	All	NDPs: 0 Tests: 3	X	X	X

CERTIFICATE OF ANALYSIS

SDG: 241113-125 **Report Number:** 747372 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Bulk Gas

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4♦§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS01	WS03	WS04			
			Depth (m)	.	.	.			
			Sample Type	Gas (G)	Gas (G)	Gas (G)			
			Date Sampled	06/11/2024	06/11/2024	06/11/2024			
			Sample Time	.	.	.			
			Date Received	13/11/2024	13/11/2024	13/11/2024			
			SDG Ref	241113-125	241113-125	241113-125			
			Lab Sample No.(s)	30664610	30664611	30664612			
			AGS Reference						
Carbon monoxide(ppm)	<1 ppm	TM053		<1 @	<1 @	<1 @			
Hydrogen sulphide	<1 ppm	TM053		<1 @	<1 @	<1 @			
Hydrogen	<0.5 %	TM053		<0.5 @	<0.5 @	<0.5 @			
Oxygen	<0.5 %	TM053		21.6 @	17.1 @	19.6 @			
Nitrogen	<1 %	TM053		78.4 @	80.6 @	78.7 @			
Carbon monoxide	<0.05 %	TM053		<0.05 @	<0.05 @	<0.05 @			
Methane	<0.05 %	TM053		<0.05 @	<0.05 @	<0.05 @			
Carbon dioxide	<0.05 %	TM053		<0.05 @	2.31 @	1.69 @			
Bulk gas, Total	%	TM053		100 @	100 @	100 @			

Table of Results - Appendix

Method No	Description
TM053	Determination of Bulk Gas Composition

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 241113-125 **Report Number:** 747372 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Test Completion Dates

Lab Sample No(s)	30664610	30664611	30664612
Customer Sample Ref.	WS01	WS03	WS04
AGS Ref.			
Depth			
Type	Gas (G)	Gas (G)	Gas (G)
Bulk Gas	21-Nov-2024	21-Nov-2024	21-Nov-2024

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

19. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
4	**Matrix interference**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials andd soils which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2021).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Cooper Associates
Park House
Sandpiper Court
Chester Business Park
Chester
Cheshire
CH4 9QU

Attention: Cooper Geotech

CERTIFICATE OF ANALYSIS

Date of report Generation:	28 November 2024
Customer:	Cooper Associates
Sample Delivery Group (SDG):	241121-29
Your Reference:	8353
Location:	Land Adjacent to Bealey Industrial Estate, Radelif
Report No:	748549
Order Number:	10274-HF

We received 3 samples on Wednesday November 20, 2024 and 3 of these samples were scheduled for analysis which was completed on Thursday November 28, 2024. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.
The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:



Lauren Ellis
General Manager Western Europe Environmental

CERTIFICATE OF ANALYSIS

SDG: 241121-29 **Report Number:** 748549 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
30702685	WS 101			20/11/2024
30702686	WS 103			20/11/2024
30702687	WS 104			20/11/2024

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

SDG: 241121-29 **Report Number:** 748549 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water
Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			30702685	30702686	30702687
Customer Sample Reference			WS 101	WS 103	WS 104
AGS Reference					
Depth (m)					
Container			Gresham Tube	Gresham Tube	Gresham Tube
Sample Type			G	G	G
Bulk Gas	All	NDPs: 0 Tests: 3	X	X	X

CERTIFICATE OF ANALYSIS

SDG: 241121-29 **Report Number:** 748549 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Bulk Gas

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-4+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	WS 101	WS 103	WS 104			
			Depth (m)	.	.	.			
			Sample Type	Gas (G)	Gas (G)	Gas (G)			
			Date Sampled	20/11/2024	20/11/2024	20/11/2024			
			Sample Time	.	.	.			
			Date Received	20/11/2024	20/11/2024	20/11/2024			
			SDG Ref	241121-29	241121-29	241121-29			
			Lab Sample No.(s)	30702685	30702686	30702687			
			AGS Reference						
Carbon monoxide(ppm)	<1 ppm	TM053		<1	<1	<1			
Hydrogen sulphide	<1 ppm	TM053		<1	<1	<1			
Hydrogen	<0.5 %	TM053		<0.5	<0.5	<0.5			
Oxygen	<0.5 %	TM053		3.92	16.7	20.1			
Nitrogen	<1 %	TM053		90.8	80.7	78.6			
Carbon monoxide	<0.05 %	TM053		<0.05	<0.05	<0.05			
Methane	<0.05 %	TM053		0.891	<0.05	<0.05			
Carbon dioxide	<0.05 %	TM053		4.37	2.64	1.28			
Bulk gas, Total	%	TM053		100	100	100			

Table of Results - Appendix

Method No	Description
TM053	Determination of Bulk Gas Composition

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 241121-29 **Report Number:** 748549 **Superseded Report:**
Client Ref.: 8353 **Location:** Land Adjacent to Bealey Industrial Estate, Radelif

Test Completion Dates

Lab Sample No(s)	30702685	30702686	30702687
Customer Sample Ref.	WS 101	WS 103	WS 104
AGS Ref.			
Depth			
Type	Gas (G)	Gas (G)	Gas (G)
Bulk Gas	28-Nov-2024	28-Nov-2024	28-Nov-2024

Appendix General

1. Results are expressed on a dry weight basis (dried at 35ºC) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 15 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of 15 days after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

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5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

6. NDP - No determination possible due to insufficient/unsuitable sample.

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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@	**Sample holding time exceeded due to late arrival of instructions or samples**
§	**Sampled on date not provided**

20. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

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The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

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Gas Mitigation Ventilation Designs

Key
Selection from Drop Down
Input values
Output Results/ Defaults
Calculation results
Formulas for reference

Site Name:	Land Adjacent to Bealeys Industrial Estate
Project No.:	8353
Date:	27/04/2026
Run By:	BH
Template:	V.1.1 (BH-July 2024)

INPUTS

Gas Characteristics

		Output Results	
Gas Type:	Methane	1.0	C_e = equilibrium gas concentration in the void to achieve very good ventilation
Method:	Gas Regime		
Gas Screening Value (GSV):			GSV
or			
Gas Regime:	CS2	0.7	GSV

Site Characteristics

Building Width (m):	29.500	
Building Length (m):	10.300	
Subfloor Void (m):	0.15	
Height of vents (m)	0.15	z
Mean wind speed:	4.5	
(BS5925 - Figure 5 - see look ups)		

		k	a	
Site Environment:	Urban	0.35	0.25	factors for wind speed in calculation
Wind Exposure:	Sheltered Inland	0.46		wind factor

STEP 1 Calculate fresh air flow required to dilute gas to design concentration

$Q = q\{(100-C_e)/C_e\}$

Where:

q = surface emission rate of gas from the ground (total under whole building)

C_e = equilibrium gas concentration in the void (in this case expressed as the % value not the mathematical value ie for 1% use 1 in the equation rather than 0.01).

q = building width x length x gas emissions in $m^3/h/m^2$

q calculation:	0.0212695
Q calculation	2.1

STEP 2 Air brick vent area and spacing for an open void

The approach described in BS5925: 1991 is used to determine the necessary ventilation area and spacing of air bricks.

STEP 2.1 Reference wind speed

Hourly mean wind speed (BS5925 - Figure 5):	4.5	U_{50}
Correction ratio for site wind exposure:	0.46	
Design wind speed (allow for 80% exceedance):	2.07	U_m

Therefore reference wind speed $u_r = u_m \times K \times z^a$ (Where z = height of vent)

Reference wind speed (U_r):	0.45

STEP 2.1 Vent area

Calculate required vent A_w area to give flow of fresh air, Q

$$A_w = \frac{Q}{U_r \times C_d \times \sqrt{\Delta C_p}} \times 10^6$$ (note the factor 10^6 is to convert m^2 to mm^2)

Q (Step 1) is in m^3/h and needs to be converted to m^3/s = Q/3600	0.0006	Q
U_r (Step 2.1):	0.45	U_r

Assume the discharge coefficient for a narrow opening, Cd =0.61, which is a typical value for narrow openings from BS 5925: 1991. (This is a factor that correlates theoretical performance to actual performance)

0.61	C_d

Note for simple airbrick vents or similar there is usually some suction or pressure on the wall, regardless of wind direction. This is allowed for by using a very low value of Δ_p, typically 0.4 to 0.6

0.4	Δ_p

A_w = 0.0006 / (0.45 x 0.61 x 0.63) x 1000000

Area of ventilation required for whole building, A_w (mm^2)	3363

This is the total vent area along one long side of the building (the same area needs to be provided on two opposing sides).

Venting required if opposite vents on building width in mm^2/m	3363	÷	29.5	=	114
Venting required if opposite vents on building length in mm^2/m	3363	÷	10.3	=	326

Note: The minimum venting area required in the Building Regulations of $1500mm^2/m$

Park House, Sandpiper Court,
Chester Business Park,
Chester, CH4 9QU

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Company registered in England & Wales.
Company number 09730429.

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email: admin@coopers.co.uk

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chartered consulting engineers

STEP 3 - Vent numbers/spacing

Step 3.1 - External Vents

The venting required on the opposite sides of the building is calculated by multiplying the distance (m) by the venting required (mm^2/m):

Building Width:	29.5	m
Venting Required on Building Width:	1500	mm^2/m
Total Venting on Building Width	44250	mm^2
or		
Building Length:	10.3	m
Venting Required on Building Length:	2000	mm^2/m
Total Venting on Building Width	20600	mm^2

Ventilation achieved through air bricks (default is 6000mm^2) 6170 mm^2

The number of vents is determined by dividing the total venting required by the venting achieved per vent (round up):

Building Width Vents:	44250	÷	6170	=	7.17179903	=	8
Building Length Vents:	20600	÷	6170	=	3.33873582	=	4

Minimum ventilation required to provide an even flow of air across the building is 1 vent per 2m, the total vents required are therefore:

Building Width Vents:		
Minimum Vents (1 per 2m):	15	No.
Design Vents:	8	No.
Required Vents (max of above):	15	No.
Achieving ventilation	92550	mm^2
Building Length Vents:		
Minimum Vents (1 per 2m):	6	No.
Design Vents:	4	No.
Required Vents (max of above):	6	No.
Achieving ventilation	37020	mm^2

Step 3.1 - Internal Cross Ventilation

To allow cross-ventilation through internal walls, the ventilation should be a minimum of double the required vents

Vent Pipe diameter:	75	mm
No. of pipes per location (stacks)	1	
Achieves vent area:	4418	mm^2 (can manual over ride vent area for other vent forms, such as spacers or air vents)

Building Width:	29.5	m						
Number of Vents:	88500	÷	4418	=	20.1	=	21
Spaced at:	29.5	÷	21	=	1.40	m		
Building Length:	10.3	m						
Number of Vents:	41200	÷	4418	=	9.3	=	10
Spaced at:	10.3	÷	10	=	1.03	m		

STEP 4 - Time to fill void to explosive limits (methane)

Check the time taken to fill the void to 5% methane if there is no wind.

Time to fill to 5% methane = (Volume of void x 5%)/Surface emission rate of gas below building.

The void volume is: 29.5 x 10.3 x 0.2 = 45.6

Time to Fill the void is determined by:

$$\frac{void\ vol. \times methane\ (as\ fraction)}{surface\ emmission\ rate\ (in\ m^3\ per\ hr\ per\ m) \times building\ area}$$

$$\frac{45.6 \times 0.05}{0.70 \times 0.0001 \times 29.5 \times 10.3}$$

$$\frac{2.278875}{0.0212695} = 107.1$$ Hrs to fill void to explosive levels with no wind

Time for void to fill must be more than 10 hours: Yes - No Changes Required

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Chester Business Park,
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Technical Datasheet

Visqueen Gas Barrier NF-400

Features & benefits

- BDA Agrement Certification - third party accreditation
- Complies with NHBC Foundation NF94 guidance for use in Type A membrane locations - non foil system
- Complies with the methane gas transmission rate, mass per unit area and thickness requirements of BS 8485:2015 + A1:2019 - industry standard for methane and carbon dioxide protection
- Transparent - allows a clear view of the substrate during and post installation
- Multi functional - also acts as a radon and damp proof membrane
- Dual jointing methods - depending upon specification, lap joints can be heat welded or taped

Product description

Visqueen Gas Barrier NF-400 is a co-extruded, multi-layer thermoplastic gas membrane, 0.4mm thick (400 micron). The membrane is transparent with a blue tint and supplied 2.4m x 43.5m in a single wound roll.

Approvals and standards

- Third party accreditation (BDA Agrement Certificate BAB-24-339-P-A-UK)
- Complies with the methane gas transmission rate, mass per unit area and thickness requirements of BS 8485:2015 + A1:2019
- Suitable for all Characteristic Gas Situation (CS) ground gas regimes
- Complies with NHBC Foundation NF94 guidance for use in Type A membrane locations (non foil system)
- Conforms to the specification requirements of NHBC Amber 1 and Amber 2 applications
- Conforms to the specification requirements of BR 211:2023
- UKCA UKNI CE to EN 13967:2012
- Visqueen certified with Quality Management System ISO 9001:2015
- Visqueen certified with Occupational Health and Safety System ISO 45001:2018
- Visqueen certified with Environmental Management System ISO 14001:2015

Usage

Visqueen Gas Barrier NF-400 is suitable for use in all types of buildings to prevent the ingress of harmful levels of methane, carbon dioxide and radon.

The barrier can be positioned above or below reinforced cast in situ concrete floor slabs e.g. ground bearing, suspended or raft, or above precast suspended segmental subfloors, e.g. beam and block floor.

The barrier can also be used as a high performance radon membrane and/or damp proof membrane.

NHBC NF94 guidance: Radon, carbon dioxide, and methane protection
Visqueen Gas Barrier NF-400 when installed with either welded or taped joints complies with NHBC Foundation NF94 publication, Hazardous ground gas - an essential guide for housebuilders, in Type A membrane locations in precast suspended segmental subfloors and reinforced cast in situ concrete floor slabs (ground bearing, suspended or raft).

For site or zone characteristic gas situations of CS4 and above, contact Visqueen Technical Office.

The barrier is not intended for use where there is a risk of hydrostatic pressure.

System components

- VisqueenPro Double Sided Jointing Tape, 50mm x 10m
- VisqueenPro Detailing Strip, 300mm x 10m
- Visqueen TreadGUARD 1500, 1m x 2m
- Visqueen TreadGUARD 300, 2m x 75m
- Visqueen Ultimate Top Hat Units
- Visqueen NF-Detailing Strip, 300mm x 10m
- Visqueen NF-60 Lap Tape, 60mm x 45m
- Visqueen NF-150 Lap Tape, 150mm x 10m

Storage and handling

When storing Visqueen Gas Barrier NF-400 care should be taken to:
- store in its original packaging;
- avoid exposure to direct sunlight and high or low temperatures for prolonged periods of time;
- store in a well-ventilated covered area to protect from rain, frost, humidity and mechanical damage;
- store away from possible ignition sources;
- store rolls of the barrier horizontally on a flat surface and not stacked.

Care should be taken to avoid accidental damage to the product when handling on site.

Care should be taken when handling the product in line with current manual handling regulations.

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Visqueen Gas Barrier NF-400

Preparation

Visqueen Gas Barrier NF-400 should be installed on a smooth continuous surface e.g. grouted beam and block floor, a compacted blinding layer e.g. 50mm thick sand blinding, or smooth concrete blinding. The substrate should be free from irregularities such as loose aggregates or other sharp protrusions, voids, projections or mortar deposits.

The barrier can be cut with a sharp retractable safety knife or robust scissors.

Hand rollers are required during lap joint formation and sealing membrane detailing. Typical hand rollers include 40mm silicone pressure roller and 6mm brass penny pressure roller.

Consult the project specification to ensure the correct method of lap joint formation for the project is followed (welded or taped).

Rolls of tape should be kept in a warm, dry location prior to use to ensure the tape is workable and can be more easily applied.

Installation

Installation of Visqueen Gas Barrier NF-400 should be carried out by a competent contractor experienced with this type of product e.g. hold an NVQ Level 2 Diploma in substructure work occupations (Installation of Gas Membranes - Construction).

The installation should be subjected to third-party validation in accordance with BS 8485:2015 +A1:2019 and CIRIA C735.

Visqueen Gas Barrier NF-400 should be loose laid on the substrate ensuring that the barrier sheet edges are aligned allowing adequate overlap for jointing between the sheets. The barrier can be laid either side facing upwards.

The barrier lap area should be clean and dry at the time of jointing. The barrier has been designed to exhibit superior welding properties using hot wedge and hot air welding, therefore onsite welding of all lap joints is recommended. When hot air hand welding the lap joints, the joint should be overlapped by approximately 100mm and an approximate 35mm weld is normally achieved. During hand welding, the lap joints should be firmly compressed using a hand roller to ensure an adequate bond is achieved.

When taping the lap joints, the joint should be overlapped by approximately 100mm and bonded with VisqueenPro Double Sided Jointing Tape (positioned approximately 25mm from the edge of the sheet) and sealed with Visqueen NF-60 Lap Tape or Visqueen NF-150 Lap Tape depending on the project specification. The lap joints should be firmly compressed using a hand roller during taping to ensure an adequate bond is achieved.

Creating an effective gas barrier often requires complex three-dimensional detailing, such as around internal and external walls, corners, doorway thresholds, service pipes, party walls, and structural columns. Visqueen Detailing Strip (Pro or NF depending on the project specification) is gas resistant and can be used in place of the gas barrier to maintain continuous protection. The detailing strip lap joints should be firmly compressed using a hand roller to ensure an adequate bond is achieved. Visqueen Ultimate Preformed Units are also available.

If the barrier is punctured or perforated a patch of the same material should be lapped at least 100mm beyond the limits of the puncture and either welded in position, or bonded with VisqueenPro Double Sided Jointing Tape (positioned approximately 25mm from the edge of the sheet) and sealed with Visqueen NF-60 Lap Tape or Visqueen NF-150 Lap Tape depending on the project specification. Alternatively a patch can be formed using Visqueen NF-Detailing Strip lapped at least 150mm beyond the extents of the puncture.

Long periods of exposure to ultraviolet light will reduce the effectiveness of the barrier. The barrier should be covered by a protective layer e.g. Visqueen TreadGuard protection or other approved protection material, immediately after installation to prevent damage from following trades, ultraviolet light, etc. Care should be taken to ensure that the barrier is not punctured, stretched or displaced during or post installation.

VisqueenPro Detailing Strip is also suitable for sealing detailing junctions and patch repairs, however when the gas protection measures are to conform with the requirements of NHBC NF94 guidance, please ensure acceptance by all stakeholders prior to use.

Usable temperature range

When Visqueen Gas Barrier NF-400 is installed with taped lap joints, the air temperature should not be below 5°C or falling to prevent the risk of surface condensation affecting the tape adhesion.

When ambient temperatures are above 25°C or rising, the barrier should be covered immediately after installation.

Additional information

When used in accordance BS8485:2015 + A1:2019 a subfloor ventilation system or pressure relief may also be required.

To assist build sequencing, Visqueen Ultimate Gas DPC is available for gas protection through the wall

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Visqueen Gas Barrier NF-400

construction.

For further information contact Visqueen Technical Office on 0333 202 6800.

The information in this datasheet was correct at the time of publication. It is the user's responsibility to obtain the latest version of the datasheet as it is updated on a regular basis. The information contained in the latest datasheet supersedes all previously published editions.

Property	Test method	Units	Compliance criteria	Result
Dimensions	BS EN 1848-2	m	-	2.4 x 43.5
Nominal thickness	BS EN 1849-2	mm	+/-10%	0.4
Mass	BS EN 1849-2	g/m²	>370	>370
Tensile strength - machine direction	BS EN 12311-2 method B	N/mm²	MDV	26.3
Tensile strength - cross direction	BS EN 12311-2 method B	N/mm²	MDV	29.4
Elongation at break - machine direction	BS EN 12311-2 method B	%	MDV	607
Elongation at break - cross direction	BS EN 12311-2 method B	%	MDV	921
Joint strength - taped joint	BS EN 12317-2	N/50mm	MDV	217
Joint strength - welded joint	BS EN 12317-2	N/50mm	MDV	405
Watertightness at 2kPa for 24 hours	BS EN 1928 method A	-	Pass/Fail	Pass
Watertightness at 2kPa for 24 hours after ageing	BS EN 1296 (12 weeks) + BS EN 1928 method A	-	Pass/Fail	Pass
Watertightness at 2kPa for 24 hours after alkali environment	BS EN 1847 (28 days) + BS EN 1928 method A	-	Pass/Fail	Pass
Resistance to impact	BS EN 12691 method A	mm	MDV	400
Low temperature flexibility	BS EN 495-5	°C	MDV	-20
Resistance to tearing (nail shank) - machine direction	BS EN 12310-1	N	MDV	265
Resistance to tearing (nail shank) - cross direction	BS EN 12310-1	N	MDV	240
Water vapour resistance	BS EN 1931 method B	MNs/g	MDV	2,296
Water vapour permeability	BS EN 1931 method B	g/m²/d	MDV	0.08
Water vapour resistance factor	BS EN 1931 method B	µ	MDV	1,140,000
Water vapour diffusion equivalent air layer thickness	BS EN 1931 method B	SD in m	MDV	459
Methane gas transmission rate - membrane	BS ISO 15105-1	ml/m²/day/atm	MDV	13.2
Methane gas transmission rate - welded membrane joint	BS ISO 15105-1	ml/m²/day/atm	MDV	15
Carbon dioxide gas transmission rate	BS ISO 15105-1	ml/m²/day/atm	MDV	22
Radon gas transmission rate - membrane	SP method	m/s	MDV	<3.0 x 10-9
Puncture CBR	BS EN 12236	N	MDV	1620
Tensile yield strength - machine direction	ASTM D4885-01	kN/m	MDV	8

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Visqueen Gas Barrier NF-400

Tensile yield strength - cross direction	ASTM D4885-02	kN/m	MDV	7.3
Resistance to static loading	BS EN 12730 method C	kg	MDV	15
Elongation yield - machine direction	ASTM D4885-01	%	MDV	405.3
Elongation yield - cross direction	ASTM D4885-01	%	MDV	400.2
Tear resistance - trouser method A - machine direction	BS ISO 34-1	kN/m	MDV	128
Tear resistance - trouser method A - cross direction	BS ISO 34-1	kN/m	MDV	109.7
Tear resistance - angle method B - machine direction	BS ISO 34-1	N	MDV	137
Tear resistance - angle method B - cross direction	BS ISO 34-1	N	MDV	139.6

Health and safety information

Refer to the Visqueen Gas Barrier NF-400 safety datasheet (SDS).

About Visqueen

Visqueen is a leading provider of construction membrane technologies and design-based solutions for ground gas, structural waterproofing, damp proofing and fire protection.

We offer complete support at every stage of the specification, including the supply chain process. As the UK's principal technical authority, we are best placed to ensure that the principal designer and contractor specify the most technically suited, durable, and competitive solution to guarantee their project is protected for the lifetime of the building.

Visqueen is at the forefront of advanced membrane technology and innovation in the construction industry, earning the trust and loyalty of specifiers throughout the UK and Europe.

For more information, visit visqueen.com or contact our sales office at +44 (0) 333 202 6800 or enquiries@visqueen.com

Complete Range, Complete Solution



Passive Fire Protection | Gas Protection | Damp Proof Membrane | Air and Vapor Control | Stormwater | Damp Proof Course | Temporary Protection

Visqueen Technical Support

Visqueen offer a comprehensive full nationwide technical support. Our team of CSSW qualified technical support managers provide on site design-based solutions for specifiers, contractors and builders merchants, and will ensure that from design stage to installation the project is fully risk assessed and the specification is approved by all stakeholders.

Our Technical Office, can design, prepare and manage CAD detailing, together with assisting in quantity take offs, while offering advice on technical installations and product selection.

Competency & Design

Visqueen promotes competency in building design by ensuring that its technical team possesses the necessary skills, knowledge, experience, and ethical practices. The company adopts the "golden thread of information," ensuring all project data is digitally secure and accessible throughout a building's lifecycle. This approach aligns with the Building Safety Act and aims to foster accountability and compliance with evolving regulations, providing clients with confidence in the safety and reliability of their projects.

Visqueen CPD Seminars

Visqueen's CPD Seminars offer insights into Building Regulations, Standards, and industry guidance related to

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Visqueen Gas Barrier NF-400

damp proofing, hazardous ground gas protection, and structural waterproofing. These one-hour seminars are tailored for construction design professionals and delivered by our Technical Support Managers. Visit our website to book a free CPD.

Visqueen Contract Design Services

Visqueen Contract Design Services offers a bespoke design service led by our team of Certified Surveyors in Structural Waterproofing (CSSW), providing experienced and specialised waterproofing design expertise for complex projects. We provide comprehensive support throughout the entire project, ensuring that all work meets the requirements of warranty providers and adheres to the highest standards of quality, reliability and current legislation.

Visqueen Training Academy

Based at our Derbyshire facility, the Visqueen Training Academy offers a variety of training programs across the UK. These include one-day product awareness sessions for distributors and builders' merchants, and intensive two-day courses for hands-on product installation training. Contact us for more information.

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Appendix 6

Risk Assessments

JIWG

Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	B Hill
Date	27-Apr-26
Scenario details	Contractors removal of visible ACM debris (cement sheeting)

Decision Support Tool for CAR2012 Work Categories

Stage 1

Hazard Factors

		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	1
Extent of degradation of ACMs at outset of work	Weathered (Slight degradation in ACM; material still retains its basic integrity)	2
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Non-friable ACM or ACM with fibres firmly linked in a matrix	0
Distribution of Visible Asbestos Across Affected Area	Sporadic/random occurrences of visible contamination by ACMs	2
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Sub-total		**7**

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking — Low

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.
It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Exposure Factors		Score
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.001 fibres/ml	0
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)	4
Activity type and effect on deterioration of ACMs during work	Low intensity, no or minimal deterioration expected	0
Best description of primary host material matrix (soil/made ground)	Coarse to Fine Gravel	3
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1
Sub-total		**8**
Exposure ranking		Low
Combined hazard and exposure ranking	**15**	Low

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Stage 3

Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

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Asbestos in Soil and Construction & Demolition Materials

Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	B Hill
Date	27-Apr-26
Scenario details	Contractors Excavation of Soils with Free Fibres

Decision Support Tool for CAR2012 Work Categories

Stage 1

Hazard Factors

		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Free dispersed fibres/fibre bundles	2
Extent of degradation of ACMs at outset of work	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	Gross/very frequent occurrences of visible contamination by ACMs	4
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - <0.001 to 0.01 %wt/wt	1
Sub-total		**15**

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking **Medium**

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It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

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Stage 2

Exposure Factors		Score
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.001 fibres/ml	0
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)	4
Activity type and effect on deterioration of ACMs during work	Low intensity, no or minimal deterioration expected	0
Best description of primary host material matrix (soil/made ground)	Coarse to Fine Gravel	3
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1
Sub-total		**8**
Exposure ranking		Low
Combined hazard and exposure ranking	**23**	Medium

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Stage 3

Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.
**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)
***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

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Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Degraded (Significant degradation in ACM; material has lost its basic integrity)	3
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not firmly linked in a matrix	2
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		6
Hazard ranking		Low

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Stage 2

Emission Factors		Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Low	2
Activity type and effect on deterioration of ACMs	Moderate disturbance, slight deterioration expected	3
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4
Sub-total		11
Exposure ranking		Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Construction	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			Medium
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material visible at the surface, very likely to be disturbed by wind erosion and/or human/animal disturbance of soi	E	
Pathway ranking		4E	High
Overall ranking			High

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Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	BH
Date	27-Apr-26
Reviewed by	BH
Characterisation of scenario being evaluated	Contractors exposure to soils with ACMs during earthworks/groundworks without precautions to mitigate dusts
Interpretation of scenario ranking by DST	High risk posed where standard dust puression measures recommended

Decision Support Tool for Receptor Risk Ranking

Stage 1 Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Degraded (Significant degradation in ACM; material has lost its basic integrity)	3
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not firmly linked in a matrix	2
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		6
Hazard ranking		Low

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Stage 2

Emission Factors		Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Low	2
Activity type and effect on deterioration of ACMs	Low disturbance, minimal deterioration expected	2
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4
Sub-total		**10**
Exposure ranking		**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential (Pre-Remediation)	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	>> 10 hours per day (e.g. 24 hour residential exposure)	4	
Receptor ranking		8	High
Combined hazard, exposure and receptor ranking			High
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		4D	Medium
Overall ranking			Medium

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Project Reference	8353

Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes

Run by	BH
Date	27-Apr-26
Reviewed by	BH

Characterisation of scenario being evaluated	Future residents exposure to soils with ACMs if no remedial measures are undertaken

Interpretation of scenario ranking by DST	Medium risks posed, remedial measures are therefore required.

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Decision Support Tool for Receptor Risk Ranking

Stage 1 Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Degraded (Significant degradation in ACM; material has lost its basic integrity)	3
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not firmly linked in a matrix	2
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		6
Hazard ranking		Low

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Low	2	
Activity type and effect on deterioration of ACMs	No disturbance activity	0	
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4	
Sub-total		**8**	
Exposure ranking			**Low**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential (Post Remediation)	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	>> 10 hours per day (e.g. 24 hour residential exposure)	4	
Receptor ranking		8	High
Combined hazard, exposure and receptor ranking			High
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material buried at significant depth, very unlikely to be disturbed.	A	
Pathway ranking		4A	Negligible
Overall ranking			Negligible

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Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	BH
Date	27-Apr-26
Reviewed by	BH
Characterisation of scenario being evaluated	Future residents exposure to soils with ACMs after placement below inert cover systems
Interpretation of scenario ranking by DST	Negligble risks identified, demonstrates that cover systems are suitable to protect future residents.

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Decision Support Tool for Receptor Risk Ranking

Stage 1 Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	0
Extent of degradation of ACMs	Degraded (Significant degradation in ACM; material has lost its basic integrity)	3
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not firmly linked in a matrix	2
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		6
Hazard ranking		Low

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Stage 2

Emission Factors		Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Low	2
Activity type and effect on deterioration of ACMs	Moderate disturbance, slight deterioration expected	3
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4
Sub-total		**11**
Exposure ranking		**Medium**

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential (Adjacent Residents)	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	>> 10 hours per day (e.g. 24 hour residential exposure)	4	
Receptor ranking		8	High
Combined hazard, exposure and receptor ranking			High
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material visible at the surface, very likely to be disturbed by wind erosion and/or human/animal disturbance of soi	E	
Pathway ranking		3E	Medium
Overall ranking			Medium

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Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	BH
Date	27-Apr-26
Reviewed by	BH
Characterisation of scenario being evaluated	Adjacent residents exposure to soils with ACMs during earthworks/groundworks
Interpretation of scenario ranking by DST	Medium risk posed where standard dust puression measures recommended

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Version 2, February 2017

Decision Support Tool for Receptor Risk Ranking

Stage 1

Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Free dispersed fibres/fibre bundles	2
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		11
Hazard ranking		Medium

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Stage 2

Emission Factors		Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1
Respirable fibre index for ACM - RIVM report 711701034 (2003)	High	4
Activity type and effect on deterioration of ACMs	Low disturbance, minimal deterioration expected	2
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4
Sub-total		11
Exposure ranking		Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Construction	No score required	
Age of Receptor	Young adult (>16 and <24)	2	
Duration of exposure/site occupancy	> 1hr <10 hr daily exposure (e.g. part-time to full time occupational exposure or extended daily recreational exposure)	3	
Receptor ranking		5	Medium
Combined hazard, exposure and receptor ranking			High
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material visible at the surface, very likely to be disturbed by wind erosion and/or human/animal disturbance of soi	E	
Pathway ranking		4E	High
Overall ranking			High

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Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	BH
Date	27-Apr-26
Reviewed by	BH
Characterisation of scenario being evaluated	Contractors exposure to soils with free fibres during earthworks/groundworks without precautions to mitigate dusts
Interpretation of scenario ranking by DST	High risk posed where standard dust puression measures recommended

Decision Support Tool for Receptor Risk Ranking

Stage 1 Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Free dispersed fibres/fibre bundles	2
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		11
Hazard ranking		Medium

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Stage 2

Emission Factors		Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1
Respirable fibre index for ACM - RIVM report 711701034 (2003)	High	4
Activity type and effect on deterioration of ACMs	Low disturbance, minimal deterioration expected	2
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4
Sub-total		11
Exposure ranking		Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential (Pre-Remediation)	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	>> 10 hours per day (e.g. 24 hour residential exposure)	4	
Receptor ranking		8	High
Combined hazard, exposure and receptor ranking			High
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material present near the surface, potential to be disturbed during non-construction/routine use of land	D	
Pathway ranking		4D	Medium
Overall ranking			Medium

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Project Reference	8353

Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes

Run by	BH
Date	27-Apr-26
Reviewed by	BH

Characterisation of scenario being evaluated	Future residents exposure to soils with asbestos free fibres if no remedial measures are undertaken

Interpretation of scenario ranking by DST	Medium risks posed, remedial measures are therefore required.

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Decision Support Tool for Receptor Risk Ranking

Stage 1 Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Free dispersed fibres/fibre bundles	2
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		11
Hazard ranking		Medium

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Stage 2

Emission Factors		Score	
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1	
Respirable fibre index for ACM - RIVM report 711701034 (2003)	High	4	
Activity type and effect on deterioration of ACMs	No disturbance activity	0	
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4	
Sub-total		9	
Exposure ranking			Low

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential (Post Remediation)	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	>> 10 hours per day (e.g. 24 hour residential exposure)	4	
Receptor ranking		8	High
Combined hazard, exposure and receptor ranking			High
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4	
Pathway: Depth to impacted material	Material buried at significant depth, very unlikely to be disturbed.	A	
Pathway ranking		4A	Negligible
Overall ranking			Negligible

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Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	BH
Date	27-Apr-26
Reviewed by	BH
Characterisation of scenario being evaluated	Future residents exposure to asbestos free fibres after placement below inert cover systems
Interpretation of scenario ranking by DST	Negligble risks identified, demonstrates that cover systems are suitable to protect future residents.

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Decision Support Tool for Receptor Risk Ranking

Stage 1 Hazard Identification		Score
Select ACM type (run model for each type to generate 'Worst Case' output)	Free dispersed fibres/fibre bundles	2
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Mainly chrysotile and trace amphibole (no crocidolite)	1
Sub-total		11
Hazard ranking		Medium

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Stage 2

Emission Factors		Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Very Low quantities - 0.001 to 0.01 %wt/wt	1
Respirable fibre index for ACM - RIVM report 711701034 (2003)	High	4
Activity type and effect on deterioration of ACMs	Low disturbance, minimal deterioration expected	2
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast	4
Sub-total		11
Exposure ranking		Medium

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Stage 3

Pathway and Receptor Sensitivity		Score	
Receptor category	Residential (Adjacent Residents)	No score required	
Age of Receptor	Infant (under 5)	4	
Duration of exposure/site occupancy	>> 10 hours per day (e.g. 24 hour residential exposure)	4	
Receptor ranking		8	High
Combined hazard, exposure and receptor ranking			High
Pathway: Distance of Receptor from Source	>10m of edge of area of disturbance	3	
Pathway: Depth to impacted material	Material visible at the surface, very likely to be disturbed by wind erosion and/or human/animal disturbance of soi	E	
Pathway ranking		3E	Medium
Overall ranking			Medium

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Project Reference	8353
Site Name	Land Adjacent to Bealeys Industrial Estate, Radcliffe
Client	Westchurch Homes
Run by	BH
Date	27-Apr-26
Reviewed by	BH
Characterisation of scenario being evaluated	Adjacent residents exposure to soils with asbestos free fibres during earthworks/groundworks
Interpretation of scenario ranking by DST	Medium risk posed where standard dust puression measures recommended

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Version 2, February 2017

CLEA Software Version 1.071

Report generated 27-Apr-26

Report title Land Adjacent to Bealeys Indsutrial Estate, Radcliffe

Created by B Hill at Coopers

RESULTS

Environment Agency

		Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
		oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
1	TPH Aromatic >C12-16	NR	2.00E+03	2.00E+03	0.00	1.00	1.00	1.69E+02 (sol)	Yes	Yes	No	0	0	0	0	0	0
2	TPH Aromatic >C16-21	3.58E+04	NR	NR	1.00	NR	NR	5.37E+01 (vap)	Yes	No	No	0	0	0	0	0	0
3	TPH Aromatic >C21-35	3.47E+06	NR	NR	1.00	NR	NR	4.83E+00 (sol)	Yes	No	No	0	0	0	0	0	0
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Environment Agency

	Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
	oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
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Environment Agency

		Soil Distribution				Media Concentrations													
		Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
		%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
1	TPH Aromatic >C12-16	99.1	0.9	0.0	100.0	2.00E+03	8.61E+02	NA	NA	NA	3.24E-02	6.52E-04	0.00E+00	NA	NA	NA	NA	NA	NA
2	TPH Aromatic >C16-21	99.7	0.3	0.0	100.0	3.58E+04	3.02E+02	NA	NA	NA	1.61E-02	2.12E-03	0.00E+00	NA	NA	NA	NA	NA	NA
3	TPH Aromatic >C21-35	100.0	0.0	0.0	100.0	3.47E+06	1.18E+02	NA	NA	NA	1.41E-02	4.66E-02	0.00E+00	NA	NA	NA	NA	NA	NA
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Environment Agency

	Soil Distribution				Media Concentrations													
	Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
	%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
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Environment Agency

		Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
		Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
1	TPH Aromatic >C12-16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-02	5.57E+96	6.06E+95	0.00	0.00	0.00	0.00	49.95	0.05	0.00	50.00
2	TPH Aromatic >C16-21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-02	5.57E+96	0.00E+00	0.00	0.00	0.00	0.00	49.70	0.30	50.00	0.00
3	TPH Aromatic >C21-35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-02	5.57E+96	0.00E+00	0.00	0.00	0.00	0.00	43.51	6.49	50.00	0.00
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Environment Agency

	Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
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Environment Agency

		Oral Health Criteria Value (µg kg^{-1} BW day^{-1})		Inhalation Health Criteria Value (µg kg^{-1} BW day^{-1})		Oral Mean Daily Intake (µg day^{-1})	Inhalation Mean Daily Intake (µg day^{-1})	Air-water partition coefficient (K_{aw}) (cm^3 cm^{-3})	Coefficient of Diffusion in Air (m^2 s^{-1})	Coefficient of Diffusion in Water (m^2 s^{-1})	log K_{oc} (cm^3 g^{-1})	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
1	TPH Aromatic >C12-16	TDI	40	TDI	60	9.9E+100	9.99E+99	1.26E-02	1.00E-05	1.00E-09	3.7	4.29	0.1	0.5	10	1	1
2	TPH Aromatic >C16-21	TDI	30	NR	NR	9.9E+100	NR	6.95E-04	1.00E-05	1.00E-09	4.15	4.82	0.1	0.5	10	1	1
3	TPH Aromatic >C21-35	TDI	30	NR	NR	9.9E+100	NR	2.48E-05	1.00E-05	1.00E-09	5.1	5.95	0.1	0.5	10	1	1
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Environment Agency

	Oral Health Criteria Value (µg kg^{-1} BW day^{-1})		Inhalation Health Criteria Value (µg kg^{-1} BW day^{-1})		Oral Mean Daily Intake (µg day^{-1})	Inhalation Mean Daily Intake (µg day^{-1})	Air-water partition coefficient (K_{aw}) (cm^3 cm^{-3})	Coefficient of Diffusion in Air (m^2 s^{-1})	Coefficient of Diffusion in Water (m^2 s^{-1})	log K_{oc} (cm^3 g^{-1})	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
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Environment Agency

		Soil-to-water partition coefficient ($cm^3 g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg L^{-1}$)	Soil-to-plant concentration factor for green vegetables ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for root vegetables ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for tuber vegetables ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for herbaceous fruit ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for shrub fruit ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for tree fruit ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)
1	TPH Aromatic >C12-16	2.91E+01	1.14E+00	5.75E+00	model	model	model	model	model	model
2	TPH Aromatic >C16-21	8.19E+01	5.62E-03	6.53E-01	model	model	model	model	model	model
3	TPH Aromatic >C21-35	7.30E+02	1.61E-06	6.61E-03	model	model	model	model	model	model
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Environment Agency

	Soil-to-water partition coefficient ($cm^3 g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg L^{-1}$)	Soil-to-plant concentration factor for green vegetables ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for root vegetables ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for tuber vegetables ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for herbaceous fruit ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for shrub fruit ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)	Soil-to-plant concentration factor for tree fruit ($mg g^{-1}$ plant DW or FW basis over $mg g^{-1}$ DW soil)
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CLEA Software Version 1.071

Report generated 27-Apr-26

Report title Land adjacent to Bealeys Industrial Estate

Created by B Hill at Coopers

RESULTS

Environment Agency

		Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
		oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
1	TPH Aromatic >C12-16	NR	2.20E+06	2.20E+06	0.00	1.00	1.00	1.69E+02 (sol)	Yes	Yes	No	0	0	0	0	0	0
2	TPH Aromatic >C16-21	6.04E+06	NR	NR	1.00	NR	NR	5.37E+01 (vap)	Yes	No	No	0	0	0	0	0	0
3	TPH Aromatic >C21-35	2.68E+07	NR	NR	1.00	NR	NR	4.83E+00 (sol)	Yes	No	No	0	0	0	0	0	0
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Environment Agency

	Assessment Criterion (mg kg^{-1})			Ratio of ADE to HCV			Saturation Limit (mg kg^{-1})	50% rule?		Top Two applied?	Apply Top 2 Approach to Produce Group					
	oral	inhalation	combined	oral	inhalation	combined		Oral	Inhal		Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
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Environment Agency

		Soil Distribution				Media Concentrations													
		Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
		%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
1	TPH Aromatic >C12-16	99.1	0.9	0.0	100.0	2.20E+06	9.46E+05	NA	NA	NA	NA	7.17E-01	0.00E+00	NA	NA	NA	NA	NA	NA
2	TPH Aromatic >C16-21	99.7	0.3	0.0	100.0	6.04E+06	5.10E+04	NA	NA	NA	NA	3.59E-01	0.00E+00	NA	NA	NA	NA	NA	NA
3	TPH Aromatic >C21-35	100.0	0.0	0.0	100.0	2.68E+07	9.08E+02	NA	NA	NA	NA	3.59E-01	0.00E+00	NA	NA	NA	NA	NA	NA
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Environment Agency

	Soil Distribution				Media Concentrations													
	Sorbed	Dissolved	Vapour	Total	Soil	Soil gas	Indoor Dust	Outdoor dust at 0.8m	Outdoor dust at 1.6m	Indoor Vapour	Outdoor vapour at 0.8m	Outdoor vapour at 1.6m	Green vegetables	Root vegetables	Tuber vegetables	Herbaceous fruit	Shrub fruit	Tree fruit
	%	%	%	%	mg kg^{-1}	mg m^{-3}	mg kg^{-1}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg m^{-3}	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW	mg kg^{-1} FW
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Environment Agency

		Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
		Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
1	TPH Aromatic >C12-16	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-02	5.57E+96	6.06E+95	0.00	0.00	0.00	0.00	0.00	50.00	0.00	50.00
2	TPH Aromatic >C16-21	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-02	5.57E+96	0.00E+00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00
3	TPH Aromatic >C21-35	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.50E-02	5.57E+96	0.00E+00	0.00	0.00	0.00	0.00	0.00	50.00	50.00	0.00
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Environment Agency

	Average Daily Exposure (mg kg^{-1} bw day^{-1})							Distribution by Pathway (%)							
	Direct soil ingestion	Consumption of homegrown produce and attached soil	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour	Background (oral)	Background (inhalation)	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with soil and dust	Inhalation of dust	Inhalation of vapour (indoor)	Inhalation of vapour (outdoor)	Background (oral)	Background (inhalation)
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Environment Agency

		Oral Health Criteria Value (µg kg^{-1} BW day^{-1})		Inhalation Health Criteria Value (µg kg^{-1} BW day^{-1})		Oral Mean Daily Intake (µg day^{-1})	Inhalation Mean Daily Intake (µg day^{-1})	Air-water partition coefficient (K_{aw}) (cm^3 cm^{-3})	Coefficient of Diffusion in Air (m^2 s^{-1})	Coefficient of Diffusion in Water (m^2 s^{-1})	log K_{oc} (cm^3 g^{-1})	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
1	TPH Aromatic >C12-16	TDI	40	TDI	60	9.9E+100	9.99E+99	1.26E-02	1.00E-05	1.00E-09	3.7	4.29	0.1	0.5	10	1	1
2	TPH Aromatic >C16-21	TDI	30	NR	NR	9.9E+100	NR	6.95E-04	1.00E-05	1.00E-09	4.15	4.82	0.1	0.5	10	1	1
3	TPH Aromatic >C21-35	TDI	30	NR	NR	9.9E+100	NR	2.48E-05	1.00E-05	1.00E-09	5.1	5.95	0.1	0.5	10	1	1
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Environment Agency

		Oral Health Criteria Value (µg kg^{-1} BW day^{-1})		Inhalation Health Criteria Value (µg kg^{-1} BW day^{-1})	Oral Mean Daily Intake (µg day^{-1})	Inhalation Mean Daily Intake (µg day^{-1})	Air-water partition coefficient (K_{aw}) (cm^3 cm^{-3})	Coefficient of Diffusion in Air (m^2 s^{-1})	Coefficient of Diffusion in Water (m^2 s^{-1})	log K_{oc} (cm^3 g^{-1})	log K_{ow} (dimensionless)	Dermal Absorption Fraction (dimensionless)	Soil-to-dust transport factor (g g^{-1} DW)	Sub-surface soil to indoor air correction factor (dimensionless)	Relative bioavailability via soil ingestion (unitless)	Relative bioavailability via dust inhalation (unitless)
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Environment Agency

		Soil-to-water partition coefficient ($cm^3 g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg L^{-1}$)	Soil-to-plant concentration factor for green vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for root vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tuber vegetables (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for herbaceous fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for shrub fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)	Soil-to-plant concentration factor for tree fruit (mg g^{-1} plant DW or FW basis over mg g^{-1} DW soil)
1	TPH Aromatic >C12-16	2.91E+01	1.14E+00	5.75E+00	model	model	model	model	model	model
2	TPH Aromatic >C16-21	8.19E+01	5.62E-03	6.53E-01	model	model	model	model	model	model
3	TPH Aromatic >C21-35	7.30E+02	1.61E-06	6.61E-03	model	model	model	model	model	model
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Environment Agency

	Soil-to-water partition coefficient ($cm^3\ g^{-1}$)	Vapour pressure (Pa)	Water solubility ($mg\ L^{-1}$)	Soil-to-plant concentration factor for green vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for root vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for tuber vegetables ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for herbaceous fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for shrub fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)	Soil-to-plant concentration factor for tree fruit ($mg\ g^{-1}$ plant DW or FW basis over $mg\ g^{-1}$ DW soil)
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Supplementary guidance for the selection of water pipes in land potentially affected by contamination

United Utilities
Water for the North West

Introduction

In January 2011, UK Water Industry Research (UKWIR) published "Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites" (Ref 10/WM/03/21; the 'UKWIR Guidance'). Its aim is to ensure that the correct materials are selected for water pipes and components to be used below ground in brownfield sites to protect the quality of drinking water whilst taking into account the service life of the water distribution system. It supersedes the Water Regulations Advisory Scheme (WRAS) Information and Guidance Note 9-04-03 "Laying Pipes in Contaminated Land" which has been withdrawn.

The UKWIR Guidance is for use by developers, self-lay organisations, water companies and consultants when planning, designing and constructing water mains and/or services in brownfield sites. It defines brownfield sites as "land or premises that have previously been used or developed. They may also be vacant or derelict. However, they are not necessarily contaminated." The UKWIR Guidance states that it does not apply to greenfield sites; however, we consider this supplementary guidance and the relevant sections of the UKWIR guidance as being equally suitable for application to those greenfield sites considered to be potentially affected by contamination. Where greenfield sites are not affected by contamination a preliminary risk assessment (see below) will suffice.

The UKWIR Guidance also states that there should be no departure from its provisions *"except where formally approved by the Water Company, such departure being technically justifiable or representing advances in knowledge or product development"*.

We have adopted the UKWIR Guidance in principle and produced this company specific supplementary guidance (the 'UUW Guidance') which includes the Risk Assessment for Water Pipes (the 'RA').

This guidance does not cover operative safety, health exposure modelling or accidental pipe damage.

Risk Assessment for Water Pipes in Land Potentially Affected by Contamination

Any application for new water supplies to a development (construction of new properties, or renovation or conversion of existing buildings) in land potentially affected by contamination shall include a completed RA.

As a minimum a desk study (preliminary risk assessment) shall be provided with the RA in accordance with the framework in Environment Agency publication "Model Procedures for the Management of Land Contamination" (ref: CLR11) that sets out whether the land through which the pipes are to be laid may be affected by contamination. The application of the source, pathway, receptor concept will be an integral part of any pipeline risk assessment. For each potential source (the contamination) and each potential receptor (the water pipe), consideration shall be given to whether a potential pathway between source and receptor exists, or may exist in the future, linking the two. There are normally only three pathways by which contamination may come into contact with water pipes. These are direct contact with the soil or backfill, an excessive vapour phase or a contaminated groundwater regime. If none of these conditions exist on site (adopting the source, pathway, receptor concept) then it is likely that extended and/or targeted soil testing will not be required and a simple risk assessment will suffice. For those sites where land may be affected by contamination appropriate testing shall be undertaken on the materials within which the pipes are to be laid, whether that be existing ground materials, remediated materials or imported capping materials. The testing requirements are as described in the following section.

The signatories of the Water Supply Application Form and the RA must ensure that all assessments of land condition have been carried out in accordance with applicable current standards and guidelines by or under the direction of a suitably qualified competent person.

We require the competent person to be a) a chartered member of an appropriate professional body (such as the Institution of Civil Engineers, the Geological Society of London or the Royal Institution of Chartered Surveyors) with relevant experience of investigating contaminated sites or b) a Specialist in Land Condition (SiLC) with appropriate geo-environmental experience.

How to contact us about the information in this leaflet



DeveloperServicesWater@uuplc.co.uk



0345 072 6067
Opening hours:
8am-5pm Mon to Thurs
8am-4.30pm Fri

Testing Requirements

The soil, rock and if appropriate groundwater tests that are required on all sites where the potential for organic contamination has been identified in the desk study and where water pipes are proposed to be laid must be accredited by United Kingdom Accreditation Service (UKAS) as a minimum and where commercially available the Environment Agency's Monitoring Certification Service (MCERTS). These accredited tests should be undertaken for:

Banded hydrocarbons EC5-EC10, EC10-EC16, EC16-EC40 (Total aliphatic and aromatic hydrocarbons for each banding may be summed). Aliphatic/aromatic fractionation and subsequent banding may be required should a more detailed site specific risk assessment be undertaken. The bandings have been amended to take into account readily available laboratory tests. The equivalent carbon number (EC) is used to assess petroleum hydrocarbon mixtures rather than the actual number of carbon atoms in the molecule in line with guidance issued by the Environment Agency (2005).

Volatile organic compounds (VOCs) (method by head space or purge & trap GCMS) with tentative identification of compounds greater than 20µg/kg. The method used should be capable of detecting a wide range of compounds listed in US EPA Method 8260C or similar. The method should include analysis of naphthalene.

BTEX (Benzene, toluene, ethyl benzene and xylenes) plus MTBE (Methyl-tertiary butyl ether) (by head space GCMS)

Semi-Volatile Organic Compounds (SVOCs) (method by GCMS) with tentative identification of compounds greater than 20µg/kg The method used should be capable of detecting the compounds listed in US EPA Method 8270D or similar. The total concentration of SVOCs excludes polycyclic aromatic hydrocarbons, ethers, nitrobenzene, ketones, aldehydes, phenols, cresols and chlorinated phenols. Phenols, cresols and chlorinated phenols which are detected by the SVOC analysis are given their own assessment criteria.

We do not consider Table G1 and Table 3.1 of the UKWIR Guidance to be a definitive guide for assessing total concentrations. Table 1 in the RA below replaces Table 3.1 of the UKWIR Guidance.

Where previous site uses include the use, storage, treatment, disposal or manufacture of any of the following, appropriate testing for these substances will be required:

- Ethers, nitrobenzene, ketones, aldehydes and amines. Note that the presence of amines on any site at the proposed pipe depth +/- 1.0m precludes the use of polyethylene. The methods of analysis and method of calculation of total concentrations of these compounds will need to be agreed with UUW.

To comply with the testing requirements, the suites of tests that are required on all brownfield sites where wrapped steel, wrapped ductile iron or copper pipes are to be laid as minimum must include:

- pH, Conductivity and redox potential

Sufficiency of Testing

Water pipes are normally laid at between 0.75 and 1.35m from finished ground level to crown of pipe. Samples taken and tested must represent both a) the soil in which the water pipes are to be laid and b) the soil down to at least 500mm below the underside of the proposed pipe. Where the proposed depth of the pipes is unknown at the time of application, soil samples representative of the ground condition between surface level and 1.5m below finished ground level shall be taken as a minimum. Where appropriate (see UKWIR Guidance) groundwater sampling and groundwater monitoring will also be necessary. Photo-ionisation detection (PID) monitoring along the proposed route of the pipeline may be employed, though this does not provide a definitive guide to the suitability of water pipe materials.

Where required a sufficient number of test results should be obtained from the material in which the pipes are to be laid. CLAIRE/CIEH 2008 "Guidance on comparing soil contamination data with a critical concentration" may be used, where appropriate, to justify the number of soil samples tested; however, this statistical model should not be used on heterogeneous materials or used to average test results from different types of materials.

Further guidance on representative sampling is contained within BS10175:2011 Code of Practice for the Investigation of Potentially Contaminated Sites, the Department of the Environment's Contaminated Land Research Report "Sampling strategies for contaminated land" prepared by The Centre for Research into the Built Environment, Nottingham Trent University (Ref: CLR 4; 1994) and the Environment Agency's "Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination" (ref: R&D Technical Report P5-066/TR; 2000).

Where remediation has been carried out on the site, the test results obtained from validation samples will be used in the assessment. Where a horizontal capping system has been or will be employed using materials spread across a site, sufficient samples will need to be taken to characterise the capping material used and the results presented to UUW. However, the sufficiency of sampling on the horizontal capping system, in which the pipeline will be placed, may be assessed on the basis of the source, quantity and type of materials used.

Detection Limits

Only positive concentrations, ie those above the limit of detection should be used in summation of VOC and SVOC (or other test groups of compounds ie phenols, cresols and chlorinated phenols). Laboratory methods shall provide a minimum limit of detection of 10µg/kg for each individual VOC or SVOC (or other test groups of compounds) quantitatively detected in accordance with the methods described above. For tentatively identified compounds (TICs), only those compounds with a concentration of 20µg/kg or greater shall be used in the summation of VOC and SVOC (or other test groups of compounds).

Protective Measures

Where polyethylene, ductile iron, steel or copper pipes are to be laid on a brownfield site or other land potentially affected by contamination (whether or not it has been remediated) and where the concentrations exceed the generic guideline values set out in Table 1 of the RA, the developer shall provide either:

a) a robust risk assessment to show how any contaminants will not significantly impact on proposed water supplies or buried assets over the lifetime of the assets; or

b) more suitable pipe materials; or

c) an engineering solution to protect the pipe work backed up by an adequate assessment of the risk.

Liquid free phase product (e.g. oil or free solvent layers) shall not remain in the ground or groundwater in the vicinity of water pipes, whether barrier pipe or any other pipe materials are used.

When designing pipe routes on land potentially affected by contamination, new preferential contamination pathways along the route of new water pipes shall not be created. Particular measures may be required to prevent the possible migration of contamination through pipe bedding and into controlled waters.

References

BS10175: 2011
"Investigation of Potentially Contaminated Sites Code of Practice"

CLAIRE/CIEH
"Guidance on comparing soil contamination data with a critical concentration" 2008

Department of the Environment Contaminated Land Research Report
"Sampling strategies for contaminated land" prepared by The Centre for Research into the Built Environment, Nottingham Trent University (Ref: CLR 4) 1994

Environment Agency
"Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination"
(ref: R&D Technical Report P5-066/TR) 2000

Environment Agency
"Model Procedures for the Management of Land Contamination" (ref: CLR11), 2004

Environment Agency P5-080/TR3
"The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils", 2005

UK Water Industry Research (UKWIR)
"Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites" (Ref 10/WM/03/21) January 2011

Water Regulations Advisory Scheme (WRAS) Information and Guidance Note 9-04-03
"Laying Pipes in Contaminated Land" 2002

Frequently asked questions

Why has UUW published supplementary guidance to the 'UKWIR Guidance for the Selection of Water Pipes to be used in Brownfield Sites'?

UUW agrees with the UKWIR Guidance in principle; we have published supplementary guidance to clarify some of the areas in which it will operate.

Does the UKWIR Guidance only apply to 'brownfield sites'?

Yes, the UKWIR Guidance does apply to brownfield sites; in addition United Utilities Water will apply this guidance and the UUW supplementary guidance to any greenfield sites which are potentially affected by contamination.

Who is responsible for completing/ signing the Risk Assessment for Water Pipes (RA)?

This may be the Developer, the Developers representative, or the competent person directing the land assessment. The signatory of the Risk Assessment for Water Pipes (RA) must ensure that all land assessments have been carried out in accordance with current standards and guidelines by or under the direction of a suitably qualified competent person. For water supply applications on land potentially affected by contamination, UUW requires the competent person to be either a chartered member of an appropriate professional body (such as the Institution of Civil Engineers, the Geological Society of London or the Royal Institution of Chartered Surveyors) with relevant experience of investigating contaminated sites or a Specialist in Land Condition (SiLC). This level of competency is intended to promote good practice and high professional standards and is no greater than that required for planning purposes by Local Authorities.

Do we need to agree the number and location of soil samples with the Water Company as indicated by the UKWIR guidance following the Preliminary Risk Assessment (PRA)?

Where a preliminary risk assessment (PRA) highlights the need for a site investigation UUW considers it is a responsibility of the qualified competent person directing the land assessment to determine the location and frequency of sampling. UUW's role would be to confirm that the appropriate choice of pipe material has been made on the basis of the information provided.

What do we do if the pipe route is not known when the Site Investigation report is commissioned?

Where the route of the pipe is not known at the site investigation stage, then any resultant pipe selection needs to take account of any contamination found on the site. Consideration should be given to identifying the route and depth of the pipeline at the site investigation stage to avoid unnecessary testing.

Is it acceptable not to undertake a site investigation and specify the use of barrier pipe which seems to be suitable for all conditions?

Not all brownfield land is contaminated, and because of that a default to barrier pipe is not an acceptable approach to UUW, due to the possibility of higher installation and future maintenance costs. The approach as to whether a site investigation is needed should be risk based. For those sites where land may be affected by contamination appropriate testing shall be undertaken on the ground materials within which the pipes are to be laid, whether that be existing ground materials, remediated materials or imported capping materials.

Examples where defaulting to barrier pipe would not be acceptable:

- Where a capping layer (non-contaminated) is introduced within which the pipes will be installed.
- Sites with a potential low risk for contamination.
- Where liquid free phase product (e.g. oil or free solvent layers) is in the ground or groundwater in the vicinity of water pipes.
- Where the route of the pipe could be diverted to another suitable location free from contamination.

Are UUW employees who will assess the Design Proposals for contaminated sites suitably qualified?

It is the role of the Developer's suitably qualified competent person to deal with or direct the assessment of land. UUW's role is to assess the Risk Assessment for Water Pipes and supporting Site Assessment Report (SAR) which is provided with any new water supply application (ie. it has been provided in the correct format, proposals for pipe selection are included, the methodology is in line with the UKWIR Guidance and UUW Supplementary Guidance, it has been directed by a suitably qualified competent person etc.). If UUW do need to provide assistance or information in deciding pipe materials then the assessment would be carried out under the direction of a suitably qualified competent person.

What happens to existing PE that is in the ground under the "old" guidelines?

The latest UKWIR guidance and UUW's supplementary guidance are intended to be used to decide what pipe materials will be used for new water mains and services. It will have no effect for developers with regard to any parts of UUW's existing network.

Will the Developer be required to submit a fully completed Risk Assessment for Water Pipes (RA) and supporting Site Assessment Report (SAR), including pipe material recommendation, for both the option of a mains requisition application and the option of a self-lay application?

Yes, UUW expect the 'Developer', as defined in UUW Supplementary Guidance, to submit a Risk Assessment for Water Pipes (RA) and supporting Site Assessment Report (SAR), including pipe material recommendation, in respect of any water pipes being installed on the development irrespective of who is to install them.

Does Table 1 in UUW's Risk Assessment for Water Pipes (RA) replace any of the tables to be completed in the Site Assessment Report (SAR) as required in the UKWIR Guidance?

UUW does not consider Table G1 and Table 3.1 of the UKWIR Guidance to be a definitive guide for assessing total concentrations. Table 1 in UUW's RA replaces Table 3.1 of the UKWIR Guidance.

Have any other Water Companies adopted the UKWIR Guidance yet?

You will need to contact the water company concerned if you are intending to install water pipes outside UUW's licensed area.

United Utilities
Water for the North West

About us

United Utilities is the North West's water company. We keep the taps flowing and toilets flushing for seven million customers every day. From Crewe to Carlisle, we work hard behind the scenes to help your life flow smoothly.

United Utilities Water Limited, Haweswater House, Lingley Mere Business Park, Lingley Green Avenue, Warrington WA5 3LP.
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LRA1A-11/19v0

11/19/SD/8483f-1

Risk assessment for water pipes (RA)

United Utilities
Water for the North West

The risk assessment for water pipes will help you choose appropriate materials for your development. We are happy to deal with a risk assessment for water pipes in advance of any formal application for a new water supply.

If you need any help completing the form please call us on **0345 072 6067.**

Section 1: Development details	
Development name *(if it has one)*	N/A
Development address	Land adjacent to Bealey Industrial Estate, Radcliffe
OS Grid reference *(mid point)*	SD 797 082
Developer's name	Westchurch Homes
UUW reference number *(for UU use only)*	

Please provide details below of the current and historical use of the site and adjacent sites.
If your supporting information has details of the current and historical site use, please reference below the relevant sections of your report.

Onsite:
Current: - open ground, dense vegetation, outside units and storage of trading estate.
Historical: - part of former Broad Dumers Paper Works, including reservoirs, holding/storage tanks, and filter beds and Bealey's Goit. reservoir/tanks recorded as inert lanfill following filling in the 1980's.

Offsite:
Current: Trading estate to the south west and west, open land to the north, residential to the east and south.
Historical: Eaton Hill Cotton Mill (later a dyeing works, then dyeing and finishing), a gasometer, Dumers Paper Works, Radcliffe Bleach and Chemical Works (later bleaching works), a chemical works, engineering works, infilled reservoirs, areas of waste disposal activity and a sewage works.

Section 2: Preliminary risk assessment	
Has your desk study and site walkover identified any land potentially affected by contamination?	☑ Yes ☐ No

If the site is potentially affected by contamination but you have not completed any intrusive site investigation please provide details below of the rationale behind the intended pipe selection.
If your supporting information has details of the rationale behind the intended pipe selection, please reference below the relevant sections of your report.

N/A - investigations undertaken

Section 3: Intrusive site investigation

Have you completed any intrusive site investigation?	☑ Yes ☐ No
Have you completed any none intrusive site investigation?	☐ Yes ☑ No
Date(s) when the site investigation(s) undertaken	21 03 2024 26 09 2024 D D M M Y Y Y Y
At what level has groundwater been encountered?	0.6-3.0 metres below ground level or ☐ Not encountered

Table 1 (Pipeline Selection Risk Assessment Summary (PSRAS)) below classifies testing required where the preliminary risk assessment has identified land potentially affected by contamination. Please provide details below of any test groups which have not been tested and the rationale for not testing.

If your supporting information has details of the rationale behind not testing any particular test groups, please reference below the relevant sections of your report.

Refer to Coopers Letter Report 8353si for rationale of selected suites of testing, based upon conceptual site model. Additional investigation required in areas of the site which were inaccessible.

If the intrusive site investigation has identified concentrations above the PE threshold (see PSRAS) and your intended pipe selection is PE. Please provide details below of the rationale behind the intended pipe selection.

If your supporting information has details of the rationale behind the intended pipe selection, please reference below the relevant sections of your report.

Area of petroleum range hydrocarbon contamination proposed for removal.

Section 4: Site remediation

Please provide details below of any site remediation (which may include a change in site levels) already completed.

If your supporting information has details of the site remediation already completed, please reference below the relevant sections of your report.

No remediation undertaken at time of assessment (see below for proposals).

Has the PSRAS (Table 1) been completed using appropriate data after remediation?	☐ Yes ☑ No ☐ N/A

Please provide details below of any proposed site remediation and an analysis of whether this will affect your intended pipe selection.

If your supporting information has details of any proposed site remediation and whether this will affect your intended pipe selection, please reference below the relevant sections of your report.

Subject to additional investigation upon vacant possession of the site, concurrent with demolition works.
Areas of petroleum range hydrocarbons from former reservoir to be removed.
Cover systems intended for proposed gardens.

Section 5: Final use of site

Please provide details below of any chemicals (including fuel) to be stored on site and any other future contamination risks which may affect your intended pipe selection.

If your supporting information has details of potential contamination risks which may affect your intended pipe selection, please reference below the relevant sections of your report.

None - Proposed residential end use.

What water pipe materials are intended to be used on site?	☑ PE ☐ PE Barrier Pipe Type A ☐ PE Barrier Pipe Type B Other *(please specify):*

Section 6: Additional information

Please use the section below to provide any additional details to support your intended pipe selection.

Refer to Coopers Report 8353si.

The investigation has identified an areas of elevated petroleum range hydrocarbons intended for removal.

The proposed pipeline materials are for initial proposals only based upon the information of the areas accessible for investigation and this assessment should be revised upon completion of the additional investigation.

Section 7: Risk assessor

Name and relevant qualifications of person directing the risk assessment for water pipes	B W Hill BSc(Hons), CSci, MIEnvSc, FGS (Chartered Scientist)
Name and address of risk assessor's company	Coopers (Chester) Ltd, Park House, Sandpiper Court, Chester Business Park Chester CH4 9QU
Date risk assessment performed	0 8 1 1 2 0 2 4

Section 8: Declaration

I confirm I have completed this form and provided supporting information in accordance with 'UKWIR Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites' and UUW's Supplementary Guidance. I also confirm that if any further site investigation is needed and carried out, I will be required to submit an additional Risk Assessment for Water Pipes with the relevant supporting information.
I understand that failure to supply any of the required information may delay my application being processed.

Name	Ben Hill	Company	Coopers (Chester) Ltd
Telephone	01244 684920	Date	0 8 1 1 2 0 2 4

Please email the completed form and supporting information to **DeveloperServicesWater@uuplc.co.uk** or post to us at United Utilities Water, Developer Services, Second floor Grasmere House, Lingley Mere, Warrington WA5 3LP.

United Utilities
Water for the North West

About us

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Table 1 - Pipe selection risk assessment summary (PSRAS)

1. Testing must be undertaken on the materials within which the pipes are to be laid, whether that be existing ground materials, remediated materials or imported capping materials. Please use the appropriate testing data to complete Table 1 below.

2. If more than one pipe selection is being made, for example, for pipes in different areas of a large site, a completed PSRAS is required for each selection.

What materials have been tested to populate Table 1 below? ☑ Existing ground materials ☐ Remediated materials ☐ Imported capping materials

Coopers Note - further investigation needed, including targeting of former tanks and areas of high risk of elevated TPH.

All concentrations in mg/kg

Test Group	Testing Required?	PE threshold	Metal Pipes/ Barrier Pipe	Laboratory Detection Limit	Testing UKAS accredited Y/N	Maximum concentration at proposed pipeline depth *See Note [2]*	Maximum site concentration *See Note [3]*	Locations and depths where concentrations exceed proposed pipeline threshold
Total VOCs	Where Preliminary Risk Assessment (PRA) has identified land potentially affected by contamination	0.5	Pass	0.01	Y	<LOD	<LOD	None
Total BTEX & MTBE		0.1	Pass	0.1	Y	<LOD	<LOD	None
Total SVOCs (excluding PAHs and those substances marked with an *)		2	Pass	0.1	Y	0.1	0.1	None
EC5-EC10 aliphatic and aromatic hydrocarbons		2	Pass	0.01	Y	<LOD	<LOD	None
EC10-EC16 aliphatic and aromatic hydrocarbons		10	Pass	1.5	Y	483.52	483.52	WS101 (3-4m bgl)
EC16-EC40 aliphatic and aromatic hydrocarbons		500	Pass	3.4	Y	3121.9	3121.9	WS101 (3-4m bgl)
Phenols* (from SVOC analysis)		2	Pass	0.1	Y	<LOD	<LOD	None
Cresols and chlorinated phenols* (from SVOC analysis)		2	Pass	0.1	Y	<LOD	<LOD	None
Ethers*	Only where identified	0.5	Pass	N/A	N/A	N/A	N/A	N/A
Nitrobenzene*		0.5	Pass	N/A	N/A	N/A	N/A	N/A
Ketones*		0.5	Pass	N/A	N/A	N/A	N/A	N/A
Aldehydes*		0.5	Pass	N/A	N/A	N/A	N/A	N/A
Amines		Fail	Pass	N/A	N/A	N/A	N/A	N/A
Corrosive	Conductivity, Redox and pH	Pass	*See Note [1]*	N/A	N/A	N/A	N/A	N/A

Note [1] Threshold: For wrapped steel, corrosive if pH<7 and conductivity > 400µS/cm. For wrapped ductile iron corrosive if pH<5, Eh not neutral and conductivity > 400µS/cm. For copper, corrosive if pH<5 or >8 and Eh positive.

Note [2] Water pipes are normally laid at 0.75-1.35m below finished ground level.

Note [3] Also state if liquid free product is present in soil or groundwater.

NA = not tested based upon conceptual site model - refer to Coopers Report No. 8353si for justification of testing.

Appendix 7

Tier 1 Risk Assessment Screening Values



Controlled Water Receptor Threshold Values



Legislation Framework which Drives the Contamination Assessment of Land in England and Wales

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Soil Tier 1 Threshold Values (mg/kg) Residential and POS

		Elements and compounds	S4UL	Small Terrace	Med/Large Terrace	Semi-detached	Detached	Residential (without Veg)	POS (Resi)	POS (Park)
				White, yellow & green values are NOAEL with orange values C4SL				C4SL (S4UL) (1% SOM)		
Silty clay	Metals/Semi-metals	Arsenic	37	37 (32.4 CLEA)				40 (40)	79 (79)	168 (170)
		Beryllium	1.7 (inh.)	51 (to be used with caution and superseded)				(1.7)	(2.2)	(63)
		Boron	290	291				(11,000)	(21,000)	(46,000)
		Cadmium	11	22 (11 CLEA)				150 (85)	220 (120)	880 (532)
		Chromium (III)	910	3000				(910)	(1,500)	(33,000)
		Chromium (VI)	6	21 (4.3)				21 (6)	51 (7.7)	250 (220)
		Copper	2,400	2,330 (Phytotoxic pH <6 = 100, pH6-7 = 135, pH >7 = 200)				(7,100)	(12,000)	(44,000)
		Lead	-	200				310	630	1,300
		Mercury (methyl)	11	7.4 (SGV withdrawn)				(15)	(40)	(68)
		Mercury (inorganic)	40	169 (SGV withdrawn)				(56)	(120)	(240)
		Mercury (Hg)	1.2	1.2 (SGV withdrawn)				(1.2)	(16)	(30vap (25.8))
		Nickel	130	(130 S4UL) (Phytotoxic pH <6 = 60, pH6-7 = 75, pH >7 = 110)				(180)	(230)	(800)
		Selenium	250	351				(430)	(1,100)	(1,800)
		Vanadium	410	79				(1,200)	(2,000)	(5,000)
		Zinc	3,700	3,750 (Phytotoxic pH <6 = 200, pH6-7 = 200, pH >7 = 300)				(40,000)	(81,000)	(170,000)
	PAH	Acenaphthene	210	205				(3,000 – 57 s)	(15,000)	(29,000)
		Acenaphthylene	170	168				(2,900 – 86.1 s)	(15,000)	(29,000)
		Anthracene	2,400	2,260				(31,000-1.17 v)	(74,000)	(150,000)
		Benzo(a)anthracene	7.2	3.1				(11)	(29)	(49)
		Benzo(a)pyrene	2.2	5 (6% SOM) (0.83 CLEA)				5.3 (3.2)	10 (5.7)	21 (11)
		Benzo(b)fluoranthene	2.6	5.56				(3.9)	(7.1)	(13)
		Benzo(ghi)perylene	320	10.7				(360)	(640)	(1,400)
		Benzo(k)fluoranthene	7.7	8.5				(110)	(190)	(370)
		Chrysene	15	6.0				(30)	(57)	(93)
		Dibenz(ah)anthracene	0.24	0.76				(0.31)	(0.57)	(1.1)
		Fluoranthene	280	257				(1,500)	(3,100)	(6,300)
		Fluorene	170	163				(2,800 – 30.9 s)	(9,900)	(20,000)
		Indeno(123-cd)pyrene	27	3.18				(45)	(82)	(150)
		Phenanthrene	95	91.8				(1,300 – 36 s)	(3,100)	(6,200)
		Pyrene	620	563				(3,700)	(7,400)	(15,000)
Sandy loam		Naphthalene	2.3	1.54	1.71	1.7	1.97	(2.3)	(4,900)	(1,200 – 76.4 s)
	BTEX	Benzene	0.087	0.2 (1%) (0.079 CLEA)	0.082	0.082	0.085	0.89 (0.38)	140 (72)	190 (90)
		Toluene	130	119	122	122	125	(869)	(56,000)	(87,000 v)
		Ethylbenzene	47	62.5	68	67.9	71.6	(83)	(24,000)	(17,000 v)
		Xylene (based on p)	56	41.7	45.5	45.3	50.9	(70)	(41,000)	(17,000 v)
		Phenol	120	184	207	206	224	(440^{dir} (460))	(440^{dir} (10,000))	(440^{dir} (7,600))
	Aliphatic	5-6	42	30				(42)	(570,000-304 s)	(95,000 – 304 s)
		6-8	100	73				(100)	(600,000)	(150,000-144 s)
		8-10	27	19				(27)	(13,000)	(14,000 – 78 s)
		10-12	130 (48)	93 (48)^{vap}				(130 – 48 v)	(13,000)	(21,000 – 48 s)
		12-16	1,100 (24)	740 (24)^{sol}				(1,100 - 24 v)	(13,000)	(25,000 – 24 s)
		16-35	65,000 (8.48)	45,000 (8.48)^{sol}				(65,000)	(250,000)	(450,000)
		35-44	65,000 (8.48)	45,000 (8.48)^{sol}				(65,000)	(250,000)	(450,000)
	Aromatic	8-10	34	27				(47)	(5,000)	(7,200 – 613 v)
		10-12	74	69				(250)	(5,000)	(9,200 – 364 s)
		12-16	140	140				(1,800)	(5,100)	(10,000)
		16-21	260	250				(1,900)	(3,800)	(7,600)
		21-35	1,100	890				(1,900)	(3,800)	(7,600)

Notes:

The soil organic matter has been assumed to be 1% as this is the most conservative value for organic compounds. Inorganic compounds unaffected by this parameter.

Silty clay strata appears to prove more conservative threshold values for metals, semi-metals and several PAH compounds. Sandy loam strata appears to prove more conservative threshold values for TPH compounds, phenol and naphthalene.

The assessment of hydrocarbon fractions should be completed additively to determine the total risk of the whole range of compounds present as well as by single TPH fractional units, however this should be undertaken on a sample by sample basis where significant hydrocarbon concentrations have been encountered to derive a compound TPH concentration.

Although benzene has a C4SL value, this has been calculated for small terraced housing and not other housing stock, therefore other housing stock should either adopt the more conservative CLEA thresholds or that of a small terraced property. All thresholds not coloured orange (C4SL) for different housing stock have utilised LQM/CIEH Generic Assessment Criteria for Human Health Risk assessment, 2nd edition, 2009. CLEA values in brackets where C4SL values are available.

Vap denotes where the threshold is exceeded beyond the vapour saturation limit. Sol denotes where the threshold is exceeded beyond the solubility saturation limit.

It should be noted that these threshold values only relate to human health risk assessment and an assessment for potential groundwater risk should be undertaken as a separate risk assessment.

Dir denotes the S4ULs based on a threshold protective of direct skin contact with phenol (guideline in brackets based on health effects following long term exposure provided for illustration only)

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CONTROLLED WATER RECEPTOR THRESHOLD VALUES (µg/l)

Compound/element		Groundwater Quality Threshold Values[1&16] Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters[13]	Short term (95th percentile) for fresh waters[13]	Annual average (AA-EQS) for inland surface waters[14]	Maximum allowable concentration (MAC-EQS)[14] for inland surface waters [15]
Inorganic elements and compounds	Ammonium	500	-	-	-	-
	Arsenic	10	50	-	-	-
	Boron	1000	-	-	-	-
	Cadmium[9]	5.0	-	-	≤0.08 (Class 1)	≤0.45 (Class 1)
		-	-	-	0.08 (Class 2)	0.45 (Class 2)
		-	-	-	0.09 (Class 3)	0.6 (Class 3)
		-	-	-	0.15 (Class 4)	0.9 (Class 4)
		-	-	-	0.25 (Class 5)	1.5 (Class 5)
	Chromium (III)	50	4.7	32	-	-
	Chromium (VI)	-	3.4	-	-	-
	Chloride	250,000	-	-	-	-
	Chlorine	-	2	5	-	-
	Copper	2000	1[5]	-	-	-
	Cyanide	50	1	5	-	-
	Iron	-	1,000	-	-	-
	Lead	10	-	-	1.2[5]	14
	Manganese	-	123[5]	-	-	-
	Mercury	1.0	-	-	-	0.07
	Nickel	20	-	-	4[5]	34
	Nitrate[2]	50,000	-	-	-	-
	Nitrite[2]	500	-	-	-	-

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Compound/element		Groundwater Quality Threshold Values[1&16] Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters[13]	Short term (95th percentile) for fresh waters[13]	Annual average (AA-EQS) for inland surface waters[14]	Maximum allowable concentration (MAC-EQS)[14] for inland surface waters[15]
	Selenium	10	-	-	-	-
	Sulphate	250,000	-	-	-	-
	Zinc	-	10.9	-	-	-
PAH compounds	Anthracene	-	-	-	0.1	0.1
	Benzo(a)pyrene	0.01	-	-	$1.7x10^{-4}$	0.27
	Fluoranthene	-	-	-	0.0063	0.12
	Naphthalene	-	-	-	2	130
	PAH compounds (benzo(b)fluoranthene + benzo(k)fluoranthene + benzo(ghi)perylene + indeno(1,2,3-cd)pyrene)	0.1	-	-	$1.7x10^{-4(12)}$	$0.27^{(12)}$
	Benzo(b)fluoranthene	-	-	-	-	0.017
	Benzo(k)fluoranthene	-	-	-	-	0.017
	Benzo(ghi)perylene	-	-	-	-	$8.2x10^{-3}$
	Indeno(1,2,3-cd)pyrene	-	-	-	-	n/a
BTEX compounds	Benzene	1.0	-	-	10	50
	Ethene	-	-	-	-	-
	Toluene	-	74	380	-	-
	Xylene	-	-	-	-	-
VOCs	Carbon tetrachloride	-	-	-	12	n/a
	C10-C13 Chloroalkanes (e.g. chloroethane, bromomethane, chloromethane)	-	-	-	0.4	1.4
	1,2-dichloroethane	3.0	-	-	10	n/a
	Trihalomethanes total (trichloromethane (chloroform) + bromoform +	100	-	-	-	-

Compound/element		Groundwater Quality Threshold Values[1&16] Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters[13]	Short term (95th percentile) for fresh waters[13]	Annual average (AA-EQS) for inland surface waters[14]	Maximum allowable concentration (MAC-EQS)[14] for inland surface waters[15]
	dibromochloromethane + bromodichloromethane)					
	Vinyl chloride	0.5	-	-	-	-
	1,2 dichloroethane	3.0	-	-	-	-
	Trichlorobenzenes	-	-	-	0.4	n/a
	Tetrachloroethane + trichloroethylene	10	-	-	-	-
	Trichloroethylene	-	-	-	10	n/a
	Tetrachloroethane	-	140	1848		
	Tetrachloroethylene	-	-	-	10	n/a
	Trichloromethane (alternative name chloroform)	-	-	-	2.5	n/a
	Tetrachloromethane	3	-	-	-	-
SVOCs	Benzyl butyl phthalate	-	7.5	51	-	-
	Bis(2-ethylhexyl)phthalate (alternative name: di(2-ethylhexyl)-phthalate	-	-	-	1.3	n/a
	Brominated diphenylethers[8]	-	-	-	na	0.14
	2,4-dichlorophenol	-	4.2	140	-	-
	Hexa-chlorobenzene	-	-	-	-	0.05
	Hexa-chlorobutadiene	-	-	-	-	0.6
	Pentachlorophenol	-	-	-	0.4	1

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Compound/element		Groundwater Quality Threshold Values[1&16] Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters[13]	Short term (95th percentile) for fresh waters[13]	Annual average (AA-EQS) for inland surface waters[14]	Maximum allowable concentration (MAC-EQS)[14] for inland surface waters[15]
Other organic compounds	Phenol	-	7.7	46	-	-
	Perfluorooctane sulfonic acid and its derivatives (PFOS)	-	-	-	$6.5x10^{-4}$	36
	Total 48 PFAS[16]	0.1	-	-	-	-
Pesticides in groundwater	**Pesticides & related products[3]**	-	-	-	-	-
	Aldrin	0.03	-	-	-	-
	Dieldrin	0.03	-	-	-	-
	Heptachlor	0.03	-	-	-	-
	Heptachlo epoxide	0.03	-	-	-	-
	Other pesticides	0.1	-	-	-	-
	Pesticides total[4]	0.5	-	-	-	-
Pesticides in surface waters	Atrazine	-	-	-	0.6	2.0
	Chlorfenvinphos	-	-	-	0.1	0.3
	Chlorpyrifos (Chlorpyrifosethyl)	-	-	-	0.03	0.1
	Cyclodiene pesticides: aldrin, dieldrin, endrin[10]	-	-	-	0.01	n/a
	Cypermethrin	-	0.0001	0.0004	$8x10^{-5}$	$6x10^{-4}$
	Diazinon	-	0.01	0.02	-	-
	DDT total[11]	-	-	-	0.025	n/a
	2,4 dichlorophenoxyacetic acid (2,4 D)	-	0.3	1.3	-	-
	Dichlorvos	-	-	-	$6x10^{-4}$	$7x10^{-4}$
	Dimethoate	-	0.48	4.0	-	-

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Compound/element		Groundwater Quality Threshold Values[1&16] Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters[13]	Short term (95th percentile) for fresh waters[13]	Annual average (AA-EQS) for inland surface waters[14]	Maximum allowable concentration (MAC-EQS)[14] for inland surface waters [15]
	Endosulfan	-	-	-	0.005	0.01
	Heptachlor and hetachlorepoxide	-	-	-	$2x10^{-7}$	$3x10^{-4}$
	Mecoprop	-	18	187	-	-
	Permethrin	-	0.001	0.01	-	-
	Simazine	-	-	-	1	4
	Terbutryn	-	-	-	0.065	0.34

NOTES

1. Threshold values based on The Water Supply (Water Quality) Regulations 2018 with the exception of Note 15.
2. The water must satisfy the formula "[nitrate]/50 + [nitrite]/3 ≤ 1", where the square brackets signify the concentrations in mg/1 for nitrate (NO_3) and nitrite (NO_2).
3. "pesticides and related products" means any of the following, and includes their relevant metabolites, degradation and reaction products— (a) organic insecticide; (b) organic herbicide; (c) organic fungicide; (d) organic nematocide; (e) organic acaricide; (f) organic algicide; (g) organic rodenticide; (h) organic slimicide; (i) any product related to any of (a) to (h) (including any growth regulator).
4. The sum of the concentrations of the individual compounds detected and quantified in the monitoring process.
5. "Bioavailable" meaning the fraction of the dissolved concentration of the metal likely to result in toxic effects as determined using the UKTAG Metal Bioavailability Assessment Tool (also referred to as a PNEC Estimator) for the relevant metal.
6. The Environment Agency (EA) must define the type of river systems according to their alkalinity and altitude and the acid neutralising capacity for the river due to the dissolved carbon content. The definition due to alkalinity and altitude is in Table 1, as follows:

Site altitude	Table 1 - Alkalinity (as mg/l $CaCO_3$)				
	<10	≥10 to <50	≥50 to <100	≥100 to <200	>200
Under 80m	Type 1	Type 2	Type 3	Type 5	Type 7
Over 80m			Type 4	Type 6	

The quality of the rivers or river sections will then be categorised by the EA, according to the dissolved oxygen content, biological oxygen demand and ammonia levels relative to the type denoted in Table 1. The ammonia standards would be classified as follows in Table 2.

Table 2 -Ammonia standards for rivers (rivers categorised by type in accordance with river type in Table 1 above.				
Total ammonia as nitrogen (mg/l) (90 percentile)				
Type	High	Good	Moderate	Poor
1, 2, 4 and 6	0.2	0.3	0.75	1.1
3, 5 and 7	0.3	0.6	1.1	2.5

7. Ambient background concentrations have been presented in the Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 with regards to the ambient background dissolved zinc concentrations.
8. The EQS refers to the sum of the concentrations of congener numbers 28, 47, 99, 100, 153 and 154.
9. The EQS for cadmium and its compounds is dependent on the water hardness as specified: Class 1: <40mg $CaCO_3$/l, Class 2: 40 to <50mg $CaCO_3$/l, Class 3: 50 to <100mg $CaCO_3$/l, Class 4: 100 to <200mg $CaCO_3$/l and Class 5: ≥200mg $CaCO_3$/l.
10. EQS relates to the sum of aldrin, dieldrin and endrin.
11. DDT total comprises the sum of the isomers 1,1,1-trichloro-2,2 bis (p-chloropheny) ethane, 1,1,1-trichloro-2 (o-chlorophenyl)-2-(p-chlorophenyl) ethane, 1,1 -dichloro-2,2 bis (p-chlorophenyl) ethylene and 1,1-dichloro-2,2 bis (p-chlorophenyl) ethane.
12. For the group of PAH compounds benzo(b)fluoranthene + benzo(k)fluoranthene + benzo(ghi)perylene + indeno(1,2,3-cd)pyrene, the EQS for benzo(a)pyrene must be applied, this being considered to be a marker for these PAH compounds.
13. Fresh water includes rivers and lakes.
14. Where the MAC-EQS is noted as n/a, the AA-EQS values are considered protective against short-term pollution peaks in continuous discharges as they are significantly lower than the values derived on the basis of acute toxicity.
15. Inland surface waters includes rivers and lakes and related artificial or heavily modified water bodies.
16. Drinking Water Inspectorate Guidance to water companies – “Guidance on the Water Supply (Water Quality) Regulations 2016 (as amended) for England and Water Supply (Water Quality) Regulations 2018 for Wales specific to PFAS (per- and polyfluoroalkyl substances) in drinking water. August 2024

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Legislation Framework Which Drives the Contamination Assessment of Land in England and Wales

Foreward

In the UK, historical contaminated land is regulated by the planning and development control system and the contaminated land regime set out in Part IIA of the Environmental Protection Act 1990. The Water Act 2003 amended the Part IIA legislation in respect of controlled waters.

When considering an application for development, the potential for the land to be contaminated is a material consideration, and the planning authority should satisfy itself that any contamination is properly assessed and adequately remediated, based on a suitable for use approach. This is to ensure that the land is made suitable for its proposed new use.

For development sites which introduce new potential sources of pollution on site and these are either suspected of, or known to be causing environmental damage, a remediation notice may be placed on the operator under the Environmental Damages (Prevention and Remediation) Regulations, as applicable to England or Wales. The legislation aims to deter pollution events from occurring. When pollution events do occur, apportionment of the 'blame' for the pollution event follows a specific protocol to assess which party, assuming multiple parties have utilised the site, is responsible. The operator deemed responsible for the pollution will then be expected to clean up the pollution ideally voluntarily, or a remediation notice is served enforcing the polluter to undertake the works, assuming an appeal made is unsuccessful.

As such, developers should give due consideration to the Environmental Damages (Prevention and Remediation) Regulations during management of their site activities, for which they are responsible. Fuel tanks are often on site for the refuelling of plant, providing a potential point source of pollution at one or a number of locations about the site, as they are relocated. In addition, soils (generic term for all non-construction materials) used to raise site levels, form engineering platforms (i.e. piling and roads) and for use in garden areas are imported to site.

The legislation is complex and often is interchangeable and may depend upon the time the contamination was released into the environment and the receptors which have been\may be detrimentally affected by the contamination. A summary of the most relevant legislation and guidance is noted below.

Developers should not take on liability for all previous pollution the vendor and previous owners have left on the site. If some liability has to be taken to progress the sale of the site, a full appreciation of the liabilities of the contamination must be understood. It is common during the course of the ground investigation that all sources of historical contamination are not revealed and hence it is prudent to keep liability for these unknown events with the previous operators.

Interaction of the Planning Regime with the Environmental Protection Act 1990 – Part IIA

Current guidance/legislation applicable to England has been published by the Ministry of Housing, Communities and Local Government, the '*National Planning Policy Framework'*, February 2019, and by the Department of Environment, Food and Rural Affairs (DEFRA), the '*Environmental Protection Act 1990: Part 2A. Contaminated Land Statutory Guidance*', April 2012. The Welsh Government has published '*Planning Policy Wales, Edition 11*', February 2021 and '*Contaminated Land Statutory Guidance for Wales 2012',* 2013. Both planning policies continue to promote the 'suitable for use approach', with the emphasis related to ensuring that the future use or development being undertaken would not be designated as contaminated land under Part IIA of the Environmental Protection Act 1990. Where remediation is required this should be undertaken in such a manner that it would not have an adverse impact on the environment.

In order for a planning decision to be made, a site investigation carried out by a specialist must be provided, which assesses the potential hazards to future site users and the local environment arising from past activities or natural factors. Where remediation is required to mitigate these impacts, the remediation scheme must show that the land would not be designated as contaminated land under Part IIA of the Environmental Protection Act 1990. If contamination cannot be overcome satisfactorily, the authority may refuse planning permission.

The responsibility for ensuring the development is undertaken in such a manner lies with the developer/land owner.

The definition of contaminated land is presented in the Environmental Protection Act 1990 as follows: *'any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that—*
(a)significant harm is being caused or there is a significant possibility of such harm being caused; or
(b) significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused;.....'

Before the local authority can conclude that land appears to be contaminated land, the authority must assess the risk that a significant pollutant linkage exists.

This means that each of the following has to be present:
(a) a **contaminant**;
(b) a **receptor**; and
(c) a **pathway**.

Guidance defines the risk as the combination of:

'(a) the likelihood that harm, or pollution of water, will occur as a result of contaminants in, on or under the land; and
(b) the scale and seriousness of such harm or pollution if it did occur'.

The Statutory Guidance under Part IIA of the Environmental Protection Act 1990 both in England and Wales promotes the application of a four category test to assess whether land is contaminated or not. Category 1 sites are sites which have a high likelihood of contamination and would be considered as a significant problem. Category 4 sites are sites which are obviously not contaminated on the basis of either desktop information or a basic intrusive investigation. Categories 2 and 3 lie between the obviously uncontaminated and contaminated sites, with the division between these categories being considered as contaminated land under Part IIA. Risk assessment will be required to assess whether a site lies within Category 2 or 3. The risk assessment will initially be determined by health risks, then by socio-economic factors should health risks be uncertain, with a default decision of contaminated should the tests not be adequately met (refer to Figure 1).

For the purpose of determining whether a site may be classified as contaminated land, soil guideline values (SGV)/generic assessment criteria (GAC) should not be utilised as determining factors. These may be applied to confirm Category 4 sites, these showing categorically that it is considered there is no risk of harm to human health on such sites. However, SGV and GAC threshold values are conservative, indicating that there is no risk at all to human health or very minimal risk. As such, these should not be considered to act as threshold values between Category 3 and Category 4 sites. The Statutory Guidance has made provision for generic screening values to be derived, termed as Category 4 Screening Levels (C4SL), which still provide a cautious assessment but relate the risk associated with normal ambient levels of contaminants, termed the low observed adverse effect level (LOAEL), making for a more pragmatic approach to risk assessment. C4SLs may be applied to site investigations undertaken in support of a planning application. To date C4SLs have been derived arsenic, cadmium, chromium (VI), lead, benzo(a)pyrene and benzene and represent. It has been proposed to derive twenty additional C4SLs including the inorganic and organic contaminants. As C4SLs will result in levels of contaminant concentrations in soils that will still be considered to be acceptable in terms of level of risk in relation to the Part IIA of the Environmental Protection Act 1990.

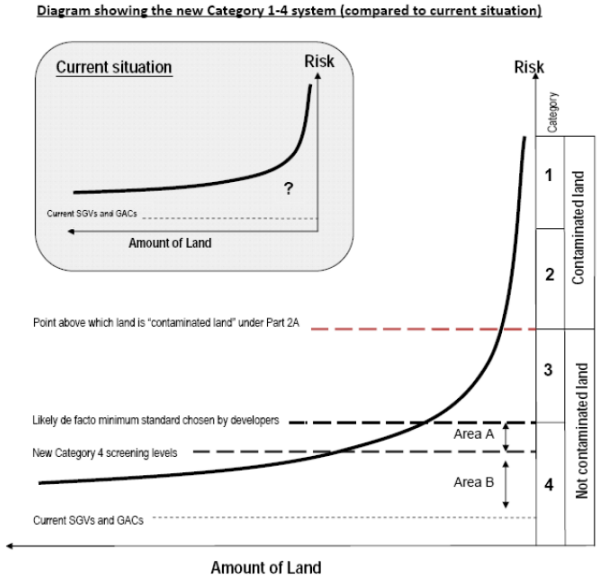


Figure 1: The New Four Category System

Environmental Protection Act 1990 – Part III

It should be noted that under the Environmental Protection Act 1990, the statutory nuisance regime applies to *'premises which may be prejudicial to health or a nuisance'*. In this case the term *'health'* does not apply to contaminated land issues. However, nuisance may apply where the effects of deposits of substances on land cause offence to human senses (such as stenches).

Environmental Damage (Prevention and Remediation) Regulations

The following legislation made in England and Wales respectively, is designed to control new contamination events.

- *The Environmental Damage (Prevention and Remediation) (England) Regulations 2015* (revoking the 2009 Regulations).
- *The Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009*, as amended by *The Environmental Damage (Prevention and Remediation) (Amendment) (Wales) Regulations 2015*.

The meaning of 'environmental damage' has been detailed by DEFRA's guidance document applicable to these Regulations as shown below:

'An important point to note is that the Regulations are a 'backstop', only applying when something has gone wrong and there is an imminent threat or actual 'environmental damage' within the scope of the Regulations. The emphasis should be on proactively putting in place appropriate pollution prevention measures to reduce risks to the environment. Those running businesses and other operations can reduce the likelihood of ever being caught by the Regulations' requirements by minimising risks to the natural resources covered by the Regulations. This means that businesses should be aware, in particular, where they:

- *Operate within or near areas of high biodiversity value, especially Sites of Special Scientific Interest (SSSIs);*
- *Operate near water bodies; and/or*
- *Carry out activities with potential risks to human health*
- *This is so they can take the necessary steps to manage the relevant risks effectively, including implementing and monitoring appropriate pollution prevention measures.*

The Regulations do not cover all types of damage to the environment. They only cover 'environmental damage' which is one or more of damage to:

- *protected species and natural habitats or to a site of special scientific interest (these are referred to collectively in the guidance as* ***damage to species and habitats****);*
- *surface water or groundwater (these are referred to collectively in the guidance as* ***damage to water****); and,*
- *land. (Damage to land is contamination of land by substances, preparations, organisms or micro-organisms that results in a significant risk of adverse effects on human health.*

Both the England and Wales Regulations state they do not apply in relation to:

- damage that occurred before the Regulations originally came into force in 2009, but for marine waters July 2015
- damage that occurs or occurred after these dates, or is or was threatened after these dates, but is caused by an incident, event or emission that took place before these dates; or
- damage caused by an incident, event or emission that takes or took place after these dates, if derived from an activity that took place and finished before these dates.
- environmental damage caused by pollution of a diffuse character if the causal link between the damage and specific activities cannot be defined.

The Regulations state where an operator of an activity has caused environmental damage, or where there is sufficient evidence to indicate that environmental damage will eventually occur, the operator must immediately

- take all practicable steps to prevent further damage; and
- notify all relevant details to the relevant enforcing authority.