IGE consulting

MCWFC Academy Development Training Facility

Remediation Strategy Report

For: John Turner Construction Group Ltd

John Turner Construction Group

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Date:	**June 2024**
Written By:	**Amy Ellams** BSc (Hons) 
Checked and Authorised By:	**Andrew Edwards** MSc, PIEMA, MIEnvSoc, FGS, CEnv 
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IGE Consulting Ltd, Office 16, Bartle House, Oxford Court, Manchester, M2 3WQ

Tel: 0161 914 9170

Email:contact@igeconsulting.co.uk

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QMS ISO 9001 : 2015 REGISTERED
QMS ISO 14001 : 2015 REGISTERED
ace Association for Consultancy and Engineering Proud Member
CHAS PREMIUM PLUS CHAS
BVC THE BRITISH VERIFICATION COUNCIL GROUNDGAS PROTECTION SYSTEMS

1.0 INTRODUCTION

This *Remediation Strategy Report (4154-01)* has been prepared at the request of John Turner Construction Group on behalf of City Football Group Ltd. Instructions to proceed with this report were received in April 2024.

This report pertains to a c. 0.72 Ha site located off Ashton New Road (A662), Manchester, c. 3.5km east of Manchester city centre, at the approximate postcode M11 4AA. The National Ordnance Survey Grid Reference for the centre of the site is 387584E, 398442N. A site location plan is included in Appendix 2 (Drawing ref. *SI-01*) with the Site Block Plan as Proposed (Bowker Sadler Architecture, Reference 22-053-1101, Rev A, dated October 2023).

The site is currently occupied by a disused building, formerly a HSBC bank with associated access road and small parking area in the north. The southern part of the site currently comprises grassed areas associated with training pitches and seating areas. The north and south parts of the site are separated by a c. 5m high mound of soil that is heavily vegetated. General site photos of the site are included below from 2022 – 2023:



Figure 1: Site photograph viewing southwest of the northern part of the site.



Figure 2: Site photograph viewing east of the southern part of the site.



Figure 3: Site photograph viewing east of the central part of the site, on the southern side of the existing on-site mound.



Figure 4: Site photograph viewing east of the central part of the site, on the northern side of the existing on-site mound.

1.1 Scope

The scope of this Remediation Strategy Report is in two phases:

1. Phase 1 involves the removal of the approximately 6000m^3 earth mound which covers a significant proportion of the proposed scheme and as such negates any ground investigation and assessment being undertaken beneath its envelope. Following removal of this stockpile, which is required to facilitate the development, further ground investigation works will be undertaken. These proposed ground investigation works are detailed below.

2. Phase 2 pertains to the design build phase remediation based upon the findings of the *CC Geotechnical Ltd Combined Phase 1 and Phase 2 Geo-Environmental Report* (Ref. CCG-C-23-13703, July 2023). This is to be reassessed following Phase 1 specified above.

It is the Client's intention to construct a two-storey extension to the east of the existing building and utilise the existing building by conversion, to develop a new Women's facility comprising changing rooms, gym, offices and reception area, with associated earthworks, landscaping, boundary treatment, parking and access. The proposed development plan is contained in Appendix 2. An extract of the proposed development plan is shown below:



Figure 5: Extract of the Landscape Masterplan (taken from Saville Landscape Design, 407-01, Rev D, December 2023) with the main area of work outlined in red.

A planning application (reference: 138987/FO/2024) was submitted to Manchester City Council in January 2024 for the '*Erection of a two-storey side extension to former bank to form training facility with associated earthworks, landscaping, boundary treatment, parking and access*.' The application was approved with conditions in April 2024.

Condition 10 outlined in the decision notice issued in April 2024 states the following:

"*10) Notwithstanding the Phase I-II Geo Environmental Report, Prepared by CC Geotechnical Ltd., Date: July 2023, Ref: CCG-C-23-13707, received by the City Council, as Local Planning Authority, on the 11 January 2024:*

Before the development hereby approved commences, the following information should be provided:

- Remediation Strategy

- The results of the site investigation and the detailed risk assessment referred to

in the submitted documents and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required and how they are to be undertaken.

- A verification plan providing details of the data that will be collected in order to

demonstrate that the works set out in the remediation strategy in (1) are complete and identifying any requirements for longer-term monitoring of pollutant linkages,

maintenance and arrangements for contingency action."

1.2 Brief

In order to fulfil the above planning condition, the production of a Remediation Strategy report has been undertaken, utilising the findings of the CC Geotechnical site investigation works undertaken in April and May of 2023, outlined in the CC Geotechnical Ltd Combined Phase 1 and Phase 2 Geo-Environmental Report (Ref. CCG-C-23-13703, July 2023), human health, controlled waters and ground gas risk on site.

The limitations of the report are contained in Appendix 1.

1.3 Summary of Phase 2 Investigation Findings

In April and May of 2023, CCG undertook an intrusive investigation of the site, comprising 1 No. Cable Percussive borehole to a depth of 15.00m below ground level (bgl) (51.71m AOD) and 6 No. dynamic sample boreholes to depths of up to 5.00m bgl (between 62.30m and 60.75m AOD). 4 No. of the boreholes were installed with combined ground gas and groundwater monitoring wells.

The CCG report and appendices are presented in full in Appendix 3.

The locations of the CCG exploratory holes are detailed on the below extract.



Figure 6: An extract of the Site Investigation Location Plan from CCGS Report (ref. 13703/3, dated July 2023). Red = Cable Percussion Borehole, Blue = Window Sampling Borehole.

Soil testing

6 No. soil samples from across site were submitted for environmental analysis. No exceedances of a 'Public Open Space (Park)' Generic Assessment Criteria (GAC), based on 2.5% organic matter, were recorded within any of the soil samples tested.

However, 4 No. of the 6 No. soil samples subjected to laboratory testing identified asbestos fibre bundles. The asbestos was not quantified within the reporting.

Waste classification was considered in the report. 3 No. soil samples from across site were subject to Waste Acceptance Criteria (WAC) analysis – all were classified as non-hazardous. The 6 No. soil samples were also subject to HazWaste Classification via the online program, with 1 No. sample identified as hazardous.

Water testing

2 No. groundwater samples were obtained from the ground gas and groundwater monitoring wells and sent for chemical testing. Exceedances were identified when results of the laboratory testing results were compared to Environmental Quality Standards (EQS) or, where EQS values are not available, World Health Organisation (WHO) guidelines for drinking water.

Section 15.3 of the CCG report summarises the risk posed to Controlled Waters and deduces the following:

Perched water accumulations have been impacted by Polycyclic Aromatic Hydrocarbons (PAH) and heavy long chain aliphatic and aromatic hydrocarbons.
However, the results represent groundwater quality pertaining to the superficial perched water accumulations, a proven thick stiff clay impermeable aquiclude encountered in BH01 protects the main potential receptors: the sandstone bedrock formation and the Ashton Canal (which is assumed to have a clay liner). The report also states, there is no evidence that potentially leachable sources of contamination remain on the site, therefore the exceedances identified above are not considered to pose a significant risk to controlled waters.

It should be noted the report also stated that these bodies of perched groundwater may require to be managed / disposed of during the construction process and care will be required to avoid run-off into the Ashton Canal.

Ground Gas Monitoring

CCG undertook 4 No. rounds of ground gas monitoring over a one-month period between the 8th June and 29th June 2023.

No methane was recorded in any of the visits and the maximum recorded carbon dioxide was 4.8% in visits 1 and 2 in exploratory hole BH1 with the lowest oxygen percentage recorded as 12.4% during visit 2 also in BH1.

Subsequently, a Gas Screening Value (GSV) of 0.0048l/hrs was calculated for CO_2.

Based solely on the calculated GSV the ground gas risk to the site and the future development was deemed to be **low** and in-line with **Characteristic Situation 1 (CS1)**. Therefore, no ground gas protection measures are deemed necessary in the proposed development, in-line with BS8485 + A1 (2019).

Radon

The CCG Phase 1 and Phase 2 report indicates that the site lies within an area with less than 1% of homes above the action level. Consequently, BR211 (2015) indicates that no radon protection measures are necessary in the construction of new dwellings or extensions.

2.0 PROPOSED SCOPE OF WORKS

The presence of the earth mound currently covering a significant proportion of the development area and separating the north and south parts of the site, is currently preventing full site access and hindering further ground investigation and construction works.

Therefore, there are two phases of work proposed:

2.1 Enabling Works (Mound Clearance)

To allow full access to the site for the development, the mound needs to be removed from site. Figure 7 presented below demonstrates the location of the existing earth mound in relation to the proposed site layout, contours are in AOD.

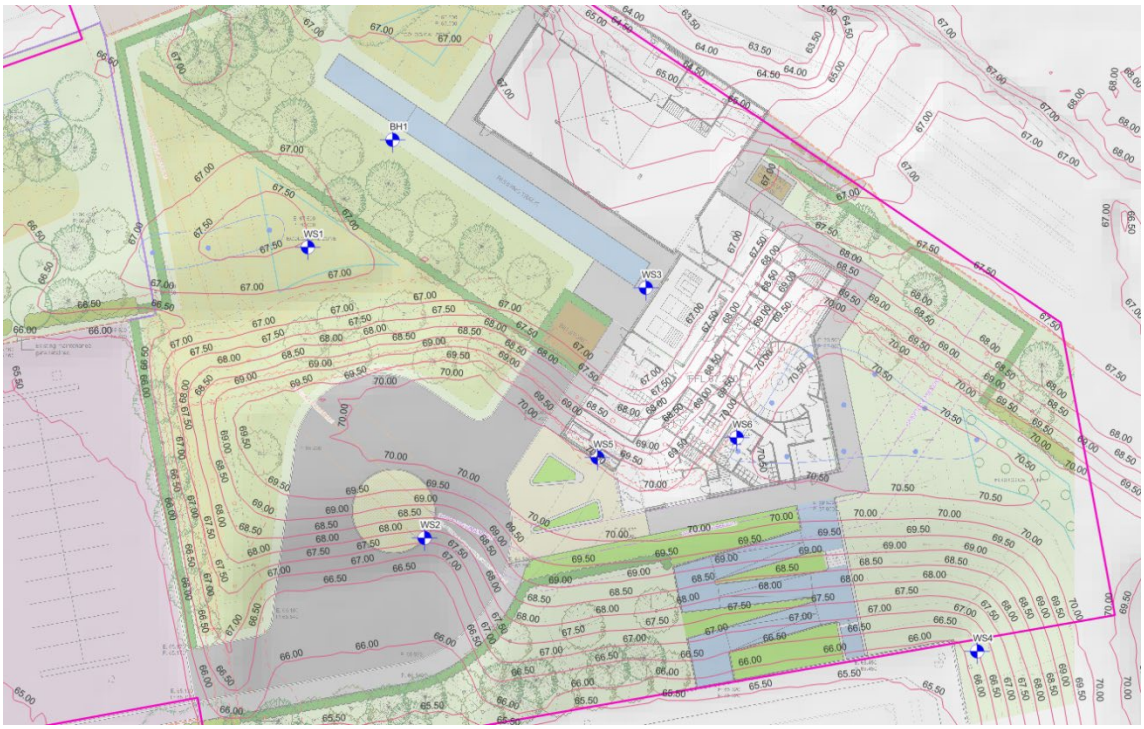


Figure 7: An Extract of the Landscape Masterplan (taken from Saville Landscape Design, 407-01, Rev D, December 2023) with overlain LiDAR data to demonstrate location of the mound. The approximate site boundary is in pink. Blue borehole locations from CCG GI, April and May 2023.

It has been calculated that there is approximately 3000 - 6000m^3 of material currently in the mound on site to be cleared. Within the development plan, it is proposed that where possible, site-won material will be utilised be used across the areas of soft

landscaping / general fill. For material to be reused, it needs to comply with standards outlined in §3.0 of this report.

During the ground investigation works completed by CCG, 4 No. of the 6 No. soil samples subjected to laboratory testing identified asbestos (WS2, WS3, WS4 and WS6). The locations are shown on Figure 7 above, to demonstrate their location in relation to the existing earth mound and proposed site plan. No other exceedances were identified when compared to a Public Open Space (Park) end use. Subsequently, further testing is required to assess the suitability of soils for reuse in line with the above-mentioned guidelines in §3.0 of this report.

2.1.1 Export of Materials

If any contamination is identified, or any material that is surplus to the soft landscaping works, disposal off-site will be required. Any soils to be removed from site must be classified in accordance with WM3 under the definition of waste and chemically tested to determine their destination, i.e. reuse or landfill, prior to removal. Waste ticket records must also be retained as proof of the export of materials from site.

2.1.2 Discovery Strategy

Based on the current and historical site uses, the presence of unrecorded contaminative hotspots cannot be discounted beneath the envelope of the existing stockpile. In the event of unexpected contamination being discovered, the Discovery Strategy must be followed. The strategy is outlined below. Construction workers will also be issued with a copy of the strategy throughout the development process.

Potentially contaminative material can be identified as follows:

- Appears oily / has an iridescent sheen
- Hydrocarbon odour e.g., oily or petroleum odour;
- Solvent odour e.g., sharp or sweet odour;
- Waste materials e.g., metals, plastic etc.;
- Asbestos e.g., fibrous sheeting / roofing / board / lagging etc.;
- ‘Landfill’ odour e.g., rotten / putrefying / leachate odour.

Or any other material that looks man-made or does not match its surroundings – if in doubt, check.

If any of the above material is discovered, the following procedure must be carried out:

a) Stop works in the area of the contamination discovery;
b) Inform the Site Manager;
c) Record the visual and olfactory evidence of contamination;
d) Suitably qualified geo-environmental engineer to investigate the contamination; take samples, photographs and in-situ tests and discover the extents of the contamination, and to identify potential contaminants and specify chemical testing, if necessary;
e) Either dig out the contaminated material and stockpile, on an impermeable membrane if necessary, or leave in-situ whilst awaiting chemical test results, if needed – whichever presents the least risk.
f) Suitably qualified geo-environmental engineer to re-visit the site's risk assessment, taking into account the newly discovered contamination and recommend remediation, if necessary, or other next steps;
g) If the risk assessment and remediation strategy is changed as a result, the Local Authority and/or the Environment Agency should be informed and/or consulted;
h) Lastly, undertake remediation of the affected area if this has been deemed appropriate.

2.1.3 Decommissioning of Boreholes

It is imperative that all boreholes drilled into the site are located and appropriately grouted to negate any possible preferential ground gas pathways, including those installed by CCG in 2023. Utilising guidance provided in the Environment Agency's '*Good practice for decommissioning redundant boreholes and wells*' (October 2012), it is prudent to secure redundant boreholes to ensure that no groundwater pollution can occur. The Environment Agency (EA) offer advice on the methods of sealing wells to ensure that the preferential pathway is removed. The following diagram taken from the EA guidance shows a monitoring well (A) and 3 No. options for decommissioning (B, C and D):

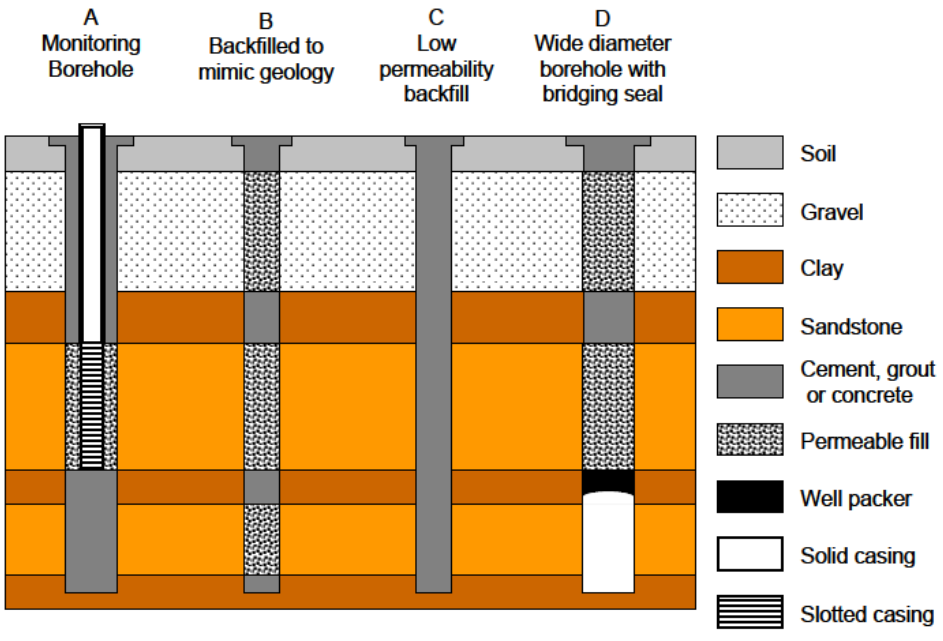


Figure 1: Schematic options (B–D) for decommissioning wells and boreholes

It is considered prudent to utilise Option C – low permeability backfill, shown in the diagram above, to adequately seal the borehole. The guidance recommends that 'the backfill materials must be clean, inert and non-polluting', e.g. bentonite. It is recommended to remove the standpipe and seal with bentonite to ground level. This will be sufficient to prevent contaminant transport.

2.2 Full Phase 2 Ground Investigation (Post Mound Clearance)

Following the controlled removal of the approximately 3000 - 6000m^3 earth mound clearance, to assess the ground conditions underlying the earth mound, a ground investigation is recommended in order to identify the presence or absence of further contamination and to deduce geotechnical parameters for design purposes. These works will also allow reassessment of the recommendations of this report, to see if they are still applicable.

2.2.1 Ground Investigation

Subject to the findings of the stockpile clearance, it is proposed to undertake dynamic sampling boreholes across the area of development to allow in-situ geotechnical testing and the collection of samples for classification and geotechnical and

environmental laboratory testing. A preliminary proposed exploratory hole plan is presented in Appendix 2 with an extract below:



Figure 8: An Extract of the Proposed Exploratory Hole Location Plan (SI-02, IGE, June 2024). Red = Proposed IGE exploratory holes, Blue = previous CCG boreholes. The approximate working area boundary is in red.

Please note that the locations of the exploratory hole locations are subject to change following mound clearance and allowance should be made for further exploratory boreholes if required.

Following the ground investigation, all findings and results will be presented in a Phase 2 Geo-Environmental Report, including the screening of environmental testing results against criteria for a Public Open Space (POS).

Based upon the findings f the site investigation works either ground gas monitoring wells will be installed or a RB17 (fTOC) assessment will be undertaken along with a rigorous conceptual site model.

2.2.2 United Utilities Pipeline Risk Assessment

During the investigative works, soil samples will be collected and sent for environmental laboratory testing. The results of this testing will also be used to complete a United Utilities Pipeline Risk Assessment which assesses the risk of (possible) contamination to new water pipes.

3.0 REMEDIATION STRATEGY FOR HUMAN HEALTH

The proposed end use of the site is to develop a new Women's facility comprising changing rooms, gym, offices and reception area, with associated earthworks, landscaping, boundary treatment, parking and access roads.

Based on the inclusion of soft landscaping, feasible pathways to end users and construction workers exist, consequently, a clean cover system will be required within the areas of soft landscaping across the site.

Construction workers

The risk to construction workers is deemed moderate due to their acute interaction with the soil. Consequently, although the use of appropriate PPE, including disposable overalls and gloves as well as following health and safety procedures will **reduce** the risk, remedial measures are deemed necessary and are detailed below.

3.1 Installation of a Clean Cover System in Soft Landscaped Areas

Based on the inclusion of soft landscaping, feasible pathways to end users and construction workers exist, consequently, a clean cover system will be required within the areas of soft landscaping across the site (see Figure 5).

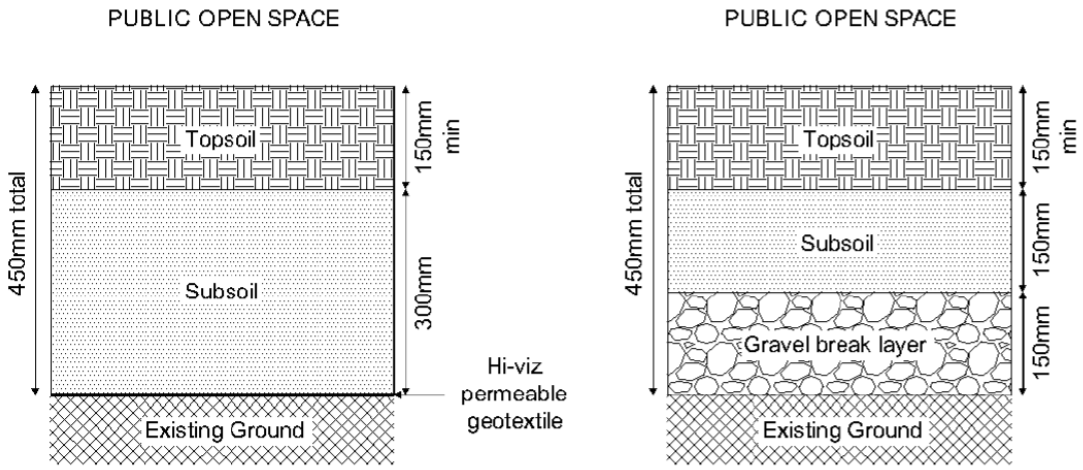
Technical Guidance for 'Planning & Contaminated Land' produced by Manchester City Council (MCC), February 2021, states: *'Typical cover system design requires a capillary break layer at its base, which is then overlain by various depths/types of fill material. These individual layers working in unison form the cover system or capping layer. The minimum acceptable total depth for fill materials (including the break layer) within private garden areas should be 600mm'.*

Within this guidance, it is also stated that the minimum acceptable total depth for fill materials (including the break layer) within areas of soft-landscaping, common areas or public open spaces, can be relaxed to 450mm, considering the *'reduced risk afforded by diminished exposure of human health receptors to potentially contaminated soils within these public areas.'*

Therefore, the cover system for the Public Open Space (POS) is to be 450mm thick and consist of:

- A minimum of 150mm up to a maximum of 300mm suitable topsoil, underlain by
- Suitable subsoil, to a total thickness of 450mm, underlain by
- A hi viz permeable geotextile or a hard-to-dig gravel break layer.

This is shown diagrammatically below:



Soils for use in the above recommended cover system may be site-won subject to further chemical testing. However, if the site-won material is not deemed suitable, material may need to be imported to site.

In order to deem the material suitable for use, the Technical Guidance from MCC states sampling densities should be based on the source of the material utilised (either imported or site-won). The below table, (Table 2 from Technical Guidance for 'Planning & Contaminated Land', Manchester City Council (MCC), February 2021) should be referenced for the recommended sampling frequencies depending on the soil source, with the expectation that as an absolute minimum, sampling would consist of at least three samples for each source used.

Table 2 Sampling frequencies for imported or site-won fill materials

End-Use	Greenfield Soils	Remediated Soils	Brownfield Soils	Unknown Soil Source
Residential Gardens	1:200m^3	1:100m^3	1:50m^3	1:50m^3
Soft landscaping	1:200m^3	1:150m^3	1:150m^3	1:150m^3
Other	1:200m^3	1:200m^3	1:200m^3	1:200m^3

Soils for use in the above recommended cover system must be validated as detailed below to ensure their suitability for use.

3.2 Validation of Clean Cover System

Once the 450mm clean cover system is installed to break contaminative linkages, validation requirements include:

- Details of the source of the cover material;
- Chemical test results to demonstrate that the soil is free from contamination and 'suitable for use' in-line with the below chemical testing suites and rates.
- Waste transfer notes to provide evidence of source (if imported);
- Confirmation of cover depth by either measurement tape or topographical survey with photographs.

All material (site-won or imported) used for the construction of soft landscaping must be validated as detailed below to ensure its suitability for use (i.e., no glass or plastic is to be included and meets chemical testing acceptability criteria).

Imported topsoil and subsoil is required to be tested at source prior to import to confirm suitability. All topsoil and subsoil, whether site-won or imported is required to be tested at the frequency outlined above in §3.1.

It should be noted that 'General Fill' is material used primarily to raise levels, specifically not within areas of private gardens, public open space, or soft landscaping, e.g. 6F2.

A list of possible testing suites has been presented below. Although, in addition to the standard suites given, the laboratory testing suite should include any additional contaminants of concern based on the source of the samples:

Testing Suites:

A. Asbestos ID, Asbestos quantification.
B. pH, total and free cyanide, soluble sulfate, organic matter.
C. Arsenic, Beryllium, Boron, Cadmium, Chromium (III and VI) Copper, Lead, Inorganic Mercury, Nickel, Selenium, Vanadium, Zinc.
D. Speciated PAHs: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene, Benzo(ghi)perylene.
E. Total (non-speciated) PAHs.
F. Speciated Total Petroleum Hydrocarbons (TPH): Aliphatic >EC5 - EC6, >EC6 - EC8, >EC8 - EC10, >EC10 - EC12, >EC12 - EC16, >EC16 - EC21, >EC21 - EC35, and > EC35 - EC44, and Aromatic >EC5 - EC7, >EC7 - EC8, >EC8 - EC10, >EC10 - EC12, >EC12 - EC16, >EC16 - EC21, >EC21 - EC35, > EC35 - EC44.
G. Total Petroleum Hydrocarbons (TPH): TPH EC6 – EC40.
H. BTEX: Benzene, Toluene, Ethylbenzene, p- & m-xylene, o-xylene. Methyl tertiary butyl ether (MTBE).

Once tested, the results are to be compared against the following Acceptability Criteria:

Suite	Determinand (mg/kg unless stated)	Acceptability Criteria for:			
		Private Gardens	Public Open Space (residential)	Soft Landscaping or Public Open Space (Park)	General Fill
A	Asbestos (%)	ND	ND	ND	<0.001 – 0.01%
B	pH	>6 - <8[3]	>6 - <8[3]	>6 - <8[3]	>5 - <10[3]
	Total Cyanide	0.5[3]	0.5[3]	0.5[3]	0.5[3]
	Free Cyanide	0.5[3]	0.5[3]	0.5[3]	0.5[3]
	Soluble Sulfate (mg/l)	500[3]	500[3]	500[3]	500[3]
C	Arsenic	37	79	170	640
	Beryllium	1.7	2.2	63	12
	Boron	290	21000	46000	240000
	Cadmium	11	120	560	190
	Chromium (III)	910	1500	33000	8600
	Chromium (VI)	6	7.7	220	33
	Copper	2400	12000	44000	68000
	Lead	200[1]	630[1]	1300	2330[1]
	Inorganic Mercury	40	120	240	1100
	Nickel	130	230	800	980
	Selenium	250	1100	1800	12000
	Vanadium	410	2000	5000	9000
	Zinc	3700	81000	170000	730000
D	Naphthalene	2.3	4900	1200	
	Acenaphthylene	170	15000	29000	
	Acenaphthene	210	15000	29000	
	Fluorene	170	9900	20000	
	Phenanthrene	95	3100	6200	
	Anthracene	2400	74000	150000	
	Fluoranthene	280	3100	6300	
	Pyrene	620	7400	15000	
	Benzo(a)anthracene	7.2	29	49	
	Chrysene	15	57	93	
	Benzo(b)fluoranthene	2.6	7.1	13	

	Benzo(k)fluoranthene	77	190	370	
	Benzo(a)pyrene	2.2	5.7	11	
	Indeno(1,2,3-cd)pyrene	27	82	150	
	Dibenz(a,h)anthracene	0.24	0.57	1.1	
	Benzo(ghi)perylene	320	640	1400	
E	Total PAHs				1000(4)
F	TPH-CWG - Aliphatic >EC5 - EC6	42	570000	95000	
	TPH-CWG - Aliphatic >EC6 - EC8	100	600000	150000	
	TPH-CWG - Aliphatic >EC8 - EC10	27	13000	14000	
	TPH-CWG - Aliphatic >EC10 - EC12	130	13000	21000	
	TPH-CWG - Aliphatic >EC12 - EC16	1100	13000	25000	
	TPH-CWG - Aliphatic >EC16 - EC21	65000	250000	450000	
	TPH-CWG - Aliphatic >EC21 - EC35				
	TPH-CWG - Aliphatic > EC35 - EC44	65000	250000	450000	
	TPH-CWG - Aromatic >EC5 - EC7	70	56000	76000	
	TPH-CWG - Aromatic >EC7 - EC8	130	56000	87000	
	TPH-CWG - Aromatic >EC8 - EC10	34	5000	7200	
	TPH-CWG - Aromatic >EC10 - EC12	74	5000	9200	
	TPH-CWG - Aromatic >EC12 - EC16	140	5100	10000	
	TPH-CWG - Aromatic >EC16 - EC21	260	3800	7600	
	TPH-CWG - Aromatic >EC21 - EC35	1100	3800	7800	
	TPH-CWG - Aromatic > EC35 - EC44	1100	3800	7800	
G	TPH > EC6 - EC40				5000(4)
H	Benzene	0.087	72	90	
	Toluene	130	56000	87000*	
	Ethylbenzene	47	24000	17000*	
	p & m-xylene	56	41000	17000*&**	
	o-xylene	60	41000	17000*	
	MTBE (Methyl Tertiary Butyl Ether)	LOD(3)	LOD(3)	LOD(3)	

LQM/CIEH S4ULs for Human Health Risk Assessment (3rd edition, 2015) used unless stated:

1) *Category 4 Screening Levels (March 2014)*
2) *CL:AIRE Soil GAC for Human Health Assessment (January 2010)*
3) *In-house screening criteria used as no GAC methodology currently exists*
4) *Hazardous waste thresholds. This limit only applies to imported material, not to in-situ soil.*

Assumed 1% SOM (most conservative) for those values dependent upon SOM.
ND = Not Detected
LOD = Limit of Detection
**Exceeds vapour saturation limit*
***Exceeds solubility saturation limit*

The above acceptability criteria for PAHs for imported topsoil and subsoil are based on the published LQM/CIEH S4ULs (2015) for each individual PAH and not based on the Category 4 Screening Level using benzo(a)pyrene as a surrogate marker. This is as the source of the imported material is unknown therefore using the surrogate marker approach may not be suitable as the distribution of PAHs in the imported material may not be similar to those in the Culp et al. (1998)[1] study. Once chemical testing had been undertaken on imported soil and the distribution of PAHs compared to the distribution in the Culp et al. (1998) study, it may be suitable to use the surrogate marker approach / C4SL.

[1] Culp et al. (1998), *A comparison of the tumors induced by coal tar and benzo[a]pyrene in a 2-year bioassay*, **Carcinogenesis,** vol.19, no.1, pp.117–124.

5.0 OTHER REMEDIAL CONSIDERATIONS

5.1 Definition of Waste: Code of Practice

Due to the recommended handling and re-use of excavated site-won materials, it is possible to avoid complex waste legislation by utilising the Definition of Waste: Code of Practice (2011, DoW:CoP). This allows assessment of whether or not excavated materials are waste, and when excavated and treated waste can be classified as 'no longer waste'.

It is recommended that in line with DoW:CoP, a robust, site-specific material management plan (MMP) may need to be emplaced and adhered to and verified in an appropriate verification report. This must be reviewed by a 'Qualified Person' who must provide a Declaration to the EA prior to works within the MMP being commenced.

5.2 Material Management

During the course of the development there will be areas of stockpiled soils intended for use within the soft landscaping area. These will have been subjected to off-site testing and approved for use on site. It is imperative that the stockpiles are well managed to avoid inadvertent mixing or depositing of surplus or deleterious materials that would compromise the continued use. We would recommend that the site management reviews the proposed positions for placement of stockpiles and places either fencing or warning signs to ensure compliance. Stockpiled soils recovered from areas of possible contamination are to be stored on an impermeable sheet and covered with appropriate spoil bunding, with any impacted soil segregated from soil with no visual and / or olfactory evidence of contamination.

5.3 Design Variation

Following any variation in a finalised proposed development layout and / or detailed design including earthworks design it is recommended that the above conclusions are re-appraised to determine their suitability.

APPENDIX 1

LIMITATIONS OF INVESTIGATION WORK AND REPORT

LIMITATIONS OF REPORT

This consultancy report was compiled and carried out by IGE Consulting Limited ('IGE') for the client, as defined in the main report (the 'client'), on the basis of a defined programme and scope of works and the terms of a contract between IGE and the client. IGE undertook this with all reasonable skill and care, taking into account the limits of the scope of works required by the client, the prevailing site conditions, the time scale involved and the resources, including financial and manpower resources, agreed between IGE and the client. IGE cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outwith the agreed scope of works.

Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices. This report may not be relied upon, or transferred to, by any other party without the written agreement of its author. If a third party relies on this report, it does so wholly at its own and sole risk and IGE disclaims any liability to such parties.

It is IGE's understanding that this report is to be used for the purpose described in the 'Brief' section of this report. That purpose was a significant factor in determining the scope and the services to be provided. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without IGE's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of IGE.

This report is a function of the date it was written and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of IGE. In the absence of such written advice of IGE, reliance on the report in the future shall be at the client's own and sole risk. Should IGE be requested to review the report in the future, IGE shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between IGE and the client.

The observations and conclusions described in this report are based solely upon the scope of works agreed between the client and IGE. IGE has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. IGE is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the agreed scope of works. For the avoidance of doubt, this report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species (e.g. Japanese Knotweed). It is recommended that the client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the suspected presence asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace full and proper surveys.

Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. The geo-environmental sections are written in broad agreement with BS 10175:2011+A2 2017.

LIMITATIONS OF INVESTIGATION WORK

Desk Study References

This report is based upon IGE's observations of existing physical conditions at the site gained from a walkover survey of the site together with IGE's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. Reliance has been placed on this publicly available data obtained from the sources identified in the main report. When using the information, it has been assumed that it is correct. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst IGE have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. IGE did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services. IGE is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to IGE and including the doing of any independent investigation of the information provided to IGE except when otherwise provided in the terms of the contract between the client and IGE.

Historical Mapping

Historical Ordnance Survey maps do not provide a comprehensive description of a site history. They provide details of the site from a date prior to the publication of the map (i.e. a snapshot in time). The period between map editions can be substantial (i.e. several decades). Not all map series are available for every date range in many areas of the UK and therefore there will be gaps in this mapped record for some sites. Potentially contaminative land uses could have been present and removed during such periods and may therefore not form a part of this particular record. In addition, there will be potentially contaminative land uses which are not identified on the map records such as small scale storage / use of hazardous materials, illegal / unlicensed waste disposal activities etc. Different map series identify different features utilising different symbols which can result in features that remain on-site being removed from maps. Some features are also not mapped for security reasons (e.g. airfields and other military installations). These areas are mostly shown as blank areas on historical maps.

Site Walkover

During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not be made known or accessible.

Flooding

Flooding in this report is defined as flooding caused by the sea, ditches, rivers, streams, ponds, lakes, reservoirs and the like. It does not extend to flooding caused by surcharged piped drainage systems and investigations into flooding of this nature are excluded from this report.

Extent of Contamination Studies

Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities. The conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the reporting in full. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Intrusive Investigation

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations, the potential exists for ground conditions to be encountered which are different to those considered in this report. The explored extent of the site area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters, based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Exploratory Holes

Where exploratory holes have been carried out as part of this investigation, the spacing has been determined to provide a reasonable indication of the general ground conditions across the site, but the number has ultimately been limited by commercial constraints. The findings of the exploratory holes relate specifically to the exploratory hole locations and are no absolute guarantee of the ground conditions between such locations. Due allowance should be made for the possibility of variation in conditions between exploratory hole locations.

Extent of Contamination Testing

The extent of contaminated land testing carried out on samples obtained from the site has been determined in accordance with the latest legal guidance issued by the government to provide, with reasonable certainty, the probable general levels of contamination present on site that could pose a significant hazard to human health or waters. The extent of site investigation works including chemical testing has also been limited by reasonable commercial constraints. Although extensive testing of samples has been carried out, the volume of samples taken for testing are a minute fraction of the total volume of soils and groundwater present on site. Therefore, there is a residual risk that undetected pockets of contamination may be present on site, situated between testing locations.

When investigating or developing potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and temporally. The absence of certain ground, ground gas, contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Extent of Geo-Environmental Studies

This report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species e.g. Japanese Knotweed. It is recommended that the Client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace a full and proper survey. If an Unexploded Ordnance (UXO) report has been obtained within the report, it has been so on the basis of Health and Safety concerns and no assessment has been made other than transcribing the recommendations of the sub-contractor contained within the report. In terms of a potential contaminative source, unless ordnance has been manufactured / stored on site, UXOs will only be determined as a contaminative source following a positive identification on site.

PLANNING CONTEXT

The National Planning Policy Framework (NPPF, 2023) states that the purpose of the planning system is to contribute to the achievement of sustainable development. In order to do this the planning system has three overarching objectives, one of which directly relates to the potential for pollution and contaminated land:

- *'**environmental objective** - to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'.*

In accordance with this environmental objective, Paragraph 124 clarifies that 'making effective use of land' includes to:

- *'give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land'*.

In accordance with this environmental objective, Paragraph 180 clarifies that' conserving and enhancing the natural environment includes:

- *'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability*'; and
- *'remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate'.*

Paragraph 189 of the NPPF states that planning policies and decisions for developments should also ensure that:

- *'a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation)*'; and,
- '*after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990*'; and
- '*adequate site investigation information, prepared by a competent person, is available to inform these assessments'*.

This report has been prepared and authorised by staff that are competent as defined in the NPPF.

APPENDIX 2

FIGURES AND DRAWINGS

FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary

N

0 50 100 150 200 250 m

Rev	Drawn	Date	Description

Drawing Status:
Information

Contract:

MCWFC Academy Development
Training Facility

For: Manchester City Football Club Ltd

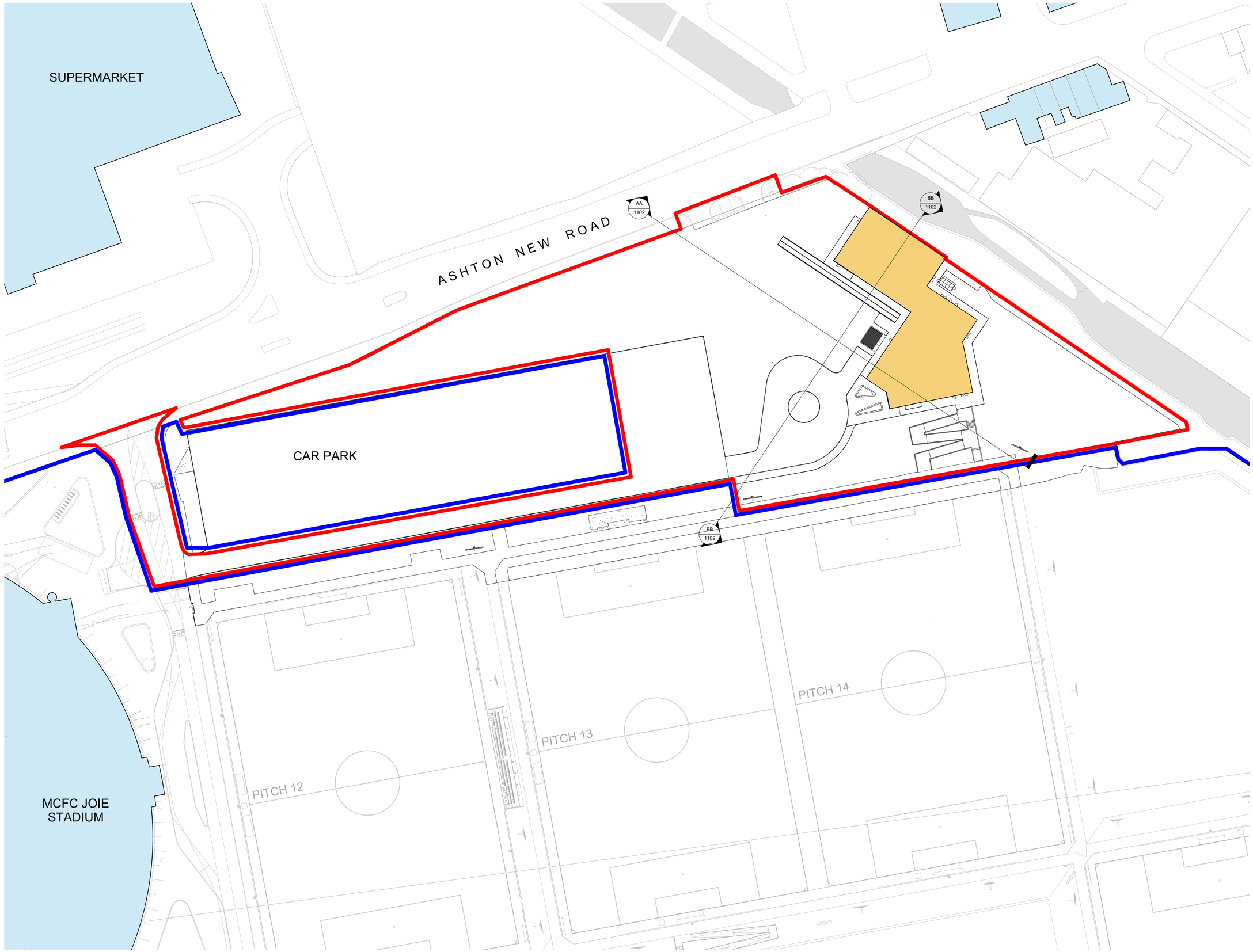
Drawing Title:

Site Location Plan

IGE consulting

Office 16, Bartle House, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:2500 @A3	Date: May 2024	
Drawn: ARE	Checked: AE	
Contract No. 4154	Drawing No. SI - 01	P1



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- Drawing not to be scaled
- Report Errors and Omissions to the Architect.
- Check all dimensions on site
- Drawing to be read in conjunction with the Health and Safety Plan and all relevant Risk Assessments

N

DEVELOPMENT SITE BOUNDARY

MCFC OWNERSHIP SITE BOUNDARY

EXISTING BUILDINGS

NEW DEVELOPMENT

Site Block Plan Proposed

1 : 500

1:5
1:500
10m 20 30 40 50 60 70m

C:\Users\Andrew\Documents\a-new_building_central_andy.callicott.rvt

Rev.	Date	Drn.		Chkd.
A	20.12.23	ADC	Design updated	DL

BOWKER SADLER **ARCHITECTURE**

Hatherlow House | Hatherlow | Romiley | Stockport | SK6 3DY
0161 406 7333 | office@bowker-sadler.co.uk | www.bowker-sadler.co.uk

Project
MCWFC Site Development

Client
City Football Group

Drawing
Site Block Plan as Proposed

Scale	Sheet Size	Drawn	Checked	Date
1 : 500	@ A1	ADC	DL	Oct '23

Project No.	Originator	Zone	Level	Form	Discipline	Number	Revision
22-053 -						1101	A

Status
PLANNING

- This drawing is the Copyright of Saville Landscape Design Ltd & cannot be reproduced in any form without the consent of the company.
- Drawing scaled & levels for planning purposes only.
- All dimensions for construction shall be verified by the Contractor (s) on site before any work commences or shop drawings prepared.
- Any discrepancies to be brought to the attention of the Contract Administrator for instruction prior to proceeding.



KEY

SOFT LANDSCAPING

- Existing trees/hedge to be retained Subject to arboricultural report & final layout
- Existing trees/hedge to be removed Subject to arboricultural report & final layout
- Existing trees to be transplanted
- Existing tree to be transplanted - Deciduous
- Existing fruit tree to be transplanted
- Proposed tree - Coniferous
- Proposed tree - Deciduous
- Grass
- Hedge
- Native hedge mix
- Ornamental shrub planting
- Wildflower meadow
- Earthworks created with existing excavated & imported soils

HARD LANDSCAPING

- Pedestrian surfacing A
- Pedestrian surfacing B
- Pedestrian surfacing C
- Vehicular hard surfacing
- Existing vehicular entrance reinstated as footpath to MCC adoptable standards
- Existing car park surfacing retained

BOUNDARIES & STRUCTURES

- Existing boundary treatment to be retained
- Welded mesh security fence
- Automated vehicular/ pedestrian gates
- Wall

FURNITURE

- Raised planting bed

MISCELLANEOUS

- Existing contour retained
- Proposed contour
- Proposed bank
- E: 69.500 — Existing level
- P: 69.500 — Proposed level

Scale 1:250 @A0

N

Rev	Description	Initial	Date
D	Dwg status updated	KAS	Dec23
C	Parking amended to clients comments, wildflower & tree prpls amended, to ecology comments, bin store amended	KAS	Dec23
B	Site extended, parking added, to ecology comments, bin store amended	KAS	Dec23
A	Site extended, parking added, landscaping updated accordingly	KAS	Nov23

saville LANDSCAPE DESIGN Ltd
Hatherlow House Romiley Stockport Cheshire SK6 3DY
T : 0161 406 7333
M : 07502 269193
E : info@savillelandscape.co.uk
W : www.savillelandscape.co.uk

CLIENT
MCFC

PROJECT TITLE
MCWFC Facility

DRAWING TITLE
Landscape Masterplan

STATUS
PLANNING

SCALE	SHEET SIZE	DRAWN	CHECKED	DATE
1:250	A0	KAS	-	Dec23

PROJECT NO.	DRAWING NO.	REV.
407	01	D

FOR GUIDANCE PURPOSES ONLY

Approximate Boundary of Works

Previous CCG Boreholes

Proposed IGE DS Locations

N

DS5
E: 66.800
P: 68.300
ECOLOGICAL ZONE

BH1

RUNNING TRACK

EXISTING EASEMENT

E: 66.400
P: 66.400

E: 67.500
P: 70.000
WS1
ECOLOGICAL ZONE

E: 66.350
P: 66.350

E: 65.590
P: 65.590

DS4

E: 70.000
P: 66.600

EXISTING EASEMENT

P: 66.200

DS3

E: 66.100
P: 65.540

E: 65.170
P: 65.170

P: 65.990

P: 66.140

E: 65.130
P: 65.130

WS3

BIN STORE

EXISTING EASEMENT ABANDONED

FFL 67.220

WS5

WS6

DS2

E: 70.000
P: 66.930

WS2

DIVERTED EASEMENT

EXISTING EASEMENT ABANDONED

E: 68.500
P: 66.500

E: 69.425
P: 67.000

DIVERTED EASEMENT

E: 69.500
P: 67.000

EXTERNAL PLANT AREA

EXTERNAL CHEMICAL STORE

E: 63.000
P: 64.000

DS1

E: 70.500
P: 67.000

DIVERTED EASEMENT

ECOLOGICAL ZONE

WS4

E: 65.450
P: 65.450

E: 65.320
P: 65.320

0 5 10 15 20 25 m

Rev	Drawn	Date	Description

Drawing Status:
Information

Contract:

MCWFC Academy Development Training Facility

For: John Turner Construction Group Ltd

Drawing Title:

Proposed Exploratory Hole Location Plan

IGE consulting

Office 16, Bartle House, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:300 @A3	Date: June 2024	
Drawn: ARE	Checked: AE	
Contract No. 4154	Drawing No. SI - 02	P1

APPENDIX 3

CC GEOTECHNICAL LTD COMBINED PHASE 1 AND PHASE 2 GEO-ENVIRONMENTAL REPORT (REF. CCG-C-23-13703, JULY 2023)



CCG-C-23-13703

GROUND INVESTIGATION FOR;

MCFA WOMAN'S FACILITY

JULY 2023

Prepared by:

CC GEOTECHNICAL LIMITED

Unit 1 Deltic Way
Knowsley Industrial Estate
Liverpool
Merseyside
L33 7BA

Telephone: 0151 545 2750
Facsimile: 0151 548 7892

Prepared for:

MARSTON & GRUNDY LLP

Priory House
Ellesmere Avenue
Marple
Stockport
SK6 7AN

Telephone: 0161 427 7231

DOCUMENT CONTROL FORM	
Client:	Marston & Grundy LLP Consulting Engineers
Project Title:	Phase I-II Geoenvironmental Report for site at Proposed MCFA Womens Facility
Reference Number:	CCG-C-23-13703
Main Author:	Daniel O'Regan BSc (Hons) PIEMA
Signature:	
Reviewed by:	Chris Bolan MSc CEng MICE CEnv
Signature:	
Approved for Issue by:	Chris Bolan MSc CEng MICE CEnv
Signature	
	For & behalf of CC GEOTECHNICAL LTD
Date:	July 2023
Revision Number:	
Comments:	
Status:	Issue
Distribution:	

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Where opinions expressed in this report are based on current available guidance and legislation, no liability can be accepted by *CCG* for the effects of any future changes to such guidelines and legislation. Additional information, improved practices, new guidance, changes in legislation, or amendments to design proposals, may necessitate this report having to be reviewed in whole or in part after that date. A summary of current guidance / legislation and assessment methodologies employed by *CCG* are included herein.

Factual data has largely been obtained from enquiries with third parties, the results of which are relied on unless indicated to be inaccurate by contradictory information. Further assessment, investigation, construction activities, could not have been considered in the preparation of the report. Where such information might impact upon stated opinions, *CCG* reserves the right to modify such opinions expressed herein.

The findings and opinions conveyed, via this report, are based on information obtained from a variety of sources as detailed in this report, and which *CCG* assumes to be reliable, but has not been independently confirmed. Therefore, *CCG* cannot and does not guarantee the authenticity or reliability of third-party information it has referred to.

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1.0 INTRODUCTION

CC GEOTECHNICAL LIMITED (***CCG***) is providing consultancy services to ***MARSTON & GRUNDY LLP*** *(Consulting Engineer*) on behalf of ***CITY FOOTBALL GROUP LTD*** (*The Client*) in connection with the proposed redevelopment of a parcel of land located within the Manchester City Football Club Academy Complex in east Manchester. The specific area of interest is located in the NE extremity of the complex adjacent to a former HSBC bank building off Ashton New Road (A662), Manchester, M11 4AA.

It is understood that 3 possible alternative layouts / locations are being considered. These are shown as Alternate 1 / Alternate 2 / Alternate 3 in Appendix A. The selected location is to be developed by the construction of a single-storey Women`s Facility comprising of changing rooms, gym, offices and reception.

The proposed development falls within the administrative jurisdiction of ***MANCHESTER CITY COUNCIL.***

A combined desk study and ground investigation report was prepared, to provide environmental and geotechnical data relevant to the planning, design, and construction of the project. The findings of these studies and investigations are discussed hereunder.

This report should be read in conjunction with the Notes on Limitations, given in Appendix I.

2.0 PURPOSE & AIMS OF THE STUDY & INVESTIGATION

The primary aim of the Phase I Desk Study was to assess whether the site is likely to be affected by contamination, to an extent that it may pose a risk to human health and/or the built environment and/or the wider natural environment or is affected by any other natural or artificial feature which may impact on the proposed development. Specific tasks undertaken to achieve this were as follows:

- A review of available information including historical mapping, commercial environmental databases, and Environment Agency Data
- The undertaking of a site walkover
- The development of a Preliminary Conceptual Model

The main purpose of the Phase II Intrusive Investigation was to confirm the conclusions of the desk study, with reference to:

- The assessment of the nature and extent of contamination in relation to potential risks to human health for end users, construction workers, and worker occupants of adjacent properties
- The assessment of the nature and extent of contamination in relation to potential risks to controlled waters
- The assessment of the nature and extent of contamination in relation to potential risks to the fabric of buildings and services
- The refinement of the Preliminary Conceptual Model confirming pollution linkages that have been demonstrated to be present

- The identification of feasible remediation measures to remove or break the identified pollution linkages
- The provision of information and interpretative comment on ground conditions in relation to foundation selection / design / construction, and the design of associated infrastructure.

3.0 SITE DATA

3.1 Site Location

The site comprises an undefined area of land located within the NE extremity Manchester City Football Club Academy Complex, adjoining a former HSBC bank, south of Ashton New Road, (A662), Manchester, M11 4AA, as illustrated on ***CCG*** Drawing No. 13703-1 and Aerial Plate No. 13703-2 contained herein.

The ***ORDNANCE SURVEY*** co-ordinates for the approximate site centre are 387585E, 398441N. It stands at an elevation of approximately 66.5m AOD.

3.2 Site Description & Walkover Observations

The site was visited in June 2023, on completion of a review of historical mapping and environmental data presented herein.

The site is located within a commercial / industrial setting. It is substantially occupied by a raised landscaped earth mound, assumed to have been formed by deposition of surplus soils generated in the overall Academy development phase. The area immediately north of the mound is occupied by a former HSBC bank building and associated car park, with the area to the south adjoining the training pitches of the Academy. The western boundary of the area is adjoined by a paved car park associated with the Academy. To the east of the site is the Ashton Canal.

The surface topography across the site varies substantially with the top of the mound standing at around 3m above the peripheral levels. At the time of undertaking the site walkover survey, there was no visual evidence of potentially contaminative activities or storage of potentially contaminative materials on site.

The information obtained from the visit is summarised in Table 1 hereunder.

Table 1: Summary of Walkover Observations

FEATURE	OBSERVATION
Current use of proposed development Land	Area to the north vacant land (former HSBC bank) and area to the south MCFC training grounds
Context	Commercial / industrial context
Surface & Topography	Typical level ground either side of a 3m mound, which divides the north and south of the site
Dimensions	The site has loosely defined limits , with an approximate dimensions of c. 85m x 65m; its long axis being on a north-south alignment
Adjacent to the Site	N – Ashton New Rd (A662) E – Ashton Canal S – MCFC training grounds W – Car parking / landscaped areas
Services	None observed
Material storage	None observed
Waste disposal	None observed
Other potential contamination	None observed

4.0 SITE HISTORY

The history of the site and its immediate surrounds was investigated by consultation with a range of archive resources. Geographical information, historical mapping and environmental data were primarily based on a GroundSure Reports (CMAPS-AAG-1106941-4165-010623) dated June 2023, as presented in Appendix H, along with accompanying historical mapping data.

Table 2: Historical Map Review

YEAR	SCALE	ON SITE	ADJACENT TO SITE	<250M
1848	1:10,560	Unspecified properties located in the N and SE parts of the site Road later recognised as “Chatham Street” transects the site in S portion [NW/SE alignment]	NE: Manchester and Ashton under Lyne Canal NW: Road [later recognised as “Ashton New Road”]	c.100m SW: Clayton Colliery [not recognised in subsequent mapping data] c.110m W: Canal / Brook
1890-91 1893	1:10,560 1:2,500	Site forms part of “Canal Chemical Works”	NE: Lock recognised SE: Extension of unspecified properties SW: Terraced residential properties delineating Boardman Street to the SW NW: Tramway established along Ashton New Road]	Much of the land surrounding the site is developed for commercial / industrial land use c.10m NE: Chemical Works c.50m NW: Dalton Chemical Works [subsequently recognised as “Disused” c.60m SE: Clayton Aniline Works c.85m E: Clayton Oil Works c.90m N: Bank Road Chemical Works c.100m SW: Chemical Works c.125m W: Bradford Chemical Works c.140m NW: Tower Chemical Works c.140m N: Excelsior Chemical Works, adjacent Rope Walk to the NE c.160m W: Chemical Works, adjacent Kilns to the W c.190m SE: Sheldrake Mill (Cotton) c.200m SW: Clayton Chemical Works c.210m SE: Clayton and Bradford Foundry
1905-06 1908	1:10,560 1:2,500	Site now fully developed [“Canal Chemical Works”]	SW: Terraced residential properties no longer recognised	c.10m NE: India Rubber Works c.80m S: Gasometer recognised c.100m E: Extension of Clayton Aniline Works [extending to the SW] c.230m N: Manchester United Football Ground
1922 1923 1923	1:2,500 1:10,560 1:10,560	Rubber Works recognised in the NW portion of the site	No significant change	c.50m NW: Brattice Works [former Dalton Chemical Works] c.230m N: Electricity Generating Station with associated Cooling Ponds to the W [former Manchester United Football Ground]
1932-33 1933-34 1938	1:2,500 1:10,560 1:10,560	Tanks and Chimneys recognised in the N portion of the site	SW: Mineral Railway Line [approx. N-S alignment]	Numerous Tanks recognised surrounding the site (<250m) c.70m NW: Clayton Aniline Chemical Works c.230m N: Electricity Generating Station no longer recognised

Table 2: Historical Map Review (continued)

YEAR	SCALE	ON SITE	ADJACENT TO SITE	<250M
1949 1950 1951 1953-56 1956	1:1,250 1:2,500 1:2,500 1:1,250 1:10,560	No significant change Chatham Street now recognised as "Clipstone Street"	NW: Tramway no longer recognised along Ashton New Road	c.10m NE: Falcon Sheet Metal Works [former India Rubber Works] c.90m N: Ruin c.90m SE: Electric Sub-Station recognised c.100m NE: Corn Mill recognised, adjacent Saw Mill to the W c.150m S: Electric Sub-Station recognised c.160m S: Refuse Heap c.250m SE: Electric Sub-Station recognised
1968	1:10,560	No significant change	No significant change	c.40m SW: Works
1970-72 1977-80 1981 1980-85 1985	1:1,250 1:1,250 1:10,000 1:1,250 1:10,000	Development of roads in the NW half of the site Bank recognised in the NE portion of the site Large unspecified property located in the SE portion of the site	No significant change	c.100m NE: Waste Paper Works [former Corn Mill / Saw Mill] c.130m NE: Garage recognised c.160m N: Garage, adjacent Dairy to the E c.170m N: Electric Sub-Station recognised c.220m NE: Garage recognised
1986-91 1991	1:1,250 1:10,000	No significant change	No significant change	c.180m E: Electric Sub-Station recognised
1991-92 1992-94 1994 1994-95 1995 2001 2003 2010	1:1,250 1:1,250 1:1,250 1:1,250 1:1,250 1:10,000 1:1,250 1:10,000	No significant change	No significant change	c.40m SW: Works no longer recognised

It can be seen that the site and its immediately adjoining land have a long history of potentially contaminative uses. It is understood that major remediation works were carried out over the full extent of the Academy facility in the 2010-2020 period.

5.0 ENVIRONMENTAL SETTING

5.1 Geology

The appended GroundSure Report states that the underlying solid geology is documented to comprise Sandstone (Chester Formation). The drift deposits are recorded to comprise of Till, Devensian (Diamicton) – clay, silt, sand. As with most former industrial land, superficial made ground deposits of an unknown composition, thickness and extent associated with previous activities on site and its immediate environs may underlie the site.

The Radon Potential Data shows the site to be situated within an area where less than 1% of the properties within the area are affected by Radon, and hence no Radon Protection Measures will be required for new structures in contact with the ground.

Geological Information obtained from the GroundSure Environmental Report is presented in Appendix H, and summarised hereunder:

Table 3: Summary of Geological Data from GroundSure Report

GEOLOGY		
Data	**Distance**	**Comments**
Artificial Ground	On Site	Artificial ground and/or reworked ground deposits not shown, although site walkover shows 2.5m mound subdividing the site. Also, general area known to have undergone significant remedial works
Superficial Deposits / Drift Geology	On Site	Till, Devensian – Diamicton
Permeability of Diamicton	Max Permeability	High
	Min Permeability	Low

Table 3: Summary of Geological Data from GroundSure Report (continued)

GEOLOGY		
Data	**Distance**	**Comments**
Bedrock and Solid Geology	On Site	Sandstone - Chester Formation – Principal Aquifer
Permeability of Bedrock: On Site	Maximum Permeability	High
	Minimum Permeability	Moderate
Geological Lines of Weakness	On Site	Fault (inferred) Coal Seam (west elevation)
	<250m	Coal Seam (SW)
Radon Affected Area	On Site	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
Radon Protection	On Site	No Radon Protection Measures are required

MINING, GROUNDWORKINGS AND NATURAL CAVITIES		
Data	**Distance**	**Comments**
Natural cavities	<500m	No records
BritPits	<500m	139m N: West End Brick Field [Clay & Shale] – Ceased 339m S: Clayton Colliery [Coal, Deep] - Ceased
Surface ground workings	<250m	On Site: Canal 6m E: Canal 10-11m N: Canal 11m S: Refuse Heap 21m S: Unspecified Heap 31m S: Pond 57m S: Refuse Heap 61m SE: Refuse Heap 95m SW: Pond 97m W: Colliery 106m N: Brick Kiln 128m S: Refuse Heap 129m S: Pond 130m S: Refuse Heap 132m S: Unspecified Heap 136m S: Refuse Heap 137m NW: Brick Field 140m S: Refuse 165m S: Refuse Heap 186m N: Pond 195m N: Pond 204m N: Unspecified Ground Workings 235m NW: Unspecified Ground Workings 239-40m SW: Refuse Heap 243m NW: Unspecified Pit
Underground workings	<1000m	433m W: Colliery 458m W: Unspecified Disused Shafts 460m W: Unspecified Disused Shafts 465m W: Unspecified Shafts 467m W: Unspecified Shafts
Historical Mineral Planning Areas	<500m	No records
Non-coal mining	<1000m	727m SW. Vein Mineral: Class A
Mining cavities	<1000m	323m W: Manchester. Mineral: Fireclay 679m SW: Ardwick. Mineral: Bath Stone, Cornstone, Limestone
Coal mining	On Site	The site is located within a coal mining area as defined by the Coal Authority
Brine areas	On Site	No records
Gypsum areas	On Site	No records
Tin mining	On Site	No records
Clay mining	On Site	No records

HAZARDS		
Data	**Distance**	**Comments**
Maximum shrink swell clays	On site	Very Low
Maximum running sands	On site	Very Low
Maximum compressible deposits	On site	Negligible
Maximum collapsible deposits	On site	Very Low
Maximum landslides	On site	Very Low
Maximum ground dissolution of soluble rocks	On site	Negligible

5.2 Mining

The appended environmental data, indicate surface ground works associated with the canal (eastern boundary), BritPits (140m North), Collieries (430m West) and mineral workings (Fireclay 330m West).

5.3 Hydrology and Hydrogeology

Information on hydrology and hydrogeology obtained from a GroundSure Environmental Report is presented in Appendix H, and summarised hereunder:

Table 4: Summary of GroundSure Environmental Report

HYDROGEOLOGY AND HYDROLOGY		
Aquifer within Superficial Drift Deposits (Diamicton)	On site	**Secondary: Unproductive:** Assigned where it is not possible to attribute either category A or B to a soil type. In general, these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
Aquifer within Bedrock Deposits	On site (West)	**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
	On site (East)	**Principal:** Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
Groundwater Abstraction Licenses	<1000m	222m E: Evonik Chemicals Ltd. Licence No: 2569006037 260m E: Air Products Chemicals Ltd. Licence No: 2569006037 319m S: CIBA Specialty Chemicals Plc. Licence No: 2569006026 383m S: Manchester City Football Club Limited. Licence No: NW/069/0006/005 410m E: Evonik Chemicals Ltd. Licence No: 2569006036 418m SE: Air Products Chemicals Ltd. Licence No: 2569006039
Surface Water Abstraction Licenses	<1000m	6m E: British Waterways. Licence No: 2569006996 160m E: British Waterways. Licence No: 2569006997 473m E: British Waterways. Licence No: 2569006995
Potable Water Abstraction Licences	<1000m	No records
Source Protection Zones	<500m	No records
Source Protection Zones (confined aquifer)	<500m	No records
Water Network (OS Mastermap)	<250m	7m N: Ashton Canal 8m E: Ashton Canal 9m NE: Ashton Canal 10m E: Ashton Canal 168m NW: Ashton Canal 174m NW: Ashton Canal
Surface water features	<250m	2nr records
WFD Surface water body catchments	On Site	On Site: River. Water body catchment: Medlock (Lumb Brook to Irwell)
WFD Surface water bodies	<250m	8m E: Canal [Ashton Canal and Peak Forest Canal, lower section]. Overall rating: Moderate [2019]
WFD Groundwater bodies	<250m	On Site: Manchester and East Cheshire Permo-Triassic Sandstone Aquifers. Overall rating: Poor [2019]
FLOODING		
Risk of Flooding from Rivers and Sea (RoFRaS)	<50m	No records
Historical Flood Events	<250m	No records
Flood Defences	<250m	No records
Areas Benefitting from Flood Defences	<250m	No records
Flood Storage Areas	<250m	No records
Flood Zone 2	<50m	No records
Flood Zone 3	<50m	No records
Surface water flooding: Highest risk	On Site	1 in 30 year, Greater than 1.0m
	<50m	1 in 30 year, Greater than 1.0m
Groundwater flooding: Highest risk	On Site	Moderate
	<50m	Moderate - High

For simplified interpretation, the geological succession underlying the site may be regarded as a series of discrete units in terms of their hydrogeological significance, as illustrated hereunder:

Table 5: Hydrogeological Interpretation

UNIT	PROPERTIES	HYDROGEOLOGICAL DESIGNATION
Made / Reworked Ground	If present, likely to be generally granular and permeable and will permit vertical and lateral transmission of groundwater.	Unproductive Aquifer
Till (Diamicton)	These are drift deposits with low permeability that have negligible significance for water supply or river base flow	Secondary Undifferentiated
Chester Formation - Sandstone	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers	Principal
Pennine Upper Coal Measures Formation - Mudstone, Siltstone and Sandstone	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	**Secondary A**

6.0 FURTHER ENVIRONMENTAL DATA

Environmental data was researched using several sources including Environment Agency Maps and GroundSure Envirosight Report presented in Appendix H and is summarised in Table 6 hereunder.

Table 6: Further Environmental Data

POTENTIALLY CONTAMINATIVE USES IDENTIFIED FROM 1:10,000 SCALE MAPPING		
Data	**Distance**	**Comments**
Historical industrial land uses	<150m	On Site: Steel Works [1956] On SitE: Railway Sidings [1933-38] On Site: Unspecified Works [1968-91] On Site: Unspecified Commercial / Industrial [1923-56] On Site: Chemical Works [1890-1968] 1m W: Unspecified Works [1968] 11m S: Refuse Heap [1921-23] 17m N: Oil Works [1921-23] 19m NW: Unspecified Works [1921-23] 19m E: Unspecified Works [1968] 20m N: Unspecified Commercial / Industrial [1933] 21m S: Unspecified Heap [1956] 21m SW: Chemical Works [1923] 22-23m N: Unspecified Works [1985-91] 29m SE: Railway Building [1938] 36m S: Railway Sidings [1978] 52m W: Unspecified Works [1968] 55m W: Unspecified Works [1985-91] 87m S: Refuse Heap [1890-1915] 65m Se: Unspecified Works [1985] 65m NW: Unspecified Works [1978] 68m SE: Unspecified Works [1923] 73-74m S: Unspecified Tank [1906-38] 90m W: Unspecified Works [1978-91] 97m W: Colliery [1851] 99m N: Chemical Works [1891] 106m N: Brick Kiln [1851] 109m SW: Unspecified Works [1923] 109m SE: Unspecified Works [1978] 112m SW: Unspecified Works [1978] 116m W: Unspecified Commercial / Industrial [1905-06] 118m W: Chemical Works [1906-33] 121m SE: Unspecified Works [1985-91] 121m W: Unspecified Works [1968] 125m W: Chemical Works [1923] 128m S: Alkali Works [1915] 129m N: Refuse Heap [1891] 130m S: Unspecified Commercial / Industrial [1938] 130m S: Alkali Works [1934-38] 132m S: Unspecified Heap [1934-38] 135m S: Unspecified Works [1905-15] 135m SW: Unspecified Commercial / Industrial [1851] 137m NW: Brick Field [1891] 140m S: Refuse [1956] 143m N: Unspecified Works [1968]
Historical tanks	On site	Tank (1949) Unspecified tank (1949 – 1956) Tank (1932 – 1956)

		Tank (1970 – 1980);Unspecified Tank (1908)
Historical energy features	<50m	No records
Historical petrol stations	<250m	No records
Historical garages	<100m	No records
Historical military land	<250m	No records
Records of Current Industrial Land Use		
Data	**Distance**	**Comments**
Recent industrial land uses	<150m	20m E – Mooring and unloading facilities 129m E - Vehicle Repair, Testing and Servicing 139m E - Vehicle Repair, Testing and Servicing 149m E – Electrical substation
Current or recent petrol stations	<250m	No records
Electricity cables	<250m	No records
Gas pipelines	<250m	No records
Sites determined as Contaminated Land	<250m	No records
Control of Major Accident Hazards (COMAH)	<250m	On site – CIBA Speciality Chemicals
Regulated explosive sites	<250m	No records
Hazardous substance storage/usage	<250m	76m W - Manufacture and sales of performance chemicals for use in the rubber, Surface Coatings and Chemical Industry 79m NW - Manufacture of dyestuffs and related chemicals
Historical licensed industrial activities (IPC)	<200m	140m W – CIBA Specialty Chemicals
Licenced industrial activities (Part A(1))	<200m	83m W - Hexion Specialty Chemicals Clayton Ltd - organic chemicals; plastic materials eg polymers
Licensed pollutant release (Part A(2)/B)	<200m	118m N – Vitacom Ltd – Process: Rubber (Historical permit – type B) 164m N – E3G Ltd - Process: Rubber (Current permit – type B) 172m E – DJ Auto Centre Process: Waste Oil Burner (Current permit - type B)
Radioactive Substance Authorisations	<100m	No records
Licensed Discharges to controlled waters	<250m	No records
Pollutant release to surface waters (Red list)	<250m	No records
Pollutant release to public sewer	<250m	No records
List 1 Dangerous Substances	<250m	142m W – Clayton Aniline. Not active – receiving water: Manchester ship canal. Substances: Mercury (other) cadmium 248m SW – Rhodia Ltd Outlet S1 – S4. Not active – receiving water: Manchester ship canal. Substances: Mercury (other) cadmium 248m SW – OMG UK Ltd. Not active – receiving water: Manchester ship canal. Substances: Mercury (other) cadmium
List 2 Dangerous Substances	<250m	142m W – Ciba Geigy plc. Not active – receiving water: Manchester ship canal. Substances: Chromium, Copper, Zinc, Toluene
Pollution Incidents (EA/NRW)	<200m	88m SE - Atmospheric pollutants and effects (smoke): 28/01/03. Water - none (CAT 4), Land impact - none (CAT 4), Air impact – minor (CAT 4),
Pollution inventory substances	<250m	Unknown distance from site
Pollution inventory waste transfers	<250m	Unknown distance from site
Pollution inventory radioactive waste	<250m	No records
WASTE AND LANDFILL		
Data	**Distance**	**Comments**
Active or recent landfill	<250m	No records
Historical landfill (BGS records)	<250m	No records
Historical landfill (LA/mapping records)	<250m	No records
Historical landfill (EA/NRW records]	<250m	No records
Historical waste sites	<200m	81m NE – Waste paper works (1970) 88m NE – Waste paper works (1971) 139m S – Refuse (1956)
Licensed waste sites	<200m	107m N - Recon Packaging Ltd; Material Recycling Treatment Facility
Waste exemptions	<250m	No records
ENVIRONMENTAL DESIGNATIONS		
Data	**Distance**	**Comments**
Sites of Special Scientific Interest (SSSI)	<500m	None
Conserved wetland sites (Ramsar sites)	<500m	None
Special Areas of Conservation (SAC)	<500m	None
Special Protection Areas (SPA)	<500m	None
National Nature Reserves (NNR)	<500m	None
Local Nature Reserves (LNR)	<500m	None
Designated Ancient Woodland	<500m	None
Biosphere Reserves	<500m	None
Forest Parks	<500m	None
Marine Conservation Zones	<500m	None
Green Belt	<500m	None
Proposed Ramsar sites	<500m	None
Possible Special Areas of Conservation (PSAC)	<500m	None
Potential Special Protection Areas (pSPA)	<500m	None
Nitrate Sensitive Areas	<500m	None
Nitrate Vulnerable Zones	<500m	None

7.0 ARCHAEOLOGICAL DATA

Examination of historical maps indicates no features of significant archaeological interest in the general vicinity of the site.

8.0 PREVIOUS SITE INVESTIGATIONS / REPORTS

Searches and consultations have not established any available information of previous site investigations having been undertaken at the study site.

9.0 PRELIMINARY QUALITATIVE RISK ASSESSMENT (TIER 1)

9.1 Introduction

The risk assessment methodologies adopted by ***CCG*** are based on current available guidance from several sources and are included in Appendix J.

The Tier 1 Risk Assessment and Preliminary Conceptual Model (PCM) were formulated using the information discussed above and based on the following assumptions:

- The site is to be developed with the construction of a single storey Women`s Facility building to accommodate changing rooms, gym, offices, reception, welfare facilities etc
- Drinking water will be from a mains supply.

In constructing the Preliminary Conceptual Model (PCM)***, CCG*** applied the guidance contained in CIRIA C552: 2001. This recommends use of a Risk Matrix which classifies risk based on the product of Probability of a source being present, and the Consequence of receptors being exposed to the source. Guidance tables setting out the classifications of probability and consequence together with a risk matrix are given in Tables 7-9 hereunder. In using this approach ***CCG*** generally recommends actual intrusive investigation of any Risk Classification of "*Moderate*" or over. In the case of residential housing, risk ratings of `*Low*` may also warrant investigation.

Table 7: Matrix of consequences against probability to gain a risk classification [CIRIA C552, 2001]

		CONSEQUENCE			
		SEVERE	MEDIUM	MILD	MINOR
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

9.2 Preliminary Conceptual Model

By application of the risk assessment methodology outlined above, the following PCM was constructed. There is significant evidence obtained from the desk study and site inspections of a potential risk of contamination being present on the site. On this basis a Preliminary Conceptual Model was adopted as summarised in the table hereunder:

Table 8: Preliminary Conceptual Model (PCM)

POLLUTANT LINKAGE	SOURCE	PATHWAY	RECEPTOR	PROBABILITY	CONSEQUENCE	RISK RATING
1	Broad spectrum of heavy metals, aggressive pH, hydrocarbons, PAH`s in superficial reworked soils from past industrial land uses	Soil and / or soil dust ingestion	Construction workers Future worker occupants Offsite receptors	Likely	Medium	Moderate
2	Asbestos containing materials (ACM) in superficial soils	Fibre Inhalation	Construction workers Future worker occupants Offsite receptors	Likely	Severe (ACM)	High
3	Inhalation of ground gases from onsite or offsite sources i.e., made ground soils, reworked soils / backfilled material	Inhalation	Future residents	Likely	Medium	Moderate
4	pH & Sulphate attack on concrete	Direct contact with concrete	Future building	Likely	Mild	Moderate / Low
5	Organic contamination in superficial soils	Direct contact with water mains	Potable water supply	Likely	Medium	Moderate

The contaminants of concern associated with those risks which require intrusive investigation were researched by reference to published industry profiles, and are summarised hereunder:

Table 9: Summary of Contaminants of Concern based on PCM

LINKAGE NO.	METALS	NON-METALS	ORGANICS	GASES	OTHERS
PL1, PL2, PL4, PL5	Cd, Cr (total & hexavalent), Ni, Cu, Zn, Pb, Hg, Se, Mo, Sb	As, sulphates, sulphides, boron, free cyanide	TPHCWG, PAH's, BTEX, SOM	-	pH Asbestos
PL3	-	-	-	CH_4, CO_2, CO, H_2S	-
PL1-PL5	Cd, Cr, Ni, Cu, Pb, Hg, Se, Zn	As, sulphates	TPHCWG, BTEX PAH's, SOM	CH_4, CO_2, CO, H_2S	pH Asbestos

9.3 Summary of Risks

The foregoing analysis identified several potential risks, and if present, these could adversely impact on human or environmental receptors. Since no previous site investigation has been undertaken, an intrusive phase of investigation was undertaken to determine whether the postulated pollutant linkages are present on site.

10.0 SCOPE OF PHASE II INTRUSIVE INVESTIGATION

Based on the findings of the Phase I desk study and taking account of the potential presence of pollution linkages an intrusive investigation was undertaken. The Phase II Intrusive Investigation provided for exploratory boreholes to be sunk through made ground superficial soils into the underlying natural strata to allow for sampling of soils and groundwater if present.

The objectives of the investigation were to obtain sufficient geo-environmental and geotechnical data to reliably assess risks to human and environmental receptors, and to provide engineering parameters on which suitable foundation solutions could be selected.

11.0 FIELDWORK

11.1 Introduction

A programme of fieldwork investigation was undertaken in April & May 2023 and comprised the following programme of works:

- The sinking of 1nr borehole (BH1) using light cable percussion methods
- The sinking of 6nr boreholes (WS1 – WS6) using light dynamic sampling methods
- The installation of 50mm HDPE plain and slotted well-tube complete with non-lime pea gravel surround and bentonite seals together with associated headworks at 4nr borehole positions (BH1, WS1, WS3 & WS4)
- The subsampling of soils for geotechnical testing and geoenvironmental analyses
- The instigation of a gas – groundwater monitoring programme comprising 4nr rounds over a month period

The fieldwork was planned and carried out in accordance with BS10175:2011+A2:2017 and BS5930:2015+A1:2020, and the sampling and monitoring methodologies employed by ***CCG***.

The layout of the investigation is annotated on ***CCG*** Drawing No. 23-13703-3 presented in Appendix A.

11.2 Borehole Drilling & Monitoring Installations

11.2.1 Cable Percussion Borehole

The borehole (BH1) was advanced by cable percussion methods to a depth of 15mbgl using a Dando 150 SA rig and 150mm diameter tools and casings. The borehole was positioned clear of all known buried utilities, and the location was checked by a cable avoidance scanner before and during the hand excavation of a starter pit extending to 1.2mbgl.

Standard Penetration Tests (SPT's) were carried out at regular depth intervals of approximately 1m / 1.5m throughout the cable percussion of the borehole. Where suitably cohesive strata was encountered, 'U100' undisturbed samples were recovered.

Upon completion of the borehole, a monitoring installation was installed and sealed.

The borehole log, annotated with sampling details, SPT 'N' values, and standpipe construction details is presented in Appendix B.

11.2.2 Light Dynamic Sampling Boreholes

A total of 6nr boreholes (WS1 – WS6) were sunk using light dynamic sampling methods using a Dando Terrier 2000 rig deploying 100mm casings and associated tools, to depths of up to 5.0mbgl.

Each borehole location was positioned clear of all overhead services and scanned using a cable avoidance scanner before and during hand excavation of a starter pit extending to 1.2mbgl.

Boring tools were decontaminated prior to commencement.

In this method of investigation samples of subsoils are recovered by driving and extracting a series of reducing diameter 1m long steel tubes. Standard penetration test's (SPT's) were undertaken at regular depth increments,

with hand shear vane (HSV) testing being undertaken in cohesive strata. This method of sampling recovers relatively "undisturbed" soil profiles in Perspex tubes, which are used to line the steel tubes. The Perspex tubes were split and carefully logged and subsampled. Subsamples for potential chemical analysis were removed at appropriate positions from the profile and transferred to chilled amber glass jars and vials for laboratory analysis.

The logs of the boreholes, annotated with sampling details, SPT `N` values, and standpipe construction details are given in Appendix C.

11.2.3 Monitoring Installations

Standpipes comprising 50mm diameter HDPE plain and slotted well-tube set in bentonite and non-limestone pea gravel surround were installed at 4nr borehole positions. Each standpipe was fitted with a gas valve connector and was protected by a flush cover set in concrete.

Details of standpipe installations are provided on the relevant borehole logs in Appendix B & C and summarised in the tabulation hereunder:

Table 10: Borehole Installation Details

BOREHOLE	DEPTH OF BOREHOLE (mbgl)	DEPTH OF STANDPIPE (mbgl)	RESPONSE ZONE	
			FROM (mbgl)	TO (mbgl)
BH1	15.0m	5.0m	1.0m	5.0m
WS1	5.0m	3.0m	1.0m	3.0m
WS3	5.0m	2.5m	1.0m	2.5m
WS4	5.0m	4.0m	0.5m	4.0m

The standpipe installations were periodically monitored for flow rate and composition of ground gas using a Geotechnical Instruments GA infra-red analyser. The installations were also monitored for standing water levels with an electronic dip meter. The results of the gas and groundwater monitoring data is given in Appendix D.

12.0 OBSERVED GROUND CONDITIONS

12.1 Stratigraphy

The stratigraphy of the boreholes was generally consistent with the documented geology. The succession may be generalised as tabulated hereunder:

Table 11: Observed Stratigraphy

Location	STRATIGRAPHY
BH1	Tarmac (100mm thick), overlying brown silty very sandy GRAVEL (MADE GROUND) to 0.45mgl resting on a 150mm thick reinforced concrete slab. The sequence continued in dark grey / brown silty sand and gravel (MADE GROUND) to 2.1mbgl. Natural deposits were encountered from 2.1m comprising of firm to stiff brown silty sandy CLAY proven to 15.0mbgl.
WS1	Grassed topsoil overlying brown clay fill (MADE GROUND) to 2.75mbgl. The sequence continues in very loose brown silty sandy GRAVEL to 3.5mbgl overlying firm to stiff brown silty sandy gravelly CLAY, with occasional gravel bands proven to 5.0mbgl.
WS2	Grassed topsoil overlying brown clay fill (MADE GROUND) to 2.0mbgl. The sequence continues in stiff brown silty sandy gravelly CLAY, proven to 5.0mbgl.
WS3	Grassed topsoil overlying medium dense GRAVEL (MADE GROUND) to 2.6mbgl. The sequence continues with clay fill (MADE GROUND) to 3.0m overlying grey sandy GRAVEL (MADE GROUND) to 3.5mbgl. The sequence continues with firm to stiff brown silty sandy gravelly CLAY proven to 5.0mbgl.
WS4	Brown clay fill (MADE GROUND) to 3.7m overlying natural deposits of firm to stiff brown silty sandy gravelly CLAY proven to 5.0mbgl.
WS5 / WS5A	Grassed topsoil overlying brown clay fill (MADE GROUND) with gravel bands proven to 3.0mbgl.
WS6 / WS6A	Grassed topsoil overlying brown clay fill (MADE GROUND) with gravel bands proven to 1.7mbgl. Borehole refused on obstruction.

12.2 Groundwater Regime

Accumulations of perched water were encountered at the interface of made ground and natural clay. Further discussion Is presented in the summary of standpipe monitoring hereunder.

13.0 LABORATORY TESTING

13.1 Soil Classification Testing

The following programme of soil geotechnical testing was undertaken at the ***UKAS*** laboratory of ***CCG.***

- Determination of soil moisture content in accordance with BS: 1377: Part 2: 1990
- Determination of Atterberg Limits in accordance with BS: 1377: Part 2: 1990
- Determination of Undrained Triaxial Compression in accordance with BS 1377-7: 1990

The soil engineering test results are presented in Appendix E.

13.2 Soil Contamination Analyses

A programme of soil and groundwater chemical analyses was undertaken at a ***UKAS / MCERTS*** accredited laboratory:

- 6nr samples of made-ground soils were analysed to a broad-spectrum suite of contaminants including metals, non-metals, asbestos ID, speciated PAH's, hydrocarbons to the TPHCWG methodology.
- 3nr samples of made ground soils were also subject to WAC analysis screened for asbestos containing materials (ACM's)
- 2nr samples of groundwater recovered from the monitoring installations and analysed to a broad-spectrum suite of contaminants including heavy metals, non-metals, speciated PAH's, hydrocarbons to the TPHCWG methodology.

The soil contamination test results and certificates are presented in Appendix F.

14.0 RISK ASSESSMENT FOR THE PROTECTION OF HUMAN HEALTH

14.1 Generic Quantitative Risk Assessment (Tier 2 / GQRA)

An assessment of the soil analysis data was carried out in accordance with the guidance presented in LCRM and in accordance with current guidance and legislation.

The Human Health Risk Assessment was carried out in accordance with the ***CCG*** methodology for assessing soil contamination data, and since it is proposed that the site be redeveloped for recreational use, the assessment was based on criteria contained in publication LQM/CIEH S4UL`s for Human Health Risk Assessment (2015) (CCG licence S4UL3233), applicable to the "Public Open Space (park)" land use scenario. This document does not provide criteria for Lead, for which the results were compared to the C4SL published by DEFRA SP1010 Development of Category 4 Screening Levels.

14.2 Assessment of Contamination Data

Based on a Soil Organic Matter content of 2.5%, the assessment of the soil data is summarised in the tabulations hereunder, and presented on the worksheets in Appendix G.

14.2.1 Assessment of Metal Data

The assessment of the metal data concluded that all analyses are below their respective guideline criteria, and therefore no potential risk to human health is indicated.

14.2.2 Assessment of Non-Metal Data

The assessment of the non-metal data concluded that all analyses are below their respective guideline criteria, and therefore no potential risk to human health is indicated.

14.2.3 Assessment of Polycyclic Aromatic Hydrocarbon [PAH's] Data

The assessment of the Polycyclic Aromatic Hydrocarbon (PAH's) data concluded that all analyses are below their respective guideline criteria, and therefore no potential risk to human health is indicated.

14.2.4 Assessment of Total Petroleum Hydrocarbon [TPH's] Data

The assessment of TPH data concluded that all analyses are below their respective guideline criteria, and therefore no potential risk to human health is indicated.

14.2.5 Assessment of BTEX Data

All BTEX compounds were reported to be below their limit of detection and therefore no risk to human health is indicated.

14.2.6 Assessment of Asbestos Data

Asbestos fibre bundles were encountered within 4 of 6nr samples analysed (WS2, WS3, WS4 & WS6) and therefore a potential risk to human health is indicated. This finding is discussed further in the post investigation conceptual model discussion in Section 20 hereunder.

15.0 CONTROLLED WATERS RISK ASSESSMENT

15.1 Assessment of Metals, Non-Metals & Polycyclic Aromatic Hydrocarbon (PAH) Data

A total of 2nr water samples were recovered from installations BH1 & WS4 and analysed for a broad range of contaminants including speciated PAH and TPH concentrations. The positive results above the limit of detection were assessed against the available Environmental Quality Standards (AA-EQS) for freshwater as shown hereunder.

Table 12: Assessment of Metals, Non-Metals & Polycyclic Aromatic Hydrocarbon (PAH) Data

Contaminant	AA-EQS (ug/l)	Maximum (ug/l)	Exceedances	
			(mg/kg)	Location
Arsenic	50	274	274	WS4
Boron	2000	242	-	-
Copper	12	12.2	12.2	WS4
Nickel	40	10	-	-
Lead	20	1	-	-
Zinc	50	65	65	BH1

Sulphate	400,000	1,810,000	1,810,000	WS2
Naphthalene	2.4	4.74	4.74	WS4
Fluoranthene	0.1	18	18.0 14.6	BH1 WS4
Benzo[a]anthracene	0.05	7.4	7.40 6.34	BH1 WS4
Benzo[b]fluoranthene	0.03	6.6	6.0 6.6	BH1 WS4
Benzo[k]fluoranthene	0.03	6.49	6.49 5.86	BH1 WS4
Benzo[a]pyrene	0.05	8.92	8.92 7.49	BH1 WS4
Indeno(123-cd)pyrene	0.02	3.78	3.78 3.20	BH1 WS4
Benzo(ghi)perylene	0.02	4.53	4.53 3.50	BH1 WS4

The above assessment confirms several contaminants exceed their respective guideline criteria, and therefore a potential risk to controlled water is indicated. These exceedances are discussed further in Section 15.3 hereunder.

15.2 Assessment of Hydrocarbon (TPH) Data

Speciated hydrocarbon results were assessed by comparison EQS Inland water Criteria values or where no EQS Inland water Criterion is available, then WHO guidelines for Drinking Water are adopted.

Table 13: Assessment of Hydrocarbon (TPH) Data

Contaminant	AA-EQS / [WHO]* (ug/l)	Maximum (ug/l)	Exceedances	
			(mg/kg)	Location
Aromatic EC5-EC7	10*	<1	-	-
Aromatic EC7-EC8	50	<1	-	-
Aromatic EC8-EC10	20	92.1	92.1	WS4
Aromatic EC10-EC12	100*	59.5	-	-
Aromatic EC12-EC16	100*	13.6	-	-
Aromatic EC16-EC21	90*	91.1	91.1	WS4
Aromatic EC21-EC35	90*	496	496	WS4
Aliphatic EC5-EC6	15000*	<1	-	-
Aliphatic EC6-EC8	15000*	<1	-	-
Aliphatic EC8-EC10	300*	44.1	-	-
Aliphatic EC10-EC12	300*	36.5	-	-
Aliphatic EC12-EC16	300*	7.9	-	-
Aliphatic EC16-EC21	300*	82.9	-	-
Aliphatic EC21-EC35	300*	426	426	WS4

*WHO Guideline Criteria

The above assessment identified several species of hydrocarbons that marginally exceed their respective guideline criteria, and therefore a potential risk to controlled water is indicated. These exceedances are discussed further in Section 15.3 hereunder.

15.3 Summary of Controlled Waters Risk Assessment

The perched groundwater accumulations have been shown to be impacted by some PAH species and heavy long chain aliphatic and aromatic hydrocarbons. Whilst the above transgressions of recognised assessment criteria are noted, the following site conditions should be borne in mind:

- The results represent groundwater quality pertaining to the superficial perched water accumulations.
- The main potential receptors are the sandstone bedrock formation which has been shown by BH01 to be protected by a thick stiff clay impermeable aquiclude, and the Ashton canal which may be assumed to have a clay liner.
- There is no evidence that potentially leachable sources of contamination remain on the site.

The criteria transgressions identified above are not considered to pose a significant risk to controlled waters. However, these bodies of perched groundwater will require to be managed / disposed of during the construction process and particular care will be required during the construction phase to avoid run-off into the Ashton canal. Furthermore, piling methods must take account of the potential for vertical migration, and adopt appropriate mitigation methods.

16.0 SPECIFICATION OF BURIED CONCRETE

The data obtained in the investigations was assessed against the guidance given in BRE Special Digest 1: 2005, as summarised hereunder:

Table 14: Design Chemical Class Based on Soil Data

CONCRETE SPECIFICATION DATA SHEET		
Is the site Brownfield or Greenfield?	Brownfield	
Is the water table static or mobile?	Static	
Highest water-soluble Sulphate results	906mg/l	Design Sulphate Class of DS2, ACEC Class of ***AC-1s***
Lowest pH result	8.4	
Intended Working Life	100 years	Adopt Design Chemical Classification of DC1

Table 15: Design Chemical Class Based on Water Data

CONCRETE SPECIFICATION DATA SHEET		
Is the site Brownfield or Greenfield?	Brownfield	
Is the water table static or mobile?	Static	
Highest Sulphate results	1810mg/l	Design Sulphate Class of DS-3, ACEC Class of ***AC-2S***
Lowest pH result	7.1	
Intended Working Life	100 years	Adopt Design Chemical Classification of DC-2

Based on the foregoing assessments, concrete in the ground should be specified to conform to the compositional requirements of Design Chemical Class DC 2m, as defined in BRE Special Digest 1: 2005.

17.0 ASSESSMENT OF RISK FROM GROUND GASES

A total of 4nr standpipes were installed across the site for subsequent monitoring. Using the data gathered in the monitoring programme, a gas risk assessment was undertaken in accordance with the ground gas risk assessment methodology employed by ***CCG***. The ground gas risk assessment methodology conforms to current UK guidance on the assessment of risks posed by ground gases.

The potential sources of gas identified in the desk study were generally considered as sources of "*Very Low*" generation potential, and "*Low*" sensitivity, resulting in a programme of monitoring comprising of 4nr rounds distributed over a month period.

A gas risk assessment was undertaken in accordance with current UK guidelines set out in CIRCA C665 2007 "Assessing Risk Posed by Hazardous Gases to Buildings". The CIRIA risk assessment methodology uses typical maximum soil gas concentrations and worse case borehole flow rates to define a "Characteristic Situation" for the shallow gas regime.

The volumetric gas flow rate used by the risk assessment is termed "*Gas Screening Value* (GSV)" in the guidance and is defined below.

Where: GSV (litres/hr) = borehole flow rate (litres/hr) x gas concentration.

There are also two stages to the assessment method proposed in CIRIA C665 – firstly, compliance with a GSV Threshold Value and secondly, compliance with additional factors such as maximum permissible gas concentration. The gas monitoring data is presented in Appendix D and summarised hereunder.

Table 16: Summary of Gas Monitoring Data

Position	WS1	WS3	WS4	BH1
No Monitoring Visits	4	4	4	4
Highest CH_4 (%)	Nil	Nil	Nil	Nil
Highest CO_2 (%)	Nil	1.3	Nil	4.8
Lowest O_2 (%)	19.8	19.0	19.4	14.0
Highest H_2S (ppm)	Nil	Nil	Nil	Nil
Highest CO (ppm)	Nil	Nil	Nil	Nil
Highest Flow (l/hr)	<0.01	<0.01	<0.01	<0.01
Water Levels (m)	Dry	1.52 – 1.55	0.54 – 0.63	1.55 – 1.64
Highest PID response	0.0	0.0	0.0	0.0
Pressure Range (mb)	1010 to 1013mbar			

After 4 rounds of monitoring, a Gas Screening Value (GSV) of 0.0048l/hrs is calculated for CO_2 Using these GSV values, the risk to the proposed development was assessed in line with Situation A as defined in CIRIA C665, and on this basis the readings conform to Characteristic Situation 1, and based on this classification, gas protection measures are not required.

18.0 NEW WATER MAINS SUPPLY

The specification for new water mains at this site was based on the criteria specified in Paper 10/WM/03/21 '*Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites*' published by UK Water Industry Research (UKWIR) January 2011.

Preliminary findings indicate that the soil concentrations of pertinent soil contaminants are below the threshold concentrations recommended under the UKWIR guidance. On this basis, new water mains must be specified as PE/AL/PE barrier (Protectaline) pipe construction. Also, new mains should be laid in a clean remediated alignment, with 300mm clean gravel surround (i.e 600mm wide trench, with mains set centrally).

Pipes should be laid in accordance with BS EN 12201-2 'Plastic piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) as stated in UKWIR guidance.

Notwithstanding the above preliminary assessment, the developer should contact the relevant water supply company to obtain concurrence with the recommendations given above and may be required to return a completed Risk Assessment.

19.0 WASTE CLASSIFICATION – MOUND EXCAVATION

The site preparation will require the excavation and offsite disposal of a large volume of fill presently forming the mound on site. To assess the classification of waste likely to be generated by the works, all analyses were subject to assessment via the Hazwaste online program, supplemented by 3nr WAC analyses. The assessments are contained in Appendix F and are summarised hereunder:

Table 17: Waste Classification

Sample location / depth	Hazwaste Classification	WAC Classification	Comment
WS1 / 0.8	Non-Hazardous	-	No Asbestos Present
WS2 / 0.5	Non-Hazardous	Non-Hazardous	Asbestos present below Hazardous Threshold
WS3 / 0.7	Hazardous	-	Bank sample Hazardous based on $ZnSO_4$ Asbestos present – no quantification
WS4 / 0.9	Non-Hazardous	-	Asbestos present – no quantification
WS5 / 0.6	Non-Hazardous	Non-Hazardous	No Asbestos Present
WS6 / 1.5	Non-Hazardous	Non-Hazardous	Asbestos present below Hazardous Threshold

It can be seen that there is a mix of hazardous and non-hazardous materials present in the near surface soils. The disposal of spoil from this site will require close liaison with landfill operators who may deem it impractical to differentiate the classifications and insist that all spoil be classified as Hazardous waste.

20.0 POST INVESTIGATION CONCEPTUAL MODEL

Based on the findings of the investigation, a conceptual model could be constructed illustrating proven pollution linkages and summarising the conceptual remediation recommendations discussed above, as tabulated hereunder.

Table 18: Conceptual Model

Source	Pathway	Receptor	Remedial Options
Asbestos containing materials encountered within surficial made ground soils	Soil dust inhalation	Human Health	The proven presence of ACM indicates a potential risk to human health which will require an appropriate combination of remedial measures and construction practice to mitigate risks to human health. As a priority, it is essential that dust releases be effectively eliminated during groundworks, to ensure there are no risk of releases of airborne fibres, and to this end contractors engaged in works involving disturbance of the ground must develop an Asbestos Management Plan. This plan may be based on the guidance contained in CIRIA C733 “Asbestos in soil and made ground: a guide to understanding and managing risks”. This provides a basis for the contractor to develop good working practice.

			Further guidance is contained in CL:aire publication - Asbestos in Soil and Construction & Demolition Materials. Site preparation for Alternates 1 and 3 will require bulk excavation works, disturbing and exposing soils which may contain asbestos. Cultivated landscaping areas within the development will require a significant cover thickness to ensure human contact with existing soils is prevented in normal groundsman / gardening activity. It should be assumed that remediation will be required on any of the 3 Alternates. A cover of 450mm of clean imported topsoil is recommended. Since the lateral boundaries of the site merge into existing landscaping, a regime of field sampling and testing should be implemented to reliably delineate the extent of remediation.
Made ground soils – soil concentrations of pertinent contaminant species (TPH's) are marginally above several UUW threshold values	Direct migration into water mains	Potable water supply (human consumption)	Normal Polyethylene (PE) mains should not be adopted. In these circumstances, the guidance recommends that adoption of PE/AL/PE mains laid in a remediated alignment comprising of clean granular fill 300mm clean gravel surround (i.e 600mm wide trench, with mains set centrally).
Elevated levels of metals, PAHs and TPH species in groundwater	Vertical migration to Principal Aquifer Lateral migration to Ashton Canal	Principal aquifer Ashton Canal	Piling works must provide measures / methods to prevent vertical migration of groundwater to bedrock aquifer Groundworks will require management to prevent lateral migration to Ashton Canal Construction Method Statements must reflect these risks
Elevated levels of sulphates in made ground soils	Direct contact	Building Fabric	Concrete in the ground should be specified to conform to the compositional requirements of Design Chemical Class DC2, as defined in BRE Special Digest 1: 2005.

21.0 FOUNDATIONS & FLOOR SLABS RECOMMENDATIONS

21.1 Introduction & Site Preparation

It is understood that the site is to be developed with the construction of a Women's Facility within the Manchester City Football Club Training facility. Preliminary proposed development plans are provided in Appendix A. As stated above Alternates 1 and 3 will require the bulk excavation and offsite disposal of the earth mound which has been shown to be contaminated by asbestos. In the context of the current uses of the overall facility, it may be preferable to adopt Alternate 2, since no disturbance of the mound will be required to deliver this option.

21.2 Foundations & Ground Slabs

Notwithstanding which option is selected, the evidence of the investigation is that a considerable depth of made ground will remain insitu below development level. Taking this into account, spread (pad or strip) foundations are not considered a suitable option and it is recommenced that a piled foundation be adopted.

A range of piled solutions may be adopted. The Alternates all appear to be single storey modular construction and it may be feasible to deploy a driven pile solution, since driven piles will not generate soil for disposal.

Subject to required pile loadings, it may be possible to deploy bottom driven steel cased cast insitu piles, which for the purposes of preliminary design, may be taken to have SWL`s as hereunder:

Table 19: Bottom Driven Steel Cased Pile Carrying Capacity

Pile Diameter mm	Carrying Capacity kN
150	130
220	260

The SWL`s of precast concrete driven piles may be taken as hereunder:

Table 20: Driven Precast Concrete Piles Carrying Capacity

Pile Section mm x mm	Carrying Capacity kN
200 x 200	350
250 x 250	600

Piling contractors must be required to geotechnical design calculations / dynamic installation calculations for the actual loadings calculated to be imposed on each pile, and to provide pile installation records.

A suspended ground slab will be required either as a cast insitu reinforced slab or precast suspended floor.

21.3 Excavations

Excavations may be undertaken by light hydraulic excavators. Excavations in excess of 1.2mbgl will require side support. Concrete or blinding concrete should be placed over excavation formations immediately following excavation to preserve the integrity of the exposure.

21.4 Groundwater Management

The monitoring programme indicates that shallow accumulations of groundwater will be encountered in executing the works and contractors must allow for pumping to maintain dry working conditions during foundation construction / service installations particularly during heavy and/or prolonged periods of precipitation. Measures to prevent groundwater run-off to the Ashton canal will be required.

22.0 CONCLUSIONS & RECOMMENDATIONS

The conclusions and recommendations hereunder are based on the salient sections of the report and should not be referred to in isolation of the relevant sections of the text. All recommendations are subject to Regulatory Authority review.

Table 21: Conclusions & Recommendations

Soil Contamination	The above human health risk assessment confirms that asbestos containing materials encountered within surficial made ground soils and therefore a potential risk to human is present, which will require an appropriate combination of remedial measures. As a priority, it is essential that dust releases be effectively eliminated during groundworks, to ensure there are no risk of releases of airborne fibres, and to this end contractors engaged in works involving disturbance of the ground must develop an Asbestos Management Plan. This plan may be based on the guidance contained in CIRIA C733 "Asbestos in soil and made ground: a guide to understanding and managing risks". This provides a basis for the contractor to develop good working practice. Further guidance is contained in CL:aire publication - Asbestos in Soil and Construction & Demolition Materials. Site preparation for Alternates 1 and 3 will require bulk excavation works, disturbing and exposing soils which may contain asbestos. Cultivated landscaping areas within the development will require a significant cover thickness to ensure human contact with existing soils is prevented in normal groundsman / gardening activity. It should be assumed that remediation will be required on any of the 3 Alternates. A cover of 450mm of clean imported topsoil is recommended. Since the lateral boundaries of the site merge into existing landscaping, a regime of field sampling and testing should be implemented to reliably delineate the extent of remediation.
Concrete Specification	Based on the foregoing assessments, concrete in the ground should be specified to conform to the compositional requirements of Design Chemical Class DC 2m, as defined in BRE Special Digest 1: 2005.
Water Mains	The specification for new water mains at this site was based on the criteria specified in Paper 10/WM/03/21 '*Guidance for the selection of Water Supply Pipes to be used in Brownfield Sites*' published by UK Water Industry Research (UKWIR) January 2011. Preliminary findings indicate that the soil concentrations of pertinent soil contaminants are below the threshold concentrations recommended under the UKWIR guidance. On this basis, new water mains must be specified as PE/AL/PE barrier (Protectaline) pipe construction. Also, new mains should be laid in a clean remediated alignment, with 300mm clean gravel surround (i.e 600mm wide trench, with mains set centrally). Pipes should be laid in accordance with BS EN 12201-2 'Plastic piping systems for water supply, and for drainage and sewerage under pressure – Polyethylene (PE) as stated in UKWIR guidance. Notwithstanding the above preliminary assessment, the developer should contact the relevant water supply company to obtain concurrence with the recommendations given above and may be required to return a completed Risk Assessment.
Gas Risk Assessment	After 4 rounds of monitoring, a Gas Screening Value (GSV) of 0.0048l/hrs is calculated for CO_2 Using these GSV values, the risk to the proposed development was assessed in line with Situation A as defined in CIRIA C665, and on this basis the readings conform to Characteristic Situation 1, and based on this classification, gas protection measures are not required.
Foundations & Ground Floor Slabs	See Section 21.0 for full discussion
Excavations	Excavations may be undertaken by light hydraulic excavators. Excavations in excess of 1.2mbgl will require side support. Concrete or blinding concrete should be placed over excavation formations immediately following excavation to preserve the integrity of the exposure.
Groundwater Management	The monitoring programme indicates that shallow accumulations of groundwater will be encountered in executing the works and contractors must allow for pumping to maintain dry working conditions during foundation construction / service installations particularly during heavy and/or prolonged periods of precipitation. Measures to prevent groundwater run-off to the Ashton canal will be required.

APPENDIX A

DRAWINGS



Legend

Site Location

CC GEOTECHNICAL LIMITED
UNIT 1 DELTIC WAY
KNOWSLEY INDUSTRIAL ESTATE
LIVERPOOL
L33 7BA
0151 545 2750

Client: Marston & Grundy LLP	
Project: MCFA Woman's Facility	
Title: Site Location Plan	
Scale: NTS	Issue: 1
Drawn by: LT	Date July2023
Project No. CCG-C-23-13703	Drawing No. 13703-1

CC GEOTECHNICAL LIMITED



Legend

Site Location

CC GEOTECHNICAL LIMITED
UNIT 1 DELTIC WAY
KNOWSLEY INDUSTRIAL ESTATE
LIVERPOOL
L33 7BA
0151 545 2750

Client: Marston & Grundy LLP	
Project: MCFA Woman's Facility	
Title: Site Aerial Photography Plan	
Scale: NTS	Issue: 1
Drawn by: LT	Date July 2023
Project No. CCG-C-23-13703	Drawing No. 13703-2

CC GEOTECHNICAL LIMITED



Notes:

Cable Percussive Borehole

Window Sampling Borehole

CC GEOTECHNICAL LIMITED
UNIT 1 DELTIC WAY
KNOWSLEY INDUSTRIAL ESTATE
LIVERPOOL
L33 7BA
0151 545 2750

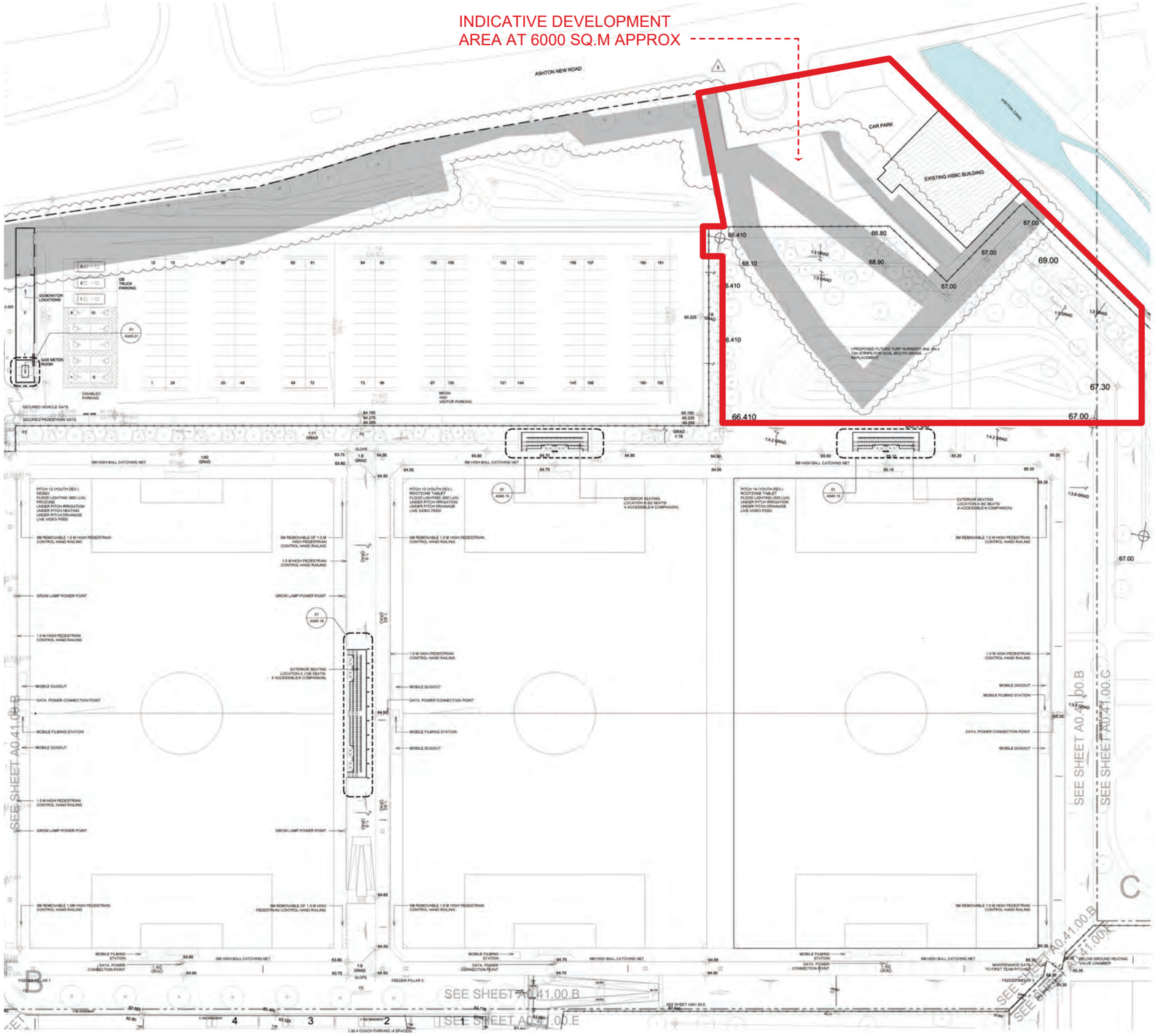
Client:
Marston & Grundy LLP

Project:
MCFA Woman's Facility

Title:
Site Investigation Location Plan

Scale:	Issue:
NTS	1
Drawn by:	Date:
LT	06/07/2023
Project No.	Drawing No.
CCG-C-23-13703	13703/3

CC GEOTECHNICAL LIMITED



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- Drawing not to be scaled
- Report Errors and Omissions to the Architect.
- Check all dimensions on site
- Drawing to be read in conjunction with the Health and Safety Plan and all relevant Risk Assessments

Rev.	Date	Drn.	Chkd.

BOWKER SADLER **ARCHITECTURE**

Hatherlow House | Hatherlow | Romiley | Stockport | SK6 3DY
0161 4067333 office@bowker-sadler.co.uk www.bowker-sadler.co.uk

Project

MCFC Womens Facility

Client

Manchester City Football Club

Drawing

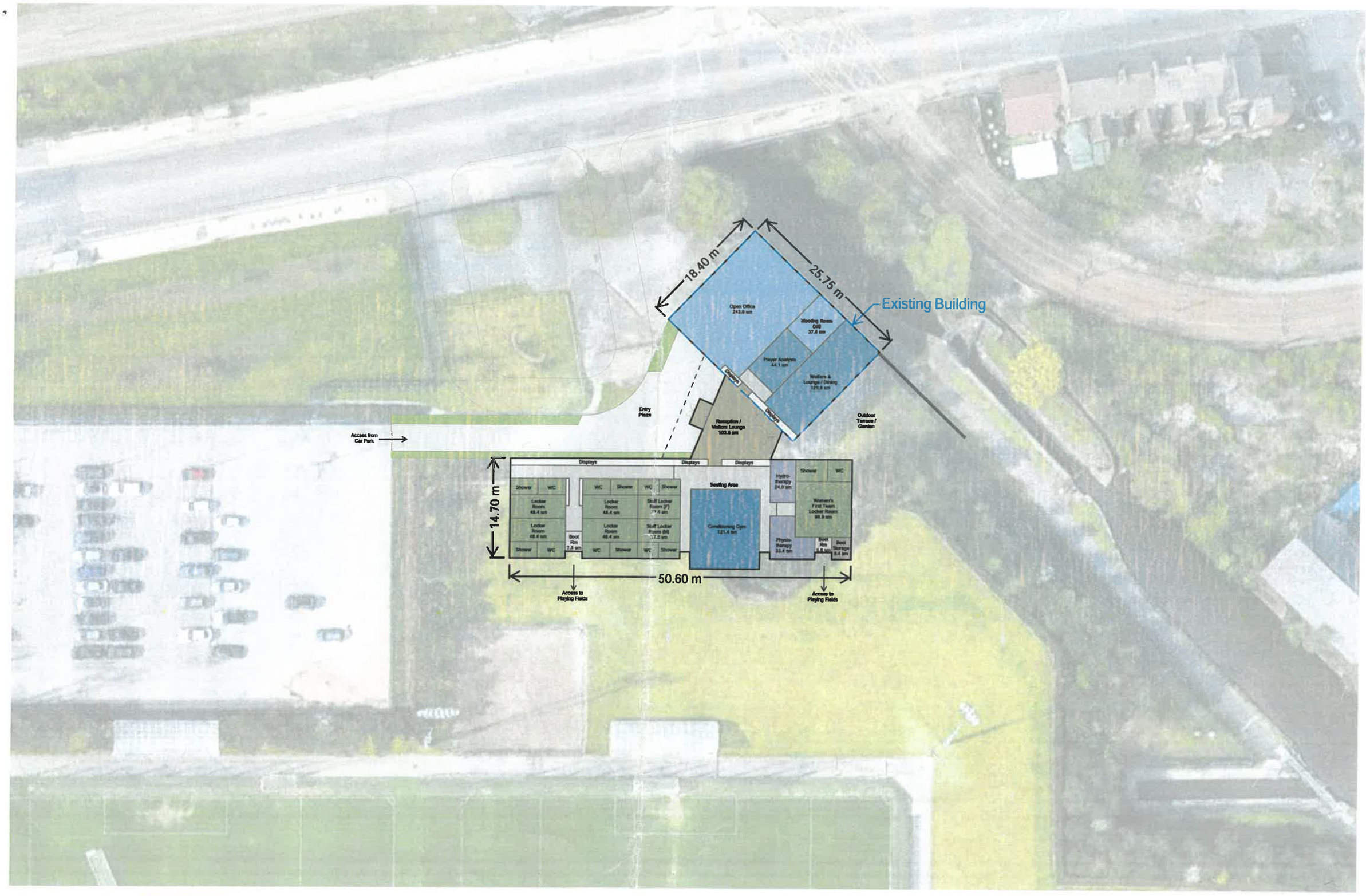
Indicative Development Area

Scale	Sheet Size	Drawn	Checked	Date
1:1000	@A3	DL	AS	FEB 2023

Project No.	Dwg No.	Revision
22-053	SK001	

Status

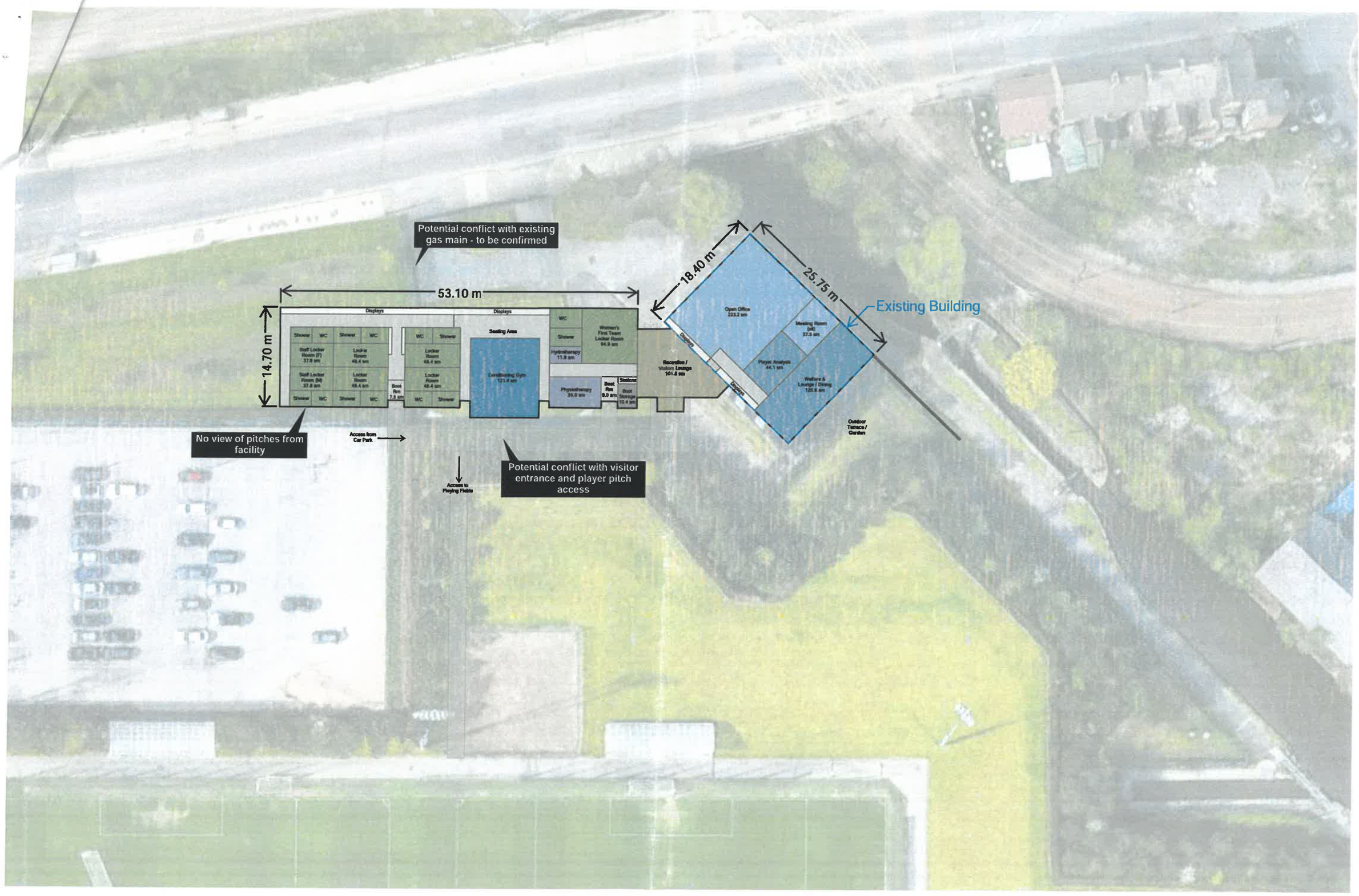
Information



Women's Facilities - Alternate 1
Approximate Building Floor Area = 1,336 SM
11 April 2022

Rafael Vinoly Architects

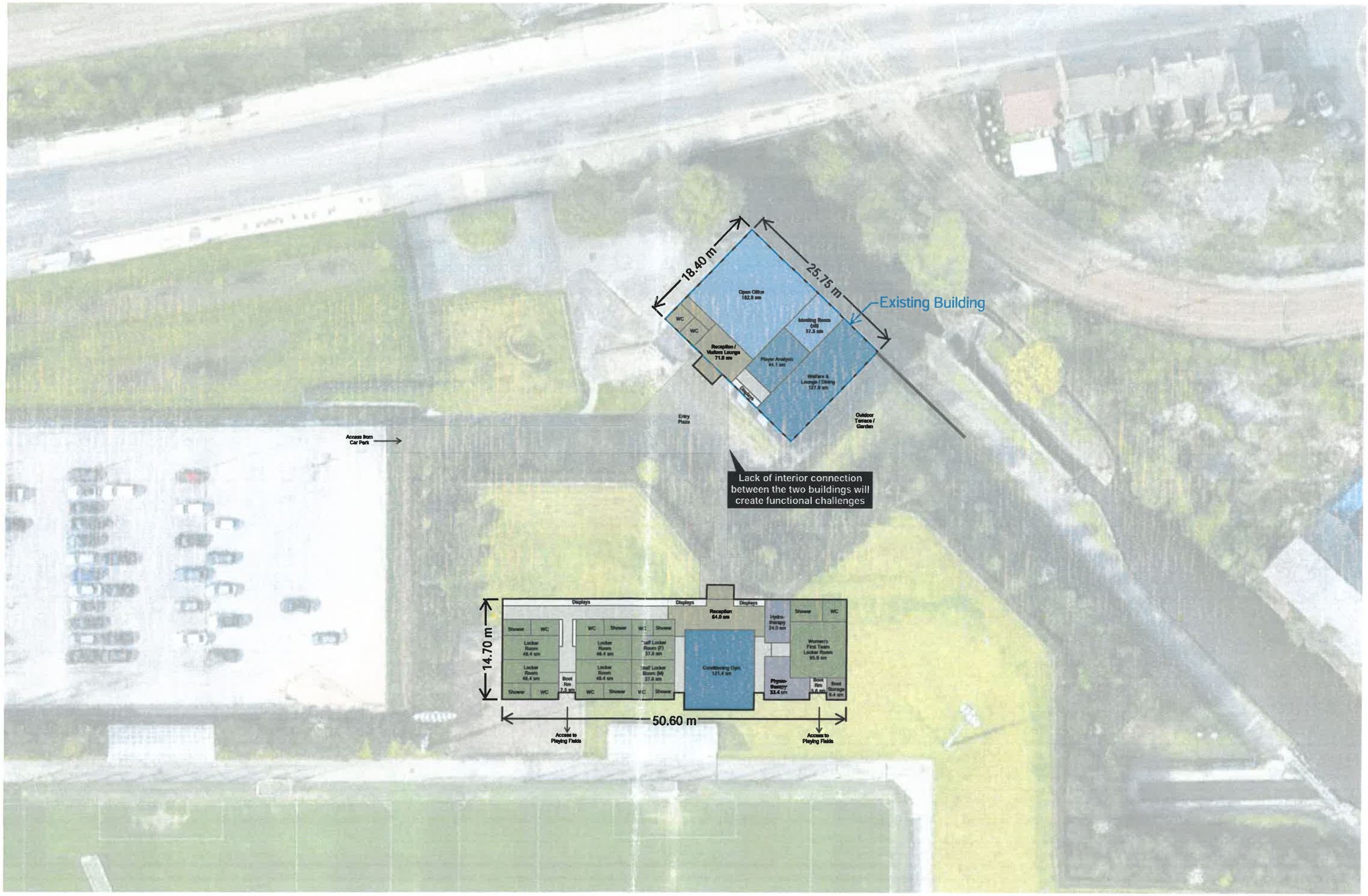
1:500 scale



Women's Facilities - Alternate 2
Approximate Building Floor Area = 1,375 SM
11 April 2022

Rafael Vinoly Architects

1:500 scale



Women's Facilities - Alternate 3
Approximate Building Floor Area = 1,246 SM
11 April 2022

Rafael Vinoly Architects

1:500 scale

APPENDIX B

CABLE PERCUSSION BOREHOLE LOG SHEETS

Contract Name: MCFA Womens Facility			Client: Marston & Grundy	Borehole ID: **BH1**
Contract Number: CCG-C-23-13703	Date Started: 23/05/2023	Logged By:	Checked By: CB	Status: FINAL — Sheet 1 of 2
Cable Percussion Borehole Log	Easting: 387564.8	Northing: 398458.8	Ground Level: 66.71mAOD	Plant Used: Dando 150 S/A Rig — Rig Crew: AR/CMC — Scale: 1:50
Weather:	Termination: AS SCHEDULED		SPT Hammer: N/R, Energy Ratio: N/R	

Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Strata Description
			66.61	0.10	TARMAC
0.30	B			(0.35)	Brown very sandy slightly silty GRAVEL. Gravel is fine to coarse sub-angular brick, sandstone and cinders (MADE GROUND)
			66.26	0.45	
0.65	B		66.11	0.60	REINFORCED CONCRETE
			65.91	0.80	Dark grey silty SAND and GRAVEL. Gravel is fine to coarse sub-angular concrete, slag, cinders and ceramic (MADE GROUND)
1.00	B			(0.45)	
		SPT(S) 1.20m, N=5 (1,2/1,1,2,1)	65.46	1.25	Dark grey very sandy silty GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded slag, cinders and sandstone (MADE GROUND)
1.50	B				
				(0.85)	Dark grey very sandy very silty GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded slag, cinders and sandstone (MADE GROUND)
		SPT(S) 2.00m, N=15 (2,2/3,3,4,5)	64.61	2.10	
2.50	B				Firm becoming stiff then very stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone and coal
3.00 - 3.45	UT				
3.50	B				
		SPT(S) 4.00m, N=23 (4,6/5,6,6,6)			
4.50	B				
5.00 - 5.45	UT				
6.00	B			(12.90)	
		SPT(S) 6.50m, N=21 (3,5/5,5,5,6)			
7.50	B				
8.00 - 8.45	UT				
9.00	B				
		SPT(S) 9.50m, N=26 (4,6/6,7,6,7)			

Continued next sheet

Groundwater: Water Strike at 1.64; Backfill/Installation: 1.00 PLAIN, 1.00–5.00 SLOTTED

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
23-05-2023	16:00	6.00	6.00	
24-05-2023	08:00	6.00	6.00	
24-05-2023	16:00	6.00	6.00	

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Chiselling

From (m)	To (m)	Duration	Remarks

Installation

Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	
1.00	5.00	SLOTTED	

Remarks:
1.5 hours hand excavating 1.20mbgl service avoidance pit

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.64			0		Monitored on 08/06/23

Contract Name: MCFA Womens Facility			Client: Marston & Grundy		Borehole ID: **BH1**
Contract Number: CCG-C-23-13703	Date Started: 23/05/2023	Logged By:	Checked By: CB	Status: FINAL	Sheet 2 of 2
Cable Percussion Borehole Log	Easting: 387564.8	Northing: 398458.8	Ground Level: 66.71mAOD	Plant Used: Dando 150 S/A Rig	Rig Crew: AR/CMC	Scale: 1:50
Weather:	Termination: AS SCHEDULED		SPT Hammer: N/R, Energy Ratio: N/R		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
10.50	B					Firm becoming stiff then very stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone and coal		
11.00 - 11.45	UT							
12.00	B							
		SPT(S) 12.50m, N=42 (5,8/10,10,10,12)						
13.50	B							
		SPT(S) 14.00m, N=50 (7,12/50 for 270mm)						
15.00	B		51.71	15.00		End of Borehole at 15.00m		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
23-05-2023	16:00	6.00	6.00	
24-05-2023	08:00	6.00	6.00	
24-05-2023	16:00	6.00	6.00	

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1.5 hours hand excavating 1.20mbgl service avoidance pit

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	1.00	PLAIN	
1.00	5.00	SLOTTED	

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.64			0		Monitored on 08/06/23

APPENDIX C

WINDOW SAMPLING BOREHOLE LOGSHEETS

Contract Name: MCFA Womens Facility			Client: Marston & Grundy	Borehole ID: **WS1**
Contract Number: CCG-C-23-13703	Date Started: 25/04/2023	Logged By:	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting: 387558.0	Northing: 398449.4	Ground Level: 67.30mAOD	Plant Used: Dando Terrier Rig
Rig Crew: LN	Scale: 1:25	Sheet 1 of 1		
Weather:	Termination: AS SCHEDULED	SPT Hammer: N/R, Energy Ratio: N/R		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	U			(0.30)		Grassed TOPSOIL		
			67.00	0.30		Brown gravelly slightly sandy silty friable CLAY. Gravel is fine to coarse sub-angular brick and sandstone (MADE GROUND)		
1.00 - 2.00	U	SPT(S)N=30 (2,3/2,6,12,10)		(2.45)				
2.00 - 3.00	U	SPT(S)N=9 (4,3/3,1,3,2)						
			64.55	2.75		Very loose brown slightly silty slightly sandy GRAVEL. Gravel is fine to medium sub-angular to sub-rounded quartz, sandstone and mudstone		
3.00 - 4.00	U	SPT(S)N=3 (1,1/1,1,0,1)		(0.75)				
			63.80	3.50		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium mudstone		
		HVP=95		(0.60)				
4.00 - 5.00	U	SPT(S)N=13 (1,2/2,2,4,5)						
			63.20	4.10		Medium dense brown slightly silty slightly sandy GRAVEL. Gravel is fine to medium sub-angular to sub-rounded quartz, sandstone and mudstone		
				(0.40)				
			62.80	4.50		Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone		
		HVP=60		(0.50)				
			62.30	5.00		End of Borehole at 5.00m		

1 2 3 4 5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)
				0.00	0.50	PLAIN	
				0.50	3.00	SLOTTED	

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit
Borehole advanced by dynamic probing methods

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.20			0		

Contract Name: MCFA Womens Facility			Client: Marston & Grundy	Borehole ID: **WS2**
Contract Number: CCG-C-23-13703	Date Started: 25/04/2023	Logged By:	Checked By: CB	Status: FINAL — Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 387567.2	Northing: 398415.6	Ground Level: 66.50mAOD	Plant Used: Dando Terrier Rig — Rig Crew: LN — Scale: 1:25
Weather:	Termination: AS SCHEDULED		SPT Hammer: N/R, Energy Ratio: N/R	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.30)		Grassed TOPSOIL		
0.20	B		66.20	0.30				
0.50	B			(0.70)		Brown slightly sandy slightly gravelly silty friable CLAY. Gravel is fine to coarse sub-angular sandstone and brick with occasional inclusions of wood (MADE GROUND)		
0.80	B							
1.00 - 2.00	U		65.50	1.00		1		
		SPT(S)N=17 (2,3/2,4,5,6)				Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular brick, limestone and sandstone (MADE GROUND)		
		HVP=110		(1.05)				
2.00 - 3.00	U	SPT(S)N=12 (1,2/2,3,3,4)	64.45	2.05		2		
		HVP=110				Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone		
3.00 - 4.00	U	SPT(S)N=21 (3,3/3,4,6,8)				3		
		HVP=110		(2.95)				
		HVP=110						
4.00 - 5.00	U	SPT(S)N=19 (2,3/4,5,5,5)				4		
		HVP=110						
		HVP=110						
			61.50	5.00		End of Borehole at 5.00m		
						5		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit
Borehole advanced by dynamic probing methods

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
			0		Dry

Contract Name: MCFA Womens Facility			Client: Marston & Grundy	Borehole ID: **WS3**
Contract Number: CCG-C-23-13703	Date Started: 25/04/2023	Logged By:	Checked By: CB	Status: FINAL — Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 387592.2	Northing: 398445.7	Ground Level: 66.56mAOD	Plant Used: Dando Terrier Rig — Rig Crew: LN — Scale: 1:25
Weather:	Termination: AS SCHEDULED		SPT Hammer: N/R, Energy Ratio: N/R	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	U		66.36	0.20		Brownish grey very sandy GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded cinders, limestone and slag (MADE GROUND)		
			66.26	0.30		Grassed TOPSOIL		
						Brown sandy GRAVEL. Gravel is fine to coarse sub-angular brick, sandstone and limestone (MADE GROUND)		
1.00 - 2.00	U							
		SPT(S)N=28 (3,5/5,7,6,10)		(1.85)				
2.00 - 3.00	U	SPT(S)N=25 (3,3/5,2,9,9)						
			64.41	2.15		Grey sandy GRAVEL. Gravel is fine to coarse sub-angular sandstone, brick, cinders and slag (MADE GROUND)		
				(0.45)				
			63.96	2.60		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded mudstone and sandstone (MADE GROUND)		
		HVP=100		(0.40)				
3.00 - 4.00	U	SPT(S)N=16 (1,4/4,3,4,5)	63.56	3.00		Grey sandy GRAVEL. Gravel is fine to coarse sub-angular sandstone, brick, cinders and slag (MADE GROUND)		
				(0.50)				
			63.06	3.50		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded mudstone and sandstone (MADE GROUND)		
		HVP=110						
4.00 - 5.00	U	SPT(S)N=11 (2,2/2,3,2,4)						
				(1.50)				
			61.56	5.00		End of Borehole at 5.00m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)
0.00	0.50	PLAIN	
0.50	2.50	SLOTTED	

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit
Borehole advanced by dynamic probing methods

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
1.55			0		Monitored on 08/06/23

Contract Name: MCFA Womens Facility			Client: Marston & Grundy	Borehole ID: **WS4**
Contract Number: CCG-C-23-13703	Date Started: 25/04/2023	Logged By:	Checked By: CB	Status: FINAL — Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting: 387626.0	Northing: 398402.9	Ground Level: 65.75mAOD	Plant Used: Dando Terrier Rig — Rig Crew: LN — Scale: 1:25
Weather:	Termination: AS SCHEDULED		SPT Hammer: N/R, Energy Ratio: N/R	

Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Strata Description
0.20	B			(0.40)	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular brick and sandstone (MADE GROUND)
			65.35	0.40	
0.60	B			(0.60)	Brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse sub-angular brick, sandstone and limestone (MADE GROUND)
0.90	B				
1.00 - 2.00	U		64.75	1.00	
		SPT(S)N=16 (2,3/3,4,4,5)			Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular to sub-rounded brick, limestone and concrete (MADE GROUND)
		HVP=110			
2.00 - 3.00	U	SPT(S)N=22 (3,3/5,6,6,5)			
				(2.70)	
		HVP=110			
3.00 - 4.00	U	SPT(S)N=8 (1,3/1,2,2,3)			
			62.05	3.70	
		HVP=75			Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone
				(0.45)	
4.00 - 5.00	U	SPT(S)N=12 (2,2/3,3,3,3)			
			61.60	4.15	
				(0.65)	Firm brown slightly gravelly sandy silty CLAY. Gravel is fine to medium sub-angular sandstone (waterlogged)
			60.95	4.80	
		HVP=80			Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-rounded sandstone
			60.75	5.00	End of Borehole at 5.00m

Groundwater: Water Strike; Backfill/Installation

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)
				0.00	0.50	PLAIN	
				0.50	4.00	SLOTTED	

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit
Borehole advanced by dynamic probing methods

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
0.50			0		

Contract Name: MCFA Womens Facility		Client: Marston & Grundy		Borehole ID: **WS5**
Contract Number: CCG-C-23-13703	Date Started: 26/04/2023	Logged By:	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting:	Northing:	Ground Level:	Plant Used: Dando Terrier Rig
Rig Crew: LN	Scale: 1:25	Sheet 1 of 1		
Weather:	Termination: Refused on obstruction			

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	U			0.05		Grassed TOPSOIL		
				(0.55)		Brown slightly sandy slightly gravelly silty CLAY. Low cobble content. Gravel is fine to coarse sub-angular sandstone, limestone, brick and cinders (MADE GROUND)		
				0.60				
				(0.40)		Brown sandy GRAVEL. Gravel is fine to coarse sub-angular sandstone, brick and limestone (MADE GROUND)		
				1.00		End of Borehole at 1.00m		

1 2 3 4 5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.00mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

	Contract Name: MCFA Womens Facility		Client: Marston & Grundy		Borehole ID: **WS5A**
	Contract Number: CCG-C-23-13703	Date Started: 26/04/2023	Logged By:	Checked By: CB	Status: FINAL
					Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting:	Northing:	Ground Level:	Plant Used: Dando Terrier Rig	Rig Crew: LN
					Scale: 1:25
Weather:		Termination: AS SCHEDULED			

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	U			0.10		Grassed TOPSOIL		
				(1.20)		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone, brick, cinders and limestone (MADE GROUND)		
1.00 - 2.00	U			1.30				
				1.40		Grey GRAVEL. Gravel is fine to coarse sub-angular limestone (MADE GROUND)		
				(1.60)		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular sandstone, limestone and brick (MADE GROUND)		
2.00 - 3.00	U			3.00		End of Borehole at 3.00m		

1 2 3 4 5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: MCFA Womens Facility		Client: Marston & Grundy		Borehole ID: **WS6**
Contract Number: CCG-C-23-13703	Date Started: 26/04/2023	Logged By:	Checked By: CB	Status: FINAL — Sheet 1 of 1
Dynamic Sampling Borehole Log	Easting:	Northing:	Ground Level:	Plant Used: Dando Terrier Rig — Rig Crew: LN — Scale: 1:25
Weather:	Termination: Refused on obstruction			

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	U			0.10		Grassed TOPSOIL		
				(1.60)		Brown slightly sandy gravelly silty CLAY. Low cobble content. Gravel is fine to coarse sub-angular limestone, concrete, sandstone and brick (MADE GROUND)		
1.00 - 1.70	U			1.70		End of Borehole at 1.70m		

1
2
3
4
5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

	Contract Name: MCFA Womens Facility		Client: Marston & Grundy		Borehole ID: **WS6A**
	Contract Number: CCG-C-23-13703	Date Started: 26/04/2023	Logged By:	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting:	Northing:	Ground Level:	Plant Used: Dando Terrier Rig	Rig Crew: LN
					Sheet 1 of 1
					Scale: 1:25
Weather:		Termination: AS SCHEDULED			

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
0.00 - 1.00	U			0.20		Grassed TOPSOIL		
				(0.80)		Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse sub-angular brick, sandstone and cinders (MADE GROUND)		
				1.00		End of Borehole at 1.00m		

1
2
3
4
5

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.00mbgl service avoidance pit

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

APPENDIX D

GAS & GROUNDWATER MONITORING DATA

GAS AND WATER MONITORING RESULTS

	Date:	08-Jun-23	15-Jun-23	22-Jun-23	29-Jun-23								
	Visit Number	1	2	3	4								
	Atmos Press mb	1013	1010	1012	1011								
	Pressure Trend	Steady	Steady	Steady	Steady								
	Air Temp °C	11	22	19	18								
	Cloud cover	Clear	Overcast	Clear	High white clouds								
	Wind velocity	Moderate	Low	Low	Light breeze								
	Precipitation	Dry	Dry	Dry	Dry								
	State of Ground	Dry	Dry	Dry	Dry								
WS01	CH4 (%):	Nil	Nil	Nil	Nil								
	CO2 (%):	Nil	Nil	Nil	Nil								
	O2 (%):	20.5	20.5	20.6	19.8								
	H2S (ppm):	Nil	Nil	Nil	Nil								
	CO (ppm):	Nil	Nil	Nil	Nil								
	PID (ppm):	0.0	0.0	0.0	0.0								
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1								
	Water Level (mbgl):	Dry	Dry	Dry	Dry								
WS03	CH_4 (%):	Nil	Nil	Nil	Nil								
	CO_2 (%):	1.3	1.0	1.2	1.1								
	O_2 (%):	19.0	19.2	18.9	19.0								
	H_2S (ppm):	Nil	Nil	Nil	Nil								
	CO (ppm):	Nil	Nil	Nil	Nil								
	PID (ppm):	0.0	0.0	0.0	0.0								
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1								
	Water Level (mbgl):	1.55	1.55	1.54	1.52								
WS04	CH4 (%):	Nil	Nil	Nil	Nil								
	CO2 (%):	Nil	Nil	Nil	Nil								
	O2 (%):	19.8	19.4	19.8	19.8								
	H2S (ppm):	Nil	Nil	Nil	Nil								
	CO (ppm):	Nil	Nil	Nil	Nil								
	PID (ppm):	0.0	0.0	0.0	0.0								
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1								
	Water Level (mbgl):	0.54	0.60	0.63	0.59								
BH01	CH4 (%):	Nil	Nil	Nil	Nil								
	CO2 (%):	4.8	4.8	4.6	4.7								
	O2 (%):	14.0	12.4	14.1	19.1								
	H2S (ppm):	Nil	Nil	Nil	Nil								
	CO (ppm):	Nil	Nil	Nil	Nil								
	PID (ppm):	0.0	0.0	0.0	0.0								
	Flow (l/hr):	<0.1	<0.1	<0.1	<0.1								
	Water Level (mbgl):	1.64	1.62	1.60	1.55								

CCG-CMS-FO-129
Issue 2

Job No: CCG-C-23-13703

Site: MCFA Womens Facility

Instrument: GFM436

APPENDIX E

ENGINEERING TEST DATA

Units 1 & 2
Deltic Place
Deltic Way
Knowsley Industrial Estate
Liverpool
L33 7BU

Telephone: (0151) 545 2750
Fax: (0151) 548 7892
Email: enquiries@ccgeotechnical.com
www.ccgeotechnical.com

CC GEOTECHNICAL LTD
Consulting Geoenvironmental and Geotechnical Engineers

LABORATORY REPORT

CONTRACT NUMBER: CCG-C-23-13703

CONTRACT TITLE: MCFA WOMENS FACILITY

CLIENT: MARSTON & GRUNDY

DATE RECEIVED: 28/04/23
DATE COMMENCED: 28/04/23
DATE COMPLETED: 30/05/23
REPORT DATE: 30/05/23

Test Description	Qty
Determination of Moisture Content BS 1377-2:1990 (a)	2
Determination of Liquid & Plastic Limits BS 1377-2:1990 (a)	4
Unconsolidated Undrained Triaxial Compression BS1377-7:1990 (a)	4

Notes: Observations and interpretations are not accredited by UKAS
All testing undertaken at laboratory permanent facilities
denotes non-accredited test
a denotes UKAS accredited test
s denotes test undertaken by approved subcontractor
Test results only relate to the samples tested

This report is issued in accordance with the requirements of the United kingdom Accreditation Services and EN ISO/IEC 17025:2017. The results reported herein relate only to the material supplied to the laboratory. This report shall not be reproduced except in full, without the prior written approval of the laboratory.
Approved Signatories: Chris Bolan (Managing Director) – Daniel Kerfoot (Laboratory Manager)

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Shear Strength (kN/m^2)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
WS1	WS	4.80	4.80	20	-	-	-	40	17	23	84	CI	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subrounded sandstone. (BS1377Pt2:3.2,4.4,5)
WS4	WS	4.90	4.90	18	-	-	-	37	16	21	94	CI	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subrounded sandstone. (BS1377Pt2:3.2,4.4,5)
BH1	UT	3.00	3.45	17	2.23	1.90	200	38	17	21	91	CI	Y	Brown slightly sandy slightly gravelly silty CLAY of very high undrained shear strength. Gravel is fine to coarse subrounded sandstone. (BS1377Pt2:3.2,4.4,5,Pt7:8)
BH1	UT	5.00	5.45	13	2.24	2.00	193	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY of very high undrained shear strength. Gravel is fine to coarse subrounded sandstone & coal. (BS1377Pt2:3.2,Pt7:8)
BH1	UT	8.00	8.45	12	2.29	2.04	170	35	16	19	88	CL / CI	Y	Brown slightly sandy slightly gravelly silty CLAY of very high undrained shear strength. Gravel is fine to coarse subrounded sandstone & coal. (BS1377Pt2:3.2,4.4,5,Pt7:8)
BH1	UT	11.00	11.45	13	2.27	2.01	276	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY of very high undrained shear strength. Gravel is fine to coarse subrounded sandstone & coal. (BS1377Pt2:3.2,Pt7:8)

SITE: MCFA WOMENS FACILTY (CCG-C-23-13703) DATE: 30.05.23

CLIENT: MARSTON & GRUNDY

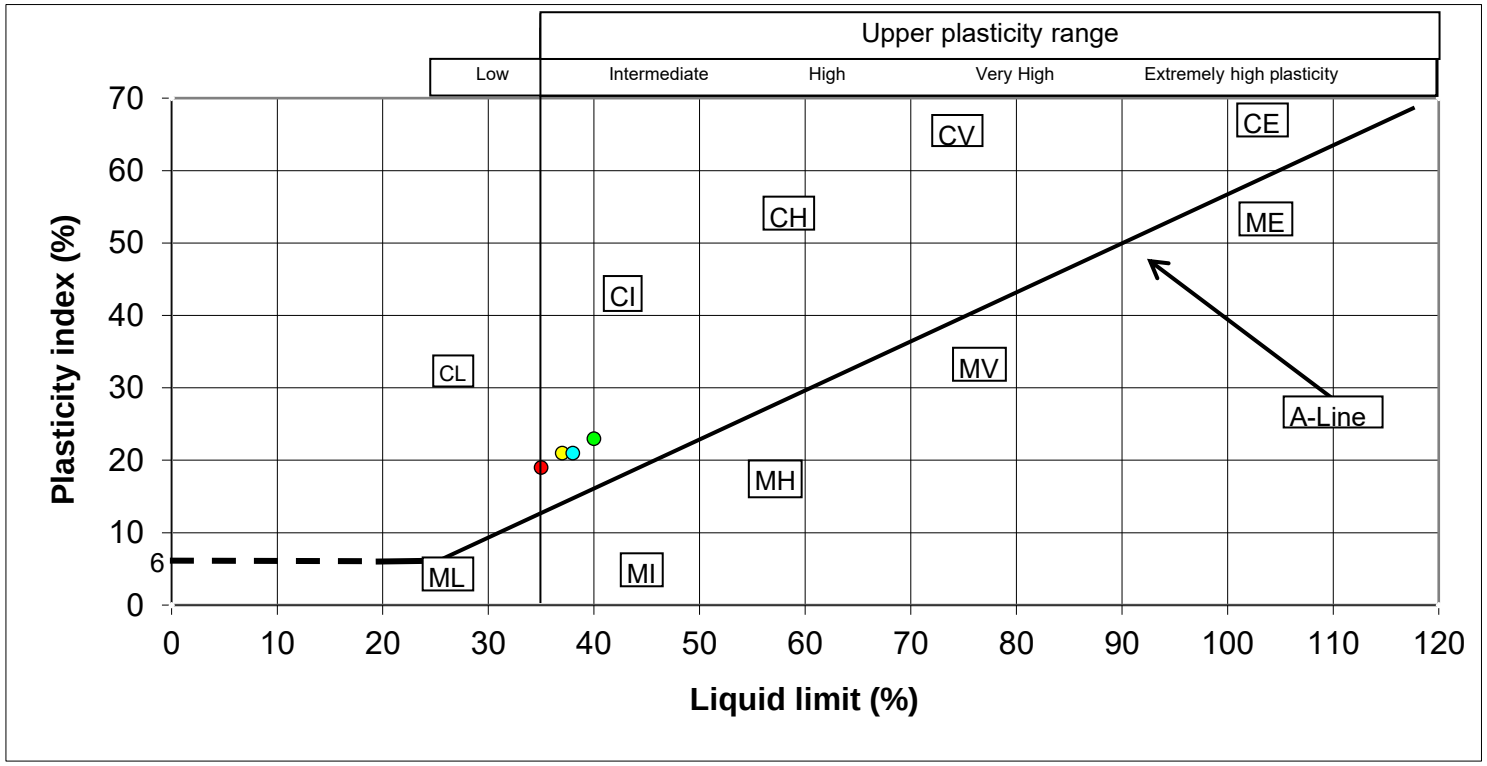
UKAS TESTING 4514

Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
WS1	4.80	40.0	23.0
WS4	4.90	37.0	21.0
BH1	3.00	38.0	21.0
BH1	8.00	35.0	19.0

UKAS TESTING
4514

APPROVED BY	DK

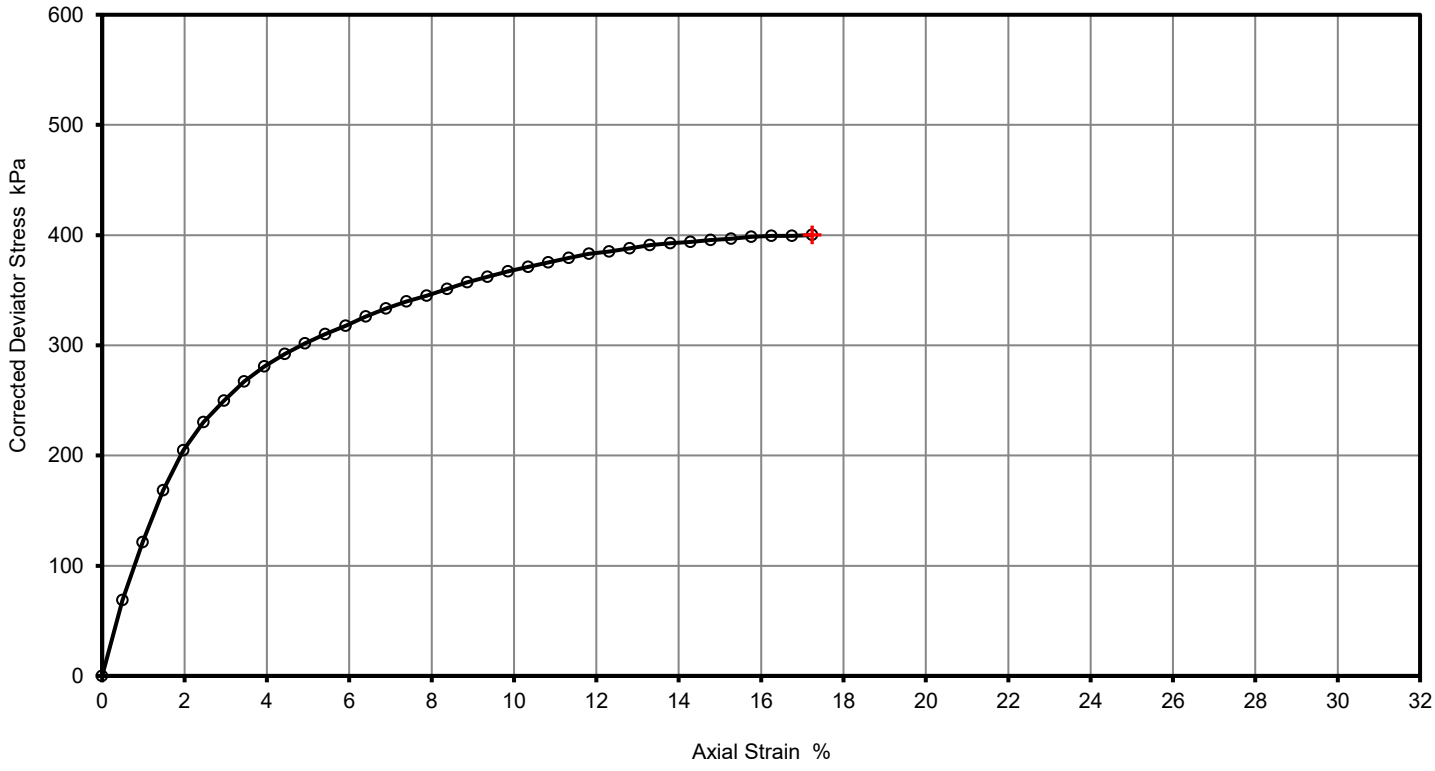
CLIENT: MARSTON & GRUNDY	SITE: MCFA WOMENS FACILTY (CCG-C-23-13703)

CC Geotechnical Ltd Tel: 0151 545 2750 e: lab@ccgeotechnical.com	**Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen**			Job Ref	CCG-C-23-13703
				Borehole/Pit No.	BH1
Site Name	MCFA WOMENS FACILTY			Sample No.	1
Soil Description				Depth	3.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY			Date of test	25/05/2023
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen				

UKAS TESTING 4514

Test Number		1	
Length		203.0	mm
Diameter		102.2	mm
Bulk Density		2.23	Mg/m3
Moisture Content		17.3	%
Dry Density		1.90	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		60	kPa
At failure	Axial Strain	17.2	%
	Deviator Stress, (σ1 - σ3)f	400	kPa
	Undrained Shear Strength, cu	200	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

Approved	Printed
DanielKerfoot	30/05/2023 10:44

Fig. No. 1

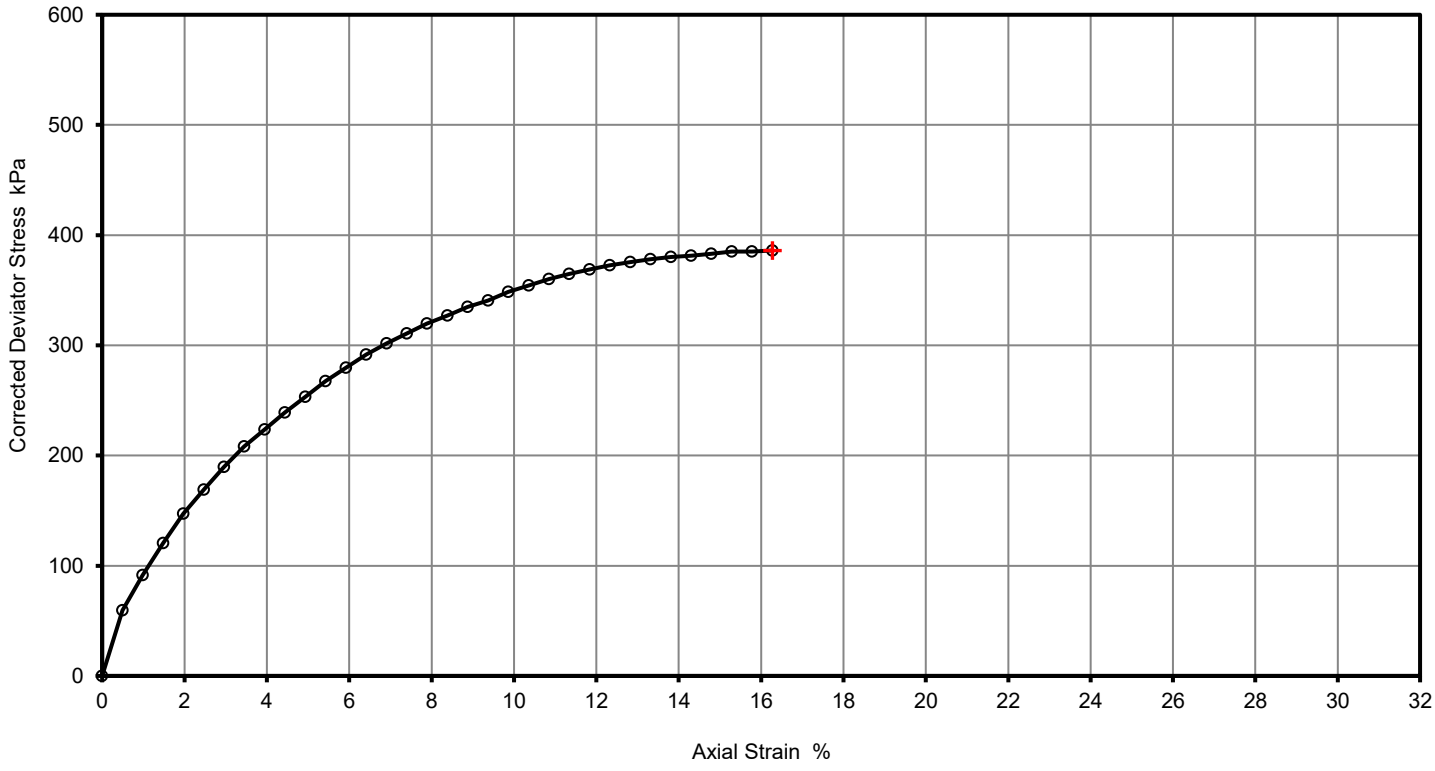
Sheet 1

CC Geotechnical Ltd Tel: 0151 545 2750 e: lab@ccgeotechnical.com	**Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen**			Job Ref	CCG-C-23-13703
				Borehole/Pit No.	BH1
Site Name	MCFA WOMENS FACILTY			Sample No.	1
Soil Description				Depth	5.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY			Date of test	26/05/2023
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen				

UKAS TESTING 4514

Test Number		1	
Length		202.8	mm
Diameter		102.6	mm
Bulk Density		2.24	Mg/m3
Moisture Content		12.5	%
Dry Density		2.00	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		100	kPa
At failure	Axial Strain	16.3	%
	Deviator Stress, (σ1 - σ3)f	386	kPa
	Undrained Shear Strength, cu	193	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

Approved	Printed
DanielKerfoot	30/05/2023 10:44

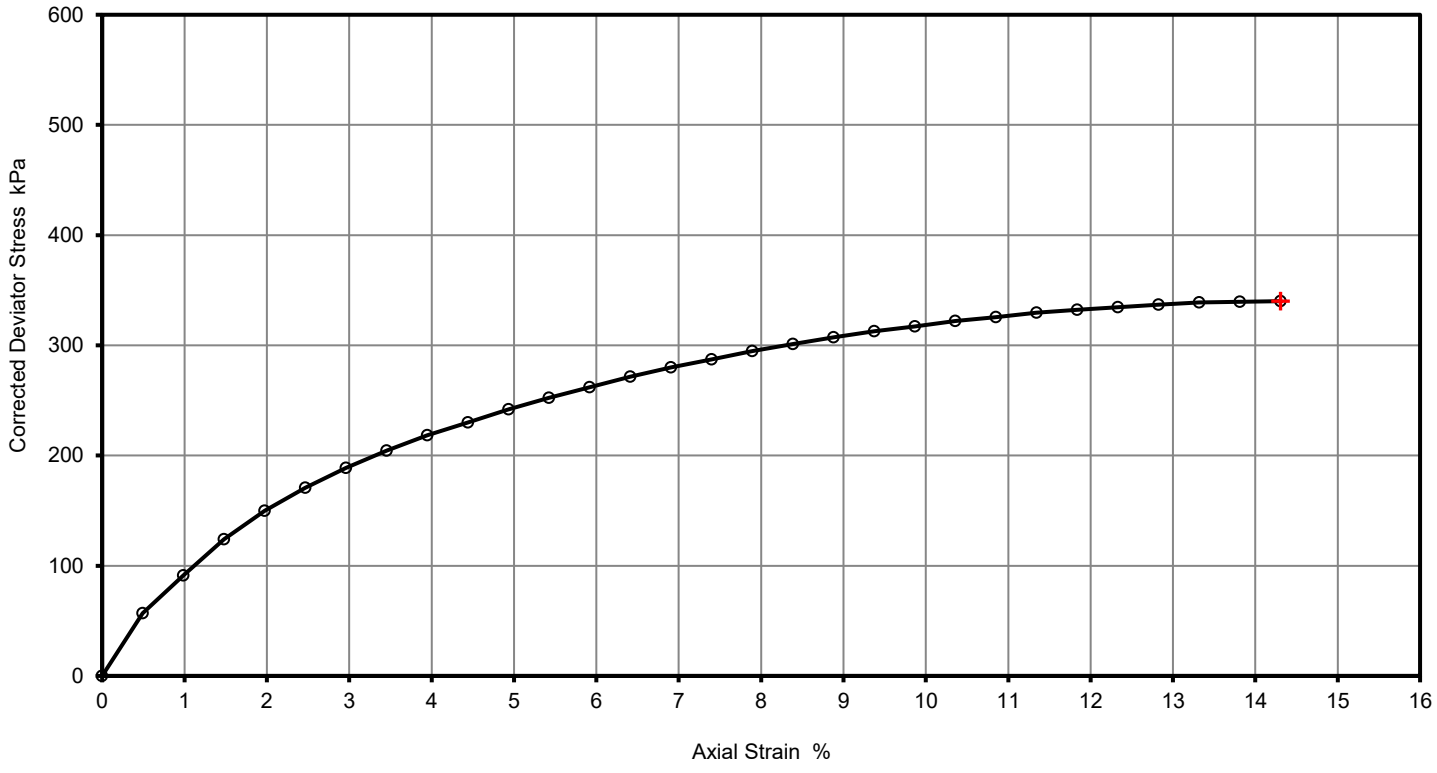
Fig. No. 1

CC Geotechnical Ltd Tel: 0151 545 2750 e: lab@ccgeotechnical.com	**Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen**			Job Ref	CCG-C-23-13703
				Borehole/Pit No.	BH1
Site Name	MCFA WOMENS FACILTY			Sample No.	1
Soil Description				Depth	8.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY			Date of test	26/05/2023
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen				

UKAS TESTING 4514

Test Number		1	
Length		202.7	mm
Diameter		102.3	mm
Bulk Density		2.29	Mg/m3
Moisture Content		12.1	%
Dry Density		2.04	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		160	kPa
At failure	Axial Strain	14.3	%
	Deviator Stress, (σ1 - σ3)f	340	kPa
	Undrained Shear Strength, cu	170	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

Approved: DanielKerfoot

Printed: 30/05/2023 10:44

Fig. No. 1

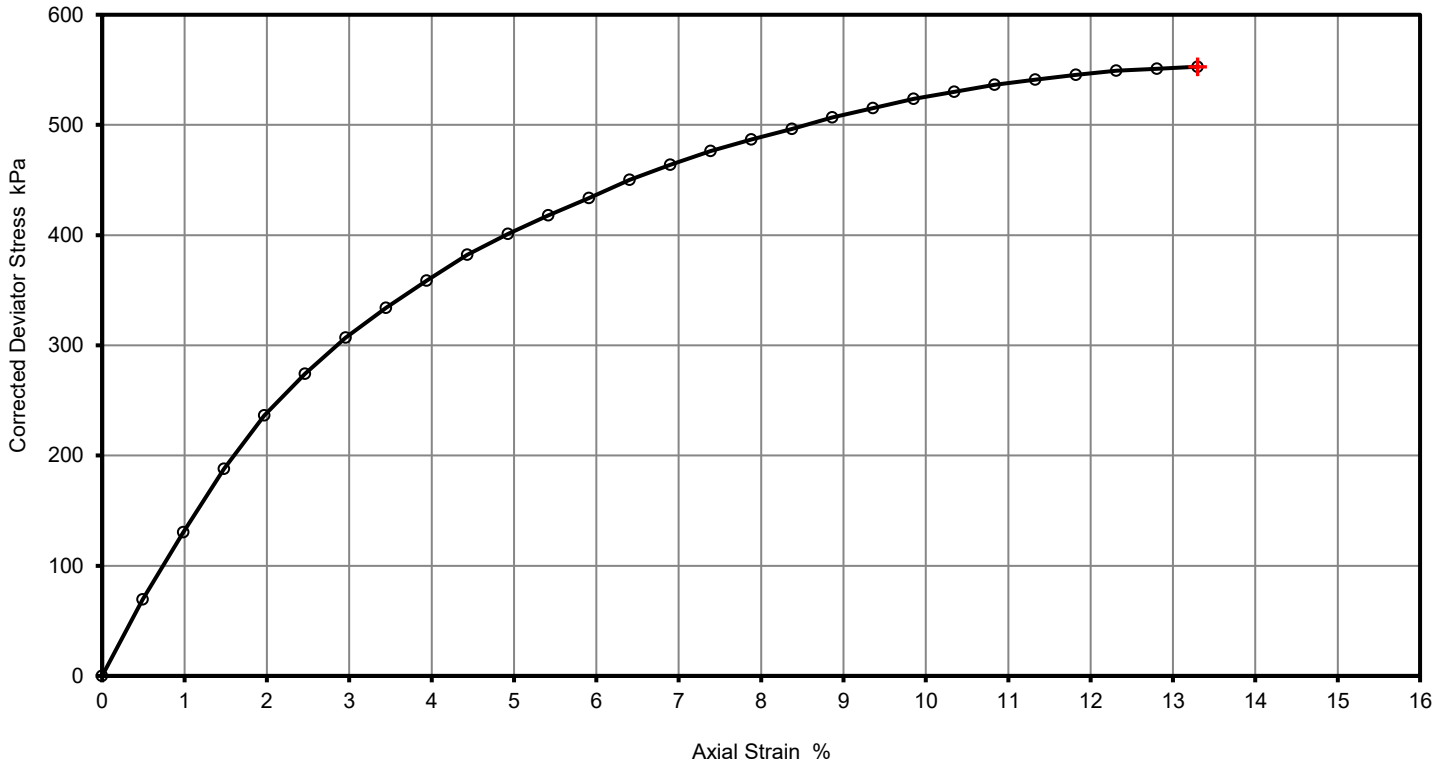
Sheet 3

CC Geotechnical Ltd Tel: 0151 545 2750 e: lab@ccgeotechnical.com	**Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - single specimen**			Job Ref	CCG-C-23-13703
				Borehole/Pit No.	BH1
Site Name	MCFA WOMENS FACILTY			Sample No.	1
Soil Description				Depth	11.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY			Date of test	26/05/2023
Test Method	BS1377 : Part 7 : 1990, clause 8, single specimen				

UKAS TESTING 4514

Test Number		1	
Length		203.0	mm
Diameter		103.2	mm
Bulk Density		2.27	Mg/m3
Moisture Content		12.7	%
Dry Density		2.01	Mg/m3
Rate of Strain		2.0	%/min
Cell Pressure		220	kPa
At failure	Axial Strain	13.3	%
	Deviator Stress, (σ1 - σ3)f	553	kPa
	Undrained Shear Strength, cu	276	kPa ½(σ1 - σ3)f
	Mode of Failure	Plastic	

Deviator Stress v Axial Strain



Remarks

Approved: DanielKerfoot

Printed: 30/05/2023 10:44

Fig. No. 1

Sheet 4

APPENDIX F

CHEMICAL TEST CERTIFICATES

Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
Telephone: (01424) 718618

cs@elab-uk.co.uk
info@elab-uk.co.uk

UKAS TESTING
2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	23-48629
Issue:	1
Date of Issue:	27/06/2023
Contact:	Daniel O'Regan
Customer Details:	CC Geotechnical Ltd Unit 1 & 2 Deltic Place Deltic Way Liverpool MersevsideL33 7BA
Quotation No:	Q22-03450
Order No:	23-13703
Customer Reference:	23-13703
Date Received:	19/06/2023
Date Approved:	27/06/2023
Details:	MCFA Womans Facility
Approved by:	

Tim Reeve, Quality Officer

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

This report may only be reproduced in full

Sample Summary

Report No.: 23-48629, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
327213	BH1	15/06/2023	19/06/2023		
327214	WS4	15/06/2023	19/06/2023		

2683

Results Summary

Report No.: 23-48629, issue number 1

ELAB Reference	327213	327214
Customer Reference		
Sample ID		
Sample Type	WATER	WATER
Sample Location	BH1	WS4
Sample Depth (m)		
Sampling Date	15/06/2023	15/06/2023

Determinand	Codes	Units	LOD		
Dissolved Metals					
Arsenic	U	ug/l	5	< 5	274
Boron	N	ug/l	5	242	35
Calcium	U	ug/l	100	183000	678000
Cadmium	U	ug/l	1	< 1	< 1
Chromium	U	ug/l	5	< 5	< 5
Copper	U	ug/l	5	< 5.0	12.2
Mercury	U	ug/l	0.1	< 0.1	0.1
Magnesium	U	ug/l	100	51000	5040
Nickel	U	ug/l	5	6	10
Lead	U	ug/l	1	< 1	1
Selenium	U	ug/l	5	< 5	7
Zinc	U	ug/l	5	65	< 5
Anions					
Sulphate	U	mg/l	0.5	351	1810
Inorganics					
Free Cyanide	N	ug/l	5	< 5	22
Miscellaneous					
Dissolved organic carbon	N	mg/l	1.5	6.9	51
Hardness (CaCO3)	N	mg/l CaCO3	0.1	667	1710
pH	U	pH units	0.1	7.1	9.2
Polyaromatic hydrocarbons					
Naphthalene GCMS	N	ug/l	0.01	0.59	4.74
Acenaphthylene GCMS	N	ug/l	0.01	0.15	0.29
Acenaphthene GCMS	N	ug/l	0.01	1.08	3.64
Fluorene GCMS	N	ug/l	0.01	1.07	4.48
Phenanthrene GCMS	N	ug/l	0.01	13.0	16.2
Anthracene GCMS	N	ug/l	0.01	2.28	3.92
Fluoranthene GCMS	N	ug/l	0.01	18.0	14.6
Pyrene GCMS	N	ug/l	0.01	17.0	13.2
Benzo (a) anthracene GCMS	N	ug/l	0.01	7.40	6.34
Chrysene GCMS	N	ug/l	0.01	8.70	8.64
Benzo (b) fluoranthene GCMS	N	ug/l	0.01	6.00	6.60
Benzo (k) fluoranthene GCMS	N	ug/l	0.01	6.49	5.86
Benzo (a) pyrene GCMS	N	ug/l	0.01	8.92	7.49
Indeno (1,2,3-cd) pyrene GCMS	N	ug/l	0.01	3.78	3.20
Dibenzo(a,h)anthracene GCMS	N	ug/l	0.01	1.18	1.03
Benzo(ghi)perylene GCMS	N	ug/l	0.01	4.53	3.50
Total PAH(16) GCMS	N	ug/l	0.01	100	104

Results Summary

Report No.: 23-48629, issue number 1

ELAB Reference	327213	327214
Customer Reference		
Sample ID		
Sample Type	WATER	WATER
Sample Location	BH1	WS4
Sample Depth (m)		
Sampling Date	15/06/2023	15/06/2023

Determinand	Codes	Units	LOD		
BTEX					
Benzene	U	ug/l	1	< 1.00	< 1.00
Toluene	U	ug/l	1	< 1.00	< 1.00
Ethylbenzene	U	ug/l	1	< 1.00	< 1.00
Xylenes	U	ug/l	1	< 1.00	< 1.00
MTBE	U	ug/l	1	< 1.00	< 1.00
TPH CWG					
>C5-C6 Aliphatic (HS_1D_MS)	N	ug/l	1	< 1.0	< 1.0
>C6-C8 Aliphatic (HS_1D_MS)	N	ug/l	1	< 1.0	< 1.0
>C8-C10 Aliphatic (EH_CU_1D_AL)	N	ug/l	5	< 5.0	44.1
>C10-C12 Aliphatic (EH_CU_1D_AL)	N	ug/l	5	< 5.0	36.5
>C12-C16 Aliphatic (EH_CU_1D_AL)	N	ug/l	5	6.5	7.9
>C16-C21 Aliphatic (EH_CU_1D_AL)	N	ug/l	5	< 5.0	82.9
>C21-C35 Aliphatic (EH_CU_1D_AL)	N	ug/l	5	9.8	426
>C35-C40 Aliphatic (EH_CU_1D_AL)	N	ug/l	5	< 5.0	128
Total (>C5-C40) Aliphatic (HS_1D_MS+EH_CU_1D_AL)	N	ug/l	5	16.3	725
>C5-C7 Aromatic (HS_1D_MS)	N	ug/l	1	< 1.0	< 1.0
>C7-C8 Aromatic (HS_1D_MS)	N	ug/l	1	< 1.0	< 1.0
>C8-C10 Aromatic (EH_CU_1D_AR)	N	ug/l	5	< 5.0	92.1
>C10-C12 Aromatic (EH_CU_1D_AR)	N	ug/l	5	< 5.0	59.5
>C12-C16 Aromatic (EH_CU_1D_AR)	N	ug/l	5	< 5.0	13.6
>C16-C21 Aromatic (EH_CU_1D_AR)	N	ug/l	5	< 5.0	91.1
>C21-C35 Aromatic (EH_CU_1D_AR)	N	ug/l	5	17.6	496
>C35-C40 Aromatic (EH_CU_1D_AR)	N	ug/l	5	< 5.0	204
Total (>C5-C40) Aromatic (HS_1D_MS+EH_CU_1D_AR)	N	ug/l	5	17.6	957
Total (>C5-C40) Ali/Aro (HS_1D_MS+EH_CU_1D_Total)	N	ug/l	5	33.9	1680

Method Summary

Report No.: 23-48629, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Water					
Aliphatic/Aromatic hydrocarbons in water	N		26/06/2023		GC-FID
Dissolved metals by ICP in waters	U		26/06/2023	301	ICPMS
Dissolved organic carbon	N		20/06/2023	102	IR
pH of waters	U		21/06/2023	113	Electromeric
Cyanide in waters	N		19/06/2023	132	Colorimetry
PAHs and/or PCBs in waters	N		20/06/2023	135	GC-MS
BTEX in waters	U		21/06/2023	200	GC-MS
Low range Aliphatic hydrocarbons water	N		21/06/2023	200	GC-MS
Low range Aromatic hydrocarbons water	N		21/06/2023	200	GC-MS
Aliphatic hydrocarbons in water	N		20/06/2023	215	GC-FID
Aromatic hydrocarbons in water	N		20/06/2023	215	GC-FID
Anions	U		19/06/2023	270	Ion Chromatography
Hardness in waters	N		26/06/2023	APHA	ICPMS

Tests marked N are not UKAS accredited

2683

Report Information

Report No.: 23-48629, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

TPH Classification - HWOL Acronym System

HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
2D	GC-GC - Double coil gas chromatography
#1	EH_Total but with humics mathematically subtracted
#2	EH_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
F: +44 (0) 1244 833781
W: www.element.com

CC Geotechnical Ltd
Units 1-2
Deltic Place
Deltic Way
Knowsley Industrial Estate
United Kingdom
L33 7BU

Attention :	Chris Bolan
Date :	22nd May, 2023
Your reference :	CCG-C-23-13703
Our reference :	Test Report 23/6790 Batch 1
Location :	MCFA Womens Facility
Date samples received :	29th April, 2023
Status :	Final Report
Issue :	1

Six samples were received for analysis on 29th April, 2023 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womens Facility
Contact: Chris Bolan
EMT Job No: 23/6790

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-9	10-13	14-17	18-22	23-27					LOD/LOR	Units	Method No.
Sample ID	WS1	WS2	WS3	WS4	WS5	WS6							
Depth	0.80	0.50	0.70	0.90	0.60	1.50							
COC No / misc													
Containers	V J T B	V J T B	V J T B	V J T B	V J T B	V J T B							
Sample Date	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	29/04/2023	29/04/2023	29/04/2023	29/04/2023	29/04/2023	29/04/2023							
Arsenic #	44.4	77.5	100.5	44.0	75.4	86.6					<0.5	mg/kg	TM30/PM15
Cadmium #	0.3	0.1	0.6	<0.1	0.2	0.2					<0.1	mg/kg	TM30/PM15
Chromium #	39.2	55.1	49.6	51.5	59.2	75.3					<0.5	mg/kg	TM30/PM15
Copper #	48	183	155	90	211	126					<1	mg/kg	TM30/PM15
Lead #	134	341	322	202	253	317					<5	mg/kg	TM30/PM15
Mercury #	0.3	0.9	0.4	0.4	0.6	0.8					<0.1	mg/kg	TM30/PM15
Nickel #	16.4	30.1	42.6	24.8	28.9	33.3					<0.7	mg/kg	TM30/PM15
Selenium #	1	2	2	1	2	2					<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	4991	4906	5853	5091	1613	8211					<50	mg/kg	TM50/PM29
Water Soluble Boron #	3.7	1.4	1.2	1.5	1.5	1.5					<0.1	mg/kg	TM74/PM32
Zinc #	248	278	789	222	243	240					<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	1.72	1.89	0.08	2.20	1.79	5.49$_{AA}$					<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.33	<0.03	<0.03	0.05	0.29	<0.15$_{AA}$					<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.84	0.74	0.07	0.31	0.97	5.20$_{AA}$					<0.05	mg/kg	TM4/PM8
Fluorene #	0.68	0.60	<0.04	0.19	0.82	4.45$_{AA}$					<0.04	mg/kg	TM4/PM8
Phenanthrene #	5.37	4.61	0.80	1.22	6.82	27.43$_{AA}$					<0.03	mg/kg	TM4/PM8
Anthracene #	2.48	1.32	0.22	0.48	3.14	23.47$_{AA}$					<0.04	mg/kg	TM4/PM8
Fluoranthene #	8.05	5.67	1.53	1.28	8.10	23.54$_{AA}$					<0.03	mg/kg	TM4/PM8
Pyrene #	7.95	5.44	1.37	1.16	7.74	20.86$_{AA}$					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	3.51	2.67	0.78	0.52	3.86	8.76$_{AA}$					<0.06	mg/kg	TM4/PM8
Chrysene #	3.80	2.92	0.75	0.54	4.11	9.44$_{AA}$					<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	4.96	4.29	1.19	0.70	6.18	11.82$_{AA}$					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	2.97	2.61	0.72	0.35	4.00	7.30$_{AA}$					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	1.77	1.45	0.42	0.23	2.41	4.16$_{AA}$					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.22	0.27	0.07	<0.04	0.36	0.78$_{AA}$					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	1.74	1.51	0.42	0.25	2.38	4.01$_{AA}$					<0.04	mg/kg	TM4/PM8
Coronene	-	0.26	-	-	0.34	0.61$_{AA}$					<0.04	mg/kg	TM4/PM8
PAH 16 Total	46.4	36.0	8.4	9.5	53.0	156.7$_{AA}$					<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	36.25	-	-	53.31	157.32$_{AA}$					<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	3.57	3.09	0.86	0.50	4.45	8.51$_{AA}$					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	1.39	1.20	0.33	0.20	1.73	3.31$_{AA}$					<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	83	82	78	83	73	100$_{AA}$					<0	%	TM4/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	-	131	-	-	193	178					<30	mg/kg	TM5/PM8/PM16

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womens Facility
Contact: Chris Bolan
EMT Job No: 23/6790

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-9	10-13	14-17	18-22	23-27					LOD/LOR	Units	Method No.
Sample ID	WS1	WS2	WS3	WS4	WS5	WS6							
Depth	0.80	0.50	0.70	0.90	0.60	1.50							
COC No / misc													
Containers	V J T B	V J T B	V J T B	V J T B	V J T B	V J T B							
Sample Date	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	29/04/2023	29/04/2023	29/04/2023	29/04/2023	29/04/2023	29/04/2023							
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1					<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL)#	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1					<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1	0.5	<0.1	0.3	<0.1 SV	0.2					<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL)#	<0.2 SV	12.0	<0.2	5.7	<0.2	1.4					<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL)#	<4 SV	13	<4	14	10	14					<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL)#	26 SV	28	46	43	44	51					<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL)#	86 SV	78	156	84	131	112					<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	112 SV	132	202	147	185	179					<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Aromatics													
>C5-EC7 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1					<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR)#	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1					<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR)#	<0.1	0.1	<0.1	0.3	<0.1 SV	<0.1					<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR)#	11.7 SV	10.0	<0.2	11.7	8.7	11.7					<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR)#	34 SV	23	9	24	42	76					<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR)#	130 SV	123	39	104	199	370					<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR)#	281 SV	290	188	189	517	541					<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR)#	457 SV	446	236	329	767	999					<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	569 SV	578	438	476	952	1178					<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE#	<5	<5	<5	<5	<5 SV	<5					<5	ug/kg	TM36/PM12
Benzene#	<5	9	<5	19	6 SV	17					<5	ug/kg	TM36/PM12
Toluene#	8	16	<5	40	<5 SV	25					<5	ug/kg	TM36/PM12
Ethylbenzene#	7	33	<5	54	<5 SV	25					<5	ug/kg	TM36/PM12
m/p-Xylene#	12	93	<5	137	7 SV	46					<5	ug/kg	TM36/PM12
o-Xylene#	10	29	<5	53	<5 SV	31					<5	ug/kg	TM36/PM12
PCB 28#	-	<5	-	-	<5	<5					<5	ug/kg	TM17/PM8
PCB 52#	-	<5	-	-	<5	<5					<5	ug/kg	TM17/PM8
PCB 101#	-	<5	-	-	<5	7					<5	ug/kg	TM17/PM8
PCB 118#	-	<5	-	-	<5	<5					<5	ug/kg	TM17/PM8
PCB 138#	-	7	-	-	<5	8					<5	ug/kg	TM17/PM8
PCB 153#	-	10	-	-	<5	10					<5	ug/kg	TM17/PM8
PCB 180#	-	7	-	-	<5	8					<5	ug/kg	TM17/PM8
Total 7 PCBs#	-	<35	-	-	<35	<35					<35	ug/kg	TM17/PM8
Natural Moisture Content	16.5	22.0	15.8	25.8	20.9	18.9					<0.1	%	PM4/PM0
Hexavalent Chromium#	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3					<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)#	0.4873	0.9059	0.3707	0.5628	0.0644	1.1014					<0.0015	g/l	TM38/PM20
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womens Facility
Contact: Chris Bolan
EMT Job No: 23/6790

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5-9	10-13	14-17	18-22	23-27					LOD/LOR	Units	Method No.
Sample ID	WS1	WS2	WS3	WS4	WS5	WS6							
Depth	0.80	0.50	0.70	0.90	0.60	1.50							
COC No / misc													
Containers	V J T B	V J T B	V J T B	V J T B	V J T B	V J T B							
Sample Date	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023	26/04/2023							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	29/04/2023	29/04/2023	29/04/2023	29/04/2023	29/04/2023	29/04/2023							
Total Organic Carbon #	-	4.29	-	-	3.41	6.08					<0.02	%	TM21/PM24
Organic Matter	3.1	7.4	4.7	3.6	5.9	10.5					<0.2	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10					<10	mg/kg	TM107/PM45
ANC at pH4	-	0.98	-	-	1.02	1.08					<0.03	mol/kg	TM77/PM0
ANC at pH7	-	0.22	-	-	0.07	0.23					<0.03	mol/kg	TM77/PM0
Loss on Ignition #	-	7.4	-	-	5.5	8.7					<1.0	%	TM22/PM0
pH #	10.82	9.62	8.83	11.05	8.48	10.58					<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	26.3
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	79.2
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**23/6790**			
Sample No	**7**			
Client Sample No	**WS2**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.50**			
Sample Date	**26/04/2023**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	4.29	3	5	6
Loss on Ignition (%)	7.4	-	-	10
Sum of BTEX (mg/kg)	0.180	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	131	500	-	-
PAH Sum of 17(mg/kg)	36.25	100	-	-
pH (pH Units)	9.62	-	>6	-
ANC to pH 7 (mol/kg)	0.22	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	0.98	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0902	0.902	0.5	2	25
Barium	0.013	0.13	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	<0.0015	<0.015	0.5	10	70
Copper	0.020	0.20	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.011	0.11	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.024	0.24	0.06	0.7	5
Selenium	0.006	0.06	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	9.0	90	800	15000	25000
Fluoride	0.4	4	10	150	500
Sulphate as SO4	117.1	1171	1000	20000	50000
Total Dissolved Solids	285	2849	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	4	40	500	800	1000

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All solid results are expressed on a dry weight basis unless stated otherwise.

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	24.7
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	80.2
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**23/6790**			
Sample No	**20**			
Client Sample No	**WS5**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.60**			
Sample Date	**26/04/2023**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.41	3	5	6
Loss on Ignition (%)	5.5	-	-	10
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	193	500	-	-
PAH Sum of 17(mg/kg)	53.31	100	-	-
pH (pH Units)	8.48	-	>6	-
ANC to pH 7 (mol/kg)	0.07	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	1.02	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0590	0.590	0.5	2	25
Barium	0.027	0.27	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0019	0.019	0.5	10	70
Copper	0.015	0.15	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.003	0.03	0.5	10	30
Nickel	<0.002	<0.02	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.012	0.12	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	<0.3	<3	800	15000	25000
Fluoride	0.5	5	10	150	500
Sulphate as SO4	10.8	108	1000	20000	50000
Total Dissolved Solids	96	960	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	5	50	500	800	1000

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All solid results are expressed on a dry weight basis unless stated otherwise.

CEN 10:1 LEACHATE RESULTS BS EN 12547-2

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	26.0
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	79.4
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**23/6790**			
Sample No	**25**			
Client Sample No	**WS6**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**1.50**			
Sample Date	**26/04/2023**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	6.08	3	5	6
Loss on Ignition (%)	8.7	-	-	10
Sum of BTEX (mg/kg)	0.144	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	178	500	-	-
PAH Sum of 17(mg/kg)	157.32	100	-	-
pH (pH Units)	10.58	-	>6	-
ANC to pH 7 (mol/kg)	0.23	-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	1.08	-	to be evaluated	to be evaluated

Eluate Analysis	**10:1 conc^{n} leached**		**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	C_{10}	**A_{10}**			
	mg/l	**mg/kg**	**mg/kg**		
Arsenic	0.0299	0.299	0.5	2	25
Barium	0.028	0.28	20	100	300
Cadmium	<0.0005	<0.005	0.04	1	5
Chromium	0.0049	0.049	0.5	10	70
Copper	0.019	0.19	2	50	100
Mercury	<0.001	<0.01	0.01	0.2	2
Molybdenum	0.018	0.18	0.5	10	30
Nickel	0.004	0.04	0.4	10	40
Lead	<0.005	<0.05	0.5	10	50
Antimony	0.020	0.20	0.06	0.7	5
Selenium	<0.003	<0.03	0.1	0.5	7
Zinc	<0.003	<0.03	4	50	200
Chloride	6.3	63	800	15000	25000
Fluoride	<0.3	<3	10	150	500
Sulphate as SO4	115.2	1153	1000	20000	50000
Total Dissolved Solids	282	2821	4000	60000	100000
Phenol	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	9	90	500	800	1000

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All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womens Facility
Contact: Chris Bolan

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
23/6790	1	WS1	0.80	4	Bart Kuznicki	17/05/2023	**General Description (Bulk Analysis)**	Brown Soil, Stones
					Bart Kuznicki	17/05/2023	**Asbestos Fibres**	NAD
					Bart Kuznicki	17/05/2023	**Asbestos ACM**	NAD
					Bart Kuznicki	17/05/2023	**Asbestos Type**	NAD
23/6790	1	WS2	0.50	8	Matthew Turner	17/05/2023	**General Description (Bulk Analysis)**	Brown soil/Stone/Brick
					Matthew Turner	17/05/2023	**Asbestos Fibres**	Fibre Bundles
					Matthew Turner	17/05/2023	**Asbestos ACM**	NAD
					Matthew Turner	17/05/2023	**Asbestos Type**	Chrysotile
					Matthew Turner	17/05/2023	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					Matthew Turner	17/05/2023	**Total Detailed Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					Matthew Turner	17/05/2023	**Total Gravimetric Quantification (ACM + Detailed) (% Asb)**	<0.001 (mass %)
					Matthew Turner	22/05/2023	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					Matthew Turner	22/05/2023	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
23/6790	1	WS3	0.70	13	Bart Kuznicki	17/05/2023	**General Description (Bulk Analysis)**	Brown Soil, Stones
					Bart Kuznicki	17/05/2023	**Asbestos Fibres**	Fibre Bundles
					Bart Kuznicki	17/05/2023	**Asbestos Fibres (2)**	Fibre Bundles
					Bart Kuznicki	17/05/2023	**Asbestos ACM**	NAD
					Bart Kuznicki	17/05/2023	**Asbestos ACM (2)**	ACM Debris
					Bart Kuznicki	17/05/2023	**Asbestos Type**	Chrysotile
					Bart Kuznicki	17/05/2023	**Asbestos Type (2)**	Amosite
23/6790	1	WS4	0.90	17	Matthew Turner	17/05/2023	**General Description (Bulk Analysis)**	Brown soil/Stone
					Matthew Turner	17/05/2023	**Asbestos Fibres**	Fibre Bundles
					Matthew Turner	17/05/2023	**Asbestos ACM**	NAD
					Matthew Turner	17/05/2023	**Asbestos Type**	Chrysotile
23/6790	1	WS5	0.60	21	Charlotte Taylor	17/05/2023	**General Description (Bulk Analysis)**	brown soil/stones
					Charlotte Taylor	17/05/2023	**Asbestos Fibres**	NAD
					Charlotte Taylor	17/05/2023	**Asbestos ACM**	NAD
					Charlotte Taylor	17/05/2023	**Asbestos Type**	NAD
23/6790	1	WS6	1.50	26	Bart Kuznicki	17/05/2023	**General Description (Bulk Analysis)**	Brown Soil, Stones
					Bart Kuznicki	17/05/2023	**Asbestos Fibres**	Fibre Bundles
					Bart Kuznicki	17/05/2023	**Asbestos ACM**	NAD
					Bart Kuznicki	17/05/2023	**Asbestos Type**	Chrysotile
					Matthew Turner	22/05/2023	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					Matthew Turner	22/05/2023	**Total Detailed Gravimetric Quantification (% Asb)**	<0.001 (mass %)

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womens Facility
Contact: Chris Bolan

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
23/6790	1	WS6	1.50	26	Matthew Turner	22/05/2023	Total Gravimetric Quantification (ACM + Detailed) (% Asb)	<0.001 (mass %)
					Matthew Turner	22/05/2023	**Asbestos PCOM Quantification (Fibres)**	0.001 (mass %)
					Matthew Turner	22/05/2023	**Asbestos Gravimetric & PCOM Total**	0.001 (mass %)

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womens Facility
Contact: Chris Bolan

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 23/6790						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/6790

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/6790

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes

EMT Job No: 23/6790

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes

EMT Job No: 23/6790

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.			AR	Yes
TM107	Determination of Sulphide/Thiocyanate by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.			AR	Yes
TM131	Quantification of Asbestos Fibres and ACM based on HSG 248 Second edition:2021, HSG 264 Second edition:2012, HSE Contract Research Report No.83/1996, MDHS 87:1998, WM3 1st Edition v1.1:2018	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	Yes
TM170	Determination of Trace Metals by ICP-MS (Inductively Coupled Plasma – Mass Spectrometry): Modified USEPA Method 200.8, Rev. 5.4, 1994; Modified EPA Method 6020A, Rev.1, Feb 2007; Modified BS EN ISO 17294-2:2016	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes		AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes

EMT Job No: 23/6790

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
F: +44 (0) 1244 833781
W: www.element.com

CC Geotechnical Ltd
Units 1-2
Deltic Place
Deltic Way
Knowsley Industrial Estate
United Kingdom
L33 7BU

Attention :	Chris Bolan
Date :	9th June, 2023
Your reference :	CCG-C-23-13703
Our reference :	Test Report 23/8543 Batch 1
Location :	MCFA Womans Facility
Date samples received :	27th May, 2023
Status :	Final Report
Issue :	1

Three samples were received for analysis on 27th May, 2023 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Simon Gomery BSc
Project Manager

Please include all sections of this report if it is reproduced

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womans Facility
Contact: Chris Bolan
EMT Job No: 23/8543

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5	6								LOD/LOR	Units	Method No.
Sample ID	BH01	BH01	BH01										
Depth	1.00	2.50	6.00										
COC No / misc													
Containers	V J T B	J	J										
Sample Date	24/05/2023	24/05/2023	24/05/2023										
Sample Type	Soil	Soil	Soil										
Batch Number	1	1	1										
Date of Receipt	27/05/2023	27/05/2023	27/05/2023										
Arsenic #	71.9	-	-								<0.5	mg/kg	TM30/PM15
Cadmium #	1.1	-	-								<0.1	mg/kg	TM30/PM15
Chromium #	56.4	-	-								<0.5	mg/kg	TM30/PM15
Copper #	154	-	-								<1	mg/kg	TM30/PM15
Lead #	967	-	-								<5	mg/kg	TM30/PM15
Mercury #	1.6	-	-								<0.1	mg/kg	TM30/PM15
Nickel #	47.8	-	-								<0.7	mg/kg	TM30/PM15
Selenium #	1	-	-								<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	2506	-	-								<50	mg/kg	TM50/PM29
Water Soluble Boron #	1.5	-	-								<0.1	mg/kg	TM74/PM32
Zinc #	1802	-	-								<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.93 AA	-	-								<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.39 AA	-	-								<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.87 AA	-	-								<0.05	mg/kg	TM4/PM8
Fluorene #	1.17 AA	-	-								<0.04	mg/kg	TM4/PM8
Phenanthrene #	16.20 AA	-	-								<0.03	mg/kg	TM4/PM8
Anthracene #	2.68 AA	-	-								<0.04	mg/kg	TM4/PM8
Fluoranthene #	16.20 AA	-	-								<0.03	mg/kg	TM4/PM8
Pyrene #	17.94 AA	-	-								<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	6.49 AA	-	-								<0.06	mg/kg	TM4/PM8
Chrysene #	8.17 AA	-	-								<0.02	mg/kg	TM4/PM8
Benzo(a)pyrene #	6.35 AA	-	-								<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	3.46 AA	-	-								<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.45 AA	-	-								<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	3.84 AA	-	-								<0.04	mg/kg	TM4/PM8
PAH 16 Total	95.1 AA	-	-								<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	7.15 AA	-	-								<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	2.78 AA	-	-								<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	98 AA	-	-								<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	<0.1 SV	-	-								<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	<0.1 SV	-	-								<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	<0.1 SV	-	-								<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	<0.2	-	-								<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	9	-	-								<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	124	-	-								<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	382	-	-								<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	515	-	-								<19	mg/kg	TM5/TM36/PM8/PM12/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womans Facility
Contact: Chris Bolan
EMT Job No: 23/8543

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-4	5	6								LOD/LOR	Units	Method No.
Sample ID	BH01	BH01	BH01										
Depth	1.00	2.50	6.00										
COC No / misc													
Containers	V J T B	J	J										
Sample Date	24/05/2023	24/05/2023	24/05/2023										
Sample Type	Soil	Soil	Soil										
Batch Number	1	1	1										
Date of Receipt	27/05/2023	27/05/2023	27/05/2023										
TPH CWG													
Aromatics													
>C5-EC7 (HS_1D_AR) #	<0.1 SV	-	-								<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	<0.1 SV	-	-								<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	<0.1 SV	-	-								<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	1.1	-	-								<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	25	-	-								<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	293	-	-								<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	553	-	-								<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR) #	872	-	-								<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35) (EH+HS_CU_1D_Total)	1387	-	-								<38	mg/kg	TM5/TM36/PM8/PM12/PM16
MTBE #	<5 SV	-	-								<5	ug/kg	TM36/PM12
Benzene #	<5 SV	-	-								<5	ug/kg	TM36/PM12
Toluene #	22 SV	-	-								<5	ug/kg	TM36/PM12
Ethylbenzene #	<5 SV	-	-								<5	ug/kg	TM36/PM12
m/p-Xylene #	14 SV	-	-								<5	ug/kg	TM36/PM12
o-Xylene #	6 SV	-	-								<5	ug/kg	TM36/PM12
Natural Moisture Content	24.3	-	-								<0.1	%	PM4/PM0
Hexavalent Chromium #	NDP	-	-								<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.4785	0.0720	0.0349								<0.0015	g/l	TM38/PM20
Free Cyanide	<0.5	-	-								<0.5	mg/kg	TM89/PM45
Organic Matter	19.4	-	-								<0.2	%	TM21/PM24
Sulphide	14	-	-								<10	mg/kg	TM107/PM45
pH #	7.56	7.84	8.62								<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	-	-									None	Subcontracted

Please see attached notes for all abbreviations and acronyms

Client Name: CC Geotechnical Ltd

Reference: CCG-C-23-13703

Location: MCFA Womans Facility

Contact: Chris Bolan

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Method No.	NDP Reason
23/8543	1	BH01	1.00	1-4	TM38/PM20	Sample unsuitable for this test

Client Name: CC Geotechnical Ltd
Reference: CCG-C-23-13703
Location: MCFA Womans Facility
Contact: Chris Bolan

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 23/8543						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/8543

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/8543

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

EMT Job No: 23/8543

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.			AR	Yes
TM107	Determination of Sulphide/Thiocyanate by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.			AR	Yes
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

GK0WX-V5I0F-ZE966

Job name

MCFA WOMENS FACILITY

Description/Comments

Project

CCG-C-23-13703

Site

MCFA WOMENS FACILITY

Classified by

Name:
Michael Hartley
Date:
22 May 2023 13:33 GMT
Telephone:
0151 545 2750

Company:
CC Geotechnical Ltd
Units 1 & 2 Deltic Way
Knowsley Industrial Estate
Kirkby
L33 7BU

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	06 Apr 2023

Next 3 year Refresher due by Apr 2026

Purpose of classification

7 - Disposal of Waste

Address of the waste

Manchester City Football Academy **Post Code** N/A

SIC for the process giving rise to the waste

41100 Development of building projects

Description of industry/producer giving rise to the waste

redevelopment of land for building

Description of the specific process, sub-process and/or activity that created the waste

Waste created during construction preparation

Description of the waste

Made Ground

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results			Page
					Inert	SNRHW	Hazardous	
1	WS1-26/04/2023-0.80m		Non Hazardous		-	-	-	3
2	WS2-26/04/2023-0.50m		Non Hazardous		N/A	Pass	Pass	6
3	WS3-26/04/2023-0.70m		Hazardous	HP 14	-	-	-	10
4	WS4-26/04/2023-0.90m		Non Hazardous		-	-	-	12
5	WS5-26/04/2023-0.60m		Non Hazardous		N/A	Pass	Pass	15
6	WS6-26/04/2023-1.50m		Non Hazardous		N/A	Fail	Fail	19

Related documents

#	Name	Description
1	EMT-23-6790-Batch-1-202305221311.HWOL	Element .hwol file used to populate the Job
2	CCG Soil A 2023	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate the samples in this Job: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Michael Hartley

Created date: 22 May 2023 13:33 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	23
Appendix B: Rationale for selection of metal species	24
Appendix C: Version	25

Classification of sample: WS1-26/04/2023-0.80m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1-26/04/2023-0.80m
Moisture content:
16.5%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		44.4 mg/kg	1.32	50.32 mg/kg	0.00503 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.294 mg/kg	0.0000294 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		39.2 mg/kg	1.462	49.179 mg/kg	0.00492 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		48 mg/kg	1.126	46.389 mg/kg	0.00464 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	134 mg/kg		115.021 mg/kg	0.0115 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.3 mg/kg	1.353	0.349 mg/kg	0.0000349 %	✓	
7	nickel { dinickel hexacyanoferrate }	028-037-00-8	238-946-3	14874-78-3		16.4 mg/kg	2.806	39.495 mg/kg	0.00395 %	✓	
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1 mg/kg	1.405	1.206 mg/kg	0.000121 %	✓	
9	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		248 mg/kg	4.398	936.211 mg/kg	0.0936 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		3.7 mg/kg	3.22	10.226 mg/kg	0.00102 %	✓	
12	pH			PH		10.82 pH		10.82 pH	10.82 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		1.72 mg/kg		1.476 mg/kg	0.000148 %	✓	
14	acenaphthylene		205-917-1	208-96-8		0.33 mg/kg		0.283 mg/kg	0.0000283 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
15	●	acenaphthene		201-469-6	83-32-9		0.84	mg/kg		0.721	mg/kg	0.0000721 %	✓	
16	●	fluorene		201-695-5	86-73-7		0.68	mg/kg		0.584	mg/kg	0.0000584 %	✓	
17	●	phenanthrene		201-581-5	85-01-8		5.37	mg/kg		4.609	mg/kg	0.000461 %	✓	
18	●	anthracene		204-371-1	120-12-7		2.48	mg/kg		2.129	mg/kg	0.000213 %	✓	
19	●	fluoranthene		205-912-4	206-44-0		8.05	mg/kg		6.91	mg/kg	0.000691 %	✓	
20	●	pyrene		204-927-3	129-00-0		7.95	mg/kg		6.824	mg/kg	0.000682 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		3.51	mg/kg		3.013	mg/kg	0.000301 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		3.8	mg/kg		3.262	mg/kg	0.000326 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		3.57	mg/kg		3.064	mg/kg	0.000306 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.39	mg/kg		1.193	mg/kg	0.000119 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2.97	mg/kg		2.549	mg/kg	0.000255 %	✓	
26	●	indeno[123-cd]pyrene		205-893-2	193-39-5		1.77	mg/kg		1.519	mg/kg	0.000152 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.22	mg/kg		0.189	mg/kg	0.0000189 %	✓	
28	●	benzo[ghi]perylene		205-883-8	191-24-2		1.74	mg/kg		1.494	mg/kg	0.000149 %	✓	
29		benzene	601-020-00-8	200-753-7	71-43-2		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
30		toluene	601-021-00-3	203-625-9	108-88-3		0.008	mg/kg		0.0068	mg/kg	0.000000687 %	✓	
31	●	ethylbenzene	601-023-00-4	202-849-4	100-41-4		0.007	mg/kg		0.006	mg/kg	0.000000601 %	✓	
32		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.022	mg/kg		0.0189	mg/kg	0.00000189 %	✓	
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
											Total:	0.129 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Insufficient concentration to be considered flammable risk. No liquid free phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

toluene: (conc.: 6.87e-07%)
ethylbenzene: (conc.: 6.01e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

xylene: (conc.: 1.89e-06%)

Classification of sample: WS2-26/04/2023-0.50m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS2-26/04/2023-0.50m
Moisture content:
22%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 22% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		77.5 mg/kg	1.32	83.873 mg/kg	0.00839 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1 mg/kg	1.142	0.0936 mg/kg	0.00000936 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		55.1 mg/kg	1.462	66.01 mg/kg	0.0066 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		183 mg/kg	1.126	168.883 mg/kg	0.0169 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	341 mg/kg		279.508 mg/kg	0.028 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.9 mg/kg	1.353	0.998 mg/kg	0.0000998 %	✓	
7	nickel { dinickel hexacyanoferrate }	028-037-00-8	238-946-3	14874-78-3		30.1 mg/kg	2.806	69.219 mg/kg	0.00692 %	✓	
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				2 mg/kg	1.405	2.303 mg/kg	0.00023 %	✓	
9	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		278 mg/kg	4.398	1002.15 mg/kg	0.1 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.4 mg/kg	3.22	3.695 mg/kg	0.000369 %	✓	
12	pH			PH		9.62 pH		9.62 pH	9.62 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		1.89 mg/kg		1.549 mg/kg	0.000155 %	✓	
14	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthene				0.74	mg/kg		0.607	mg/kg	0.0000607 %	✓	
			201-469-6	83-32-9									
16		fluorene				0.6	mg/kg		0.492	mg/kg	0.0000492 %	✓	
			201-695-5	86-73-7									
17		phenanthrene				4.61	mg/kg		3.779	mg/kg	0.000378 %	✓	
			201-581-5	85-01-8									
18		anthracene				1.32	mg/kg		1.082	mg/kg	0.000108 %	✓	
			204-371-1	120-12-7									
19		fluoranthene				5.67	mg/kg		4.648	mg/kg	0.000465 %	✓	
			205-912-4	206-44-0									
20		pyrene				5.44	mg/kg		4.459	mg/kg	0.000446 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				2.67	mg/kg		2.189	mg/kg	0.000219 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				2.92	mg/kg		2.393	mg/kg	0.000239 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				3.09	mg/kg		2.533	mg/kg	0.000253 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				1.2	mg/kg		0.984	mg/kg	0.0000984 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				2.61	mg/kg		2.139	mg/kg	0.000214 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				1.45	mg/kg		1.189	mg/kg	0.000119 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				0.27	mg/kg		0.221	mg/kg	0.0000221 %	✓	
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				1.51	mg/kg		1.238	mg/kg	0.000124 %	✓	
			205-883-8	191-24-2									
29		benzene				0.009	mg/kg		0.0073	mg/kg	0.000000738 %	✓	
		601-020-00-8	200-753-7	71-43-2									
30		toluene				0.016	mg/kg		0.0131	mg/kg	0.00000131 %	✓	
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				0.033	mg/kg		0.027	mg/kg	0.0000027 %	✓	
		601-023-00-4	202-849-4	100-41-4									
32		xylene				0.122	mg/kg		0.1	mg/kg	0.00001 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		asbestos				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
36		coronene				0.26	mg/kg		0.213	mg/kg	0.0000213 %	✓	
			205-881-7	191-07-1									
										Total:	0.172 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Insufficient concentration to be considered flammable risk. No liquid free phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene: (conc.: 7.38e-07%)
toluene: (conc.: 1.31e-06%)
ethylbenzene: (conc.: 2.7e-06%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

xylene: (conc.: 0.00001%)

WAC results for sample: WS2-26/04/2023-0.50m

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample PASSES the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	4.29	3	5	6
2	LOI (loss on ignition)	%	7.4	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.18	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.035	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	131	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	36.25	100	-	-
7	pH	pH	9.62	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.22	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.902	0.5	2	25
10	barium	mg/kg	0.13	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	<0.015	0.5	10	70
13	copper	mg/kg	0.2	2	50	100
14	mercury	mg/kg	<0.01	0.01	0.2	2
15	molybdenum	mg/kg	0.11	0.5	10	30
16	nickel	mg/kg	<0.02	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	0.24	0.06	0.7	5
19	selenium	mg/kg	0.06	0.1	0.5	7
20	zinc	mg/kg	<0.03	4	50	200
21	chloride	mg/kg	90	800	15,000	25,000
22	fluoride	mg/kg	4	10	150	500
23	sulphate	mg/kg	1171	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	40	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	2849	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail

Classification of sample: WS3-26/04/2023-0.70m

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS3-26/04/2023-0.70m
Moisture content:
15.8%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2]: (compound conc.: 0.3%)

Determinands

Moisture content: 15.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		100.5 mg/kg	1.32	114.588 mg/kg	0.0115 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.592 mg/kg	0.0000592 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		49.6 mg/kg	1.462	62.602 mg/kg	0.00626 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		155 mg/kg	1.126	150.702 mg/kg	0.0151 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	322 mg/kg		278.066 mg/kg	0.0278 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.4 mg/kg	1.353	0.468 mg/kg	0.0000468 %	✓	
7	nickel { dinickel hexacyanoferrate }	028-037-00-8	238-946-3	14874-78-3		42.6 mg/kg	2.806	103.21 mg/kg	0.0103 %	✓	
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				2 mg/kg	1.405	2.427 mg/kg	0.000243 %	✓	
9	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		789 mg/kg	4.398	2996.514 mg/kg	0.3 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.2 mg/kg	3.22	3.337 mg/kg	0.000334 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
12		pH		PH		8.83	pH		8.83	pH	8.83 pH		
13		naphthalene				0.08	mg/kg		0.0691	mg/kg	0.00000691 %	✓	
		601-052-00-2	202-049-5	91-20-3									
14		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
15		acenaphthene				0.07	mg/kg		0.0604	mg/kg	0.00000604 %	✓	
			201-469-6	83-32-9									
16		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
17		phenanthrene				0.8	mg/kg		0.691	mg/kg	0.0000691 %	✓	
			201-581-5	85-01-8									
18		anthracene				0.22	mg/kg		0.19	mg/kg	0.000019 %	✓	
			204-371-1	120-12-7									
19		fluoranthene				1.53	mg/kg		1.321	mg/kg	0.000132 %	✓	
			205-912-4	206-44-0									
20		pyrene				1.37	mg/kg		1.183	mg/kg	0.000118 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.78	mg/kg		0.674	mg/kg	0.0000674 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.75	mg/kg		0.648	mg/kg	0.0000648 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.86	mg/kg		0.743	mg/kg	0.0000743 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.33	mg/kg		0.285	mg/kg	0.0000285 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				0.72	mg/kg		0.622	mg/kg	0.0000622 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				0.42	mg/kg		0.363	mg/kg	0.0000363 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				0.07	mg/kg		0.0604	mg/kg	0.00000604 %	✓	
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				0.42	mg/kg		0.363	mg/kg	0.0000363 %	✓	
			205-883-8	191-24-2									
29		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
32		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.372 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS4-26/04/2023-0.90m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS4-26/04/2023-0.90m
Moisture content:
25.8%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 25.8% Dry Weight Moisture Correction applied (MC)

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		44	mg/kg	1.32	46.18	mg/kg	0.00462 %	✓	
2		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		51.5	mg/kg	1.462	59.833	mg/kg	0.00598 %	✓	
4		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		90	mg/kg	1.126	80.548	mg/kg	0.00805 %	✓	
5		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	202	mg/kg		160.572	mg/kg	0.0161 %	✓	
6		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.4	mg/kg	1.353	0.43	mg/kg	0.000043 %	✓	
7		nickel { dinickel hexacyanoferrate }	028-037-00-8	238-946-3	14874-78-3		24.8	mg/kg	2.806	55.308	mg/kg	0.00553 %	✓	
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1	mg/kg	1.405	1.117	mg/kg	0.000112 %	✓	
9		zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		222	mg/kg	4.398	776.105	mg/kg	0.0776 %	✓	
10		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
11		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.5	mg/kg	3.22	3.839	mg/kg	0.000384 %	✓	
12		pH			PH		11.05	pH		11.05	pH	11.05 pH		
13		naphthalene	601-052-00-2	202-049-5	91-20-3		2.2	mg/kg		1.749	mg/kg	0.000175 %	✓	
14		acenaphthylene		205-917-1	208-96-8		0.05	mg/kg		0.0397	mg/kg	0.00000397 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthene				0.31	mg/kg		0.246	mg/kg	0.0000246 %	✓	
			201-469-6	83-32-9									
16		fluorene				0.19	mg/kg		0.151	mg/kg	0.0000151 %	✓	
			201-695-5	86-73-7									
17		phenanthrene				1.22	mg/kg		0.97	mg/kg	0.000097 %	✓	
			201-581-5	85-01-8									
18		anthracene				0.48	mg/kg		0.382	mg/kg	0.0000382 %	✓	
			204-371-1	120-12-7									
19		fluoranthene				1.28	mg/kg		1.017	mg/kg	0.000102 %	✓	
			205-912-4	206-44-0									
20		pyrene				1.16	mg/kg		0.922	mg/kg	0.0000922 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.52	mg/kg		0.413	mg/kg	0.0000413 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.54	mg/kg		0.429	mg/kg	0.0000429 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.5	mg/kg		0.397	mg/kg	0.0000397 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.2	mg/kg		0.159	mg/kg	0.0000159 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				0.35	mg/kg		0.278	mg/kg	0.0000278 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				0.23	mg/kg		0.183	mg/kg	0.0000183 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				0.25	mg/kg		0.199	mg/kg	0.0000199 %	✓	
			205-883-8	191-24-2									
29		benzene				0.019	mg/kg		0.0151	mg/kg	0.00000151 %	✓	
		601-020-00-8	200-753-7	71-43-2									
30		toluene				0.04	mg/kg		0.0318	mg/kg	0.00000318 %	✓	
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				0.054	mg/kg		0.0429	mg/kg	0.00000429 %	✓	
		601-023-00-4	202-849-4	100-41-4									
32		xylene				0.19	mg/kg		0.151	mg/kg	0.0000151 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
										Total:	0.119 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Insufficient concentration to be considered flammable risk. No liquid free phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene: (conc.: 1.51e-06%)
toluene: (conc.: 3.18e-06%)
ethylbenzene: (conc.: 4.29e-06%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

xylene: (conc.: 0.00001%)

Classification of sample: WS5-26/04/2023-0.60m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS5-26/04/2023-0.60m
Moisture content:
20.9%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 20.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		75.4 mg/kg	1.32	82.343 mg/kg	0.00823 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.189 mg/kg	0.0000189 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		59.2 mg/kg	1.462	71.567 mg/kg	0.00716 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		211 mg/kg	1.126	196.495 mg/kg	0.0196 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	253 mg/kg		209.264 mg/kg	0.0209 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.6 mg/kg	1.353	0.672 mg/kg	0.0000672 %	✓	
7	nickel { dinickel hexacyanoferrate }	028-037-00-8	238-946-3	14874-78-3		28.9 mg/kg	2.806	67.064 mg/kg	0.00671 %	✓	
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				2 mg/kg	1.405	2.324 mg/kg	0.000232 %	✓	
9	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		243 mg/kg	4.398	883.95 mg/kg	0.0884 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.5 mg/kg	3.22	3.995 mg/kg	0.000399 %	✓	
12	pH			PH		8.48 pH		8.48 pH	8.48 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		1.79 mg/kg		1.481 mg/kg	0.000148 %	✓	
14	acenaphthylene		205-917-1	208-96-8		0.29 mg/kg		0.24 mg/kg	0.000024 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthene				0.97	mg/kg		0.802	mg/kg	0.0000802 %	✓	
			201-469-6	83-32-9									
16		fluorene				0.82	mg/kg		0.678	mg/kg	0.0000678 %	✓	
			201-695-5	86-73-7									
17		phenanthrene				6.82	mg/kg		5.641	mg/kg	0.000564 %	✓	
			201-581-5	85-01-8									
18		anthracene				3.14	mg/kg		2.597	mg/kg	0.00026 %	✓	
			204-371-1	120-12-7									
19		fluoranthene				8.1	mg/kg		6.7	mg/kg	0.00067 %	✓	
			205-912-4	206-44-0									
20		pyrene				7.74	mg/kg		6.402	mg/kg	0.00064 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				3.86	mg/kg		3.193	mg/kg	0.000319 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				4.11	mg/kg		3.4	mg/kg	0.00034 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				4.45	mg/kg		3.681	mg/kg	0.000368 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				1.73	mg/kg		1.431	mg/kg	0.000143 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				4	mg/kg		3.309	mg/kg	0.000331 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				2.41	mg/kg		1.993	mg/kg	0.000199 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				0.36	mg/kg		0.298	mg/kg	0.0000298 %	✓	
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				2.38	mg/kg		1.969	mg/kg	0.000197 %	✓	
			205-883-8	191-24-2									
29		benzene				0.006	mg/kg		0.0049	mg/kg	0.000000496 %	✓	
		601-020-00-8	200-753-7	71-43-2									
30		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
32		xylene				0.007	mg/kg		0.0057	mg/kg	0.000000579 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		coronene				0.34	mg/kg		0.281	mg/kg	0.0000281 %	✓	
			205-881-7	191-07-1									
										Total:	0.156 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Insufficient concentration to be considered flammable risk. No liquid free phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

benzene: (conc.: 4.96e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

xylene: (conc.: 5.79e-07%)

WAC results for sample: WS5-26/04/2023-0.60m

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample PASSES the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	3.41	3	5	6
2	LOI (loss on ignition)	%	5.5	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.025	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.035	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	193	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	53.31	100	-	-
7	pH	pH	8.48	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.07	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.59	0.5	2	25
10	barium	mg/kg	0.27	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	0.019	0.5	10	70
13	copper	mg/kg	0.15	2	50	100
14	mercury	mg/kg	<0.01	0.01	0.2	2
15	molybdenum	mg/kg	0.03	0.5	10	30
16	nickel	mg/kg	<0.02	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	0.12	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	<0.03	4	50	200
21	chloride	mg/kg	<3	800	15,000	25,000
22	fluoride	mg/kg	5	10	150	500
23	sulphate	mg/kg	108	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	960	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail

Classification of sample: WS6-26/04/2023-1.50m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS6-26/04/2023-1.50m
Moisture content:
18.9%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		86.6 mg/kg	1.32	96.165 mg/kg	0.00962 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.192 mg/kg	0.0000192 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		75.3 mg/kg	1.462	92.561 mg/kg	0.00926 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		126 mg/kg	1.126	119.312 mg/kg	0.0119 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	317 mg/kg		266.611 mg/kg	0.0267 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.8 mg/kg	1.353	0.911 mg/kg	0.0000911 %	✓	
7	nickel { dinickel hexacyanoferrate }	028-037-00-8	238-946-3	14874-78-3		33.3 mg/kg	2.806	78.575 mg/kg	0.00786 %	✓	
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				2 mg/kg	1.405	2.363 mg/kg	0.000236 %	✓	
9	zinc { zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2] }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		240 mg/kg	4.398	887.723 mg/kg	0.0888 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.5 mg/kg	3.22	4.062 mg/kg	0.000406 %	✓	
12	pH			PH		10.58 pH		10.58 pH	10.58 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		5.49 mg/kg		4.617 mg/kg	0.000462 %	✓	
14	acenaphthylene		205-917-1	208-96-8		<0.15 mg/kg		<0.15 mg/kg	<0.000015 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthene				5.2	mg/kg		4.373	mg/kg	0.000437 %	✓	
			201-469-6	83-32-9									
16		fluorene				4.45	mg/kg		3.743	mg/kg	0.000374 %	✓	
			201-695-5	86-73-7									
17		phenanthrene				27.43	mg/kg		23.07	mg/kg	0.00231 %	✓	
			201-581-5	85-01-8									
18		anthracene				23.47	mg/kg		19.739	mg/kg	0.00197 %	✓	
			204-371-1	120-12-7									
19		fluoranthene				23.54	mg/kg		19.798	mg/kg	0.00198 %	✓	
			205-912-4	206-44-0									
20		pyrene				20.86	mg/kg		17.544	mg/kg	0.00175 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				8.76	mg/kg		7.368	mg/kg	0.000737 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				9.44	mg/kg		7.939	mg/kg	0.000794 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				8.51	mg/kg		7.157	mg/kg	0.000716 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				3.31	mg/kg		2.784	mg/kg	0.000278 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				7.3	mg/kg		6.14	mg/kg	0.000614 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				4.16	mg/kg		3.499	mg/kg	0.00035 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				0.78	mg/kg		0.656	mg/kg	0.0000656 %	✓	
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				4.01	mg/kg		3.373	mg/kg	0.000337 %	✓	
			205-883-8	191-24-2									
29		benzene				0.017	mg/kg		0.0143	mg/kg	0.00000143 %	✓	
		601-020-00-8	200-753-7	71-43-2									
30		toluene				0.025	mg/kg		0.021	mg/kg	0.0000021 %	✓	
		601-021-00-3	203-625-9	108-88-3									
31		ethylbenzene				0.025	mg/kg		0.021	mg/kg	0.0000021 %	✓	
		601-023-00-4	202-849-4	100-41-4									
32		xylene				0.077	mg/kg		0.0648	mg/kg	0.00000648 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
35		asbestos				<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
36		coronene				0.61	mg/kg		0.513	mg/kg	0.0000513 %	✓	
			205-881-7	191-07-1									
										Total:	0.169 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Insufficient concentration to be considered flammable risk. No liquid free phase.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene: (conc.: 1.43e-06%)
toluene: (conc.: 2.1e-06%)
ethylbenzene: (conc.: 2.1e-06%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

xylene: (conc.: 6.48e-06%)

WAC results for sample: WS6-26/04/2023-1.50m

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"
The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

The sample FAILS the Hazardous (Hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	6.08	3	5	6
2	LOI (loss on ignition)	%	8.7	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.144	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.035	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	178	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	157.32	100	-	-
7	pH	pH	10.58	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.23	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.299	0.5	2	25
10	barium	mg/kg	0.28	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	0.049	0.5	10	70
13	copper	mg/kg	0.19	2	50	100
14	mercury	mg/kg	<0.01	0.01	0.2	2
15	molybdenum	mg/kg	0.18	0.5	10	30
16	nickel	mg/kg	0.04	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	0.2	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	<0.03	4	50	200
21	chloride	mg/kg	63	800	15,000	25,000
22	fluoride	mg/kg	<3	10	150	500
23	sulphate	mg/kg	1153	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	90	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	2821	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail
	SNRHW WAC criteria fail
	Hazardous WAC criteria fail

Appendix A: Classifier defined and non GB MCL determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Insufficient concentration of chromium(VI) to be present.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {dinickel hexacyanoferrate}

Insufficient concentration of chromium(VI) to be present.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

zinc {zinc sulphate (hydrous) (mono-, hexa- and hepta hydrate); [1] zinc sulphate (anhydrous) [2]}

Insufficient concentration of chromium(VI) to be present.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.111.5569.10274 (22 Apr 2023)
HazWasteOnline Database: 2023.111.5569.10274 (22 Apr 2023)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021

APPENDIX G

CONTAMINATION ASSESSMENT WORKSHEETS

CC GEOTECHNICAL LIMITED
Consulting Geotechnical and Geoenvironmental Engineers

METALS DATA SUMMARY AND RISK ASSESSMENT SHEET

Job number: CCG-C-23-13703
Site name: MCFA Womans Facility

Prepared by: DO
Authorised by: CB
Proposed land use: Public Open Space (Park)
SOM % used: 2.5

= Threshold exceeded
= Below Limit of detection
n/t = Not tested

			Metals							
Contaminants			Cadmium	Chromium III	Chromium VI	Copper	Lead	Mercury (elemental)	Nickel	Zinc
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Detection			0.5	5.0	0.8	5.0	5.0	0.5	5.0	5.0
Human Health Risk Assessment (GAC)			532	33000	220	44000	1300	30	3400	170000
Sample Location	Sample Depth (m)	Sample type								
WS1	0.80	SOIL	0.3	39.2	<0.3	48	134	0.3	16.4	248
WS2	0.50	SOIL	0.1	55.1	<0.3	183	**341**	**0.9**	30.1	278
WS3	0.70	SOIL	**0.6**	49.6	<0.3	155	322	0.4	**42.6**	**789**
WS4	0.90	SOIL	<0.1	51.5	<0.3	90	202	0.4	24.8	222
WS5	0.60	SOIL	0.2	59.2	<0.3	**211**	253	0.6	28.9	243
WS6	1.50	SOIL	0.2	**75.3**	<0.3	126	317	0.8	33.3	240
Human Health Risk Assessment (GAC)			532	33000	220	44000	1300	30	3400	170000

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Consulting Geotechnical and Geoenvironmental Engineers

SEMI-METALS, NON-METALS, INORGANICS AND OTHER DATA SUMMARY AND RISK ASSESSMENT SHEET

Job number: CCG-C-23-13703
Site name: MCFA Womans Facility

Prepared by: DO
Authorised by: CB
Proposed land use: Public Open Space (Park)
SOM % used: 2.5

= **Threshold exceeded**

= **Below Limit of detection**

n/t = **Not tested**

			Semi/non-metals			Inorganics			Other	
Contaminants			**Arsenic**	**Boron**	**Selenium**	**Cyanide (free)**	**Sulphate (water soluble)**	**Sulphate (water soluble)**	**pH (units)**	**Soil Organic Matter %**
Units			mg/kg	mg/kg	mg/kg	mg/kg	g/l	mg/l	units	units
Limit of Detection			1.0	0.5	1.0	1.0	0.02	20.0	0.1	0.1
Human Health Risk Assessment (GAC)			170	46000	1800	22	0	0.0	0	0
Sample Location	Sample Depth (m)	Sample type								
WS1	0.80	SOIL	44.4	**3.7**	1	<0.5	< 0.02	n/t	9	1.7
WS2	0.50	SOIL	77.5	1.4	**2**	<0.5	< 0.02	n/t	8.5	0.7
WS3	0.70	SOIL	**100.5**	1.2	**2**	<0.5	0.14	n/t	8.7	3.3
WS4	0.90	SOIL	44	1.5	1	<0.5	0.03	n/t	8	2.1
WS5	0.60	SOIL	75.4	1.5	**2**	<0.5	0.02	n/t	7.9	2.2
WS6	1.50	SOIL	86.6	1.5	**2**	<0.5	n/t	8211	10.58	10.5
Human Health Risk Assessment (GAC)			170	46000	532	22	N/A	N/A	N/A	N/A

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SPECIATED PAH'S DATA SUMMARY AND RISK ASSESSMENT SHEET

Job number: CCG-C-23-13703
Site name: MCFA Womans Facility

Prepared by: DO
Authorised by: CB
Proposed land use: Public Open Space (Park)
SOM % used: 2.5

= Threshold exceeded
= Below Limit of detection
n/t = Not tested

Contaminants			PAH's															
			Acenapthene	Acenapthylene	Anthracene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[ghi]perylene	Benzo[k]fluoranthene	Chrysene	Dibenzo[ah]anthracene	fluoranthene	fluorene	Indeno[123-cd]pyrene	Napthalene	Pheanthrene	Pyrene	Total PAH's
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Detection			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.4
Human Health Risk Assessment (GAC)			30000	30000	150000	56	12	15	1500	410	110	1.3	6300	20000	170	1900	6200	15000	NA
Sample Location	Sample Depth (m)	Sample type																	
WS1	0.80	SOIL	0.84	**0.33**	2.48	3.51	2.97	3.57	1.74	1.39	3.8	0.22	8.05	0.68	1.77	1.72	5.37	7.95	46.4
WS2	0.50	SOIL	0.74	<0.03	1.32	2.67	2.61	3.09	1.51	1.2	2.92	0.27	5.67	0.6	1.45	1.89	4.61	5.44	36
WS3	0.70	SOIL	0.07	<0.03	0.22	0.78	0.72	0.86	0.42	0.33	0.75	0.07	1.53	<0.04	0.42	0.08	0.8	1.37	8.4
WS4	0.90	SOIL	0.31	0.05	0.48	0.52	0.35	0.5	0.25	0.2	0.54	<0.04	1.28	0.19	0.23	2.2	1.22	1.16	9.5
WS5	0.60	SOIL	0.97	0.29	3.14	3.86	4	4.45	2.38	1.73	4.11	0.36	8.1	0.82	2.41	1.79	6.82	7.74	53
WS6	1.50	SOIL	**5.2**	<0.15	**23.47**	**8.76**	**7.3**	**8.51**	**4.01**	**3.31**	**9.44**	**0.78**	**23.54**	**4.45**	**4.16**	**5.49**	**27.43**	**20.86**	**156.7**
Human Health Risk Assessment (GAC)			30000	30000	532	56	12	15	1500	410	110	1.3	6300	20000	170	1900	6200	15000	NA

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SPECIATED TPH'S DATA SUMMARY AND RISK ASSESSMENT SHEET

Job number: CCG-C-23-13703
Site name: MCFA Womans Facility

Prepared by: DO
Authorised by: CB
Proposed land use: Public Open Space (Park)
SOM % used: 2.5

= Threshold exceeded
= Below Limit of detection
n/t = Not tested

			Speciated TPH's														
			Aromatics							Aliphatics							
Contaminants			EC5-7	EC7-8	EC8-10	EC10-12	EC12-16	EC16-21	EC21-35	EC35-44	EC5-6	EC6-8	EC8-10	EC10-12	EC12-16	EC16-35	EC35-44	TOTAL TPH'S
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Detection			0.01	0.01	1.0	1.0	1.0	1.0	1.0	1.0	0.01	0.01	1.0	1.0	1.0	1.0	1.0	1.0
Human Health Risk Assessment (GAC)			84000	95000	8500	9700	10000	7700	7800	7800	130000	220000	18000	23000	25000	480000	480000	480000
Sample Location	Sample Depth (m)	Sample type																
WS1	0.80	SOIL	<0.1	<0.1	<0.1	**11.7**	34	130	281	457	<0.1	<0.1	<0.1	<0.2	<4	112	**0**	569
WS2	0.50	SOIL	<0.1	<0.1	0.1	10	23	123	290	446	<0.1	<0.1	**0.5**	**12**	13	106	**0**	578
WS3	0.70	SOIL	<0.1	<0.1	<0.1	<0.2	9	39	188	236	<0.1	<0.1	<0.1	<0.2	<4	**202**	**0**	438
WS4	0.90	SOIL	<0.1	<0.1	**0.3**	**11.7**	24	104	189	329	<0.1	<0.1	0.3	5.7	**14**	127	**0**	476
WS5	0.60	SOIL	<0.1	<0.1	<0.1	8.7	42	199	517	767	<0.1	<0.1	<0.1	<0.2	10	175	**0**	952
WS6	1.50	SOIL	<0.1	<0.1	<0.1	**11.7**	**76**	**370**	**541**	**999**	<0.1	<0.1	0.2	1.4	**14**	163	**0**	**1178**
Human Health Risk Assessment (GAC)			84000	95000	532	9700	10000	7700	7800	7800	130000	220000	18000	23000	25000	480000	480000	N/A

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BTEX DATA SUMMARY AND RISK ASSESSMENT SHEET

Job number: CCG-C-23-13703
Site name: MCFA Womans Facility

Prepared by: DO
Authorised by: CB
Proposed land use: Public Open Space (Park)
SOM % used: 2.5

= Threshold exceeded
= Below Limit of detection
n/t = Not tested

			BTEX			
Contaminants			Benzene	Toluene	Ethylbenzene	Total Xylenes
Units			µg/kg	µg/kg	µg/kg	µg/kg
Limit of Detection			10	10	10	10
Human Health Risk Assessment (GAC)			100000	95000000	22000000	23000000
Sample Location	Sample Depth (m)	Sample type				
WS1	0.80	SOIL	<5	8	7	12
WS2	0.50	SOIL	9	16	33	93
WS3	0.70	SOIL	<5	<5	<5	<5
WS4	0.90	SOIL	**19**	**40**	**54**	**137**
WS5	0.60	SOIL	6	<5	<5	7
WS6	1.50	SOIL	17	25	25	46
0	0	0	0	0	0	0
0	0	0	0	0	0	0
Human Health Risk Assessment (GAC)			100000	532	22000000	23000000

APPENDIX H

GROUNDSURE REPORT & HISTORICAL MAPPING

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

M11 4AA, M11 4AA

Order Details

Date: 01/06/2023

Your ref: CMAPS-AAG-1106941-4165-010623

Our Ref: CMAPS-AAG-1106941-4165-010623EDRGEO

Site Details

Location: 387582 398438

Area: 0.6 ha

Authority: Manchester City Council ↗



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Summary of findings p. 2 >

OS MasterMap site plan p.12 >

Aerial image p. 8 >

groundsure.com/insightuserguide ↗

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

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
13 >	1.1 >	Historical industrial land uses >	13	13	75	113	-
21 >	1.2 >	Historical tanks >	3	17	258	139	-
37 >	1.3 >	Historical energy features >	0	0	23	23	-
39 >	1.4 >	Historical petrol stations >	0	0	0	0	-
39 >	1.5 >	Historical garages >	0	0	6	1	-
39 >	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
40 >	2.1 >	Historical industrial land uses >	13	15	116	147	-
51 >	2.2 >	Historical tanks >	8	19	396	211	-
74 >	2.3 >	Historical energy features >	0	0	45	48	-
78 >	2.4 >	Historical petrol stations >	0	0	0	0	-
78 >	2.5 >	Historical garages >	0	0	7	1	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
79 >	3.1 >	Active or recent landfill >	0	0	0	0	-
79 >	3.2 >	Historical landfill (BGS records) >	0	0	0	0	-
80 >	3.3 >	Historical landfill (LA/mapping records) >	0	0	0	0	-
80 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	1	-
80 >	3.5 >	Historical waste sites >	0	0	10	1	-
82 >	3.6 >	Licensed waste sites >	0	0	1	2	-
83 >	3.7 >	Waste exemptions >	0	0	0	2	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
84 >	4.1 >	Recent industrial land uses >	0	1	16	-	-
86 >	4.2 >	Current or recent petrol stations >	0	0	0	2	-
86 >	4.3 >	Electricity cables >	0	0	0	0	-
86 >	4.4 >	Gas pipelines >	0	0	0	0	-
86 >	4.5 >	Sites determined as Contaminated Land >	0	0	0	0	-

86 >	4.6 >	Control of Major Accident Hazards (COMAH) >	1	0	0	2	-
87 >	4.7 >	Regulated explosive sites >	0	0	0	0	-
87 >	4.8 >	Hazardous substance storage/usage >	0	0	5	2	-
88 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	27	11	-
93 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	26	23	-
100 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	5	4	-
101 >	4.12 >	Radioactive Substance Authorisations >	0	0	1	0	-
102 >	4.13 >	Licensed Discharges to controlled waters >	0	0	0	0	-
102 >	4.14 >	Pollutant release to surface waters (Red List) >	0	0	0	0	-
102 >	4.15 >	Pollutant release to public sewer >	0	0	0	2	-
102 >	4.16 >	List 1 Dangerous Substances >	0	0	6	5	-
103 >	4.17 >	List 2 Dangerous Substances >	0	0	1	0	-
104 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	9	4	-
105 >	4.19 >	Pollution inventory substances >	0	0	1	3	-
107 >	4.20 >	Pollution inventory waste transfers >	0	0	1	1	-
115 >	4.21 >	Pollution inventory radioactive waste >	0	0	0	0	-
Page	Section	**Hydrogeology** >	On site	0-50m	50-250m	250-500m	500-2000m
116 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
118 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
120 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
121 >	5.4 >	Groundwater vulnerability- soluble rock risk >	None (within 0m)				
121 >	5.5 >	Groundwater vulnerability- local information >	None (within 0m)				
122 >	5.6 >	Groundwater abstractions >	0	0	2	19	5
129 >	5.7 >	Surface water abstractions >	0	1	3	2	0
131 >	5.8 >	Potable abstractions >	0	0	0	0	0
131 >	5.9 >	Source Protection Zones >	0	0	0	0	-
131 >	5.10 >	Source Protection Zones (confined aquifer) >	0	0	0	0	-
Page	Section	**Hydrology** >	On site	0-50m	50-250m	250-500m	500-2000m
132 >	6.1 >	Water Network (OS MasterMap) >	0	4	2	-	-

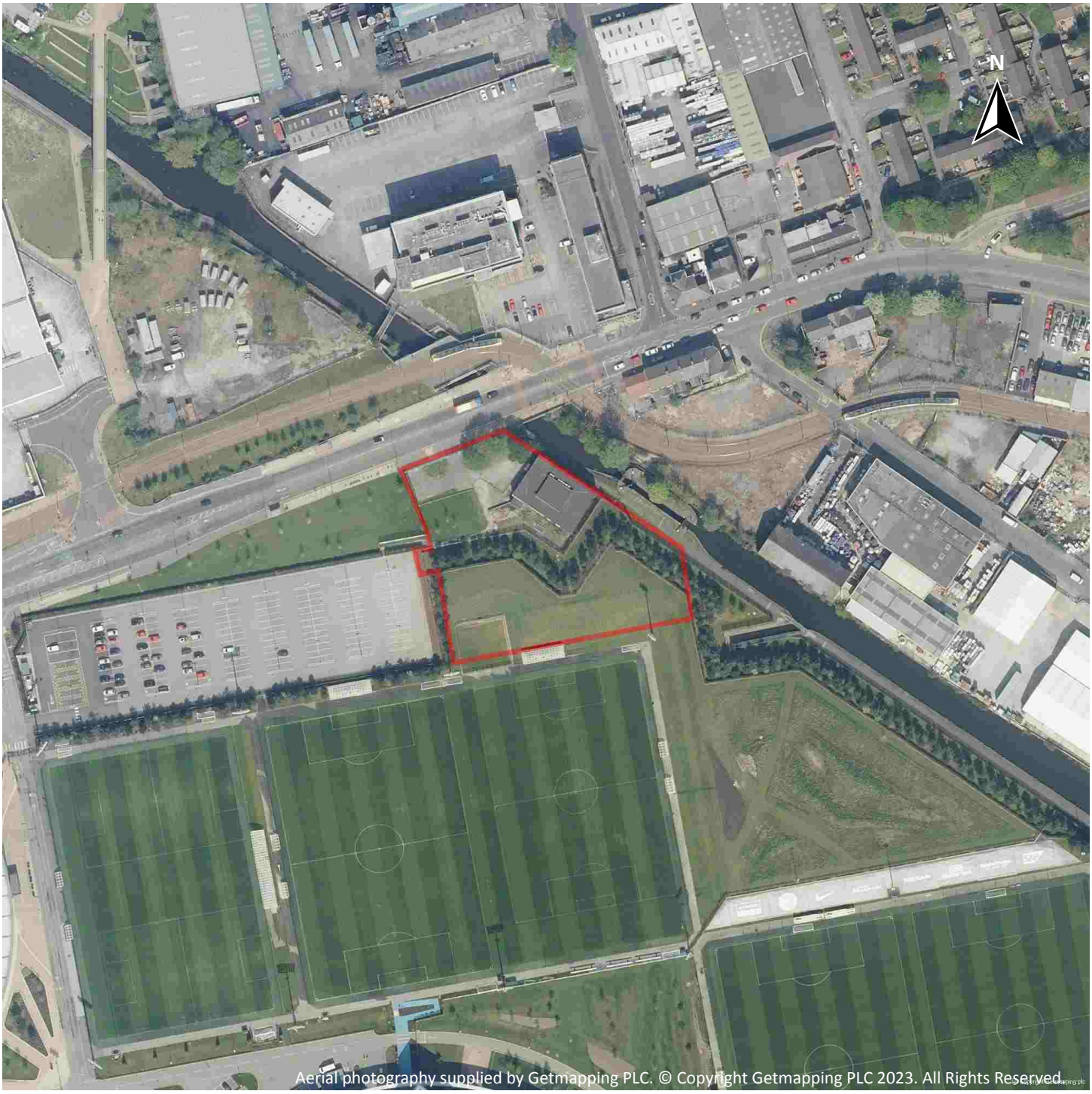
133 >	6.2 >	Surface water features >	0	2	0	-	-
133 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
134 >	6.4 >	WFD Surface water bodies >	0	1	0	-	-
134 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	**River and coastal flooding >**	On site	0-50m	50-250m	250-500m	500-2000m
136 >	7.1 >	Risk of flooding from rivers and the sea >	None (within 50m)				
136 >	7.2 >	Historical Flood Events >	0	0	0	-	-
136 >	7.3 >	Flood Defences >	0	0	0	-	-
137 >	7.4 >	Areas Benefiting from Flood Defences >	0	0	0	-	-
137 >	7.5 >	Flood Storage Areas >	0	0	0	-	-
138 >	7.6 >	Flood Zone 2 >	None (within 50m)				
138 >	7.7 >	Flood Zone 3 >	None (within 50m)				
Page	Section	**Surface water flooding >**					
139 >	8.1 >	Surface water flooding >	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	**Groundwater flooding >**					
141 >	9.1 >	Groundwater flooding >	Moderate-High (within 50m)				
Page	Section	**Environmental designations >**	On site	0-50m	50-250m	250-500m	500-2000m
142 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	0	0
143 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	0	0	0
143 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	0	0
143 >	10.4 >	Special Protection Areas (SPA) >	0	0	0	0	0
143 >	10.5 >	National Nature Reserves (NNR) >	0	0	0	0	0
144 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	1
144 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	0
144 >	10.8 >	Biosphere Reserves >	0	0	0	0	0
144 >	10.9 >	Forest Parks >	0	0	0	0	0
145 >	10.10 >	Marine Conservation Zones >	0	0	0	0	0
145 >	10.11 >	Green Belt >	0	0	0	0	2
145 >	10.12 >	Proposed Ramsar sites >	0	0	0	0	0

145 >	10.13 >	Possible Special Areas of Conservation (pSAC) >	0	0	0	0	0
146 >	10.14 >	Potential Special Protection Areas (pSPA) >	0	0	0	0	0
146 >	10.15 >	Nitrate Sensitive Areas >	0	0	0	0	0
146 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	1
147 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
148 >	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
149 >	11.1 >	World Heritage Sites >	0	0	0	-	-
150 >	11.2 >	Area of Outstanding Natural Beauty >	0	0	0	-	-
150 >	11.3 >	National Parks >	0	0	0	-	-
150 >	11.4 >	Listed Buildings >	0	1	0	-	-
151 >	11.5 >	Conservation Areas >	0	0	0	-	-
151 >	11.6 >	Scheduled Ancient Monuments >	0	0	0	-	-
151 >	11.7 >	Registered Parks and Gardens >	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
152 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
153 >	12.2 >	Open Access Land >	0	0	0	-	-
153 >	12.3 >	Tree Felling Licences >	0	0	0	-	-
153 >	12.4 >	Environmental Stewardship Schemes >	0	0	0	-	-
153 >	12.5 >	Countryside Stewardship Schemes >	0	0	0	-	-
Page	Section	**Habitat designations >**	On site	0-50m	50-250m	250-500m	500-2000m
154 >	13.1 >	Priority Habitat Inventory >	0	0	0	-	-
154 >	13.2 >	Habitat Networks >	0	0	0	-	-
155 >	13.3 >	Open Mosaic Habitat >	1	0	0	-	-
155 >	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
156 >	14.1 >	10k Availability >	Identified (within 500m)				
157 >	14.2 >	Artificial and made ground (10k) >	0	0	1	4	-
159 >	14.3 >	Superficial geology (10k) >	1	0	0	1	-

160 >	14.4 >	Landslip (10k) >	0	0	0	0	-
161 >	14.5 >	Bedrock geology (10k) >	2	2	0	1	-
162 >	14.6 >	Bedrock faults and other linear features (10k) >	1	2	2	4	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
163 >	15.1 >	50k Availability >	Identified (within 500m)				
164 >	15.2 >	Artificial and made ground (50k) >	0	0	1	1	-
165 >	15.3 >	Artificial ground permeability (50k) >	0	0	-	-	-
166 >	15.4 >	Superficial geology (50k) >	1	0	0	1	-
167 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
167 >	15.6 >	Landslip (50k) >	0	0	0	0	-
167 >	15.7 >	Landslip permeability (50k) >	None (within 50m)				
168 >	15.8 >	Bedrock geology (50k) >	2	2	0	1	-
169 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
169 >	15.10 >	Bedrock faults and other linear features (50k) >	1	2	1	3	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
171 >	16.1 >	BGS Boreholes >	0	2	31	-	-
Page	Section	Natural ground subsidence >					
174 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
175 >	17.2 >	Running sands >	Very low (within 50m)				
176 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
177 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
178 >	17.5 >	Landslides >	Very low (within 50m)				
179 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities >	On site	0-50m	50-250m	250-500m	500-2000m
181 >	18.1 >	Natural cavities >	0	0	0	0	-
182 >	18.2 >	BritPits >	0	0	1	1	-
182 >	18.3 >	Surface ground workings >	6	9	22	-	-
184 >	18.4 >	Underground workings >	0	0	0	7	0
184 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	0	-

185 >	18.6 >	Non-coal mining >	0	0	0	0	1
185 >	18.7 >	Mining cavities >	0	0	0	1	1
185 >	18.8 >	JPB mining areas >	Identified (within 0m)				
186 >	18.9 >	Coal mining >	Identified (within 0m)				
186 >	18.10 >	Brine areas >	None (within 0m)				
186 >	18.11 >	Gypsum areas >	None (within 0m)				
187 >	18.12 >	Tin mining >	None (within 0m)				
187 >	18.13 >	Clay mining >	None (within 0m)				
Page	Section	**Radon** >					
188 >	19.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	**Soil chemistry** >	On site	0-50m	50-250m	250-500m	500-2000m
190 >	20.1 >	BGS Estimated Background Soil Chemistry >	2	6	-	-	-
191 >	20.2 >	BGS Estimated Urban Soil Chemistry >	3	6	-	-	-
191 >	20.3 >	BGS Measured Urban Soil Chemistry >	0	0	-	-	-
Page	Section	**Railway infrastructure and projects** >	On site	0-50m	50-250m	250-500m	500-2000m
192 >	21.1 >	Underground railways (London) >	0	0	0	-	-
192 >	21.2 >	Underground railways (Non-London) >	0	0	0	-	-
193 >	21.3 >	Railway tunnels >	0	0	0	-	-
193 >	21.4 >	Historical railway and tunnel features >	10	3	21	-	-
194 >	21.5 >	Royal Mail tunnels >	0	0	0	-	-
195 >	21.6 >	Historical railways >	1	0	4	-	-
195 >	21.7 >	Railways >	0	9	1	-	-
196 >	21.8 >	Crossrail 1 >	0	0	0	0	-
196 >	21.9 >	Crossrail 2 >	0	0	0	0	-
196 >	21.10 >	HS2 >	0	0	0	0	-

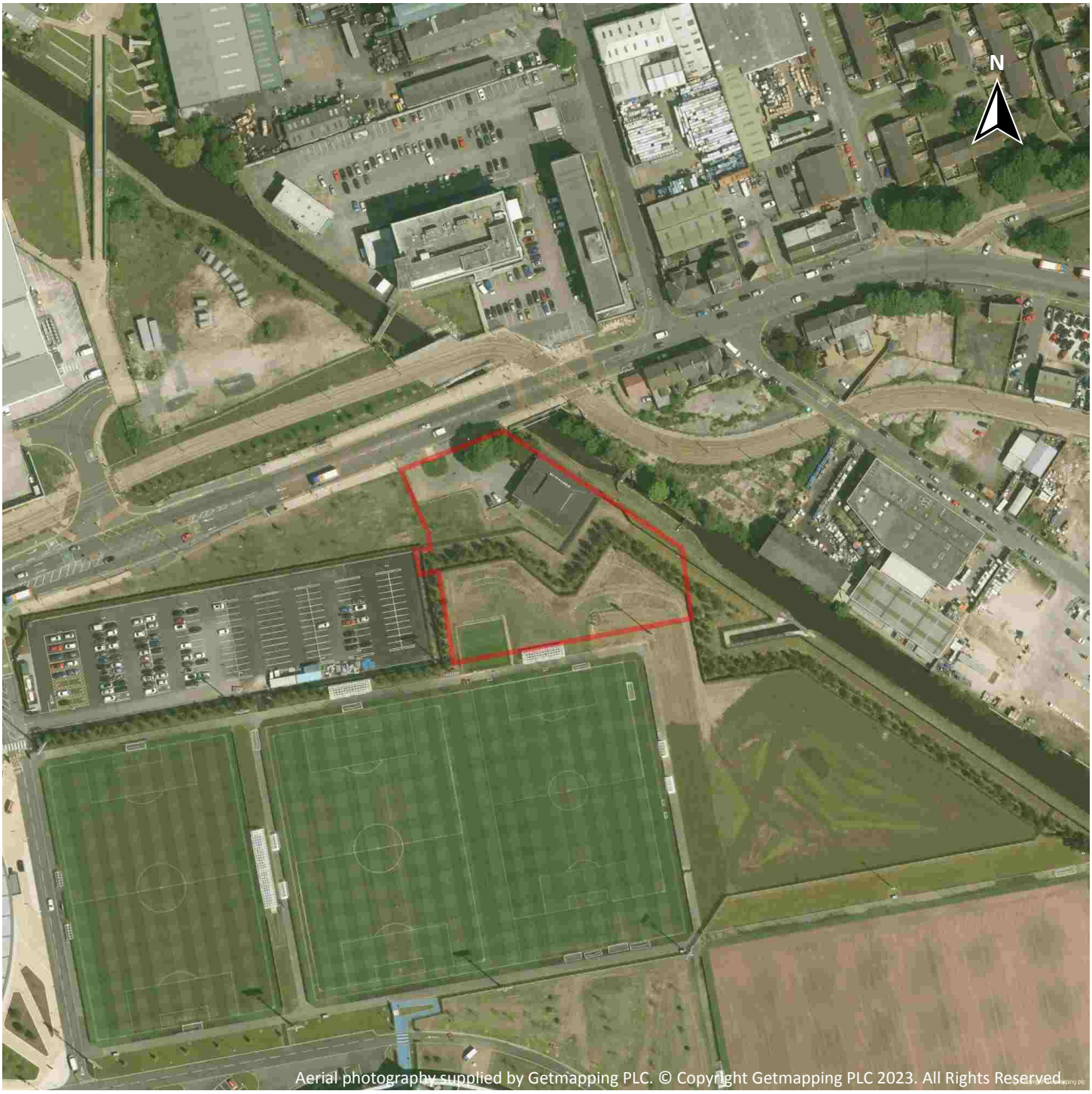
Recent aerial photograph



Capture Date: 22/04/2019

Site Area: 0.6ha

Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.6ha

Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.6ha

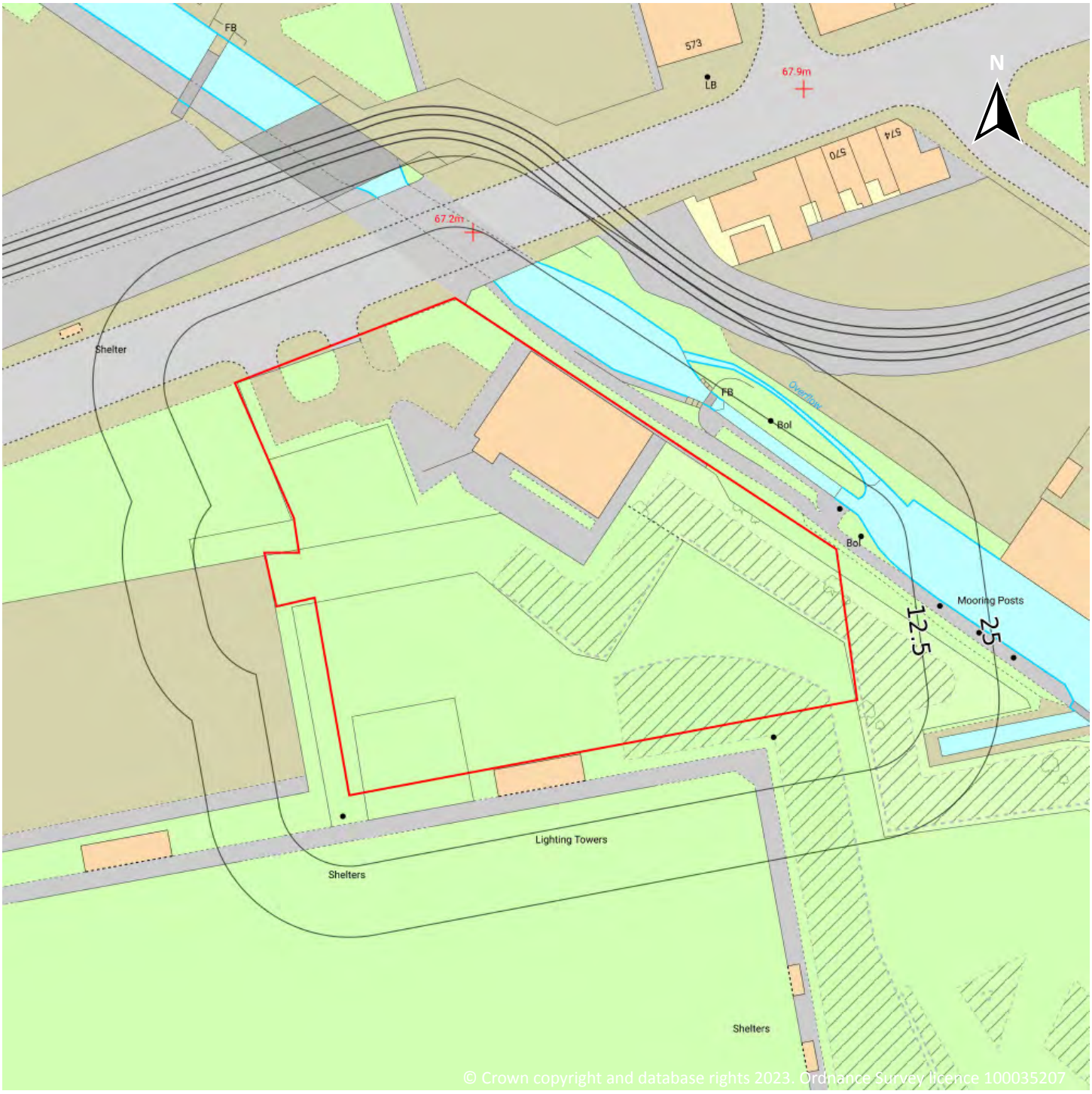
Recent site history - 2000 aerial photograph



Capture Date: 19/06/2000

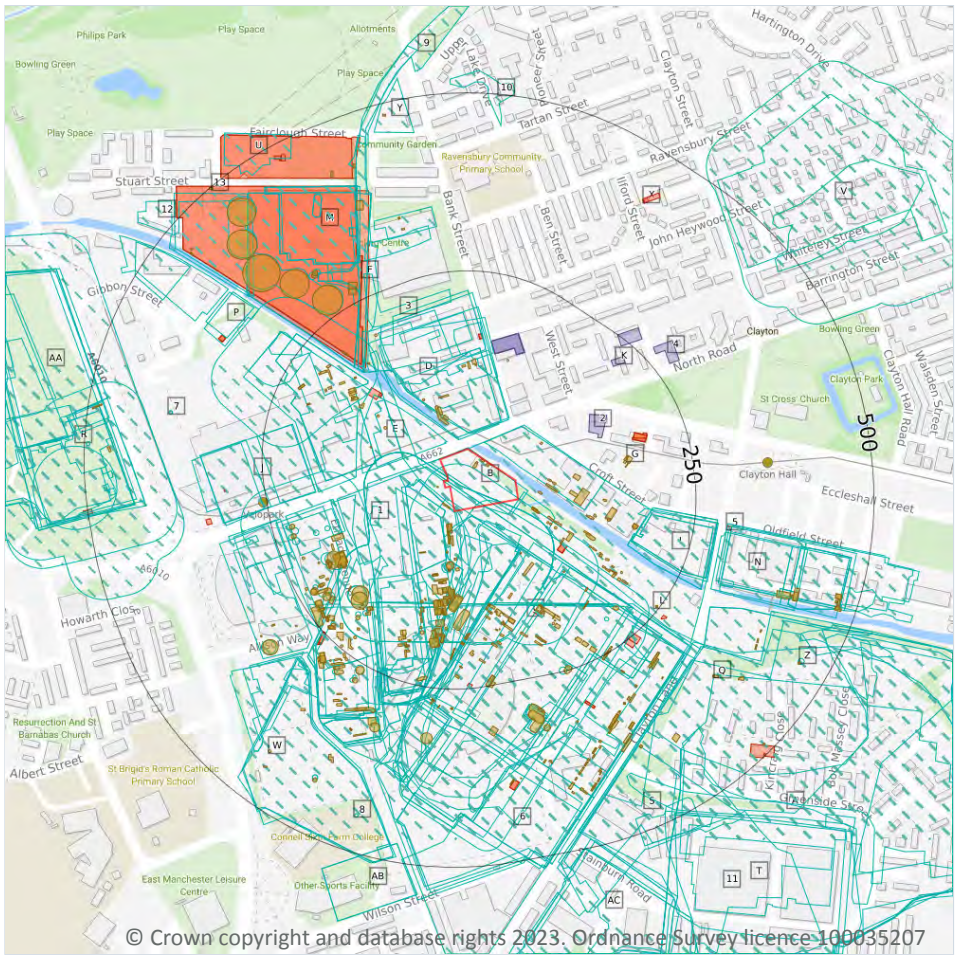
Site Area: 0.6ha

OS MasterMap site plan



Site Area: 0.6ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	214

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

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

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Steel Works**	**1956**	**810023**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Railway Sidings**	**1934 - 1938**	**882010**
B	**On site**	**Unspecified Works**	**1968**	**830471**
C	**On site**	**Unspecified Commercial/Industrial**	**1956**	**853511**
C	**On site**	**Chemical Works**	**1968**	**884000**
C	**On site**	**Chemical Works**	**1890 - 1891**	**884944**
C	**On site**	**Chemical Works**	**1934**	**888408**
C	**On site**	**Unspecified Works**	**1985 - 1991**	**943793**
C	**On site**	**Chemical Works**	**1906 - 1915**	**950978**
C	**On site**	**Railway Sidings**	**1933 - 1934**	**968150**
C	**On site**	**Chemical Works**	**1921**	**974713**
C	**On site**	**Unspecified Commercial/Industrial**	**1923**	**976600**
C	**On site**	**Unspecified Commercial/Industrial**	**1933 - 1934**	**990094**
C	1m SW	Unspecified Works	1968	984377
C	11m S	Refuse Heap	1923	990889
C	11m S	Refuse Heap	1921	957108
D	17m N	Oil Works	1921 - 1923	864827
E	19m NW	Unspecified Works	1921 - 1923	848942
C	19m E	Unspecified Works	1968	830470
D	20m N	Unspecified Commercial/Industrial	1933	796764
C	21m S	Unspecified Heap	1956	923971
C	21m SW	Chemical Works	1923	852811
D	22m N	Unspecified Works	1991	926651
D	23m N	Unspecified Works	1985 - 1991	898710
C	29m SE	Railway Building	1938	820498
C	36m S	Railway Sidings	1978	846139
E	52m W	Unspecified Works	1968	912430
C	55m W	Unspecified Works	1985 - 1991	909589
C	57m S	Refuse Heap	1890 - 1915	858305

ID	Location	Land use	Dates present	Group ID
C	65m SE	Unspecified Works	1985	940096
D	65m NW	Unspecified Works	1978	847531
C	68m SE	Unspecified Works	1923	856782
C	73m S	Unspecified Tank	1938	901748
C	74m S	Unspecified Tank	1906 - 1933	922414
E	90m W	Unspecified Works	1978	871981
E	90m W	Unspecified Works	1985 - 1991	881370
1	97m W	Colliery	1851	798316
D	99m N	Chemical Works	1891	834550
D	106m N	Brick Kiln	1851	811031
C	109m SW	Unspecified Works	1923	971621
C	109m SE	Unspecified Works	1978	962557
C	112m SW	Unspecified Works	1978	896127
C	116m W	Unspecified Commercial/Industrial	1905 - 1906	934228
E	118m W	Chemical Works	1906 - 1933	885077
C	121m SE	Unspecified Works	1985 - 1991	870723
E	121m W	Unspecified Works	1968	866157
C	125m W	Chemical Works	1923	883999
C	128m S	Alkali Works	1915	908859
D	129m N	Refuse Heap	1891	829165
C	130m S	Unspecified Commercial/Industrial	1938	888176
C	130m S	Alkali Works	1934 - 1938	961180
C	132m S	Unspecified Heap	1934 - 1938	913510
C	135m S	Unspecified Works	1905	851601
C	135m S	Unspecified Works	1915	960638
C	135m SW	Unspecified Commercial/Industrial	1851	976601
E	137m NW	Brick Field	1891	817951
C	140m S	Refuse	1956	802112

ID	Location	Land use	Dates present	Group ID
D	143m N	Unspecified Works	1968	918867
C	153m W	Unspecified Works	1968	830473
F	153m NW	Mineral Railway Sidings	1933 - 1938	884558
C	159m SW	Unspecified Commercial/Industrial	1891	898012
H	163m NW	Mineral Railway Sidings	1906	981108
C	165m S	Refuse Heap	1968	925604
I	167m SE	Finishing Works	1906 - 1938	946441
I	167m SE	Unspecified Commercial/Industrial	1891	972255
C	167m SW	Unspecified Tank	1906 - 1938	854058
C	167m SW	Unspecified Tank	1923	923831
C	167m SW	Unspecified Tank	1891	984869
I	169m E	Unspecified Works	1968	922944
F	169m NW	Railway Sidings	1921 - 1923	984262
I	170m E	Unspecified Works	1985 - 1991	884614
I	170m E	Unspecified Works	1978	910195
C	170m W	Unspecified Commercial/Industrial	1923	976599
C	171m SW	Unspecified Tank	1891	929119
C	172m W	Unspecified Tank	1906	825294
C	176m SW	Unspecified Tank	1906	954049
F	177m NW	Unspecified Commercial/Industrial	1933 - 1938	943603
F	177m NW	Electricity Generating Station	1906 - 1923	989056
J	180m W	Unspecified Works	1985 - 1991	979935
J	180m W	Unspecified Works	1968	934878
C	182m SW	Unspecified Tank	1923	942989
C	187m SW	Chimney	1851	835765
C	188m W	Unspecified Tank	1906	825295
C	194m SW	Unspecified Tank	1915	825263
3	204m N	Unspecified Ground Workings	1923	800633

ID	Location	Land use	Dates present	Group ID
C	205m SW	Unspecified Tank	1891	825264
C	206m SE	Unspecified Tank	1923	825262
C	213m SW	Unspecified Tank	1923	825265
C	215m W	Unspecified Tank	1891	825298
C	218m W	Unspecified Tank	1891 - 1906	852618
C	219m SW	Unspecified Tank	1923	825266
C	222m W	Unspecified Tank	1906	825297
C	233m W	Unspecified Depot	1985	818423
E	235m NW	Unspecified Ground Workings	1906	800643
C	237m SE	Unspecified Commercial/Industrial	1968	926845
C	239m W	Unspecified Works	1968	830472
C	239m SW	Chemical Works	1851	965952
C	239m SW	Refuse Heap	1934 - 1938	935650
C	242m SE	Unspecified Tank	1915 - 1923	911915
E	243m NW	Unspecified Pit	1938	840552
J	245m W	Unspecified Works	1968	865836
C	252m W	Unspecified Commercial/Industrial	1923	976598
F	252m NW	Unspecified Tanks	1968	815392
C	253m SW	Unspecified Tank	1905	825259
C	253m SW	Colliery	1851	798314
J	255m W	Engineering Works	1921 - 1923	917015
C	268m S	Unspecified Works	1978	865300
C	269m SW	Unspecified Works	1968	830486
C	269m SW	Unspecified Tank	1915	976902
C	272m SW	Unspecified Tank	1915 - 1923	871679
C	272m S	Unspecified Disused Mill	1905	827218
C	274m SW	Unspecified Tank	1923	952557
C	284m W	Coal Pit	1851	808491

ID	Location	Land use	Dates present	Group ID
C	286m S	Oil Tanks	1915	934088
C	286m S	Oil Tanks	1923	852756
C	286m S	Oil Tanks	1905	975013
C	286m SW	Unspecified Works	1985	871686
M	287m NW	Unspecified Works	1985	923303
C	290m SW	Unspecified Works	1968	854915
N	290m E	Unspecified Commercial/Industrial	1923	796793
C	291m S	Unspecified Tank	1934 - 1938	914329
C	292m SW	Unspecified Tanks	1968	815401
H	294m N	Unspecified Heap	1923	804178
N	295m E	Chemical Works	1978	918950
C	297m SW	Wheel Works	1915 - 1923	949526
N	299m E	Unspecified Works	1968	849751
M	299m NW	Electric Generating Station	1968	842028
M	299m NW	Unspecified Works	1978	990122
C	300m SW	Chemical Works	1915 - 1923	857688
C	300m SW	Chemical Works	1905	971581
N	302m E	Chemical Works	1891	981333
N	302m E	Unspecified Works	1985 - 1991	929483
C	302m SW	Disused Chemical Works	1934 - 1938	866287
C	303m SW	Size Works	1923	908918
C	308m SW	Unspecified Works	1915	877861
C	308m SW	Unspecified Works	1934	901782
C	308m SW	Size Works	1938	991102
F	309m NW	Unspecified Tank	1933 - 1938	936093
O	309m SE	Engineering Works	1934	912693
F	310m NW	Unspecified Tank	1968	924537
C	313m SW	Unspecified Tank	1923	825267

ID	Location	Land use	Dates present	Group ID
H	313m N	Chemicals Works	1891	795013
C	313m S	Unspecified Tank	1934	825249
C	315m S	Unspecified Mill	1851 - 1890	961717
O	318m SE	Railway Sidings	1968	862695
P	330m NW	Unspecified Mill	1985	976402
O	330m SE	Railway Sidings	1956	877918
O	332m SE	Engineering Works	1923	951144
P	337m NW	Unspecified Mill	1968	853462
F	348m NW	Unspecified Mills	1891	917092
F	353m NW	Unspecified Mills	1906 - 1923	981518
C	360m S	Unspecified Ground Workings	1934	800644
C	360m S	Unspecified Heap	1938	804174
6	368m S	Unspecified Works	1915 - 1923	912251
O	369m SE	Unspecified Works	1968	923446
R	369m W	Colliery	1968	890493
C	374m S	Unspecified Heap	1938	804175
R	375m W	Colliery	1891	971185
M	381m NW	Unspecified Tanks	1978	815393
M	381m NW	Chimneys	1968	844028
7	382m W	Coal Pit	1851	808493
F	382m NW	Unspecified Works	1985 - 1991	927491
S	385m SE	Motor Works	1905	833283
N	389m E	Brewery	1968	958488
N	391m E	Brewery	1923	913193
N	403m E	Vinegar Brewery	1906	831121
N	403m E	Brewery	1933 - 1938	854933
N	403m E	Brewery	1921	904415
T	409m SE	Engineering Works	1938	884631

ID	Location	Land use	Dates present	Group ID
O	416m SE	Unspecified Heap	1985 - 1991	854063
C	418m SW	Unspecified Tank	1934	825268
C	418m SW	Unspecified Tanks	1915	815400
R	418m W	Colliery	1851	887196
O	419m SE	Railway Sidings	1915	870808
R	419m W	Unspecified Depot	1985 - 1991	983795
V	421m NE	Brick Works	1906	964206
R	430m W	Iron Works	1956	988439
R	433m W	Colliery	1906 - 1923	878194
R	433m W	Railway Sidings	1906	845027
R	434m W	Unspecified Commercial/Industrial	1933 - 1938	879239
O	438m SE	Railway Sidings	1923	924696
N	440m SE	Refuse Heap	1956 - 1968	927998
V	443m NE	Brick Works	1921 - 1923	925321
F	443m NW	Unspecified Works	1968	848975
8	447m S	Coal Pit	1851	808506
9	449m N	Railway Sidings	1956 - 1968	911076
Y	450m N	Unspecified Works	1891	830466
Z	454m SE	Unspecified Tank	1968	825260
R	455m W	Unspecified Disused Shafts	1991	958517
R	456m W	Railway Sidings	1933 - 1938	923517
10	457m N	Unspecified Ground Workings	1906	800634
R	458m W	Unspecified Disused Shafts	1985	877729
R	460m W	Unspecified Disused Shafts	1985	849285
R	465m W	Unspecified Shafts	1978	809312
R	466m W	Railway Sidings	1921 - 1923	872908
R	467m W	Unspecified Shafts	1978	809313
AA	468m W	Unspecified Commercial/Industrial	1891 - 1978	895595

ID	Location	Land use	Dates present	Group ID
V	471m NE	Unspecified Ground Workings	1906	800635
U	472m NW	Electric Substation	1985 - 1991	982245
AB	473m S	Unspecified Works	1985 - 1991	950101
AB	473m S	Unspecified Works	1968	953001
N	474m SE	Sand Pit	1915 - 1923	904794
AA	475m W	Unspecified Works	1985	988793
S	478m SE	Unspecified Pit	1890	840558
AA	481m W	Unspecified Works	1968	868023
N	482m E	Refuse Heap	1956 - 1968	891215
T	484m SE	Unspecified Works	1978	878377
AC	488m S	Unspecified Works	1968	922875
11	489m SE	Dye Works	1851	870141
12	491m NW	Unspecified Works	1968	830467
AC	492m S	Unspecified Works	1985	862949
R	492m W	Coal Pit	1851	808492
T	492m SE	Unspecified Works	1985	985355
AC	499m S	Dye Works	1923	920128

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**417**

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 13 >**

ID	Location	Land use	Dates present	Group ID
B	**On site**	**Tanks**	**1949**	**141083**

ID	Location	Land use	Dates present	Group ID
B	**On site**	**Unspecified Tank**	**1949 - 1956**	**132250**
B	**On site**	**Tanks**	**1932 - 1956**	**147569**
C	5m SW	Tanks	1970 - 1980	145616
C	9m W	Unspecified Tank	1908	116153
C	18m SW	Tanks	1949	129322
C	18m SW	Tanks	1949	147383
C	20m SW	Tanks	1949	144568
C	23m SE	Tanks	1949	130026
C	23m SE	Tanks	1949	147429
C	26m SE	Tanks	1932	137765
C	27m SW	Unspecified Tank	1956	116154
C	29m SW	Tanks	1956	143578
C	29m E	Tanks	1893	106915
C	34m SW	Tanks	1956	106917
C	41m E	Tanks	1893	106913
D	41m NW	Tanks	1893	145942
C	45m E	Tanks	1908	106916
D	48m NW	Tanks	1908	106941
C	49m SE	Tanks	1908 - 1922	149311
C	51m E	Tanks	1908	106914
C	52m SE	Unspecified Tank	1908 - 1922	130097
C	56m SE	Unspecified Tank	1908 - 1922	147975
C	57m SW	Unspecified Tank	1949 - 1956	125137
D	57m NW	Tanks	1908	141266
C	60m SE	Unspecified Tank	1922	116231
C	62m NE	Unspecified Tank	1932	116230
C	63m SE	Unspecified Tank	1908 - 1922	129690
C	65m SE	Unspecified Tank	1908	116228

ID	Location	Land use	Dates present	Group ID
C	66m S	Unspecified Tank	1949 - 1956	138481
C	68m SE	Unspecified Tank	1908 - 1922	144291
C	70m SW	Tanks	1949 - 1956	122935
C	71m S	Gasometer	1908 - 1932	135678
C	72m E	Tanks	1956	106912
C	74m SE	Unspecified Tank	1956	116223
C	78m E	Unspecified Tank	1922 - 1932	130905
D	79m N	Tanks	1893	106942
C	80m S	Unspecified Tank	1949 - 1956	129535
C	80m E	Unspecified Tank	1932	116232
C	82m S	Tanks	1949	106909
C	82m S	Unspecified Tank	1949 - 1956	133157
C	83m SE	Tanks	1949 - 1956	127388
C	84m SE	Unspecified Tank	1932	116227
D	85m NW	Unspecified Tank	1908	116152
E	87m NW	Unspecified Tank	1908	116150
C	90m SE	Unspecified Tank	1932	116224
C	91m SW	Tanks	1949	127871
C	91m SW	Unspecified Tank	1956	116155
C	93m SW	Unspecified Tank	1956	116157
C	94m S	Tanks	1956	106903
E	98m W	Unspecified Tank	1908	116151
C	98m E	Tanks	1949 - 1956	145441
C	99m S	Tanks	1956	135686
C	100m S	Tanks	1949	139548
C	101m S	Unspecified Tank	1956	116158
C	103m SE	Unspecified Tank	1932	116226
E	105m NW	Unspecified Tank	1908	116149

ID	Location	Land use	Dates present	Group ID
C	106m S	Tanks	1949 - 1980	132520
C	106m S	Tanks	1970 - 1980	134738
C	107m S	Tanks	1970	125368
C	107m SE	Tanks	1908	106911
C	108m S	Tanks	1970	134893
C	108m E	Unspecified Tank	1956	116233
C	109m S	Tanks	1956	106902
C	110m S	Tanks	1970	149120
D	112m N	Tanks	1949	106938
D	115m N	Unspecified Tank	1949	116105
C	117m S	Tanks	1994	130302
D	118m N	Tanks	1949	143710
C	119m S	Tanks	1987 - 1991	128908
C	119m SE	Unspecified Tank	1956	116225
C	119m S	Tanks	1949 - 1956	125997
C	119m E	Tanks	1956 - 1980	146379
C	120m SE	Tanks	1956	106910
C	124m S	Tanks	1949 - 1956	129500
C	124m S	Tanks	1949 - 1956	146047
C	125m E	Unspecified Tank	1956	116234
C	125m SE	Tanks	1949 - 1956	128110
C	125m E	Tanks	1949 - 1970	129402
C	127m S	Tanks	1980	128189
C	127m S	Tanks	1956 - 1970	147267
C	127m S	Tanks	1970	134022
C	128m S	Unspecified Tank	1949 - 1956	148566
C	129m E	Unspecified Tank	1956 - 1980	131573
C	129m SW	Unspecified Tank	1956	116156

ID	Location	Land use	Dates present	Group ID
E	130m NW	Tanks	1949 - 1953	133368
C	133m SW	Tanks	1956	107001
D	135m N	Unspecified Tank	1922	116229
C	137m S	Tanks	1949 - 1970	134955
C	137m SE	Tanks	1956	106908
C	137m S	Unspecified Tank	1949	125464
C	137m S	Unspecified Tank	1949	149190
C	138m S	Tanks	1949 - 1970	145885
C	138m S	Tanks	1949	107000
C	138m S	Tanks	1949	139310
C	138m S	Tanks	1956 - 1970	126070
C	138m S	Tanks	1987 - 1994	138407
C	138m S	Tanks	1949 - 1956	140666
C	139m SE	Tanks	1956	106907
C	141m SW	Unspecified Tank	1949	129303
E	143m NW	Tanks	1932 - 1949	126372
C	145m S	Tanks	1949	106998
C	146m S	Tanks	1949	106999
E	148m NW	Unspecified Tank	1953	116148
C	149m S	Unspecified Tank	1956	116222
C	149m SE	Tanks	1908	106906
C	149m S	Unspecified Tank	1908	116211
E	149m NW	Tanks	1932	123263
C	151m SW	Tanks	1956	107004
C	151m SE	Tanks	1956	106996
C	151m SE	Tanks	1949 - 1956	147755
C	152m SE	Tanks	1949 - 1956	130314
C	152m S	Tanks	1956	106997

ID	Location	Land use	Dates present	Group ID
E	152m NW	Tanks	1949 - 1953	144825
C	152m S	Tanks	1933	106991
C	153m S	Tanks	1956 - 1980	134369
G	154m E	Unspecified Tank	1980	126030
C	154m S	Tanks	1949	129933
G	155m E	Unspecified Tank	1987 - 1991	123928
G	155m E	Unspecified Tank	1956 - 1970	136270
C	156m SE	Tanks	1933	128745
C	156m S	Unspecified Tank	1949 - 1956	143950
C	156m S	Unspecified Tank	1956	115891
C	157m SE	Unspecified Tank	1949 - 1956	143387
C	157m SE	Tanks	1956	106905
C	158m W	Tanks	1980 - 1996	135435
C	159m SE	Tanks	1933	148293
C	161m S	Tanks	1956	136070
C	161m SE	Unspecified Tank	1949 - 1956	123851
C	162m SE	Tanks	1949	140552
C	163m S	Unspecified Tank	1922	115890
C	164m S	Unspecified Tank	1956	116213
E	164m NW	Unspecified Tank	1949	146177
E	164m NW	Unspecified Tank	1953	127483
C	164m SW	Unspecified Tank	1908 - 1932	135606
E	164m NW	Unspecified Tank	1949	142735
C	165m S	Tanks	1956	140497
C	165m E	Tanks	1949 - 1956	125749
C	165m E	Unspecified Tank	1932 - 1949	128827
C	165m S	Tanks	1933	106990
C	165m SW	Tanks	1980	126525

ID	Location	Land use	Dates present	Group ID
C	166m SW	Tanks	1995 - 1996	130435
C	166m SW	Tanks	1994	122430
C	166m S	Unspecified Tank	1949 - 1956	129419
E	166m NW	Unspecified Tank	1932	116104
C	166m SW	Tanks	1991	123174
C	168m S	Unspecified Tank	1893	115892
C	169m S	Tanks	1994	142641
C	169m SE	Unspecified Tank	1949	142031
C	170m SE	Tanks	1932	130638
C	170m SE	Tanks	1956	141111
C	171m SE	Unspecified Tank	1908 - 1922	127575
C	171m SW	Unspecified Tank	1893	131619
E	171m NW	Unspecified Tank	1949 - 1953	134719
C	172m SE	Tanks	1956	137053
C	172m S	Tanks	1949	107018
C	172m SW	Unspecified Tank	1893 - 1922	143824
C	173m S	Unspecified Tank	1956	115889
C	173m S	Tanks	1949 - 1956	127712
C	173m SE	Tanks	1956	106995
C	173m S	Tanks	1922	141942
C	173m S	Tanks	1933	145111
C	174m S	Unspecified Tank	1922 - 1933	140860
C	174m S	Tanks	1949 - 1956	136076
C	174m S	Tanks	1933	126460
C	176m SW	Tanks	1949 - 1953	146447
C	177m SW	Tanks	1949	123155
C	177m SE	Unspecified Tank	1922	116235
C	177m S	Unspecified Tank	1956	115887

ID	Location	Land use	Dates present	Group ID
C	177m SW	Tanks	1893	106918
C	177m SE	Tanks	1956	106994
C	179m SE	Tanks	1956	106904
C	179m SW	Unspecified Tank	1932	116147
C	179m S	Tanks	1987 - 1991	132827
C	180m SE	Tanks	1933	106992
C	180m SW	Tanks	1953	107016
C	181m S	Tanks	1949	106988
E	182m NW	Unspecified Tank	1949	129924
C	182m S	Unspecified Tank	1956	115888
C	182m SE	Tanks	1933	106993
C	182m SW	Unspecified Tank	1949	115893
C	183m SW	Unspecified Tank	1893	144915
C	184m S	Tanks	1949	107020
C	184m SW	Tanks	1933	107005
C	184m S	Tanks	1956	106989
C	184m S	Unspecified Tank	1956	126992
C	184m S	Unspecified Tank	1949	148424
C	185m SE	Unspecified Tank	1949	124412
E	185m NW	Unspecified Tank	1932	116130
C	186m SW	Unspecified Tank	1908	137919
C	187m SW	Tanks	1949 - 1980	126490
C	187m SW	Tanks	1949	144875
C	187m SW	Tanks	1991	128183
C	188m SW	Unspecified Tank	1949	115895
C	188m SW	Tanks	1953	107006
C	189m S	Unspecified Tank	1922 - 1933	148480
C	189m SW	Tanks	1991 - 1996	141538

ID	Location	Land use	Dates present	Group ID
C	189m SW	Unspecified Tank	1933	126116
E	189m NW	Unspecified Tank	1949	128199
C	189m SW	Unspecified Tank	1949	144142
C	190m S	Unspecified Tank	1933	116212
C	191m SW	Tanks	1949	107017
C	191m S	Unspecified Tank	1949 - 1956	130627
C	193m S	Tanks	1949 - 1956	126284
C	193m S	Tanks	1956	135776
E	195m NW	Unspecified Tank	1932	116103
C	195m S	Tanks	1949	137800
E	195m NW	Unspecified Tank	1908 - 1932	136376
C	197m SW	Tanks	1949 - 1953	125647
C	197m S	Tanks	1933	107019
E	198m NW	Unspecified Tank	1949 - 1953	137561
C	199m SW	Unspecified Tank	1893	115896
C	199m SW	Unspecified Tank	1893	115894
C	199m S	Tanks	1933	106987
C	200m SW	Unspecified Tank	1949 - 1953	123188
C	200m SE	Tanks	1956	148736
C	200m SW	Unspecified Tank	1949 - 1980	146400
E	201m NW	Unspecified Tank	1949 - 1953	141153
C	202m SE	Tanks	1949	135168
E	202m NW	Unspecified Tank	1949 - 1953	132611
C	202m SW	Unspecified Tank	1932	116143
C	204m SW	Tanks	1893	106901
C	205m S	Unspecified Tank	1949 - 1953	131278
C	205m SW	Unspecified Tank	1908 - 1932	141627
E	206m NW	Unspecified Tank	1949	116106

ID	Location	Land use	Dates present	Group ID
C	206m SW	Unspecified Tank	1980	116146
C	206m SW	Tanks	1893	107015
C	208m SW	Tanks	1893	106899
C	208m SW	Tanks	1932	106900
C	210m S	Unspecified Tank	1956	115886
C	210m SW	Unspecified Tank	1893	131377
C	211m SE	Tanks	1949 - 1956	134555
C	211m SW	Unspecified Tank	1949 - 1953	143284
C	211m SW	Unspecified Tank	1922	116142
E	217m NW	Unspecified Tank	1949 - 1953	135773
E	217m NW	Unspecified Tank	1949	124488
C	217m S	Tanks	1956	107021
C	218m W	Unspecified Tank	1908	116132
C	219m SE	Tanks	1949 - 1956	140103
C	220m SW	Unspecified Tank	1893	116144
C	220m W	Unspecified Tank	1908	116131
C	221m SW	Unspecified Tank	1994 - 1996	148606
C	223m SW	Tanks	1980	107010
C	223m SW	Unspecified Tank	1991	125828
C	223m SW	Tanks	1980	107003
C	223m SW	Unspecified Tank	1933	115897
C	225m SW	Tanks	1949 - 1953	127812
C	225m SW	Tanks	1949	140484
C	228m SW	Tanks	1949 - 1953	144164
C	228m SW	Unspecified Tank	1922	140591
C	228m SW	Tanks	1949	124694
C	229m S	Unspecified Tank	1949 - 1956	126226
C	230m SW	Tanks	1980	149111

ID	Location	Land use	Dates present	Group ID
C	230m SW	Tanks	1933	107009
C	231m SW	Tanks	1893	107007
C	231m SE	Tanks	1949	106986
C	231m SW	Unspecified Tank	1953	128959
C	231m SW	Unspecified Tank	1949	135741
C	232m SW	Unspecified Tank	1949 - 1953	143527
C	232m SW	Tanks	1949	107002
C	233m SW	Tanks	1933	146085
C	233m SW	Unspecified Tank	1893	116145
C	234m SW	Tanks	1953	126100
C	234m SW	Tanks	1949	133204
C	235m S	Tanks	1908 - 1922	127800
C	236m S	Unspecified Tank	1949 - 1956	146208
C	244m SE	Unspecified Tank	1908 - 1922	124394
C	245m SE	Unspecified Tank	1956	116218
L	245m SE	Unspecified Tank	1970	122422
L	245m SE	Unspecified Tank	1949	132584
L	245m SE	Unspecified Tank	1956	148814
C	245m S	Unspecified Tank	1933	116210
L	245m SE	Unspecified Tank	1949	140290
C	245m SW	Unspecified Tank	1922	115901
C	245m SE	Tanks	1956	123849
C	247m SE	Tanks	1956	145795
C	248m SE	Tanks	1933	122356
C	249m SE	Tanks	1933	143424
C	252m SW	Tanks	1893	107008
F	253m NW	Unspecified Tank	1953	116108
C	254m SW	Unspecified Tank	1893 - 1908	126323

ID	Location	Land use	Dates present	Group ID
C	256m SW	Unspecified Tank	1922	115902
F	260m NW	Unspecified Tank	1949	137467
C	261m SW	Tanks	1893	107012
C	264m SW	Tanks	1908	107013
C	265m S	Unspecified Tank	1956	115885
C	266m SW	Tanks	1922	125089
C	266m S	Tanks	1949	107029
F	268m NW	Unspecified Tank	1949	140973
C	269m SW	Tanks	1933 - 1949	148054
C	270m SW	Tanks	1949	146265
C	271m SW	Unspecified Tank	1893	115904
C	272m SW	Unspecified Tank	1893 - 1933	142254
C	272m SW	Tanks	1953	129972
C	273m SW	Tanks	1893 - 1933	140329
C	273m SW	Unspecified Tank	1893	115899
C	273m S	Tanks	1949	107028
C	276m S	Unspecified Tank	1949	130128
C	276m S	Unspecified Tank	1956	131935
C	276m SW	Tanks	1933	142307
C	276m S	Unspecified Tank	1949	146493
C	280m SE	Unspecified Tank	1956	116199
C	281m SW	Unspecified Tank	1893	115905
C	286m S	Tanks	1933 - 1956	144281
C	291m SE	Tanks	1949 - 1956	126643
C	291m SE	Tanks	1949	132100
C	293m S	Unspecified Tank	1933	116209
C	295m S	Oil Tanks	1908 - 1922	147443
C	297m SE	Tanks	1933	106985

ID	Location	Land use	Dates present	Group ID
C	298m SW	Tanks	1893	107011
C	299m SW	Tanks	1953	122866
F	300m NW	Unspecified Tank	1953	116107
C	301m SW	Tanks	1893	107014
C	302m SW	Tanks	1949	129387
C	303m SW	Tanks	1893	107030
J	305m W	Tank or Trough	1893	121465
C	307m S	Tanks	1956	107032
C	308m SE	Unspecified Tank	1956	116198
F	309m NW	Tanks	1932	106940
C	310m SW	Tanks	1953 - 1980	142664
C	310m SW	Unspecified Tank	1953	126605
C	311m SW	Unspecified Tank	1893 - 1922	125313
F	312m NW	Unspecified Tank	1949	124118
C	313m SW	Tanks	1893	107031
C	314m S	Unspecified Tank	1994	115884
C	317m S	Unspecified Tank	1996	145491
C	317m SE	Tanks	1933	106984
C	318m SE	Tanks	1949 - 1956	136973
C	318m S	Unspecified Tank	1933	116208
H	321m N	Unspecified Tank	1949 - 1953	137913
C	321m SE	Unspecified Tank	1956	116197
C	322m SE	Unspecified Tank	1933	116207
C	322m SW	Unspecified Tank	1893	115898
C	322m SE	Unspecified Tank	1956	127041
C	322m SE	Unspecified Tank	1949	133058
C	323m SE	Unspecified Tank	1949	144528
C	330m SE	Unspecified Tank	1956	116200

ID	Location	Land use	Dates present	Group ID
C	330m SE	Tanks	1956	142343
C	332m SE	Tanks	1949	134551
C	332m SE	Tanks	1949	143724
C	335m SW	Tanks	1953	107034
F	337m NW	Unspecified Tank	1953	116109
H	337m N	Unspecified Tank	1949	125746
H	337m N	Unspecified Tank	1953	140757
H	337m N	Unspecified Tank	1949	147068
C	338m SW	Unspecified Tank	1949	133578
C	338m SW	Unspecified Tank	1949	136267
C	340m SE	Tanks	1933	107027
C	340m SE	Unspecified Tank	1949 - 1956	145897
C	347m SW	Unspecified Tank	1922	115903
C	351m SE	Tanks	1949 - 1956	132932
C	352m SE	Unspecified Tank	1933	116196
C	352m SE	Tanks	1949	143331
C	357m SE	Unspecified Tank	1949 - 1956	137750
C	364m SE	Unspecified Tank	1949 - 1956	133623
C	364m SE	Unspecified Tank	1933	116203
C	365m SE	Unspecified Tank	1949	124403
C	365m SE	Unspecified Tank	1949 - 1956	149350
H	366m NW	Tanks	1949	126621
C	366m S	Tanks	1949 - 1956	140052
C	368m S	Unspecified Tank	1949 - 1956	145954
Q	368m SE	Tanks	1949 - 1970	137054
C	371m SE	Tanks	1933	107025
C	374m SE	Unspecified Tank	1933	116206
C	377m S	Tanks	1956	107035

ID	Location	Land use	Dates present	Group ID
C	381m S	Tanks	1956	107036
C	382m S	Unspecified Tank	1949	116205
C	382m SW	Tanks	1922	107033
C	383m S	Tanks	1949 - 1956	131440
C	385m S	Unspecified Tank	1949 - 1956	139879
C	385m SE	Unspecified Tank	1949	126295
C	385m S	Unspecified Tank	1949	116204
N	386m E	Tanks	1995 - 1996	148941
Q	387m SE	Unspecified Tank	1956	116216
C	387m S	Tanks	1949 - 1956	147326
Q	389m SE	Unspecified Tank	1956	116215
F	390m NW	Unspecified Tank	1953	116110
Q	392m SE	Unspecified Tank	1956	116217
C	395m SE	Unspecified Tank	1956	116201
A	396m SE	Tanks	1922	107026
C	398m SE	Unspecified Tank	1949	128521
Q	399m SE	Tanks	1949 - 1970	136758
C	399m S	Unspecified Tank	1949 - 1956	145907
C	399m S	Unspecified Tank	1949	144706
C	401m SE	Unspecified Tank	1956	116202
C	404m S	Tanks	1949 - 1956	148595
N	407m E	Unspecified Tank	1972 - 1983	132892
C	407m S	Tanks	1949	107043
N	408m E	Unspecified Tank	1979	128235
N	409m E	Tanks	1995 - 1996	147358
C	409m S	Tanks	1949 - 1956	123351
N	409m E	Tanks	1983	135740
C	413m S	Tanks	1949	128453

ID	Location	Land use	Dates present	Group ID
C	413m S	Tanks	1949 - 1956	122910
C	415m S	Tanks	1933	107040
C	417m S	Unspecified Tank	1949 - 1956	138019
C	422m SW	Unspecified Tank	1893	115876
W	423m SW	Unspecified Tank	1922	115877
M	424m NW	Unspecified Tank	1949	132231
M	425m N	Tanks	1953	106939
F	425m NW	Unspecified Tank	1953	116111
W	444m SW	Tanks	1893	107037
F	450m NW	Tanks	1893	106923
Z	455m SE	Unspecified Tank	1950	143296
Z	456m SE	Unspecified Tank	1950	122548
F	456m NW	Tanks	1893	106924
R	462m W	Unspecified Tank	1893	116134
N	466m E	Unspecified Tank	1983	116221
N	466m E	Tanks	1972 - 1983	133020
N	468m E	Unspecified Tank	1979	116220
N	470m E	Unspecified Tank	1972	116219
N	470m E	Tanks	1950	123616
N	471m E	Unspecified Tank	1983	141866
R	480m W	Tanks	1953 - 1985	138315
Y	481m N	Unspecified Tank	1949 - 1953	132858
A	486m SE	Unspecified Tank	1949 - 1970	135938
13	496m NW	Unspecified Tank	1949 - 1953	125977

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	46

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 13 >**

ID	Location	Land use	Dates present	Group ID
C	71m S	Gasometer	1908 - 1932	73248
C	87m SE	Electricity Substation	1949 - 1991	71318
C	88m SE	Electricity Substation	1994	69928
E	121m NW	Electricity Substation	1985	75460
E	121m NW	Electricity Substation	1989	69601
D	155m N	Electricity Substation	1978	73456
D	155m N	Electricity Substation	1972 - 1997	79248
C	157m SE	Electricity Substation	1949	73971
C	157m SE	Electricity Substation	1949 - 1956	67292
F	163m NW	Electricity Generating Station	1908 - 1922	69584
F	173m NW	Electricity Generating Station	1949	75559
F	174m NW	Electricity Generating Station	1949	67122
G	174m E	Electricity Substation	1949 - 1994	74141
G	174m E	Electricity Substation	1986 - 1987	79871
G	175m E	Electricity Substation	1949	68710
G	176m E	Electricity Substation	1997	67404
G	190m E	Electricity Substation	1949	81157
C	236m S	Electricity Substation	1949	62207
C	242m S	Electricity Substation	1949 - 1956	68410
C	245m SE	Electricity Substation	1970 - 1994	70493
C	248m SE	Electricity Substation	1949 - 1956	67188

ID	Location	Land use	Dates present	Group ID
C	249m SW	Electricity Substation	1980	66361
C	249m SW	Electricity Substation	1953	71571
C	252m SW	Electricity Substation	1949	71828
L	261m SE	Electricity Substation	1949 - 1970	84080
C	264m SW	Electricity Substation	1994	68888
C	264m SW	Electricity Substation	1996	69701
C	264m SW	Electricity Substation	1995	74124
C	264m SW	Electricity Substation	1996	75956
C	265m SW	Electricity Substation	1991	74138
5	296m E	Electricity Substation	1956 - 1994	75041
C	298m SE	Electricity Substation	1949 - 1956	65590
C	299m SE	Electricity Substation	1949	69688
J	331m W	Electricity Substation	1991 - 1996	65964
P	346m NW	Electricity Substation	1985	66511
P	346m NW	Electricity Substation	1949 - 1989	69908
C	386m S	Electricity Substation	1949	74084
C	387m S	Electricity Substation	1949 - 1980	79405
U	411m N	Electricity Transformer Station	1985	63378
U	413m N	Electricity Substation	1994	66021
X	425m NE	Electricity Substation	1972 - 1986	84923
X	425m NE	Electricity Substation	1997	66931
U	472m NW	Electricity Substation	1985	85433
A	475m SE	Electricity Substation	1956 - 1970	70055
U	477m NW	Electricity Substation	1989	81063
R	493m W	Electricity Substation	1949 - 1953	82552

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	7

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 13 >**

ID	Location	Land use	Dates present	Group ID
2	124m NE	Garage	1978	20327
D	139m N	Garage	1997	22667
D	139m N	Garage	1972 - 1986	24761
D	139m N	Garage	1978	21189
K	211m NE	Garage	1972	20329
K	240m NE	Garage	1972	20330
4	265m NE	Garage	1972	20328

This data is sourced from Ordnance Survey / Groundsure.

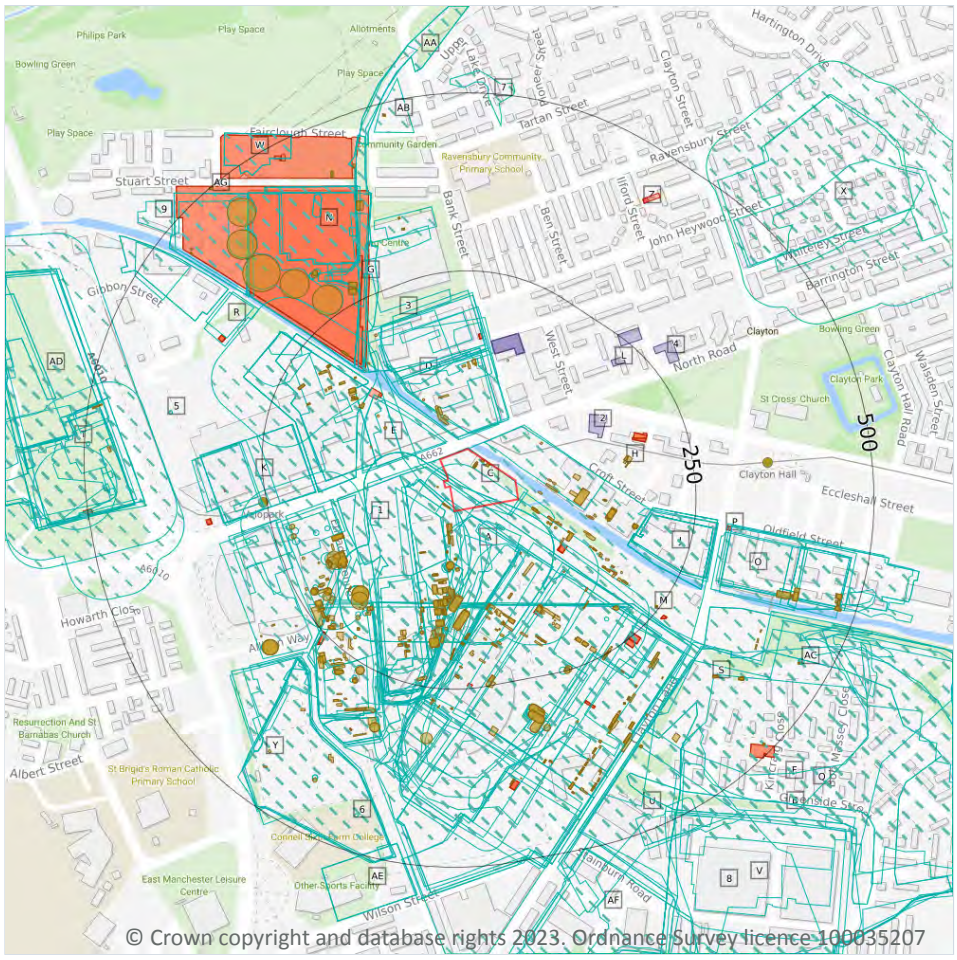
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	291

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 40 >**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Railway Sidings**	**1938**	**882010**
A	**On site**	**Railway Sidings**	**1933**	**968150**
A	**On site**	**Chemical Works**	**1968**	**884000**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Commercial/Industrial**	**1933**	**990094**
A	**On site**	**Chemical Works**	**1921**	**974713**
A	**On site**	**Chemical Works**	**1906**	**950978**
A	**On site**	**Chemical Works**	**1891**	**884944**
A	**On site**	**Unspecified Commercial/Industrial**	**1956**	**853511**
A	**On site**	**Unspecified Works**	**1985**	**943793**
A	**On site**	**Unspecified Works**	**1991**	**943793**
A	**On site**	**Unspecified Commercial/Industrial**	**1923**	**976600**
B	**On site**	**Steel Works**	**1956**	**810023**
C	**On site**	**Unspecified Works**	**1968**	**830471**
A	1m SW	Unspecified Works	1968	984377
A	11m S	Refuse Heap	1923	990889
A	11m S	Refuse Heap	1921	957108
D	17m N	Oil Works	1923	864827
E	19m NW	Unspecified Works	1923	848942
A	19m E	Unspecified Works	1968	830470
D	20m N	Oil Works	1921	864827
D	20m N	Unspecified Commercial/Industrial	1933	796764
E	20m NW	Unspecified Works	1921	848942
A	21m S	Unspecified Heap	1956	923971
A	21m SW	Chemical Works	1923	852811
D	22m N	Unspecified Works	1991	926651
D	23m N	Unspecified Works	1985	898710
A	29m SE	Railway Building	1938	820498
A	36m S	Railway Sidings	1978	846139
E	52m W	Unspecified Works	1968	912430
A	55m W	Unspecified Works	1985	909589
A	55m W	Unspecified Works	1991	909589

ID	Location	Land Use	Date	Group ID
A	57m S	Refuse Heap	1906	858305
A	61m SE	Refuse Heap	1891	858305
A	65m SE	Unspecified Works	1985	940096
D	65m NW	Unspecified Works	1978	847531
A	68m SE	Unspecified Works	1923	856782
A	73m S	Unspecified Tank	1938	901748
A	74m S	Unspecified Tank	1921	922414
A	74m S	Unspecified Tank	1906	922414
A	74m S	Unspecified Tank	1933	922414
A	74m S	Unspecified Tank	1923	922414
E	90m W	Unspecified Works	1985	881370
E	90m W	Unspecified Works	1978	871981
E	90m W	Unspecified Works	1991	881370
1	97m W	Colliery	1851	798316
D	99m N	Chemical Works	1891	834550
D	106m N	Brick Kiln	1851	811031
A	109m SW	Unspecified Works	1923	971621
A	109m SE	Unspecified Works	1978	962557
A	112m SW	Unspecified Works	1978	896127
A	116m W	Unspecified Commercial/Industrial	1906	934228
E	118m W	Chemical Works	1921	885077
E	118m W	Chemical Works	1906	885077
E	118m W	Chemical Works	1933	885077
E	118m W	Chemical Works	1923	885077
A	121m SE	Unspecified Works	1991	870723
E	121m W	Unspecified Works	1968	866157
D	122m N	Unspecified Works	1991	898710
D	125m N	Unspecified Works	1985	898710

ID	Location	Land Use	Date	Group ID
A	125m W	Chemical Works	1923	883999
A	128m S	Alkali Works	1915	908859
A	128m S	Refuse Heap	1915	858305
D	129m N	Refuse Heap	1891	829165
A	130m S	Refuse Heap	1905	858305
A	130m S	Railway Sidings	1934	968150
A	130m S	Unspecified Commercial/Industrial	1938	888176
F	130m S	Railway Sidings	1938	882010
F	130m S	Railway Sidings	1938	882010
A	130m S	Unspecified Commercial/Industrial	1905	934228
A	130m S	Alkali Works	1938	961180
A	130m S	Alkali Works	1934	961180
A	132m S	Unspecified Heap	1938	913510
A	132m S	Unspecified Heap	1934	913510
D	133m N	Unspecified Works	1978	847531
A	135m S	Chemical Works	1890	884944
A	135m S	Unspecified Works	1915	960638
A	135m SW	Unspecified Commercial/Industrial	1851	976601
A	136m S	Refuse Heap	1890	858305
A	137m S	Unspecified Works	1905	851601
E	137m NW	Brick Field	1891	817951
A	138m S	Chemical Works	1934	888408
A	140m S	Refuse	1956	802112
D	143m N	Unspecified Works	1968	918867
A	153m W	Unspecified Works	1968	830473
G	153m NW	Mineral Railway Sidings	1938	884558
G	153m NW	Mineral Railway Sidings	1933	884558
A	159m SW	Unspecified Commercial/Industrial	1891	898012

ID	Location	Land Use	Date	Group ID
I	163m NW	Mineral Railway Sidings	1906	981108
A	165m S	Refuse Heap	1968	925604
J	167m SE	Finishing Works	1921	946441
J	167m SE	Finishing Works	1906	946441
J	167m SE	Unspecified Commercial/Industrial	1891	972255
J	167m SE	Finishing Works	1938	946441
J	167m SE	Finishing Works	1933	946441
J	167m SE	Finishing Works	1923	946441
A	167m SW	Unspecified Tank	1906	854058
A	167m SW	Unspecified Tank	1891	984869
A	167m SW	Unspecified Tank	1938	854058
A	167m SW	Unspecified Tank	1933	854058
A	167m SW	Unspecified Tank	1923	923831
J	169m E	Unspecified Works	1968	922944
G	169m NW	Railway Sidings	1921	984262
J	170m E	Unspecified Works	1985	884614
J	170m E	Unspecified Works	1978	910195
J	170m E	Unspecified Works	1991	884614
A	170m W	Unspecified Commercial/Industrial	1923	976599
A	171m SW	Unspecified Tank	1891	929119
A	171m SW	Chemical Works	1915	950978
A	172m W	Unspecified Tank	1906	825294
A	176m SW	Unspecified Commercial/Industrial	1934	990094
A	176m SW	Unspecified Tank	1906	954049
G	177m NW	Electricity Generating Station	1921	989056
G	177m NW	Electricity Generating Station	1906	989056
G	177m NW	Unspecified Commercial/Industrial	1938	943603
G	177m NW	Unspecified Commercial/Industrial	1933	943603

ID	Location	Land Use	Date	Group ID
G	177m NW	Electricity Generating Station	1923	989056
K	180m W	Unspecified Works	1985	979935
K	180m W	Unspecified Works	1991	979935
K	180m W	Unspecified Works	1968	934878
A	182m SW	Unspecified Tank	1923	942989
A	187m SW	Chimney	1851	835765
A	188m W	Unspecified Tank	1906	825295
A	194m SW	Unspecified Tank	1915	825263
3	204m N	Unspecified Ground Workings	1923	800633
A	205m SW	Unspecified Tank	1891	825264
A	206m SE	Unspecified Tank	1923	825262
A	213m SW	Unspecified Tank	1923	825265
A	215m W	Unspecified Tank	1891	825298
A	218m W	Unspecified Tank	1891	852618
A	219m SW	Unspecified Tank	1923	825266
A	222m W	Unspecified Tank	1906	825297
A	224m W	Unspecified Tank	1906	852618
A	233m W	Unspecified Depot	1985	818423
E	235m NW	Unspecified Ground Workings	1906	800643
A	237m SE	Unspecified Commercial/Industrial	1968	926845
A	239m W	Unspecified Works	1968	830472
A	239m SW	Chemical Works	1851	965952
A	239m SW	Refuse Heap	1938	935650
A	240m SW	Refuse Heap	1934	935650
G	240m NW	Railway Sidings	1923	984262
A	242m SE	Unspecified Tank	1915	911915
E	243m NW	Unspecified Pit	1938	840552
A	244m SE	Unspecified Tank	1923	911915

ID	Location	Land Use	Date	Group ID
K	245m W	Unspecified Works	1968	865836
A	252m W	Unspecified Commercial/Industrial	1923	976598
G	252m NW	Unspecified Tanks	1968	815392
A	253m SW	Unspecified Tank	1905	825259
A	253m SW	Colliery	1851	798314
K	255m W	Engineering Works	1921	917015
K	257m W	Engineering Works	1923	917015
A	268m S	Unspecified Works	1978	865300
A	269m SW	Unspecified Works	1968	830486
A	269m SW	Unspecified Tank	1915	976902
A	272m SW	Unspecified Tank	1915	871679
A	272m S	Unspecified Disused Mill	1905	827218
A	274m SW	Unspecified Tank	1923	952557
A	278m SW	Unspecified Tank	1923	871679
A	284m W	Coal Pit	1851	808491
A	286m S	Oil Tanks	1915	934088
A	286m S	Oil Tanks	1905	975013
A	286m S	Oil Tanks	1923	852756
A	286m SW	Unspecified Works	1985	871686
N	287m NW	Unspecified Works	1985	923303
A	288m S	Unspecified Works	1985	870723
A	288m S	Unspecified Works	1991	870723
A	290m SW	Unspecified Works	1968	854915
O	290m E	Unspecified Commercial/Industrial	1923	796793
A	291m S	Unspecified Tank	1938	914329
A	292m SW	Unspecified Tanks	1968	815401
A	292m S	Unspecified Tank	1934	914329
I	294m N	Unspecified Heap	1923	804178

ID	Location	Land Use	Date	Group ID
O	295m E	Chemical Works	1978	918950
A	297m SW	Wheel Works	1915	949526
O	299m E	Unspecified Works	1968	849751
N	299m NW	Unspecified Works	1978	990122
N	299m NW	Electric Generating Station	1968	842028
A	300m S	Unspecified Tank	1938	914329
A	300m SW	Chemical Works	1905	971581
A	300m SW	Wheel Works	1923	949526
A	300m SW	Chemical Works	1923	857688
A	302m S	Unspecified Tank	1934	914329
O	302m E	Chemical Works	1891	981333
O	302m E	Unspecified Works	1985	929483
O	302m E	Unspecified Works	1991	929483
A	302m SW	Disused Chemical Works	1938	866287
A	302m SW	Disused Chemical Works	1934	866287
A	303m SW	Size Works	1923	908918
A	305m SW	Chemical Works	1915	857688
A	308m SW	Size Works	1938	991102
A	308m SW	Unspecified Works	1934	901782
A	308m SW	Unspecified Works	1915	877861
G	309m NW	Unspecified Tank	1938	936093
Q	309m SE	Railway Sidings	1934	882010
Q	309m SE	Engineering Works	1934	912693
G	310m NW	Unspecified Tank	1968	924537
G	310m NW	Unspecified Tank	1933	936093
A	313m SW	Unspecified Tank	1923	825267
I	313m N	Chemicals Works	1891	795013
A	313m S	Unspecified Tank	1934	825249

ID	Location	Land Use	Date	Group ID
A	315m S	Unspecified Mill	1890	961717
Q	318m SE	Railway Sidings	1968	862695
R	330m NW	Unspecified Mill	1985	976402
Q	330m SE	Railway Sidings	1956	877918
Q	332m SE	Engineering Works	1923	951144
R	337m NW	Unspecified Mill	1968	853462
A	339m S	Unspecified Mill	1851	961717
G	348m NW	Unspecified Mills	1891	917092
G	353m NW	Unspecified Mills	1921	981518
G	353m NW	Unspecified Mills	1906	981518
G	353m NW	Unspecified Mills	1923	981518
A	360m S	Unspecified Ground Workings	1934	800644
A	360m S	Unspecified Heap	1938	804174
A	368m S	Unspecified Works	1915	912251
Q	369m SE	Unspecified Works	1968	923446
T	369m W	Colliery	1968	890493
A	372m S	Unspecified Works	1923	912251
A	374m S	Unspecified Heap	1938	804175
T	375m W	Colliery	1891	971185
N	381m NW	Unspecified Tanks	1978	815393
N	381m NW	Chimneys	1968	844028
5	382m W	Coal Pit	1851	808493
G	382m NW	Unspecified Works	1985	927491
G	382m NW	Unspecified Works	1991	927491
U	385m SE	Motor Works	1905	833283
O	389m E	Brewery	1968	958488
O	391m E	Brewery	1923	913193
O	403m E	Brewery	1921	904415

ID	Location	Land Use	Date	Group ID
O	403m E	Vinegar Brewery	1906	831121
O	403m E	Brewery	1938	854933
O	403m E	Brewery	1933	854933
V	409m SE	Engineering Works	1938	884631
Q	416m SE	Unspecified Heap	1985	854063
Q	416m SE	Unspecified Heap	1991	854063
A	418m SW	Unspecified Tank	1934	825268
A	418m SW	Unspecified Tanks	1915	815400
T	418m W	Colliery	1851	887196
Q	419m SE	Railway Sidings	1915	870808
T	419m W	Unspecified Depot	1985	983795
T	419m W	Unspecified Depot	1991	983795
X	421m NE	Brick Works	1906	964206
T	430m W	Iron Works	1956	988439
T	433m W	Colliery	1921	878194
T	433m W	Colliery	1906	878194
T	433m W	Railway Sidings	1906	845027
T	433m W	Colliery	1923	878194
T	434m W	Unspecified Commercial/Industrial	1938	879239
T	434m W	Unspecified Commercial/Industrial	1933	879239
Q	438m SE	Railway Sidings	1923	924696
O	440m SE	Refuse Heap	1968	927998
X	443m NE	Brick Works	1923	925321
G	443m NW	Unspecified Works	1968	848975
O	446m SE	Refuse Heap	1956	927998
6	447m S	Coal Pit	1851	808506
X	448m NE	Brick Works	1921	925321
AA	449m N	Railway Sidings	1956	911076

ID	Location	Land Use	Date	Group ID
AA	449m N	Railway Sidings	1968	911076
AB	450m N	Unspecified Works	1891	830466
AC	454m SE	Unspecified Tank	1968	825260
T	455m W	Unspecified Disused Shafts	1991	958517
T	456m W	Railway Sidings	1938	923517
T	456m W	Railway Sidings	1933	923517
7	457m N	Unspecified Ground Workings	1906	800634
T	458m W	Unspecified Disused Shafts	1985	877729
T	460m W	Unspecified Disused Shafts	1985	849285
T	465m W	Unspecified Shafts	1978	809312
T	466m W	Railway Sidings	1923	872908
T	467m W	Unspecified Shafts	1978	809313
AD	468m W	Unspecified Commercial/Industrial	1891	895595
X	471m NE	Unspecified Ground Workings	1906	800635
W	472m NW	Electric Substation	1985	982245
W	472m NW	Electric Substation	1991	982245
T	473m W	Railway Sidings	1921	872908
AE	473m S	Unspecified Works	1985	950101
AE	473m S	Unspecified Works	1991	950101
AE	473m S	Unspecified Works	1968	953001
O	474m SE	Sand Pit	1923	904794
AD	475m W	Unspecified Works	1985	988793
U	478m SE	Unspecified Pit	1890	840558
AD	481m W	Unspecified Commercial/Industrial	1978	895595
AD	481m W	Unspecified Works	1968	868023
O	482m E	Refuse Heap	1956	891215
O	483m SE	Sand Pit	1915	904794
O	483m E	Refuse Heap	1968	891215

ID	Location	Land Use	Date	Group ID
V	484m SE	Unspecified Works	1978	878377
AF	488m S	Unspecified Works	1968	922875
8	489m SE	Dye Works	1851	870141
9	491m NW	Unspecified Works	1968	830467
AF	492m S	Unspecified Works	1985	862949
T	492m W	Coal Pit	1851	808492
V	492m SE	Unspecified Works	1985	985355
AF	499m S	Dye Works	1923	920128

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**634**

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 40 >**

ID	Location	Land Use	Date	Group ID
C	**On site**	**Tanks**	**1932**	**147569**
C	**On site**	**Tanks**	**1949**	**141083**
C	**On site**	**Unspecified Tank**	**1949**	**132250**
C	**On site**	**Tanks**	**1949**	**147569**
C	**On site**	**Unspecified Tank**	**1956**	**132250**
C	**On site**	**Tanks**	**1956**	**147569**
C	**On site**	**Tanks**	**1949**	**147569**
C	**On site**	**Tanks**	**1949**	**141083**
A	5m SW	Tanks	1980	145616
A	5m SW	Tanks	1970	145616
A	9m W	Unspecified Tank	1908	116153
A	18m SW	Tanks	1949	129322

ID	Location	Land Use	Date	Group ID
A	18m SW	Tanks	1949	147383
A	20m SW	Tanks	1949	144568
A	23m SE	Tanks	1949	130026
A	23m SE	Tanks	1949	147429
A	26m SE	Tanks	1932	137765
A	27m SW	Unspecified Tank	1956	116154
A	29m SW	Tanks	1956	143578
A	29m E	Tanks	1893	106915
A	34m SW	Tanks	1956	106917
A	41m E	Tanks	1893	106913
D	41m NW	Tanks	1893	145942
A	45m E	Tanks	1908	106916
D	48m NW	Tanks	1908	106941
A	49m SE	Tanks	1908	149311
A	49m SE	Tanks	1922	149311
A	51m E	Tanks	1908	106914
A	52m SE	Unspecified Tank	1908	130097
A	52m SE	Unspecified Tank	1922	130097
A	56m SE	Unspecified Tank	1908	147975
A	56m SE	Unspecified Tank	1922	147975
A	57m SW	Unspecified Tank	1949	125137
A	57m SW	Unspecified Tank	1949	125137
A	57m SW	Unspecified Tank	1956	125137
D	57m NW	Tanks	1908	141266
A	60m SE	Unspecified Tank	1922	116231
A	62m NE	Unspecified Tank	1932	116230
A	63m SE	Unspecified Tank	1908	129690
A	63m SE	Unspecified Tank	1922	129690

ID	Location	Land Use	Date	Group ID
A	65m SE	Unspecified Tank	1908	116228
A	66m S	Unspecified Tank	1949	138481
A	66m S	Unspecified Tank	1956	138481
A	66m S	Unspecified Tank	1949	138481
A	68m SE	Unspecified Tank	1908	144291
A	68m SE	Unspecified Tank	1922	144291
A	70m SW	Tanks	1949	122935
A	70m SW	Tanks	1956	122935
A	70m SW	Tanks	1949	122935
A	71m S	Gasometer	1908	135678
A	71m S	Gasometer	1922	135678
A	71m S	Gasometer	1932	135678
A	72m E	Tanks	1956	106912
A	74m SE	Unspecified Tank	1956	116223
A	78m E	Unspecified Tank	1922	130905
A	78m E	Unspecified Tank	1932	130905
D	79m N	Tanks	1893	106942
A	80m S	Unspecified Tank	1949	129535
A	80m S	Unspecified Tank	1956	129535
A	80m E	Unspecified Tank	1932	116232
A	82m S	Tanks	1949	106909
A	82m S	Unspecified Tank	1949	133157
A	82m S	Unspecified Tank	1956	133157
A	83m SE	Tanks	1949	127388
A	83m SE	Tanks	1949	127388
A	83m SE	Tanks	1956	127388
A	84m SE	Unspecified Tank	1932	116227
D	85m NW	Unspecified Tank	1908	116152

ID	Location	Land Use	Date	Group ID
E	87m NW	Unspecified Tank	1908	116150
A	90m SE	Unspecified Tank	1932	116224
A	91m SW	Tanks	1949	127871
A	91m SW	Tanks	1949	127871
A	91m SW	Unspecified Tank	1956	116155
A	93m SW	Unspecified Tank	1956	116157
A	94m S	Tanks	1956	106903
E	98m W	Unspecified Tank	1908	116151
A	98m E	Tanks	1956	145441
A	99m S	Tanks	1956	135686
A	100m S	Tanks	1949	139548
A	100m S	Tanks	1949	139548
A	101m S	Unspecified Tank	1956	116158
A	102m E	Tanks	1949	145441
A	103m SE	Unspecified Tank	1932	116226
E	105m NW	Unspecified Tank	1908	116149
A	106m S	Tanks	1980	132520
A	106m S	Tanks	1980	134738
A	107m S	Tanks	1970	134738
A	107m S	Tanks	1970	125368
A	107m SE	Tanks	1908	106911
A	108m S	Tanks	1970	134893
A	108m E	Unspecified Tank	1956	116233
A	109m S	Tanks	1956	106902
A	110m S	Tanks	1970	149120
D	112m N	Tanks	1949	106938
D	115m N	Unspecified Tank	1949	116105
A	117m S	Tanks	1994	130302

ID	Location	Land Use	Date	Group ID
D	118m N	Tanks	1949	143710
D	118m N	Tanks	1949	143710
A	119m S	Tanks	1987	128908
A	119m S	Tanks	1991	128908
A	119m S	Tanks	1949	132520
A	119m SE	Unspecified Tank	1956	116225
A	119m S	Tanks	1949	125997
A	119m S	Tanks	1956	125997
A	119m E	Tanks	1970	146379
A	119m E	Tanks	1956	146379
A	120m SE	Tanks	1956	106910
A	121m E	Tanks	1980	146379
A	124m S	Tanks	1949	129500
A	124m S	Tanks	1956	129500
A	124m S	Tanks	1949	146047
A	124m S	Tanks	1956	146047
A	125m E	Unspecified Tank	1956	116234
A	125m SE	Tanks	1949	128110
A	125m SE	Tanks	1949	128110
A	125m SE	Tanks	1956	128110
A	125m E	Tanks	1949	129402
A	126m E	Tanks	1949	129402
A	126m E	Tanks	1970	129402
A	126m E	Tanks	1956	129402
A	127m S	Tanks	1980	128189
A	127m S	Tanks	1970	147267
A	127m S	Tanks	1956	147267
A	127m S	Tanks	1970	134022

ID	Location	Land Use	Date	Group ID
A	128m S	Unspecified Tank	1949	148566
A	128m S	Unspecified Tank	1956	148566
A	129m E	Unspecified Tank	1970	131573
A	129m E	Unspecified Tank	1956	131573
A	129m SW	Unspecified Tank	1956	116156
A	130m E	Unspecified Tank	1980	131573
E	130m NW	Tanks	1953	133368
E	130m NW	Tanks	1949	133368
A	133m SW	Tanks	1956	107001
D	135m N	Unspecified Tank	1922	116229
A	137m S	Tanks	1970	134955
A	137m S	Tanks	1949	134955
A	137m S	Tanks	1956	134955
A	137m SE	Tanks	1956	106908
A	137m S	Unspecified Tank	1949	125464
A	137m S	Unspecified Tank	1949	149190
A	138m S	Tanks	1970	145885
A	138m S	Tanks	1949	145885
A	138m S	Tanks	1956	145885
A	138m S	Tanks	1949	107000
A	138m S	Tanks	1949	139310
A	138m S	Tanks	1970	126070
A	138m S	Tanks	1956	126070
A	138m S	Tanks	1994	138407
A	138m S	Tanks	1949	140666
A	138m S	Tanks	1956	140666
A	139m SE	Tanks	1956	106907
A	139m S	Tanks	1949	140666

ID	Location	Land Use	Date	Group ID
A	140m S	Tanks	1987	138407
A	140m S	Tanks	1991	138407
A	141m SW	Unspecified Tank	1949	129303
A	142m SW	Unspecified Tank	1949	129303
E	143m NW	Tanks	1932	126372
E	144m NW	Tanks	1949	126372
E	144m NW	Tanks	1949	126372
A	145m S	Tanks	1949	106998
A	146m S	Tanks	1949	106999
E	148m NW	Unspecified Tank	1953	116148
A	149m S	Unspecified Tank	1956	116222
A	149m SE	Tanks	1908	106906
A	149m S	Unspecified Tank	1908	116211
E	149m NW	Tanks	1932	123263
A	151m SW	Tanks	1956	107004
A	151m SE	Tanks	1956	106996
A	151m SE	Tanks	1949	147755
A	152m SE	Tanks	1949	147755
A	152m SE	Tanks	1956	147755
A	152m SE	Tanks	1949	130314
A	152m SE	Tanks	1956	130314
A	152m S	Tanks	1956	106997
E	152m NW	Tanks	1953	144825
E	152m NW	Tanks	1949	144825
A	152m SE	Tanks	1949	130314
A	152m S	Tanks	1933	106991
E	152m NW	Tanks	1949	144825
A	153m S	Tanks	1980	134369

ID	Location	Land Use	Date	Group ID
A	153m S	Tanks	1970	134369
A	153m S	Tanks	1956	134369
H	154m E	Unspecified Tank	1980	126030
A	154m S	Tanks	1949	129933
A	154m S	Tanks	1949	129933
H	155m E	Unspecified Tank	1987	123928
H	155m E	Unspecified Tank	1991	123928
H	155m E	Unspecified Tank	1970	136270
H	155m E	Unspecified Tank	1956	136270
A	156m SE	Tanks	1933	128745
A	156m S	Unspecified Tank	1949	143950
A	156m S	Unspecified Tank	1956	143950
A	156m S	Unspecified Tank	1956	115891
A	157m SE	Unspecified Tank	1949	143387
A	157m SE	Unspecified Tank	1956	143387
A	157m SE	Tanks	1956	106905
A	158m W	Tanks	1980	135435
A	158m W	Tanks	1996	135435
A	158m W	Tanks	1996	135435
A	158m W	Tanks	1995	135435
A	158m W	Tanks	1994	135435
A	159m W	Tanks	1991	135435
A	159m SE	Tanks	1933	148293
A	161m S	Tanks	1956	136070
A	161m SE	Unspecified Tank	1949	123851
A	161m SE	Unspecified Tank	1956	123851
A	162m SE	Tanks	1949	140552
A	163m S	Unspecified Tank	1922	115890

ID	Location	Land Use	Date	Group ID
A	164m S	Unspecified Tank	1956	116213
E	164m NW	Unspecified Tank	1953	127483
E	164m NW	Unspecified Tank	1949	146177
A	164m SW	Unspecified Tank	1908	135606
A	164m SW	Unspecified Tank	1922	135606
A	164m SW	Unspecified Tank	1932	135606
E	164m NW	Unspecified Tank	1949	142735
A	165m S	Tanks	1956	140497
A	165m E	Tanks	1949	125749
A	165m E	Tanks	1956	125749
A	165m E	Unspecified Tank	1932	128827
A	165m E	Unspecified Tank	1949	128827
A	165m S	Tanks	1933	106990
A	165m SW	Tanks	1980	126525
A	166m SW	Tanks	1996	130435
A	166m SW	Tanks	1996	130435
A	166m SW	Tanks	1995	130435
A	166m SW	Tanks	1994	122430
A	166m S	Unspecified Tank	1949	129419
E	166m NW	Unspecified Tank	1932	116104
A	166m SW	Tanks	1991	123174
A	167m S	Unspecified Tank	1949	129419
A	167m S	Unspecified Tank	1956	129419
A	168m S	Unspecified Tank	1893	115892
A	169m S	Tanks	1994	142641
A	169m SE	Unspecified Tank	1949	142031
A	170m SE	Tanks	1932	130638
A	170m SE	Tanks	1956	141111

ID	Location	Land Use	Date	Group ID
A	171m SE	Unspecified Tank	1908	127575
A	171m SE	Unspecified Tank	1922	127575
A	171m SW	Unspecified Tank	1893	131619
E	171m NW	Unspecified Tank	1953	134719
E	171m NW	Unspecified Tank	1949	134719
A	172m SE	Tanks	1956	137053
A	172m S	Tanks	1949	107018
A	172m SW	Unspecified Tank	1922	143824
A	173m S	Unspecified Tank	1956	115889
A	173m S	Tanks	1949	127712
A	173m S	Tanks	1956	127712
A	173m SE	Tanks	1956	106995
A	173m S	Tanks	1922	141942
A	173m S	Tanks	1933	145111
A	174m S	Unspecified Tank	1922	140860
A	174m S	Tanks	1949	136076
A	174m S	Tanks	1956	136076
A	174m S	Tanks	1933	126460
A	174m S	Unspecified Tank	1933	140860
A	176m SW	Tanks	1953	146447
A	176m SW	Tanks	1949	146447
A	177m SW	Tanks	1949	123155
A	177m SE	Unspecified Tank	1922	116235
A	177m S	Unspecified Tank	1956	115887
A	177m SW	Tanks	1893	106918
A	177m SE	Tanks	1956	106994
A	178m SW	Unspecified Tank	1893	143824
A	179m SE	Tanks	1956	106904

ID	Location	Land Use	Date	Group ID
A	179m SW	Unspecified Tank	1932	116147
A	179m S	Tanks	1987	132827
A	179m S	Tanks	1991	132827
A	180m SE	Tanks	1933	106992
A	180m SW	Tanks	1953	107016
A	181m S	Tanks	1949	106988
E	182m NW	Unspecified Tank	1949	129924
A	182m S	Unspecified Tank	1956	115888
A	182m SE	Tanks	1933	106993
E	182m NW	Unspecified Tank	1949	129924
A	182m SW	Unspecified Tank	1949	115893
A	183m SW	Unspecified Tank	1893	144915
A	184m S	Tanks	1949	107020
A	184m SW	Tanks	1933	107005
A	184m S	Tanks	1956	106989
A	184m S	Unspecified Tank	1956	126992
A	184m S	Unspecified Tank	1949	148424
A	185m SE	Unspecified Tank	1949	124412
A	185m SE	Unspecified Tank	1949	124412
E	185m NW	Unspecified Tank	1932	116130
A	186m SW	Unspecified Tank	1908	137919
A	187m SW	Tanks	1980	126490
A	187m SW	Tanks	1953	126490
A	187m SW	Tanks	1949	126490
A	187m SW	Tanks	1949	144875
A	187m SW	Tanks	1991	128183
A	188m SW	Unspecified Tank	1949	115895
A	188m SW	Tanks	1953	107006

ID	Location	Land Use	Date	Group ID
A	189m S	Unspecified Tank	1933	148480
A	189m SW	Tanks	1996	141538
A	189m SW	Tanks	1996	141538
A	189m SW	Tanks	1995	141538
A	189m SW	Tanks	1994	141538
A	189m SW	Unspecified Tank	1933	126116
E	189m NW	Unspecified Tank	1949	128199
A	189m S	Unspecified Tank	1922	148480
A	189m SW	Unspecified Tank	1949	144142
A	190m SW	Tanks	1991	141538
A	190m S	Unspecified Tank	1933	116212
A	191m SW	Tanks	1949	107017
A	191m S	Unspecified Tank	1949	130627
A	191m S	Unspecified Tank	1956	130627
A	191m S	Unspecified Tank	1949	130627
A	193m S	Tanks	1949	126284
A	193m S	Tanks	1956	126284
A	193m S	Tanks	1949	126284
A	193m S	Tanks	1956	135776
E	195m NW	Unspecified Tank	1932	116103
A	195m S	Tanks	1949	137800
A	195m S	Tanks	1949	137800
E	195m NW	Unspecified Tank	1908	136376
E	195m NW	Unspecified Tank	1922	136376
E	195m NW	Unspecified Tank	1932	136376
A	197m SW	Tanks	1953	125647
A	197m SW	Tanks	1949	125647
A	197m SW	Tanks	1949	125647

ID	Location	Land Use	Date	Group ID
A	197m S	Tanks	1933	107019
E	198m NW	Unspecified Tank	1953	137561
E	198m NW	Unspecified Tank	1949	137561
E	198m NW	Unspecified Tank	1949	137561
A	199m SW	Unspecified Tank	1893	115896
A	199m SW	Unspecified Tank	1893	115894
A	199m S	Tanks	1933	106987
A	200m SW	Unspecified Tank	1953	123188
A	200m SW	Unspecified Tank	1949	123188
A	200m SE	Tanks	1956	148736
A	200m SW	Unspecified Tank	1980	146400
A	200m SW	Unspecified Tank	1953	146400
A	200m SW	Unspecified Tank	1949	146400
A	201m SW	Unspecified Tank	1949	146400
E	201m NW	Unspecified Tank	1953	141153
E	201m NW	Unspecified Tank	1949	141153
A	202m SE	Tanks	1949	135168
A	202m SE	Tanks	1949	135168
E	202m NW	Unspecified Tank	1949	132611
E	202m NW	Unspecified Tank	1953	132611
E	202m NW	Unspecified Tank	1949	132611
A	202m SW	Unspecified Tank	1932	116143
E	203m NW	Unspecified Tank	1953	132611
E	203m NW	Unspecified Tank	1949	132611
A	204m SW	Tanks	1893	106901
A	205m S	Unspecified Tank	1953	131278
A	205m S	Unspecified Tank	1949	131278
A	205m S	Unspecified Tank	1949	131278

ID	Location	Land Use	Date	Group ID
A	205m SW	Unspecified Tank	1908	141627
A	205m SW	Unspecified Tank	1922	141627
A	205m SW	Unspecified Tank	1932	141627
E	206m NW	Unspecified Tank	1949	116106
A	206m SW	Unspecified Tank	1980	116146
A	206m SW	Tanks	1893	107015
A	208m SW	Tanks	1893	106899
A	208m SW	Tanks	1932	106900
A	210m S	Unspecified Tank	1956	115886
A	210m SW	Unspecified Tank	1893	131377
A	211m SE	Tanks	1949	134555
A	211m SE	Tanks	1956	134555
A	211m SE	Tanks	1949	134555
A	211m SW	Unspecified Tank	1953	143284
A	211m SW	Unspecified Tank	1949	143284
A	211m SW	Unspecified Tank	1922	116142
A	212m SW	Unspecified Tank	1949	143284
E	217m NW	Unspecified Tank	1953	135773
E	217m NW	Unspecified Tank	1949	135773
E	217m NW	Unspecified Tank	1949	124488
A	217m S	Tanks	1956	107021
A	218m W	Unspecified Tank	1908	116132
A	219m SE	Tanks	1949	140103
A	219m SE	Tanks	1956	140103
A	219m SE	Tanks	1949	140103
A	220m SW	Unspecified Tank	1893	116144
A	220m W	Unspecified Tank	1908	116131
A	221m SW	Unspecified Tank	1996	148606

ID	Location	Land Use	Date	Group ID
A	221m SW	Unspecified Tank	1996	148606
A	221m SW	Unspecified Tank	1995	148606
A	221m SW	Unspecified Tank	1994	148606
A	223m SW	Tanks	1980	107010
A	223m SW	Unspecified Tank	1991	125828
A	223m SW	Tanks	1980	107003
A	223m SW	Unspecified Tank	1933	115897
A	225m SW	Tanks	1953	127812
A	225m SW	Tanks	1949	127812
A	225m SW	Tanks	1949	140484
A	228m SW	Tanks	1953	144164
A	228m SW	Tanks	1949	144164
A	228m SW	Unspecified Tank	1922	140591
A	228m SW	Tanks	1949	124694
A	229m S	Unspecified Tank	1949	126226
A	229m S	Unspecified Tank	1956	126226
A	230m SW	Tanks	1980	149111
A	230m SW	Tanks	1933	107009
A	231m SW	Tanks	1893	107007
A	231m SE	Tanks	1949	106986
A	231m SW	Unspecified Tank	1953	128959
A	231m SW	Unspecified Tank	1949	135741
A	232m SW	Unspecified Tank	1953	143527
A	232m SW	Unspecified Tank	1949	143527
A	232m SW	Tanks	1949	107002
A	233m SW	Tanks	1933	146085
A	233m SW	Unspecified Tank	1893	116145
A	234m SW	Tanks	1953	126100

ID	Location	Land Use	Date	Group ID
A	234m SW	Tanks	1949	133204
A	234m SW	Tanks	1949	133204
A	235m S	Tanks	1908	127800
A	236m S	Unspecified Tank	1949	146208
A	236m S	Unspecified Tank	1956	146208
A	238m S	Tanks	1922	127800
A	244m SE	Unspecified Tank	1908	124394
A	245m SE	Unspecified Tank	1956	116218
M	245m SE	Unspecified Tank	1970	122422
M	245m SE	Unspecified Tank	1949	132584
M	245m SE	Unspecified Tank	1956	148814
A	245m S	Unspecified Tank	1933	116210
M	245m SE	Unspecified Tank	1949	140290
A	245m SW	Unspecified Tank	1922	115901
A	245m SE	Tanks	1956	123849
A	246m SE	Unspecified Tank	1922	124394
A	247m SE	Tanks	1956	145795
A	248m SE	Tanks	1933	122356
A	249m SE	Tanks	1933	143424
A	252m SW	Tanks	1893	107008
G	253m NW	Unspecified Tank	1953	116108
A	254m SW	Unspecified Tank	1893	126323
A	254m SW	Unspecified Tank	1908	126323
A	256m SW	Unspecified Tank	1922	115902
G	260m NW	Unspecified Tank	1949	137467
G	260m NW	Unspecified Tank	1949	137467
A	261m SW	Tanks	1893	107012
A	264m SW	Tanks	1908	107013

ID	Location	Land Use	Date	Group ID
A	265m S	Unspecified Tank	1956	115885
A	266m SW	Tanks	1922	125089
A	266m S	Tanks	1949	107029
G	268m NW	Unspecified Tank	1949	140973
G	269m NW	Unspecified Tank	1949	140973
A	269m SW	Tanks	1949	148054
A	270m SW	Tanks	1949	146265
A	271m SW	Unspecified Tank	1893	115904
A	272m SW	Unspecified Tank	1893	142254
A	272m SW	Unspecified Tank	1908	142254
A	272m SW	Tanks	1953	129972
A	273m SW	Unspecified Tank	1922	142254
A	273m SW	Unspecified Tank	1933	142254
A	273m SW	Tanks	1893	140329
A	273m SW	Tanks	1908	140329
A	273m SW	Unspecified Tank	1893	115899
A	273m SW	Tanks	1922	140329
A	273m SW	Tanks	1933	140329
A	273m S	Tanks	1949	107028
A	276m SW	Tanks	1933	148054
A	276m S	Unspecified Tank	1949	130128
A	276m S	Unspecified Tank	1956	131935
A	276m SW	Tanks	1933	142307
A	276m S	Unspecified Tank	1949	146493
A	280m SE	Unspecified Tank	1956	116199
A	281m SW	Unspecified Tank	1893	115905
A	286m S	Tanks	1949	144281
A	286m S	Tanks	1956	144281

ID	Location	Land Use	Date	Group ID
A	287m S	Tanks	1949	144281
A	291m SE	Tanks	1949	126643
A	291m SE	Tanks	1956	126643
A	291m SE	Tanks	1949	132100
A	293m S	Unspecified Tank	1933	116209
A	295m S	Oil Tanks	1908	147443
A	295m S	Oil Tanks	1922	147443
A	296m S	Tanks	1933	144281
A	297m SE	Tanks	1933	106985
A	298m SW	Tanks	1893	107011
A	299m SW	Tanks	1953	122866
G	300m NW	Unspecified Tank	1953	116107
A	301m SW	Tanks	1893	107014
A	302m SW	Tanks	1949	129387
A	303m SW	Tanks	1949	129387
A	303m SW	Tanks	1893	107030
K	305m W	Tank or Trough	1893	121465
A	307m S	Tanks	1956	107032
A	308m SE	Unspecified Tank	1956	116198
G	309m NW	Tanks	1932	106940
A	310m SW	Tanks	1953	142664
A	310m SW	Unspecified Tank	1953	126605
A	311m SW	Unspecified Tank	1893	125313
A	311m SW	Unspecified Tank	1908	125313
A	311m SW	Unspecified Tank	1922	125313
A	311m SW	Tanks	1980	142664
G	312m NW	Unspecified Tank	1949	124118
G	312m NW	Unspecified Tank	1949	124118

ID	Location	Land Use	Date	Group ID
A	313m SW	Tanks	1893	107031
A	314m S	Unspecified Tank	1994	115884
A	317m S	Unspecified Tank	1996	145491
A	317m S	Unspecified Tank	1996	145491
A	317m SE	Tanks	1933	106984
A	318m SE	Tanks	1949	136973
A	318m SE	Tanks	1956	136973
A	318m SE	Tanks	1949	136973
A	318m S	Unspecified Tank	1933	116208
I	321m N	Unspecified Tank	1953	137913
I	321m N	Unspecified Tank	1949	137913
I	321m N	Unspecified Tank	1949	137913
A	321m SE	Unspecified Tank	1956	116197
A	322m SE	Unspecified Tank	1933	116207
A	322m SW	Unspecified Tank	1893	115898
A	322m SE	Unspecified Tank	1949	133058
A	322m SE	Unspecified Tank	1956	127041
A	323m SE	Unspecified Tank	1949	144528
A	330m SE	Unspecified Tank	1956	116200
A	330m SE	Tanks	1956	142343
A	332m SE	Tanks	1949	134551
A	332m SE	Tanks	1949	143724
A	335m SW	Tanks	1953	107034
G	337m NW	Unspecified Tank	1953	116109
I	337m N	Unspecified Tank	1949	125746
I	337m N	Unspecified Tank	1953	140757
I	337m N	Unspecified Tank	1949	147068
A	338m SW	Unspecified Tank	1949	133578

ID	Location	Land Use	Date	Group ID
A	338m SW	Unspecified Tank	1949	136267
A	340m SE	Tanks	1933	107027
A	340m SE	Unspecified Tank	1949	145897
A	340m SE	Unspecified Tank	1956	145897
A	347m SW	Unspecified Tank	1922	115903
A	351m SE	Tanks	1949	132932
A	351m SE	Tanks	1956	132932
A	352m SE	Unspecified Tank	1933	116196
A	352m SE	Tanks	1949	143331
A	357m SE	Unspecified Tank	1949	137750
A	357m SE	Unspecified Tank	1956	137750
A	357m SE	Unspecified Tank	1949	137750
A	364m SE	Unspecified Tank	1949	133623
A	364m SE	Unspecified Tank	1956	133623
A	364m SE	Unspecified Tank	1949	133623
A	364m SE	Unspecified Tank	1933	116203
A	365m SE	Unspecified Tank	1949	124403
A	365m SE	Unspecified Tank	1949	149350
A	365m SE	Unspecified Tank	1956	149350
I	366m NW	Tanks	1949	126621
A	366m S	Tanks	1949	140052
A	366m S	Tanks	1956	140052
A	367m S	Tanks	1949	140052
I	368m NW	Tanks	1949	126621
A	368m S	Unspecified Tank	1949	145954
A	368m S	Unspecified Tank	1956	145954
S	368m SE	Tanks	1970	137054
S	368m SE	Tanks	1949	137054

ID	Location	Land Use	Date	Group ID
S	368m SE	Tanks	1956	137054
A	369m S	Unspecified Tank	1949	145954
S	369m SE	Tanks	1949	137054
A	371m SE	Tanks	1933	107025
A	374m SE	Unspecified Tank	1933	116206
A	377m S	Tanks	1956	107035
A	381m S	Tanks	1956	107036
A	382m S	Unspecified Tank	1949	116205
A	382m SW	Tanks	1922	107033
A	383m S	Tanks	1949	131440
A	383m S	Tanks	1956	131440
A	385m S	Unspecified Tank	1949	139879
A	385m S	Unspecified Tank	1956	139879
A	385m SE	Unspecified Tank	1949	126295
A	385m S	Unspecified Tank	1949	116204
A	385m S	Unspecified Tank	1949	139879
A	386m SE	Unspecified Tank	1949	126295
O	386m E	Tanks	1996	148941
O	386m E	Tanks	1995	148941
S	387m SE	Unspecified Tank	1956	116216
A	387m S	Tanks	1949	147326
A	387m S	Tanks	1956	147326
A	387m S	Tanks	1949	147326
S	389m SE	Unspecified Tank	1956	116215
G	390m NW	Unspecified Tank	1953	116110
S	392m SE	Unspecified Tank	1956	116217
A	395m SE	Unspecified Tank	1956	116201
F	396m SE	Tanks	1922	107026

ID	Location	Land Use	Date	Group ID
A	398m SE	Unspecified Tank	1949	128521
A	398m SE	Unspecified Tank	1949	128521
S	399m SE	Tanks	1970	136758
S	399m SE	Tanks	1949	136758
S	399m SE	Tanks	1956	136758
A	399m S	Unspecified Tank	1949	145907
A	399m S	Unspecified Tank	1956	145907
S	399m SE	Tanks	1949	136758
A	399m S	Unspecified Tank	1949	144706
A	401m SE	Unspecified Tank	1956	116202
A	404m S	Tanks	1949	148595
A	404m S	Tanks	1956	148595
A	405m S	Tanks	1949	148595
O	407m E	Unspecified Tank	1972	132892
O	407m E	Unspecified Tank	1983	132892
A	407m S	Tanks	1949	107043
O	408m E	Unspecified Tank	1979	128235
O	409m E	Tanks	1996	147358
O	409m E	Tanks	1995	147358
A	409m S	Tanks	1949	123351
A	409m S	Tanks	1956	123351
O	409m E	Tanks	1983	135740
A	413m S	Tanks	1949	128453
A	413m S	Tanks	1949	122910
A	413m S	Tanks	1956	122910
A	415m S	Tanks	1933	107040
A	417m S	Unspecified Tank	1949	138019
A	417m S	Unspecified Tank	1956	138019

ID	Location	Land Use	Date	Group ID
A	417m S	Unspecified Tank	1949	138019
A	422m SW	Unspecified Tank	1893	115876
Y	423m SW	Unspecified Tank	1922	115877
N	424m NW	Unspecified Tank	1949	132231
N	424m NW	Unspecified Tank	1949	132231
N	425m N	Tanks	1953	106939
G	425m NW	Unspecified Tank	1953	116111
Y	444m SW	Tanks	1893	107037
G	450m NW	Tanks	1893	106923
AC	455m SE	Unspecified Tank	1950	143296
AC	456m SE	Unspecified Tank	1950	122548
G	456m NW	Tanks	1893	106924
T	462m W	Unspecified Tank	1893	116134
O	466m E	Tanks	1972	133020
O	466m E	Unspecified Tank	1983	116221
O	467m E	Tanks	1979	133020
O	467m E	Tanks	1983	133020
O	468m E	Unspecified Tank	1979	116220
O	470m E	Unspecified Tank	1972	116219
O	470m E	Tanks	1950	123616
O	471m E	Tanks	1950	123616
O	471m E	Unspecified Tank	1983	141866
O	472m E	Unspecified Tank	1983	141866
T	480m W	Tanks	1985	138315
T	481m W	Tanks	1953	138315
AB	481m N	Unspecified Tank	1953	132858
AB	481m N	Unspecified Tank	1949	132858
AB	482m N	Unspecified Tank	1949	132858

ID	Location	Land Use	Date	Group ID
B	486m SE	Unspecified Tank	1970	135938
B	486m SE	Unspecified Tank	1949	135938
B	486m SE	Unspecified Tank	1956	135938
AG	496m NW	Unspecified Tank	1953	125977
AG	496m NW	Unspecified Tank	1949	125977
AG	496m NW	Unspecified Tank	1949	125977

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**93**

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 40 >**

ID	Location	Land Use	Date	Group ID
A	71m S	Gasometer	1908	73248
A	71m S	Gasometer	1922	73248
A	71m S	Gasometer	1932	73248
A	87m SE	Electricity Substation	1949	71318
A	88m SE	Electricity Substation	1970	71318
A	88m SE	Electricity Substation	1949	71318
A	88m SE	Electricity Substation	1956	71318
A	88m SE	Electricity Substation	1994	69928
A	88m SE	Electricity Substation	1980	71318
A	88m SE	Electricity Substation	1987	71318
A	88m SE	Electricity Substation	1991	71318
E	121m NW	Electricity Substation	1985	75460
E	121m NW	Electricity Substation	1989	69601
D	155m N	Electricity Substation	1978	73456

ID	Location	Land Use	Date	Group ID
D	155m N	Electricity Substation	1972	79248
D	155m N	Electricity Substation	1986	79248
D	156m N	Electricity Substation	1997	79248
A	157m SE	Electricity Substation	1949	73971
A	157m SE	Electricity Substation	1949	67292
A	157m SE	Electricity Substation	1956	67292
G	163m NW	Electricity Generating Station	1908	69584
G	163m NW	Electricity Generating Station	1922	69584
G	173m NW	Electricity Generating Station	1949	75559
G	174m NW	Electricity Generating Station	1949	67122
H	174m E	Electricity Substation	1987	79871
H	174m E	Electricity Substation	1991	74141
H	174m E	Electricity Substation	1949	74141
H	175m E	Electricity Substation	1994	74141
H	175m E	Electricity Substation	1949	68710
H	176m E	Electricity Substation	1986	79871
H	176m E	Electricity Substation	1997	67404
H	190m E	Electricity Substation	1949	81157
A	236m S	Electricity Substation	1949	62207
A	242m S	Electricity Substation	1949	68410
A	242m S	Electricity Substation	1956	68410
A	245m SE	Electricity Substation	1994	70493
A	246m SE	Electricity Substation	1970	70493
A	246m SE	Electricity Substation	1980	70493
A	246m SE	Electricity Substation	1987	70493
A	246m SE	Electricity Substation	1991	70493
A	248m SE	Electricity Substation	1949	67188
A	248m SE	Electricity Substation	1956	67188

ID	Location	Land Use	Date	Group ID
A	248m SE	Electricity Substation	1949	67188
A	249m SW	Electricity Substation	1980	66361
A	249m SW	Electricity Substation	1953	71571
A	252m SW	Electricity Substation	1949	71828
A	252m SW	Electricity Substation	1949	71828
M	261m SE	Electricity Substation	1970	84080
M	261m SE	Electricity Substation	1949	84080
M	261m SE	Electricity Substation	1956	84080
M	261m SE	Electricity Substation	1949	84080
A	264m SW	Electricity Substation	1996	75956
A	264m SW	Electricity Substation	1996	69701
A	264m SW	Electricity Substation	1995	74124
A	264m SW	Electricity Substation	1994	68888
A	265m SW	Electricity Substation	1991	74138
P	296m E	Electricity Substation	1970	75041
P	296m E	Electricity Substation	1956	75041
P	296m E	Electricity Substation	1980	75041
P	296m E	Electricity Substation	1987	75041
P	296m E	Electricity Substation	1991	75041
P	297m E	Electricity Substation	1994	75041
A	298m SE	Electricity Substation	1949	65590
A	298m SE	Electricity Substation	1956	65590
A	299m SE	Electricity Substation	1949	69688
K	331m W	Electricity Substation	1996	65964
K	331m W	Electricity Substation	1996	65964
K	331m W	Electricity Substation	1995	65964
K	331m W	Electricity Substation	1994	65964
K	332m W	Electricity Substation	1991	65964

ID	Location	Land Use	Date	Group ID
R	346m NW	Electricity Substation	1985	66511
R	346m NW	Electricity Substation	1989	69908
R	346m NW	Electricity Substation	1953	69908
R	346m NW	Electricity Substation	1949	69908
R	347m NW	Electricity Substation	1949	69908
A	386m S	Electricity Substation	1949	74084
A	387m S	Electricity Substation	1970	79405
A	387m S	Electricity Substation	1949	79405
A	387m S	Electricity Substation	1956	79405
A	387m S	Electricity Substation	1980	79405
W	411m N	Electricity Transformer Station	1985	63378
W	413m N	Electricity Substation	1994	66021
Z	425m NE	Electricity Substation	1972	84923
Z	425m NE	Electricity Substation	1986	84923
Z	425m NE	Electricity Substation	1978	84923
Z	425m NE	Electricity Substation	1997	66931
W	472m NW	Electricity Substation	1985	85433
B	475m SE	Electricity Substation	1970	70055
B	475m SE	Electricity Substation	1956	70055
W	477m NW	Electricity Substation	1989	81063
T	493m W	Electricity Substation	1953	82552
T	493m W	Electricity Substation	1949	82552
T	494m W	Electricity Substation	1949	82552

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	8

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 40 >**

ID	Location	Land Use	Date	Group ID
2	124m NE	Garage	1978	20327
D	139m N	Garage	1997	22667
D	139m N	Garage	1972	24761
D	139m N	Garage	1986	24761
D	139m N	Garage	1978	21189
L	211m NE	Garage	1972	20329
L	240m NE	Garage	1972	20330
4	265m NE	Garage	1972	20328

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	1

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 79 >**

ID	Location	Details		
4	472m N	Site Address: Clayton Vale Power Station, Bank Bridge Road, Manchester Licence Holder Address: Europa House, Birdhall Lane, Cheadle Heath, Stockport	Waste Licence: Yes Site Reference: RD/LIC/045/76,GDO F001 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 01/01/1974 Licence Surrender: -	Operator: - Licence Holder: Central Electricity Generating Board First Recorded 31/12/1965 Last Recorded: 31/12/1968

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

3.5 Historical waste sites

Records within 500m	11

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 79 >**

ID	Location	Address	Further Details	Date
A	81m NE	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1970

ID	Location	Address	Further Details	Date
A	88m NE	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1971
A	88m NE	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1978
2	139m S	Site Address: N/A	Type of Site: Refuse Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1956
B	243m SW	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1996
B	243m SW	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1996
B	243m SW	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1995
B	243m SW	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1994
B	245m SW	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1979
B	246m SW	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1991

ID	Location	Address	Further Details	Date
3	421m W	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1988

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

3.6 Licensed waste sites

Records within 500m	**3**

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

Features are displayed on the Waste and landfill map on **page 79 >**

ID	Location	Details		
1	107m N	Site Name: Recon Packaging Ltd Site Address: Bank Street, Clayton, Manchester, M11 4BT Correspondence Address: -	Type of Site: Material Recycling Treatment Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RPL004 EPR reference: EA/EPR/GP3192CM/V002 Operator: Recon Packaging Ltd Waste Management licence No: 53467 Annual Tonnage: 417	Issue Date: 04/12/1998 Effective Date: - Modified: 24/08/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
D	377m SW	Site Name: F W Singleton Ltd Site Address: Land/premises At, Score Street, Clayton, Manchester, M11 2SN Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FWS001 EPR reference: EA/EPR/JP3092CU/S002 Operator: F W Singleton Ltd Waste Management licence No: 53626 Annual Tonnage: 383333	Issue Date: 08/12/1995 Effective Date: - Modified: - Surrendered Date: 23/05/2013 Expiry Date: - Cancelled Date: - Status: Surrendered

ID	Location	Details		
D	377m SW	Site Name: F W Singleton Ltd Site Address: Land/premises At, Score Street, Clayton, Manchester, M11 2SN Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FWS001 EPR reference: EA/EPR/JP3092CU/S002 Operator: F W Singleton Ltd Waste Management licence No: 53626 Annual Tonnage: 383333.272	Issue Date: 08/12/1995 Effective Date: - Modified: - Surrendered Date: May 23 2013 12:00AM 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	**2**

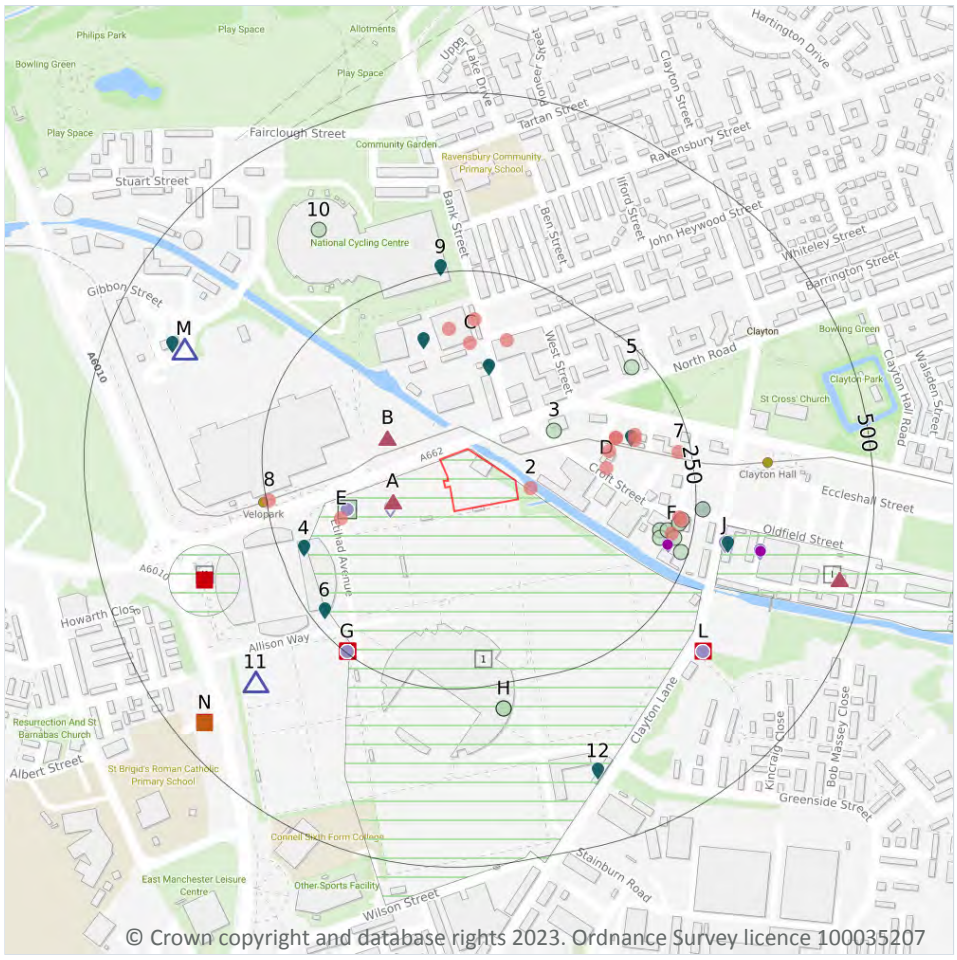
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 79 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
C	302m E	Evonik Chemicals Limited, Clayton Lane, Clayton, M11 4SR	WEX234634	Treating waste exemption	Not on a farm	Crushing waste fluorescent tubes
C	302m E	Evonik Chemicals Limited, Clayton Lane, Clayton, M11 4SR	WEX088752	Treating waste exemption	Not on a farm	Crushing waste fluorescent tubes

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

4 Current industrial land use



4.1 Recent industrial land uses

Records within 250m	17

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 84 >**

ID	Location	Company	Address	Activity	Category
2	20m E	Mooring Posts	Greater Manchester, M11	Moorings and Unloading Facilities	Water
D	129m E	Gratt Motor Co	34, Croft Street, Manchester, Greater Manchester, M11 4RQ	Vehicle Repair, Testing and Servicing	Repair and Servicing

ID	Location	Company	Address	Activity	Category
D	139m E	Clayton Motors Manchester Ltd	32, Croft Street, Manchester, Greater Manchester, M11 4RQ	Vehicle Repair, Testing and Servicing	Repair and Servicing
C	149m N	Electricity Sub Station	Greater Manchester, M11	Electrical Features	Infrastructure and Facilities
E	153m W	Electricity Sub Station	Greater Manchester, M11	Electrical Features	Infrastructure and Facilities
D	154m E	Manchester M O T Ltd	612, Ashton New Road, Manchester, Greater Manchester, M11 4SG	Vehicle Repair, Testing and Servicing	Repair and Servicing
D	154m E	South Manchester Commercial Vehicle Sales Ltd	612, Ashton New Road, Manchester, Greater Manchester, M11 4SG	New Vehicles	Motoring
C	163m N	Jada Tyres Tyre Centre	Unit 1, Bamford Street, Manchester, Greater Manchester, M11 4FE	Vehicle Repair, Testing and Servicing	Repair and Servicing
C	171m N	Works	Greater Manchester, M11	Unspecified Works Or Factories	Industrial Features
D	178m E	Electricity Sub Station	Greater Manchester, M11	Electrical Features	Infrastructure and Facilities
D	179m E	Electricity Sub Station	Greater Manchester, M11	Electrical Features	Infrastructure and Facilities
C	182m N	Eastland Compounding	British Vita, Bank Street, Newton Heath, Manchester, Greater Manchester, M11 4AS	Rubber, Silicones and Plastics	Industrial Products
F	221m E	Works	Greater Manchester, M11	Unspecified Works Or Factories	Industrial Features
F	228m E	K & R Motors Ltd	-, Croft Street, Manchester, Greater Manchester, M11 4RQ	Vehicle Repair, Testing and Servicing	Repair and Servicing
F	232m E	Auto Fit	Victoria Works, Croft Street, Manchester, Greater Manchester, M11 4RQ	Vehicle Repair, Testing and Servicing	Repair and Servicing
7	233m E	Shiraz Plastic Ltd	2, Linfield Street, Manchester, Greater Manchester, M11 4RG	Rubber, Silicones and Plastics	Industrial Products
8	247m W	Velopark (Manchester Metrolink)	Greater Manchester, M11	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	2

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 84 >**

ID	Location	Company	Address	LPG	Status
11	369m SW	ESSO	26-52, Grey Mare Lane, Bradford, Manchester, Greater Manchester, M11 3DG	Not Applicable	Obsolete
M	392m NW	ASDA	Alan Turing Way, Bradford, Manchester, Greater Manchester, M11 4BD	No	Open

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	3

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 84 >**

ID	Location	Company	Address	Operational status	Tier
1	**On site**	**Ciba Speciality Chemicals**	**Ciba Speciality Chemicals, Ashton New Road, Clayton, M11 4AP**	**Historical COMAH Site**	**-**
I	294m E	Evonik Chemicals Limited	Evonik Chemicals Limited, Clayton, Manchester, Clayton Lane, Manchester, Greater Manchester, M11 4SR	Current COMAH Site	COMAH Lower Tier Operator
K	312m W	Rhodia Ltd	Rhodia Ltd, Ashton New Road, Manchester, M11 4AT	Historical NIHHS Site	-

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	**7**

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 84 >**

ID	Location	Details	
A	76m W	Application reference number: 092423/HSC/2010/N2 Application status: Historical Consent Application date: 12/04/2010 Address: OMG UK Limited, Ashton New Road, Clayton, Manchester, M11 4AT	Details: Deemed Consent - Manufacture and sales of performance chemicals for use in the Rubber, Surface Coatings and Chemical Industry Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
A	76m W	Application reference number: 093567/HSC/2010/N2 Application status: Historical Consent Application date: 08/09/2010 Address: OMG UK Limited, Ashton New Road, Clayton, Manchester, M11 4AT	Details: Revocation of hazardous substances consent granted under ref 092423/HSC/2010/N2 Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

ID	Location	Details	
B	79m NW	Application reference number: 094262/HSC/2010/N2 Application status: Historical Consent Application date: 15/09/2010 Address: Ashton New Road, Clayton, Manchester, M11 4AP	Details: Revocation of hazardous substances consents granted under refs: 000002/HSC/NORTH2/92 and 057477/HSC/NORTH2/99 Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
B	79m NW	Application reference number: 057477/HSC/NORTH2/99 Application status: Historical Consent Application date: 02/09/1999 Address: CIBA Speciality Chemicals PLC, Ashton New Road, Clayton, Manchester, M11 4AP	Details: Hazardous Substances Deemed Consent - Manufacture of dyestuffs and related chemicals Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
B	79m NW	Application reference number: 000002/HSC/NORTH2/92 Application status: Historical Consent Application date: 12/11/1992 Address: Clayton Aniline Co. Ltd., Ashton New Road, Clayton, Manchester, M11 4AP	Details: Storage of sulphur trioxide (as Oleum) and chlorine. Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
I	464m E	Application reference number: No Details Application status: Approved Application date: 05/04/2002 Address: Evonik Chemicals Ltd, Clayton Lane, Clayton, Manchester, Greater Manchester, England, M11 4SR	Details: Above Ground Storage Of Various Substances Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
I	464m E	Application reference number: 062763/HSC/NORTH2/01 Application status: Historical Consent Application date: 05/04/2002 Address: Air Products (Chemicals) Plc, Clayton Lane, Clayton, Manchester, Greater Manchester, England, M11 4SR	Details: Above Ground Storage Of Various Substances Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	**38**

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 84 >**

ID	Location	Details	
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, M11 4AP Process: Combustion Processes Permit Number: AA2330	Original Permit Number: IPCAPP Date Approved: 28-8-1992 Effective Date: 28-8-1992 Status: Superseded By Variation
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, M11 4AP Process: Combustion Processes Permit Number: AI2996	Original Permit Number: IPCMINVAR Date Approved: 16-9-1993 Effective Date: 16-9-1993 Status: Revoked
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: PO Box 2, Ashton New Road, Clayton, Manchester, M11 4AP Process: Manufacture And Use Of Organic Chemicals Permit Number: AK3579	Original Permit Number: IPCAIRAPP Date Approved: 23-2-1994 Effective Date: 23-2-1994 Status: Superseded By Variation
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: PO Box 2, Ashton New Road, Clayton, Manchester, M11 4AP Process: Manufacture And Use Of Organic Chemicals Permit Number: AO5042	Original Permit Number: IPCMINVAR Date Approved: 3-10-1994 Effective Date: 3-10-1994 Status: Superseded By Variation
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: PO Box 2, Ashton New Road, Clayton, Manchester, M11 4AP Process: Manufacture And Use Of Organic Chemicals Permit Number: AP3614	Original Permit Number: IPCMINVAR Date Approved: 28-2-1995 Effective Date: 1-3-1995 Status: Superseded By Variation
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: PO Box 2, Ashton New Road, Clayton, Manchester, M11 4AP Process: Manufacture And Use Of Organic Chemicals Permit Number: AV8879	Original Permit Number: IPCMINVAR Date Approved: 2-12-1996 Effective Date: 9-12-1996 Status: Superseded By Variation
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: PO Box 2, Ashton New Road, Clayton, Manchester, M11 4AP Process: Manufacture And Use Of Organic Chemicals Permit Number: BD6263	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: PO Box 2, Ashton New Road, Clayton, Manchester, M11 4AP Process: Manufacture And Use Of Organic Chemicals Permit Number: BT9046	Original Permit Number: IPCMINVAR Date Approved: 12-2-2003 Effective Date: 17-2-2003 Status: Superseded By Variation
E	141m W	Operator: Ciba Specialty Chemicals Plc Address: PO Box 2, Ashton New Road, Clayton, Manchester, M11 4AP Process: Manufacture And Use Of Organic Chemicals Permit Number: BY0577	Original Permit Number: IPCMINVAR Date Approved: 25-6-2004 Effective Date: 1-7-2004 Status: Revoked

ID	Location	Details	
G	248m SW	Operator: Omg (UK) Ltd Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AK5334	Original Permit Number: IPCAPP Date Approved: 17-2-1994 Effective Date: 28-2-1994 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AK6055	Original Permit Number: IPCAIRAPP Date Approved: 23-2-1994 Effective Date: 23-2-1994 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AK6063	Original Permit Number: IPCAIRAPP Date Approved: 23-2-1994 Effective Date: 23-2-1994 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AR1698	Original Permit Number: IPCMINVAR Date Approved: 3-5-1996 Effective Date: 6-5-1996 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AR1728	Original Permit Number: IPCMINVAR Date Approved: 1-8-1995 Effective Date: 7-8-1995 Status: Superseded By Variation
G	248m SW	Operator: Rhodia Ltd Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AS6195	Original Permit Number: IPCAPP Date Approved: 14-12-1995 Effective Date: 15-12-1995 Status: Superseded By Variation
G	248m SW	Operator: Rhodia Ltd Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AS6209	Original Permit Number: IPCAPP Date Approved: 14-12-1995 Effective Date: 15-12-1995 Status: Superseded By Variation
G	248m SW	Operator: Omg (UK) Ltd Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: AX0488	Original Permit Number: IPCMINVAR Date Approved: 18-4-1997 Effective Date: 28-4-1997 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BD1407	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation

ID	Location	Details	
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BD1415	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
G	248m SW	Operator: Rhodia Ltd Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BD2144	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
G	248m SW	Operator: Rhodia Ltd Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BD2152	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
G	248m SW	Operator: Omg (UK) Ltd Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BD7502	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Revoked - Now Ippc
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BT9054	Original Permit Number: IPCMINVAR Date Approved: 12-2-2003 Effective Date: 17-2-2003 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BT9062	Original Permit Number: IPCMINVAR Date Approved: 12-2-2003 Effective Date: 17-2-2003 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BY0569	Original Permit Number: IPCMINVAR Date Approved: 25-6-2004 Effective Date: 1-7-2004 Status: Revoked
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: BY0585	Original Permit Number: IPCMINVAR Date Approved: 25-6-2004 Effective Date: 1-7-2004 Status: Superseded By Variation
G	248m SW	Operator: Ciba Specialty Chemicals Plc Address: Ashton New Road, Clayton, Manchester, Greater Manchester, M11 4AT Process: Manufacture And Use Of Organic Chemicals Permit Number: CA3084	Original Permit Number: IPCMINVAR Date Approved: 13-3-2006 Effective Date: 1-4-2006 Status: Revoked

ID	Location	Details	
F	260m E	Operator: Synprotec Ltd Address: 303 Clayton Road, Clayton, Manchester, M11 4SX Process: Manufacture And Use Of Organic Chemicals Permit Number: AJ1279	Original Permit Number: IPCAPP Date Approved: 16-11-1993 Effective Date: 16-11-1993 Status: Superseded By Variation
F	260m E	Operator: Synprotec Ltd Address: 303 Clayton Road, Clayton, Manchester, M11 4SX Process: Manufacture And Use Of Organic Chemicals Permit Number: BA8596	Original Permit Number: IPCMAJVAR Date Approved: 7-7-1998 Effective Date: 20-7-1998 Status: Superseded By Variation
F	260m E	Operator: Synprotec Ltd Address: 303 Clayton Road, Clayton, Manchester, M11 4SX Process: Manufacture And Use Of Organic Chemicals Permit Number: BE3766	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 Status: Superseded By Variation
F	260m E	Operator: Synprotec Ltd Address: 303 Clayton Road, Clayton, Manchester, M11 4SX Process: Manufacture And Use Of Organic Chemicals Permit Number: BG3147	Original Permit Number: IPCMINVAR Date Approved: 24-6-1999 Effective Date: 24-6-1999 Status: Revoked - Now Ippc
L	336m SE	Operator: Air Products (chemicals) Plc Address: Clayton Lane, Clayton, Manchester, M11 4SR Process: Manufacture And Use Of Organic Chemicals Permit Number: AK7078	Original Permit Number: IPCAIRAPP Date Approved: 18-2-1994 Effective Date: 1-3-1994 Status: Superseded By Variation
L	336m SE	Operator: Air Products (chemicals) Plc Address: Clayton Lane, Manchester, Greater Manchester, M11 4SR Process: Manufacture And Use Of Organic Chemicals Permit Number: AK7086	Original Permit Number: IPCAIRAPP Date Approved: 18-2-1994 Effective Date: 1-3-1994 Status: Revoked
L	336m SE	Operator: Air Products (chemicals) Plc Address: Clayton Lane, Clayton, Manchester, M11 4SR Process: Manufacture And Use Of Organic Chemicals Permit Number: AL2675	Original Permit Number: IPCAPP Date Approved: 18-2-1994 Effective Date: 1-3-1994 Status: Revoked
L	336m SE	Operator: Air Products (chemicals) Plc Address: Clayton Lane, Clayton, Manchester, M11 4SR Process: Manufacture And Use Of Organic Chemicals Permit Number: AP6958	Original Permit Number: IPCMINVAR Date Approved: 18-1-1995 Effective Date: 18-1-1995 Status: Superseded By Variation
L	336m SE	Operator: Air Products (chemicals) Plc Address: Clayton Lane, Clayton, Manchester, M11 4SR Process: Manufacture And Use Of Organic Chemicals Permit Number: AR9427	Original Permit Number: IPCMINVAR Date Approved: 25-8-1995 Effective Date: 11-9-1995 Status: Superseded By Variation

ID	Location	Details	
L	336m SE	Operator: Air Products (chemicals) Plc Address: Clayton Lane, Clayton, Manchester, M11 4SR Process: Manufacture And Use Of Organic Chemicals Permit Number: AZ8609	Original Permit Number: IPCMINVAR Date Approved: 3-11-1997 Effective Date: 10-11-1997 Status: Superseded By Variation
L	336m SE	Operator: Air Products (chemicals) Plc Address: Clayton Lane, Clayton, Manchester, M11 4SR Process: Manufacture And Use Of Organic Chemicals Permit Number: BE1488	Original Permit Number: IPCMINVAR Date Approved: 24-11-1998 Effective Date: 30-11-1998 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 **49**

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 84 >**

ID	Location	Details	
A	83m W	Operator: Hexion Specialty Chemicals Clayton Ltd Installation Name: Rhodia UK Ltd Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: SP3538GH Original Permit Number: UP3136LU	EPR Reference: EA/EPR/UP3136LU/S002 Issue Date: - Effective Date: 16/02/2009 Last date noted as effective: 21/03/2023 Status: Surrender Effective
A	83m W	Operator: OMG (UK) LTD Installation Name: OMG UK LTD Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: BS3492IW Original Permit Number: BS3492IW	EPR Reference: - Issue Date: 09/03/2004 Effective Date: 09/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
A	83m W	Operator: Hexion Specialty Chemicals Clayton Ltd Installation Name: Rhodia UK Ltd Process: ASSOCIATED PROCESS Permit Number: SP3538GH Original Permit Number: UP3136LU	EPR Reference: EA/EPR/UP3136LU/S002 Issue Date: - Effective Date: 16/02/2009 Last date noted as effective: 21/03/2023 Status: Surrender Effective
A	83m W	Operator: Hexion Specialty Chemicals Clayton Ltd Installation Name: Rhodia UK Ltd Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: SP3538GH Original Permit Number: UP3136LU	EPR Reference: EA/EPR/UP3136LU/S002 Issue Date: - Effective Date: 16/02/2009 Last date noted as effective: 21/03/2023 Status: Surrender Effective

ID	Location	Details	
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; ORGANOMETALLIC COMPOUNDS EG LEAD ALKYLS Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective

ID	Location	Details	
F	219m E	Operator: Carbogen Amcis Limited Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: EP3738EJ Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 19/12/2013 Effective Date: 19/12/2013 Last date noted as effective: 21/03/2023 Status: Effective
F	219m E	Operator: Carbongen Amcis Ltd Installation Name: 303 Clayton Road EPR/PP3236ST Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: PP3236ST Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 16/05/2005 Effective Date: 16/05/2005 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: OMG (UK) LTD Installation Name: - Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A) Permit Number: BS3492 Original Permit Number: BS3492	EPR Reference: - Issue Date: 09/03/2004 Effective Date: 09/03/2004 Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
G	248m SW	Operator: RHODIA INDUSTRIAL SPECIALTIES PLC Installation Name: - Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BM0079 Original Permit Number: BM0079	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
G	248m SW	Operator: Rhodia UK Ltd Installation Name: Latex Plant, Clayton Process: ASSOCIATED PROCESS Permit Number: PP3131SY Original Permit Number: PP3131SY	EPR Reference: - Issue Date: 05/07/2005 Effective Date: 05/07/2005 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: Hexion Specialty Chemicals Clayton Ltd Installation Name: Rhodia UK Ltd Avonmouth Process: ASSOCIATED PROCESS Permit Number: UP3136LU Original Permit Number: UP3136LU	EPR Reference: EA/EPR/UP3136LU/S002 Issue Date: 01/06/2006 Effective Date: 01/06/2006 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: Hexion Specialty Chemicals Clayton Ltd Installation Name: Rhodia UK Ltd Avonmouth Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: UP3136LU Original Permit Number: UP3136LU	EPR Reference: EA/EPR/UP3136LU/S002 Issue Date: 01/06/2006 Effective Date: 01/06/2006 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: OMG (UK) LTD Installation Name: OMG UK LTD Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: XP3431LM Original Permit Number: BS3492IW	EPR Reference: - Issue Date: 24/11/2006 Effective Date: 24/11/2006 Last date noted as effective: 21/03/2023 Status: Superceded

ID	Location	Details	
G	248m SW	Operator: OMG (UK) LTD Installation Name: OMG UK LTD Process: ORGANIC CHEMICALS; ANY OTHER ORGANIC COMPOUNDS (NOT DESCRIBED 4.1 A(1)(A)) Permit Number: KP3330HG Original Permit Number: BS3492IW	EPR Reference: - Issue Date: - Effective Date: 23/12/2010 Last date noted as effective: 21/03/2023 Status: Surrender Effective
G	248m SW	Operator: Rhodia UK Ltd Installation Name: Latex Plant, Clayton Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: PP3131SY Original Permit Number: PP3131SY	EPR Reference: - Issue Date: 05/07/2005 Effective Date: 05/07/2005 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: Hexion Specialty Chemicals Clayton Ltd Installation Name: Rhodia UK Ltd Avonmouth Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: UP3136LU Original Permit Number: UP3136LU	EPR Reference: EA/EPR/UP3136LU/S002 Issue Date: 01/06/2006 Effective Date: 01/06/2006 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: RHODIA INDUSTRIAL SPECIALTIES PLC Installation Name: RHODIA LATEX PLANT Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BM0079IX Original Permit Number: BM0079IX	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: RHODIA INDUSTRIAL SPECIALTIES PLC Installation Name: RHODIA LATEX PLANT Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: BM0079IX Original Permit Number: BM0079IX	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: Rhodia UK Ltd Installation Name: Latex Plant, Clayton Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: PP3131SY Original Permit Number: PP3131SY	EPR Reference: - Issue Date: 05/07/2005 Effective Date: 05/07/2005 Last date noted as effective: 21/03/2023 Status: Superceded
G	248m SW	Operator: RHODIA INDUSTRIAL SPECIALTIES PLC Installation Name: RHODIA LATEX PLANT Process: ASSOCIATED PROCESS Permit Number: BM0079IX Original Permit Number: BM0079IX	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded

ID	Location	Details	
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; HALOGEN CONTAING COMPOUNDS EG HALOCARBONS Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; SYNTHETIC RUBBERS Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; ORGANOMETALLIC COMPOUNDS EG LEAD ALKYLS Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS

ID	Location	Details	
F	260m E	Operator: SYNPROTEC LTD Installation Name: - Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BM0303 Original Permit Number: BM0303	EPR Reference: - Issue Date: - Effective Date: - Last date noted as effective: 01/10/2004 Status: SUPERSEDED BY PAS
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; SULPHUR CONTAINING COMPOUNDS EG SULPHIDES Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; PLASTIC MATERIALS EG POLYMERS Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ASSOCIATED PROCESS Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; ORGANOMETALLIC COMPOUNDS EG LEAD ALKYLS Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded

ID	Location	Details	
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; PHOSPHORUS CONTAINING COMPOUNDS EG SUBSTITUTED PHOSPHINES Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; HALOGEN CONTAINING COMPOUNDS EG HALOCARBONS Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
F	260m E	Operator: Synprotec Ltd Installation Name: 303 Clayton Lane EPR/BM0303IW Process: ORGANIC CHEMICALS; OXYGEN CONTAINING COMPOUNDS EG ALCOHOLS Permit Number: BM0303IW Original Permit Number: BM0303IW	EPR Reference: - Issue Date: 22/03/2004 Effective Date: 22/03/2004 Last date noted as effective: 21/03/2023 Status: Superceded
J	296m E	Operator: Air Products (Chemicals) Limited Installation Name: CLAYTON WORKS Process: ASSOCIATED PROCESS Permit Number: YP3031PB Original Permit Number: BL9623IK	EPR Reference: - Issue Date: 16/12/2004 Effective Date: 01/01/2005 Last date noted as effective: 21/03/2023 Status: Superceded
J	296m E	Operator: Air Products (Chemicals) Limited Installation Name: CLAYTON WORKS Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: YP3031PB Original Permit Number: BL9623IK	EPR Reference: - Issue Date: 16/12/2004 Effective Date: 01/01/2005 Last date noted as effective: 21/03/2023 Status: Superceded
J	347m E	Operator: Evonik Chemicals Limited Installation Name: Evonik Chemicals Limited - EPR/BL9623IK Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: HP3607LB Original Permit Number: BL9623IK	EPR Reference: - Issue Date: 11/03/2021 Effective Date: 11/03/2021 Last date noted as effective: 21/03/2023 Status: Effective
J	347m E	Operator: Evonik Chemicals Limited Installation Name: Evonik Chemicals Limited - EPR/BL9623IK Process: ASSOCIATED PROCESS Permit Number: HP3607LB Original Permit Number: BL9623IK	EPR Reference: - Issue Date: 11/03/2021 Effective Date: 11/03/2021 Last date noted as effective: 21/03/2023 Status: Effective

ID	Location	Details	
J	347m E	Operator: Evonik Chemicals Limited Installation Name: Air Products (Chemicals) Clayton EPR/BL9623IK Process: ASSOCIATED PROCESS Permit Number: QP3739YK Original Permit Number: BL9623IK	EPR Reference: - Issue Date: 11/09/2017 Effective Date: 11/09/2017 Last date noted as effective: 21/03/2023 Status: Superceded
J	347m E	Operator: Evonik Chemicals Limited Installation Name: Air Products (Chemicals) Clayton EPR/BL9623IK Process: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES Permit Number: QP3739YK Original Permit Number: BL9623IK	EPR Reference: - Issue Date: 11/09/2017 Effective Date: 11/09/2017 Last date noted as effective: 21/03/2023 Status: Superceded

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

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

Records within 500m **9**

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 84 >**

ID	Location	Address	Details	
C	118m N	Vitacom Ltd, Bank St, M11 4AS	Process: Rubber Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
C	164m N	E3G Ltd Eastland Compounding, Bank Street, Clayton, M11 4AS	Process: Rubber Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
D	172m E	Djs Auto Centre, Ashton New Rd, M11 4SG	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
4	216m W	Frances Shaw And Co, Corbett Street, Clayton, M11 4BB	Process: Rubber Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

ID	Location	Address	Details	
6	229m SW	Stormproofings Ltd, Corbett Street, Clayton, M11 4BD	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
9	258m N	P St Conrete Fence Ltd, Bank Street, Clayton, M11 4BY	Process: Use of Bulk Cement Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
J	300m E	Air Products (Chemicals) Plc, Clayton Lane, Clayton, M11 4SR	Process: Use of Organic Chemicals Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
12	398m SE	Rotunda Plc, Clayton Lane, Clayton, M11 2AT	Process: Rubber Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
M	410m NW	Asda Eastlands, Ashton New Road, Bradford, M11 4BD	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m **1**

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

Features are displayed on the Current industrial land use map on **page 84 >**

ID	Location	Address	Details	
E	141m W	Salford Royal Nhs Foundation Trust, Ashton New Road, Clayton, Manchester, M11 4AP	Operator: Salford Royal Nhs Foundation Trust Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB9798 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled

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

4.13 Licensed Discharges to controlled waters

Records within 500m	0

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	2

Discharges of Special Category Effluents to the public sewer.

Features are displayed on the Current industrial land use map on **page 84 >**

ID	Location	Address	Details	
N	459m SW	FH TOMKINS BUCKLE CO LTD, SCORE STREET, SCORE STREET, MANCHESTER, MANCHESTER, M11 2BW	Permission reference: BG2612 Local Authority: MANCHESTER CITY COUNCIL First received date: 01/07/2010	Last received date: 01/01/2018 Status: RECEIVED
N	459m SW	CLIFFORD WHATMOUGH LTD (DISSOLVED), SCORE STREET, SCORE STREET, MANCHESTER, MANCHESTER, M11 2BW	Permission reference: AW4917 Local Authority: MANCHESTER CITY COUNCIL First received date: 01/07/2010	Last received date: 01/01/2018 Status: RECEIVED

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

4.16 List 1 Dangerous Substances

Records within 500m	11

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 84 >**

ID	Location	Name	Status	Receiving Water	Authorised Substances
E	142m W	Clayton Aniline	Not Active	Manchester Ship Canal	Mercury (other), Cadmium
E	142m W	Ciba Geigy Plc Outlets S1/s2(clayton Aniline)	Not Active	Manchester Ship Canal	Mercury (other), Cadmium
G	248m SW	Rhodia Ltd Outlet S1	Not Active	Manchester Ship Canal	Mercury (other), Cadmium
G	248m SW	Rhodia Ltd Outlet S2	Not Active	Manchester Ship Canal	Cadmium
G	248m SW	Rhodia Ltd Outlet S4	Not Active	Manchester Ship Canal	Mercury (other), Cadmium
G	248m SW	Omg Uk Ltd	Active	Manchester Ship Canal	Mercury (other), Cadmium
L	337m SE	Anchor Chemical Outfalls 1/2/5	Not Active	Manchester Ship Canal	Mercury (other)
L	337m SE	Air Products (chemicals) Clayton	Active	Manchester Ship Canal	Mercury (other)
K	363m W	Rhodia Industrial Specialities Ltd,	Active	Manchester Ship Canal	Cadmium
K	363m W	Rhodia Industrial Specialities Ltd,	Active	Manchester Ship Canal	Cadmium
N	460m SW	F H Tomkins Buckle Co Ltd, Union Eyelet Works, Manchester	Not Active	Manchester Ship Canal	Cadmium

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

4.17 List 2 Dangerous Substances

Records within 500m **1**

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

Features are displayed on the Current industrial land use map on **page 84 >**

ID	Location	Name	Status	Receiving Water	Authorised Substances
E	142m W	Ciba Geigy Plc, Clayton, Manchester	Not Active	River MerseyManchester Ship Canal	Chromium, Copper, Zinc, Toluene

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	**13**

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 84 >**

ID	Location	Details	
3	88m NE	Incident Date: 28/01/2003 Incident Identification: 133803 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
F	204m E	Incident Date: 29/04/2002 Incident Identification: 75428 Pollutant: Inorganic Chemicals/Products Pollutant Description: Acids	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
F	206m E	Incident Date: 23/07/2003 Incident Identification: 176591 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	214m E	Incident Date: 05/09/2002 Incident Identification: 105987 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	226m E	Incident Date: 05/09/2002 Incident Identification: 105974 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5	228m NE	Incident Date: 18/07/2001 Incident Identification: 17244 Pollutant: Organic Chemicals/Products Pollutant Description: Other Organic Chemical or Product	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
F	228m E	Incident Date: 26/07/2002 Incident Identification: 94717 Pollutant: Organic Chemicals/Products Pollutant Description: Solvents	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
F	232m E	Incident Date: 21/08/2001 Incident Identification: 25901 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Chemical Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

ID	Location	Details	
F	240m E	Incident Date: 27/03/2002 Incident Identification: 67108 Pollutant: Organic Chemicals/Products Pollutant Description: Hydrocarbons	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
F	260m E	Incident Date: 17/06/2002 Incident Identification: 85898 Pollutant: Organic Chemicals/Products Pollutant Description: Solvents	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
H	285m S	Incident Date: 31/05/2001 Incident Identification: 10156 Pollutant: Organic Chemicals/Products Pollutant Description: Dyes and Inks	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
H	285m S	Incident Date: 31/05/2001 Incident Identification: 10156 Pollutant: Organic Chemicals/Products Pollutant Description: Dyes and Inks	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
10	364m NW	Incident Date: 07/05/2003 Incident Identification: 173905 Pollutant: Inorganic Chemicals/Products Pollutant Description: Acids	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	**4**

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 84 >**

ID: F, Location: 219m E, Permit: BM0303IW
Operator: Carbogen Amcis Limited
Activity: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS
Address: 303 Clayton Road Clayton Lane Greater Manchester M11 4SX
Sector: Chemicals, Sub-sector: Chemicals
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Sulphur oxides (SO2 and SO3) as SO2	100000kg	Below Reporting Threshold

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Air	Carbon dioxide	10000000kg	Below Reporting Threshold
Air	Ammonia	1000kg	Below Reporting Threshold
Air	Carbon monoxide	100000kg	Below Reporting Threshold
Air	Nitrous oxide	10000kg	Below Reporting Threshold
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	Below Reporting Threshold
Air	Chlorine and inorganic chlorine compounds - as HCl	10000kg	Below Reporting Threshold
Air	Non-methane volatile organic compounds (NMVOCs)	10000kg	Below Reporting Threshold
Air	Dichloromethane (DCM) (Methylene chloride)	1000kg	Below Reporting Threshold

ID: J, Location: 348m E, Permit: BL9623IK
Operator: Evonik Chemicals Limited
Activity: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES
Address: Clayton Lane Clayton Greater Manchester M11 4SR
Sector Chemicals, Sub-sector: Chemicals
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Mercury	0.1kg	Below Reporting Threshold
Air	Sulphur oxides (SO2 and SO3) as SO2	100000kg	Below Reporting Threshold
Wastewater	Nitrogen - as total N	50000kg	Below Reporting Threshold
Air	Carbon dioxide	10000000kg	Below Reporting Threshold
Air	Carbon monoxide	100000kg	Below Reporting Threshold
Air	Methane	10000kg	Below Reporting Threshold
Air	Nitrogen oxides (NO and NO2) as NO2	100000kg	Below Reporting Threshold
Air	Non-methane volatile organic compounds (NMVOCs)	10000kg	Below Reporting Threshold

ID: J, Location: 348m E, Permit: BL9623IK
Operator: Evonik Chemicals Limited
Activity: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES
Address: Clayton Lane Clayton Greater Manchester M11 4SR
Sector Chemicals, Sub-sector: Chemicals
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Total organic carbon (TOC)	50000kg	77000kg

ID: J, Location: 348m E, Permit: BL9623IK
Operator: Evonik Chemicals Limited
Activity: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES
Address: Clayton Lane Clayton Greater Manchester M11 4SR
Sector Chemicals, Sub-sector: Chemicals
Releases:

Route	Substance	Reporting threshold (kg)	Quantity (kg)
Wastewater	Xylene - all isomers	10kg	18.2kg

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 84 >**

ID: F, Location: 219m E, Permit: BM0303IW
Operator: Carbogen Amcis Limited
Activity: ORGANIC CHEMICALS; HYDROCARBONS EG AROMATICS
Address: 303 Clayton Road Clayton Lane Greater Manchester M11 4SX
Sector Chemicals, Sub-sector: Chemicals
Releases:

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.)	0.33	absolute value	15 01 02	plastic packaging	No

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	0.042	absolute value	15 01 02	plastic packaging	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.)	0.45	absolute value	15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.06	absolute value	15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	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.)	0.012	absolute value	16 03 04	inorganic wastes other than those mentioned in 16 03 03	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.)	0.73	absolute value	16 03 06	organic wastes other than those mentioned in 16 03 05	No
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	4.7	absolute value	16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	8.15	absolute value	16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01	No

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	1.2	absolute value	16 10 02	aqueous liquid wastes other than those mentioned in 16 10 01	No
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.025	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
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.154	absolute value	16 03 04	inorganic wastes other than those mentioned in 16 03 03	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.)	10.65	absolute value	06 02 05	other bases	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	1	absolute value	06 02 05	other bases	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.25	absolute value	06 02 05	other bases	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.)	110.61	absolute value	07 01 01	aqueous washing liquids and mother liquors	Yes

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	6.2	absolute value	07 01 01	aqueous washing liquids and mother liquors	Yes
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	0.71	absolute value	07 01 01	aqueous washing liquids and mother liquors	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.)	1.9	absolute value	07 01 03	organic halogenated solvents, washing liquids and mother liquors	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.)	1.3	absolute value	07 07 03	organic halogenated solvents, washing liquids and mother liquors	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.)	170.97	absolute value	07 07 04	other organic solvents, washing liquids and mother liquors	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	31.35	absolute value	07 07 04	other organic solvents, washing liquids and mother liquors	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	42.42	absolute value	07 07 04	other organic solvents, washing liquids and mother liquors	Yes

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	41.061	absolute value	07 07 04	other organic solvents, washing liquids and mother liquors	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.)	0.06	absolute value	07 07 10	other filter cakes and spent absorbents	Yes
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	1.9	absolute value	13 01 10	mineral based non-chlorinated hydraulic 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.)	11.53	absolute value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.023	absolute value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	1.49	absolute value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	5.82	absolute value	15 01 10	packaging containing residues of or contaminated by dangerous substances	Yes
D10	Incineration on Land	0.005	absolute value	15 01 10	packaging containing residues of or contaminated by dangerous substances	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.)	0.3	absolute value	15 02 02	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	5.69	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.)	2.17	absolute value	16 03 03	inorganic wastes containing dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.005	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.)	0.05	absolute value	16 05 06	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	8.11	absolute value	07 07 01	aqueous washing liquids and mother liquors	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.08	absolute value	16 02 11	discarded equipment containing chlorofluorocarbons, HCFC, HFC	Yes

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.75	absolute value	16 05 07	discarded inorganic chemicals consisting of or containing dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.36	absolute value	16 05 08	discarded organic chemicals consisting of or containing dangerous substances	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.42	absolute value	07 07 07	halogenated still bottoms and reaction residues	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.)	11.2	absolute value	06 01 01	sulphuric acid and sulphurous acid	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.)	10.05	absolute value	06 01 02	hydrochloric acid	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.)	6.45	absolute value	06 01 05	nitric acid and nitrous acid	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.)	4.7	absolute value	06 02 04	sodium and potassium hydroxide	Yes
R13	Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	0.154	absolute value	07 05 04	other organic solvents, washing liquids and mother liquors	Yes
D15	Storage pending any of the operations numbered D1 to D14 (excluding temporary storage pending collection, on the site where it is produced)	0.00015	absolute value	16 05 06	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	Yes

ID: J, Location: 348m E, Permit: BL9623IK
Operator: Evonik Chemicals Limited
Activity: ORGANIC CHEMICALS; NITROGEN CONTAINING COMPOUNDS EG AMINES
Address: Clayton Lane Clayton Greater Manchester M11 4SR
Sector Chemicals, Sub-sector: Chemicals
Releases:

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	33	absolute value	15 01 01	paper and cardboard packaging	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	23	absolute value	20 03 01	mixed municipal waste	No
R4	Recycling/reclamation of metals and metal compounds	199	absolute value	20 01 40	metals	No
R3	Recycling/Reclamation of organic substances which are not used as solvents (including composting and other biological transformatin processes)	222	absolute value	15 01 02	plastic packaging	No

Route	Route description	Quantity (tonnes)	Release level	EWC code	EWC description	Hazardous waste
R1	Use principally as a fuel or other means to generate energy	25	absolute value	20 03 01	mixed municipal waste	No
R1	Use principally as a fuel or other means to generate energy	240	absolute value	07 01 08	other still bottoms and reaction residues	Yes

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

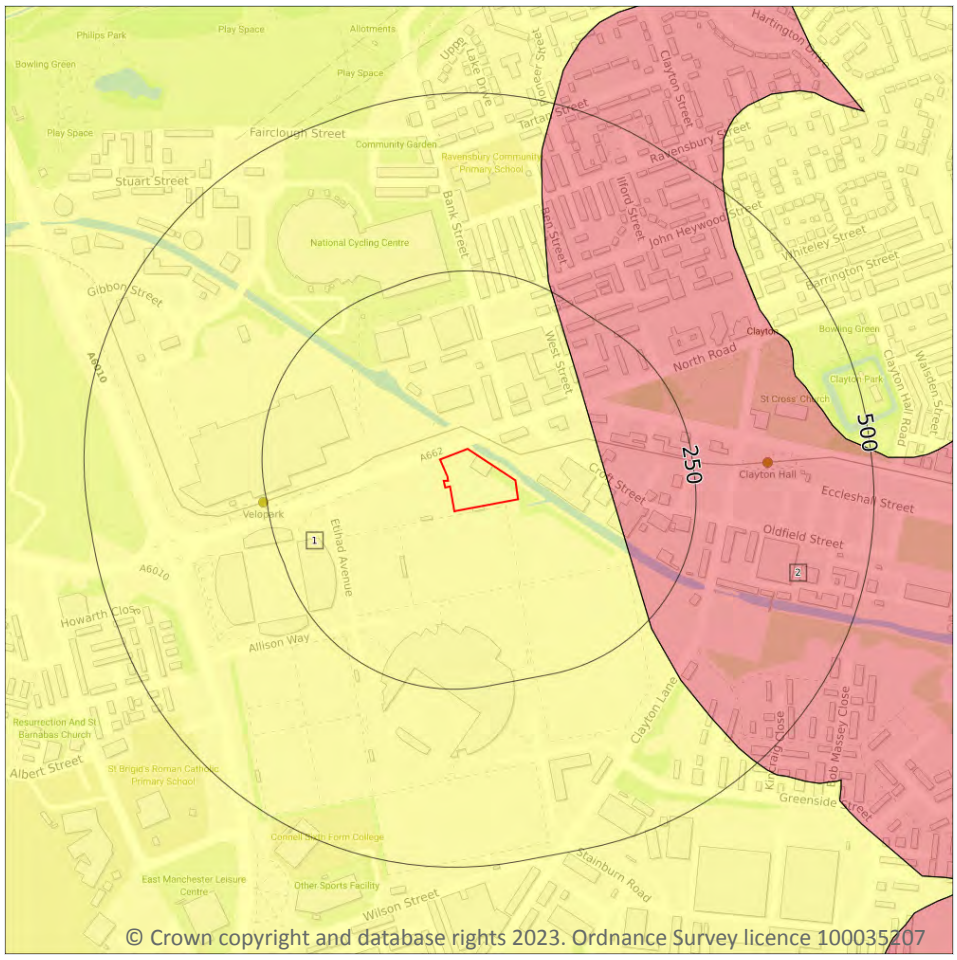
4.21 Pollution inventory radioactive waste

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

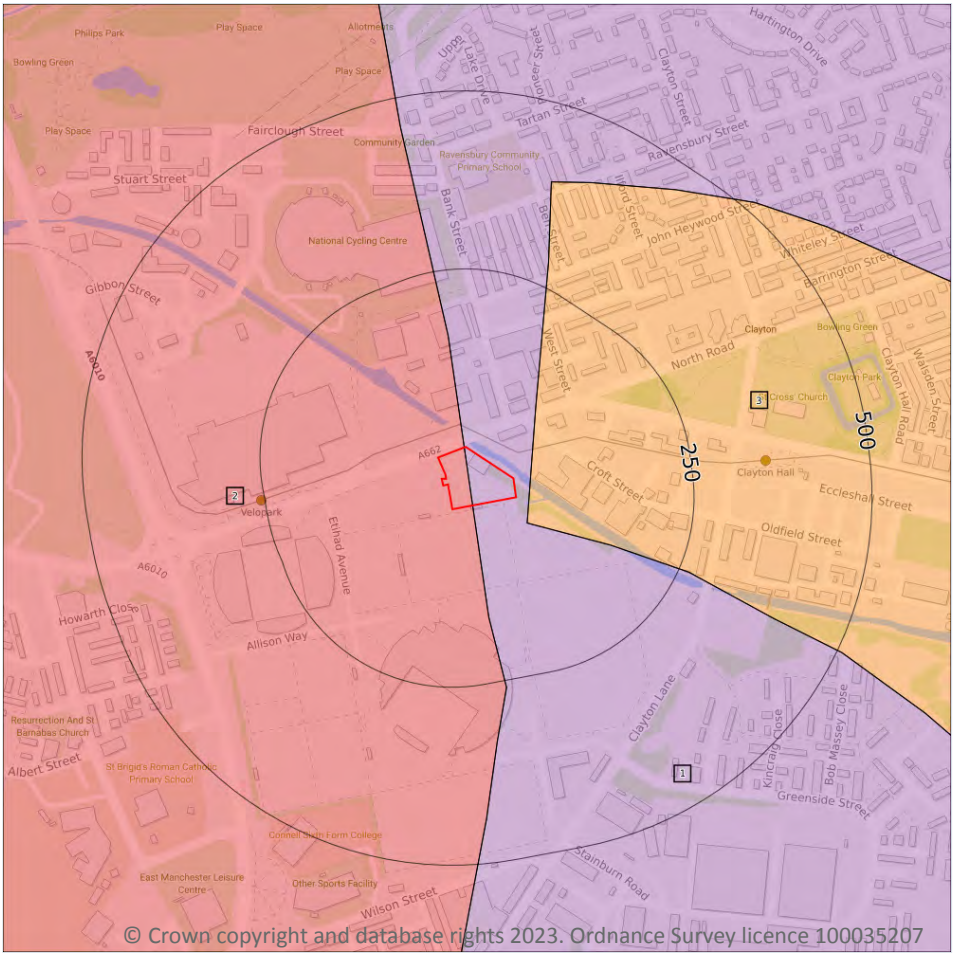
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 116 >**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**
2	124m 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



5.2 Bedrock aquifer

Records within 500m	3

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 118 >**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	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

ID	Location	Designation	Description
3	18m E	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	3

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

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

Features are displayed on the Groundwater vulnerability map on **page 120 >**

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: 300-550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Medium**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**
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: 300-550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Medium**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
3	18m E	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >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.

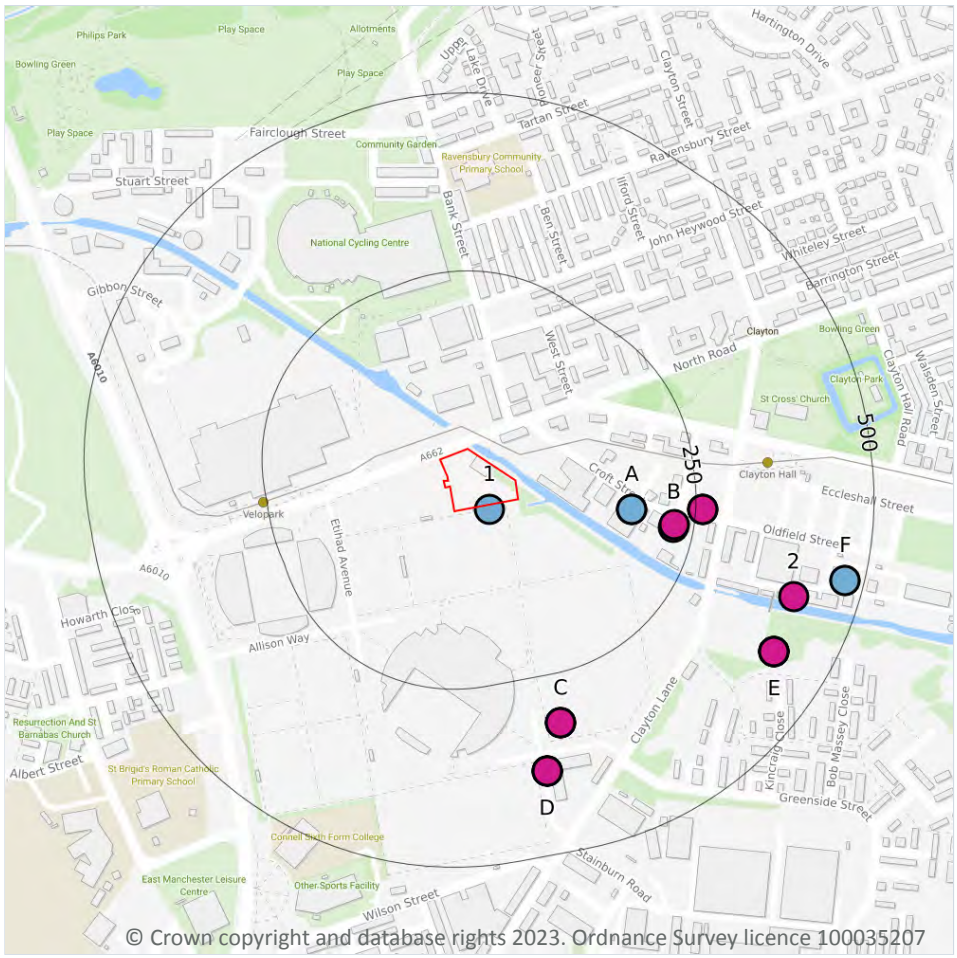
5.5 Groundwater vulnerability- local information

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	26

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 122 >**

ID	Location	Details	
B	222m E	Status: Active Licence No: 2569006037 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLE 2 ON PREMISES AT CROFT STREET, CLAYTON, MANCHESTER Data Type: Point Name: Evonik Chemicals Ltd Easting: 387859 Northing: 398375	Annual Volume (m^3): 111831.6 Max Daily Volume (m^3): 654.62 Original Application No: NPS/WR/035267 Original Start Date: 21/05/1985 Expiry Date: - Issue No: 104 Version Start Date: 19/04/2021 Version End Date: -
B	222m E	Status: Active Licence No: 2569006037 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLE 1 ON PREMISES AT CROFT STREET, CLAYTON, MANCHESTER Data Type: Point Name: Evonik Chemicals Ltd Easting: 387860 Northing: 398379	Annual Volume (m^3): 111831.6 Max Daily Volume (m^3): 654.62 Original Application No: NPS/WR/035267 Original Start Date: 21/05/1985 Expiry Date: - Issue No: 104 Version Start Date: 19/04/2021 Version End Date: -
B	260m E	Status: Historical Licence No: 2569006037 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLES (2) ON PREMISES AT CROFT ST, CLAYTON, MANCHESTER" Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 387900 Northing: 398400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -
B	260m E	Status: Historical Licence No: 2569006037 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLES (2) ON PREMISES AT CROFT ST, CLAYTON, MANCHESTER Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 387900 Northing: 398400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -

ID	Location	Details	
B	260m E	Status: Historical Licence No: 2569006037 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLES X 2 ON PREMISES AT CROFT STREET CLAYTON MANCHESTER Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 387900 Northing: 398400	Annual Volume (m^3): 111832 Max Daily Volume (m^3): 654.624 Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -
C	319m S	Status: Historical Licence No: 2569006026 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, CLAYTON, MANCHESTER" Data Type: Point Name: CIBA SPECIALTY CHEMICALS PLC Easting: 387700 Northing: 398100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/07/2000 Version End Date: -
C	319m S	Status: Historical Licence No: 2569006026 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, CLAYTON, MANCHESTER" Data Type: Point Name: CIBA SPECIALTY CHEMICALS PLC Easting: 387700 Northing: 398100	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/07/2000 Version End Date: -
C	319m S	Status: Historical Licence No: 2569006026 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, CLAYTON, MANCHESTER Data Type: Point Name: CIBA SPECIALTY CHEMICALS PLC Easting: 387700 Northing: 398100	Annual Volume (m^3): 633962 Max Daily Volume (m^3): 2837 Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/07/2000 Version End Date: -

ID	Location	Details	
C	319m S	Status: Historical Licence No: 2569006026 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, CLAYTON, MANCHESTER Data Type: Point Name: CIBA SPECIALTY CHEMICALS PLC Easting: 387700 Northing: 398100	Annual Volume (m^3): 633962 Max Daily Volume (m^3): 2837 Original Application No: - Original Start Date: 24/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 25/07/2000 Version End Date: -
D	383m S	Status: Historical Licence No: NW/069/0006/005 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT OPENSHAW, WEST ASHTON Data Type: Point Name: MANCHESTER CITY FOOTBALL CLUB LIMITED Easting: 387681 Northing: 398032	Annual Volume (m^3): 266113 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 14/11/2012 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 14/11/2012 Version End Date: -
D	383m S	Status: Historical Licence No: NW/069/0006/005 Details: Horticultural Watering Direct Source: Ground Water - North West Region Point: BOREHOLE AT OPENSHAW, WEST ASHTON Data Type: Point Name: MANCHESTER CITY FOOTBALL CLUB LIMITED Easting: 387681 Northing: 398032	Annual Volume (m^3): 266113 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 14/11/2012 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 14/11/2012 Version End Date: -
D	383m S	Status: Historical Licence No: NW/069/0006/005 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT OPENSHAW, WEST ASHTON Data Type: Point Name: MANCHESTER CITY FOOTBALL CLUB LIMITED Easting: 387681 Northing: 398032	Annual Volume (m^3): 266113 Max Daily Volume (m^3): 1000 Original Application No: - Original Start Date: 14/11/2012 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 14/11/2012 Version End Date: -
D	383m S	Status: Active Licence No: NW/069/0006/005/R01 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT OPENSHAW, WEST ASHTON Data Type: Point Name: MANCHESTER CITY FOOTBALL CLUB LIMITED Easting: 387681 Northing: 398032	Annual Volume (m^3): 221650 Max Daily Volume (m^3): 1000 Original Application No: NPS/WR/024168 Original Start Date: 01/04/2018 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 01/04/2018 Version End Date: -

ID	Location	Details	
D	383m S	Status: Active Licence No: NW/069/0006/005/R01 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT OPENSHAW, WEST ASHTON Data Type: Point Name: MANCHESTER CITY FOOTBALL CLUB LIMITED Easting: 387681 Northing: 398032	Annual Volume (m^3): 221650 Max Daily Volume (m^3): 1000 Original Application No: NPS/WR/024168 Original Start Date: 01/04/2018 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 01/04/2018 Version End Date: -
2	410m E	Status: Active Licence No: 2569006036 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT CLAYTON, MANCHESTER Data Type: Point Name: Evonik Chemicals Ltd Easting: 388027 Northing: 398277	Annual Volume (m^3): 372772 Max Daily Volume (m^3): 3600.5 Original Application No: NPS/WR/035265 Original Start Date: 21/05/1985 Expiry Date: - Issue No: 104 Version Start Date: 19/04/2021 Version End Date: -
E	418m SE	Status: Historical Licence No: 2569006036 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE ON PREMISES AT CLAYTON, MANCHESTER" Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 388000 Northing: 398200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -
E	418m SE	Status: Historical Licence No: 2569006036 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE ON PREMISES AT CLAYTON, MANCHESTER" Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 388000 Northing: 398200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -

ID	Location	Details	
E	418m SE	Status: Historical Licence No: 2569006036 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT CLAYTON, MANCHESTER Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 388000 Northing: 398200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -
E	418m SE	Status: Historical Licence No: 2569006036 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT CLAYTON, MANCHESTER Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 388000 Northing: 398200	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -
E	418m SE	Status: Historical Licence No: 2569006036 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT CLAYTON MANCHESTER Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 388000 Northing: 398200	Annual Volume (m^3): 372772 Max Daily Volume (m^3): 3600.5 Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -
E	418m SE	Status: Historical Licence No: 2569006036 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE ON PREMISES AT CLAYTON MANCHESTER Data Type: Point Name: AIR PRODUCTS CHEMICALS LTD Easting: 388000 Northing: 398200	Annual Volume (m^3): 372772 Max Daily Volume (m^3): 3600.5 Original Application No: - Original Start Date: 21/05/1985 Expiry Date: - Issue No: 100 Version Start Date: 01/07/1996 Version End Date: -

ID	Location	Details	
-	1582m S	Status: Historical Licence No: 2569006044 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PRESTON STREET, GORTON, MANCHESTER Data Type: Point Name: CEMEX UK MATERIALS LTD Easting: 388030 Northing: 396880	Annual Volume (m^3): 15000 Max Daily Volume (m^3): 115 Original Application No: - Original Start Date: 23/10/2003 Expiry Date: 31/03/2014 Issue No: 3 Version Start Date: 15/10/2007 Version End Date: -
-	1582m S	Status: Active Licence No: NW/069/0004/012 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PRESTON STREET, MANCHESTER Data Type: Point Name: Cemex UK Materials Limited Easting: 388030 Northing: 396880	Annual Volume (m^3): 7500 Max Daily Volume (m^3): 72 Original Application No: NPS/WR/030760A Original Start Date: 19/06/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 21/12/2018 Version End Date: -
-	1644m NW	Status: Historical Licence No: 2569005061 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT NORTON STREET, MILES PLATTING, MANCHESTER" Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LTD Easting: 386550 Northing: 399790	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/02/2000 Expiry Date: - Issue No: 2 Version Start Date: 01/07/2000 Version End Date: -
-	1644m NW	Status: Active Licence No: 2569005061 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT NORTON STREET, MILES PLATTING, MANCHESTER Data Type: Point Name: HANSON QUARRY PRODUCTS EUROPE LIMITED Easting: 386550 Northing: 399790	Annual Volume (m^3): 33000 Max Daily Volume (m^3): 125 Original Application No: NPS/WR/011609 Original Start Date: 08/02/2000 Expiry Date: - Issue No: 3 Version Start Date: 13/08/2012 Version End Date: -

ID	Location	Details	
-	1806m NE	Status: Historical Licence No: 2569006021 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT CLAYTON MILL BRIDGE, MANCHESTER Data Type: Point Name: MANCHESTER ABATTOIR Easting: 389100 Northing: 399500	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 22/05/1998 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**6**

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 122 >**

ID	Location	Details	
1	6m SE	Status: Historical Licence No: 2569006996 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ASHTON CANAL, MANCHESTER [VITACOM] Data Type: Point Name: BRITISH WATERWAYS Easting: 387600 Northing: 398400	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: 01/04/1969 Version End Date: -
A	160m E	Status: Historical Licence No: 2569006997 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "ASHTON CANAL, MANCHESTER [CLAYTON ANALINE]" Data Type: Point Name: BRITISH WATERWAYS Easting: 387800 Northing: 398400	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: 01/04/1969 Version End Date: -

ID	Location	Details	
A	160m E	Status: Historical Licence No: 2569006997 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: ASHTON CANAL, MANCHESTER [CLAYTON ANALINE] Data Type: Point Name: BRITISH WATERWAYS BOARD Easting: 387800 Northing: 398400	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: 01/04/1969 Version End Date: -
A	160m E	Status: Historical Licence No: 2569006997 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: ASHTON CANAL MANCHESTER CLAYTON ANALINE Data Type: Point Name: Canal and River Trust Easting: 387800 Northing: 398400	Annual Volume (m^3): 3500420 Max Daily Volume (m^3): 3500420 Original Application No: 1470 Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -
F	473m E	Status: Historical Licence No: 2569006995 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "ASHTON CANAL, MANCHESTER" Data Type: Point Name: BRITISH WATERWAYS Easting: 388100 Northing: 398300	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: 01/04/1969 Version End Date: -
F	473m E	Status: Historical Licence No: 2569006995 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ASHTON CANAL, MANCHESTER Data Type: Point Name: Canal and River Trust Easting: 388100 Northing: 398300	Annual Volume (m^3): 68190 Max Daily Volume (m^3): 68190 Original Application No: - Original Start Date: 01/04/1969 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1969 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS 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	6

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 132 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
2	7m N	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ashton Canal

ID	Location	Type of water feature	Ground level	Permanence	Name
A	8m E	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ashton Canal
A	9m NE	Manmade watercourse for water transfer.	On ground surface	Watercourse may not contain water all year round	Ashton Canal
B	10m E	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ashton Canal
C	168m NW	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ashton Canal
5	174m NW	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Ashton Canal

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	2

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 132 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 132 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Medlock (Lumb Brook to Irwell)**	**GB112069061152**	**Roch Irk Medlock**	**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 132 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	8m E	Canal	Ashton Canal and Peak Forest Canal, lower section	GB71210219 ↗	Moderate	Fail	Moderate	2019
-	710m N	River	Medlock (Lumb Brook to Irwell)	GB112069061152 ↗	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 132 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Manchester and East Cheshire Permo-Triassic Sandstone Aquifers**	**GB41201G101100 ↗**	**Poor**	**Poor**	**Poor**	**2019**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, Greater than 1.0m**
Highest risk within 50m	**1 in 30 year, Greater than 1.0m**

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

Features are displayed on the Surface water flooding map on **page 139 >**

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

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

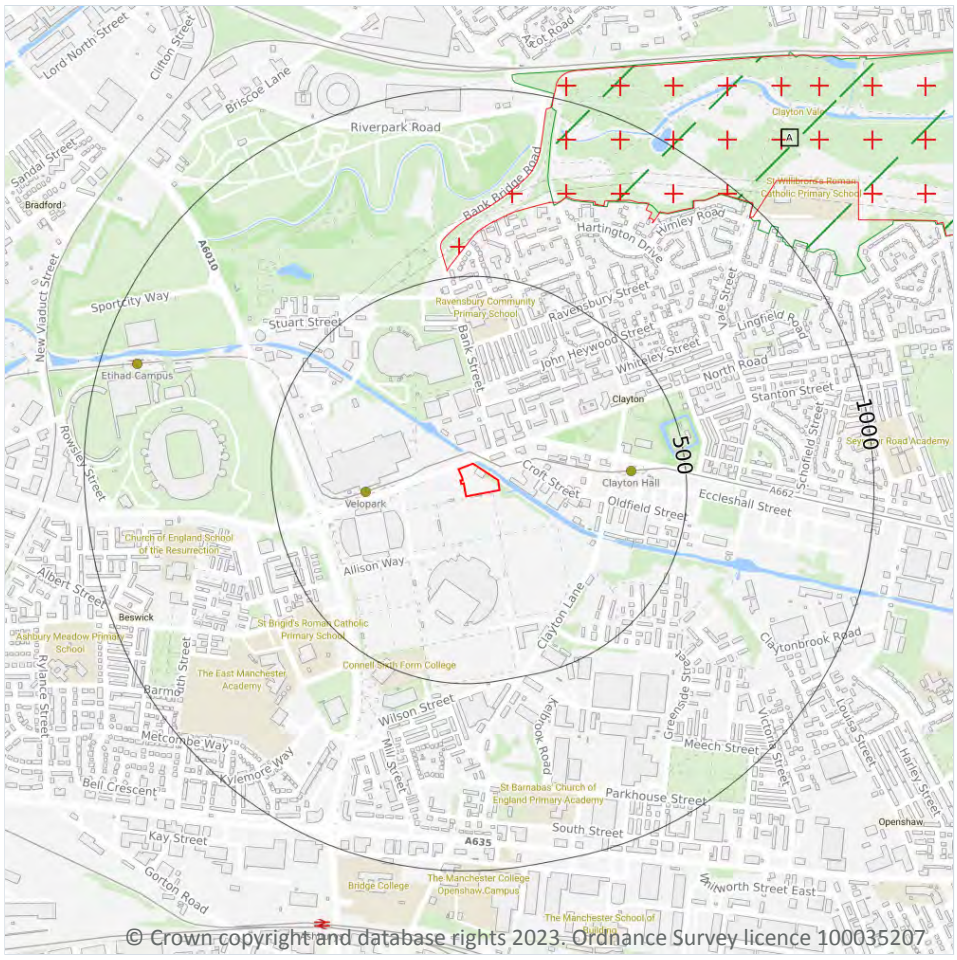
Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate-High**

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 141 >**

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	1

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 142 >**

ID	Location	Name	Data source
A	520m N	Clayton Vale	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	2

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

Features are displayed on the Environmental designations map on **page 142 >**

ID	Location	Name	Local Authority name
A	723m N	Merseyside and Greater Manchester	Manchester
-	1736m NE	Merseyside and Greater Manchester	Tameside

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

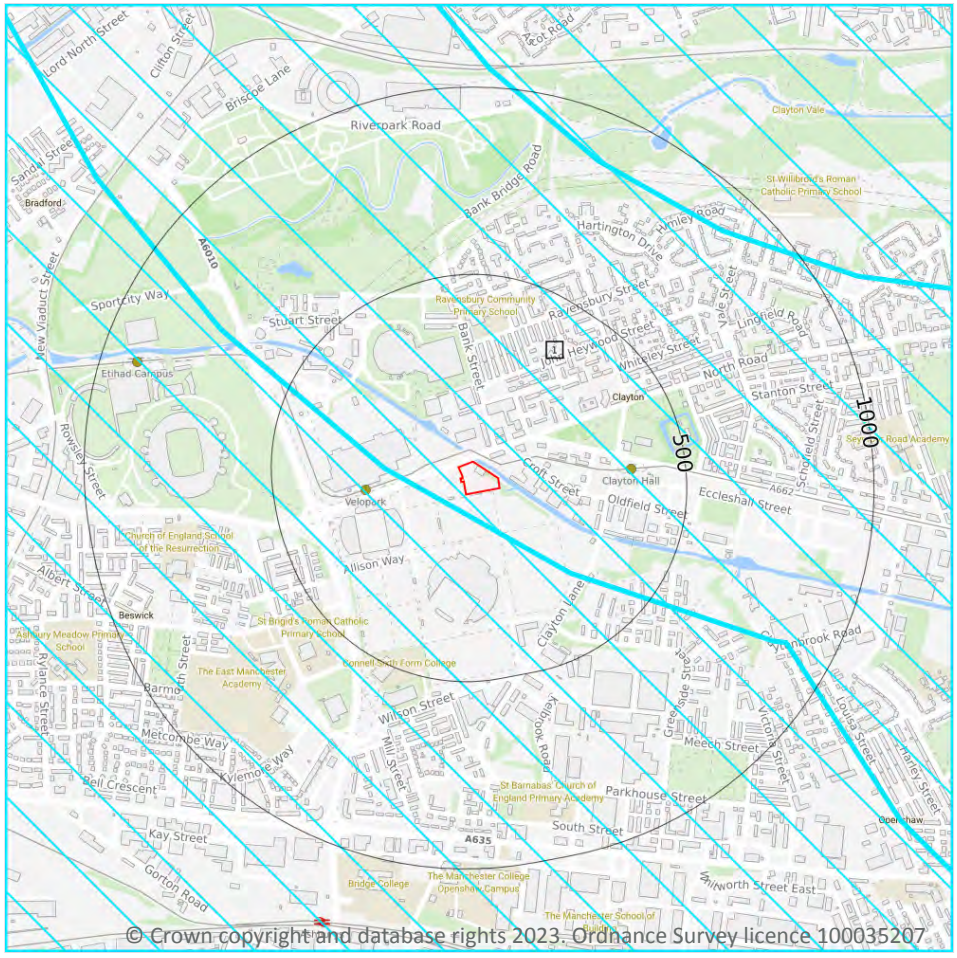
Records within 2000m	1

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

Location	Name	Type	NVZ ID	Status
1985m N	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 147 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**Infrastructure - Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, 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.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**0**

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

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

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

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	1

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

Features are displayed on the Visual and cultural designations map on **page 149 >**

ID	Location	Name	Grade	Reference Number	Listed date
1	9m NE	Ashton Canal Lock Number 8 To South East Of Ashton New Road	II	1279617	06/06/1994

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

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	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 152 >**

ID	Location	Classification	Description
1	**On site**	**Urban**	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	1

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

Features are displayed on the Habitat designations map on **page 154 >**

ID	Location	Site reference	Identification confidence	Primary source	Secondary source	Tertiary source
1	**On site**	**NLUD Ref: 421501629; BRITPITS ref: 29591**	**Low**	**National Land Use Database - Previously Developed Land**	**British Geological Survey BRITPITS database**	**UK Perspectives Aerial Photography**

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m	1

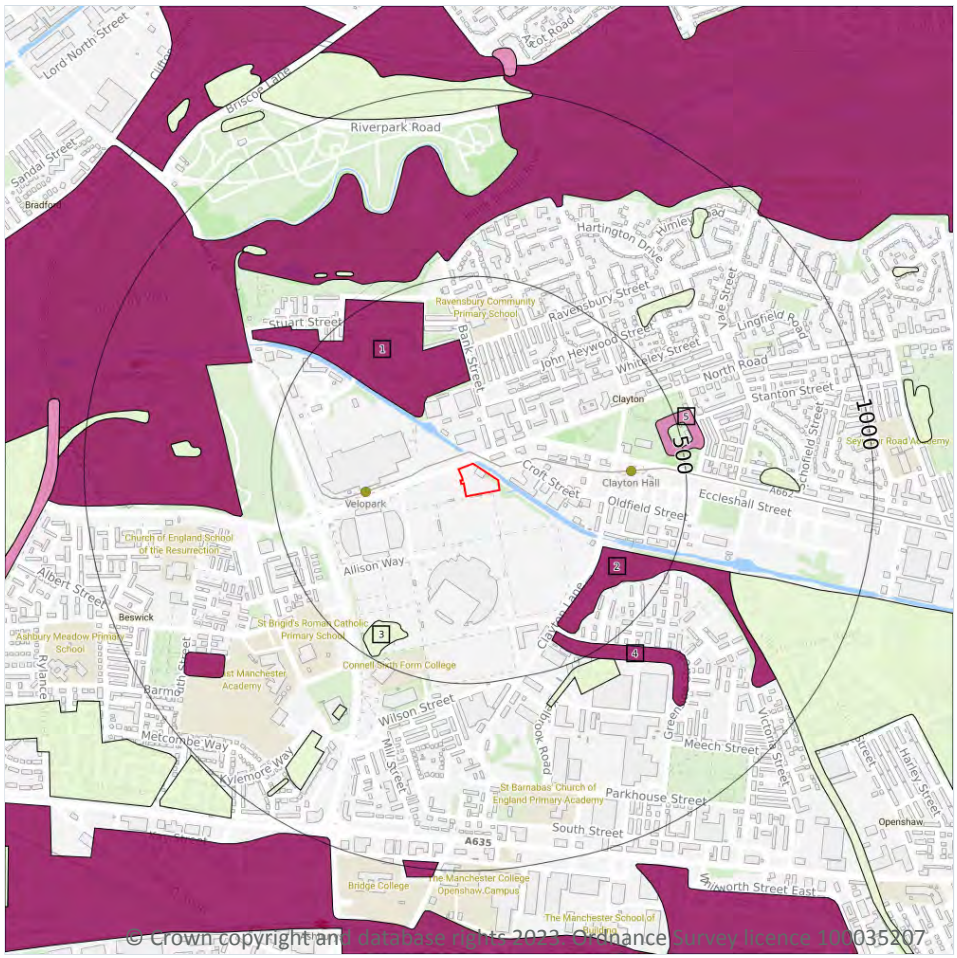
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 156 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SJ89NE**

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

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

14.2 Artificial and made ground (10k)

Records within 500m	5

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.

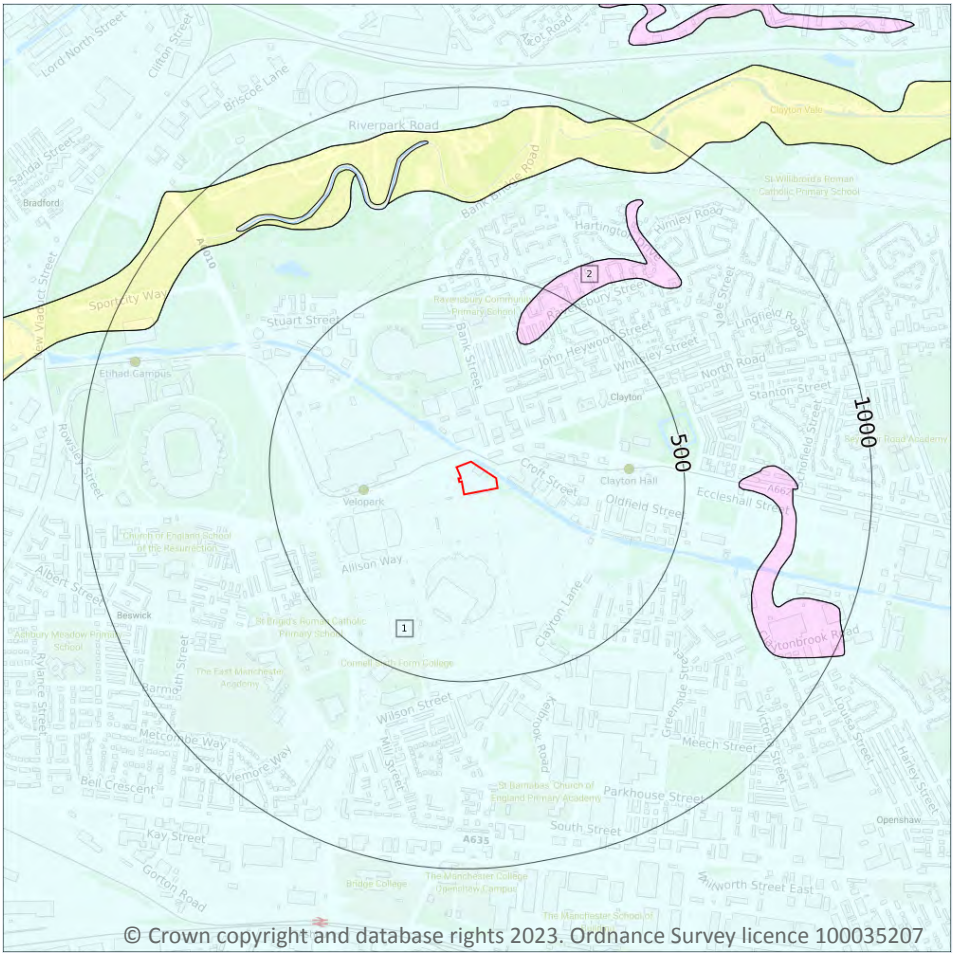
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 157 >**

ID	Location	LEX Code	Description	Rock description
1	173m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	315m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	385m SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	406m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
5	445m E	WGR-VOID	Worked Ground (Undivided)	Void

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 **2**

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 159 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**Till, Devensian - Diamicton**	**Diamicton**
2	343m N	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

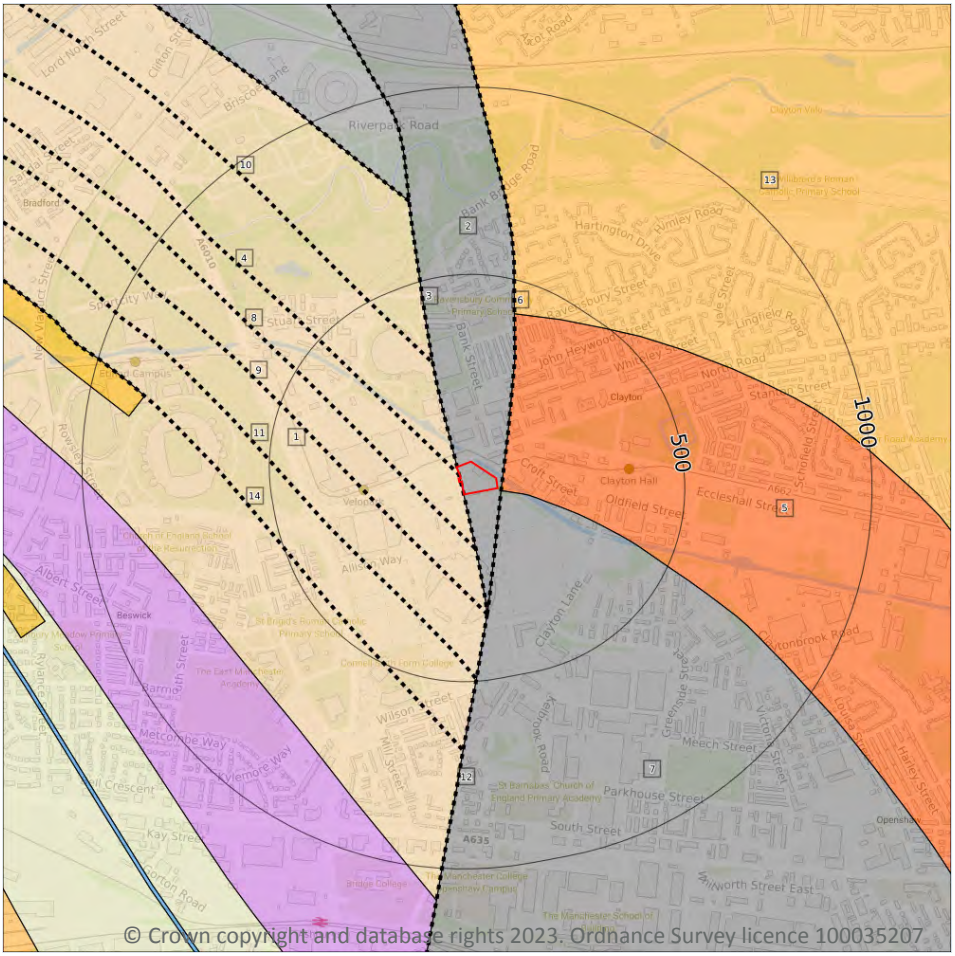
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m	5

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 161 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PUCM-MDSS**	**Pennine Upper Coal Measures Formation - Mudstone, Siltstone And Sandstone**	**Westphalian D Sub-age - Bolsovian Sub-age**
2	**On site**	**CPB-SDST**	**Chester Pebble Beds Formation - Sandstone**	**Early Triassic Epoch**
5	10m E	MM-MDST	Manchester Marls Formation - Mudstone	Late Permian Epoch [Obsolete name]

ID	Location	LEX Code	Description	Rock age
7	12m SE	CPB-SDST	Chester Pebble Beds Formation - Sandstone	Early Triassic Epoch
13	412m N	CS-SDST	Collyhurst Sandstone Formation - Sandstone	Cisuralian Epoch

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	**9**

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 161 >**

ID	Location	Category	Description
3	**On site**	**FAULT**	**Normal fault, inferred; crossmarks on downthrow side**
4	2m W	ROCK	Coal seam, inferred
6	10m E	FAULT	Normal fault, inferred; crossmarks on downthrow side
8	82m SW	ROCK	Coal seam, inferred
9	184m SW	ROCK	Coal seam, inferred
10	283m N	ROCK	Coal seam, inferred
11	316m SW	ROCK	Coal seam, inferred
12	325m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
14	462m SW	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

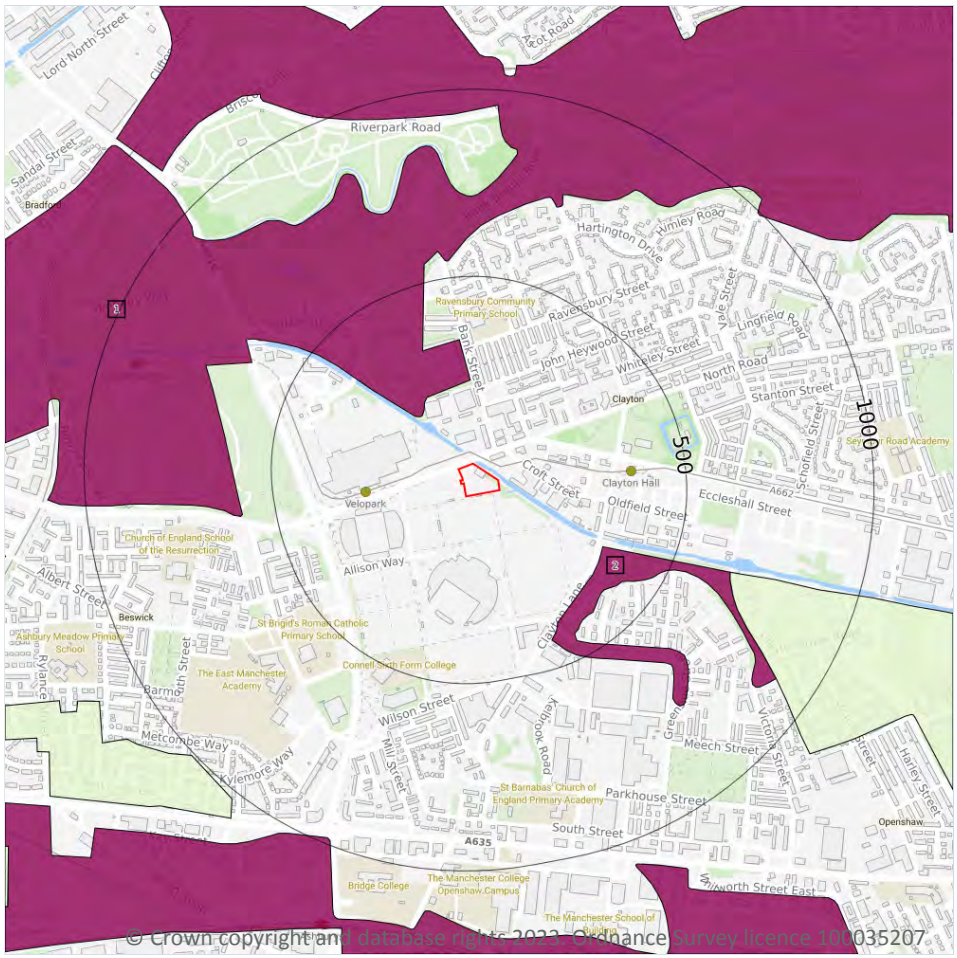
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 163 >**

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



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 164 >**

ID	Location	LEX Code	Description	Rock description
1	173m NW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT
2	314m SE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

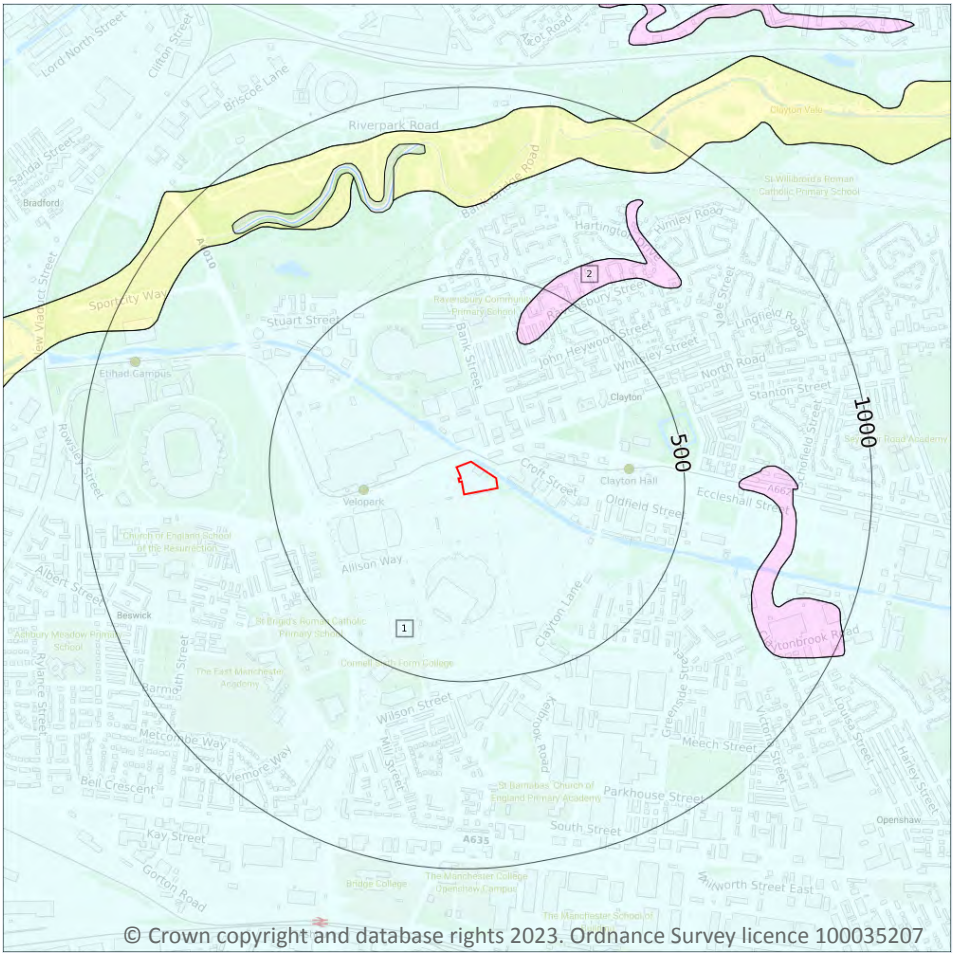
15.3 Artificial ground permeability (50k)

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	2

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 166 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**
2	343m N	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	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

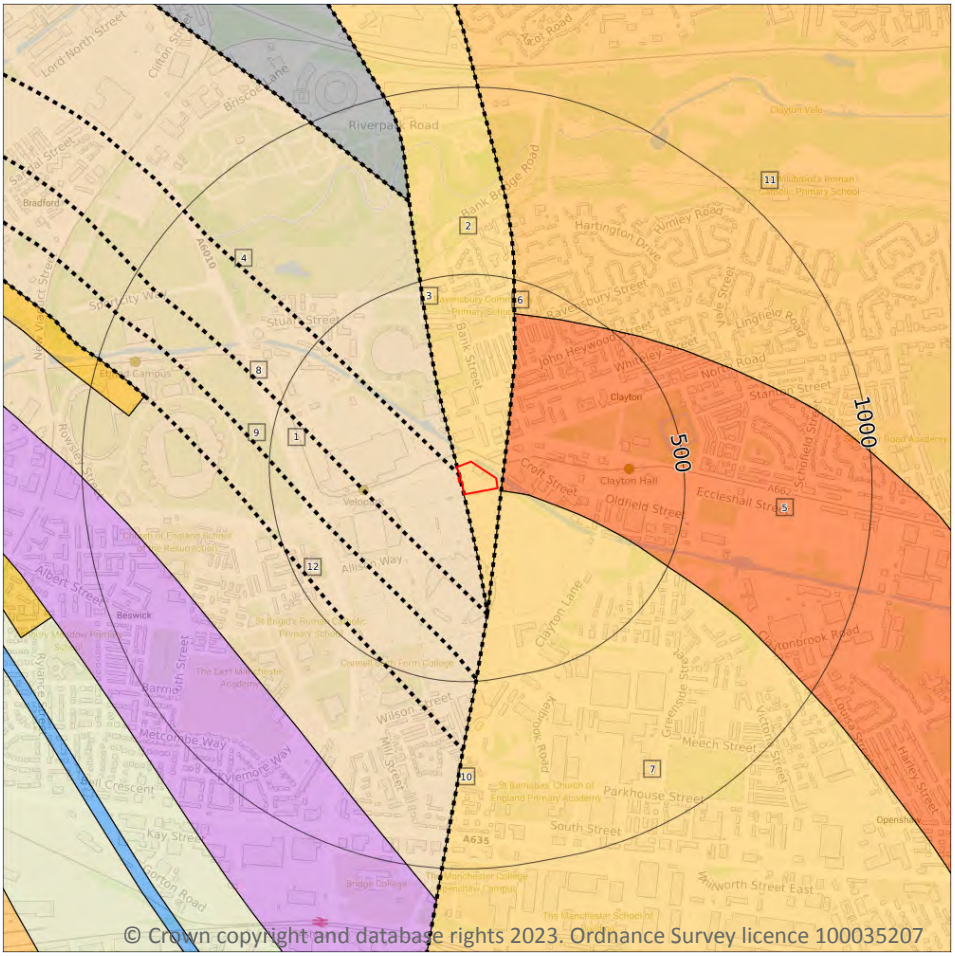
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



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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 **5**

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 168 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PUCM-MDSS**	**PENNINE UPPER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**WESTPHALIAN**
2	**On site**	**CHES-SDST**	**CHESTER FORMATION - SANDSTONE**	**OLENEKIAN**
5	10m E	MM-MDST	MANCHESTER MARLS FORMATION - MUDSTONE	-

ID	Location	LEX Code	Description	Rock age
7	12m SE	CHES-SDST	CHESTER FORMATION - SANDSTONE	OLENEKIAN
11	412m N	CS-SDST	COLLYHURST SANDSTONE FORMATION - SANDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**3**

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of 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	**Mixed**	**High**	**Moderate**
10m E	Fracture	Low	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**7**

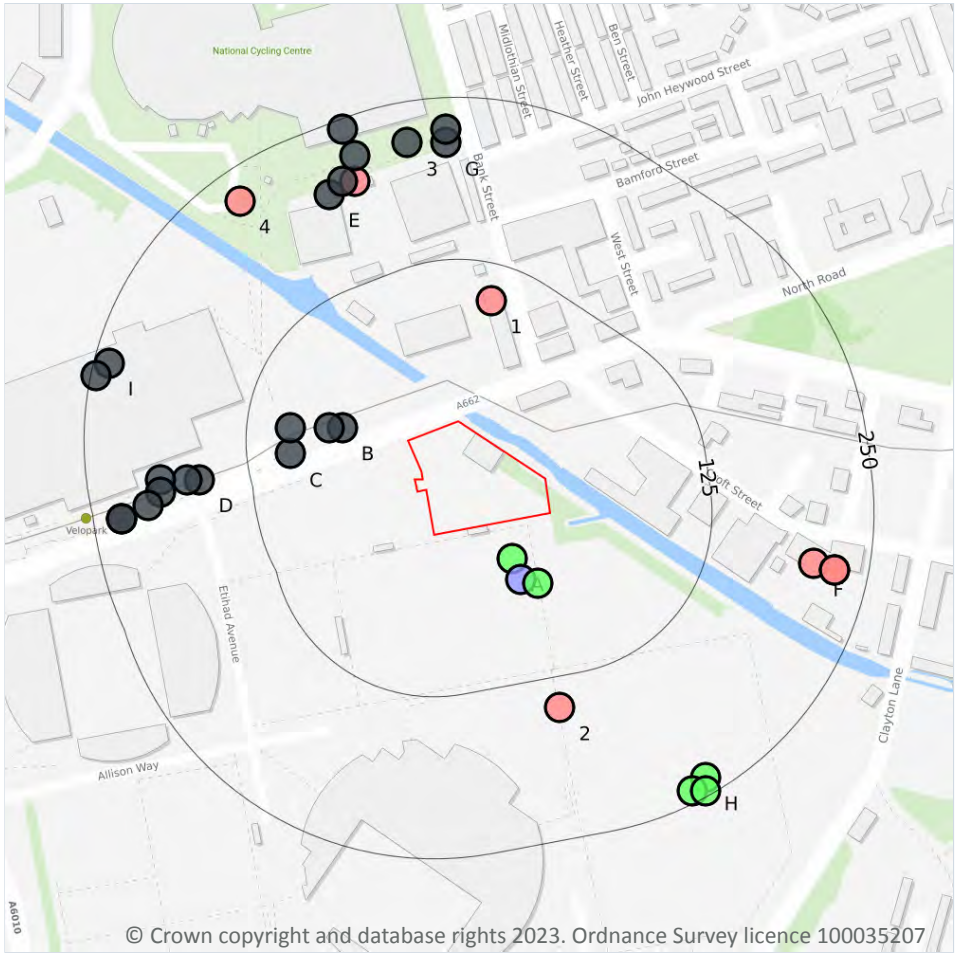
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 168 >**

ID	Location	Category	Description
3	**On site**	**FAULT**	**Fault, inferred**
4	2m W	ROCK	Coal seam, inferred
6	10m E	FAULT	Fault, inferred
8	184m SW	ROCK	Coal seam, inferred
9	316m SW	ROCK	Coal seam, inferred
10	325m S	FAULT	Fault, inferred
12	462m SW	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	33

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 171 >**

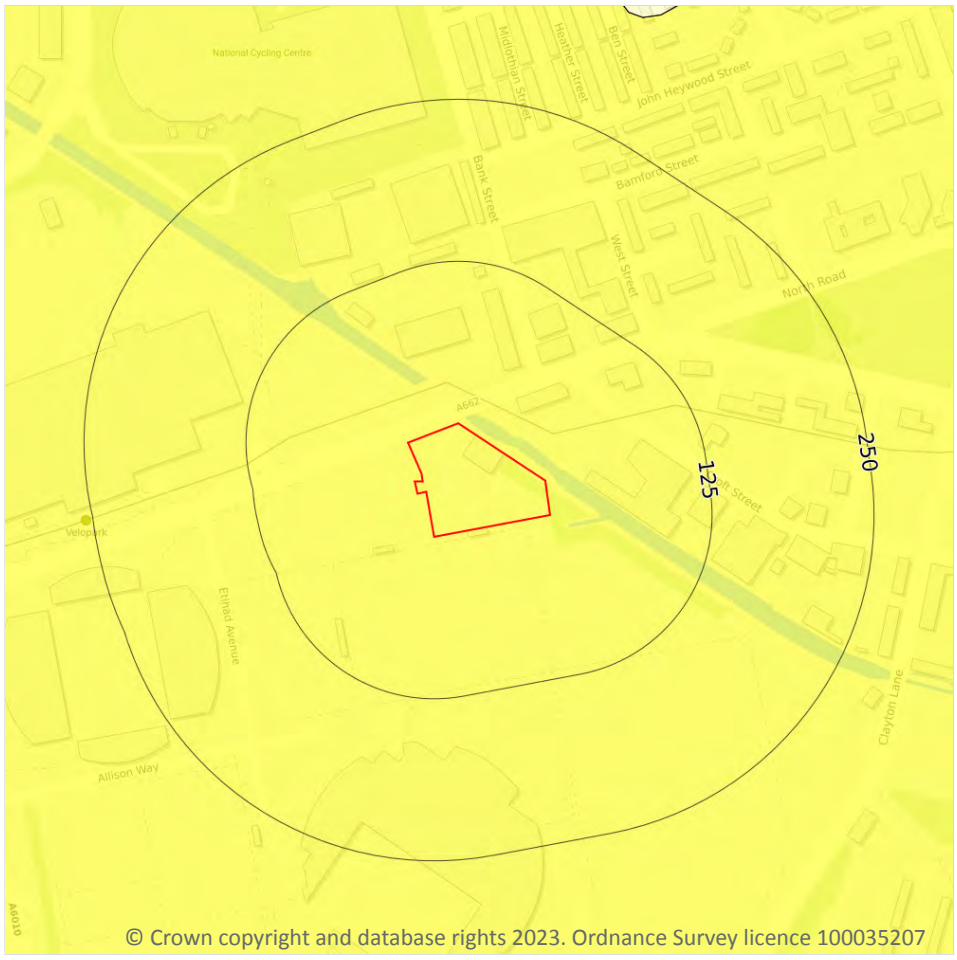
ID	Location	Grid reference	Name	Length	Confidential	Web link
A	29m SE	387611 398379	CLAYTON ANILINE WORKS T2	13.72	N	936608 ↗
A	46m SE	387618 398363	CLAYTON ANILINE WORKS T3	5.49	N	936609 ↗
A	51m SE	387631 398360	CLAYTON ANILINE WORKS T1	10.06	N	936607 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
B	52m W	387480 398480	MANCHESTER METROLINK-ADDITIONAL WORKS BHA10	-	Y	N/A
B	62m W	387470 398480	MANCHESTER METROLINK-ADDITIONAL WORKS BHA9	-	Y	N/A
C	91m W	387440 398460	MANCHESTER METROLINK-ADDITIONAL WORKS BHA7	-	Y	N/A
C	91m W	387440 398480	MANCHESTER METROLINK-ADDITIONAL WORKS BHA8	-	Y	N/A
1	97m N	387595 398578	MAIN & CRANE ASHTON NEW ROAD	61.57	N	936497 ↗
2	149m S	387648 398264	CLAYTON ANILINE CO.	60.96	N	936499 ↗
D	164m W	387370 398440	MANCHESTER METRO PHASE 3 EXTENSION TO COMMONWEALTH WEALTH GAMES STADIUM TP J6	-	Y	N/A
D	173m W	387360 398440	MANCHESTER METRO PHASE 3 EXTENSION TO COMMONWEALTH WEALTH GAMES STADIUM TP J7	-	Y	N/A
D	193m W	387340 398440	MANCHESTER METRO PHASE 3 EXTENSION TO COMMONWEALTH WEALTH GAMES STADIUM TP J8	-	Y	N/A
D	195m W	387340 398430	MANCHESTER METRO PHASE 3 EXTENSION TO COMMONWEALTH WEALTH GAMES STADIUM BHJ5	-	Y	N/A
E	199m NW	387470 398660	EASTLANDS PLOTS 56 & 57 BH4/56	-	Y	N/A
E	201m N	387490 398670	EASTLANDS R1/56	45.0	N	936636 ↗
E	205m NW	387480 398670	EASTLANDS PLOTS 56 & 57 BHR1/56	-	Y	N/A
D	207m W	387330 398420	MANCHESTER METROLINK-ADDITIONAL WORKS BHA6A	-	Y	N/A
F	207m E	387844 398375	MARSDEN CLAYTON LTD	103.33	N	936498 ↗
G	215m N	387560 398700	EASTLANDS PLOTS 56 & 57 BH3/56	-	Y	N/A
3	219m N	387530 398700	EASTLANDS PLOTS 56 & 57 TH2/56	-	Y	N/A
E	220m N	387490 398690	EASTLANDS PLOTS 56 & 57 TH3/56	-	Y	N/A
F	224m E	387860 398370	VICTOR WOLF LTD CLAYTON SOUTH	137.16	N	937338 ↗
F	224m E	387860 398370	VICTOR WOLF LTD CLAYTON NORTH	137.16	N	937337 ↗
G	225m N	387560 398710	EASTLANDS PLOTS 56 & 57 TH1/56	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	226m NW	387401 398655	BRADFORD COLLIERY MAIN NORTH CROSS CUT	43.59	N	936496 ↗
D	228m W	387310 398410	MANCHESTER METRO PHASE 3 EXTENSION TO COMMONWEALTH WEALTH GAMES STADIUM TP J9`	-	Y	N/A
D	228m W	387310 398410	MANCHESTER METROLINK-ADDITIONAL WORKS BHA5	-	Y	N/A
H	237m SE	387760 398210	CIBA CLAYTON MANCHESTER 2	15.0	N	937268 ↗
I	239m W	387300 398530	EASTLANDS PLOTS 48 & 51 BH4/48	-	Y	N/A
H	241m SE	387750 398200	CIBA CLAYTON MANCHESTER 3	30.0	N	937269 ↗
E	242m N	387480 398710	EASTLANDS PLOTS 56 & 57 TH4/56	-	Y	N/A
H	245m SE	387760 398200	CIBA CLAYTON MANCHESTER 1	15.4	N	937267 ↗
I	246m W	387290 398520	EASTLANDS PLOTS 48 & 51 TH8/48	-	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	1

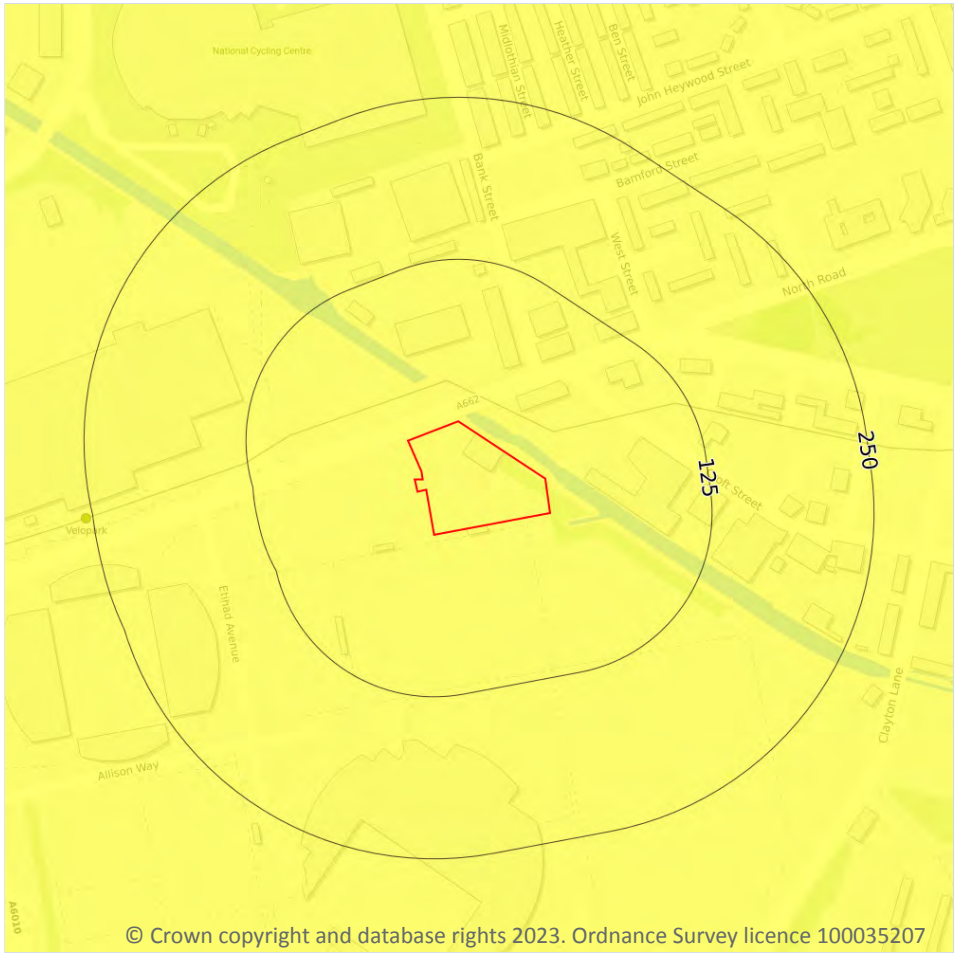
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 174 >**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	1

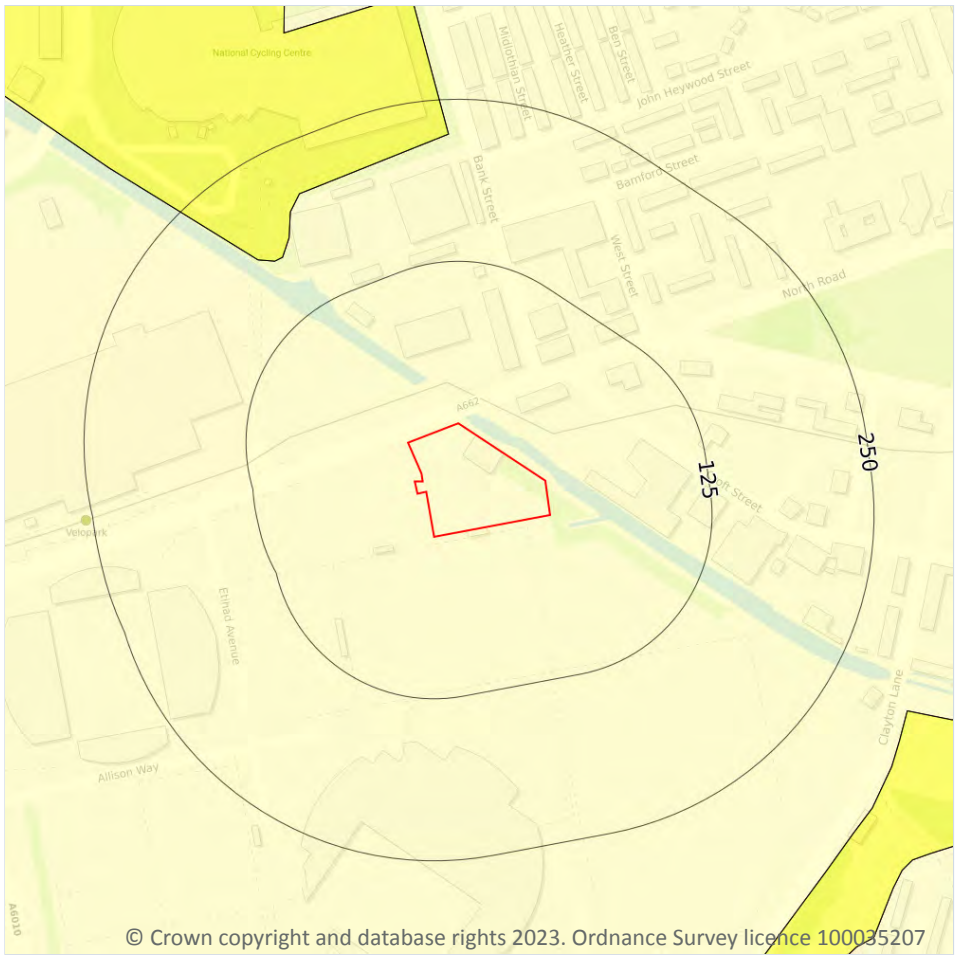
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 175 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 176 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 177 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	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 178 >**

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



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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 179 >**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 181 >**

ID	Location	Details	Description
D	139m N	Name: West End Brick Field Address: Clayton, MANCHESTER, Lancashire Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
G	339m S	Name: Clayton Colliery Address: Gorton, MANCHESTER, Lancashire Commodity: Coal, Deep Status: Ceased	Type: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots) Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	37

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 181 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Canal**	**1938**	**1:10560**
A	**On site**	**Canal**	**1933**	**1:10560**
A	**On site**	**Canal**	**1921**	**1:10560**
A	**On site**	**Canal**	**1906**	**1:10560**
A	**On site**	**Canal**	**1891**	**1:10560**

ID	Location	Land Use	Year of mapping	Mapping scale
B	**On site**	**Canal**	**1923**	**1:10560**
B	6m E	Canal	1968	1:10560
B	6m E	Canal	1956	1:10560
B	10m N	Canal	1985	1:10000
B	10m N	Canal	1978	1:10000
C	11m S	Refuse Heap	1923	1:10560
B	11m N	Canal	1991	1:10000
C	11m S	Refuse Heap	1921	1:10560
C	21m S	Unspecified Heap	1956	1:10560
C	31m S	Pond	1891	1:10560
C	57m S	Refuse Heap	1906	1:10560
C	61m SE	Refuse Heap	1891	1:10560
1	95m SW	Pond	1851	1:10560
2	97m W	Colliery	1851	1:10560
D	106m N	Brick Kiln	1851	1:10560
C	128m S	Refuse Heap	1915	1:10560
C	129m S	Pond	1851	1:10560
3	129m N	Refuse Heap	1891	1:10560
C	130m S	Refuse Heap	1905	1:10560
C	132m S	Unspecified Heap	1938	1:10560
C	132m S	Unspecified Heap	1934	1:10560
C	136m S	Refuse Heap	1890	1:10560
E	137m NW	Brick Field	1891	1:10560
C	140m S	Refuse	1956	1:10560
C	165m S	Refuse Heap	1968	1:10560
F	186m N	Pond	1891	1:10560
F	195m N	Pond	1851	1:10560
4	204m N	Unspecified Ground Workings	1923	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
E	235m NW	Unspecified Ground Workings	1906	1:10560
C	239m SW	Refuse Heap	1938	1:10560
C	240m SW	Refuse Heap	1934	1:10560
E	243m NW	Unspecified Pit	1938	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**7**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 181 >**

ID	Location	Land Use	Year of mapping	Mapping scale
K	433m W	Colliery	1921	1:10560
K	433m W	Colliery	1906	1:10560
K	433m W	Colliery	1923	1:10560
K	458m W	Unspecified Disused Shafts	1985	1:10000
K	460m W	Unspecified Disused Shafts	1985	1:10000
K	465m W	Unspecified Shafts	1978	1:10000
K	467m W	Unspecified Shafts	1978	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 181 >**

ID	Location	Name	Commodity	Class	Likelihood
21	727m SW	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	2

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 181 >**

ID	Location	Mine Address	Mineral	Data source	Publisher
7	332m W	Manchester, Greater Manchester	Fireclay	'Underground Manchester - Secrets of the city revealed'	Willow Publishing
19	679m SW	Ardwick, Greater Manchester	Bath Stone, Cornstone, Limestone	CATALOGUE OF PLANS OF ABANDONED MINES (NON COAL)	-

This data is sourced from Stantec UK Ltd.

18.8 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.

18.9 Coal mining

Records on site	**1**

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

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	**0**

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

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

18.11 Gypsum areas

Records on site	**0**

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

Records on site	0

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

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

19 Radon



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%

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 188 >**

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.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	8

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
15m N	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
16m N	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
18m E	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
31m W	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
39m SE	15 - 25 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
43m NW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**9**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**22**	**3.8**	**52**	**36**	**0.3**	**73**	**21**	**28**	**4**
On site	**24**	**4.2**	**57**	**39**	**0.3**	**75**	**21**	**29**	**5**
On site	**25**	**4.4**	**45**	**31**	**0.3**	**81**	**22**	**30**	**4**
6m SE	21	3.7	47	32	0.3	72	25	27	4
15m N	25	4.4	49	34	0.3	77	20	31	4
29m N	26	4.6	43	30	0.3	83	21	32	4
31m W	24	4.2	40	27	0.3	75	19	30	31
43m NW	25	4.4	39	27	0.3	78	19	31	41
49m SW	24	4.2	42	29	0.3	73	20	28	20

This data is sourced from the British Geological Survey.

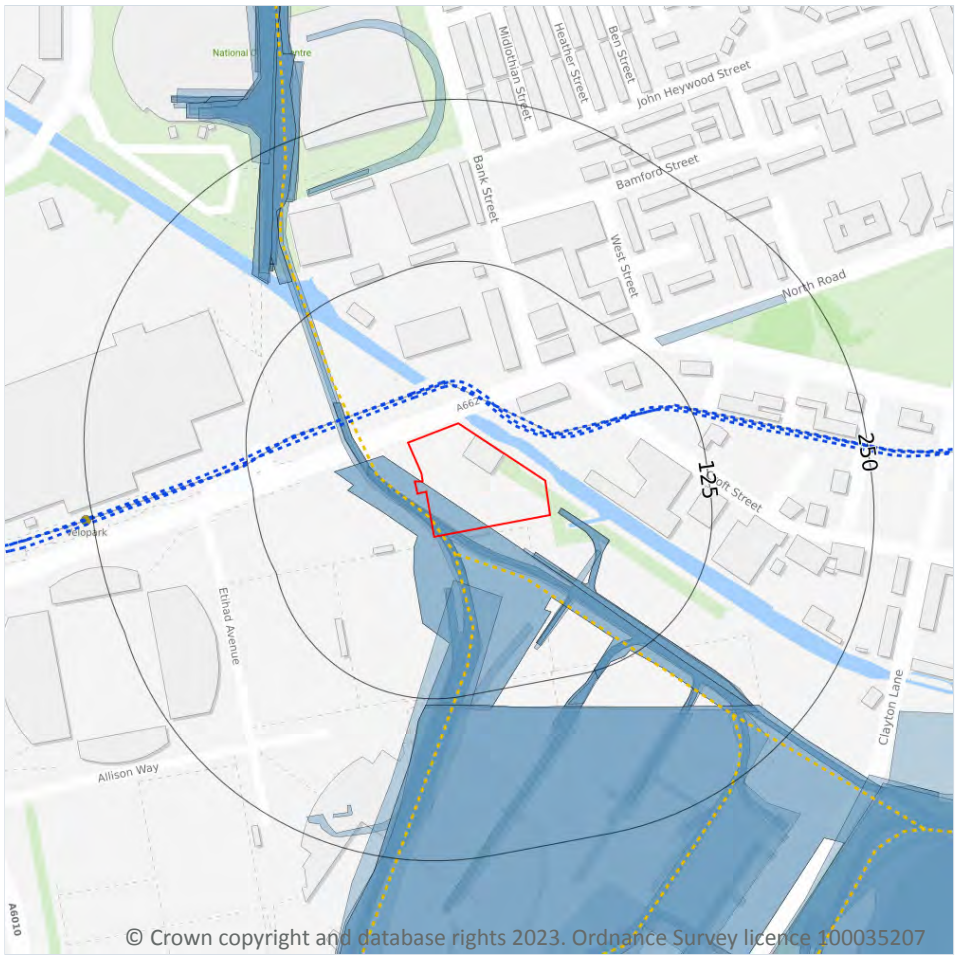
20.3 BGS Measured Urban Soil Chemistry

Records within 50m	**0**

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects



Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	34

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 192 >**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1949**	**2500**
On site	**Railway Sidings**	**1987**	**1250**
On site	**Railway Sidings**	**1991**	**1250**
On site	**Mineral Railway Sidings**	**1970**	**1250**
On site	**Mineral Railway Sidings**	**1949**	**1250**
On site	**Mineral Railway Sidings**	**1956**	**1250**
On site	**Mineral Railway Sidings**	**1980**	**1250**
On site	**Railway Sidings**	**1932**	**2500**
On site	**Railway Sidings**	**1938**	**10560**
On site	**Railway Sidings**	**1933**	**10560**
35m W	Mineral Railway Sidings	1949	1250
35m W	Mineral Railway Sidings	1953	1250
36m S	Railway Sidings	1978	10000
78m S	Railway Sidings	1893	2500
128m S	Railway Sidings	1893	2500
128m S	Railway	1932	-
130m S	Railway Sidings	1938	10560

Location	Land Use	Year of mapping	Mapping scale
130m S	Railway Sidings	1934	10560
134m S	Railway Sidings	1933	2500
138m NE	Tramway Sidings	1908	2500
152m S	Railway Sidings	1933	2500
153m NW	Mineral Railway Sidings	1938	10560
153m NW	Mineral Railway Sidings	1933	10560
163m NW	Mineral Railway Sidings	1906	10560
168m NW	Mineral Railway Sidings	1908	2500
168m NW	Mineral Railway Sidings	1922	2500
169m NW	Railway Sidings	1921	10560
171m NW	Railway	1922	-
172m NW	Railway Sidings	1953	1250
172m NW	Railway Sidings	1949	1250
203m N	Railway Sidings	1949	2500
205m N	Railway Sidings	1949	1250
217m S	Railway Sidings	1933	2500
240m NW	Railway Sidings	1923	10560

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	5

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

Features are displayed on the Railway infrastructure and projects map on **page 192 >**

Location	Description
On site	**Dismantled**
118m NW	Dismantled
155m NW	Abandoned
193m NW	Dismantled
208m SE	Dismantled

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	10

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

Features are displayed on the Railway infrastructure and projects map on **page 192 >**

Location	Name	Type
23m NE		light_rail
25m N	Not given	Multi Track
25m NE		light_rail
26m N		light_rail
29m N		light_rail
30m N		light_rail
31m NW		light_rail
34m N		light_rail
34m NW		light_rail
102m E		light_rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

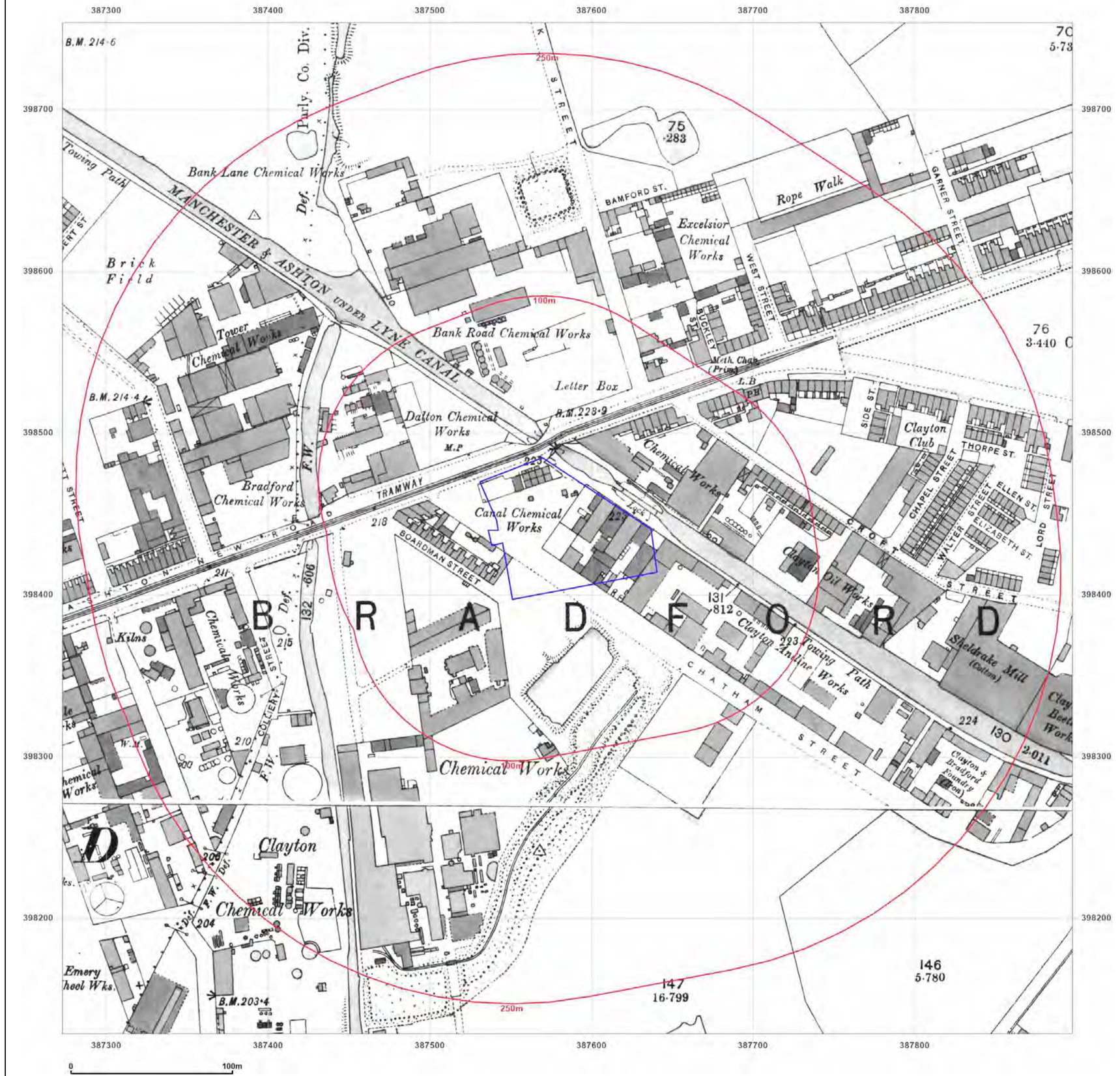
This data is sourced from HS2 ltd.

Data providers

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

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

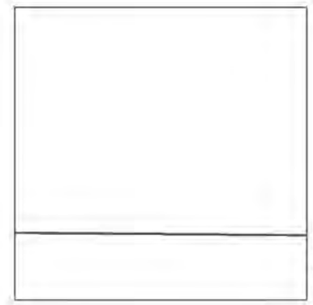
Map date: **1893**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1893
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Edition 1893
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Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1908**

Scale: 1:2,500

Printed at: 1:2,500

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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1922**

Scale: 1:2,500

Printed at: 1:2,500

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Edition 1922
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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1932-1933**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1932
Edition N/A
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Surveyed 1873
Revised 1933
Edition N/A
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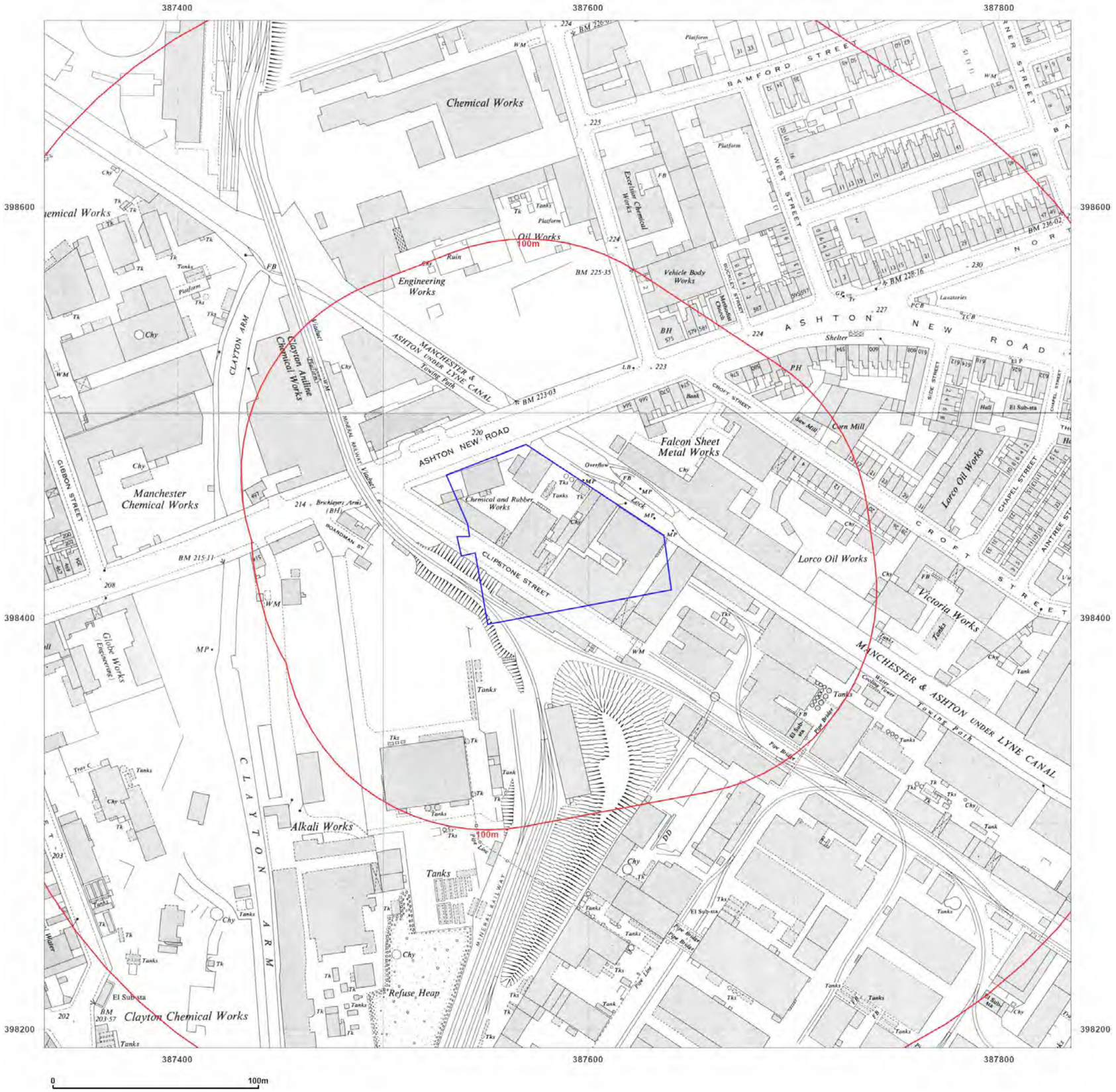
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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1949**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1949
Revised 1949
Edition N/A
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Surveyed 1949
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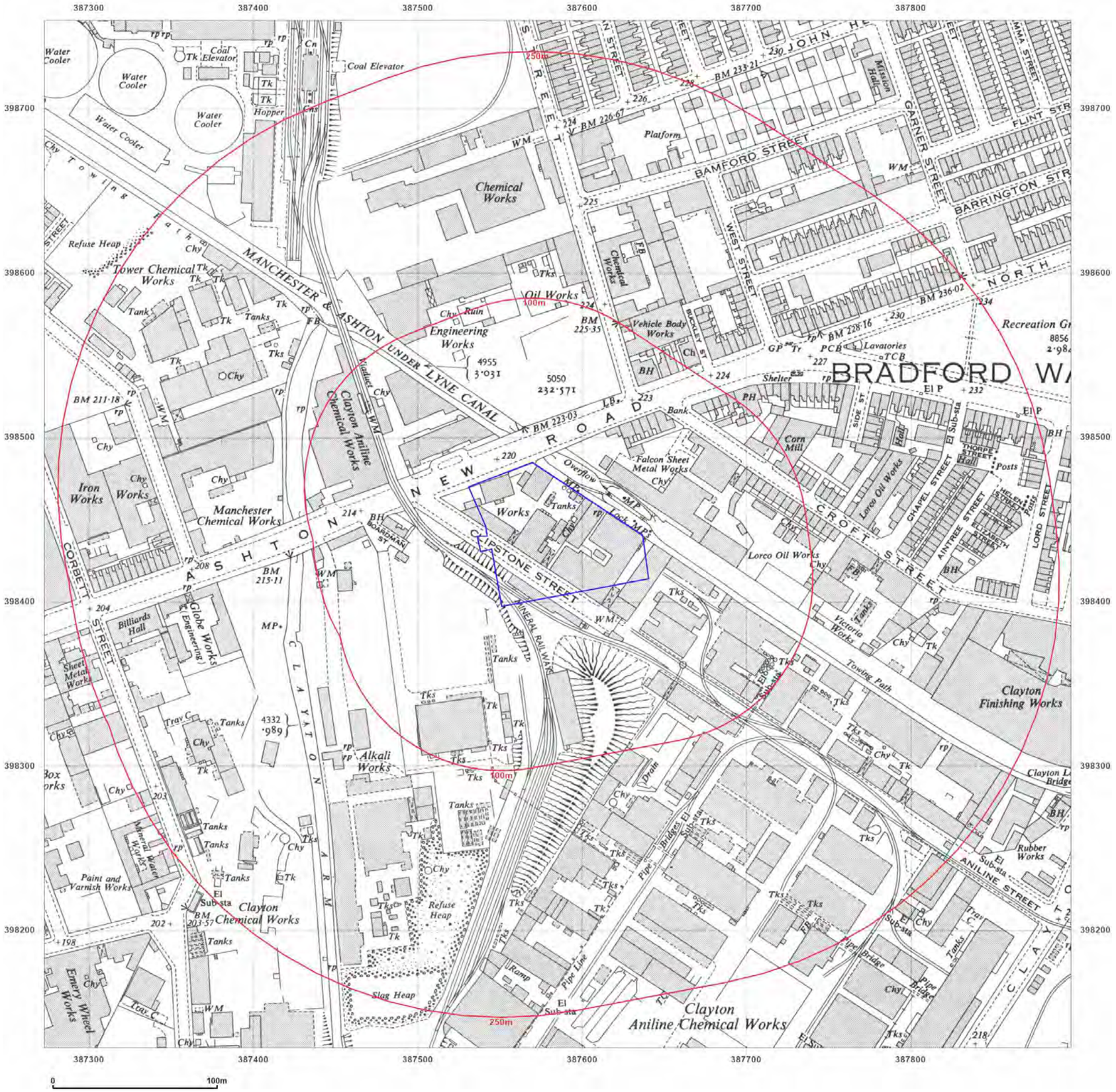
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Client Ref:	CMAPS-AAG-1106941-4165-010623
Report Ref:	CMAPS-AAG-1106941-4165-010623HIS
Grid Ref:	387585, 398441
Map Name:	National Grid
Map date:	**1950**
Scale:	1:2,500
Printed at:	1:2,500

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Edition N/A
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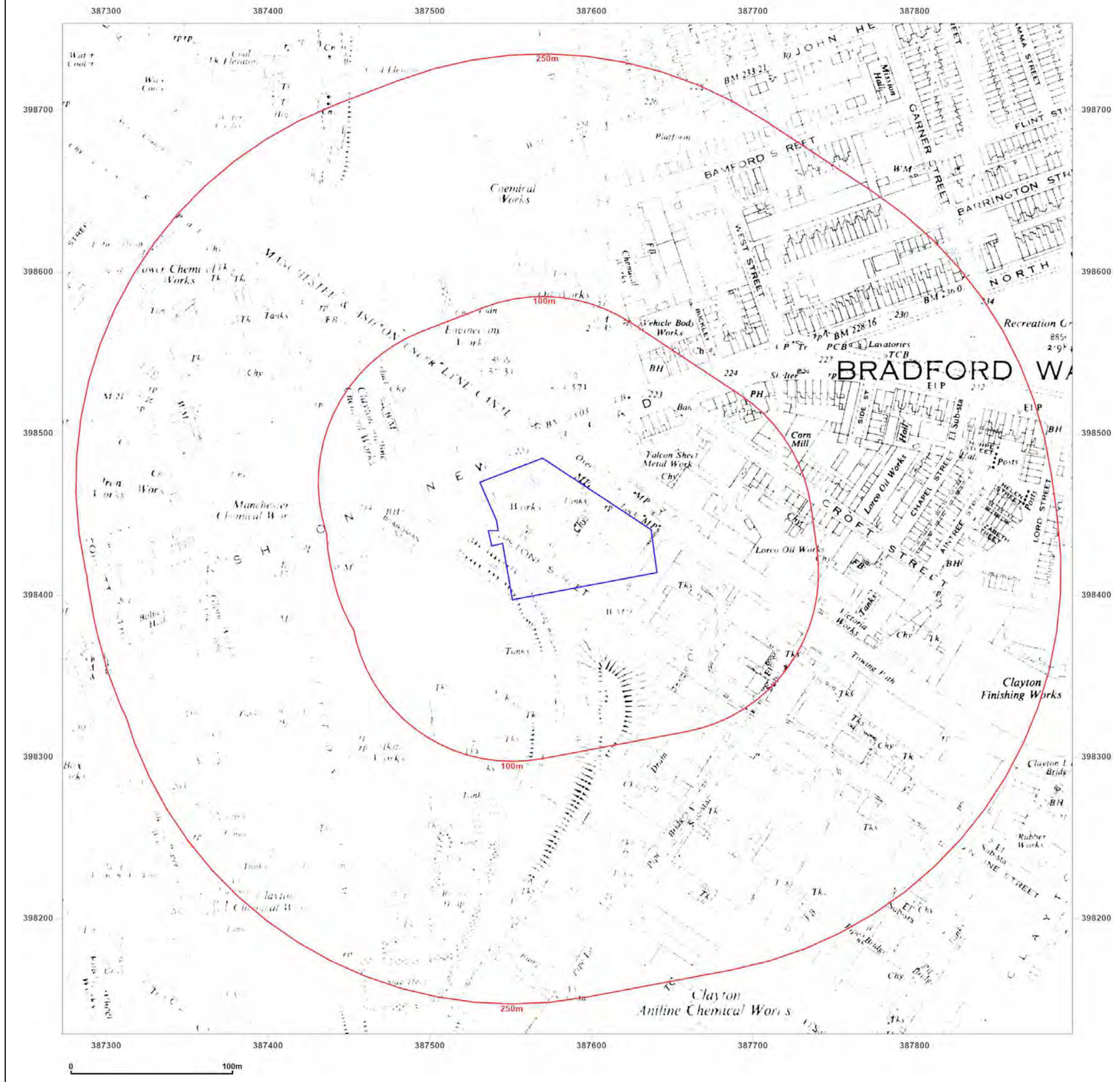
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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1951**

Scale: 1:2,500

Printed at: 1:2,500

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Revised N/A
Edition N/A
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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1953-1956**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1953
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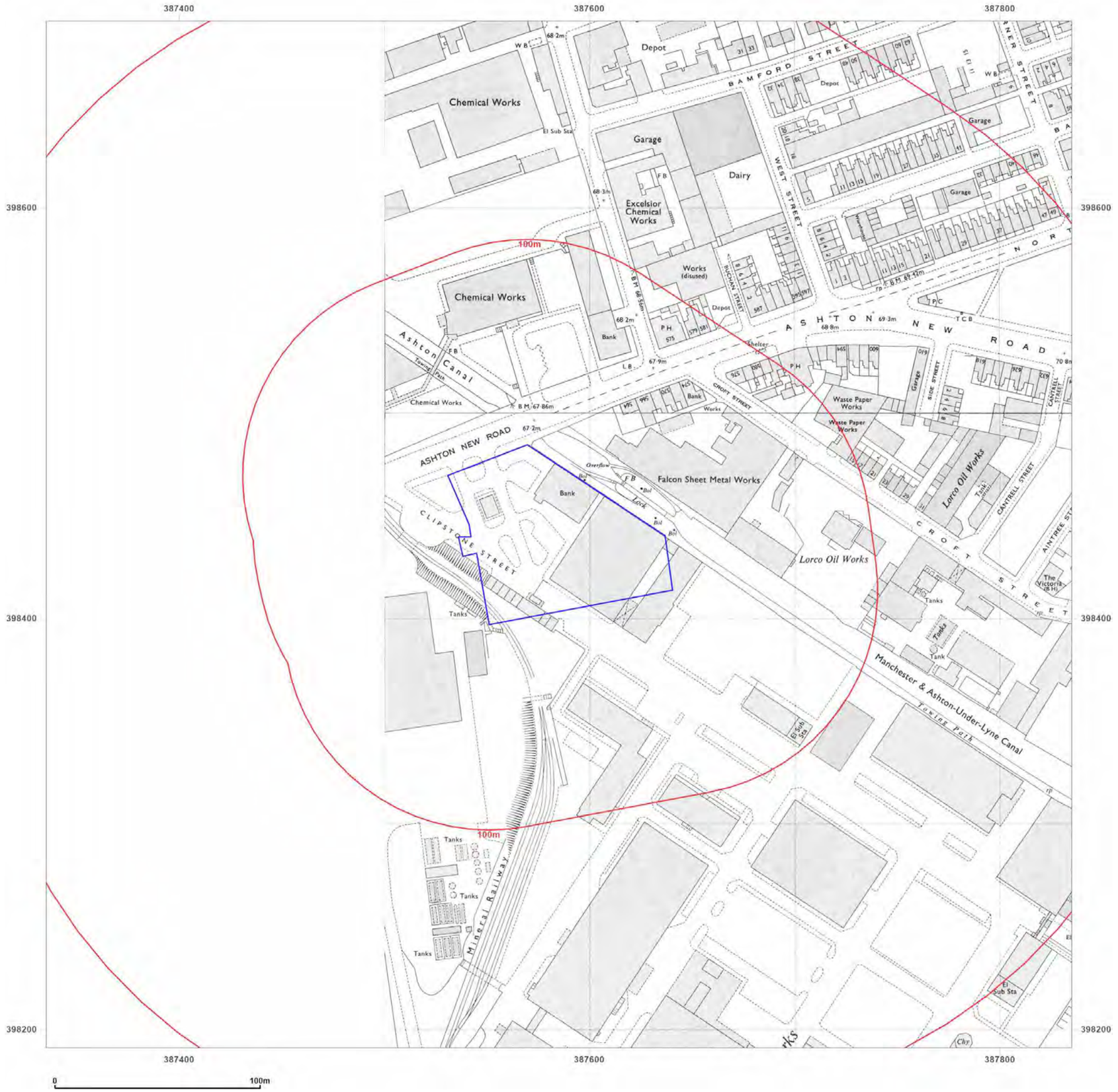
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CCG

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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1970-1972**

Scale: 1:1,250

Printed at: 1:2,000

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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1977-1980**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1978
Levelled 1964

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
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Surveyed N/A
Revised N/A
Edition N/A
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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1980-1985**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1964
Revised 1985
Edition N/A
Copyright 1985
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Surveyed 1949
Revised 1979
Edition N/A
Copyright 1980
Levelled 1964

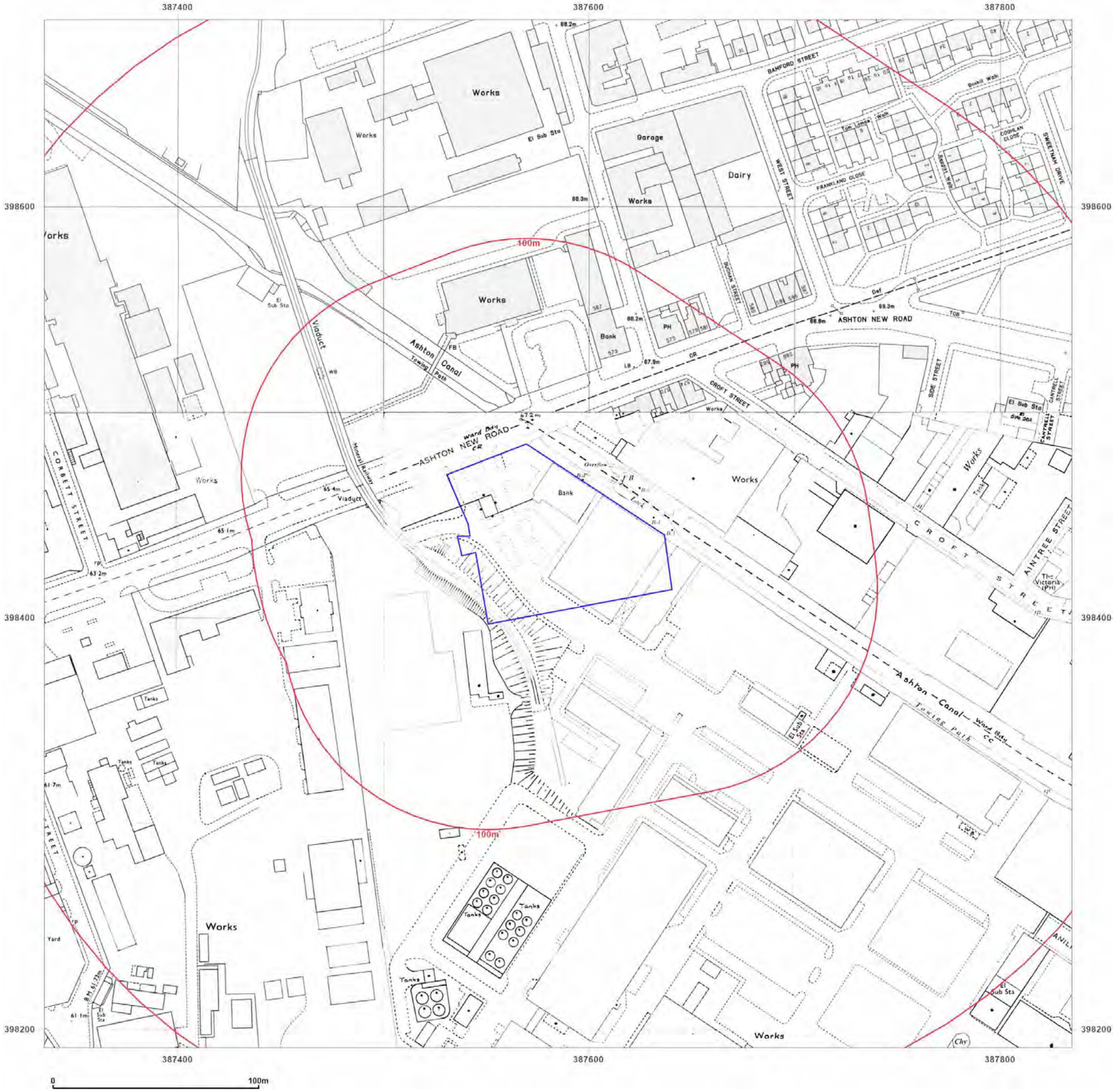
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Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1986-1991**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1949
Revised 1988
Edition N/A
Copyright 1989
Levelled 1964

Surveyed 1949
Revised 1984
Edition N/A
Copyright 1986
Levelled 1964

Surveyed 1964
Revised 1991
Edition N/A
Copyright 1991
Levelled 1964

Surveyed 1964
Revised 1986
Edition N/A
Copyright 1987
Levelled 1964

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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1991-1992**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1992
Revised 1992
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed 1992
Revised 1992
Edition N/A
Copyright 1992
Levelled N/A

Surveyed 1964
Revised 1991
Edition N/A
Copyright 1991
Levelled 1964

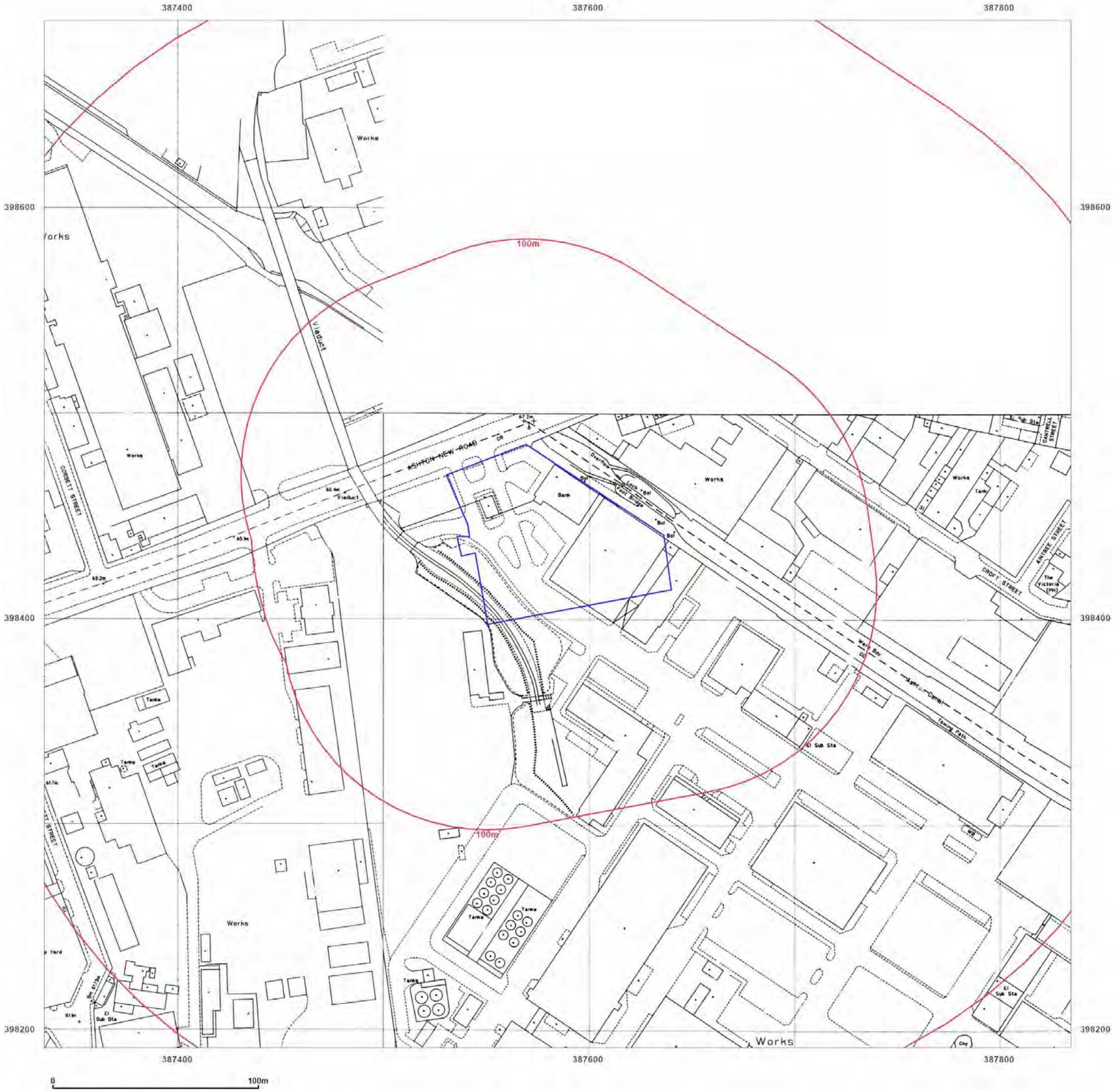
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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1992-1994**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1992
Revised 1992
Edition N/A
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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
Levelled N/A

Surveyed 1994
Revised 1994
Edition N/A
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Levelled N/A

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Edition N/A
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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1994-1995**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1995
Revised 1995
Edition N/A
Copyright 1995
Levelled N/A

Surveyed 1995
Revised 1995
Edition N/A
Copyright 1995
Levelled N/A

Surveyed 1994
Revised 1994
Edition N/A
Copyright 1994
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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

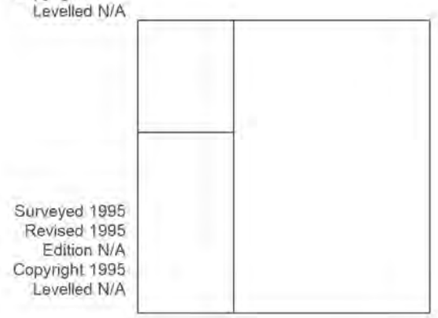
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Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1995
Revised 1995
Edition N/A
Copyright 1995
Levelled N/A



Surveyed 1995
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Edition N/A
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Levelled N/A

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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

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

N
W E
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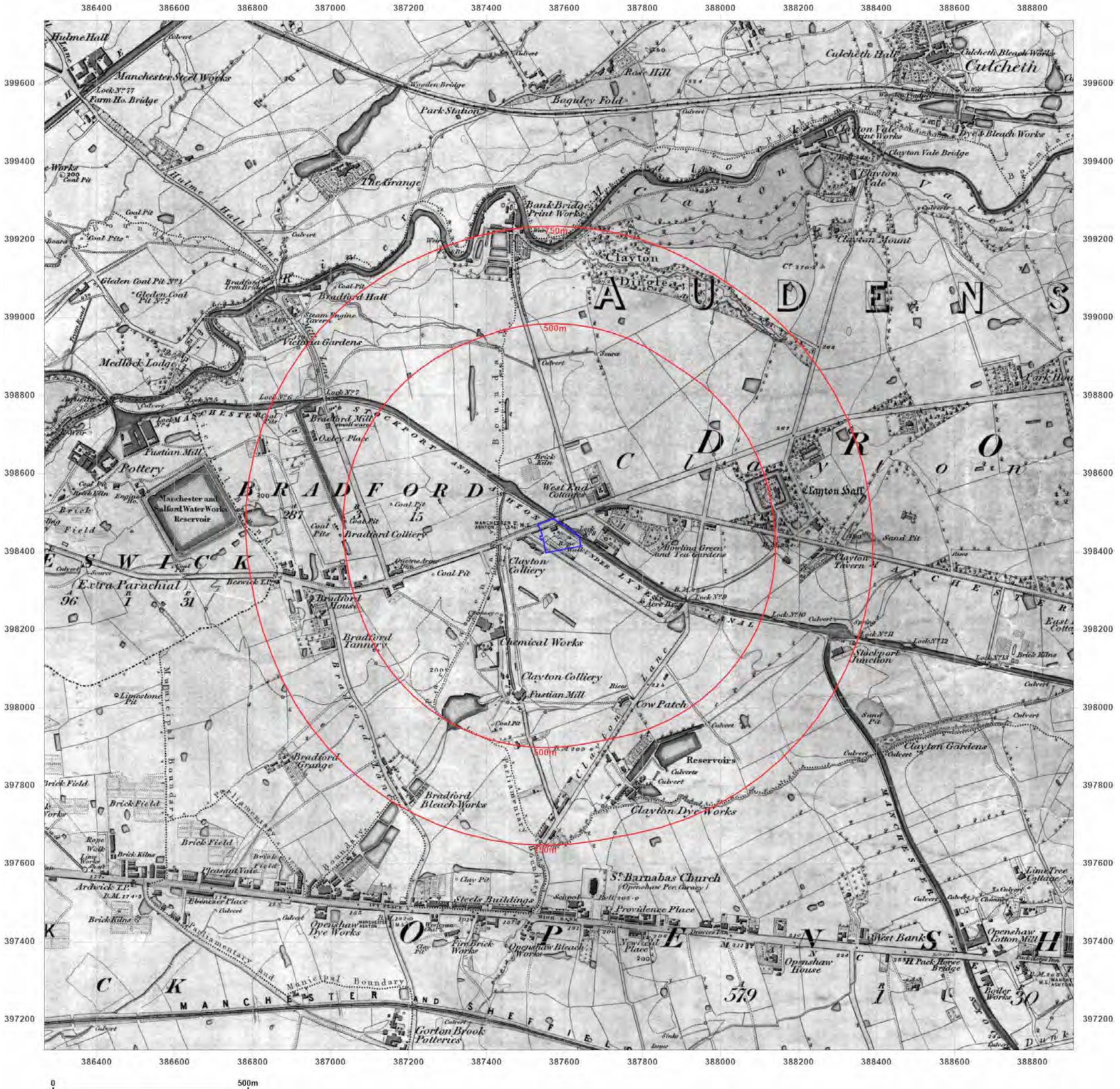
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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1848**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1845
Revised N/A
Edition 1848
Copyright N/A
Levelled N/A

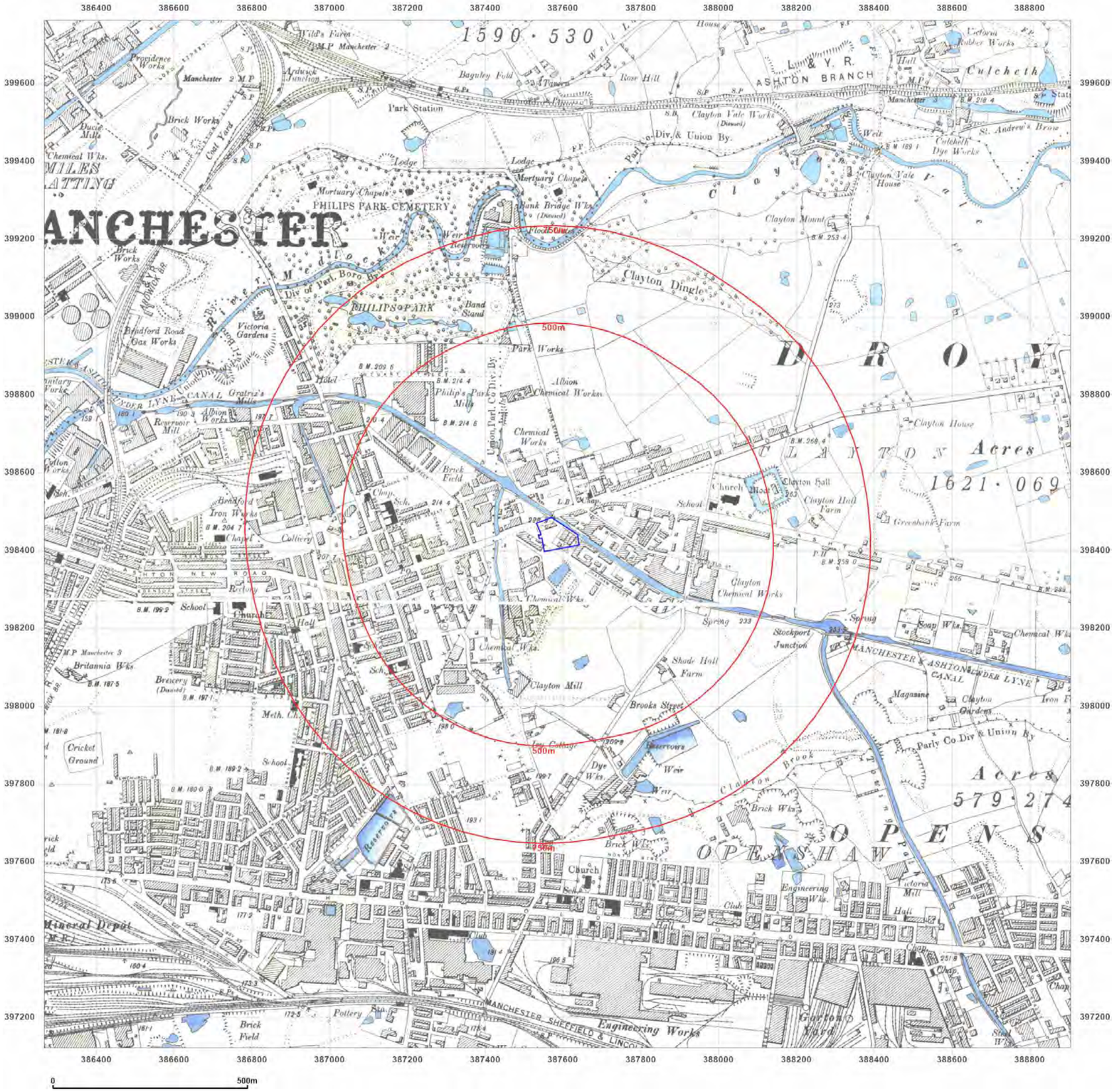
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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1890-1891**

Scale: 1:10,560

Printed at: 1:10,560

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

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

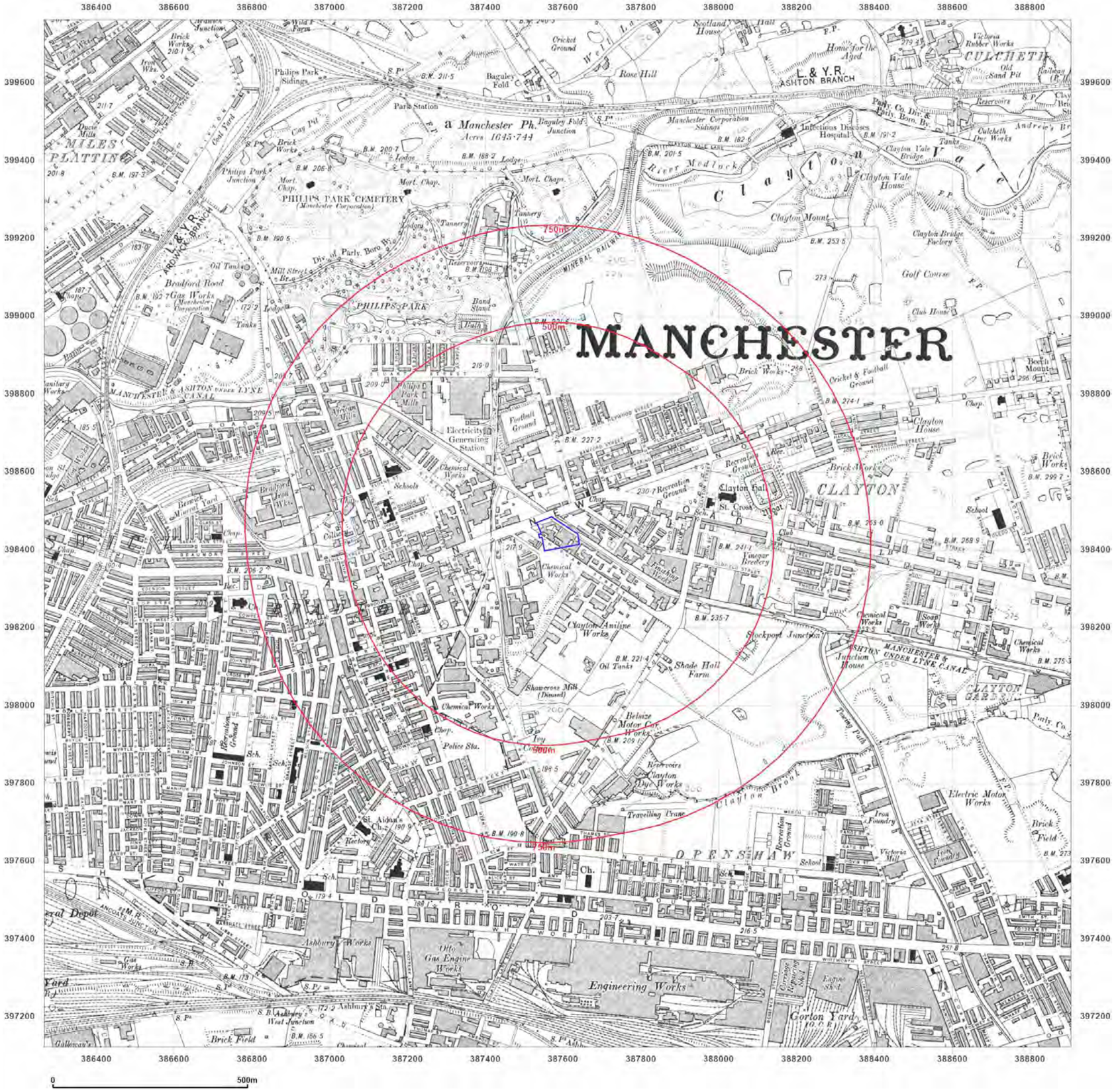
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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1905-1906**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1844
Revised 1906
Edition 1906
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1905
Edition 1905
Copyright N/A
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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1921
Edition 1923
Copyright N/A
Levelled 1906

Surveyed 1844
Revised 1915
Edition 1923
Copyright N/A
Levelled 1915

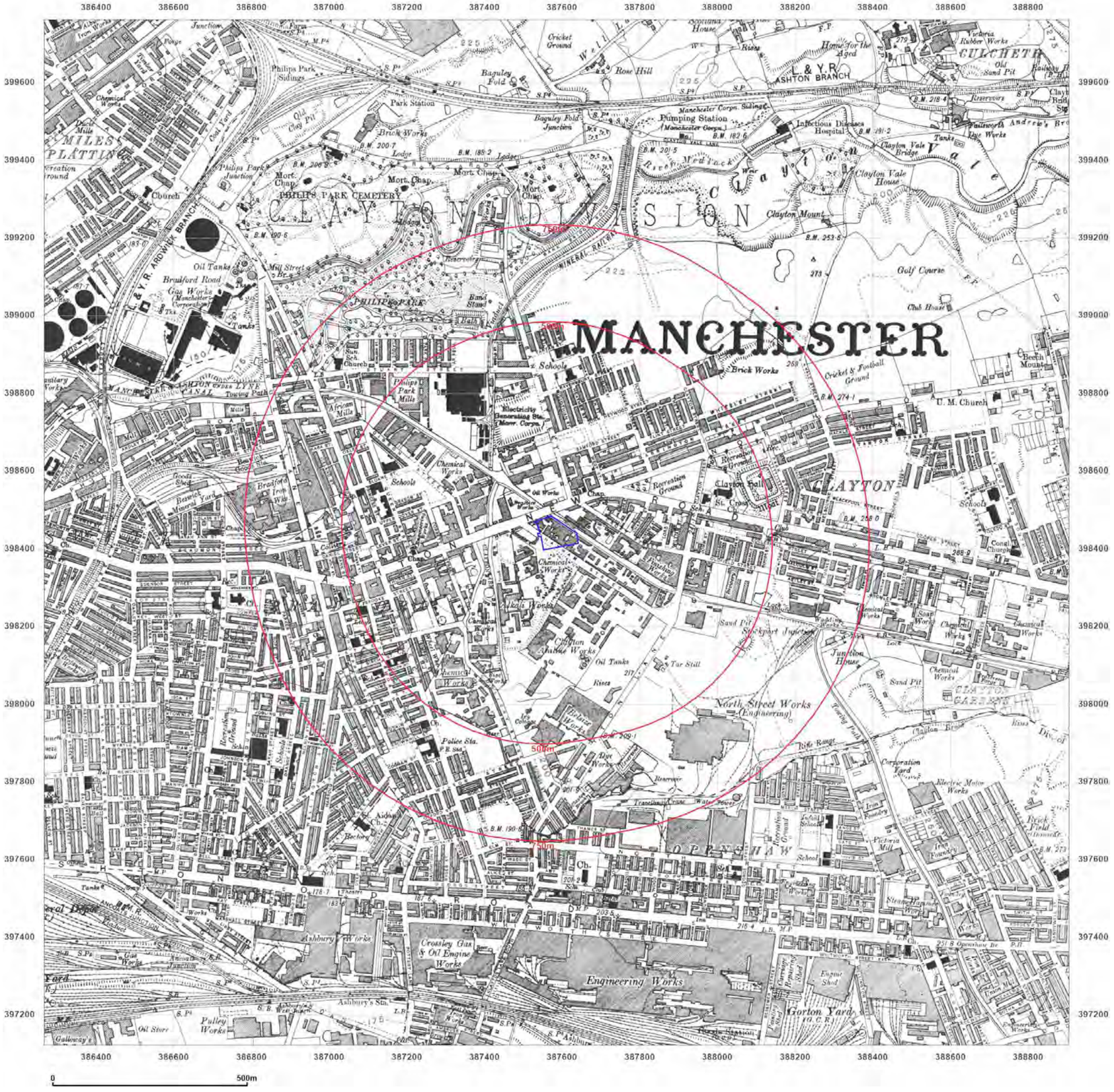
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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1916
Edition 1923
Copyright N/A
Levelled 1915

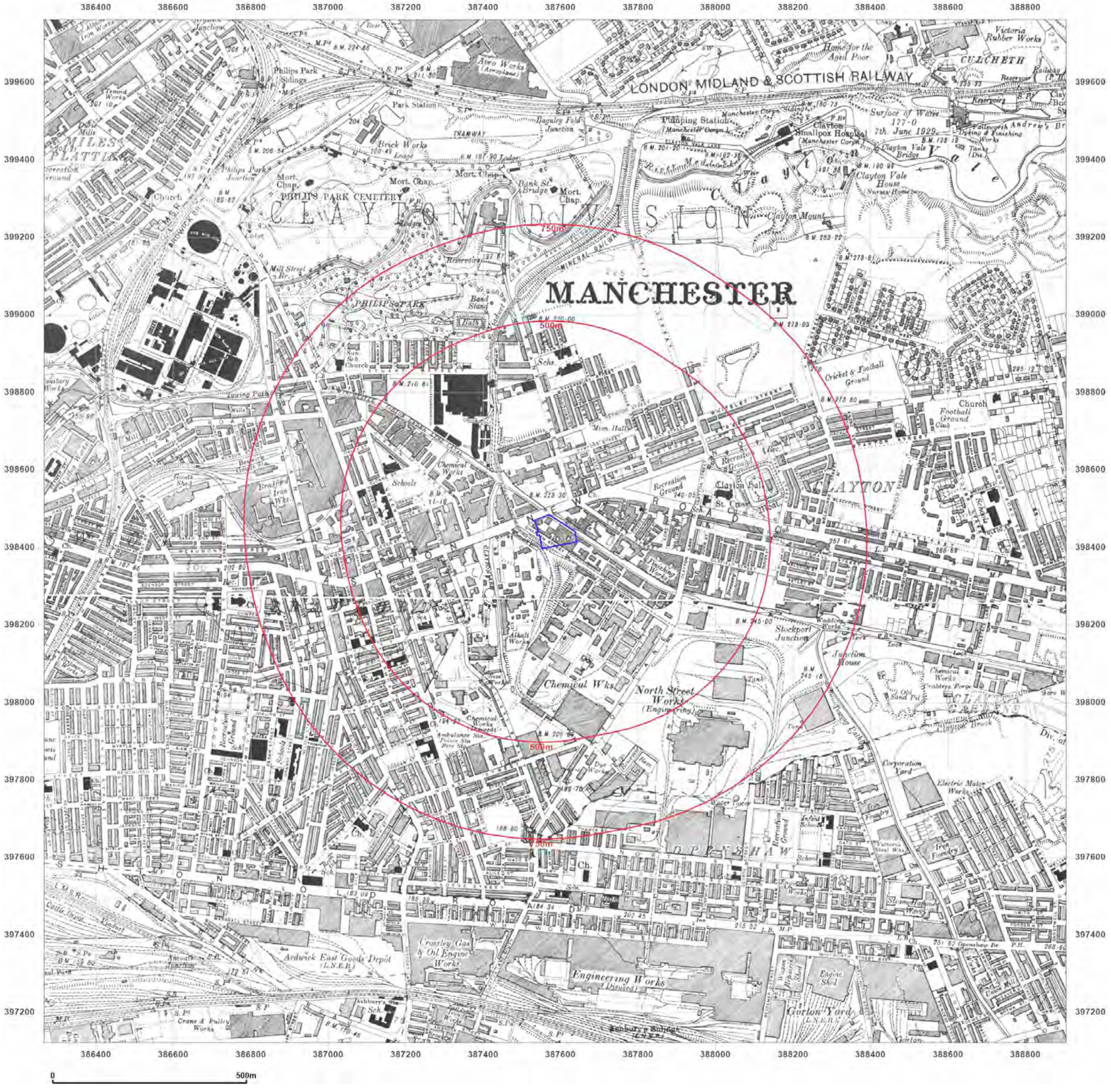
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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1933-1934**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1933
Edition 1933
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1934
Edition 1934
Copyright N/A
Levelled 1927

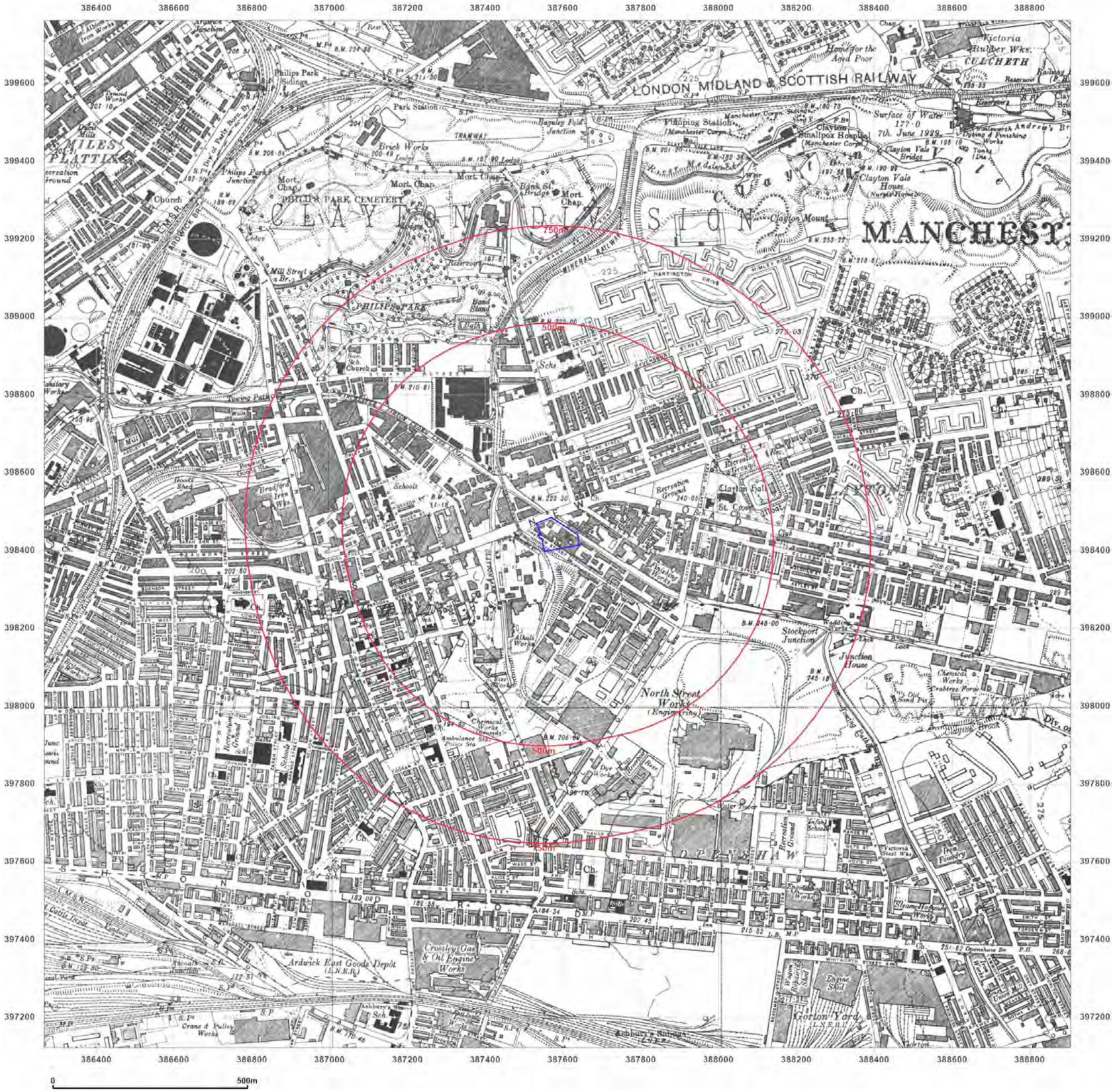
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CCG

Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1938
Edition 1938
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1938
Edition 1938
Copyright N/A
Levelled 1927

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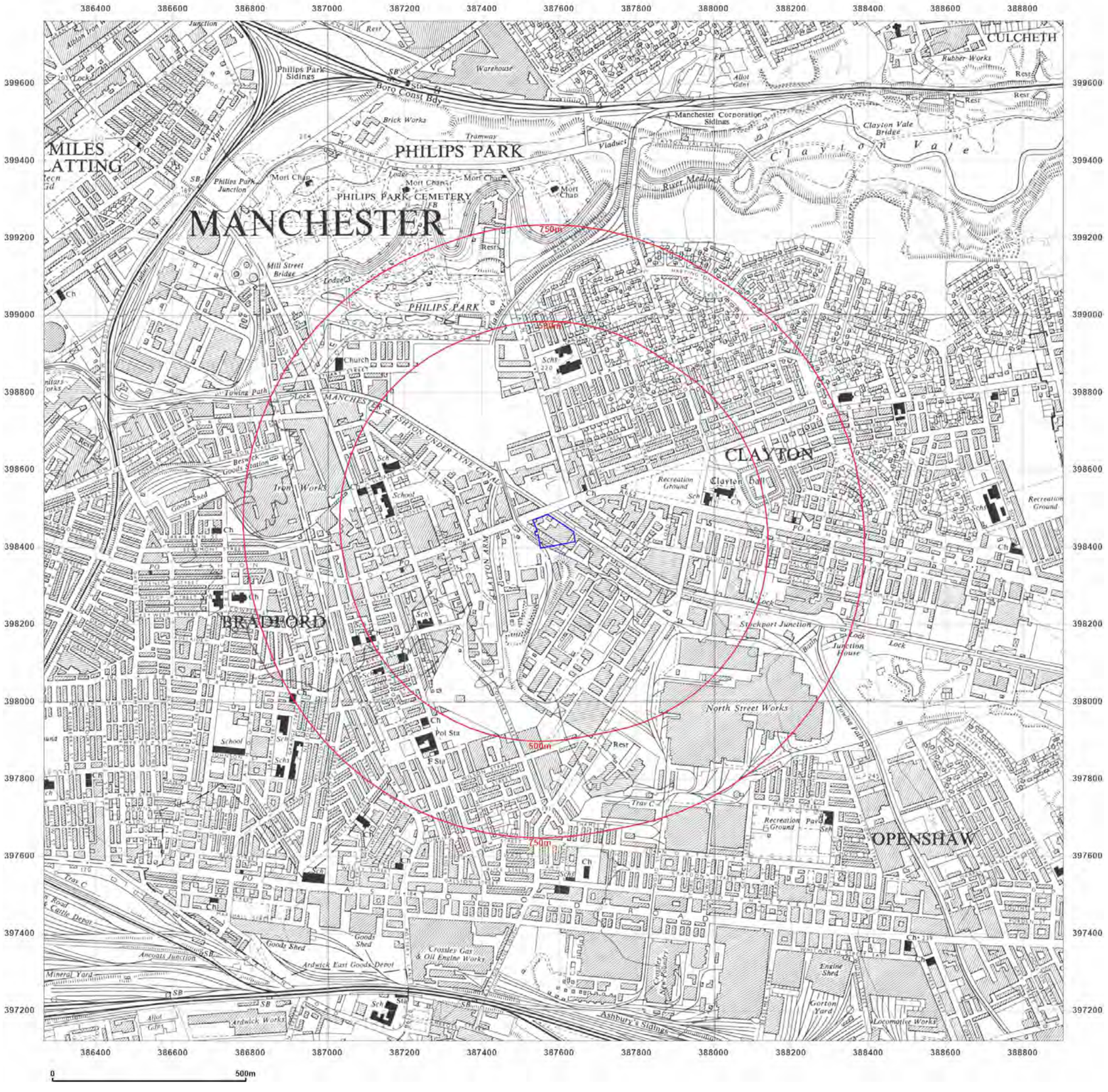
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CCG

Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: Provisional

Map date: **1956**

Scale: 1:10,560

Printed at: 1:10,560

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

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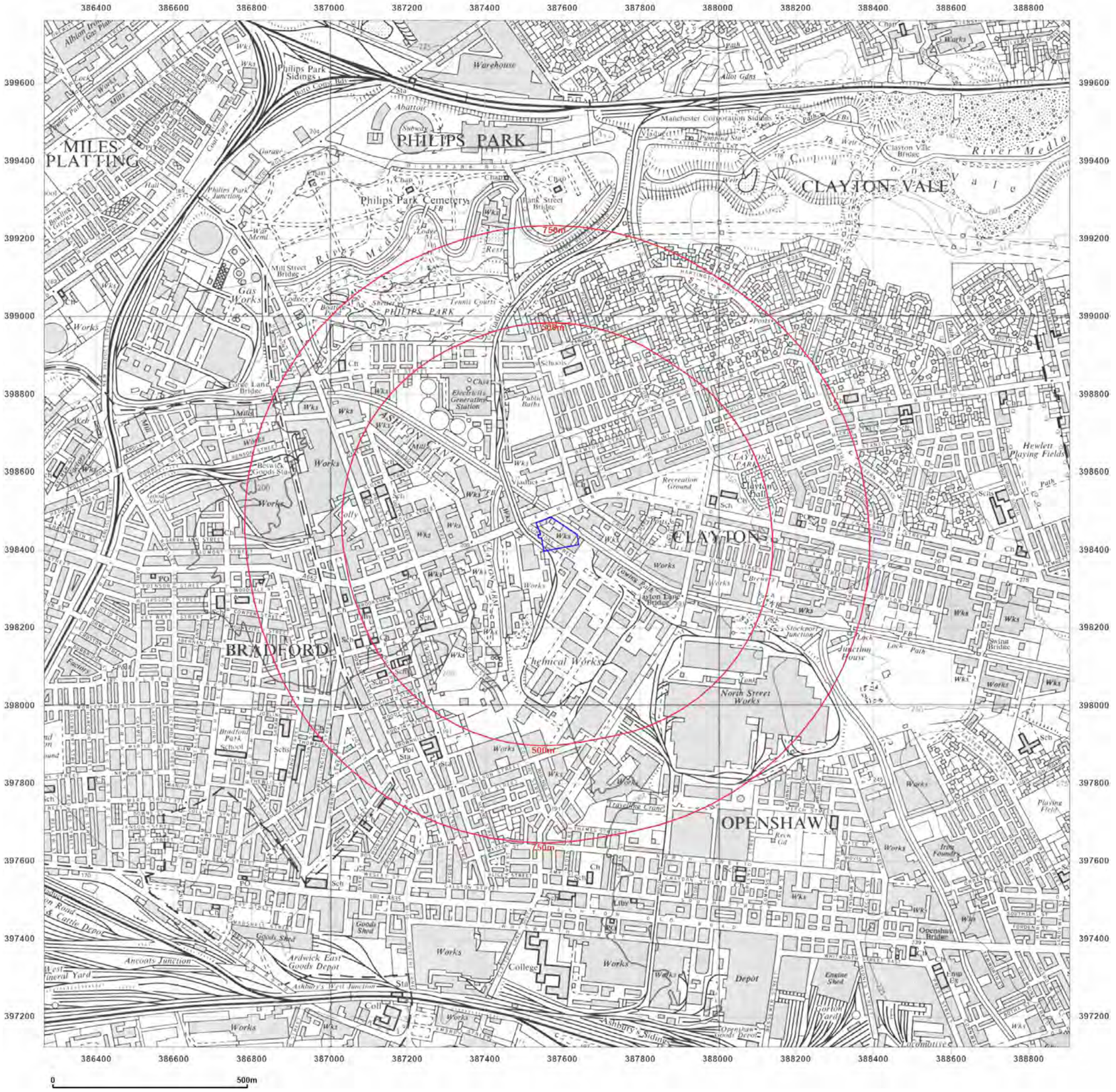
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CCG

Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: Provisional

Map date: **1968**

Scale: 1:10,560

Printed at: 1:10,560

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

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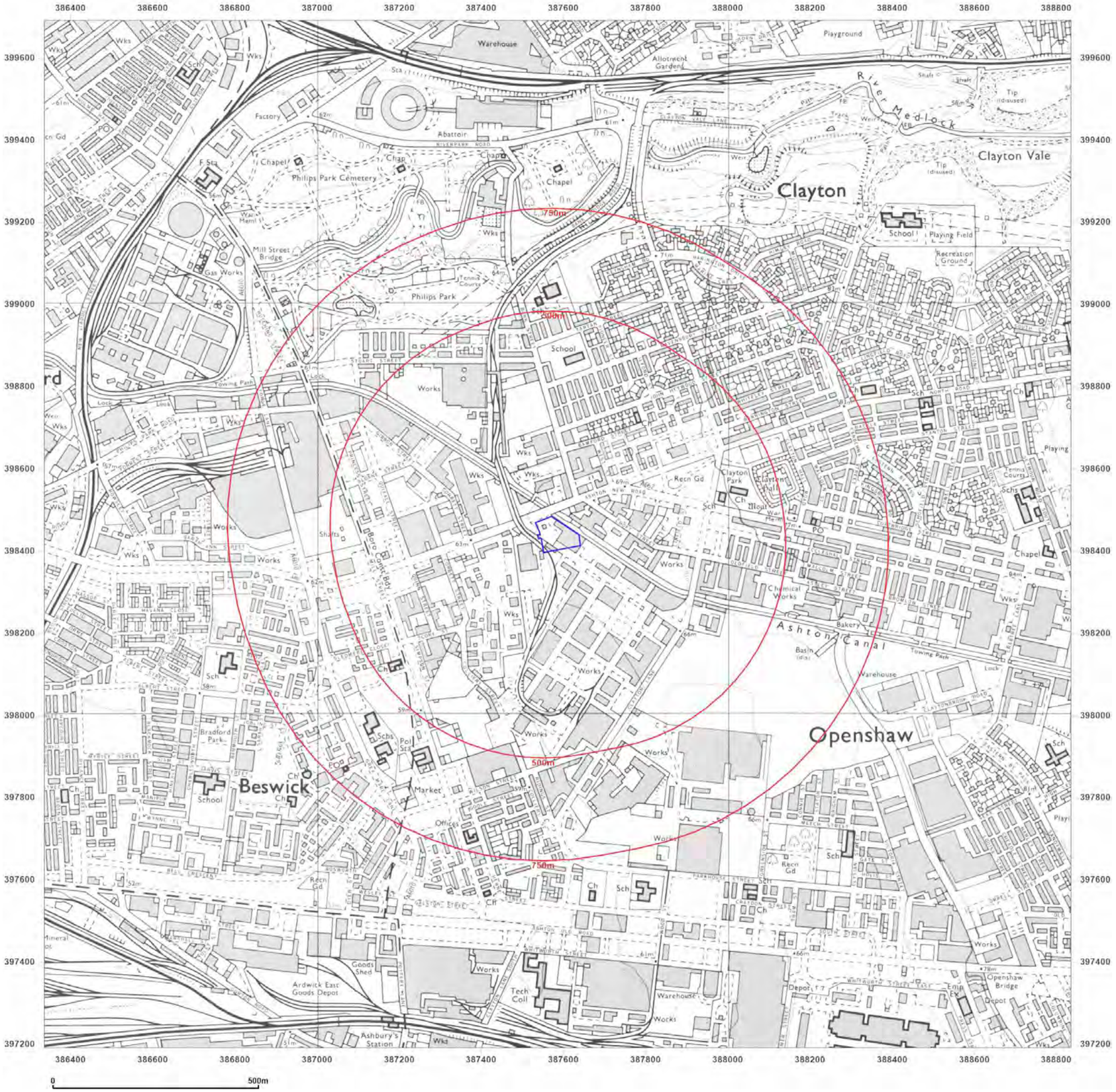
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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1981**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1976
Revised 1980
Edition N/A
Copyright 1981
Levelled 1976

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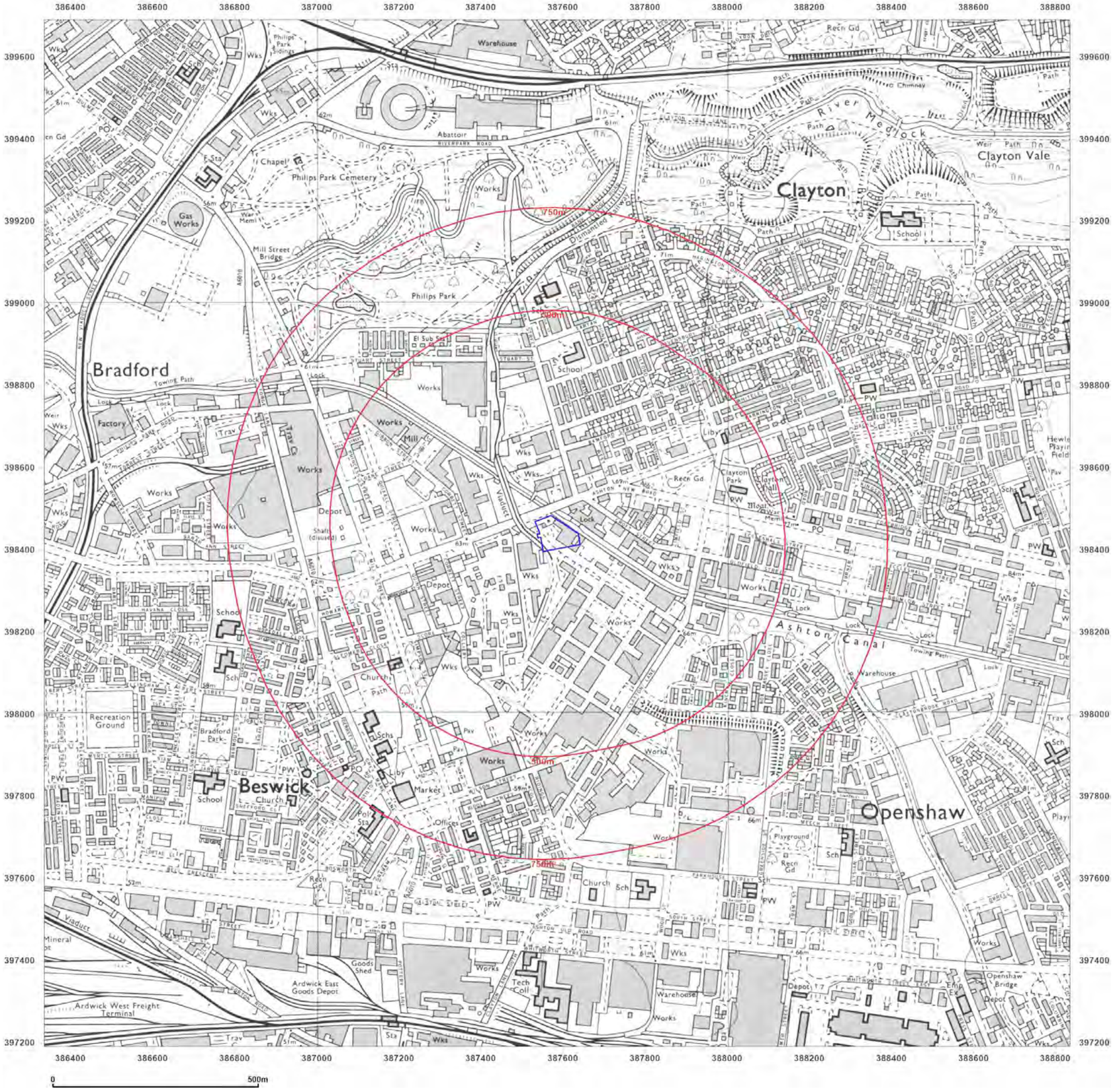
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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1985**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1985
Revised 1985
Edition N/A
Copyright 1985
Levelled 1981

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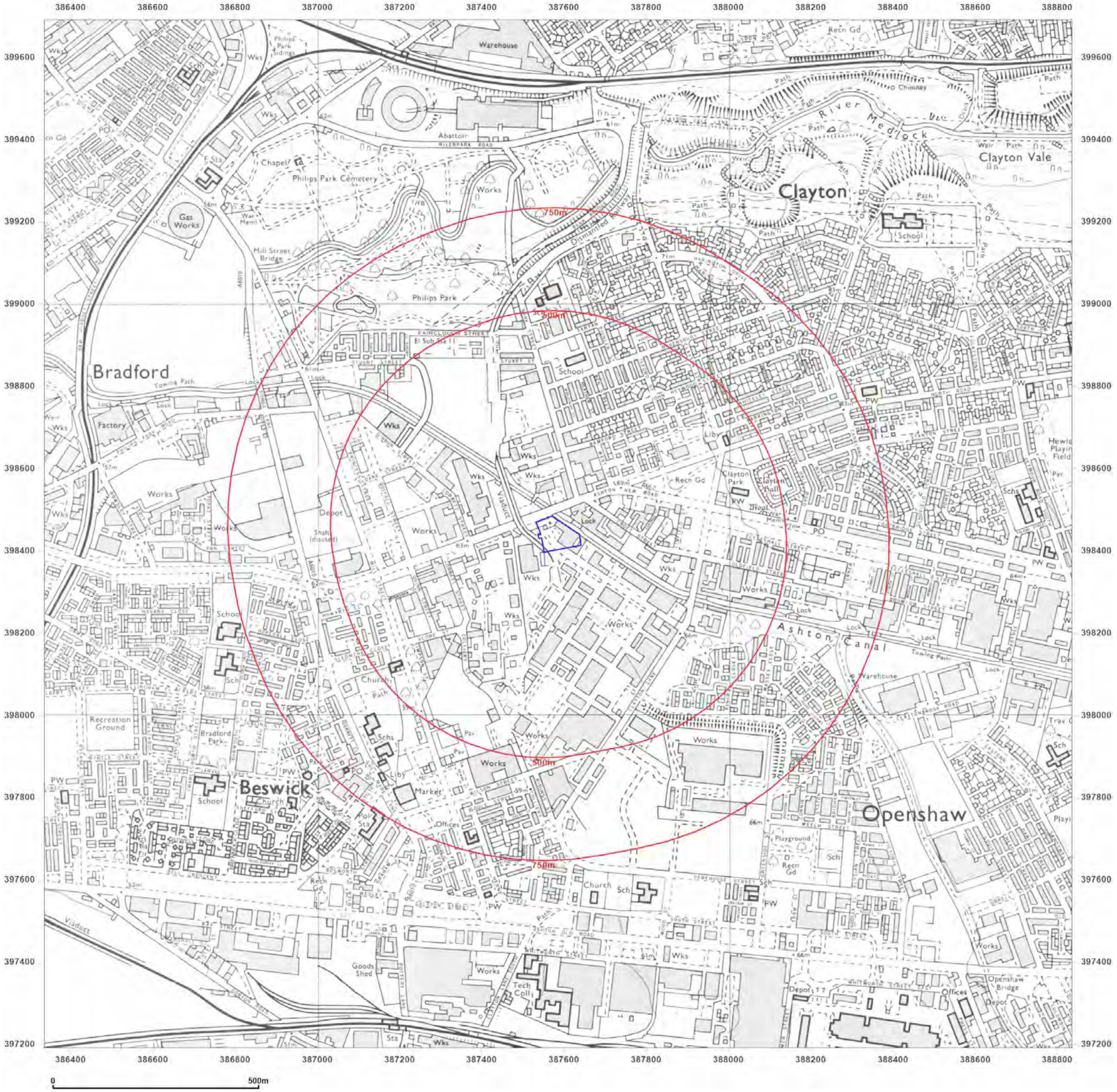
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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **1991**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1985
Revised 1991
Edition N/A
Copyright 1991
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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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Site Details:

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Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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W E
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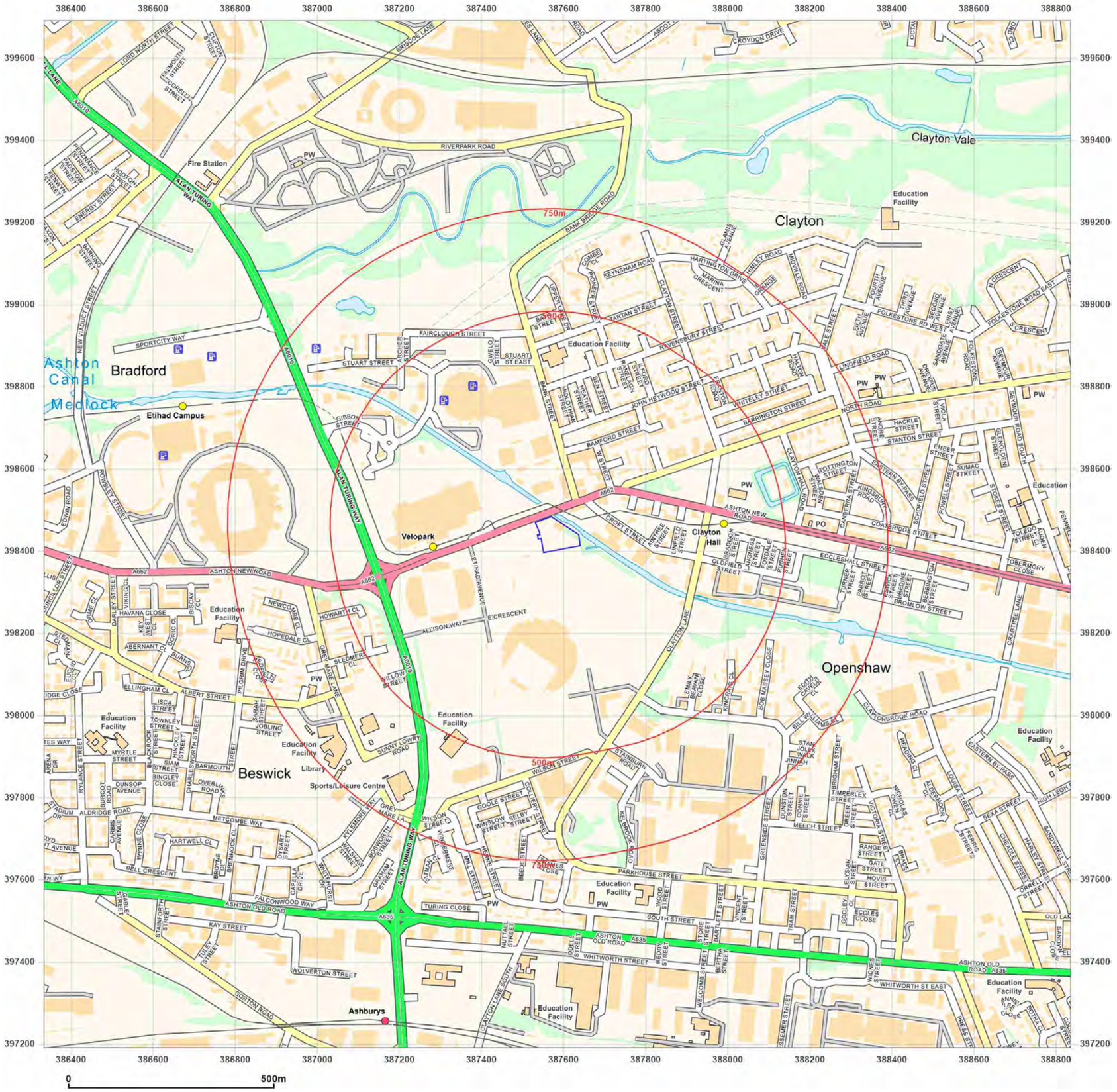
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Site Details:

M11 4AA, M11 4AA

Client Ref: CMAPS-AAG-1106941-4165-010623
Report Ref: CMAPS-AAG-1106941-4165-010623HIS
Grid Ref: 387585, 398441

Map Name: National Grid

Map date: **2023**

Scale: 1:10,000

Printed at: 1:10,000

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APPENDIX I

NOTES ON LIMITATIONS

Notes on Limitations
For
Geoenvironmental and Geotechnical Consultancy Services

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2. the consequences of use of this document by any party with whom an agreement has not been executed.

Phase I Environmental Audits / Desk Studies

The work undertaken to provide the basis of a Phase 1 Desk Study report comprises a study of available documented information from a variety of sources (including the client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in a Desk Study report have been dictated by finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in the report, CC GEOTECHNICAL LTD reserves the right to review such information and to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Environmental Audits

The investigation of the site has been carried out with the intention of providing sufficient information concerning the type and degree of contamination, and ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated to potential human targets, building materials, the environment (including adjacent land), and surface and groundwater.

The amount of exploratory work and chemical testing undertaken may have been restricted by the timescale available, and the locations of the exploratory holes may have been restricted to areas unoccupied by the building(s) on the site, and further restricted by the existence of buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues may need to be resolved.

For those reasons, if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. The number of sampling points and the methods of sampling and testing do not preclude the existence of localised “hotspots” of contamination where concentrations may be significantly higher than those actually encountered.

Geoenvironmental Ground Investigations

The investigation of the site has been carried out to provide sufficient information within the agreed scope of the investigation, under the general headings of type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions, to provide a reasonable assessment of the environmental risks together with engineering and development implications.

If costs have been included in relation to the site remediation, these must be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of the site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal, weather, or other effects.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.