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Supplementary Site Investigation
for land off
Wilbraham Road
Chorlton

For: Anwyl Homes
Anwyl House
St Davids Park
Ewloe
Flintshire
CH5 3DT

Date of Report: 26th October 2023

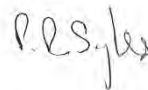
Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Document Validation

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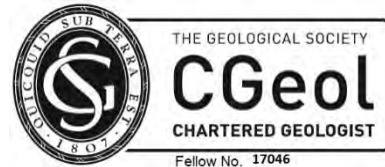
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8165ssi	-	25 th October 2023	Supplementary Site Investigation	J A Lewis	P R Sykes
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1.0 Terms and Conditions

- 1.1 This report presents the supplementary site investigation for a proposed residential development on land off Wilbraham Road, Chorlton. This report was prepared on instructions received from our client Anwyl Homes, Anwyl House, St David's Park, Ewloe, Flintshire, CH5 3DT.
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2.0 Introduction

2.1 Site Location and Summary of Use

The proposed development is located in Chorlton, approximately 4km to the south west of Manchester city centre, at National Grid Reference SJ 826 942. The site covers an area of 1.99ha.

At the time of the supplemental site investigation the majority of the proposed development site comprised a disused sports ground, with rough grassland. Burrows (5 No.) were present in the south of the site. The site was accessed via a grassed track adjacent to the east side of 354 Wilbraham Road. The proposed development site also comprised the rear garden of 354 Wilbraham Road and its garage.

2.2 Development Overview

Our current assessments assume that the future development will consist of 65 No. residential plots, comprising detached, semi-detached and mews houses with associated private gardens and car parking. Access to the development will be off Wilbraham Road, via a proposed driveway to be developed across the rear of 354 Wilbraham Road, following demolition of the garage belonging to this property. The proposed development layout is recorded on Coopers Drawing No. 8165/01, presented in Appendix 12.

The proposed finished site levels are to remain approximately the same as the current site levels, in the far south and west of the site. Current site levels are to be elevated by between approximately 0.5m and 1m across the eastern half of the site.

The majority of the plot foundations are to either be vibro stone columns or driven piles, with low number of plots potentially having traditional strip or mass concrete trenchfill foundations in the far south west of the site.

2.3 Rationale for Supplementary Site Investigation

E3P undertook a site investigation for the proposed development at the site and prepared a subsequent remediation strategy, as discussed in the following reports:

- “Phase I desk study”, Reference No. 15-811-R1-6, dated January 2023
- “Phase II geoenvironmental site assessment”, Reference No. 15-811-R2-6, dated January 2023
- “Remediation and enabling works strategy”, Reference No. 15-811-R3-2, dated January 2023

These reports were submitted to Manchester City Council in support of the planning application. Following a review of the reports, Manchester City Council provided comments to Anwyl, generally based on recommendations provided by E3P.

Coopers subsequently liaised with Manchester City Council to gain agreement to the supplementary site investigation required in respect of potential contamination issues, the proposed investigation being outlined in Coopers’ email dated 11th May 2023, presented in Appendix 1.

In this correspondence, Coopers discussed the extent of the contamination within the made ground (similar to topsoil). It was recommended that the made ground (similar to topsoil) is entirely removed from site, in order to remove the source of contamination within this stratum.

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Further agreed investigation is summarised as follows:

- establish whether mercury concentrations recorded in a sample taken from TP114 are likely to be present in the inorganic form, thereby not posing a significant risk to human health;
- assess if the madeground includes gravel of “tar” in the vicinity of TP114 and establish source of elevated naphthalene concentrations to provide assessment of potential risk to human health;
- sample natural sand present below the madeground in the southern ponds to schedule for leachability analysis of arsenic, to confirm the elevated concentration reported in TP111 at 2.0m bgl was an anomaly;
- additional trial pits to be excavated in former pond infill to characterise the material types and establish the presence of organic materials; and
- provide a risk assessment relating to elevated concentrations of methylnaphthalene.

The supplementary site investigation was also undertaken to:

- gain additional geotechnical information to aid the foundation recommendations and the design of the driven piles and vibro-stone columns;
- aid in the characterisation of madeground (similar to topsoil) and madeground for potential disposal to landfill;
- aid in estimating the volumes of materials which may require disposal.

2.4 **Summary of Site History**

The first available historical mapping (1849) indicated the site to be agricultural land, split by field boundaries. It was occupied by three ponds and a marshy area, with a further boundary intersecting with the site in this area. The ponds were no longer indicated on site by 1881. The site became an athletics ground in the 1930s, with a tennis court, a pavilion and a second smaller building, then a football ground in the 1980s.

2.5 **Scope of Site Investigation**

E3P Scope of Works

E3P had undertaken a ground investigation on 30th March 2022, including 14 No. machine dug trial pits to depths between 2.1m and 3.5m bgl and 4 No. small diameter boreholes drilled to between 5.0m and 5.45m bgl. The exploratory holes were located on a general spread across the site, with 1 No. small diameter borehole in the vicinity of the former pond in the north east of the site and 1 No. trial pit in the adjacent former marsh area. 1 No. trial pit was located in each of the former ponds in the south of the site. A strip of ground covered in gravel, considered to be part of a possible former athletics track, was present immediately to the south of the former building present in the centre of the site.

Coopers Scope of Works

Exploratory Holes

5 No. cable percussion boreholes were drilled at locations selected by Roger Bullivant. These were to be drilled to approximately 20m bgl.

Coopers supervised the excavation of a further 61 No. machine dug trial pits with the use of a JCB 3CX between 5th June and 9th June 2023. These were undertaken for the following purposes:

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- 10 No. across the former pond in the north east of the site to delineate the extent of the made ground and establish the possible presence and extent of peat;
- 22 No. across the former ponds in the south of the site and in the vicinity of these features to delineate the extent of the made ground and establish the possible presence and extent of peat;
- 1 No. trial pit in the former marsh area to determine the possible presence of made ground and/or peat;
- 17 No. trial pits distributed to assess the underlying drift strata for the foundation design;
- 3 No. to target former building structures and former gravel track;
- 6 No. trial pits to target the possible localised zone of mercury and naphthalene referenced by E3P;
- 2 No. trial pits to assess the ground conditions in the access track to the site and adjacent to the access on site.

Chemical Analysis

The exploratory holes enabled soil samples to be taken for scheduling of total soils concentrations, leachate concentrations and waste acceptance criteria (WAC) analysis at Envirolab, an MCERTS accredited laboratory. Samples were taken from variable depths to enable human health risk assessment assuming all arisings may be used within 1m of the finished ground levels, should arisings be re-used. The analysis also provided data for the controlled waters risk assessment, water supply pipe assessment and waste characterisation.

Samples were stored in appropriate containers provided by the chemical analysis laboratory, Envirolab. The sample containers were placed in cool boxes with ice packs. Where samples could not be submitted to the laboratory within 24 hours of sampling, these were held in a refrigerator between transportation.

Details of this are discussed in Section 5.

Geotechnical Testing

In situ testing comprised Standard Penetration Tests (SPTs) in each borehole. Where feasible hand shear vane tests were undertaken in cohesive soils.

One sample was selected from the drift strata in each borehole and one from the made ground in borehole BH01, to be scheduled for BRE SD1 sulphate analysis, to aid the concrete design specification.

Limitations to the Investigation

At the time of the site investigation undertaken by Coopers, access to the rear garden of 354 Wilbraham Road was not permitted and the garage on the property was still standing, thereby preventing ground investigation in this part of the proposed development, at this stage.

Access was also limited along the entrance track to the site, due to overgrown vegetation and the need to permit vehicular access to the site.

3.0 Ground Conditions

3.1 Summary of Expected Geology

According to the 1:50k scale mapping on the GeoIndex, on the British Geological Survey (BGS) website (<https://mapapps2.bgs.ac.uk/geoindex/home.html>), and the 1:10560 scale BGS maps, Reference No. SJ89SW and SJ89NW, the site is immediately underlain by Glaciofluvial Sheet Deposits, likely to be comprised of sands and gravels. Glacial Till is depicted at the surface to the east and in more localised areas to the west of the Glaciofluvial Sheet Deposits. Glacial Till would be expected to be present below these Deposits. The Glacial Till would be expected to be comprised predominantly of clay interbedded with thin sand strata.

The bedrock is defined as being the Wilmslow Sandstone Formation. A named fault, the Pendleton Fault, lies approximately 800m to the north east of the site trending north west to south east. This is downthrown to the east. The dip in the bedrock strata within this fault block was noted to be 8°. The Wilmslow Sandstone Formation is underlain by the Manchester Marl Formation, comprised predominantly of mudstone and siltstone.

3.2 Summary of Ground Conditions Reported by E3P

Madeground (similar to topsoil)

E3P reported the presence of madeground (similar to topsoil) across the site to depths between 0.2m and 0.4m below ground level (bgl). This was characterised as a dark brown clayey sand with gravel of brick, glass, mudstone and sandstone.

Madeground

E3P recorded madeground in localised areas, generally in the vicinity of the former ponds and former field boundaries, to a maximum depth of 1.6m bgl but tended to be recorded to less than 1.0m bgl. This was described as a dark brown gravelly sand, the sand being comprised of brick, glass, ceramic and sandstone.

Drift deposits

E3P encountered a light brownish-grey fine to medium sand within the majority of the exploratory holes below the madeground (similar to topsoil) and madeground to depths between 1.0m and 2.0m bgl. The sand was recorded to be underlain by soft clay within a number of the exploratory holes to between 2.1m and 3.5m bgl at the base of the trial pits and 5.45m at the base of the small diameter boreholes. Very soft to firm clays were recorded immediately below the madeground encountered in the vicinity of the former ponds.

Olfactory observations

A slight hydrogen sulphide odour was noted by E3P in trial pits within the vicinity of the former pond in the south of the site.

Groundwater

Groundwater seepages were recorded at between 0.8m and 2.0m bgl in the sand and the soft clays.

3.3 **Summary of Ground Conditions Recorded by Coopers**

Coopers cable percussion borehole and trial pit logs, presented in Appendices 2 and 3, have been summarised below.

3.3.1 **Madeground (similar to topsoil) across the site**

Madeground (similar to topsoil) was generally encountered in each exploratory hole completed by Coopers, both over the former ponds and beyond their footprints. The exception was within trial pit TP241, excavated within the former gravel track. The madeground (similar to topsoil) comprised a brown, slightly silty, slightly gravelly, fine to coarse sand, the gravel being of brick, ceramics and natural stone.

The depth of this stratum varied between 0.3m and 0.7m bgl. The average madeground (similar to topsoil) thickness based on both findings by E3P and Coopers was calculated to be 0.417m. The volume was estimated to be 8310m³.

3.3.2 **Madeground in the Former North Eastern Pond and Marsh Area**

The madeground identified within the former pond and former marsh area in the north east of the site, defined by the historical mapping, was found to be generally a brown, slightly silty, slightly gravelly, fine to coarse sand. The gravel was comprised of brick, concrete, slate, ceramics and ash and clinker and occasional glass fragments and bottles. Wood shavings were noted sporadically interspersed in the stratum in some of the trial pits.

Localised madeground clay was recorded below the madeground sand in trial pit TP201 and cable percussion borehole BH01. This was a dark brown, slightly silty, slightly gravelly, sandy clay, the gravel being comprised of brick, ash and clinker, ceramics and individual sporadic wood shavings.

The madeground sand within the former pond was encountered at depths of between 0.4m and 0.6m and extended to depths of between 0.9m and 1.8m bgl, but generally extended no deeper than 1.4m bgl. The madeground clay was encountered at depths between 0.9m and 1.8m, this stratum extending to between 1.1m and 2.7m bgl.

The approximate lateral extent of the former north eastern pond and marsh area has been shown in Drawing No. 8165/01, presented in Appendix 12. The volume of the madeground in this area of the site was approximated to be 1490m³.

3.3.3 **Madeground within former southern ponds**

Madeground was encountered within the areas of the two former southern ponds surveyed by the historical mapping but also between the two features. The full extent of the madeground is considered to be beyond the surveyed boundaries, particularly to the south, including the vicinity of trial pit TP114, excavated by E3P, with trial pits TP223, TP226, TP239 and TP240 including madeground pond infill.

The madeground generally comprised two madeground strata. One was described as a brown, slightly silty, slightly gravelly, fine to coarse sand, which was present in all the trial pits recorded to contain madeground. The gravel comprised of brick, concrete, ash and clinker, ceramics, occasional glass and metal fragments and sporadic wood fragments in two trial pits.

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Occasional bottles were encountered throughout the former ponds. The madeground sand in the south eastern former pond also contained a white material in bands in trial pit TP243, but interspersed in TP244 and TP254. This varied in texture from a chalky type material to a clayey material.

The second madeground stratum was noted to be a brown to dark brown, slightly sandy, silty, gravelly clay, the gravel being comprised of similar inclusions recorded in the madeground sand. The white substance noted in the madeground sand was also found in occasional bands in the madeground clay in TP253.

Madeground in the former ponds was encountered at between 0.3m and 0.7m bgl, the madeground sand being encountered immediately below the madeground (similar to topsoil), in the south eastern pond and where no madeground clay was present across both former ponds. Madeground clay was generally present below the madeground sand in the south eastern pond but encountered immediately below the madeground (similar to topsoil) in the south western pond, with the madeground sand below this. The madeground sand varied in thickness between 0.3m and 1.1m thick. The madeground clay tended to be in a thinner stratum between 0.2m and 0.7m thick.

The gravel track in the centre of the site (TP241) was found to overlie the former pond. The gravel comprised a 0.1m thick stratum of natural stone.

The overall depth of the madeground below the southern former ponds was generally between 1.1m and 1.6m but shallowing towards the edges to 0.8m deep. The approximate lateral extent of the madeground in the southern former ponds has been illustrated on Drawing No. 8165/01, presented in Appendix 12. The madeground in this area was assessed to be approximately 1500m³.

3.3.4 Madeground beyond the former ponds and marsh area

Madeground sand was encountered in the footprint of the former building in the central east of the site, this including gravel of concrete, brick ash and clinker to 1.0m bgl. The volume of this was estimated to be approximately 27m³.

Reworked natural sand was encountered where land drains were present. This included 3 No. trial pits (TP224, TP225 and TP251) excavated in the vicinity of trial pit TP114 excavated by E3P.

3.3.5 Shallow drift strata

General drift strata beyond the former ponds and marsh area

Generally, a slightly silty, slightly gravelly fine to coarse sand was recorded below the madeground (similar to topsoil) across the site beyond the infilled former ponds and marsh area. This was encountered at between 0.4m and 0.7m and extended to depths of between 1.0m and 1.8m (generally between 1.0m and 1.3m thick). The sand overlay a firm, slightly silty, slightly gravelly, sandy clay. The upper 0.2m of the clay in the northern part of the site tended to contain occasional fine roots no more than 3mm in diameter.

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The hand shear vane tests recorded in the trial pits tended to show undrained shear strengths as low as 40kPa at the head of the clays, these increasing to values up to 94kPa, with depth. The exception to this was in trial pit TP210, where an undrained shear strengths of 16kPa was recorded at 1.2m bgl with the strength increasing to 44kPa at 1.6m bgl. This appeared to be a continuation of the poor clay strengths recorded below the former north eastern pond, discussed below.

Below the former north eastern pond

Generally, the made ground within the footprint of the former north eastern pond was immediately underlain by a light brown, mottled greyish brown, slightly silty, slightly clayey, gravelly sand. This was encountered at depths between 1.1m and 1.4m bgl and was reported to extend to depths between 1.9m and 2.7m bgl (between 0.5m and 1.6m thick).

The sand was underlain by soft and soft to firm light brown and greyish brown slightly silty, slightly gravelly, sandy clay, between 1.9m and 2.7m bgl. The clay contained localised pseudo fibrous peat. This was in thin bands in trial pits TP230 and TP231, up to a maximum of 200mm to 300mm thick and in occasional pockets of pseudo fibrous peat up to a maximum of 200mm in diameter in trial pits TP232 and TP233. This was generally present below 2.6m bgl but in TP233 the pockets of peat were noted between 1.9m and 2.5m bgl. The soft clay in trial pit TP235 comprised an amorphous peat from 2.6m bgl to the base of the trial pit at 3.8m bgl.

The hand shear vane tests undertaken in these clays provided undrained shear strengths results of between 18kPa and 44kPa, the strengths increasing with depth. The equivalent bearing capacities of the undrained shear strengths are 31kPa and 75kPa.

Below the marsh area in the north east

A firm to firm to stiff, brown, slightly silty, slightly gravelly clay was encountered immediately below the made ground within the marshy area and to the north of the former pond. This was present at depths of between 0.8m and 2.7m bgl. No sand stratum was noted in the trial pits in this area.

Hand shear vane tests undertaken in clay in the former marsh area and to the north of the former pond recorded undrained shear strengths of between 62kPa and 92kPa, the strengths increasing with depth. The equivalent bearing capacities of the undrained shear strengths are 106kPa and 158kPa.

Below the southern former ponds

The made ground fill in the southern former ponds was immediately underlain by the sand stratum encountered generally across the site this extending to depths of between 1.3m and at least 2.4m, where the overall depth of the stratum was not proven in some trial pits. Where the depth was proven the thickness of the sand stratum was between 0.2m and 0.8m thick. The clay stratum recorded elsewhere on site was recorded in a number of the trial pits below the sand stratum, thus generally being firm, but soft to firm in one trial pit.

The undrained shear strengths recorded at the head of the clays below the former southern ponds tended to range between 40kPa and 56kPa (equivalent bearing capacities between 69kPa and 96kPa), although occasionally this would increase to 68kPa. The undrained shear strength in the soft to firm clay was recorded to be 36kPa (equivalent bearing capacity 62kPa). The undrained shear strengths increased with depth to between 52kPa and 78kPa (equivalent bearing capacities between 89kPa and 134kPa).

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3.3.6 Deeper drift strata

No sand was encountered below the made ground in cable percussion borehole BH01 but a slightly silty, slightly clayey sand was recorded to depths between 1.3m and 1.8m bgl in cable percussion boreholes BH02 to BH04. A slightly silty, slightly gravelly, clayey sand was noted to 3.8m bgl in cable percussion borehole BH05. Where standard penetration tests (SPT) were completed in the sand strata, SPT N values of between 1 and 4 were recorded indicating the sands to be very loose.

The cable percussion boreholes proved clay below the sands to depths between 12.4m and 15.3m bgl, the clay being interbedded with a 0.2m to 0.32m thick sand and gravel band at between 9.8m and 12.4m bgl in cable percussion boreholes BH01 to BH03. In BH01 the sand and gravel band was underlain by a dense, slightly clayey, gravelly sand to 14.4m bgl. A 0.2m thick cobble was encountered in BH04 at 12.0m bgl. The thickness of the clay strata ranged between 11.0m and 13.9m.

The clays tended to be described as soft and soft to firm to depths between 2.9m and 9.2m bgl. These became firm, firm to stiff and stiff below these depths.

3.3.7 Bedrock across the site

A reddish brown weathered sandstone recovered as a gravelly fine to coarse sand was encountered in cable percussion boreholes BH01, BH02, BH04 and BH05 at between 14.4m and 15.3m bgl (13.3m aOD and 14.71m aOD). Drilling was continued in the weathered bedrock for between 1.3m and 2.3m, with SPTs generally reaching refusal throughout the drilling in the weathered sandstone. Sandstone bedrock was assumed to have been reached at 15.3m bgl (13.3m aOD) in cable percussion borehole BH03, based on the refusal in the SPT and the materials recovered in the SPT shoe.

3.3.8 Olfactory Evidence

No odours were recorded which indicated the presence of potential contaminants.

3.3.9 Groundwater

Perched groundwater was recorded in the majority of the trial pits as seepages from made ground and the shallow sand stratum, as summarized in Table 1. The seepages were generally only slight with significant accumulations of groundwater at the base of only 6 No. trial pits. The groundwater was considered to generally be perched in the sand stratum above the underlying clay or perched in the made ground strata.

Where land drains were encountered they usually were dry. Only 1 No. land drain had an outflow of water.

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Table 1: Groundwater strikes in trial pits

Location and extent of groundwater ingress	Ingress depth in trial pits beyond former ponds (m bgl)		Ingress depth in south eastern former pond (m bgl)		Ingress depth in south western former pond (m bgl)		Ingress depth in north eastern former pond (m bgl)	
	No. observations	Depth (m bgl)	No. observations	Depth (m bgl)	No. observations	Depth (m bgl)	No. observations	Depth (m bgl)
Sand with slight accumulation at base of trial pit	9	1.0 -1.6	2	1.7-1.8	2	1.0-1.2	1	1.9
Sand with no accumulation at base of trial pit	3	1.1-1.4	1	1.6	1	1.3	5	1.0-2.0
Sand with measurable accumulation at base of trial pit	1	1.4 (0.1 depth accumulation)	1	2.0 (0.1 depth accumulation)	1	1.0 (up to 0.6 accumulation)	-	-
Madeground with slight accumulation at base of trial pit	2	1.4	6	1.0-1.6	2	1.1-1.2	-	-
Madeground with measurable accumulation at base	-	-	2	1.2-1.5 (0.2 depth of accumulation)	1	1.7 (0.4 depth of accumulation)	-	-
Damp sand	-	-	-	-	-	-	4	1.2-1.5
Clay	1	2.2	-	-	-	-	-	-
Land drain with flow	1	1.3	-	-	-	-	-	-

In the cable percussion boreholes, significant groundwater strikes were recorded in the sand and gravel strata, the sandstone bedrock, and what was considered to be thin sandy and/or gravelly bands in the deeper clay strata. The groundwater was considered to be confined within these strata. The sand and gravel stratum did not appear to be in continuity across the site, this not being present in all the boreholes.

4.0 Ground Gas Risk Assessment

4.1 E3P Ground Gas Risk Assessment

E3P undertook a ground gas risk assessment in accordance with:

- CIRIA Report C665 (2007) "Assessing risks posed by hazardous ground gases to buildings".
- BS 8485:2015+A1:2019 "Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings".

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This was based on ground gas monitoring within small diameter borehole installations located across the site including one, WS102, located within the north eastern former pond (see Drawing Reference No. 8165/01, presented in Appendix 12). The response zone was within the made ground. The monitoring was undertaken on 9 No. occasions.

The gas monitoring results recorded concentrations no greater than 0.1% v/v for both methane and carbon dioxide and steady flow rates on each occasion of 0.1l/hr. Only one peak flow rate was recorded in small diameter borehole WS103 on one occasion. E3P referenced that groundwater levels within this monitoring well were noted to rise and fall. Coopers consider that this may have contributed to the temporary elevated peak flow rate. No groundwater had been recorded in WS102 on each monitoring visit.

E3P concluded that there was a very low risk posed by ground gas, based on the ground gas monitoring undertaken, with one monitoring well response zone in the made ground. As such, the site could be categorised as Characteristic Situation 1 (CS1). However, E3P implied that due to total organic carbon concentrations recorded in samples taken from small diameter borehole WS102 and trial pit TP110 (located in the former south eastern pond), of 4% and 4.2%, respectively, that there may be a residual ground gas risk. This would be removed should the made ground be removed. The risk assessment did not give consideration to the characteristics of the source containing the elevated TOC concentrations.

4.2 Coopers Supplementary Ground Gas Risk Assessment

Coopers undertook an additional qualitative risk assessment to assess the risk posed to plots within the vicinity of the peat deposit identified below the former north eastern pond in 5 No. trial pits TP230 to TP233 and TP235, given the extent of the peat recorded and the commercial preference to leave the peat in situ. The assessment also gave consideration to the potential for the made ground to remain in-situ. The approach to the ground gas risk assessment and design was based on that detailed within the following British Standards, guidance documents and technical papers:

- BS8576:2013 “Guidance in investigations for ground gas. Permanent gases and volatile organic compounds”.
- BS 8485:2015+A1:2019 “Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings”.
- CIEH (September 2008) “The local authority guide to ground gas”. S Wilson, G Card and S. Haines.
- CL:AIRE - RB17 “A pragmatic approach to ground gas risk assessment”. November 2012.
- “Technical paper: Risk and reliability in gas protection design – 20 years on: Part 1”. G. Card, J Lucas and S Wilson. August 2019.
- NHBC Technical Extra. Issue 20 (2016) (TE20) ‘Ground gas update – site assessment, characterisation and design of gas protection measures’
- NHBC (April 2023) NF94 “Hazardous ground gas – an essential guide for housebuilders”.

Discussion with regards to completed ground gas monitoring

While ground gas monitoring was undertaken by E3P within ground gas monitoring well WS102, located within the vicinity of the peat deposits, the response zone was set within the made ground above. The small diameter borehole log did not record the presence of peat in the clay in WS102. However, had any ground gas been migrating laterally and vertically, given the location of the small diameter borehole, it is likely that some of the ground gas would have migrated into the monitoring well. Negligible ground gas concentrations were recorded.

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As the specific peat strata were not monitored, Coopers undertook a qualitative risk assessment relating to the potential for this to provide a source of ground gas which may pose a risk to the proposed development.

Qualitative risk assessment relating to presence of peat

The potential for ground gas to pose a risk to the proposed development was based on the characteristics and extent of the peat present. As discussed in Section 3.2.2, the peat was limited in extent, being localised in thin bands up to a maximum of 200mm to 300mm thick and in occasional pockets up to a maximum of 200mm in diameter. It was confined within soft and soft to firm clay. The peat was present at depths ranging between 1.9m and 2.7m bgl, but was generally present below 2.6m bgl. The peat was generally pseudo fibrous, containing a low proportion of degraded plant matter. An amorphous peat was present in one trial pit from 2.6m bgl to the base of the trial pit at 3.8m bgl.

Ground gas generation from the peat would have been at its greatest when the leafy plant matter was still present, this being easily degraded by micro-organisms. The current ground gas generation rate will be negligible. Any ground gas generated at the time may have been trapped or adsorbed in the clay. The volume of ground gases confined within this location are likely to be negligible to very low due to the limited extent of the peat present, that generated historically being a finite source. Such insignificant volumes are unlikely to provide the migration of significant concentrations. Any ground gas generated is confined within the low permeability clay such that the diffusion rates of the gas are very low, significantly reducing the migration pathway of the ground gases.

As discussed in Section 3.2.9, the groundwater observations were noted to be limited. There was no groundwater ingress within the overlying made ground. Any groundwater observed related to the sand stratum between the made ground and the clay stratum containing the peat, with the sand generally being damp and minor groundwater ingress at the head of the clay where it was perched. There was only one limited groundwater ingress from the peat within the clay stratum.

As the groundwater was only present as minor seepages in the sand, it was not considered to have a significant impact on ground gas migration within the sand stratum, in that the groundwater will not rise and fall significantly causing a significant variation in pressure and flow rate within the soil. Groundwater within the clay was found to be negligible and with the clay having a very low permeability, the flow rate in this stratum would be negligible, again significantly limiting the migration potential. Cable percussion borehole BH01 proved clay to 12.4m bgl, groundwater being confined within the sand and gravel stratum at this depth and within the sandstone bedrock at 15.3m bgl. This confirmed there would be no significant influence causing significant flow rates due to groundwater fluctuation in the shallow strata containing the peat.

The foundations for Plots 25/26 overlying the peat deposits are to comprise driven piles. When piling is undertaken should ground gas be present, a proportion of this may be released to the atmosphere, at the time of piling. However, once in place, the skin friction between the piles and the clay will prevent a pathway for gas migration in the clay stratum. Within the sand stratum, the soil mass is compacted so reducing pore space and removing the pile as a preferential pathway.

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Qualitative risk assessment relating to presence of madeground

Ground gas monitoring results obtained by E3P within the small diameter borehole WS102 have shown there is no significant ground gas generation within the north eastern pond madeground. Coopers reviewed the characteristics of the madeground in this area and in the southern former ponds, with no significant inclusions of biodegradable materials noted.

The main matrix of the madeground in both areas of the site was found to be generally a slightly silty, slightly gravelly, fine to coarse sand, with gravel of brick, concrete, slate, ceramics and ash and clinker and occasional glass fragments and bottles. Wood shavings were noted sporadically interspersed in the madeground in the north eastern former pond and wood fragments were identified sporadically in the southern ponds. Given these formed a proportion of the gravel, which in itself was identified in low proportions of the madeground, there was a very limited presence of wood shavings/fragments.

Localised slightly silty, slightly gravelly, sandy clay, with gravel of brick, ash and clinker, ceramics and individual sporadic wood shavings was also present in the north eastern pond/marsh area and a second stratum of slightly sandy, silty, gravelly clay, with similar gravel inclusions was present in the southern ponds.

Occasional bands of a white substance were recorded in the former southern ponds.

The wood fragments/shavings have a very limited potential to biodegrade due to the high lignin content, lignin being a highly complex structure of polymers. Subsequently, the potential for such materials to generate ground gas is very low. This factor together with the low proportion present in the madeground would indicate that this would not be a potential source of significant ground gas concentrations.

The historical data indicates that the fill was deposited potentially by the 1880s when the ponds were no longer surveyed as present, but at its latest the 1930s when the site became a sports ground. No other visual observations of organic materials were made within the madeground. Had any readily putrescible materials been present when the fill was deposited by the latest the 1930s, this would have fully biodegraded over this time period. As such there would be no significant ground gas generation from the madeground or the potential to generate flow rates.

The madeground in both ponds does not extend to significant depths, the madeground sand being to between 0.9m and 1.8m bgl. Generally, this extended no deeper than 1.4m bgl in the north eastern area of the site and the localised madeground clay below extended to between 1.1m and 2.7m bgl. The overall depth of the madeground sand and clay strata in the southern former ponds was generally between 1.1m and 1.6m but shallowing towards the edges to 0.8m deep. The thickness of the madeground was generally no more than approximately 1m. Such limited depths/thicknesses of madeground would limit the potential for ground gas generation in significant volumes.

The total organic carbon (TOC) concentrations were variable from below 1% to 7% with one elevated concentration of 16.8%. While TOC can be an indicator of potential ground gas generation, the characteristics of the materials need to be considered. Coopers noted the inclusions of wood fragments/shavings and ash and clinker which will result in more elevated TOC concentrations. As already discussed wood is a very low contributor to ground gas generation. Ash and clinker is not degradable so does not have a potential to generate methane and carbon dioxide. Elevated TOCs may also be associated with hydrocarbon compounds. The risk assessment for hydrocarbons to generate vapours has been addressed in detail in Section 5, but it was concluded that these do not pose a significant risk to the health of future residents.

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Coopers concluded based on the characteristics of the ground conditions and the ground gas monitoring completed by E3P, that should the madeground remain within the former ponds/marsh that there will not be significant concentrations of ground gas generated and the risk is very low.

Summary of ground gas risk assessment

It is considered that the peat and madeground present below the former north eastern pond will pose a very low risk to the proposed development due to ground gas migration. As such no ground gas protection measures are required. This is based on the following factors summarised below:

- the peat has a limited potential to have generated a significant volume of elevated ground gas concentrations, due to limited peat thicknesses present;
- due to the nature of the peat, any ground gas generated is finite;
- negligible flow rates prevailing so significantly reducing the potential for ground gas migration;
- peat being present within a soil matrix with very low permeability to permit ground gas migration;
- no groundwater influence causing significant flow rates;
- limited thickness of madeground present limiting the concentrations generated;
- no organic matter present with the potential to generate ground gas in significant concentrations;
- foundations are to comprise driven piles, which will not provide a pathway for any confined ground gas, once installed.

A risk assessment in relation to the potential risk posed by vapours arising from organic compounds within the madeground has been completed by Coopers, this being discussed in Section 5.0. This concluded there is a negligible risk posed by vapour intrusion into the proposed residential properties.

The site is therefore defined as Characteristic Situation 1 in accordance with BS8485:2015+A1:2019, or Green in accordance with the NHBC Technical Extra TE20, with no ground gas or vapour protection measures required.

5.0 Contamination Assessment Based on Supplementary Investigation

5.1 Chemical Analysis to Assess Risk to Human Health

Madeground samples selected from the vicinity of the former ponds, former marsh area, access track and former building footprint in the central east of the site were scheduled for the following analysis to assess the risk to human health:

- inorganic determinands - elemental metals and metalloids, sulphate, total cyanide, TOC, pH;
- asbestos fibre identification; and
- speciated polycyclic aromatic hydrocarbon (PAH) (16) compounds

While there was no olfactory evidence of hydrocarbon contamination, some samples taken from the madeground within the former ponds were scheduled for total petroleum compounds (TPHCWG) to assess the possible presence of lower concentrations of TPH compounds. Further samples of madeground in the former ponds were scheduled for semi-volatile compounds (SVOCs) to assess the extent of these following identification of some SVOCs by E3P.

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Previously, natural soil samples taken from below the former pond in the north east had not been analysed. Natural soil samples were selected to assess whether soil concentrations below the madeground would be suitable for use on site should there be any arisings during the construction phase.

Madeground soil samples taken from the vicinity of E3P trial pit TP114, where slightly elevated concentrations of mercury (2.5mg/kg) and naphthalene (5.2mg/kg) had been recorded, were scheduled for analysis of mercury and speciated PAH (16) compounds (which include naphthalene). Selected soil samples taken across the site with total mercury concentrations elevated above the Tier 1 threshold value for elemental mercury of 1.2mg/kg, were scheduled for speciated mercury analysis. No elevated concentrations were reported in the area of the previous elevated concentration in TP114, discussed in E3Ps site investigation report Reference No. 15-811-R2-6. The sample with the highest concentration in the vicinity of TP114 was scheduled for speciated mercury analysis, in order to characterise the mercury.

Coopers submitted the soil samples as summarised in Table 2.

Table 2 – Chemical analysis scheduled for human health risk assessment

Exploratory hole	Depth of sample (m bgl)	Strata	Area of investigation	Inorganic determinands and speciated (16) PAH compounds	Asbestos fibre ID	TPHCWG compounds	Total mercury	Speciated mercury	Speciated (16) PAH compounds	SVOCs
TP223	0.5	Madeground (clay)	Vicinity of TP114				✓		✓	
TP224	0.3	Madeground (sand)					✓			
TP226	0.4	Madeground (sand)					✓	✓	✓	
TP239	0.5	Madeground (sand)					✓		✓	
TP240	0.5	Madeground (sand)					✓			
TP215	0.5	Madeground (sand)	Former building footprint	✓	✓					
TP201	0.7	Madeground (sand)	Former marsh area	✓	✓					
	1.9	Natural sand		✓						
TP237	0.5	Madeground (sand)		✓	✓			✓		
TP229	0.5	Madeground (sand)	Former pond in north east	✓	✓			✓		✓
TP231	0.5	Madeground (sand)		✓	✓	✓				
TP233	0.5	Madeground (sand)		✓	✓					✓
	2.0	Natural clay		✓						
TP235	0.5	Madeground (sand)		✓	✓					
	1.5	Natural sand		✓						
TP243	0.5	Madeground (sand)	Former ponds in south	✓	✓					
	0.8	Madeground (sand)		✓	✓	✓		✓		✓
TP244	1.2	Madeground (clay)		✓	✓					
TP245	0.6	Madeground (sand)		✓	✓					
TP246	1.0	Madeground (clay)		✓	✓	✓		✓		✓

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Table 2 – Chemical analysis scheduled for human health risk assessment...Continued

Exploratory hole	Depth of sample (m bgl)	Strata	Area of investigation	Inorganic determinands and speciated (16) PAH compounds	Asbestos fibre ID	TPHCWG compounds	Total mercury	Speciated mercury	Speciated (16) PAH compounds	SVOCs
TP247	0.5	Madeground (sand)		✓	✓					
TP248	0.5	Madeground (sand)		✓	✓					✓
TP253	0.6	Madeground (clay)		✓	✓					
	0.7	Madeground clay (white material)		✓	✓					✓
TP254	1.2	Madeground (sand)		✓	✓					
TP256	0.5	Madeground (clay)		✓	✓					✓
	0.9	Madeground (sand)		✓	✓	✓				
TP257	0.5	Madeground (clay)		✓	✓					
	1.2	Madeground (sand)		✓	✓					
TP259	0.8	Madeground (sand)		✓	✓					
TP241	0.1	Madeground gravel	Gravel track	✓	✓					
	0.2	Madeground (sand)		✓	✓					
TP260	0.6	Madeground (sand)	Adjacent access track to site	✓	✓					
TP261	0.2	Madeground (similar to topsoil)	Access track to site	✓	✓			✓		

5.2 Chemical Analysis Results and Human Health Risk Assessment

5.2.1 Screening Values

For the purposes of this assessment, all the results were first assessed against the current most conservative Tier 1 threshold values for residential properties with plant uptake and 1% soil organic matter (SOM). The C4SLs have been applied where available. For other criteria, the S4ULs were applied where available, except for copper, nickel and zinc, for which the phytotoxic threshold values are more conservative than those applicable to human health. These are relevant in assessing whether the materials on site may be detrimental to plant growth. Where no C4SLs and S4ULs are available, the EIC/AGS/CL:AIRE GACs for organics were applied.

For the purposes of this assessment all total mercury results were first screened against the threshold for elemental mercury. Where exceedances of this concentration were recorded, a selection of these samples were scheduled for speciated mercury analysis.

The threshold criteria are presented in Appendix 4.

5.2.2 Chemical results assessment

The Envirolab Analytical Test Reports are presented in Appendix 5. The results have been summarised and assessed in relation to the different areas of the site.

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Former north eastern pond and marsh area

Elevated metal concentrations were reported in 2 No. of the 6 No. madeground soil samples scheduled for analysis. One of these samples included a mercury concentration (3.28mg/kg) slightly above the threshold value for elemental mercury (1.2mg/kg), with 2 No. other samples also containing slightly elevated concentrations above this value. However, the speciated mercury analysis undertaken on 2 No. of these samples indicated that the total mercury was comprised entirely of inorganic mercury, the concentrations being well below the Tier 1 threshold value (40mg/kg) for mercury in this form. While copper and zinc concentrations exceeded the phytotoxic threshold values these did not exceed those for human health.

Speciated PAH compounds were elevated in 3 No. of the 6 No. madeground soil samples. Speciated PAH concentrations were highly elevated in 1 No. sample, but only slightly elevated in the other two. Elevated concentrations of naphthalene were not reported.

These results exceeding the Tier 1 threshold values are summarised in Table 3.

None of the TPH compound concentrations reported in the madeground soil sample TP231 at 0.5m exceeded the Tier 1 threshold values.

Where SVOC concentrations were reported to be above the level of detection (LOD) in the 2 No. madeground soil samples analysed, these were screened against available GACs, with no concentrations exceeding these values.

Concentrations of dibenzofuran, 2-methylnaphthalene and perylene were slightly elevated above the LOD in TP229 at 0.5m and dibenzofuran, carbazole and perylene were slightly elevated above the LOD in TP333 at 0.5m.

No elevated determinand concentrations were reported in the 1 No. natural sand and 1 No. natural clay sample.

Table 3 – Concentrations of determinands in area of the north eastern former pond and marsh area exceeding threshold values

Determinand	Threshold Value for Residential Properties with Plant Uptake (mg/kg)	Determinand Concentrations Exceeding Threshold Value Within Exploratory Hole (mg/kg)		
		TP229 at 0.5m	TP233 at 0.5m	TP235 at 0.5m
Arsenic	37	-	-	61
Beryllium	1.7	-	-	2.1
Copper	200 (phytotoxic threshold based on pH >7)	-	-	386
Lead	200	821	-	459
Zinc (phytotoxic)	300 (based on pH >7)	309	-	566
Benzo(a)-anthracene	7.2	78.2	-	-
Benzo(a)pyrene	5	72.5	-	-
Benzo (b)-fluoranthene	2.6	74.1	4.07	3.1
Benzo (k)-fluoranthene	7.7	30.9	-	-
Chrysene	15	87.6	-	-
Dibenzo(ah)-anthracene	0.24	5.06	0.373	0.27

No asbestos fibres were detected in the 6 No. madeground soils samples.

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Former southern ponds

17 No. samples taken from the made ground associated with the former ponds in the south of the site were scheduled for chemical analysis. This included the made ground below the gravel track. Exceedances of the Tier 1 threshold values are summarised in Table 4.

10 No. of the 17 No. made ground soil samples were reported to contain concentrations of metals elevated above the Tier 1 threshold values for human health. The metals were predominantly lead and zinc but also included arsenic, cadmium, copper and nickel. The copper concentrations exceeded both the phytotoxic threshold value and human health threshold values in 1 No. sample, the nickel in 2 No. samples and the zinc in all 8 No. samples where concentrations were elevated. 3 No. samples were reported to contain slightly elevated concentrations of total mercury above the Tier 1 threshold value. 2 No. of these samples, scheduled for speciated mercury analysis, were shown to contain only inorganic mercury, in concentrations well below the Tier 1 threshold value for inorganic mercury.

3 No. of the samples contained slightly elevated concentrations of speciated PAH compounds, with benzo(a)pyrene, benzo(b)fluoranthene and dibenzo(a,h)anthracene present in all the samples. In addition, chrysene and naphthalene were elevated in concentration in TP246 at 1.0m.

1 No. (TP246 at 1.0m) of the 3 No. samples of made ground scheduled for TPHCWG analysis, were reported to contain TPH compounds in the aromatic ranges between C10 and C35 in concentrations above the Tier 1 threshold values based on 1% SOM.

Only the SVOCs dibenzofuran, carbazole, 2-methylnaphthalene and perylene, which have no applicable Tier 1 threshold values, were slightly elevated above the LOD in TP243 at 0.8m and TP246 at 1.0m, the concentrations noted to be more elevated in TP246 at 1.0m where TPH compounds were elevated.

1 No. made ground sample comprising the white substance, which was analysed for metals and speciated PAH compounds did not contain any elevated concentrations above the Tier 1 threshold values and SVOCs were not elevated above the LOD.

Only the total soils concentration of arsenic was analysed for in the natural sand underlying the made ground below the former southern ponds, this being specifically for the controlled waters risk assessment. However, it confirmed that there were no elevated concentrations of arsenic in the natural sand.

The gravel taken from the gravel track at TP241 at 0.1m did not contain any determinand concentrations elevated above the tier 1 threshold values.

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Table 4 – Concentrations of determinands in area of the southern ponds exceeding threshold values

Determinand	Threshold Value for Residential Properties with Plant Uptake (mg/kg)	Determinand Concentrations Exceeding Threshold Value Within Exploratory Hole (mg/kg)									
		TP241 at 0.2m	TP243 at 0.5m	TP243 at 0.8m	TP244 at 1.2m	TP245 at 0.6m	TP246 at 1.0m	TP247 at 0.5m	TP248 at 0.5m	TP253 at 0.6m	TP256 at 0.5m
Arsenic	37	-	121	-	-	70	-	-	73	-	67
Beryllium	1.7	-	-	-	-	-	-	-	-	-	-
Cadmium	11	-	14.9	621	-	13.7	-	-	-	-	-
Copper	200 (phytotoxic threshold based on pH >7)	-	472	-	-	3370	-	-	438	-	-
Copper	2400 (human health GAC)	-	-	-	-		-	-	-	-	-
Lead	200	245	3260	904	-	937	264	212	1670	-	1240
Nickel	110 (phytotoxic threshold based on pH >7)	-	-	-	-	7220	169	-	-	-	-
Nickel	130 (human health GAC)	-	-	-	-			-	-	-	-
Zinc	300 (phytotoxic threshold based on pH >7)	-	2280	171000	1400	4510	764	420	651	856	893
Zinc	3700 (human health GAC)	-	-		-		-	-	-	-	-
Benzo(a)pyrene	5	-	-	5.27	6.42	-	11.2	-	-	-	-
Benzo (b)-fluoranthene	2.6	-	-	5.53	7.76	-	11.0	-	-	-	-
Chrysene	15	-	-	-	-	-	15.6	-	-	-	-
Dibenzo(ah)-anthracene	0.24	-	-	0.58	0.44	-	1.55	-	-	-	-
Naphthalene	2.3	-	-	-	-	-	6.5	-	-	-	-
TPH aromatic C10-C12	69	-	-	-	-	-	118	-	-	-	-
TPH aromatic C12-C16	140	-	-	-	-	-	1160	-	-	-	-
TPH aromatic C16-C21	250	-	-	-	-	-	3280	-	-	-	-
TPH aromatic C21-C35	890	-	-	-	-	-	4790	-	-	-	-

15 No. of the 16 No. samples taken from the madeground in the former southern ponds scheduled for asbestos fibre identification were reported to contain no asbestos fibres or ACMs. The sample taken from the gravel track contained no asbestos fibres. 1 No. sample taken from TP248 at 0.5m was reported to contain loose asbestos fibres, these being of amosite. The sample was quantified and reported to contain 0.004% asbestos fibres by weight of the sample.

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Area assessed specifically for mercury and PAH compound concentrations

5 No. samples of madeground soil samples taken from the trial pits in the vicinity of the E3P trial pit TP114 were scheduled for total mercury analysis. The results were screened against the most conservative Tier 1 threshold value for mercury, that being elemental mercury (1.2mg/kg). None of the concentrations were reported above this threshold value. However, to characterise the mercury present in this area, the sample taken from TP226 at 0.4m with the highest concentration of total mercury (0.99mg/kg) in this area was scheduled for speciated mercury. The results indicate that the mercury was only present in the inorganic form, the concentration being well below the Tier 1 threshold value for inorganic mercury.

3 No. of the 5 No. samples were scheduled for speciated (16) PAH compounds. 2 No. samples were reported to have marginally elevated concentrations of PAH compounds as summarised in Table 5. Naphthalene was slightly elevated in the sample taken from TP239 at 0.5m.

Table 5 – Concentrations of determinands in the vicinity of TP114 exceeding Tier 1 threshold values

Determinand	Threshold Value for Residential Properties with Plant Uptake (mg/kg)	Determinand Concentrations Exceeding Threshold Value Within Exploratory Hole (mg/kg)	
		TP226 at 0.4m	TP239 at 0.5m
Benzo (b)-fluoranthene	2.6	4.45	3.71
Dibenzo(ah)-anthracene	0.24	0.37	-
Naphthalene	2.3	-	2.82

Footprint of the former building in the central east of the site

1 No. sample was scheduled for chemical analysis of inorganic determinands and speciated PAH compounds. There was only one marginal exceedance of the Tier 1 threshold values for dibenzo(ah)anthracene, summarised in Table 6.

Table 6 – Concentrations of determinands in the footprint of the former building in the central east of the site exceeding threshold values

Determinand	Threshold Value for Residential Properties with Plant Uptake (mg/kg)	Determinand Concentrations Exceeding Threshold Value Within Exploratory Hole (mg/kg)
		TP215 at 0.5m
Dibenzo(ah)-anthracene	0.24	0.3

One asbestos containing material (ACM) was identified within the madeground sample, the asbestos being chrysotile. The ACM was approximately 2cm wide as can be seen compared with a 20 pence piece in the photograph below.



Photograph 1: Comparison of ACM with a 20 pence piece for scale. Photograph provided by Envirolab on 24th July 2023

Access track to site and vicinity of the track

The samples taken from the madeground (similar to topsoil) in the access track (TP261 at 0.2) to the site and the madeground (sand) in the vicinity of the access track (TP260 at 0.6m) were shown as not containing any concentrations above the Tier 1 threshold values. Neither samples contained asbestos fibres.

5.2.3 Human Health and Phytotoxic Risk Assessment

Metals and non-volatile PAH compounds

Arsenic, lead, and PAH compounds (benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene and dibenzo(ah)anthracene) in the former north eastern pond and marsh area and arsenic, cadmium, copper, lead, nickel and zinc and PAH compounds (benzo(a)pyrene, benzo(b)fluoranthene, chrysene and dibenzo(ah)anthracene) in the southern former ponds were identified as contaminants of concern. The madeground in the footprint of the former building in the central east of the site contained a marginally elevated concentration of dibenzo(ah)anthracene.

The contaminants were typical of the madeground characteristics identified with former demolition materials and ash and clinker. These may pose a risk to the health of future users of the proposed residential properties if left in the growing medium through dermal contact, ingestion of soils and homegrown produce grown with soils attached, inhalation of dust outside and tracked back indoors. Slightly elevated concentrations of SVOCs (dibenzofuran, carbazole and methylnaphthalene) were present but it is not possible to assess whether these would pose a risk to human health or otherwise as there is insufficient scientific data available to define applicable screening values. However, being SVOCs, these would likely pose a risk through similar pathways to the metals and non-volatile PAH compounds.

Copper, nickel and zinc concentrations may be detrimental to plant growth.

If the madeground is left below the building footprints, there would be no pathway to pose a potential risk. However, remediation will be required in the soft landscaping of the gardens and any limited public open space.

Volatile naphthalene (PAH compound) and TPH compounds

Locally in trial pits TP239 at 0.5m and TP246 at 1.0m, a further PAH compound, naphthalene, was noted to be present in elevated concentrations. The GAC illustrates that this has the potential to pose a risk to human health mainly through ingestion of home grown produce and attached soil, with the second main pathway being inhalation of indoor vapours. The elevated naphthalene concentrations in TP239 was encountered in the vicinity of that reported in the sample taken from E3P's trial pit TP114 at 0.4m. A source signature double ratio plot assessment was used to help determine the possible source of the PAH compounds present in the made ground, but was not used exclusively to conclude the source, as only a low number of samples could be used in the assessment. The results of this assessment are presented in Appendix 6, together with the description of the methodology.

The output of the source signature double ratio plot illustrates that all the PAH compounds were coal derived, with 4 No. of the 6 No. associated with coal ash. 1 No. sample may be associated with tarmac (with no elevated PAH compound concentrations) and 1 No. (that taken by E3P) with coal tar/creosote. These results were compared with the trial pit logs. Coopers had noted ash and clinker specifically in the made ground within TP223, TP226 and TP246. Although ash and clinker was not noted specifically in the other trial pits, as the soil matrix was heterogeneous, ash and clinker may be present in low indistinct quantities, which may have been included within the soil sample scheduled for chemical analysis, such as that taken from TP239. Naphthalene associated with ash and clinker, would be bound within the soil structure, such that it would have a very low potential to volatilise.

Potentially, the PAH compounds were derived from differing sources, as shown on the source signature ratio plot for the sample taken from TP223 and TP114. No specific tarmac or coal tar/creosote was identified in any of the made ground observed by Coopers. E3P logged tar as one of the lithologies within the gravel in the made ground sand, indicating it was present in a low proportion of the made ground mass. While there may be further fragments of tar within the made ground sand, this would be in very low quantities, given this has not been visually identified in additional trial pits in the vicinity. As such there would be a very low potential to pose a significant risk of vapours due to the naphthalene, which may be associated with these sources. However, as the GAC was used to assess the risk posed by naphthalene, which examines all potential pathways to potentially pose harm, further assessment was undertaken by calculating site specific screening values (SSSV) to look specifically at the risk posed by vapours, as discussed in the section below.

In TP246 at 1.0m, the naphthalene concentration was found in conjunction with elevated concentrations of TPH compounds in the aromatic ranges C10 to C12, C12 to C16, C16 to C21 and C21 to C35. The GACs indicate that the main pathway for potential risk to human health is via ingestion of homegrown produce including with soil attached. Inhalation of indoor vapour is the second most significant pathway for TPH compounds in the aromatic range C10-C12, while this is limited for the aromatic range C12-C16 and very low for the aromatic ranges C16 to C21 and C21 to C35. Direct soil ingestion and dermal contact become more significant pathways for the aromatic ranges C16 to C21 and C21 to C35. The source of the naphthalene at this location cannot be confirmed whether it is associated with that of the aromatic TPH compounds or whether it was derived from the ash and clinker. The source of the TPH compounds was unclear as there was no specific visual or olfactory evidence of TPH contamination in the trial pits. However, some small bottles were noted in the trial pits, which may have contained some liquids released into the made ground, these containing TPH compounds. SSSVs were calculated for these compounds as discussed below, to assess the risk specifically posed by vapours.

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Site specific screening values (SSSVs) for naphthalene and aromatic TPH compounds

The total soils chemical analysis results for the naphthalene and the aromatic TPH compounds had been screened against generic threshold values derived by LQM using the CLEA model v.1.07 and applying the standard input data as follows:

- the most conservative SOM at 1%;
- assuming plant uptake;
- soils being a sandy loam;
- pH of 7;
- house types to be small terraced housing;
- receptor being a girl up to 6 years of age;
- pathways including direct soil and dust ingestion, consumption of home grown produce, soil attached to homegrown produce, dermal contact indoors and outdoors, inhalation of dust indoors and outdoors and inhalation of vapour indoors and outdoors;
- depth to top of soil source being 0.65m;
- thickness of contaminant layer being 2m.

To calculate the SSSVs, the CLEA Model v1.071 was adapted with site specific factors. It should be noted that this has not been updated in respect of the more recent scientific data used by LQM/CIEH in the calculations of the S4ULs, which indicate that the CLEA Model v1.071 is conservative. As the aromatic TPH compounds and naphthalene recorded in TP246 at 1.0m were found within madeground clay, SSSVs were calculated separately for these possible contaminants of concern compared with the naphthalene identified in TP114 at 0.4m and TP239 at 0.5m, identified within madeground sand.

The average SOM for these strata was calculated by taking:

- the average of the total organic carbon (TOC) x 1.72.

The average TOC for the madeground clay in the southern ponds was calculated to be 2.67%, therefore the average SOM for the madeground clay was calculated to be 4.59%. The total organic carbon was not scheduled for this specific sample. While the TOC for the sample taken from TP239 at 0.5m was not obtained, TOC values were obtained in other samples taken from the madeground sand associated with the former south east pond. The average TOC for the madeground sand was calculated to be 3.54%, therefore the average SOM for this stratum was calculated to be 6.09%.

Coopers will be recommending to the developer that the madeground (similar to topsoil) is removed from site during the remediation process and that an inert cover is used within the soft landscaping within the gardens and any limited public open space along the driveways. This will remove all pathways for contaminants to the future site users, the residents, except the potential for vapour inhalation indoors and outdoors. The receptor, a female child up to 6 years of age remained in the assessment.

The soils have been shown to have a pH of approximately 7, the generic value within the model. While some ground levels are to be elevated for some plots others are to be elevated only by approximately 0.5m. Therefore, the depth of the madeground below the floor slab was left at 0.65m. The madeground strata were less than 2m but this thickness was left as a factor.

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The house type over the area of the naphthalene reported to exceed the GAC value are proposed to be detached, while the house types over the madeground clay containing the elevated concentrations of naphthalene and aromatic TPH compounds, will be detached and semi-detached. The model was adjusted to account for these house types which have a set building footprint and therefore area of floor slab per plot. It should be noted that the area of these footprints are less than those for the proposed house types.

As previously discussed, there was no visual or olfactory evidence of mobile hydrocarbon contamination present in the madeground. Therefore, reference to the soil saturation limits was not required. The SSSVs have been summarised in Table 7. In the case of the SSSVs for aromatic TPH compounds in the ranges C16-C21 and C21 to C35, the SSSVs for inhalation become so great that they are not relevant becoming superseded by the other pathways which for this scenario will not be relevant with an inert cover over the madeground.

Table 7 – SSSVs for naphthalene and aromatic TPH compounds

Determinands	Concentrations in Trial Pits (mg/kg)			SSSVs (mg/kg)		
	TP246 at 1.0m	TP239 at 0.5m	TP114 at 0.4m	Detached house over madeground clay	Semi-detached house over madeground clay	Detached house over madeground sand
TPH aromatic C10-C12	118	-	-	3,630	1,990	-
TPH aromatic C12-C16	1160	-	-	28,600	26,600	-
TPH aromatic C16-C21	3280	-	-	NR	NR	-
TPH aromatic C21-C35	4790	-	-	NR	NR	-
Naphthalene	6.5	2.82	5.2	20.1	18.9	6.72

As can be seen from Table 7, the concentrations of naphthalene and aromatic TPH compounds are below the SSSVs for the three known proposed scenarios; detached and semi-detached plots over madeground clay and detached plots over madeground sand.

As previously discussed, the naphthalene appears to be associated either with ash and clinker, and therefore has a low likelihood of vapourising from such materials. Alternatively, if it is associated with coal tar or tarmac, no significant deposits were encountered within the madeground which would be able to generate significant volumes of naphthalene.

Consideration also needs to be given to the construction of the floor slab, which will provide some form of attenuation to any potential vapours although this is not accounted for within the CLEA model. The floor slab will either be a reinforced cast in-situ floor slab or a block and beam floor slab. In the case of the reinforced cast in-situ floor slab, this has a low crack/void ratio due to be formed as one complete slab, the reinforcement reducing the probability for cracks being generated. Consequently, this provides a lower potential for vapour ingress into the properties. The block and beam floor slab has a minimum void of 150mm, with periscopic venting, providing an effective passive ventilation layer below the floor slab, which would provide a preferential pathway for potential naphthalene vapours to disperse to the atmosphere.

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The SoBRA paper “Vapour Intrusion to Support Sustainable Risk Based Decision Making. Summer Workshop 2017” examined specific factors which lead to the degradation of vapours as they migrate to the soil surface. It also discussed the need for further development of the screening values used in the UK. It highlighted that the CLEA model does not account for the aerobic biodegradation of vapours in the unsaturated soils, where hydrocarbon vapours can be significantly reduced in concentration within a short vertical distance.

Coopers concluded there will be no significant risk posed by vapours arising from the aromatic hydrocarbon compounds and naphthalene in the madeground clay for detached and semi-detached plots overlying these soils, or posed by naphthalene in the madeground sand for detached properties. No remedial measures will be required in respect of potential vapour ingress into these properties. However, the concentrations of naphthalene and aromatic TPH compounds may pose a risk to human health if left within the growing medium in the gardens primarily due to ingestion of home grown produce and attached soils and dermal contact.

Asbestos Assessment

Asbestos fibres recorded in the southern former pond and the ACM recorded in the footprint of the former building in the central east of the site may pose a risk to the future site users through inhalation of fibres outdoors and if tracked back into the house. The risk assessment has been discussed in detail below.

In area of the Southern Ponds

Amosite asbestos fibre bundles were identified in only 1 No. out of 16 No. madeground samples. The fibres were quantified, with 0.004% by mass of the sample being reported. Therefore, based on 16 No. samples in all having been assessed for possible asbestos fibres and only 1 No. containing asbestos fibres, the frequency of asbestos fibres in the madeground can be calculated to be 0.00025%. Aside from the potential risk posed by asbestos fibres, none of the materials were deemed suitable for use in the growing medium due to the presence of contaminant concentrations, which may pose a risk to human health. Consideration was given to the risk potential to future site users, should the materials be re-used at depth below an inert cover.

There are no acceptable generic thresholds for Asbestos Containing Soils (ACSSs) by designated end use within the UK. Guidance on the methods for assessments for asbestos containing soils has been provided within the following key publications:

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

CIRIA C733 advocates a staged approach with initial qualitative assessment, and where higher risks are identified then further detailed quantitative assessments and exposure assessments should be completed. While there are no generic thresholds for determining relative lower or higher risks, risk assessment tools have been released by CL:AIRE to aid assessments. The previous approach of some companies to infer the laboratory detection limit or withdrawn ICRCCL threshold as an applicable threshold for risk is not appropriate, as detailed within CIRIA C733 “the value of 0.001% mentioned in ICRCCL should not be used in this capacity.” This is further detailed that “It is not a level below which ICRCCL considered that risks are acceptable or below which potential civil liberties could be assumed to be negligible. So, it is not an appropriate generic assessment criterion for ACSSs.”

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The primary asbestos risk to human health is through the inhalation of respirable fibres. CIRIA C733 details the primary human health risk posed by environmental exposure (non-work related) to asbestos is lung cancer and mesothelioma. The HSE have stated that occupational exposure to asbestos is “the single greatest cause of work-related deaths in UK” with an estimated circa 4000 deaths annually in the UK alone (CIRIA C733).

Based on the sampling analysis undertaken on the madeground in the southern ponds, with 1 No. out of 16 No. madeground samples taken, 6.25% of the madeground contained 0.004% by mass. This indicates a very low percentage of asbestos fibres present in the madeground in this area.

While the fibres present were comprised of amosite, which poses a higher risk to human health than chrysotile, as this was present at a very low frequency, it was considered, in the first instance, that a qualitative risk assessment would be suitable in accordance with CIRIA C733 guidance.

To undertake a robust qualitative assessment of the risks a method of qualitative assessment has been assessed by SOBRA within publication “Summer Workshop Report – Asbestos in Soils” (2015). The approach is based upon assessments of the nature of the asbestos, the soil characteristics, quality of the data and the receptor types during each activity where asbestos containing soils are liable to be disturbed. The approach assessed by SOBRA has been included in two decision support tools by CL:AIRE. The CL:AIRE sheets have been undertaken to supplement the assessment below, however the tools do not allow a justification or discussion of the parameters utilised and therefore Coopers have used these in support of the assessment rather than replacing it, a copy of which has been enclosed. A summary of the SOBRA approach is provided in Table 8 below, followed by appraisal of each criteria.

Table 8 - Qualitative Assessments Criteria Based Upon SOBRA Guidance

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

Asbestos Nature

The asbestos nature was generally considered as a very low risk, due to:

- the very low frequency of asbestos fibres present; and
- no ACMs being identified which would have the potential to degrade and release concentrated fibres in the future.

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Soil Characteristics

The soil type containing asbestos fibres was a madeground sand. Granular strata have a greater tendency to permit the release of fibres within the soil, where exposed or excavated so increasing the risk in situations with no dust suppression. As detailed within CIRIA C733 soil moisture content is inversely proportionate to airborne fibre release with exponential decrease to near 0% where moisture levels reach 25%. If the madeground was present at the surface then the desiccating effects of the sun and wind, would increase the level of risk of fibre release. Should these materials be used below the growing medium the materials would retain some moisture, so reducing the potential for asbestos fibres to be released.

Data Quality

The data quality relating to the area of madeground in the southern former ponds was sufficient to provide a high confidence in the findings.

Receptor

The receptor sensitivity varies by activity. If the madeground was present at surface within the gardens then the most sensitive group of people would be infants and children. They may be exposed to asbestos fibre release during dry weather conditions, or by disturbing the fibres while playing in the materials. It is considered that infants and children would be the most sensitive to exposure to asbestos fibres and their health may be put at risk if exposed to the asbestos fibres.

The older cohorts of the future site users may also be exposed by asbestos fibre release during dry weather conditions or potentially during maintenance of the property, requiring the madeground to be disturbed. However, they would be less sensitive.

Should the madeground be used below the growing medium or below the building the future site users would be unlikely to come into contact with the materials. Contractors laying services or undertaking maintenance works may excavate into the materials exposing them temporarily, the exercise occurring infrequently. The contractors may become exposed to the very low percentage of asbestos fibres within the madeground, likely to have some moisture reducing the potential likelihood of fibre release.

Summary to SOBRA Risk Assessment

Given the difficulty in predicting safe levels of asbestos and the sensitivity of residential receptors due to the potential exposure, age and duration, it was considered that an unacceptable level of risk would be posed by asbestos being present within madeground present at the surface. Should the madeground be used below the growing medium, the building footprints, driveways and hardstanding forming footpaths around buildings, the pathway to the most sensitive receptors would effectively be broken, such that the potential for them to be exposed to the very low percentage of asbestos fibres within the underlying madeground would be negligible. For the less sensitive receptor, the contractors, the potential for exposure to the madeground would be on very limited occasions if at all during one off exercises. On these occasions the potential for asbestos fibres to become airborne would be limited by the moisture in the madeground. Based on these factors the level of risk posed to the most sensitive receptors, the residents, would be negligible and the level of risk to contractors would be negligible to very low.

The two CL:AIRE qualitative decision support tool models are as follows:

- “Categorisation of Work Activities involving Asbestos in Soil and Construction & Demolition Materials in accordance with the Control of Asbestos Regulations 2012”; and
- “Qualitative Risk Ranking of Work Activities and Receptors Involved in or Exposed to Asbestos in Soil and Construction & Demolition Materials”.

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The specific rankings developed in the models are summarised below, with the spreadsheets presented in Appendix 7. Both support tools were applied to the use of the madeground containing a very low percentage of asbestos fibres below an inert cover, in order to determine the likely risks experienced. The work-based activity tool can also be applied to the movement and placement of the madeground during the build phase of work. The results from the support tools have been summarised as follows:

Risk to maintenance contractors undertaking construction works or future maintenance works with no controls:

- Source hazard ranking = negligible
- Asbestos exposure ranking = negligible
- Combined hazard and exposure ranking = very low
- Determined that CAR does not apply and no respiratory protection, dust suppression or specific hygiene facilities are required.

Risk to future residents with madeground used within plot below growing medium, building footprint and/or hardstanding:

- Source hazard ranking = low
- Asbestos exposure receptor ranking = very low
- Receptor ranking = medium
- Combined hazard, exposure and receptor ranking = low
- Pathway ranking = very low
- Overall ranking = negligible

Summary of CL:AIRE Risk Assessment for Asbestos in the Area of the Southern Ponds

Based on the risk assessment, it is evident from the CL:AIRE qualitative assessment that the risk posed by asbestos in the madeground, if proposed for use below the growing medium, the building footprints, the driveways and hardstanding forming footpaths around buildings, would be very low to contractors and negligible to residents.

Asbestos Assessment in the Footprint of the Former Building

Currently, only one sample has been taken from within the madeground in the footprint of the former building. This contained an ACM of chrysotile cement, which was scheduled for asbestos quantification. The ACM was shown to form 0.589% of the total soil mass.

It is not feasible to provide a robust risk assessment with one soil analysis result. Should it be preferred to retain the madeground at this location on site, Coopers recommend that additional soil samples are taken from this area of the site to analyse specifically for the presence of asbestos fibres/ACMs. This will permit a risk assessment to be completed. However, it is likely that the madeground may be retained below the building footprint, hardstanding and an inert cover within the soft landscaping of the gardens. In addition, should it be necessary to remove a proportion of this madeground to a waste management facility, this will aid in the characterisation of the waste.

5.2 **Human Health Risk Assessment – Conceptual Site Model Revised**

The risk assessment to human health has identified concentrations of contaminants which may pose a risk to human health if left within the growing medium in the soft landscaping in gardens, these being as follows:

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- arsenic, lead and PAH compounds present in the north eastern pond/marsh area;
- arsenic, cadmium, copper, lead, nickel, zinc and PAH compounds plus low frequency asbestos fibres of amosite in the southern ponds;
- further potential asbestos fibres of chrysotile/ACMs and potentially marginally elevated dibenzo(ah)anthracene (PAH compound) in the footprint of the former building in the central eastern area of the site;

Slightly elevated concentrations of SVOCs (dibenzofuran, carbazole and methylnaphthalene) above the threshold values, were identified in the former ponds, with it not being feasible to assess the potential risk posed. However, SVOCs being non-volatile, if present in concentrations which may pose a risk to human health, would do so via similar pathways to the metals and non-volatile PAH compounds.

If madeground remains in the soft landscaping, pathways for these contaminants have the potential to pose a risk to human health via dermal contact, ingestion of soils and homegrown produce grown with soils attached, inhalation of dust, including asbestos fibres outside and tracked back indoors.

The risk assessment has shown that risk posed by inhalation of indoor and outdoor vapours is not significant.

The concentrations of copper, nickel and zinc in the madeground if left in the growing medium may be detrimental to plant growth.

Buildings and hardstanding would prevent exposure to the madeground, if left on site. However, remediation will be required to break the pathways of exposure to the future site users in the soft landscaping in the gardens, as discussed in Section 10.

6.0 Contamination Assessment Based on Supplementary Investigation – Controlled Waters

6.1 Preliminary Conceptual Site Model - Controlled Waters

The E3P reports discussed a preliminary conceptual site model (CSM), which was revised following the Phase II investigation. This has been developed upon by Coopers following supplementary site investigation. The source, pathway, receptor relationship has been discussed below and has been presented diagrammatically in Appendix 8. This takes into consideration the historical uses of the site and the proposed development, which is to comprise detached, semi-detached and mews residential properties with associated gardens, driveways, patios and access roads.

Potential Sources

Historically, the site had been agricultural land, with two ponds in the southern half of the site and one pond adjacent to a marshy area in the north east corner of the site. Two further off-site ponds were noted immediately adjacent to the north east corner. Two additional ponds were also recorded off site to the north west corner. All these ponds likely to have been filled with unknown materials by 1881. Residential housing was constructed to the north west and north of the proposed development by the end of the 1930s, the land to the east remaining as a playing field. It is unknown whether the pond fill would have been removed during these developments. Based on the era in which the properties were constructed and that the gardens overlie the former ponds, it is feasible that some materials may have been left in-situ. It is very probable that the fill remains in the former pond remaining below the playing field to the north east, beyond the site boundary.

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The site investigation undertaken by Coopers identified that as well as the madeground identified by E3P in the former pond in the north east and the two ponds in the south of the site, madeground is also present between the two ponds in the south and shallow madeground extends to the south of these, as depicted in Drawing No. 8165/01, presented in Appendix 12. The site investigation also recorded madeground within the marsh area adjacent to the former pond in the north east. The estimated extent of the madeground in this area of the site is also depicted in Drawing No. 8165/01.

The site became an athletics ground in the 1930s, with a tennis court, a pavilion and a second smaller building, then a football ground in the 1980s. None of the buildings are now present. Only limited madeground was encountered by Coopers in the footprint of the second smaller building in trial pit TP215. This was shown to contain no elevated concentrations of inorganic or organic contaminants.

Madeground (similar to topsoil) was encountered across the whole site. This was found to be up to 0.7m deep across the former ponds. It has been recommended that the madeground (similar to topsoil) is removed from site due to the risk posed by contaminants to human health. Therefore, this stratum is not relevant as a possible source of contamination in the CSM for controlled waters for the proposed development, but should be acknowledged that if the contaminants within this soil stratum had the potential leach, this risk will be removed. Details of the madeground characteristics have been discussed in Section 3.0.

The madeground identified within the former pond and former marsh area in the north east of the site, was generally a sand with a low proportion of silt and gravel. The gravel was comprised of brick, concrete, slate, ceramics and ash and clinker and occasional glass fragments and bottles. Localised wood shavings were noted sporadically interspersed in the madeground. The madeground sand within the former pond was encountered at depths of between 0.4m and 0.6m and extended to depths of between 0.9m and 1.8m bgl, but generally extended no deeper than 1.4m bgl. This varied between 0.5m and 1.2m in thickness.

Localised madeground clay was recorded below the madeground sand in the marsh area. This also contained a low proportion of gravel, silt and sand, the gravel being comprised of brick, ash and clinker, ceramics and individual sporadic wood shavings. It was encountered at depths between 0.9m and 1.8m, this stratum extending to between 1.1m and 2.7m bgl. The thickness of the madeground clay varied generally between approximately 0.5m and 1.0m.

The fill in the southern ponds generally comprised two madeground strata. One was described as a sand with low proportions of silt and gravel, likely to be present throughout the former southern ponds. The gravel comprised of brick, concrete, ash and clinker, ceramics, occasional glass and metal fragments and sporadic wood fragments in two trial pits. Occasional bottles were encountered throughout these former ponds. Locally, a white substance, which varied in texture from a chalky type material to a clayey material, was noted in bands and interspersed in the madeground sand in the south eastern former pond.

The second madeground stratum was noted to be a clay with moderate proportions of silt and gravel and a low proportion of sand. The gravel comprised similar inclusions recorded in the madeground sand. The white substance noted in the madeground sand was also found very locally in occasional bands in the madeground clay.

In the former southern ponds, the madeground sand/clay was encountered at between 0.3m and 0.7m bgl, where present immediately below the madeground (similar to topsoil). Madeground clay was generally present below the madeground sand in the south eastern pond but encountered immediately below the madeground (similar to topsoil) in the south western pond, with the madeground sand below this. The madeground sand varied in thickness between 0.3m and 1.1m thick. The madeground clay tended to be in a thinner stratum between 0.2m and 0.7m thick.

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The overall depth of the madeground below the southern former ponds was generally between 1.1m and 1.6m but shallowing towards the edges to 0.8m deep.

The approximate lateral extent of the madeground in the former ponds has been illustrated on Drawing No. 8165/01, presented in Appendix 12. The madeground across the former north eastern pond/marsh area covered approximately 8% of the area of the development site, while that in the former southern ponds covered approximately 10% of the area of the development site. Generally, once the madeground (similar to topsoil) has been removed, only natural strata will be present beyond the pond fill materials.

The site is to be developed with residential housing. When the infrastructure is constructed, arisings will be derived from the madeground, for example in the road corridors where service trenches are to be laid. The madeground arisings may be disposed of, so further reducing the potential contaminant loading on site.

No hydrocarbon odours or visual evidence of such contaminants were recorded within any of the exploratory holes.

Given the characteristics of the madeground present, there would be the potential for total soil concentrations of metals and speciated polyaromatic hydrocarbon (PAH) compounds to be elevated. Mobile hydrocarbon contamination would not be expected. Leachates may be derived from the soils but given the type of madeground being brick, ceramics, glass and ash and clinker, this tends to have a low potential to leach in the ground.

Potential Receptors

It has previously been identified in the E3P Phase I Desk Study, that there is no surface water receptor within 500m of the site, the nearest being Chorlton Brook approximately 650m to the south of the site. This flows in a westerly direction towards the River Mersey approximately 2.5km to the west of the site. However, Coopers noted on the historical mapping that a stream used to flow east to west, to the north of the site, this being annotated as a feeder to a canal 2.8km to the west. The stream was built over with residential housing by 1938, when it may have become culverted. The nearest point between the culvert and the northern site boundary is approximately 55m extending to 80m. It is likely that the culvert would be an enclosed clay pipe. The site does not lie within or in the vicinity of a Drinking Water Safeguard Zone for surface waters and no surface water abstractions were recorded within the vicinity of the site, within the Phase I Desk Study. The surface water receptors were considered to have a low to moderate sensitivity.

The underlying Glaciofluvial Deposits were reported to be a Secondary A Aquifer. These are described as potentially supporting local water supplies and forming a source of base flow to rivers. The Secondary A Aquifer on site and likely within the vicinity of the development site was found to be generally between 1.0m and 1.3m thick. No significant groundwater was noted within this stratum. As such this would not be able to support local water supplies. Coopers would consider the sensitivity of this receptor to be low.

The site is underlain by a Principal Aquifer within the Wilmslow Sandstone, encountered between 14.4m and 15.3m bgl (13.3m aOD and 14.71m aOD). Principal Aquifers are defined as a significant resource, as they can provide significant volumes of drinking water and water for businesses. They may also provide a base flow for rivers, lakes and wetlands. However, the nearest Drinking Water Safeguard Zone for groundwater, defined by the Groundwater Source Protection Zone 3, lies approximately 1.5km to the north east, with the Groundwater Source Protection Zone 1 being approximately 1.8km from the site boundary. No known active groundwater abstraction permits lie within 2km of the site. It was noted that this correlates with a separate fault block and lies within the

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Chester Formation. The Pendleton Fault lies approximately 800m to the north east of the site boundary, this being downthrown to the east.

The underlying Principal Aquifer within the Wilmslow Sandstone and that within the Chester Formation were considered to have a moderate to high sensitivity.

Pathways to Receptors

Currently, the site is an open field with rough grass, which is permitting rainwater infiltration across the site. However, following redevelopment with the residential housing, associated hardstanding and subsequent drainage of rainwater, rainwater infiltration will be reduced through the made ground within the former ponds. This will reduce the potential for the total soils concentrations to leach.

Foundations for plots within the area of the former ponds/marsh are to be subject to driven pile foundations with associated reinforced groundbeams. This method of piling does not result in arisings during the drilling process and the skin friction around the piles prevents a preferential pathway for groundwater to migrate vertically.

The site topography is approximately level at 29m above Ordnance Datum (aOD) in the east and south and 28.5m aOD in the north and north west. Ground levels beyond the site fall very gently towards the River Mersey, the ground level noted from Google Earth being at approximately 21m aOD. The ground level, where the culvert may be located to the north of the site is approximately 29m aOD and that at Chorlton Brook is 28m aOD. The ground level in the locality of the Ground Source Protection Zone 1 is approximately 32m aOD.

Based on the topography of the land surrounding the site, and the direction of Chorlton Brook and the possible culverted stream, regional shallow groundwater flow within the drift deposits is likely to be from east to west. Therefore, any potential contaminants within the shallow groundwater would likely migrate away from the Ground Source Protection Zones to the north east.

As discussed in Section 3.0, the site is generally underlain by a thin stratum of Glaciofluvial Sand, this extending below the majority of the former ponds. The sand generally had a low silt and gravel content across most of the site, the silt reducing the infiltration rate of groundwater slightly. However, below the former pond in the north east, the sand was found to have a moderate clay and silt content, which would reduce the infiltration rate of groundwater significantly, the former marsh being a feature of this.

The Glaciofluvial Sand is underlain by Glacial Clay present in a significant thickness (between 11.0m and 13.9m) below the site and in places was immediately below the made ground within the former ponds/marsh area. As the clay will provide a very low infiltration rate, the permeability will be correspondingly very low. Consequently, the majority of groundwater flow within the drift deposits is likely to be laterally within the Glaciofluvial Sands. This has been demonstrated by the majority of groundwater ingresses being noted as perched within the sands and the made ground. However, flow direction may be diverted and limited towards the surface water courses by the proposed service trenches and neighbouring service trenches, which may be constructed with stone fill providing a preferential pathway.

Vertical migration of groundwater with potential leachates is being significantly reduced by the Glacial Clay. Potential leachates within any groundwater which does find a pathway through the clay via sandy partings and eventual permeation into the clay would become adsorbed to the large surface area provided by the clay particles, significantly attenuating the leachates concentrations through the significant depth of clay before reaching the underlying Principal Aquifer.

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If leachates reach the Principal Aquifer in the Wilmslow Sandstone, there would not appear to be a direct continuity in flow to the Principal Aquifer in the Chester Formation, due to the named fault, which would provide a preferential pathway, potentially diverting groundwater away from the Chester Formation. Despite the sensitivity of the Principal Aquifer, the risk posed to the Aquifer was considered to be low.

The contribution to the baseflow of surface water courses by the Secondary A Aquifer, the Glaciofluvial Deposits, is likely to be limited. Should any contaminants leach into the perched groundwater in the Glaciofluvial Deposits, due to the direction of flow, service trenches and the distance between Chorlton Brook (650m) and the site boundary, this would preclude the migration of potential contaminants reaching Chorlton Brook. Contaminant migration to the culverted stream would be significantly limited by the general direction of groundwater flow, the stream being marginally upgradient of the site and the distance (55m to 80m). The culvert itself will also reduce the likelihood of potential contaminants entering the water carried within. The risk to the Secondary A Aquifer and the surface waters was considered to be negligible to very low.

6.2 **Chemical Analysis Scheduled to Assess Risk to Controlled Waters**

6.2.1 **Chemical analysis completed by E3P**

Madeground soil samples taken by E3P from the north eastern pond (TP103 at 0.5m and WS102 at 0.4m) were both reported to contain slightly elevated total soil concentrations of PAH compounds and one elevated total soil concentration of lead. Madeground soil samples taken from the southern ponds (TP110 at 0.7m and TP114 at 0.4m), both contained elevated concentrations of PAH compounds and TP110 at 0.7m also contained elevated arsenic, copper and lead concentrations. Total petroleum hydrocarbon (TPH) compounds were analysed but there were no significant total soil concentrations reported.

E3P scheduled samples taken from TP103 at 0.5m and TP110 at 0.7m for analysis to assess the leachability of metals, speciated PAH compounds and TPH compounds. Only lead in the sample taken from TP103 at 0.5m was reported to leach in a slightly elevated concentration. As discussed in Section 2.3, arsenic was also reported to leach at an elevated concentration from a natural sand sample. The supplemental investigation was to include further analysis to determine whether this appeared to be an anomaly.

Two groundwater samples taken from monitoring wells in WS101 (response zone within the natural clay immediately below the sand stratum) and WS103 (response zone in the natural sand and clay strata) by E3P were analysed for metals, speciated PAH compounds, TPH compounds, VOCs and SVOCs. The results showed no elevated concentrations apart from a marginal elevation of arsenic in both samples.

The laboratory analysis undertaken by E3P is presented in Appendix 9.

6.2.2 **Chemical analysis completed by Coopers**

Natural sand samples were scheduled for total soil concentrations of arsenic and the potential for these soils to leach arsenic. This was undertaken to confirm that the elevated leachate concentration of arsenic reported to be in the natural sand underlying the former ponds in the south of the site by E3P was an anomaly, as discussed in Point 6 of Coopers e-mail correspondence (see Appendix 1). None of the leachate concentrations exceeded the threshold value for DWS.

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Elevated metal concentrations were reported in 2 No. of the 6 No. madeground soil samples taken from the former north eastern pond. The remainder of the samples contained metal concentrations similar to that in natural soils. Speciated PAH compounds were elevated in 3 No. of the 6 No. madeground soil samples taken from the former north eastern pond, with the speciated PAH concentrations being highly elevated in 1 No. sample (in order of magnitude of 10), but only slightly elevated in the other two.

10 No. of the 17 No. madeground soil samples taken from the former southern ponds were reported to contain elevated concentrations of metals. The metals were predominantly lead and zinc but also included arsenic, cadmium, copper and nickel. As in the former north eastern pond all other samples contained metal concentrations similar to that in natural soils.

3 No. of the samples contained slightly elevated concentrations of speciated PAH compounds and 1 No. sample of the 3 No. samples of madeground scheduled for TPHCWG analysis, were reported to contain elevated TPH compounds in the aromatic ranges between C10 and C35.

Where total soil concentrations were reported to be elevated (see Section 5.2.2) and SVOC concentrations were reported to be above the level of detection, leachability analysis was scheduled, in order to assess to potential risk to controlled waters. The scheduling is summarised in Table 9 below.

Table 9 – Chemical analysis scheduled by Coopers for controlled waters risk assessment

Exploratory hole	Depth of sample (m bgl)	Strata	Area of investigation	Leachable inorganic determinands and speciated (16) PAH compounds	Leachable TPHCWG compounds	Leachable SVOCs	Arsenic (total soil concentration)	Leachable arsenic
TP243	1.4	Natural sand	Below former ponds in south				✓	✓
TP256	1.5	Natural sand					✓	✓
TP258	1.7	Natural sand					✓	✓
TP259	1.0	Natural sand					✓	✓
TP229	0.5	Madeground (sand)	Former pond in north east	✓		✓		
TP233	0.5					✓		
TP235	0.5			✓				
TP243	0.8		Former ponds in the south	✓		✓		
TP245	0.6			✓				
TP246	1.0	Madeground (clay)		✓	✓	✓		
TP248	0.5	Madeground (sand)		✓				

6.3 Chemical Analysis Results

6.3.1 Chemical Analysis Results Assessment – Controlled Waters

The main controlled waters receptor was considered to be the Principal Aquifer, due to this having the highest sensitivity. Therefore, the groundwater quality threshold values were based on the drinking water standards (DWS) presented in the Water Supply (Water Quality) Regulations 2016, these being presented in Appendix 4. The Envirolab certificate of analysis results are presented in Appendix 5. The concentrations exceeding the DWS values have been summarised in Table 10.

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Table 10 – Concentrations of determinands in the former ponds exceeding the groundwater quality threshold values

Leachable Determinands	Groundwater Quality Threshold Value (µg/l)	Determinand Concentrations Exceeding Threshold Value Within Exploratory Hole (µg/l)					
		TP229 at 0.5m	TP235 at 0.5	TP243 at 0.8m	TP245 at 0.6m	TP246 at 1.0m	TP248 at 0.5m
Arsenic	10	-	-	-	-	-	11
Cadmium	5	-	-	35	-	-	-
Lead	10	1110	189	178	12	23	644
Nickel	20	-	-	-	79	-	-
Benzo(a)pyrene	0.01	1.36	-	-	-	-	-
Total PAH compounds (benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno-(1,2,3-cd)pyrene)	0.1	3.45	-	-	-	-	-

Note was made that the LOD for benzo(a)pyrene was marginally higher than the DWS value. It was considered that the concentration of benzo(a)pyrene was likely to be below the threshold value at locations where the total PAH compound concentrations were at LOD as well.

Table 10 shows that total PAH compounds and benzo(a)pyrene have the potential to leach in concentrations above the DWS in one sample taken from the north eastern former pond. This sample was noted to have contained the most elevated total soils concentrations of PAH compounds compared with all other results in both former pond areas. By relating the results to the total soils concentrations, it is considered that only a low proportion of the madeground (17% in the former north eastern pond

and 0% in the former southern ponds) would have the potential to leach in concentrations which may pose a risk to the Principal Aquifer. The madeground in the southern pond would not pose this risk, with no elevated leachate concentrations relating to the PAH compounds.

The 2 No. samples taken from the former north eastern pond scheduled for leachability analysis were shown to have the potential to leach lead in concentrations which may pose a risk to the Principal Aquifer. The 4 No. samples taken from the former southern ponds also have the potential to leach lead in elevated concentrations. It was noted that these did not leach in the same proportions compared with the total soil concentrations. However, it is considered that where total soil concentrations are lower, these would not leach in elevated concentrations. It may then be inferred from the total soil concentrations results that approximately 30% of the madeground in the former north eastern pond has the potential to leach lead in elevated concentrations. Similarly, approximately 60% of the madeground in the former southern ponds may leach lead in elevated concentrations.

Arsenic leached in a concentration marginally above the DWS in 1 No. sample taken from the former southern ponds. 2 No. separate samples have the potential to leach cadmium in 1 No. sample and nickel in the other, in elevated concentrations above the DWS values. Both the cadmium and nickel leach concentrations did appear to relate to the equivalent most elevated total soil concentrations. Therefore, approximately 5% of the madeground may pose a risk to the Principal Aquifer.

None of the leachable concentrations of the TPH compounds and SVOCs exceeded the LOD.

The total soils concentrations of the natural sand samples taken from below the former southern ponds were all very low as previously reported and the leachable concentrations were below the DWS value of 10µg/l. As has been demonstrated by the additional leachate analysis on overlying madeground samples, which contained elevated total soils concentrations of arsenic, the arsenic does not have the potential to leach in elevated concentrations. The elevated leachate result associated with the natural

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sand sample taken from TP111 at 2.0m would not appear to relate to possible leachate from the overlying madeground. The elevated arsenic concentration was therefore considered to be erroneous. Coopers also consider that the marginally elevated concentrations of arsenic in the groundwater samples taken by E3P do not relate to the total soils concentrations of arsenic in the madeground.

6.4 **Controlled Waters Risk Assessment – Conceptual Site Model Revised**

As discussed in the CSM in Section 6.1, the Secondary A Aquifer and surface waters have a low and low to moderate sensitivity respectively. While leachates may potentially enter the Secondary A Aquifer, the Glaciofluvial Sand, this stratum is not considered to be a significant pathway to the surface water receptors and as such potential leachates pose a negligible to very low risk.

The underlying Principal Aquifer within the Wilmslow Sandstone and that within the adjacent Chester Formation were considered to have a moderate to high sensitivity. However, there does not appear to be a direct continuity of flow between the underlying Principal Aquifer within the Wilmslow Sandstone, and that within the Chester Formation, due to the Pendleton Fault, which would provide a preferential pathway, potentially diverting groundwater away from the Chester Formation. Any effect of draw down by an abstraction point in the Chester Formation would not effect groundwater movement within the Wilmslow Sandstone due to the presence of the fault. In addition, shallow groundwater flow, carrying potential leachates, is likely to be to the west away from the Chester Formation. Despite the sensitivity of the Principal Aquifer in the Chester Formation, the risk posed to this Aquifer was considered to be low. The primary receptor was considered to be the Principal Aquifer in the Wilmslow Sandstone.

The leachate analysis indicates that approximately 30% of the madeground in the former north eastern pond and approximately 60% of the madeground in the former southern ponds has the potential to leach lead in elevated concentrations. A limited proportion of the madeground (5%) in the former southern ponds has the potential to leach cadmium and nickel in elevated concentrations. Approximately 17% of the madeground in the north eastern former pond has the potential to leach PAH compounds in elevated concentrations. The construction process may also result in the removal of some of the madeground containing the contaminants, so reducing the potential contaminant load.

Should the possible leachates identified enter the groundwater, the leachate concentrations reaching the Aquifer are likely to be attenuated such that they will not pose a significant risk to the groundwater within the Aquifer due to the following factors:

- The proposed new housing and associated hardstanding will reduce the volume of rain water ingress through the madeground and the subsequent potential for leachates to be generated.
- No significant pathway for groundwater will be created by the driven piled foundations due to the skin friction of the clay around the piles.
- The assessment indicates only a proportion of the madeground bodies pose a risk to the Principal Aquifer, therefore limiting the cumulative concentrations of potential leachate which may enter the groundwater.
- The thin stratum of underlying Glaciofluvial Sand has a low silt content which will slightly reduce the infiltration rate of the sand and so slightly reduce groundwater flow through the stratum.
- The Glaciofluvial Sand below the north eastern pond has a moderate clay and silt content which will reduce the infiltration rate of the sand in this area of the site and reduce the rate of groundwater flow together with possible leachates laterally and vertically.
- Glacial Clay underlies the Glaciofluvial Sand deposits, this being present to a significant depth of between 11m and 13.9m below the site.

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- This will have a very low infiltration rate, so significantly reducing downward migration of groundwater towards the Principal Aquifer.
- Main groundwater flow direction is likely to be laterally in a westerly direction away from the Principal Aquifer in the adjacent fault block, the Chester Formation, to the north east.
- Leachates which do find a pathway through the clay will become adsorbed to the clay particles through the depth of the clay, attenuating the concentrations.
- Groundwater samples taken downstream of the made ground in the north eastern corner were reported as not containing elevated concentrations of potential contaminants in excess of the DWS values, indicating that leachates are not migrating from the made ground.
- While it is unlikely that significant concentrations of leachate will reach the groundwater within the Principal Aquifer within the Wilmslow Sandstone, if reduced concentrations of leachates reached the Aquifer in the Wilmslow Sandstone, lateral movement of groundwater between the Wilmslow Sandstone and the Chester Formation is likely to be inhibited to a large degree by the intervening fault.

Coopers consider that with respect to the controlled waters risk assessment there will be no remediation requirements.

7.0 Drinking Water Supply Risk Assessment

The UK Water Industry Research (UKWIR) procedures, published in 2011, for assessments of potable water supplies on brownfield sites have been adopted by water supply providers and referenced in the “Contaminated Land Assessment Guidance”, published by Water UK. Independent Water Networks operating in the area of the site require a specific risk assessment form to be completed which gives due regard to the UKWIR procedures. The procedures include a phased approach to risk assessment including preliminary risk assessment, and specifications for types of contaminants being tested.

Where sources of potential contaminants that could impact potable water supply are identified within the desk study or intrusive investigation these are assessed to determine the impact on selection of pipe materials.

All strata within the site have been appraised and characterised. Localised mobile contamination and PAH compounds have been identified within the site at concentrations above thresholds for standard PE pipes for mobile contaminants. The completed risk assessment form has been presented in Appendix 10.

8.0 Waste Characterisation

To date one sample has been taken from each potential waste stream, which has been subject to Waste Acceptance Criteria (WAC) analysis, in addition to the total soil concentrations obtained, to gain an indication of the possible waste characterisation. The following samples were scheduled for WAC analysis:

- 1 No. compound sample was taken of the made ground (similar to topsoil) from across the site (MG(TS)CS);
- 1 No. sample from the former north eastern pond and marsh area (TP231 at 0.5m);
- 1 No. sample from the former south east pond (TP243 at 0.8m);
- 1 No. from the made ground between the former southern ponds (TP246 at 1.0m);
- 1 No. from the former south western pond (TP256 at 0.9m).

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Each soil type which is intended for removal will be classified with one of the following EC waste designation codes, as detailed within Environment Agency “*Technical Guidance WM3 - Hazardous Waste*”. The soils will be classified as either of the following:

- **17 05 03* soil and stones containing hazardous substances**
- **17 05 04 soil and stones other than mentioned in 17 05 03 – not containing hazardous substances.**

Madeground (similar to topsoil)

The WAC analysis indicated one exceedance of the leachable determinands as shown in Table 11. The pH of the sample was also reported to be 5.89, this being below the pH limit required for stable non-reactive hazardous waste in a non-hazardous landfill site. There is no pH limit for inert or hazardous landfill waste sites. The pH value appears to be typical for the madeground (similar to topsoil), with other pH values being reported to be between 5.0 and 6.1.

Table 11 – Concentrations exceeding the WAC screening values in the madeground (similar to topsoil)

Determinand	WAC screening value for inert waste (mg/kg)	Concentration within compound sample MG(TS)CS (mg/kg)
Lead	0.5	1.59

Based on the majority of the chemical analysis of the samples taken by E3P and Coopers, the waste characteristics of madeground (similar to topsoil) strata may be classified as non-hazardous waste. However, consultation would be needed with the waste management company to establish if these soils would be suitable for disposal at such a landfill due to the pH.

Madeground in former north eastern pond and marsh area

The WAC analysis for the madeground in the former north eastern pond indicated no exceedances of the threshold values. However, the total soils concentrations include some elevated metal concentrations which indicate the madeground may either be characterised as non-hazardous or hazardous waste. The waste management company will need to assess the characterisation specifically.

Madeground in the former southern ponds

The madeground in the former southern ponds and between the two features has been assessed as one body of madeground. A number of total soil concentrations relating to metals were elevated such that the madeground soils in this area of the site are likely to be characterised as hazardous waste. The WAC analysis indicated exceedances of the threshold values summarised in Table 12, which indicate that the materials may not be suitable to be defined as stable non-reactive hazardous waste.

Table 12 – Concentrations exceeding the WAC screening values in the madeground in the southern ponds

Determinand	WAC screening value for inert waste (mg/kg)	Sample location		
		TP243 at 0.8m	TP246 at 1.0m	TP256 at 0.9m
Mineral oil	500	564	-	-
Lead	0.5	3.68	-	-
Fluoride	10	88	-	-
Total organic carbon	3	-	4.84	-
Sum of PAH (17)	100	-	184	-
Fluoride	10	-	12	-
Antimony	0.06	-	-	0.27

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Table 12 – Concentrations exceeding the WAC screening values in the madeground in the southern ponds... Continued

Determinand	WAC screening value for stable non-reactive hazardous waste in non-hazardous landfill (%)	Sample location		
		TP243 at 0.8m	TP246 at 1.0m	TP256 at 0.9m
Cadmium	5	2.28	-	-
Determinand	WAC screening value for hazardous waste (%)	Sample location		
		TP406 at 1.6m	TP422 at 1.5m	
Loss on ignition	10	22	-	-
Total organic carbon	6	7.07	-	-
Zinc	200	485	-	-

It is recommended that the chemical analysis results including WAC analysis obtained to date are provided to a waste management company, to enable the detailed assessment and full characterisation of the waste, to determine the potential disposal routes.

Following excavation into stockpiles before removal from site, it is likely that a waste management company will require additional samples to be taken for WAC analysis.

9.0 BRE SD1

9.1 General

Selected soil samples were scheduled for chemical analysis for the pH and BRE SD1 sulphate content, by E3P and Coopers. Copies of the chemical results received are provided within Appendices 5 and 9. These were used to assess the design concrete classification for the various soil types present on site.

9.2 Results of Laboratory Analysis

Table 13 - Summary of chemical analysis

Strata	No. of samples for analysis	SO ₄ (2:1) (water soluble) mg/l	pH	Mobile/ Static
Madeground clay	7	Mean of highest two results – 120 (range of results <10 to 180)	Mean of the lowest two results – 6.11 (range of results 6.01-7.84)	Static
Madeground sand	23	Mean of highest 20% of results – 50 (range of results <10 to 80)	Mean of the lowest 20% of results – 5.86 (range of results 5.59-7.86)	Mobile
Natural clay	8	Mean of highest two results – 59 (range of results 40 & 78)	Mean of the lowest two results – 7.59 (range of results 7.57 & 7.61)	Static
Natural sand	6	Mean of highest two results – 104.95 (range of results 29.96 & 180)	Mean of the lowest two results – 5.89 (range of results 5.7 & 6.09)	Mobile

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9.3 **Interpretation**

Groundwater Mobility

Madeground clay - Static**Madeground sand** - Mobile**Natural clay** – Static**Natural sand** – Mobile

Soil/Groundwater Classification

Based upon Table C1 and D1 of BRE Special Digest 1 (2005), the Design Sulphate (DS) class, Aggressive Chemical Environment for Concrete (AC) class, and Design Concrete (DC) class for each of the strata types, except pyritic mudstone is given below: -

Madeground clay - DS-1, AC-1s, DC-1**Madeground sand** - DS-1, AC-1, DC-1**Natural clay** – DS-1, AC-1s, DC-1**Natural sand** – DS-1, AC-1, DC-1

Any fill material to be imported onto the site should be tested and should not exceed the classifications given above.

Based upon the above classification, the ready-mixed concrete (designated mix) appropriate for Design Class DC-1, for the natural and madeground would be as detailed in Table 14.

Table 14 - Sub-structure ready mix concrete designations by end use over the site

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

Notes:

- 1) Worst case sulphate conditions over the entire site are ACEC Class AC-1/AC-1s, and Design Chemical Class DC-1.
- 2) Classification and designation in accordance with NHBC guidance, Section 2.1 – Table 1, and BS8500-1, 2006.
- 3) The above conditions represent the worst case conditions identified within the testing of soils on the site.
- 4) Any fill material to be imported onto the site should be tested and should not exceed the classifications given above.

10.0 Remediation Proposals

10.1 General

Remediation will be undertaken to ensure the site is suitable for use ensuring that the risk to human health is minimised. Validation of the remediation will be undertaken.

The remediation works should attempt to minimise the volume of waste removed from the site in accordance with a sustainable development policy. There is the potential that madeground arisings will be re-used on site to attain the elevated finished levels. It is recommended that should this be proposed, that the madeground is re-used within the current area of madeground. Where materials are re-used on site, this will be undertaken in accordance with the procedures of a Material Management Plan (MMP) with Environment Agency registration following the CL:AIRE Definition of Waste: Development Industry Code of Practice (DoW CoP). The groundworks contractor will be required to maintain records of the movement of materials on site.

The following sections detail the potential remediation proposals for this site based upon areas of possible contamination.

10.2 Remediation rationale

Remediation will be required due to:

- contaminants, comprising elevated concentrations of metals and speciated PAH (16) compounds in a large proportion of the madeground (similar to topsoil), which is present across the site;
- elevated concentrations of metals, speciated PAH (16) compounds and aromatic TPH compounds in the madeground in the former pond/marsh in the north eastern area of the site and former ponds in the southern area, plus very low frequency of asbestos fibres in the former southern ponds;
- potential asbestos fibres/ACMs and potentially marginally elevated dibenzo(ah)anthracene (PAH compound) in the footprint of the former building in the central eastern area of the site;
- the presence of localised mobile contamination and PAH compounds identified within the madeground in the former ponds/marsh areas at concentrations above thresholds for standard PE pipes for mobile contaminants.

These contaminants may pose a risk to human health and be detrimental to plant growth if left within the growing medium.

As it is not feasible to use the madeground (similar to topsoil) on site at any location this will be removed from site to a permitted waste management facility.

One option to remediate the madeground would be to remove this from the site to a permitted waste management facility. It is understood that the commercial preference is for the madeground to be retained on site. It is therefore recommended that the madeground may remain below the building footprints and hardstanding and that where it is present in the soft landscaping of gardens, an inert cover is used.

These methods of remediation would prevent future site users ingesting the contaminated madeground directly or via ingestion of home grown produce and inhalation of contaminated dust and asbestos fibres.

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Based on the asbestos risk assessment, if the madeground is used below an inert growing medium, building footprint or hardstanding, the potential risk posed to the construction contractors and future maintenance workers will be very low.

It is likely that PE barrier water supply pipes will need to be employed for plots overlying the madeground within the former ponds/marsh areas due to the mobile contaminants. Consultation will be required with the water supply provider.

10.3 **Proposed Inert Cover Design**

Based on the data available, should madeground remain in the soft landscaping of the gardens an inert cover will be required over the madeground. This will apply to:

- the front and rear gardens of Plots 21 to 28, 41 to 46, 61 to 65, the front gardens only of 4 to 7 and the rear gardens only of 32 and 33.

The inert cover in the front and rear gardens should comprise 150mm inert topsoil over 450mm inert subsoil, over a geotextile membrane, as defined in Figure 1. We generally consider 2 No. paving slabs will be required adjacent to the rear of the property for maintenance requirements and will not require remediation as this will be considered hardstanding. The requirement for 2 No. paving slabs allows ladder access to the first storey and roof and is a requirement of the NHBC Standards, Chapter 9.2 (D2).

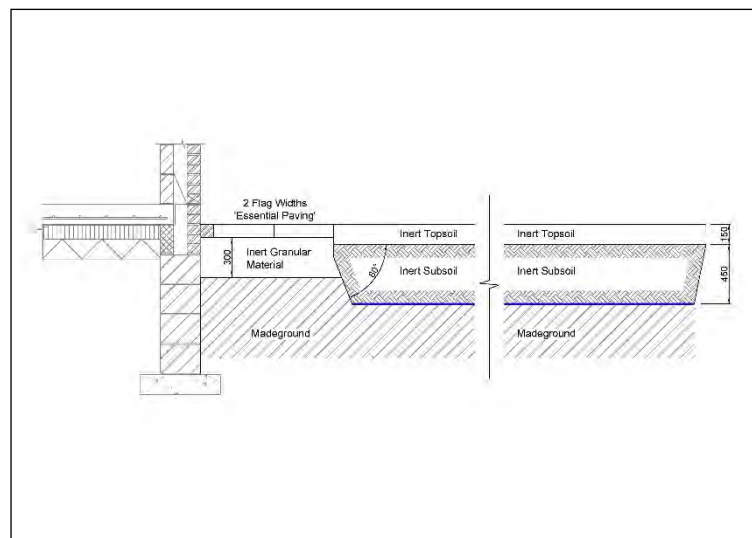


Figure 1 – Cross section of typical inert cover system

As all madeground (similar to topsoil) will be removed from site, topsoil will need to be imported. It is envisaged that as ground levels are being elevated in parts of the site, there may be a requirement to also import subsoil which will be included in the inert cover.

10.4 **Unforeseen contamination**

During the enabling and construction works, should the contractor encounter an area of potentially undisclosed contamination, then Coopers should be contacted to visit site to sample and assess the materials. The findings, assessments, and remediation proposal from these assessments will require regulatory approval prior to undertaking any remediation works. Should materials be identified that are geotechnically unsuitable to be re-used (such as buried trees) in the proposed development then these must be segregated and removed from site.

11.0 Validation

11.1 Validation of Madeground (Similar to Topsoil) and Madeground Removal

A Coopers geo-environmental engineer will attend site to validate the removal of the madeground (similar to topsoil) and the madeground should this also be removed from site.

In the case of the madeground (similar to topsoil), a visual assessment will be made to confirm the natural soils have been attained following the stripping of the madeground (similar to topsoil), with photographic evidence provided in a validation report. The waste transfer notes will need to be provided to Coopers for inclusion with the validation report.

Should the madeground be removed from site, a Coopers geo-environmental engineer will attend site to validate the removal to the natural strata. Soil samples would be taken at 10m intervals around the sides and base of the excavations. In the former ponds/marsh areas, these would be scheduled for the following suite of chemical analysis to confirm removal of the contamination and therefore the removal for the need of an inert cover:

- CLEA metals suite, speciated PAH (16) compounds, speciated TPH compounds by TPHCWG, SVOC compounds and asbestos fibres.

In the building footprint in the central eastern area of the site, these would be scheduled for:

- PAH (16) compounds and asbestos fibres.

On completion of the madeground (similar to topsoil) and madeground removal (if applicable) a validation report will be provided including the photographic evidence and chemical analysis results.

11.2 Validation of imported soils

Sampling and chemical analysis

As topsoil or potentially subsoil need to be imported to site, it is recommended that prior to accepting imported sources, samples should be analysed by the material provider, proving the topsoil/subsoil inert, preferably with provenance to aid the certification of the site. Topsoil/subsoil must not be accepted from areas where Japanese Knotweed or other invasive or injurious plants, as specified by the Environment Agency, are suspected to have been growing. Any imported inert topsoil/subsoil should be free of demolition detritus (such as bricks, brick ties, etc) as well as deleterious materials (such as timber, glass and asbestos). We would advise that the suitable imported material should be sampled by Coopers geo-environmental engineer, to confirm the initial assessment that the material is inert.

Currently, the NHBC are requesting certification from developers that all imported topsoil to site is suitable for use. Clause 10.2.8 states “Topsoil should not contain contamination which may present a hazard to the occupants” and “Topsoil should be provided to a minimum thickness of 100mm”. BS3882 (2015) and the Contaminated Land Exposure Assessment (CLEA) guidelines provide advice on determining the “suitability of topsoil”.

The developer should maintain the integrity and quality of any topsoil/subsoil brought onto site, ensuring that it does not become cross contaminated through poor site practice.

Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Should any imported fill materials be required, these should have provenance and chemical analysis to prove the materials to be imported as inert prior to acceptance on site. The analysis from the provider of the inert fill must be current and relevant for the material being imported.

Additional independent analysis of topsoil/subsoil should be completed to confirm the source documents. In accordance with the rates proposed by E3P in the remediation strategy Report Reference 15-811-R3-2, agreed by Manchester City Council, the following chemical testing quota is to be adopted once the soils have been imported to the site. The type of testing and sample frequency is dependent upon the provenance of the materials. A minimum of three samples would be taken for each source to ensure that there is sufficient data to assess the soils at the appropriate frequency as follows:

- Topsoil testing (greenfield source): 1 sample per 200m³.
- Topsoil testing (unverified source): 1 sample per 50m³.
- Subsoil testing (greenfield): 1 sample per 200m³.
- Subsoil testing (unverified source): 1 sample per 50m³.
- Coopers also recommend subsoil testing (quarried source): no requirement for testing.
- General subsoils for engineering fill: 1 sample per 1000m³.
- 6F2: 1 sample per 1000m³.

Confirmation of the volume of material imported to site must be provided to ensure that representative sampling has been undertaken in accordance with the required testing frequency.

The suites of testing should include as the standard CLEA inorganics/metals, speciated PAH (16) compounds, TPHCWG compounds and asbestos screen with fibres. Where marginally elevated concentrations are present further testing and risk assessments may be possible dependent upon the nature of the contaminants identified.

Results of the chemical analysis would be screened against the thresholds identified in the table presented in Appendix 4.

11.3 **Validation of Inert Cover Layer Depth**

Where the depth of the inert cover is required above made ground within residential gardens, validation will comprise 1 No. hand dug pit location in the front and 1 No. in the rear garden per 2 plots.

Photographic records would be made in accordance with best practice, such as is contained in the following Liverpool City Council document and summarised below:

<http://liverpool.gov.uk/media/8759/requirements-for-contaminated-land-validation.pdf>

- Upon completion to finished level of each garden requiring inert cover, Coopers are to attend site to excavate validation holes to prove cover thickness of the growing medium.
- The validation holes must not be pre-dug and be in locations of Coopers choosing. Placement of pipes and removal to validate depths are not considered as independent validation.
- Photographic evidence will be taken to demonstrate the location of the validation hole, the nature of the inert material and the depth of cover (refer to Photographs 1, 2 and 3).
- Upon completion of groups of plots, Coopers will produce a validation certificate to include all chemical testing, photographic records and validation documents required for statutory approvals.

Supplementary Site Investigation for land off Wilbraham Road, Chorlton



Photographs 2 & 3: Examples of validation photographs demonstrating inert cover



Photograph 4: Example validation photograph demonstrating depth of inert cover

11.4 **Stockpile Management Practices**

During the course of the development there will be areas of stockpiled soils intended for use within the proposed gardens. These will have been subject to extensive testing and approved for use in private residential gardens. 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. Example photographs are below demonstrating good methods and practice.



Photograph 5: Example of good stockpile management with warning signs to demonstrate areas of inert topsoil



Photograph 6: Example of good stockpile management with soils placed on geotextile with fences to prevent accidental cross-mixing

Supplementary Site Investigation for land off Wilbraham Road, Chorlton



Photographs 7 & 8: Example of good stockpile management with warning signs to demonstrate areas of inert topsoil

12.0 Further Works

The following further works are required:

- Gain acceptance of supplementary site investigation, assessment and recommendations for required remediation from relevant regulators.
- Once access to the rear garden of 354 Wilbraham Road and the garage on the property has been demolished undertake additional ground investigation in this part of the proposed development, to confirm soils are suitable for use.
- Additional soil sampling for asbestos fibre identification in the footprint of the former building in the central eastern area of the site to aid in characterisation of potential waste and develop the risk assessment.
- Provide validation of the remediation of the madeground (similar to topsoil).
- If applicable provide validation of the removal of the madeground.
- Where applicable, Coopers to prepare plot specific completion certificates per two plots, detailing the validation of the inert cover installation (if employed) including depth and if required, validation of imported topsoil and subsoil testing.
- The potential declaration to CL:AIRE with a MMP to allow for the import of topsoil and subsoil by direct transfer.
- Completed validation reports to be submitted for approval by the regulatory bodies.

13.0 Summary of Findings

- Madeground (similar to topsoil) is unsuitable for use on site and is to be removed as waste from site to a suitable permitted waste management facility.
- Madeground has been delineated in three areas of the site, the former north eastern pond/marsh, the southern ponds and the footprint of the former building in the central eastern area of the site.
- Madeground has been shown as not posing a significant risk to controlled waters.
- Madeground in the former north eastern pond/marsh and the southern ponds may pose a risk to human health if left within the growing medium due to metals, PAH compounds and in the southern ponds, a very low frequency asbestos fibres.
- Madeground in the footprint of the former building in the central eastern area of the site may pose a risk to human health due to the possible presence of asbestos fibres/ACMs.
- Madeground remaining on site can stay below buildings and hardstanding. It will need a 600mm inert cover with an underlying geotextile membrane in soft landscaping in the gardens.
- Madeground arisings from excavations may be re-used within the vicinity of the source of the madeground, subject to an MMP declaration.
- Plots within the area of the madeground in the former north eastern pond/marsh and the southern ponds will likely require PE protected water supply pipes.
- The waste characteristics of madeground (similar to topsoil) strata may be classified as non-hazardous waste, madeground in the north eastern pond/marsh may either be characterised as non-hazardous or hazardous waste and that in the southern ponds is likely to be characterised as hazardous waste.
- The site is categorised as Characteristic Situation 1 in accordance with BS8485:2015+A1:2019, or Green in accordance with the NHBC Technical Extra TE20, with no ground gas or vapour protection measures required.
- To date, no contamination has been encountered within 354 Wilbraham Road, but this needs to be confirmed by additional investigation.
- The concrete design classification in accordance with the BRE SD1 assessment for the madeground and natural ground is DS1, AC-1s, DC1 for clays and DS-1, AC-1, DC-1 for sands.

Appendix 1

Coopers Correspondence with Manchester City Council



To Head of Planning FAO: Jennifer Connor

From Head of Compliance, Enforcement and Community Safety

Contact Officer: Sharon McAndrew Our Ref: 760732

Date: 6 January 2023 Telephone: 31374

Consultation on Planning Application

Application No: 135604/FO/2022

Description: Erection of a 65 dwellings (Use Class C3(a)), with associated infrastructure, including landscaping, ecological mitigation, drainage and car parking, access from Wilbraham Road, and demolition of garage to the rear of 354 Wilbraham Road

Location: 354 Wilbraham Road, Manchester, M21 0UX

I write in response to your memorandum of the 7 December 2022 regarding the above application and to inform you that I have considered the application and recommend that the following conditions are attached to any approval.

DEMOLITION/CONSTRUCTION MANAGEMENT PLAN

Prior to the commencement of development, a demolition/construction management plan outlining working practices shall be submitted to and approved in writing by the City Council as Local Planning authority, which for the avoidance of doubt shall include as a minimum:

- Measures to control noise and vibration;
- Dust suppression measures;
- Compound locations where relevant;
- Details of an emergency contact telephone number;
- A community consultation plan; and
- Sheeting of construction vehicles.

The development shall only be carried out in accordance with the approved management plan.

Reason - To safeguard the amenities of nearby residents pursuant to policies SP1, EN19 and DM1 of the Manchester Core Strategy.

*The proposals for controlling noise and dust outlines in the CEMP should be incorporated into the Construction and waste management plan. The applicant should also refer to our noise from building sites [webpage](#) for further information/guidance and also [IAQM/EPUK Construction Guidance](#) on controlling emissions.

DEMOLITION/CONSTRUCTION HOURS

Construction/demolition works shall be confined to the following hours unless otherwise agreed in writing by the City Council as local planning authority:

- Monday - Friday: 7.30am - 6pm
- Saturday: 8.30am - 2pm
- Sunday / Bank holidays: No work

Reason - To safeguard the amenities of nearby residents pursuant to policies SP1, EN19 and DM1 of the Manchester Core Strategy.

LIGHT1

Floodlighting/external lighting scheme

a) Before the use hereby approved commences external lighting shall be designed and installed in accordance with a scheme approved in writing by the City Council as local planning authority so as to control glare and overspill onto nearby residential properties.

b) Prior to occupation of the development a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved light consultant's report. The report shall also undertake post completion testing to confirm that acceptable criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the criteria.

Reason - To safeguard the amenities of the occupiers of nearby properties.

The BWB Lighting assessment reference 220679_LIA dated November 2022 is accepted. The site is classified as an E3 Environmental Zone and the proposals in the report will ensure the E3 criteria are met. My only concern is that to comply with the criteria, the floodlights at the Maine Road Football ground will need to be replaced, and this is not part of the application site. Is there a legal agreement stating that these works can be undertaken? If not then some of the proposed properties on the eastern side of the site will not achieve the E3 criteria, which could be detrimental to the future residents.

NSE4(b)

Residential sound insulation AND overheating

a) Before the development commences a scheme for acoustically insulating the proposed residential accommodation against noise from Wilbraham Road and the adjacent football

Pitch shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises.

The potential for overheating shall also be assessed and the noise insulation scheme shall take this into account. The approved noise insulation and ventilation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data shall include measurements taken during a rush-hour period and night time to determine the appropriate sound insulation measures necessary. The following noise criteria shall be required to be achieved when providing adequate ventilation as defined by Approved Document F of the Building Regulations (whole dwelling ventilation):

Bedrooms (night time - 23.00 - 07.00)	30 dB L_{Aeq} (individual noise events shall not exceed 45 dB $L_{Amax,F}$ by more than 15 times)
Living Rooms (daytime - 07.00 - 23.00)	35 dB L_{Aeq}
Gardens and terraces (daytime)	55 dB L_{Aeq}

Higher internal noise levels than those specified above may be allowed when higher rates of ventilation are required in relation to the overheating condition.

b) Prior to first occupation of the residential units, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the internal noise criteria.

Reason: To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance and to reduce the potential for overheating.

The noise mitigation / noise insulation / overheating prevention proposals outlined in the e3p Noise Impact Assessment Reference:50-585-R1-4 dated November 2022 are accepted. A verification report will be required to discharge part b of the condition.

NSE6

External plant/equipment/servicing

a) Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location. Prior to commencement of the use hereby approved the scheme shall be submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the site. The scheme shall be implemented in full before the use commences or as otherwise agreed in writing by the City Council as local planning authority.

b) Prior to the operation of the scheme a verification report shall be submitted to and approved in writing by the City Council as local planning authority to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic report. The report shall also undertake post completion testing to confirm that the noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the agreed noise criteria.

Reason - To minimise the impact of the development and to prevent a general increase in pre-existing background noise levels around the site.

Each dwelling will have an Air Source Heat pump, these should be selected and sited, so the external plant noise criteria is met.

REF*

a) Before the development commences a scheme for the storage and disposal of refuse shall be submitted to and approved in writing by the City Council as local planning authority.

New developments shall have refuse storage space for segregated waste collection and recycling. Internal and external storage areas are required.

b) The details of the approved scheme shall be implemented as part of the development and shall remain in situ whilst the use or development is in operation.

Reason - In the interests of amenity and public health.

Section 6.25 of the Supporting Planning Statement says that each dwelling will have 140L bins as does the Design and Access Statement. The Waste proforma contradicts this and says that there will be 2x140L bins and 2x 240L bins plus a food caddy for each dwelling.

Both of these proposals are inadequate. Each dwelling will require a set of 4 x 240L bins and a food caddy. 140L bins should only be used for 1-bedroom dwellings, and there are not any within this development.

AIR QUALITY 2*

a) Prior to commencement of the development, a scheme for electric vehicle charging and boiler emissions, shall be submitted to and approved in writing by the City Council as local planning authority.

b) Prior to occupation of the development any agreed mitigation measures shall be implemented and verified as such in writing by the City Council as local planning authority and shall remain in situ whilst the use or development is in operation.

Reason: To secure a reduction in air pollution from traffic or other sources in order to protect existing and future residents from air pollution, pursuant to policies EN16, SP1 and DM1 of the Core Strategy.

Each dwelling will be fitted with an EV charging point. The applicant will need to confirm that this will be a minimum of 7.4KW.

Each dwelling will be fitted with an Air Source heat pump, these fulfil the requirements of this condition, but full specifications will be required along with noise mitigation proposals.

CLAND01 (1) New applications, no previous contaminated land conditions

a) Before the development hereby approved commences, a report (the Preliminary Risk Assessment) to identify and evaluate all potential sources and impacts of any ground contamination, groundwater contamination and/or ground gas relevant to the site shall be submitted to and approved in writing by the City Council as local planning authority. The Preliminary Risk Assessment shall conform to City Council's current guidance document (Planning Guidance in Relation to Ground Contamination).

In the event of the Preliminary Risk Assessment identifying risks which in the written opinion of the Local Planning Authority require further investigation, the development shall not commence until a scheme for the investigation of the site and the identification of remediation measures (the Site Investigation Proposal) has been submitted to and approved in writing by the City Council as local planning authority.

The measures for investigating the site identified in the Site Investigation Proposal shall be carried out, before development commences and a report prepared outlining what measures, if any, are required to remediate the land (the Site Investigation Report and/or Remediation Strategy) which shall be submitted to and approved in writing by the City Council as local planning authority.

b) When the development commences, the development shall be carried out in accordance with the previously agreed Remediation Strategy and prior to occupation a Completion/Verification Report shall be submitted to and approved in writing by the City Council as local planning authority.

In the event that ground contamination, groundwater contamination and/or ground gas, not previously identified, are found to be present on the site at any time before the development in each phase is occupied, then development shall cease and/or the development shall not be occupied until, a report outlining what measures, if any, are required to remediate the land (the Revised Remediation Strategy) is submitted to and approved in writing by the City Council as local planning authority and the development shall be carried out in accordance with the Revised Remediation Strategy, which shall take precedence over any Remediation Strategy or earlier Revised Remediation Strategy.

Reason - To ensure that the presence of or the potential for any contaminated land and/or groundwater is detected and appropriate remedial action is taken in the interests of public safety, pursuant to [INSERT] of the Unitary Development Plan for the City of Manchester.

The following items have been recommended / highlighted in the Phase II assessment:-

1. The Phase II assessment repeatedly refers to 358 Wilbraham Road, this may be a typo as it is 354 Wilbraham Road that is part of the site and 358 is not even on the boundary of the site. This is important as the Phase II assessment recommends "Further investigation of inaccessible areas associated with 358 Wilbraham Road and access track from Wilbraham Road". We will need a copy of the report once investigations of this area have been completed.
2. A Stage 2 UXO Risk Assessment was recommended. We will need a copy of this.
3. A UKWIR assessment is required to determine the type of pipework required on the site.
4. In regard to the mercury, further testing should be completed to confirm the type of mercury present and whether it presents a vapour risk. Should it be identified as elemental mercury at a level above the tier 1 threshold, a hotspot removal should be undertaken.
5. With regard to mobile contaminants such as metals, PAH's and volatile compounds, the remediation works for the site may include the removal of localised deep Made Ground and organic deposits where infilled features are present. This may remove the source of the source of the exceedances, however it is recommended that further sampling of groundwater is undertaken prior to, during and following remediation works
6. A Remediation and enabling works strategy is needed.

Information for Developers guidance documents can be downloaded using the following link:

http://www.manchester.gov.uk/info/500207/planning_and_regeneration/1962/additional_planning_guidance/3

Should you wish to discuss this matter further please contact Sharon McAndrew on extension 31374.

Fiona Sharkey
Head of Compliance, Enforcement and Community Safety

From: Jackie Lewis
Sent: 11 May 2023 11:22
To: 'sharon.mcandrew@manchester.gov.uk'
Cc: Peter Sykes; 'Jennifer.connor@manchester.gov.uk'
Subject: Wilbraham Road, Chorlton (8165) Planning Ref. 135604/FO/2022
Attachments: Environmental Health.doc

Hi Sharon

Following my call last week, as we will be undertaking a further site investigation on behalf of Anwyl Homes for geotechnical purposes. At the same time, we will also address comments firstly raised with reference to contamination issues relating to E3P's site investigation reports dated November 2022 made in The Manchester City Council Environmental health Memorandum , dated 6th January 2023 (attached) but taking into consideration E3Ps remediation strategy report, which you now have.

Taking the comments from the memo in order:

1. The revised reports issued in January 2023 have corrected the typo from 358 to 354 Wilbraham Road. The property is still inaccessible for investigation. Once Anwyl gain possession of the property (the access track and around the garage which will form part of the proposed development) a site investigation will be undertaken in this area, as referenced in E3P's remediation strategy (Section 3.7, RE-1). The house and part of the garden of 354 Wilbraham Road will remain in situ.
2. We understand that the Stage 2 UXO report is to be or has already been submitted to Manchester City Council.
3. A UKWIR assessment has been provided in the form of UU Risk assessment form in Appendix VIII of E3Ps remediation strategy report. This proposes post remediation sampling along the pipeline corridor to demonstrate to UU that PE pipes will be suitable.
4. The E3P SI report recommended that further testing is completed to determine the type of mercury present and should elemental mercury be proven that the hotspot of this is removed from site. Coopers noted that slightly elevated concentrations of mercury were recorded in the made ground sand, which is not uncommon, the mercury usually being found in its inorganic form. Elemental mercury would not be expected on a site that has not been used for industrial processes using such a metal. If it was present, it would be visible as a silvery type material possibly a thick liquid. While the likelihood of elemental mercury being present on site is considered to be negligible, we agree that this would need to be speciated if encountered, in order to confirm this. We propose to take additional samples of the made ground sand in the area it was most highly elevated but also across the site. Should we encounter further slight elevations of total mercury we will then schedule these samples for speciated mercury analysis, in order to characterise this to prove that elemental mercury is not present.
Coopers will make appropriate recommendations as to the suitability of the material to remain on site or not following the assessment of the chemical analysis results.
5. Groundwater sampling was recommended in the November revision of the E3P SI report in Section 4.8 (PL6). However, this recommendation has not been repeated in the January revision of the SI report (same section) and the remediation strategy. Coopers agree that the arsenic concentrations encountered are not likely to pose a significant risk to the Principal Aquifer, based on the concentrations recorded in the groundwater samples. We do not consider that groundwater sampling would be proportionate to the levels of arsenic present on site, given that this would not pose a significant risk to groundwaters.
6. The remediation strategy report has now been provided.
 - Coopers generally agree with Section 2.3, page 16, regarding the assessment of the risk to groundwater posed by arsenic, that this does not pose a significant risk. However, the leachate analysis result in the sample from TP111 at 2.0m raised a query. This was reported to be taken from natural sand below the former pond materials and the total soil concentration was very low at only 4.8mg/kg. we would therefore not have expected an elevated leachate concentration from this soil stratum. As discussed

below we will be undertaking additional SI in the former pond locations so will be able to take further samples to determine whether the leachate result was an anomaly.

- Section RE9 and RE10, page 25 - Coopers are proposing to undertake investigation to delineate the former ponds which will permit the assessment of the possible presence of organic materials, which may require removal for geotechnical purposes and extent of materials which may pose a ground gas risk. This will also permit further soil sampling for additional chemical analysis.
- Section RE11, page 27 – This discusses removal of hotspot contamination from the topsoil. However, elevated concentrations have been recorded in approximately 60% of the topsoil. Therefore, unknown contamination maybe present between the locations where “hotspots” may be identified. Consequently, contamination may remain. Anthropogenics are also included in the topsoil including glass in a couple of locations which would not be physically suitable for use. Coopers have therefore recommended that the topsoil is not re-used so removing the contaminants of concern in this stratum.
- Section 3.7, RE7, page 23 – This section discusses hotspot delineation of mercury. However, as discussed above in point 4, Coopers are proposing further sampling to assess whether elemental mercury is present or not. Should it be present then further risk assessment will be undertaken in order to inform the remediation strategy required.
- Section 3.7, RE8, page 24 – Elevated naphthalene was identified in TP114 at 0.4. Coopers noted that this was present in association with other elevated concentrations of PAH compounds and that the log reported gravel of “tar” present in the soil at this depth. It is therefore likely that the naphthalene is associated with the gravel of “tar” which in this form would pose a low risk to human health via inhalation. Coopers therefore propose to assess soils in this vicinity to confirm that the made ground with no gravel of “tar” present would have lower concentrations of PAH compounds including the naphthalene and to establish if there is any significant inclusions of gravel of “tar” and whether this is in fact tarmacadam.
- Section 3.7, RE8, page 24 - Methyl naphthalene in TP110 at 0.7 in the made ground sand is present in association with other elevated PAH concentrations within a former pond. There is no available human health screening value for this determinand. An assessment will need to be made as to whether this would be suitable for use on site following the additional site investigation. Additional investigation may also indicate whether there is further tarmac present which has resulted in the elevated PAH concentrations.

Following the additional site investigation, we will present the results and risk assessment to Manchester City Council together with a revised remediation strategy.

Please could you review the above proposals and advise whether you are in agreement.

I understand that you will have a number of requests, but if possible it would be very much appreciated if you could get back to me today to advise or at least let me know when you will be able to respond. If you are thinking of responding tomorrow, please could you contact Peter Sykes on the same phone number below.

Regards

Jackie

Mrs Jackie Lewis
BSc(Hons), MSc, MCIWEM C.WEM, C.Sci, C.Env.
Senior Geo-environmental Engineer

This e-mail requires acknowledgement to ensure the sender that the correct recipient has received all information requested/necessary.

✉: Coopers, Park House, Sandpiper Court, Chester Business Park, Chester, CH4 9QU

☎: (01244) 684910

☎: Direct Dial No. (01244) 684927

✉: jlewis@coopers.co.uk

Web: <http://www.coopers.co.uk>

Jackie Lewis

From: Sharon McAndrew <sharon.mcandrew@manchester.gov.uk>
Sent: 18 May 2023 11:43
To: Jackie Lewis
Subject: Re: Wilbraham Road, Chorlton (8165) Planning Ref. 135604/FO/2022

Hi Jackie

One of my colleagues and I have read through the reports you sent and the proposed changes from the E3P recommendations seem reasonable. The proposed changes are broadly in line with the original recommendations anyway.

We will need to see the results of additional site investigations when they are available along with any subsequent amendments to the risk assessment and remediation strategy.

Kind regards

Sharon McAndrew
Neighbourhood Officer
Environmental Protection Section
Neighbourhoods Directorate
Community Safety, Compliance and Enforcement
Manchester City Council
1 Hammerstone Road
Gorton
Manchester
M18 8EQ

External Tel: (Contact Centre) 0161 234 5004
Mobile: 07966 594 349
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Web: www.manchester.gov.uk

I work Thursdays, Fridays and alternate Wednesdays.

We are now on Twitter, for latest news and updates follow us @EnvHealthMcr

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From: Jackie Lewis <jlewis@coopers.co.uk>
Sent: Monday, May 15, 2023 08:53
To: Sharon McAndrew <sharon.mcandrew@manchester.gov.uk>
Cc: Peter Sykes <psykes@coopers.co.uk>; Jennifer Connor <jennifer.connor@manchester.gov.uk>
Subject: RE: Wilbraham Road, Chorlton (8165) Planning Ref. 135604/FO/2022

Hi Sharon

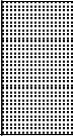
Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Appendix 2

Borehole Logs

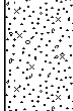
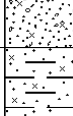
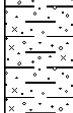
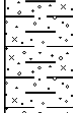
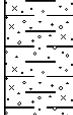
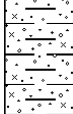
 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>					Site WILBRAHAM ROAD, CHORLTON			Borehole Number BH01	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 6.00m 150mm cased to 15.00m		Ground Level (mOD) 28.67		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382678.3 E 394305.3 N		Dates 24/05/2023		Engineer Coopers (Chester) Ltd		Sheet 1/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.80	B			1,1/1,1,0,0	28.07	(0.60)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly clayey, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is sub-angular to sub-rounded, fine to medium of natural stone with rare fragments of brick, ceramic and natural stone. *Assumed as loose to medium dense.		
1.00	B				27.77	(0.30)	MADEGROUND. Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic and rare ash and clinker. *Assumed as loose to medium dense.		
1.00	JV				27.57	(0.20)	MADEGROUND. Firm, dark grey, slightly silty, sandy CLAY. Sand is fine to coarse with rare brick and ceramic fragments.		
1.20-1.65	SPT N=2 B					1.10	Soft, greyish brown, slightly silty, slightly sandy, slightly gravelly CLAY with occasional bands of sandy, silty clay. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of natural stone.		
1.20-1.65	B								
1.50	JV								
2.00-2.45	SPT N=3			0,0/1,0,1,1		(1.80)			
2.00-2.45	B								
2.00-2.45	D								
2.50	JV								
3.00-3.45	SPT N=0			0,0/0,0,0,0	25.77	2.90	Soft, greyish brown, silty, sandy CLAY. Sand is fine to coarse.		
3.00-3.45	B								
3.00-3.45	D								
3.50	JV					(1.20)			
4.00-4.45	SPT N=3			1,0/1,0,1,1	24.57	4.10	Soft, low strength, brown, slightly silty, slightly sandy CLAY. Sand is fine to coarse.		
4.00-4.45	B								
4.20	SV 20kPa								
4.50	JV								
5.00-5.45	SPT N=9			1,1/2,3,2,2					
5.00-5.45	B								
5.00-5.45	D								
5.20	SV 16kPa								
5.30	SV 20kPa								
6.00-6.45	SPT N=10			1,1/2,2,3,3		(4.50)			
6.00-6.45	B								
6.00-6.45	D								
6.20	SV 20kPa								
6.30	SV 22kPa								
7.00-7.45	SPT N=6			0,1/1,1,2,2					
7.00-7.45	B								
7.00-7.45	D								
7.20	SV 30kPa								
7.30	SV 34kPa								
8.00-8.45	SPT N=13			1,2/2,3,4,4					
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 15.00m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m and 9.00m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 12.40m rising to 8.60m after 20 minutes and sealed at 13.50m. Groundwater at 15.30m rising to 12.80m after 20 minutes. Borehole re-drilled with 200mm casing due to soft clays in pond. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.							Scale (approx) 1:40	Logged By SD	
							Checked By PRS		

 coopers <small>chartered consulting engineers</small>			Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH01	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 6.00m 150mm cased to 15.00m		Ground Level (mOD) 28.67		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382678.3 E 394305.3 N		Dates 24/05/2023		Engineer Coopers (Chester) Ltd		Sheet 2/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
8.00-8.45	B						... as previous Soft, low strength, brown, slightly silty, slightly sandy CLAY. Sand is fine to coarse. From 8.30m: Medium strength		
8.20	SV 38kPa				20.07	8.60	Firm, medium strength, greyish brown, lightly silty, sandy CLAY. Sand is fine to coarse.		▼1
8.30	SV 40kPa								
9.00-9.45	SPT N=17			2,3/3,4,5,5			From 9.00m: Becoming slightly gravelly with gravels of angular to sub-angular, fine to coarse natural stone		
9.00-9.45	B								
9.20	SV 48kPa								
9.30	SV 50kPa								
10.00-10.45	SPT N=21			3,3/4,4,6,7					
10.00-10.45	B								
10.20	SV 60kPa								
10.30	SV 62kPa					(3.80)			
11.00-11.45	SPT N=25			3,3/4,6,7,8					
11.00-11.45	B								
11.00-11.45	D								
11.20	SV 62kPa								
11.30	SV 64kPa								
12.00-12.45	SPT N=40			2,4/4,6,9,21					
12.00-12.45	B								
12.00-12.45	D								
12.20	SV 74kPa				16.27	12.40	Brown, fine to coarse SAND and sub-angular to sub-rounded, fine to coarse GRAVEL of natural stone.		▽1
12.30	SV 78kPa			Water strike(1) at 12.40m, rose to 8.60m in 20 mins, sealed at 13.50m.	16.07	(0.20) 12.60	Brown, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-rounded, fine to coarse of natural stone.		▼2
13.00-13.45	SPT N=31			3,4/4,7,9,11			From 13.00m: Dense		
13.00-13.45	B								
13.00-13.45	D					(1.80)			
14.00-14.41	SPT 50/255			2,4/6,10,19,15					
14.00-14.45	B								
14.00-14.45	D				14.27	14.40	Reddish brown, weathered SANDSTONE recovered as gravelly, fine to coarse sand. Gravel is angular to sub-angular, fine to coarse of sandstone.		▽2
15.00-15.45	SPT N=23			4,4/4,6,6,7					
15.00-15.45	B								
15.00-15.45	D			Water strike(2) at 15.30m, rose to 12.80m in 20 mins, sealed at 12.80m.		(2.30)			
16.00-16.15	50/65 SPT 25*/85			16,9/50					
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 15.00m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m and 9.00m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 12.40m rising to 8.60m after 20 minutes and sealed at 13.50m. Groundwater at 15.30m rising to 12.80m after 20 minutes. Borehole re-drilled with 200mm casing due to soft clays in pond. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.								Scale (approx) 1:40	Logged By SD
								Checked By PRS	

 <div> <div>Coopers (Chester) Ltd</div> <div>tel: 01244 684 910</div> <div>web: www.coopers.co.uk</div> <div>email: admin@coopers.co.uk</div> </div>					Site WILBRAHAM ROAD, CHORLTON			Borehole Number BH01	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 6.00m 150mm cased to 15.00m		Ground Level (mOD) 28.67		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382678.3 E 394305.3 N		Dates 24/05/2023		Engineer Coopers (Chester) Ltd		Sheet 3/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
16.00-16.20	D				11.97	16.70	... as previous Reddish brown, weathered SANDSTONE recovered as gravelly, fine to coarse sand. Gravel is angular to sub-angular, fine to coarse of sandstone.		
							Complete at 16.70m		
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 15.00m upon service pit excavation stability characteristics. Groundwater at 12.40m rising to 8.60m after 20 minutes and sealed at 13.50m. Groundwater at 15.30m rising to 12.80m after 20 minutes. Borehole re-drilled with 200mm casing due to soft clays in pond. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.									
							Scale (approx) 1:40	Logged By SD	
							Checked By PRS		

<div><div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div></div>					Site WILBRAHAM ROAD, CHORLTON			Borehole Number BH02	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 4.00m 150mm cased to 15.00m		Ground Level (mOD) 29.11		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382686.6 E 394174.8 N		Dates 26/05/2023		Engineer Coopers (Chester) Ltd		Sheet 1/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20-0.30	B				28.81	(0.30)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of brick and ceramic fragments and natural stone. *Assumed as loose to medium dense.		
0.50	B					(1.00)	Brown, slightly silty, fine to coarse SAND with occasional silty, organic bands. *Assumed as loose to medium dense.		
1.00-1.45	SPT N=4			1,1/0,1,1,2					
1.20-1.65	B			Water strike(1) at 1.20m, rose to 1.10m in 20 mins, sealed at 3.00m.	27.81	1.30	Soft, low strength, greyish brown, slightly gravelly, silty CLAY. Gravel is angular to sub-angular, fine to medium of natural stone.		
1.20-1.65	D								
1.40	SV 30kPa								
1.50	SV 32kPa								
2.00-2.45	SPT N=4			0,1/1,0,1,2		(1.60)			
2.00-2.45	B								
2.00-2.45	D								
2.20	SV 28kPa								
2.40	SV 30kPa								
3.00-3.45	SPT N=7			1,1/1,2,2,2	26.21	2.90	Soft to firm, low strength, brown, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded of natural stone.		
3.00-3.45	B					(0.40)			
3.00-3.45	D				25.81	3.30	Soft to firm, low strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		
3.20	SV 36kPa								
3.30	SV 38kPa								
4.00-4.45	SPT N=10			1,2/2,2,3,3		(2.40)			
4.00-4.45	B								
4.20	SV 34kPa								
4.30	SV 36kPa								
5.00-5.45	SPT N=11			2,2/3,2,3,3					
5.00-5.45	B								
5.20	SV 36kPa								
5.30	SV 38kPa								
6.00-6.45	SPT N=5			1,1/2,1,1,1	23.41	5.70	Soft to firm, low strength, brown, slightly silty, gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		
6.00-6.45	B								
6.20	SV 28kPa								
6.30	SV 32kPa								
7.00-7.45	SPT N=12			1,2/2,3,3,4		(3.20)			
7.00-7.45	B								
7.00-7.45	D								
7.20	SV 32kPa								
7.30	SV 36kPa								
8.00-8.45	SPT N=10			1,2/2,2,3,3					
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 13.50m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m 7.50m and 9.00m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.10m after 20 minutes and sealed at 3.00m. Groundwater at 9.80m rising to 3.70m after 20 minutes and sealed at 12.00m. Groundwater at 14.40m rising to 12.50m after 20 minutes. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.							Scale (approx) 1:40	Logged By SD	Checked By PRS

 coopers <small>chartered consulting engineers</small>			Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH02	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 4.00m 150mm cased to 15.00m		Ground Level (mOD) 29.11		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382686.6 E 394174.8 N		Dates 26/05/2023		Engineer Coopers (Chester) Ltd		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
8.00-8.45 8.00-8.45 8.20 8.30	B D SV 44kPa SV 48kPa						... as previous Soft to firm, low strength, brown, slightly silty, gravelly sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 8.20m: Medium strength		
9.00-9.45 9.00-9.45 9.00-9.45 9.20 9.30	SPT N=13 B D SV 42kPa SV 46kPa			1,2/2,3,4,4	20.21	8.90 (0.90)	Firm to stiff, medium strength, brown, slightly silty, slightly sandy, gravelly CLAY with occasional bands of silty sand. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural sand.		
10.00-10.45 10.00-10.45 10.00-10.45	B D SPT N=16			Water strike(2) at 9.80m, rose to 3.70m in 20 mins, sealed at 12.00m. 2,2/3,4,4,5	19.31 19.01	9.80 (0.30) 10.10	Brown, fine to coarse SAND and sub-angular to sub-rounded, fine to coarse GRAVEL of natural stone.		V2
11.00-11.31 11.00-11.45 11.00-11.45	SPT 35/155 B D			3,6/12,15,8			From 11.00m: Clay very stiff, cannot take shear vanes due to samples breaking up		
12.00-12.36 12.00-12.45 12.00-12.45	SPT 50/205 B D			5,6/12,19,19		(4.30)			V3
13.00-13.39 13.00-13.45 13.00-13.45	SPT 50/235 B D			7,9/12,14,16,8					
14.00-14.38 14.00-14.45 14.00-14.45	SPT 50/230 B D			3,7/9,14,21,6					
15.00-15.18 15.00-15.45 15.00-15.45	SPT 21*/80 50/97 B D			15,6/28,22	14.71	14.40 (1.30)	Reddish brown, weathered SANDSTONE recovered as a gravelly, fine to coarse sand. Gravel is angular to sub-angular, fine to coarse of sandstone.		V3
15.50-15.63 15.50-15.70	SPT 25*/60 50/70 D			25/50	13.41	15.70	Complete at 15.70m		
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 13.50m UXO on site during drilling completing scans at 1.20m, 3.00m, 4.50m, 6.00m 7.50m and 9.00m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.10m after 20 minutes and sealed at 3.00m. Groundwater at 9.80m rising to 3.70m after 20 minutes and sealed at 12.00m. Groundwater at 14.40m rising to 12.50m after 20 minutes. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.								Scale (approx) 1:40	Logged By SD
								Checked By PRS	

<div><div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div></div>					<div>Site</div> <div>WILBRAHAM ROAD, CHORLTON</div>			<div>Borehole Number</div> <div>BH03</div>	
<div>Machine : Dando 2000</div> <div>Method : Cable Percussion</div>		<div>Casing Diameter</div> <div>200mm cased to 4.00m 150mm cased to 15.00m</div>		<div>Ground Level (mOD)</div> <div>28.60</div>		<div>Client</div> <div>Anwyl Homes Ltd</div>		<div>Job Number</div> <div>8165</div>	
		<div>Location (Observed measurements)</div> <div>382610.8 E 394284.4 N</div>		<div>Dates</div> <div>31/05/2023</div>		<div>Engineer</div> <div>Coopers (Chester) Ltd</div>		<div>Sheet</div> <div>1/2</div>	
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Casing Depth (m)</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>	<div>Legend</div>	<div>Water</div>
0.20-0.30	B				28.30	(0.30) 0.30	MADEGROUND (similar to topsoil). Brown, slightly silty, gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic fragments. *Assumed as loose to medium dense.		
0.50	B					(1.10)	Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		▼1 V1
1.20-1.65 1.20-1.65	B D			Water strike(1) at 1.20m, rose to 1.10m in 20 mins, sealed at 2.00m. 1,0/1,0,1,1	27.20	1.40	Soft, brown, slightly silty, slightly sandy CLAY with occasional small bands of organic material. Sand is fine to coarse.		
1.20-1.65	SPT N=3					(0.50)			
2.00-2.45 2.00-2.45 2.00-2.45 2.20 2.30	SPT N=7 B D SV 24kPa SV 28kPa			1,1/1,2,2,2	26.70	1.90	Soft to firm, low strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		
3.00-3.45 3.00-3.45 3.00-3.45 3.20 3.30	SPT N=8 B D SV 28kPa SV 32kPa			1,1/1,2,2,3					
4.00-4.45 4.00-4.45 4.00-4.45 4.20 4.30	SPT N=9 B D SV 38kPa SV 40kPa			1,2/2,2,2,3			From 4.30m: Becoming medium strength		
5.00-5.45 5.00-5.45 5.00-5.45 5.20 5.30	SPT N=14 B D SV 46kPa SV 48kPa			1,2/2,3,4,5		(6.80)			
6.00-6.45 6.00-6.45 6.00-6.45 6.20 6.30	SPT N=10 B D SV 60kPa SV 64kPa			1,1/2,2,3,3			From 6.00m: Firm		
7.00-7.45 7.00-7.45 7.00-7.45 7.20 7.30	SPT N=13 B D SV 58kPa SV 62kPa			1,2/2,3,4,4					
8.00-8.45	SPT N=12			2,2/2,3,3,4					▼2
<div>Remarks</div> <div>Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 12.00m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m and 9.00m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.10m after 20 minutes and sealed at 2.00m. Groundwater at 9.90m rising to 7.70m after 20 minutes and sealed at 12.00m. Groundwater at 12.50m rising to 10.50m after 20 minutes. All logs supplemented by drillers logs. No shear vanes taken from 12.00m due to stiff clay and gravel and sand content breaking up sample. **Sandstone strata assumed due to small recovery in base of SPT. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd.</div>							<div>Scale (approx)</div> <div>1:40</div>	<div>Logged By</div> <div>SD</div>	<div>Checked By</div> <div>PRS</div>

 coopers <small>chartered consulting engineers</small>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH03
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 4.00m 150mm cased to 15.00m		Ground Level (mOD) 28.60		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382610.8 E 394284.4 N		Dates 31/05/2023		Engineer Coopers (Chester) Ltd		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
8.00-8.45 8.00-8.45 8.20 8.30	B D SV 56kPa SV 58kPa						... as previous Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		
9.00-9.45 9.00-9.45 9.00-9.45 9.20 9.30	SPT N=16 B D SV 70kPa SV 74kPa			2,3/3,4,4,5	19.90	8.70 (1.20)	Stiff, medium strength, greyish brown, slightly silty, gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		
10.00-10.45 10.00-10.45 10.20 10.00-10.45 10.30	B D SV 78kPa SPT N=21 SV 80kPa			Water strike(2) at 9.90m, rose to 7.70m in 20 mins, sealed at 12.00m. 3,3/4,5,5,7	18.70 18.50	9.90 (0.20) 10.10	Brown, fine to coarse SAND and sub-angular to sub-rounded, fine to coarse GRAVEL of natural stone.		▽2
11.00-11.45 11.00-11.45 11.00-11.45	SPT N=33 B D			3,5/6,8,9,10			Stiff, high strength, brown, slightly silty, gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		▽3
12.00-12.42 12.00-12.45 12.00-12.45	SPT 50/270 B D			1,7/9,14,16,11			From 11.00m: Occasional bands of sand From 11.00m: No shear vanes taken due to stiff, sandy gravelly clays causing clays to break up		
13.00-13.44 13.00-13.45	SPT 50/290 D			5,6/10,13,15,12					▽3
14.00-14.45 14.00-14.45 14.00-14.45	SPT N=42 B D			5,5/5,9,12,16					
15.00-15.39 15.00-15.45 15.00-15.45	SPT 50/235 B D			2,5/7,16,18,9	13.30 13.15	15.30 (0.15) 15.45	Reddish brown SANDSTONE**.		
							Complete at 15.45m		
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 12.00m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m and 9.00m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.10m after 20 minutes and sealed at 2.00m. Groundwater at 9.90m rising to 7.70m after 20 minutes and sealed at 12.00m. Groundwater at 12.50m rising to 10.50m after 20 minutes. All logs supplemented by drillers logs. **Sandstone strata assumed due to small recovery in base of SPT. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Terminated at 15.45m due to extent reached. Backfilled with arisings upon completion.								Scale (approx) 1:40	Logged By SD
								Checked By PRS	

<div> coopers chartered consulting engineers</div>					Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH04	
Machine : Dando 2000		Casing Diameter 200mm cased to 4.00m 150mm cased to 15.00m			Ground Level (mOD) 28.94		Client Anwyl Homes Ltd		Job Number 8165		
Method : Cable Percussion		Location (Observed measurements) 382663.9 E 394239.1 N			Dates 31/05/2023-02/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/3		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
0.20-0.30	B					(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, with occasional brick and ceramic fragments.				
0.50	B				28.54	0.40	Brown, slightly silty, slightly clayey, fine to coarse SAND. **Assumed as loose to medium dense.				
1.20-1.65	B			Water strike(1) at 1.20m, rose to 1.10m in 20 mins, sealed at 2.00m. 0,1/0,1,1,0		(1.40)	From 1.20m: Very loose			▼1	
1.20-1.65	D									▼1	
1.20-1.65	SPT N=2				27.14	1.80	Soft to firm, low to medium strength, greyish brown, slightly silty, sandy CLAY with occasional bands of organic, silty sand. Sand is fine to coarse.				
2.00-2.45	SPT N=0			0,0/0,0,0,0		(1.10)					
2.00-2.45	B										
2.00-2.45	D										
2.20	SV 38kPa										
2.30	SV 40kPa										
3.00-3.45	SPT N=6			1,1/1,1,2,2	26.04	2.90	Firm, medium strength, brown, slightly silty, slightly gravelly, slightly sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.			▼*	
3.00-3.45	B										
3.20	SV 44kPa										
3.30	SV 46kPa										
4.00-4.45	SPT N=11			1,2/2,3,3,3							
4.00-4.45	B										
4.00-4.45	D										
4.20	SV 48kPa										
4.30	SV 52kPa										
5.00-5.45	SPT N=13			2,2/3,2,4,4		(4.90)					
5.00-5.45	B										
5.00-5.45	D										
5.20	SV 56kPa										
5.30	SV 58kPa										
6.00-6.45	SPT N=13			1,2/2,3,4,4							
6.00-6.45	B										
6.00-6.45	D										
6.20	SV 58kPa										
6.30	SV 60kPa										
7.00-7.45	SPT N=13			2,2/3,3,3,4							
7.00-7.45	B										
7.00-7.45	D										
7.20	SV 62kPa										
7.30	SV 66kPa										
8.00-8.45	SPT N=16			2,2/3,4,4,5	21.14	7.80	Firm to stiff, medium strength, brown, slightly silty, gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to				
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole cased to 16.00m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m and 9.00m. Stainless steel casing used for UXO. **Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.10m after 20 minutes and sealed at 2.00m. Groundwater at 3.50m and sealed at 4.50m. Groundwater at 13.80m rising to 12.80m after 20 minutes. *Water level remained at same depth. Assumed perched water in clays. All logs supplemented by drillers logs. Shear vanes not possible from 12.20m due to sand and gravel content. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.								Scale (approx)	Logged By		
								1:40	SD		
								Checked By	PRS		

 coopers <small>chartered consulting engineers</small>			Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH04	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 4.00m 150mm cased to 15.00m		Ground Level (mOD) 28.94		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382663.9 E 394239.1 N		Dates 31/05/2023-02/06/2023		Engineer Coopers (Chester) Ltd		Sheet 2/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
8.00-8.45 8.00-8.45 8.20 8.30	B D SV 64kPa SV 68kPa						sub-rounded, fine to coarse of natural stone.		
9.00-9.45 9.00-9.45 9.00-9.45 9.20 9.30	SPT N=15 B D SV 70kPa SV 74kPa			2,2/3,3,4,5					
10.00-10.45 10.00-10.45 10.00-10.45 10.20 10.30	SPT N=24 B D SV 76kPa SV 78kPa			3,4/5,6,6,7		(4.40)	From 10.00m: High strength		
11.00-11.45 11.00-11.45 11.00-11.45 11.20 11.30	SPT N=35 B D SV 78kPa SV 80kPa			4,5/7,9,9,10					
12.00-12.23 12.00-12.45 12.00-12.45	SPT 50/75 B D			2,5/45,5	16.74	12.20	From 12.00 - 12.20m: Cobble obstruction - chiselled for 1 hour Firm to stiff, brown slightly silty, gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 12.20m: Shear vanes not possible due to sand and gravel content causing sample to break up		▼3
13.00-13.45 13.00-13.45 13.00-13.45	SPT N=33 B D			3,5/7,7,9,10					
14.00-14.45 14.00-14.45 14.00-14.45	B SPT N=48 D			Water strike(3) at 13.80m, rose to 12.80m in 20 mins. 7,7/9,10,13,16		(3.10)			▽3
15.00-15.45 15.00-15.45	SPT N=46 D			6,7/9,10,11,16	13.64	15.30	Reddish brown SANDSTONE recovered as gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of sandstone.		
16.00-16.17	50/85 SPT 25*/80			18,7/40,10		(1.15)			
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Stainless steel casing used for UXO. Borehole cased to 16.00m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m and 9.00m. **Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.10m after 20 minutes and sealed at 2.00m. Groundwater at 3.50m and sealed at 4.50m. Groundwater at 13.80m rising to 12.80m after 20 minutes. *Water level remained at same depth. Assumed perched water in clays. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd.								Scale (approx) 1:40	Logged By SD
								Checked By PRS	

 coopers <small>chartered consulting engineers</small>			Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH04	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 4.00m 150mm cased to 15.00m		Ground Level (mOD) 28.94		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382663.9 E 394239.1 N		Dates 31/05/2023-02/06/2023		Engineer Coopers (Chester) Ltd		Sheet 3/3	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
16.00-16.45 16.00-16.45	B D				12.49	16.45	... as previous Reddish brown SANDSTONE recovered as gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of sandstone. Complete at 16.45m		
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Stainless steel casing used for UXO. Borehole cased to 16.00m UXO on site during drilling, completing scans at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m and 9.00m. **Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.10m after 20 minutes and sealed at 2.00m. Groundwater at 3.50m and sealed at 4.50m. Groundwater at 13.80m rising to 12.80m after 20 minutes. *Water level remained at same depth. Assumed perched water in clays. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd.									
								Scale (approx) 1:40	Logged By SD
								Checked By PRS	

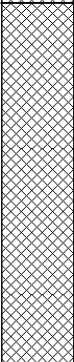
 <div>coopers chartered consulting engineers</div>					Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH05	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 6.00m 150mm cased to 15.00m			Ground Level (mOD) 28.74		Client Anwyl Homes Ltd			Job Number 8165	
		Location (Observed measurements) 382623.2 E 394212.6 N			Dates 01/06/2023-02/06/2023		Engineer Coopers (Chester) Ltd			Sheet 1/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water
0.30-0.40	B					(0.70)	MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to medium of natural stone, brick and ceramic fragments.				
0.70-0.80	B				28.04	0.70 (0.40)	MADEGROUND. Brown, slightly silty, slightly clayey, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ash, clinker and ceramic. *Assumed as loose to medium dense.				
1.10-1.20 1.20-1.65 1.20-1.65	B B D			Water strike(1) at 1.20m, rose to 1.10m in 20 mins, sealed at 2.00m. 1,2/1,1,1,1	27.64 27.44	1.10 (0.20) 1.30	MADEGROUND. Soft, grey, slightly gravelly, silty, sandy CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, ash and clinker.				▼1 ▽1
1.20-1.65	SPT N=4						Very loose, brown, slightly silty, slightly gravelly, clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.				
2.00-2.45 2.00-2.45 2.00-2.45	SPT N=1 B D			0,0/0,0,1,0		(2.50)					
3.00-3.45 3.00-3.45 3.00-3.45	SPT N=4 B D			0,1/1,0,1,2							
4.00-4.45 4.00-4.45 4.00-4.45 4.20 4.30	SPT N=6 B D SV 38kPa SV 40kPa			1,1/1,1,2,2	24.94 24.74	3.80 (0.20) 4.00	Soft brown, silty, sandy CLAY with occasional bands of organic, silty clay. Sand is fine to coarse.				
							Soft to firm, low to medium strength, brown, slightly silty, slightly sandy CLAY. Sand is fine to medium. From 4.30m: Medium strength				
5.00-5.45 5.00-5.45 5.00-5.45 5.20 5.30	SPT N=7 B D SV 42kPa SV 44kPa			1,1/1,2,2,2							
6.00-6.45 6.00-6.45 6.00-6.45 6.20 6.30	SPT N=9 B D SV 44kPa SV 46kPa			1,2/2,2,2,3		(5.20)					
7.00-7.45 7.00-7.45 7.00-7.45 7.20 7.30	SPT N=11 B D SV 48kPa SV 50kPa			2,2/2,3,3,3							
8.00-8.45	SPT N=13			2,2/3,3,3,4							
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole not cased during drilling. UXO on site during drilling, completing scans at at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m, 9.00m, 9.50m and 10.0m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.00m after 20 minutes and sealed at 2.00m. Groundwater at 15.10m rising to to 8.80m after 20 minutes. Chiselled for 1 hour to 15.70m. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.								Scale (approx) 1:40	Logged By SD		
								Checked By PRS			

 coopers <small>chartered consulting engineers</small>			Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Borehole Number BH05	
Machine : Dando 2000 Method : Cable Percussion		Casing Diameter 200mm cased to 6.00m 150mm cased to 15.00m		Ground Level (mOD) 28.74		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382623.2 E 394212.6 N		Dates 01/06/2023- 02/06/2023		Engineer Coopers (Chester) Ltd		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
8.00-8.45 8.00-8.45 8.20 8.30	B D SV 54kPa SV 56kPa						... as previous Soft to firm, low to medium strength, brown, slightly silty, slightly sandy CLAY. Sand is fine to medium.		▼2
9.00-9.45 9.00-9.45 9.00-9.45 9.20 9.30	SPT N=13 B D SV 64kPa SV 66kPa			1,1/2,3,4,4	19.54	9.20	Firm to stiff, medium strength, brown, slightly silty, gravelly, sandy CLAY with occasional bands of sand. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		
10.00-10.45 10.00-10.45 10.00-10.45 10.20 10.30	SPT N=18 B D SV 68kPa SV 70kPa			2,3/3,4,5,6					
11.00-11.45 11.00-11.45 11.00-11.45 11.20 11.30	SPT N=32 B D SV 76kPa SV 80kPa			3,4/5,7,10,10			From 11.00m: High strength		
12.00-12.42 12.00-12.45 12.00-12.45 12.20 12.30	SPT 50/265 B D SV 86kPa SV 88kPa			6,7/10,14,16,10		(5.60)			
13.00-13.40 13.00-13.45 13.00-13.45	SPT 51/245 B D			5,8/10,14,17,10					
14.00-14.23 14.00-14.45 14.00-14.45	SPT 25*/80 50/150 B D			17,8/19,25,6					
15.00-15.30 15.00-15.45 15.00-15.45	SPT 50/150 B D			5,7/20,25,5 Water strike(2) at 15.10m, rose to 8.80m in 20 mins.	13.94	14.80	Reddish brown SANDSTONE recovered as gravelly, fine to coarse sand. Gravel is angular to sub-angular, fine to coarse of sandstone.		▼2
15.70-15.85 15.70-15.90	SPT 25*/75 50/75 D			22,3/45,5	12.84	15.90			
Remarks Location CAT scanned prior to drilling. Hand dug service pit excavated to 1.20m for service clearance. Borehole not cased during drilling. UXO on site during drilling, completing scans at at 1.20m, 3.00m, 4.50m, 6.00m, 7.50m, 9.00m, 9.50m and 10.0m. Stainless steel casing used for UXO. *Based upon service pit excavation stability characteristics. Groundwater at 1.20m rising to 1.00m after 20 minutes and sealed at 2.00m. Groundwater at 15.10m rising to 8.80m after 20 minutes. Chiselled for 1 hour to 15.70m. All logs supplemented by drillers logs. Energy Ratio = 73%. Drilling Contractors = Bainbridge Bros. Ltd. Backfilled with arisings upon completion.								Scale (approx) 1:40	Logged By SD
								Checked By PRS	

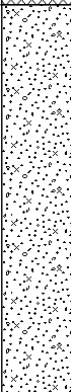
Supplementary Site Investigation for land off Wilbraham Road, Chorlton

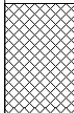
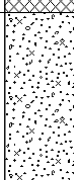
Appendix 3

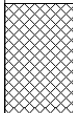
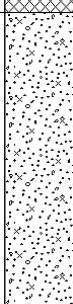
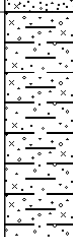
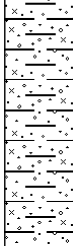
Trial Pit Logs

 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP201			
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.00m		Ground Level (mOD) 28.46		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382664.8 E 394319.1 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.20 0.20	B JV				(0.60)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of ceramic, brick and natural stone. *Assumed as loose to medium dense.					
0.70 0.70	B JV			27.86	0.60	MADEGROUND. Brown, slightly silty, slightly clayey, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, shale and natural stone. *Assumed as loose to medium dense.					
1.70 1.70	B JV			26.66	1.80	MADEGROUND. Dark brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of brick, ash, clinker and ceramic with occasional sporadic wood shavings.					
1.90 1.90	B JV				(0.90)						
2.80 2.80 2.80 2.90	SV 78kPa B JV SV 86kPa			25.76	2.70	Firm to stiff, high strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to medium of natural stone.					
				25.46	3.00	Complete at 3.00m					
						Remarks					
						Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.					
						Scale (approx) 1:25		Logged By SD		Checked By PRS	

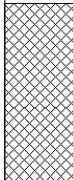
<div> coopers</div> <div>chartered consulting engineers</div>				<div>Coopers (Chester) Ltd</div> <div>tel: 01244 684 910</div> <div>web: www.coopers.co.uk</div> <div>email: admin@coopers.co.uk</div>				<div>Site</div> <div>WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number</div> <div>TP202</div>	
<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 3.00m</div>		<div>Ground Level (mOD)</div> <div>28.71</div>		<div>Client</div> <div>Anwyl Homes Ltd</div>		<div>Job Number</div> <div>8165</div>			
		<div>Location (Observed measurements)</div> <div>382654.1 E 394308.3 N</div>		<div>Dates</div> <div>05/06/2023</div>		<div>Engineer</div> <div>Coopers (Chester) Ltd</div>		<div>Sheet</div> <div>1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>	<div>Legend</div>	<div>Water</div>			
<div>0.20</div> <div>0.20</div>	<div>B</div> <div>JV</div>				<div>(0.60)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone, brick, concrete and ceramic. *Assumed as loose to medium dense.</div>	<div></div>				
<div>0.70</div> <div>0.70</div>	<div>B</div> <div>JV</div>			<div>28.11</div>	<div>0.60</div> <div>(0.50)</div>	<div>MADEGROUND. Brown, slightly silty, slightly clayey, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic (reworked due to land drain). *Assumed as loose to medium dense.</div> <div>At 0.70m: Plastic land drain, surrounded by limestone gravel, measuring approximately 50mm in diameter. Orientated north east to south west. Dry</div>	<div></div>				
<div>1.20</div> <div>1.20</div> <div>1.20</div>	<div>SV 58kPa</div> <div>B</div> <div>JV</div>			<div>27.61</div>	<div>1.10</div>	<div>Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse.</div> <div>From 1.10 - 1.30m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)</div>	<div></div>				
<div>1.50</div>	<div>SV 62kPa</div>						<div></div>				
<div>1.80</div>	<div>SV 66kPa</div>						<div></div>				
<div>2.00</div>	<div>SV 76kPa</div>				<div>(1.90)</div>	<div>From 2.00m: Becoming firm to stiff and high strength</div>	<div></div>				
<div>2.20</div> <div>2.20</div>	<div>SV 78kPa</div> <div>B</div>						<div></div>				
<div>2.50</div>	<div>SV 82kPa</div>						<div></div>				
<div>2.70</div>	<div>SV 86kPa</div>						<div></div>				
<div>2.90</div>	<div>SV 92kPa</div>			<div>25.71</div>	<div>3.00</div>	<div>Complete at 3.00m</div>	<div></div>				
<div></div>					<div>Remarks</div> <div>Location CAT scanned prior to excavation.</div> <div>Sides stable during excavation.</div> <div>No groundwater encountered during excavation.</div> <div>*Based upon trenchside stability characteristics.</div> <div>Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.</div> <div>Trial pit completed with constant UXO supervision.</div> <div>Backfilled with arisings upon completion.</div>						
<div>North</div> <div></div>					<div>Scale (approx)</div> <div>1:25</div>	<div>Logged By</div> <div>SD</div>	<div>Checked By</div> <div>PRS</div>				

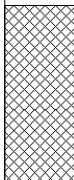
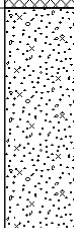
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number TP203</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 3.00m</div>		<div>Ground Level (mOD) 28.68</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>			
		<div>Location (Observed measurements) 382632.7 E 394305.1 N</div>		<div>Dates 05/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>		<div>Legend</div>	<div>Water</div>		
0.30	B		Seepage from eastern face of pit during excavation(1) at 1.60m.	28.18	(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of brick, ceramic and natural stone. *Assumed as loose to medium dense.					
0.60	B			26.88	0.50	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.			▽1		
1.90	SV 62kPa			26.88	1.80	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.80 - 2.00m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)					
1.90	B										
2.10	SV 70kPa		Accumulation at time of backfill(2) at 3.00m.		(1.30)						
2.50	SV 72kPa				(1.20)	From 2.50m: Stiff					
2.70	SV 86kPa					From 2.70m: High strength					
2.90	SV 94kPa										
2.90	B			25.68	3.00	Complete at 3.00m			▽2		
<div></div>						<div>Remarks</div> <div>Location CAT scanned prior to excavation. Sides stable during excavation. Seepage of groundwater on eastern face of pit at 1.60m during excavation. Accumulation at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>					
						<div>North</div> <div></div>	<div>Scale (approx)</div> <div>1:25</div>	<div>Logged By</div> <div>SD</div>	<div>Checked By</div> <div>PRS</div>		

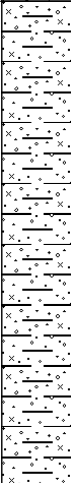
<div>coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP204	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.60 x 3.00m		Ground Level (mOD) 28.89		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382663.8 E 394290.1 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20	B			28.49	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50	B				0.40	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
					(1.20)						
				27.29	1.60	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.60 - 1.80m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)					
1.70	SV 42kPa										
1.70	B										
2.00	SV 66kPa										
2.20	SV 68kPa				(1.40)						
2.50	SV 70kPa										
2.70	SV 72kPa										
2.70	B										
2.90	SV 74kPa			25.89	3.00	Complete at 3.00m					
					Remarks						
					Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					North ↓	Scale (approx) 1:25	Logged By SD	Checked By PRS			

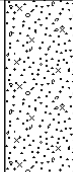
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number TP205</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 3.00m</div>		<div>Ground Level (mOD) 28.92</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>			
		<div>Location (Observed measurements) 382652.1 E 394283.6 N</div>		<div>Dates 05/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>		<div>Legend</div>	<div>Water</div>		
0.20 0.20	B JV			28.52	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50	B				0.40 (1.00)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.50 1.50	SV 58kPa B			27.52	1.40	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.40 - 1.60m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)					
1.70	SV 64kPa				(1.60)	From 2.20m: Stiff and high strength			▽1		
2.00	SV 72kPa										
2.20	SV 80kPa		Seepage from west of pit(1) at 2.20m.								
2.50 2.50	SV 88kPa B										
2.70	SV 90kPa										
2.90	SV 94kPa			25.92	3.00	Complete at 3.00m					
<div></div>					<div>Remarks</div> <div>Location CAT scanned prior to excavation. Sides stable during excavation. Seepage from west of pit at 2.20m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>						
					<div>North</div> <div></div>	<div>Scale (approx)</div> <div>1:25</div>	<div>Logged By</div> <div>SD</div>	<div>Checked By</div> <div>PRS</div>			

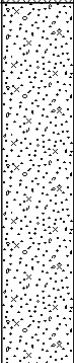
<div><div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div></div>				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP206					
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.00m		Ground Level (mOD) 28.76		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382634.5 E 394284.2 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20	B	Small seepage from western face (1) at 1.10m.		28.46	(0.30)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			V1		
0.40	B				0.30	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
				(1.10)							
				1.40	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.40 - 1.60m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)						
1.50	SV 58kPa			27.36							
1.50	B										
1.70	SV 60kPa										
2.00	SV 66kPa										
2.20	SV 68kPa			(1.60)							
2.50	SV 70kPa										
2.50	B										
2.70	SV 72kPa					From 2.70m: Stiff					
2.90	SV 76kPa			25.76	3.00	From 2.90m: High strength					
						Complete at 3.00m					
					Remarks						
					Location CAT scanned prior to excavation. Slightly spalling in sands at 1.90m. Small seepage from western face of pit at 1.10m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					Scale (approx)		Logged By		Checked By		
					1:25		SD		PRS		

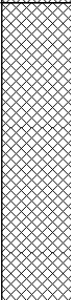
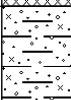
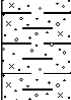
<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP207	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.00m		Ground Level (mOD) 28.69		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382615.7 E 394275.3 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV		Seepage from western face (1) at 1.00m.	28.09	(0.60)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			▽1		
0.70	B				0.60	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
					(1.00)						
1.70 1.70	SV 52kPa B		Small accumulation at time of backfill(2) at 3.00m.	27.09	1.60	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.60 - 1.80m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)			▽2		
1.90	SV 54kPa										
2.10	SV 60kPa				(1.40)						
2.50	SV 66kPa										
2.70 2.70	SV 68kPa B					From 2.70m: Stiff					
2.90	SV 70kPa				3.00	Complete at 3.00m					
				Remarks Location CAT scanned prior to excavation. Slight spalling from 1.00m. Seepage from western face of pit at 1.00m during excavation. Small accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.							
				North 	Scale (approx) 1:25		Logged By SD		Checked By PRS		

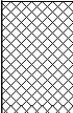
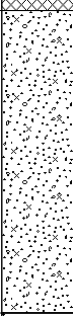
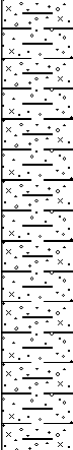
<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP208	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.00m		Ground Level (mOD) 28.82		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382634.5 E 394265.3 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.30	B		Seepage from eastern face (1) at 1.40m.	28.22	(0.60)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of brick, natural stone and ceramic. *Assumed as loose to medium dense.			V1		
0.70	B				0.60	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
					(1.00)						
1.70	SV 50kPa		Small accumulation at time of backfill(2) at 3.00m.	27.22	1.60	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.60 - 1.80m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)			V2		
1.70	B										
1.90	SV 58kPa										
2.10	SV 62kPa										
2.50	SV 68kPa										
2.70	SV 70kPa										
2.70	B										
2.90	SV 74kPa			25.82	3.00	Complete at 3.00m					
					Remarks						
					Location CAT scanned prior to excavation. Stable. Slight spalling from 1.10m. Seepage from eastern face of pit at 1.10m during excavation. Small accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
North 					Scale (approx) 1:25		Logged By SD		Checked By PRS		

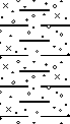
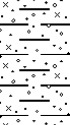
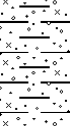
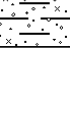
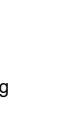
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number TP209</div>							
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 3.10m</div>		<div>Ground Level (mOD) 28.84</div>		<div>Client Anwyl Homes Ltd</div>			<div>Job Number 8165</div>								
		<div>Location (Observed measurements) 382651.4 E 394264.4 N</div>		<div>Dates 05/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>			<div>Sheet 1/1</div>								
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>			<div>Legend</div>	<div>Water</div>							
<div>0.20</div>	<div>B</div>				<div>(0.50)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.</div>			<div></div>								
<div>0.60</div>	<div>B</div>			<div>28.34</div>	<div>0.50</div>	<div>Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>			<div></div>	<div>V1</div>							
			<div>Small seepage from base during excavation(1) at 1.40m.</div>		<div>(1.00)</div>												
<div>1.60</div>	<div>SV 44kPa</div>			<div>27.34</div>	<div>1.50</div>	<div>Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.50 - 1.70m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)</div>			<div></div>								
<div>1.60</div>	<div>B</div>																
<div>1.80</div>	<div>SV 56kPa</div>																
<div>2.00</div>	<div>SV 60kPa</div>																
<div>2.20</div>	<div>SV 66kPa</div>																
<div>2.40</div>	<div>SV 68kPa</div>				<div>(1.60)</div>												
<div>2.60</div>	<div>SV 70kPa</div>																
<div>2.60</div>	<div>B</div>																
<div>2.80</div>	<div>SV 72kPa</div>																
			<div>Small accumulation at time of backfill(2) at 3.00m.</div>	<div>25.74</div>	<div>3.10</div>	<div>Complete at 3.10m</div>			<div></div>	<div>V2</div>							
<div></div>												<div>Remarks Location CAT scanned prior to excavation. Sides stable during excavation. Small seepage from base of pit at 1.40m during excavation. Small accumulation at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>					
<div>North </div>												<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>		<div>Checked By PRS</div>	

<div>coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP210	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.90m		Ground Level (mOD) 28.80		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382688.6 E 394276.8 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.20	B				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.60	B			28.30	0.50 (0.60)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.20	SV 16kPa			27.70	1.10	Soft, low strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.10 - 1.20m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)					
1.20	B										
1.40	SV 28kPa										
1.60	SV 44kPa					From 1.60m: Firm and medium strength					
1.80	SV 52kPa										
2.00	SV 60kPa				(1.80)						
2.20	SV 68kPa										
2.20	B										
2.40	SV 76kPa					From 2.40m: High strength					
2.60	SV 80kPa					From 2.60m: Stiff					
2.70	SV 86kPa										
				25.90	2.90	Complete at 2.90m					

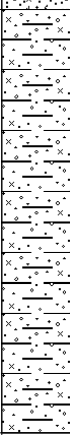
 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP211	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.00m		Ground Level (mOD) 28.93		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382663.5 E 394264 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water
0.30	B			28.43	(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			
0.60	B				0.50	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.			
			Seepage from western face of pit(1) at 1.40m.		(1.20)				
1.80	SV 48kPa			27.23	1.70	Soft to firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.			
1.80	B					From 1.70 - 1.80m: Occasional thin bands of organic clay with tree roots (maximum 3mm diameter)			
2.00	SV 52kPa					From 2.00m: Firm			
2.20	SV 58kPa				(1.30)				
2.20	SV 62kPa								
2.50	SV 66kPa								
2.70	SV 68kPa								
2.80	B			25.93	3.00	Complete at 3.00m			
2.90	SV 70kPa		Small accumulation at time of backfill(2) at 3.00m.						
					Remarks				
					Location CAT scanned prior to excavation. Small spalling from 1.40m during excavation. Seepage from western side of pit at 1.40m during excavation. Small accumulation at base of pit at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.				
North 					Scale (approx) 1:25		Logged By SD		Checked By PRS

<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP212	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.80m		Ground Level (mOD) 28.93		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382675.2 E 394253.8 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.20 0.20	B JV			28.43	(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.60	B		Small seepage from eastern face(1) at 1.30m.	27.43	0.50 (1.00)	MADEGROUND. Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone (reworked due to land drain). *Assumed as loose to medium dense. At 1.20m: Clay land drain, approximately 100mm in diameter, orientated east to west. Flowing		∇ ₁			
1.60 1.60	SV 42kPa B					1.50	Firm to stiff, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.50 - 1.70m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)				
1.80	SV 44kPa										
2.00	SV 48kPa					(1.30)	From 2.00m: Firm				
2.20	SV 50kPa										
2.50	SV 56kPa							∇ ₂			
2.60 2.70	B SV 58kPa		Groundwater at time of backfill(2) at 2.60m.	26.13	2.80	Complete at 2.80m					
						Remarks Location CAT scanned prior to excavation. Sides stable during excavation. Small seepage from eastern face at 1.30m during excavation. Groundwater at 2.60m at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.					
						North 		Scale (approx) 1:25		Logged By SD	

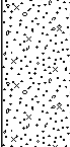
 coopers <small>chartered consulting engineers</small>			Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk			Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP213
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.60 x 2.90m		Ground Level (mOD) 28.89		Client Anwyl Homes Ltd		Job Number 8165
		Location (Observed measurements) 382644.5 E 394247 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20	B		Seepage from east and south(1) at 1.20m.	28.49	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.		▽1
0.50	B				0.40	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		
					(1.00)			
					1.40	Soft to firm, low strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.40 - 1.50m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)		
1.50	SV 28kPa		Small accumulation at base at time of backfill(2) at 2.90m.	27.49		From 2.00m: Firm and medium strength		▽2
1.50	B							
1.70	SV 38kPa							
2.00	SV 50kPa							
2.20	SV 68kPa							
2.50	SV 70kPa							
2.50	B							
2.70	SV 72kPa							
				25.99	2.90	Complete at 2.90m		
						Remarks Location CAT scanned prior to excavation. Spalling from 1.10 - 1.40m during excavation. Small seepage from east and south at 1.20m during excavation. Small accumulation at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.		
						Scale (approx) 1:25	Logged By SD	Checked By PRS

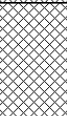
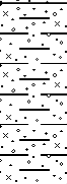
 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP214	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.60 x 3.00m		Ground Level (mOD) 28.95		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382666.6 E 394232.9 N		Dates 05/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20	B		Small groundwater seepage from north and west(1) at 1.40m.		(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50	B				28.55	0.40	MADEGROUND. Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone (reworked due to land drain). *Assumed as loose to medium dense.				
						(1.20)	At 0.80m: Clay land drain, approximately 100mm in diameter, orientated east to west. Dry				
1.70	SV 56kPa		Small accumulation at base at time of backfill(2) at 3.00m.	27.35	1.60	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.60 - 1.80m: Occasional thin bands of clay with tree roots (maximum 3mm diameter)					
1.70	B										
1.90	SV 58kPa										
2.10	SV 60kPa					(1.40)					
2.50	SV 62kPa										
2.70	SV 64kPa										
2.70	B										
2.90	SV 68kPa			25.95	3.00	Complete at 3.00m					
						Remarks Location CAT scanned prior to excavation. Small spalling at 1.00 - 1.60m during excavation. Small groundwater seepage from north and west at 1.40m during excavation. Small accumulation at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.					
						North 		Scale (approx) 1:25		Logged By SD	

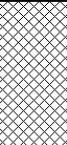
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number TP215</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 1.80 x 2.50m</div>		<div>Ground Level (mOD) 29.12</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>			
		<div>Location (Observed measurements) 382691.9 E 394241.8 N</div>		<div>Dates 06/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>		<div>Legend</div>	<div>Water</div>		
<div>0.20 0.20</div>	<div>B JV</div>		<div>Seepage from eastern face during excavation(1) at 1.50m.</div>		<div>(0.40)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick, concrete, ceramic, ash and clinker. *Assumed as loose to medium dense.</div>		<div></div>			
<div>0.50 0.50</div>	<div>B JV</div>				<div>28.72</div>	<div>0.40 (0.60)</div>	<div>MADEGROUND (reworked natural). Orangish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse of natural stone. From 0.40 - 1.00m: In the south east corner of pit, gravels of brick, concrete, ash and clinker</div>		<div></div>		
<div>1.10 1.10</div>	<div>B JV</div>				<div>28.12</div>	<div>1.00 (0.70)</div>	<div>Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>		<div></div>	<div>∇1</div>	
<div>1.80 1.80</div>	<div>SV 40kPa B</div>		<div>Small accumulation at base at time of backfill(2) at 2.50m.</div>	<div>27.42</div>	<div>1.70 (0.80)</div>	<div>Soft to firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.70m - 1.80m: Thin band of soft, greyish brown clay with tree roots (maximum 3mm diameter)</div>		<div></div>			
<div>2.00</div>	<div>SV 46kPa</div>						<div>From 2.10m: Firm</div>		<div></div>		
<div>2.10 2.20</div>	<div>SV 54kPa SV 66kPa</div>								<div></div>		
<div>2.40</div>	<div>SV 70kPa</div>				<div>26.62</div>	<div>2.50</div>	<div>Complete at 2.50m</div>		<div></div>	<div>∇2</div>	
<div></div>					<div>Remarks Location CAT scanned prior to excavation. Slight spalling from 1.30m. Seepage from eastern face of pit at 1.50m during excavation. Small accumulation of groundwater at base of pit after excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit extended laterally to be in 1.80m in width to target madeground pocket. Backfilled with arisings upon completion.</div>						
<div>North </div>					<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>		<div>Checked By PRS</div>		

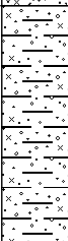
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number TP216</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>			<div>Dimensions 2.50 x 0.90 x 3.00m</div>		<div>Ground Level (mOD) 29.22</div>		<div>Client Anwyl Homes Ltd</div>			<div>Job Number 8165</div>			
			<div>Location (Observed measurements) 382693.7 E 394219.2 N</div>		<div>Dates 06/06/2023</div>							<div>Engineer Coopers (Chester) Ltd</div>	
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>				<div>Legend</div>	<div>Water</div>		
<div>0.20</div>	<div>B</div>			<div>28.82</div>	<div>(0.40)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.</div>				<div></div>			
<div>0.50</div>	<div>B</div>					<div>Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>				<div></div>	<div>▽1</div>		
			<div>Seepage from eastern face during excavation(1) at 1.50m.</div>	<div>27.62</div>	<div>1.60</div>	<div>Soft to firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.60 - 1.70m: Occasional thin bands of greyish brown, clay with tree roots (maximum 3mm diameter) From 1.80m: Firm</div>				<div></div>			
<div>1.70</div>	<div>SV 56kPa</div>												
<div>1.70</div>	<div>B</div>												
<div>1.90</div>	<div>SV 60kPa</div>												
<div>2.10</div>	<div>SV 58kPa</div>				<div>(1.40)</div>								
<div>2.50</div>	<div>SV 62kPa</div>												
<div>2.70</div>	<div>SV 60kPa</div>												
<div>2.70</div>	<div>B</div>												
<div>2.90</div>	<div>SV 58kPa</div>			<div>26.22</div>	<div>3.00</div>	<div>Complete at 3.00m</div>				<div></div>	<div>▽2</div>		
<div></div>						<div>Remarks Location CAT scanned prior to excavation. Slight spalling from 0.80m. Seepage from western face of pit at 1.50m during excavation. Small accumulation of groundwater at base of pit after excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>							
												<div>North </div>	<div>Scale (approx) 1:25</div>

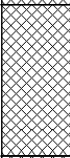
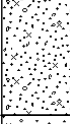
<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP217	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.90m		Ground Level (mOD) 29.09		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382685 E 394212.1 N		Dates 06/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.30	B				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.60	B			28.59	0.50	MADEGROUND. Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone (reworked natural).					
					(1.00)						
			Seepage from north(1) at 1.40m.	27.59	1.50	At 1.40m: Clay land drain, approximately 100mm in diameter, orientated north to south. Dry			▽1		
1.60	SV 48kPa					Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.60	B					From 1.50 - 1.60m: Occasional thin bands of greyish brown clay with tree roots (maximum 3mm diameter)					
1.80	SV 56kPa										
2.00	SV 60kPa										
2.20	SV 72kPa				(1.40)						
						From 2.50m: High strength					
2.50	SV 78kPa										
2.60	B										
2.70	SV 80kPa										
			Accumulation at time of backfill(2) at 2.90m.	26.19	2.90	Complete at 2.90m			▽2		
					Remarks						
					Location CAT scanned prior to excavation. Slight spalling from 1.10m. Seepage from north of pit at 1.40m during excavation. Small accumulation of groundwater at base of pit at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					North ⬅	Scale (approx) 1:25	Logged By SD	Checked By PRS			

 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP218	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.00m		Ground Level (mOD) 28.88		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382670.1 E 394211.6 N		Dates 06/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.20 0.20	B JV	Small seepage from east(1) at 1.60m.		28.48	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic and natural stone. *Assumed as loose to medium dense.		Σ1	
0.50 0.50	B JV				0.40	MADEGROUND. Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker and ceramic fragments. *Assumed as loose to medium dense.			
					(0.80)				
1.30 1.30	B JV				1.20	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.			
1.60 1.60	SV 52kPa B				1.70	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. From 1.70 - 1.80m: Occasional thin bands of greyish brown organic, silty clay			
1.80	SV 54kPa								
2.00	SV 56kPa								
2.20	SV 58kPa				(1.30)				
2.40	SV 60kPa								
2.60 2.60	SV 68kPa B								
2.80	SV 70kPa								
				25.88	3.00	Complete at 3.00m			
					Remarks Location CAT scanned prior to excavation. Sides stable during excavation. Small seepage from east of pit at 1.60m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.				
					North 	Scale (approx) 1:25		Logged By SD	

 coop ers <small>chartered consulting engineers</small>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP219	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.10m		Ground Level (mOD) 28.91		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382643.4 E 394219 N		Dates 06/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	
0.20 0.20	B JV				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ceramic and natural stone. *Assumed as loose to medium dense.					
0.60 0.60	B JV			28.41	0.50 (0.40)	MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of ash and clinker, brick, concrete and ceramic with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.					
0.90 0.90	B JV			28.01	0.90 (0.60)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.60 1.60	SV 56kPa B			27.41	1.50 (0.60)	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.80	SV 64kPa										
2.00	SV 74kPa			26.81	2.10	Complete at 2.10m					
					Remarks Location CAT scanned prior to excavation. Slight spalling from madeground from 0.50 - 0.90m. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
 North					Scale (approx) 1:25		Logged By SD		Checked By PRS		

<div>coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP220	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.80m		Ground Level (mOD) 28.92		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382604.8 E 394217.7 N		Dates 06/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20	B				(0.60)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker and natural stone with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.					
0.70	B			28.32	0.60 (0.50)	MADEGROUND (reworked). Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense. At 0.80m: Clay land drain, approximately 100mm in diameter, orientated east to west. Dry					
1.20	SV 42kPa			27.82	1.10	Soft to firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.20	B										
1.40	SV 50kPa										
1.60	SV 56kPa										
					(1.70)	From 1.80m: Becoming firm to stiff					
2.00	SV 72kPa										
2.00	SV 74kPa										
2.20	SV 80kPa					From 2.20m: High strength and stiff					
2.20	B										
2.40	SV 88kPa										
2.60	SV 88kPa										
				26.12	2.80	Complete at 2.80m					
					Remarks Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					North ↓	Scale (approx) 1:25	Logged By SD	Checked By PRS			

 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number TP221</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.60 x 2.10m</div>		<div>Ground Level (mOD) 28.88</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>	
		<div>Location (Observed measurements) 382616 E 394195.3 N</div>		<div>Dates 06/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.30	B		Seepage from east during excavation(1) at 1.30m.	28.38	(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker and natural stone with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.		▽1	
0.60 0.60	B JV			27.88	0.50 (0.50)	MADEGROUND. Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker with occasional glass fragments and glass bottles. *Assumed as loose to medium dense. At 0.50m: Clay land drain, approximately 100mm in diameter, orientated north to south. Dry			
1.10 1.10	B JV			27.58	1.00 (0.30)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.			
1.40 1.40	SV 68kPa b				1.30	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.			
1.60	SV 72kPa		Small accumulation at time of backfill(2) at 2.10m.		(0.80)			▽2	
1.80	SV 76kPa								
2.00	SV 78kPa			26.78	2.10	Complete at 2.10m			
						<div>Remarks Location CAT scanned prior to excavation. Sides stable during excavation. Seepage from east or trial pit at 1.30m during excavation. Small accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>			
<div>North </div>				<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>		<div>Checked By PRS</div>	

 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site</div> <div>WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number</div> <div>TP222</div>	
<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 2.00m</div>		<div>Ground Level (mOD)</div> <div>28.95</div>		<div>Client</div> <div>Anwyl Homes Ltd</div>		<div>Job Number</div> <div>8165</div>	
		<div>Location (Observed measurements)</div> <div>382640.4 E 394197 N</div>		<div>Dates</div> <div>06/06/2023</div>		<div>Engineer</div> <div>Coopers (Chester) Ltd</div>		<div>Sheet</div> <div>1/1</div>	
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>	<div>Legend</div>	<div>Water</div>	
<div>0.20</div> <div>0.20</div>	<div>B</div> <div>JV</div>		<div>Seepage from east during excavation(1) at 1.80m.</div> <div>Accumulation at time of backfill(2) at 2.00m.</div>		<div>(0.50)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of natural stone, brick, ceramic, ash and clinker and glass. *Assumed as loose to medium dense.</div>			
<div>0.60</div> <div>0.60</div>	<div>B</div> <div>JV</div>			<div>28.45</div>	<div>0.50</div> <div>(0.50)</div>	<div>MADEGROUND. Firm, orangish brown, slightly silty, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker with occasional glass fragments and glass bottles.</div>			
<div>1.10</div> <div>1.10</div>	<div>B</div> <div>JV</div>			<div>27.95</div>	<div>1.00</div> <div>(0.50)</div>	<div>MADEGROUND. Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker and ceramic with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.</div>			
<div>1.60</div> <div>1.60</div>	<div>B</div> <div>JV</div>			<div>27.45</div>	<div>1.50</div> <div>(0.40)</div>	<div>Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>		<div>▽1</div>	
				<div>27.05</div> <div>26.95</div>	<div>1.90</div> <div>(0.10)</div> <div>2.00</div>	<div>Firm, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.</div>		<div>▽2</div>	
						<div>Complete at 2.00m</div>			
						<div>Remarks</div> <div>Location CAT scanned prior to excavation. Slight spalling from madeground from 0.50 - 1.50m. Continuous spalling from madeground from 1.60m. Seepage from east of trial pit at 1.80m during excavation. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. No sample taken in clay at the base due to continuous spalling/collapse. Terminated at 2.00m due to continuous spalling of madeground impeding progress. Backfilled with arisings upon completion.</div>			
<div>North</div> 						<div>Scale (approx)</div> <div>1:25</div>	<div>Logged By</div> <div>SD</div>	<div>Checked By</div> <div>PRS</div>	

Machine : JCB 3CX Method : Mechanical Excavation	Dimensions 2.50 x 0.90 x 2.40m	Ground Level (mOD) 29.00	Client Anwyl Homes Ltd	Job Number 8165
	Location (Observed measurements) 382650.6 E 394188.4 N	Dates 06/06/2023	Engineer Coopers (Chester) Ltd	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20 0.20	B JV				(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ash and clinker and ceramic. *Assumed as loose to medium dense.		
0.50 0.50	B JV			28.60	0.40 (0.30)	MADEGROUND. Firm, orangish brown, slightly silty, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker and ceramic with occasional glass fragments and glass bottles.		
0.80 0.80	B JV			28.30	0.70 (0.50)	MADEGROUND. Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ceramic and ash and clinker with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.		
1.30 1.30	B JV			27.80	1.20 (0.60)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		
1.90 1.90	SV 60kPa B		Seepage from west during excavation(1) at 1.70m.	27.20	1.80 (0.60)	Firm, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		∇1
2.10	SV 64kPa							
2.30	SV 68kPa		Small accumulation at time of backfill(2) at 2.40m.	26.60	2.40	Complete at 2.40m		∇2


Remarks

Location CAT scanned prior to excavation.
Sides stable during excavation.
Seepage from west of trial pit at 1.70m during excavation. Small accumulation of groundwater at base at time of backfill.
*Based upon trenchside stability characteristics.
Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
Trial pit completed with constant UXO supervision.
Backfilled with arisings upon completion.

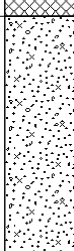
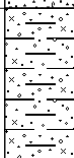

Scale (approx)

1:25

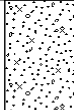
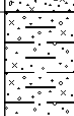
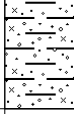
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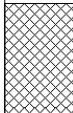
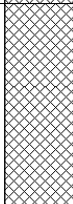
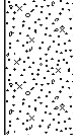
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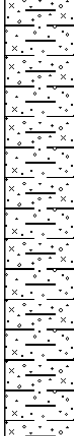
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PRS

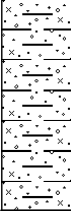
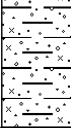
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number TP224</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 2.00m</div>		<div>Ground Level (mOD) 29.05</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>			
		<div>Location (Observed measurements) 382650.3 E 394178.6 N</div>		<div>Dates 06/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>			<div>Legend</div>	<div>Water</div>	
0.10	B			28.85	(0.20) 0.20	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.30	B				(0.50)	MADEGROUND. Yellowish mottled orangish brown, slightly silty, fine to coarse SAND (reworked). At 0.50m: Clay land drain, approximately 100mm in diameter, orientated east to west. Dry					
0.80	B			28.35	0.70	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
					(0.80)						
				27.55	1.50	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.60	SV 52kPa				(0.50)						
1.60	B										
1.70	SV 58kPa										
1.80	SV 64kPa										
1.90	SV 68kPa			27.05	2.00	Complete at 2.00m					
					<div>Remarks</div> <div>Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>						
<div>North ↓</div>					<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>		<div>Checked By PRS</div>		

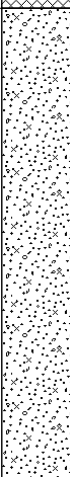
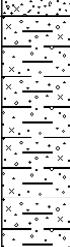
<div><div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div></div>				<div>Site</div> <div>WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number</div> <div>TP225</div>	
<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 2.00m</div>		<div>Ground Level (mOD)</div> <div>29.05</div>		<div>Client</div> <div>Anwyl Homes Ltd</div>		<div>Job Number</div> <div>8165</div>	
		<div>Location (Observed measurements)</div> <div>382659.8 E 394178.8 N</div>		<div>Dates</div> <div>06/06/2023</div>		<div>Engineer</div> <div>Coopers (Chester) Ltd</div>		<div>Sheet</div> <div>1/1</div>	
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>	<div>Legend</div>	<div>Water</div>	
0.10	B				(0.30)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic and natural stone. *Assumed as loose to medium dense.			
0.40	B			28.75	0.30 (0.30)	MADEGROUND (reworked). Orangish brown, slightly silty, fine to coarse SAND. *Assumed as loose to medium dense.			
0.70	B			28.45	0.60	At 0.50m: Clay land drain, approximately 100mm in diameter, orientated north to south. Dry			
					(0.90)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.			
			Seepage during excavation(1) at 1.40m.	27.55	1.50	Firm, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		∇1	
1.60	SV 54kPa				(0.50)				
1.60	B								
1.70	SV 56kPa								
1.80	SV 58kPa							∇2	
1.90	SV 60kPa		Accumulation at time of backfill(2) at 1.90m.	27.05	2.00	Complete at 2.00m			
<div></div>					<div>Remarks</div> <div>Location CAT scanned prior to excavation. Slight spalling from 1.00m. Seepage at 1.40m during excavation. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>				
					<div>North</div> <div></div>	<div>Scale (approx)</div> <div>1:25</div>	<div>Logged By</div> <div>SD</div>	<div>Checked By</div> <div>PRS</div>	

<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP226	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.50m		Ground Level (mOD) 29.01		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382659.7 E 394187.1 N		Dates 06/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV			28.71	(0.30) 0.30	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic and natural stone. *Assumed as loose to medium dense.					
0.40 0.40	B JV				(1.10)	MADEGROUND. Dark brown, slightly silty, slightly clayey, gravelly fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker and ceramic with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.					
1.50 1.50	B JV			27.61	1.40 (0.40)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.90 1.90	SV 58kPa B			27.21	1.80	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
2.10	SV 64kPa				(0.70)						
2.30	SV 68kPa			26.51	2.50	Complete at 2.50m					
					Remarks						
					Location CAT scanned prior to excavation. Stable - slight spalling from madeground from 0.30 - 1.40m. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
North 					Scale (approx) 1:25		Logged By SD		Checked By PRS		

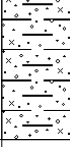
<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP227	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.60 x 2.60m		Ground Level (mOD) 29.03		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382675.4 E 394196.5 N		Dates 06/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV			28.63	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV			27.93	(0.70)	MADEGROUND. Dark brown, slightly silty, gravelly fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ceramic, ash and clinker with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.					
1.20 1.20	B JV			27.43	(0.50)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.70 1.70	SV 36kPa B				1.60	Soft to firm, low strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.90	SV 40kPa					From 1.90m: Firm and medium strength					
2.10	SV 52kPa				(1.00)						
2.30	SV 58kPa										
2.50	SV 62kPa			26.43	2.60	Complete at 2.60m					
					Remarks						
					Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
North 					Scale (approx) 1:25		Logged By SD		Checked By PRS		

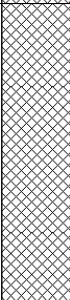
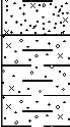
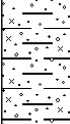
 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP228	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.60 x 2.70m		Ground Level (mOD) 29.01		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382677.6 E 394204.4 N		Dates 06/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	
0.30	B				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of brick, natural stone and ceramic. *Assumed as loose to medium dense.					
0.60	B			28.51	0.50 (0.70)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.30 1.30 1.50	SV 54kPa B SV 56kPa			27.81	1.20	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.80 2.00 2.20 2.30 2.40	SV 58kPa SV 60kPa SV 64kPa B SV 66kPa				(1.50)						
2.60	SV 70kPa			26.31	2.70	Complete at 2.70m					
											
						Remarks Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.					
						Scale (approx) 1:25		Logged By SD		Checked By PRS	

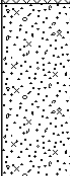
 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP229	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.30m		Ground Level (mOD) 28.62		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382679.5 E 394321.4 N		Dates 07/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	
0.20 0.20	B JV			28.22	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV				(0.80)	MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, slate, rare ceramic, ash and clinker. *Assumed as loose to medium dense. At 0.80m: Layer of ash and clinker					
1.30 1.30 1.30 1.40	SV 62kPa B JV SV 70kPa			27.42	1.20	Firm to stiff, medium strength, brown, slightly silty, gravelly, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.60	SV 76kPa				(1.10)	From 1.60m: Becoming stiff and high strength					
1.80	SV 80kPa										
2.00	SV 88kPa										
2.20 2.20	SV 92kPa B			26.32	2.30	Complete at 2.30m					
					Remarks						
					Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit completed as part of a change to encountered extent of pond to the north west of site. Backfilled with arisings upon completion.						
North 					Scale (approx) 1:25		Logged By SD		Checked By PRS		

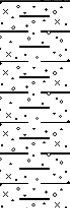
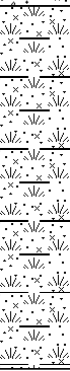
 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP230		
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.50m		Ground Level (mOD) 28.59		Client Anwyl Homes Ltd		Job Number 8165		
		Location (Observed measurements) 382681.4 E 394313.5 N		Dates 07/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
0.20	B		Sand damp(1) at 1.50m.		(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick, ceramic and glass. *Assumed as loose to medium dense.				
0.40 0.40	B JV			28.19	0.40 (0.70)	MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker, slate and rare ceramic with occasional sporadic wood waste and shavings and occasional glass fragments and glass bottles. *Assumed as loose.				
1.60 1.60	B JV			27.49	1.10 (1.60)	Light brown mottled greyish brown, slightly clayey, slightly gravelly, silty, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone with occasional pockets of clayey, silty sand. *Assumed as loose.		▽1		
2.60	B			25.89	2.70	Soft to firm, low strength, brown, slightly silty, slightly gravelly, sandy CLAY with occasional thin bands of dark brown slightly silty, clayey, pseudo fibrous peat with a maximum of 200 - 300mm thickness. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.				
2.80 2.80 2.80 3.00 3.00 3.20	SV 32kPa B JV SV 38kPa B JV SV 42kPa				(0.80)	From 3.20m: Medium strength				
3.40	SV 44kPa			25.09	3.50	Complete at 3.50m				
						Remarks Location CAT scanned prior to excavation. Spalling from 1.50m. Sand is damp from 1.50m. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit completed as part of a change to encountered extent of pond to the north west of site. Trial pit terminated at 3.50m due to continuous spalling. Backfilled with arisings upon completion.				
				Scale (approx) 1:25		Logged By SD		Checked By PRS		

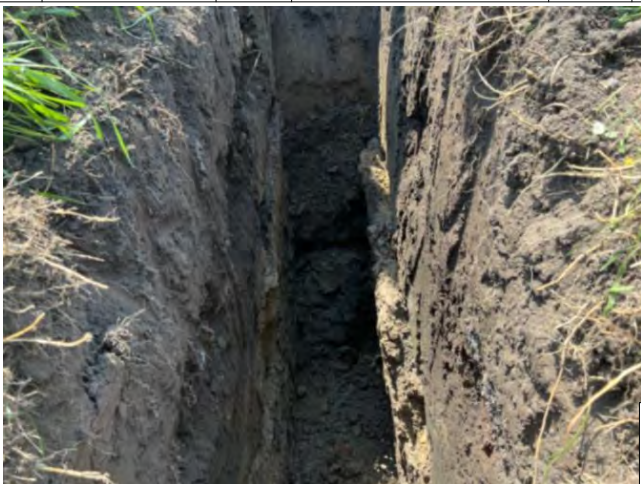
<div> coopers</div> <div>chartered consulting engineers</div>				<div>Coopers (Chester) Ltd</div> <div>tel: 01244 684 910</div> <div>web: www.coopers.co.uk</div> <div>email: admin@coopers.co.uk</div>				<div>Site</div> <div>WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number</div> <div>TP231</div>	
<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 2.70m</div>		<div>Ground Level (mOD)</div> <div>28.64</div>		<div>Client</div> <div>Anwyl Homes Ltd</div>				<div>Job Number</div> <div>8165</div>			
		<div>Location (Observed measurements)</div> <div>382683.6 E 394305.8 N</div>		<div>Dates</div> <div>07/06/2023</div>		<div>Engineer</div> <div>Coopers (Chester) Ltd</div>				<div>Sheet</div> <div>1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>				<div>Legend</div>	<div>Water</div>		
<div>0.20</div> <div>0.20</div>	<div>B</div> <div>JV</div>				<div>(0.40)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick, ceramic and glass. *Assumed as loose to medium dense.</div>				<div></div>			
<div>0.50</div> <div>0.50</div>	<div>B</div> <div>JV</div>			<div>28.24</div>	<div>0.40</div>	<div>MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ceramic, ash and clinker with occasional sporadic wood waste and shavings and occasional glass fragments and glass bottles. *Assumed as loose.</div>				<div></div>			
<div>1.30</div> <div>1.30</div>	<div>B</div> <div>JV</div>		<div>Sand damp(1) at 1.20m.</div>	<div>27.44</div>	<div>1.20</div>	<div>Light brown mottled greyish brown, slightly clayey, slightly gravelly, silty, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone with occasional pockets of clayey, silty sand. *Assumed as loose.</div>				<div></div>	<div>▽1</div>		
<div>2.00</div> <div>2.00</div> <div>2.00</div> <div>2.20</div>	<div>SV 28kPa</div> <div>B</div> <div>JV</div> <div>SV 30kPa</div>		<div>Groundwater seepage during excavation(2) at 1.90m.</div>	<div>26.74</div>	<div>1.90</div>	<div>Soft to firm, low strength, greyish brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.</div>				<div></div>	<div>▽2</div>		
<div>2.40</div>	<div>SV 38kPa</div>				<div>(0.80)</div>					<div></div>			
<div>2.60</div>	<div>SV 40kPa</div>		<div>Small accumulation at time of backfill(3) at 2.70m.</div>	<div>25.94</div>	<div>2.70</div>	<div>From 2.60m: Firm and medium strength. Occasional thin laminations of dark brown, slightly silty, clayey, pseudo fibrous peat</div>				<div></div>	<div>▽3</div>		
						<div>Complete at 2.70m</div>							
<div></div>						<div>Remarks</div> <div>Location CAT scanned prior to excavation.</div> <div>Spalling and bowing of side from 1.20m.</div> <div>Sand is damp at 1.20m. Groundwater seepage at 1.90m during excavation.</div> <div>Small accumulation of groundwater at base at time of backfill.</div> <div>*Based upon trenchside stability characteristics.</div> <div>Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.</div> <div>Trial pit completed with constant UXO supervision.</div> <div>Backfilled with arisings upon completion.</div>							
<div>North</div> <div></div>						<div>Scale (approx)</div> <div>1:25</div>		<div>Logged By</div> <div>SD</div>		<div>Checked By</div> <div>PRS</div>			

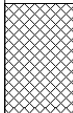
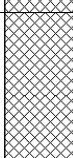
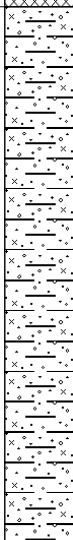
<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP232	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.90m		Ground Level (mOD) 28.67		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382686 E 394301 N		Dates 07/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.60 0.60	B JV			28.17	0.50 (0.90)	MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete and ceramic with occasional sporadic wood waste and shavings and occasional glass fragments and glass bottles. *Assumed as loose.					
1.50 1.50	B JV		Sand damp(1) at 1.40m.	27.27	1.40 (0.60)	Light brown mottled greyish brown, slightly clayey, slightly gravelly, silty, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose.			∇1		
2.10 2.10 2.10 2.30	SV 28kPa B JV SV 30kPa		Groundwater seepage (2) at 2.00m.	26.67	2.00 (0.90)	Soft, low strength, greyish brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.			∇2		
2.50 2.60 2.60 2.70	SV 38kPa B JV SV 42kPa			25.77	2.90	From 2.60m: Occasional small pockets of dark brown, slightly silty, clayey, pseudo fibrous peat (maximum 200mm thickness) From 2.70m: medium strength					
						Complete at 2.90m					
					Remarks Location CAT scanned prior to excavation. Spalling from 1.40m. Sand is damp at 1.40m. Groundwater seepage at 2.00m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit terminated at 2.90m due to spalling. Backfilled with arisings upon completion.						
					Scale (approx) 1:25		Logged By SD		Checked By PRS		

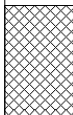
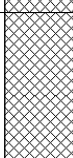
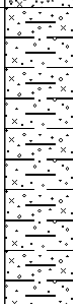
 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP233	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.10m		Ground Level (mOD) 28.68		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382688.3 E 394294.8 N		Dates 07/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.20 0.20	B JV	Groundwater seepage from north east corner(1) at 1.90m.		28.28	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			
0.50 0.50	B JV				0.40	MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ash and clinker with occasional glass fragments and glass bottles.			
					(1.00)				
1.50 1.50	B JV				1.40	Light brown mottled greyish brown, slightly silty, slightly gravelly, slightly clayey, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.			
					(0.50)				
2.00 2.00 2.00 2.20 2.20 2.20 2.40	SV 18kPa B JV SV 20kPa B JV SV 22kPa				1.90	Soft, low strength, greyish brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. 1.90 - 2.50m: Occasional pockets (maximum 200mm in diameter) of dark brown, slightly silty, clayey, pseudo fibrous peat			
					(1.20)	From 2.50m: Slight organic odour			
2.60	SV 28kPa								
2.80	SV 30kPa								
3.00	SV 38kPa								
		25.58	3.10	Complete at 3.10m					
					Remarks Location CAT scanned prior to excavation. Spalling from 1.40m. Groundwater seepage from 1.90m from north east corner during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.				
					North 	Scale (approx) 1:25		Logged By SD	

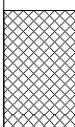
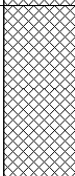
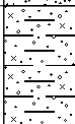
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number TP234</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 2.10m</div>		<div>Ground Level (mOD) 28.78</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>			
		<div>Location (Observed measurements) 382691.8 E 394285.1 N</div>		<div>Dates 07/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>	<div>Legend</div>	<div>Water</div>			
0.20	B				(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50	B			28.38	0.40 (0.60)	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.10	SV 48kPa		Small seepage (1) at 1.00m.	27.78	1.00	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		▽1			
1.10	B										
1.30	SV 54kPa										
1.50	SV 58kPa				(1.10)						
1.70	SV 62kPa										
1.90	SV 70kPa										
2.00	B			26.68	2.10	Complete at 2.10m					
<div></div>						<div>Remarks Location CAT scanned prior to excavation. Sides stable during excavation. Small groundwater seepage from 1.00m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>					
						<div>North </div>	<div>Scale (approx) 1:25</div>	<div>Logged By SD</div>	<div>Checked By PRS</div>		

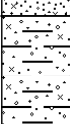
<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP235			
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.80m		Ground Level (mOD) 28.55		Client Anwyl Homes Ltd		Job Number 8165					
		Location (Observed measurements) 382689.5 E 394302.6 N		Dates 07/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1					
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water					
0.20 0.20	B JV	Seepage (1) at 1.40m.		28.15	0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.		V1					
0.50 0.50	B JV				(1.00)	MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick with occasional glass fragments and glass bottles. *Assumed as loose.							
1.50 1.50	B JV				(0.50)	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.							
2.00 2.00 2.00 2.20	SV 28kPa B JV SV 30kPa				(0.70)	Soft, low strength, greyish brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.							
2.40	SV 30kPa				2.60	Soft, dark brown, slightly silty, slightly sandy clayey, amorphous PEAT with rare shell fragments and a faint organic odour. Sand is fine to coarse.							
2.80 2.80	B JV				(1.20)								
					3.80	Complete at 3.80m							
					Remarks								
					Location CAT scanned prior to excavation. Sides stable. Slight spalling from madeground. Groundwater seepage from 1.40m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.								
North 		Scale (approx) 1:25		Logged By SD		Checked By PRS							

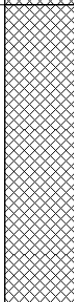
<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>		<div>Trial Pit Number TP236</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 3.00m</div>		<div>Ground Level (mOD) 28.72</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>			
		<div>Location (Observed measurements) 382681.7 E 394301.2 N</div>		<div>Dates 07/06/2023</div>						<div>Engineer Coopers (Chester) Ltd</div>	
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>		<div>Legend</div>	<div>Water</div>		
<div>0.20 0.20</div>	<div>B JV</div>			<div>28.32</div>	<div>(0.40)</div>	<div>Grass over MADEGROUND (similar to topsoil. Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.</div>		<div></div>			
<div>0.50 0.50</div>	<div>B JV</div>			<div>27.42</div>	<div>0.40</div>	<div>MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick and ceramic with occasional sporadic wood waste and wood shavings, glass fragments and glass bottles with metal such as piping. *Assumed as loose to medium dense.</div>		<div></div>			
					<div>(0.90)</div>						
<div>1.40 1.40</div>	<div>B JV</div>		<div>Damp sands(1) at 1.30m.</div>	<div>26.72</div>	<div>1.30</div>	<div>Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>		<div></div>	<div>▽1</div>		
					<div>(0.70)</div>						
			<div>Seepage(2) at 1.90m.</div>	<div>25.72</div>	<div>2.00</div>	<div>Soft to firm, low strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.</div>		<div></div>	<div>▽2</div>		
<div>2.10 2.10 2.10 2.30</div>	<div>SV 22kPa B JV SV 26kPa</div>				<div>(1.00)</div>			<div></div>			
<div>2.50</div>	<div>SV 30kPa</div>							<div></div>			
<div>2.70</div>	<div>SV 38kPa</div>							<div></div>			
					<div>3.00</div>	<div>Complete at 3.00m</div>					
<div></div>					<div>Remarks Location CAT scanned prior to excavation. Spalling from madeground and bowing of sides from 1.30m. Damp sands at 1.30m. Seepage at 1.90m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>						
<div><div>North</div><div></div></div>					<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>		<div>Checked By PRS</div>		

<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP237	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.70m		Ground Level (mOD) 28.77		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382674.3 E 394299.9 N		Dates 07/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.20 0.20	B JV			28.37	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV			27.87	(0.50)	MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete, ceramic and slate with rare metal fragments and sporadic occasional wood waste and wood shavings, glass fragments and glass bottles. *Assumed as loose.					
1.00 1.00 1.00 1.20	SV 58kPa B JV SV 64kPa				0.90	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.50	SV 68kPa										
1.70	SV 74kPa				(1.80)	From 1.70m: High strength					
2.00 2.00	SV 78kPa B					From 2.00m: Stiff					
2.20	SV 80kPa										
2.40	SV 82kPa										
2.60	SV 86kPa			26.07	2.70	Complete at 2.70m					
				Remarks Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.							
				North 	Scale (approx) 1:25	Logged By SD	Checked By PRS				

 coop ers <small>chartered consulting engineers</small>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP238	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.20m		Ground Level (mOD) 28.82		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382665.3 E 394298.1 N		Dates 07/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	
0.20 0.20	B JV			28.42	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV			27.92	(0.50) 0.90	MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick and ceramic with rare metal fragments, occasional sporadic wood waste and wood shavings, glass fragments and glass bottles. *Assumed as loose to medium dense.					
1.00 1.00	B JV			27.62	(0.30) 1.20	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. *Assumed as loose to medium dense.					
1.30 1.30	B JV				(1.00)	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
				26.62	2.20	Complete at 2.20m					
					Remarks						
					Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					Scale (approx)		Logged By		Checked By		
					1:25		SD		PRS		

 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP239		
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.10m		Ground Level (mOD) 29.03		Client Anwyl Homes Ltd		Job Number 8165		
		Location (Observed measurements) 382656.4 E 394184.7 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
0.20	B		Groundwater seepage from west(1) at 1.00m.		(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.				
0.50 0.50	B JV				28.63	0.40 (0.60)	MADEGROUND. Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick and ceramic with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.			
1.10 1.10	B JV				28.03	1.00 (0.70)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		▽1	
1.80 1.80 1.90 2.00	SV 48kPa B SV 56kPa SV 60kPa		Small accumulation at time of backfill(2) at 2.10m.		27.33	1.70 (0.40)	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.			
					26.93	2.10	Complete at 2.10m		▽2	
					Remarks					
					Location CAT scanned prior to excavation. Sides stable during excavation. Slight spalling before backfill. Groundwater seepage from the west of trial pit at 1.00m during excavation. Small accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.					
					Scale (approx)		Logged By		Checked By	
					1:25		SD		PRS	

<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP240	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 1.80m		Ground Level (mOD) 29.01		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382663.2 E 394184.1 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20	B				(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV			28.61	0.40 (0.50)	MADEGROUND. Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-rounded, fine to coarse of brick, ceramic and metal with occasional sporadic wood waste, glass fragments and glass bottles. *Assumed as loose to medium dense.					
1.00 1.00	B JV			28.11	0.90 (0.50)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.50 1.50 1.60 1.70	SV 44kPa B SV 48kPa SV 52kPa			27.61	1.40 (0.40)	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
				27.21	1.80	Complete at 1.80m					
					Remarks Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					Scale (approx) 1:25		Logged By SD		Checked By PRS		

<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP241	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.60 x 1.40m		Ground Level (mOD) 28.94		Client Anwyl Homes Ltd				Job Number 8165			
		Location (Observed measurements) 382649.7 E 394216.8 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd				Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description				Legend	Water		
0.05 0.05 0.20 0.20	B JV B JV			28.84	(0.10) 0.10	MADEGROUND. Light grey, sandy, fine to medium, angular to sub-angular GRAVEL of natural stone. *Assumed as loose.							
					(1.00)	MADEGROUND. Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-rounded, fine to coarse of brick, concrete, slate and ceramic with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.							
1.20 1.20	B JV			27.84	1.10	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.							
				27.54	(0.30) 1.40	Complete at 1.40m							

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Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 3.10m		Ground Level (mOD) 28.90		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382669.6 E 394203.3 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.20 0.20	B JV			28.50	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV					MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, concrete and ceramic with occasional metal fragments, sporadic wood, glass fragments and glass bottles.					
0.80 0.80	B JV				(0.90)	From 0.80m: Pockets of black clay					
1.40 1.40	B JV		Seepage and sands damp during excavation(1) at 1.30m.	27.60	1.30 (0.80)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		√1			
2.20 2.20 2.20 2.40	SV 42kPa B JV SV 46kPa			26.80	2.10 (1.00)	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
2.60	SV 50kPa										
2.80	SV 58kPa										
3.00	SV 64kPa		Accumulation at time of backfill(2) at 3.10m.	25.80	3.10	Complete at 3.10m		√2			
					Remarks						
					Location CAT scanned prior to excavation. Spalling from made ground and wet sands. Seepage and damp sands at 1.30m during excavation. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
North					Scale (approx) 1:25		Logged By SD		Checked By PRS		



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Site

WILBRAHAM ROAD, CHORLTON

Trial Pit Number

TP243

<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 2.10m</div>	<div>Ground Level (mOD)</div> <div>28.85</div>	<div>Client</div> <div>Anwyl Homes Ltd</div>	<div>Job Number</div> <div>8165</div>
		<div>Location (Observed measurements)</div> <div>382661.8 E 394204.1 N</div>	<div>Dates</div> <div>08/06/2023</div>	<div>Engineer</div> <div>Coopers (Chester) Ltd</div>	<div>Sheet</div> <div>1/1</div>

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20 0.20	B JV			28.45	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.		
0.50 0.50	B JV					MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, slate, tiles and concrete with occasional metal fragments, occasional sporadic wood, glass fragments and glass bottles.		
0.80 0.80	B JV				(0.90)	From 0.80m: Bands of hard, chalky, white material		
1.40 1.40	B JV			27.55	1.30 (0.80)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		∇1
			Seepage during excavation(1) at 2.00m. Accumulation at time of backfill(2) at 2.10m.	26.75	2.10	Complete at 2.10m		∇2



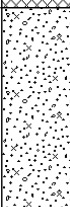
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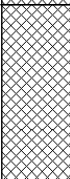
Location CAT scanned prior to excavation.
 Spalling from madeground and sands. Bowing of sides at 1.30m.
 Seepage of groundwater from 2.00m during excavation. Accumulation of groundwater at base at time of backfill.
 *Based upon trenchside stability characteristics.
 Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
 Trial pit completed with constant UXO supervision.
 Backfilled with arisings upon completion.

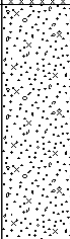
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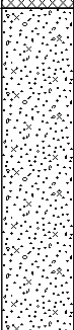
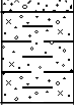
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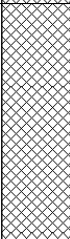
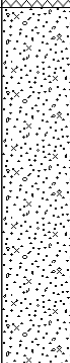
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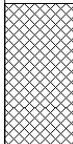
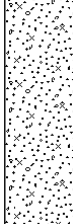
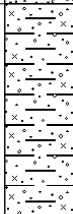
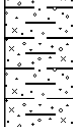
 coop ers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP244	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.00m		Ground Level (mOD) 28.87		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382654.8 E 394205.1 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water			
0.20 0.20	B JV			28.47	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV				(0.70)	MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND with occasional inclusions of white, chalky material. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker with occasional metal fragments, wood, glass fragments and glass bottles.					
1.20 1.20	B JV		Groundwater seepage during excavation(1) at 1.10m. Wet sands(2) at 1.30m.	27.77	1.10 (0.20)	MADEGROUND. Dark brown, slightly silty, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick and ceramic.		∇1			
1.40 1.40	B JV			27.57	1.30 (0.70)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		∇2			
			Accumulation at time of backfill(3) at 2.00m.	26.87	2.00	Complete at 2.00m		∇3			
						Remarks					
						Location CAT scanned prior to excavation. Spalling from 1.30m. Continuous spalling from 1.30m limiting progress. Groundwater seepage at 1.10m during excavation. Wet sands at 1.30m. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit terminated at 2.00m due to no progress from continuous spalling. Backfilled with arisings upon completion.					
North 		Scale (approx) 1:25		Logged By SD		Checked By PRS					

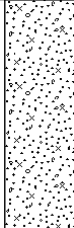
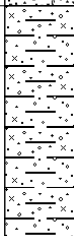
 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site</div> <div>WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number</div> <div>TP245</div>	
<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 2.10m</div>		<div>Ground Level (mOD)</div> <div>28.89</div>		<div>Client</div> <div>Anwyl Homes Ltd</div>		<div>Job Number</div> <div>8165</div>	
		<div>Location (Observed measurements)</div> <div>382647.5 E 394206.5 N</div>		<div>Dates</div> <div>08/06/2023</div>		<div>Engineer</div> <div>Coopers (Chester) Ltd</div>		<div>Sheet</div> <div>1/1</div>	
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>	<div>Legend</div>	<div>Water</div>	
<div>0.20</div> <div>0.20</div>	<div>B</div> <div>JV</div>				<div>(0.50)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.</div>			
<div>0.60</div> <div>0.60</div>	<div>B</div> <div>JV</div>			<div>28.39</div>	<div>0.50</div> <div>(0.60)</div>	<div>MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ash and clinker and ceramic with occasional metal fragments, wood, glass fragments and glass bottles. *Assumed as loose to medium dense.</div>			
<div>1.20</div> <div>1.20</div>	<div>B</div> <div>JV</div>		<div>Groundwater seepage during excavation(1) at 1.30m.</div>	<div>27.79</div>	<div>1.10</div> <div>(0.30)</div>	<div>MADEGROUND. Dark brown, slightly silty, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, ash and clinker and ceramic with occasional glass fragments and glass bottles.</div>		<div>∇₁</div>	
<div>1.50</div> <div>1.50</div>	<div>B</div> <div>JV</div>			<div>27.49</div>	<div>1.40</div> <div>(0.70)</div>	<div>Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>			
			<div>Accumulation at time of backfill(2) at 2.10m.</div>	<div>26.79</div>	<div>2.10</div>	<div>Complete at 2.10m</div>		<div>∇₂</div>	
						<div>Remarks</div> <div>Location CAT scanned prior to excavation. Spalling from madeground. Spalling from sands affecting progress. Groundwater seepage at 1.30m during excavation. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>			
<div>North</div> <div></div>						<div>Scale (approx)</div> <div>1:25</div>	<div>Logged By</div> <div>SD</div>		<div>Checked By</div> <div>PRS</div>

 <div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP246	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.40m		Ground Level (mOD) 28.91		Client Anwyl Homes Ltd		Job Number 8165	
		Location (Observed measurements) 382639.3 E 394207.5 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.20 0.20	B JV			28.51	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			
0.50 0.50	B JV				(0.50) 0.90	MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker with occasional metal fragments, glass fragments and glass bottles. *Assumed as loose to medium dense.			
1.00 1.00	B JV				(0.70) 1.60	MADEGROUND. Brown, slightly silty, slightly sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, ash and clinker and ceramic with occasional glass fragments and glass bottles.			
1.70 1.70	B JV		Groundwater seepage during excavation(1) at 1.60m.	27.31	(0.80) 2.40	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose.		∇1	
			Accumulation at time of backfill(2) at 2.40m.	26.51		Complete at 2.40m		∇2	
					Remarks				
					Location CAT scanned prior to excavation. Spalling from madeground and sand. Collapse from 1.60m. Groundwater seepage at 1.60m during excavation. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit terminated due to continuous spalling at 2.40m. Backfilled with arisings upon completion.				
					Scale (approx)		Logged By		Checked By
					1:25		SD		PRS

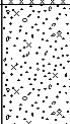
<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP247	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.50m		Ground Level (mOD) 28.81		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382631.5 E 394207.1 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV		Groundwater seepage and wet sands(1) at 1.10m.	28.41	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			∇1		
0.50 0.50	B JV				(0.30)	MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker with occasional glass fragments and glass bottles.					
0.80 0.80	B JV				(0.40)	MADEGROUND. Brown mottled dark brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is angular to sub-angular of brick. At 0.80m: Clay land drain, approximately 100mm in diameter, orientated north to south. Dry					
1.20 1.20	B JV				1.10	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose.					
					(1.10)						
2.30 2.30 2.30 2.40	SV 48kPa B JV SV 62kPa		Accumulation at time of backfill(2) at 2.50m.	26.61 26.31	2.20 (0.30)	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone			∇2		
					2.50	Complete at 2.50m					
					Remarks						
					Location CAT scanned prior to excavation. Spalling from madeground and sand. Continuous spalling from wet sands. Groundwater seepage and wet sands from 1.10m during excavation. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit terminated at 2.50m due to continuous spalling. Backfilled with arisings upon completion.						
					Scale (approx) 1:25		Logged By SD		Checked By PRS		

<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP248	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.40m		Ground Level (mOD) 28.75		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382624 E 394206.9 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV				(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV			28.35	0.40	MADEGROUND. Brown, slightly silty, gravelly, fine to coarse SAND with occasional pockets of soft clay. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker. *Assume as loose.					
					(0.80)						
1.30 1.30	B JV		Groundwater seepage during excavation(1) at 1.20m.	27.55	1.20	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose.			∇1		
					(1.20)						
2.30	B		Accumulation at time of backfill(2) at 2.40m.	26.35	2.40	Complete at 2.40m			∇2		
					Remarks						
					Location CAT scanned prior to excavation. Spalling from madeground and wet sands. Groundwater seepage at 1.20m during excavation. Accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit terminated at 2.40m due to continuous spalling. Backfilled with arisings upon completion.						
<div>North</div> 					Scale (approx) 1:25		Logged By SD		Checked By PRS		

<div><div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div></div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number TP249</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 2.00m</div>		<div>Ground Level (mOD) 28.78</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>	
		<div>Location (Observed measurements) 382617 E 394206.9 N</div>		<div>Dates 08/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>	
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>		<div>Legend</div>	<div>Water</div>
<div>0.20 0.20</div>	<div>B JV</div>				<div>(0.50)</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick, ceramic and glass. *Assumed as loose to medium dense.</div>		<div></div>	
<div>0.60 0.60</div>	<div>B JV</div>			<div>28.28</div>	<div>0.50 (0.80)</div>	<div>Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>		<div></div>	
<div>1.40 1.40 1.40</div>	<div>SV 72kPa B JV</div>		<div>Small seepage during excavation(1) at 1.30m.</div>	<div>27.48</div>	<div>1.30 (0.70)</div>	<div>Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.</div>		<div></div>	<div>V1</div>
<div>1.60</div>	<div>SV 80kPa</div>					<div>From 1.60m: Stiff and high strength</div>		<div></div>	
<div>1.80</div>	<div>SV 86kPa</div>			<div>26.78</div>	<div>2.00</div>	<div>Complete at 2.00m</div>			
<div></div>						<div>Remarks Location CAT scanned prior to excavation. Spalling from sands. Small seepage at 1.30m during excavation. No accumulation of groundwater at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>			
						<div>North </div>	<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>

<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON				Trial Pit Number TP250	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.10m		Ground Level (mOD) 29.05		Client Anwyl Homes Ltd				Job Number 8165			
		Location (Observed measurements) 382678.9 E 394201.1 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd				Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description				Legend	Water		
0.20 0.20	B JV				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.							
0.60 0.60	B JV			28.55	0.50 (0.80)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.							
1.40 1.40 1.40	SV 48kPa B JV		Small seepage during excavation(1) at 1.30m.	27.75	1.30	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					V1		
1.60	SV 52kPa				(0.80)								
1.80	SV 58kPa												
2.00	SV 62kPa				26.95	2.10	Complete at 2.10m						
<div></div>						Remarks Location CAT scanned prior to excavation. Sides stable during excavation. Small seepage at 1.30m during excavation. No accumulation of groundwater at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.							
						North 		Scale (approx) 1:25		Logged By SD		Checked By PRS	

<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP251	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.50m		Ground Level (mOD) 29.05		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382652.7 E 394170.6 N		Dates 08/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	
0.20	B			28.75	(0.30) 0.30	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV			28.45	(0.30) 0.60	MADEGROUND. Orangish brown, fine to coarse SAND (reworked due to land drain). *Assumed as loose to medium dense. At 0.50m: Clay land drain, approximately 100mm in diameter, orientated east to west. Dry					
0.70	B				(1.00)	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.70	B			27.45	1.60	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
					(0.90)						
				26.55	2.50	Complete at 2.50m					
				Remarks Location CAT scanned prior to excavation. Spalling from 1.20m. Bowing to sides from 1.60m. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.							
				North 	Scale (approx) 1:25		Logged By SD		Checked By PRS		

<div> coopers chartered consulting engineers</div>				<div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number TP252</div>	
<div>Machine : JCB 3CX Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 2.00m</div>		<div>Ground Level (mOD) 28.95</div>		<div>Client Anwyl Homes Ltd</div>				<div>Job Number 8165</div>			
		<div>Location (Observed measurements) 382654 E 394193.4 N</div>		<div>Dates 09/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>				<div>Sheet 1/1</div>			
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>				<div>Legend</div>	<div>Water</div>		
0.20 0.20	B JV				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.							
0.60 0.60	B JV			28.45	0.50 (0.40)	MADEGROUND. Firm, brown, slightly silty, gravelly, sandy CLAY. Gravel is angular to sub-angular, fine to coarse of brick and ceramic with occasional glass fragments and glass bottles.							
1.00 1.00	B JV			28.05	0.90 (0.70)	MADEGROUND. Brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker with occasional metal fragments, wood, glass fragments and glass bottles. *Assume as loose to medium dense.					∇1		
1.70 1.70	B JV		Groundwater seepage during excavation(1) at 1.50m.	27.35	1.60 (0.40)	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose.					∇2		
			Accumulation at time of backfill(2) at 2.00m.	26.95	2.00	Complete at 2.00m							
<div></div>						<div>Remarks Location CAT scanned prior to excavation. Spalling from 1.20m. Collapse at 2.00m. Groundwater seepage at 1.50m during excavation. Accumulation at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit terminated at 2.00m due to continuous spalling. Backfilled with arisings upon completion.</div>							
						<div>North </div>		<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>		<div>Checked By PRS</div>	



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Site

WILBRAHAM ROAD, CHORLTON

Trial Pit Number

TP253

<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 2.00m</div>		<div>Ground Level (mOD)</div> <div>28.89</div>		<div>Client</div> <div>Anwyl Homes Ltd</div>		<div>Job Number</div> <div>8165</div>	
		<div>Location (Observed measurements)</div> <div>382655.4 E 394201.4 N</div>		<div>Dates</div> <div>09/06/2023</div>		<div>Engineer</div> <div>Coopers (Chester) Ltd</div>		<div>Sheet</div> <div>1/1</div>	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.20 0.20	B JV				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			
0.60 0.60 0.70 0.70 0.90 0.90	B JV B JV B JV			28.39 28.09	0.50 (0.30) 0.80	MADEGROUND. Brown, slightly silty, gravelly, sandy CLAY with occasional bands of white, clayey material. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, ceramic and slate with occasional metal fragments, glass fragments and glass bottles.			
1.60 1.60	B JV		Groundwater seepage during excavation(1) at 1.50m. Accumulation at time of backfill(2) at 1.80m.	27.39 26.89	1.50 (0.50) 2.00	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose.		▽1 ▽2	
						Complete at 2.00m			



North



Remarks

Location CAT scanned prior to excavation.
 Spalling from 0.80m. Continuous spalling at 2.00m.
 Groundwater seepage at 1.50m during excavation. Accumulation at base to 1.80m at time of backfill.
 *Based upon trenchside stability characteristics.
 Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
 Trial pit completed with constant UXO supervision.
 Trial pit terminated at 2.00m due to continuous spalling.
 Backfilled with arisings upon completion.

Scale (approx)

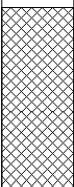
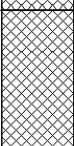
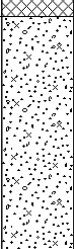
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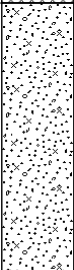
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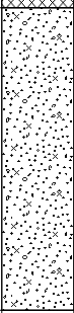
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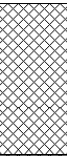
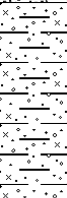
PRS

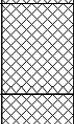
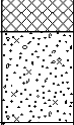
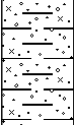
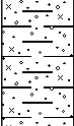
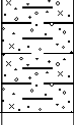
<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP254	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.40m		Ground Level (mOD) 28.86		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382657.5 E 394210.4 N		Dates 09/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV		Groundwater seepage during excavation(1) at 1.20m.		(0.60)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.			∇1		
0.70 0.70	B JV			28.26	0.60 (0.50)	MADEGROUND. Dark brown, slightly silty, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker with occasional metal fragments, glass fragments and glass bottles. *Assumed as loose to medium dense.					
1.20 1.20	B JV			27.76	1.10 (0.50)	MADEGROUND. Dark brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND with occasional inclusions of white, clayey material. Gravel is angular to sub-angular of brick and ceramic with occasional glass fragments and glass bottles. *Assume as loose to medium dense.					
1.70 1.70	B JV			27.26	1.60 (0.80)	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose.					
			Water level at time of backfill(2) at 2.20m. Accumulation of groundwater(3) at 2.40m.	26.46	2.40	Complete at 2.40m			∇3		
<div></div>					Remarks						
					Location CAT scanned prior to excavation. Spalling from 1.60m. Bowing of sides and continuous spalling from 1.80m. Collapse at 2.40m. Groundwater seepage at 1.20m during excavation. Accumulation of groundwater at base. Water level at 2.20m at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
<div>North </div>					Scale (approx) 1:25		Logged By SD		Checked By PRS		

<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP255	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.30m		Ground Level (mOD) 28.91		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382658.9 E 394217.5 N		Dates 09/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20	B	Groundwater seepage during excavation(1) at 1.40m.		28.31	(0.60)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.70	B				0.60	Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
					(0.90)						
1.60	SV 42kPa				1.50	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.60	B				(0.80)						
1.80	SV 50kPa										
2.00	SV 58kPa										
2.20	SV 64kPa										
					2.30	Complete at 2.30m					
						Remarks					
						Location CAT scanned prior to excavation. Spalling from 0.70m. Continuous spalling from 2.00m. Groundwater seepage at 1.40m during excavation. No accumulation at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Trial pit terminated at 2.30m due to spalling of sands. Backfilled with arisings upon completion.					
				North 	Scale (approx) 1:25	Logged By SD		Checked By PRS			

 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP256	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.30m		Ground Level (mOD) 28.81		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382626.6 E 394201.1 N		Dates 09/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	
0.20 0.20	B JV		Groundwater seepage during excavation(1) at 1.00m.	28.41	(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.				∇1	
0.50 0.50	B JV				(0.40)	MADEGROUND. Brown, slightly silty, sandy, gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker with occasional glass fragments and glass bottles.					
0.90 0.90	B JV				(0.50)	MADEGROUND. Dark brown, slightly silty, slightly clayey, gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick and ceramic with occasional glass fragments and glass bottles. *Assumed as loose.					
1.40 1.40	B JV		Water level at time of backfill(2) at 1.70m.	27.51	1.30	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.				∇2	
			Accumulation at base(3) at 2.30m.		26.51	2.30	Complete at 2.30m				∇3
						Remarks					
						Location CAT scanned prior to excavation. Spalling from madeground and sand from 1.00m. Continuous spalling from 2.00m. Groundwater seepage at 1.00m during excavation. Accumulation of groundwater at base. Water level at 1.70m at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.					
				North		Scale (approx)		Logged By		Checked By	
						1:25		SD		PRS	

<div> coopers chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP257	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.20m		Ground Level (mOD) 28.78		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382628.4 E 394212.3 N		Dates 09/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV		Groundwater seepage from north east of trial pit(1) at 1.70m. Water level at time of backfill(2) at 1.80m. Accumulation at base(3) at 2.20m.	28.38	(0.40) 0.40	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.					
0.50 0.50	B JV			27.68	(0.70) 1.10	MADEGROUND. Firm, brown, slightly silty, sandy, gravelly, sandy CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, ash and clinker with occasional metal fragments, glass fragments and glass bottles.					
1.20 1.20	B JV			27.18	(0.50) 1.60	MADEGROUND. Dark brown, slightly silty, slightly clayey, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick and ceramic with occasional glass fragments and glass bottles. *Assumed as loose to medium dense.					
1.70 1.70	B JV			26.58	(0.60) 2.20	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. *Assumed as loose.			∇1 ∇2		
						Complete at 2.20m			∇3		
					Remarks						
					Location CAT scanned prior to excavation. Spalling from 1.80m. Continuous spalling from 2.00m. Collapse of sides from 2.20m. Groundwater seepage at 1.70m from north east during excavation. Accumulation of groundwater at base. Water level at 1.20m at time of backfill due to collapse. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					Scale (approx) 1:25		Logged By SD		Checked By PRS		

 coopers chartered consulting engineers				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP258	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.30m		Ground Level (mOD) 28.82		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382630.1 E 394219.1 N		Dates 09/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description			Legend	Water	
0.20 0.20	B JV		Seepage from south of trial pit(1) at 1.00m.		(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.				▽1	
0.60 0.60	B JV			28.32	0.50 (0.30)	MADEGROUND. Dark brown, slightly silty, slightly clayey, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic, glass, ash and clinker. Madeground pinching out to north (shallowing to the north).					
0.90 0.90	B JV			28.02	0.80 (0.80)	Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.					
1.70 1.70	SV 52kPa B			27.22	1.60 (0.70)	Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
1.90	SV 56kPa		Small accumulation at base(2) at 2.30m.		26.52	2.30	Complete at 2.30m				▽2
2.10	SV 60kPa										
						Remarks					
						Location CAT scanned prior to excavation. Sides stable during excavation. Groundwater seepage at 1.00m from south during excavation. Small accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.					
North 						Scale (approx) 1:25		Logged By SD		Checked By PRS	

<div><div>Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk</div></div>				<div>Site WILBRAHAM ROAD, CHORLTON</div>				<div>Trial Pit Number TP259</div>		
<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions 2.50 x 0.90 x 2.40m</div>		<div>Ground Level (mOD) 28.93</div>		<div>Client Anwyl Homes Ltd</div>		<div>Job Number 8165</div>		
		<div>Location (Observed measurements) 382624.9 E 394192.3 N</div>		<div>Dates 09/06/2023</div>		<div>Engineer Coopers (Chester) Ltd</div>		<div>Sheet 1/1</div>		
<div>Depth (m)</div>	<div>Sample / Tests</div>	<div>Water Depth (m)</div>	<div>Field Records</div>	<div>Level (mOD)</div>	<div>Depth (m) (Thickness)</div>	<div>Description</div>			<div>Legend</div>	<div>Water</div>
<div>0.20 0.20</div>	<div>B JV</div>		<div>Small seepage from eastern face of pit(1) at 1.20m.</div>	<div>28.53</div>	<div>0.40</div>	<div>Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick and ceramic. *Assumed as loose to medium dense.</div>			<div></div>	
<div>0.50 0.50</div>	<div>B JV</div>			<div>28.23</div>	<div>0.70</div>	<div>MADEGROUND. Firm, orangish brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is angular to sub-angular, fine to coarse of natural stone, ceramic and brick with occasional glass fragments and glass bottles. From 0.50m: Madeground pinching out to the south</div>			<div></div>	
<div>0.80 0.80</div>	<div>B JV</div>			<div>28.03</div>	<div>0.90</div>	<div>MADEGROUND. Dark brown, slightly silty, slightly clayey, slightly gravelly, fine to coarse SAND. Gravel is angular to sub-angular, fine to coarse of brick, ceramic and natural stone.</div>			<div></div>	
<div>1.00 1.00</div>	<div>B JV</div>			<div>27.73</div>	<div>1.20</div>	<div>Light brown mottled greyish brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.</div>			<div></div>	<div>∇1</div>
<div>1.30 1.30</div>	<div>SV 58kPa B</div>					<div>Firm, medium strength, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.</div>			<div></div>	
<div>1.50</div>	<div>SV 64kPa</div>				<div>(1.20)</div>	<div>From 1.90m: High strength</div>			<div></div>	
<div>1.70</div>	<div>SV 70kPa</div>								<div></div>	
<div>1.90</div>	<div>SV 78kPa</div>								<div></div>	
<div>2.10</div>	<div>SV 82kPa</div>								<div></div>	
			<div>Small accumulation at time of backfill(2) at 2.40m.</div>	<div>26.53</div>	<div>2.40</div>	<div>Complete at 2.40m</div>			<div></div>	<div>∇2</div>
<div></div>						<div>Remarks</div> <div>Location CAT scanned prior to excavation. Sides stable during excavation. Small groundwater seepage from 1.20m from eastern face of pit during excavation. Small accumulation of groundwater at base at time of backfill. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.</div>				
						<div>North </div>		<div>Scale (approx) 1:25</div>		<div>Logged By SD</div>

<div> coopers</div> <div>chartered consulting engineers</div>				Coopers (Chester) Ltd tel: 01244 684 910 web: www.coopers.co.uk email: admin@coopers.co.uk				Site WILBRAHAM ROAD, CHORLTON		Trial Pit Number TP260	
Machine : JCB 3CX Method : Mechanical Excavation		Dimensions 2.50 x 0.90 x 2.30m		Ground Level (mOD) 29.32		Client Anwyl Homes Ltd		Job Number 8165			
		Location (Observed measurements) 382653.9 E 394158 N		Dates 09/06/2023		Engineer Coopers (Chester) Ltd		Sheet 1/1			
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description		Legend	Water		
0.20 0.20	B JV				(0.50)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, brick, ceramic and limestone. *Assumed as loose to medium dense.					
0.60 0.60	B JV			28.82	0.50	MADEGROUND (reworked). Light brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
					(1.00)						
				27.82	1.50	At 1.40m: Land drain, approximately 100mm in diameter, orientated east to west					
1.60	B				(0.80)	Firm, brown, slightly silty, slightly gravelly, sandy CLAY. Sand is fine to coarse. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.					
				27.02	2.30	Complete at 2.30m					
					Remarks						
					Location CAT scanned prior to excavation. Sides stable during excavation. No groundwater encountered during excavation. *Based upon trenchside stability characteristics. Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy. Trial pit completed with constant UXO supervision. Backfilled with arisings upon completion.						
					North ↓	Scale (approx) 1:25	Logged By SD	Checked By PRS			



coop

ers

chartered consulting engineers

Coopers (Chester) Ltd

tel: 01244 684 910

web: www.coopers.co.uk

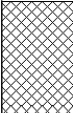
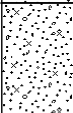
email: admin@coopers.co.uk

Site

WILBRAHAM ROAD, CHORLTON

Trial Pit Number

TP261

<div>Machine : JCB 3CX</div> <div>Method : Mechanical Excavation</div>		<div>Dimensions</div> <div>2.50 x 0.90 x 1.00m</div>	<div>Ground Level (mOD)</div> <div>29.61</div>	<div>Client</div> <div>Anwyl Homes Ltd</div>		<div>Job Number</div> <div>8165</div>		
		<div>Location (Observed measurements)</div> <div>382645.2 E 394136 N</div>	<div>Dates</div> <div>09/06/2023</div>	<div>Engineer</div> <div>Coopers (Chester) Ltd</div>		<div>Sheet</div> <div>1/1</div>		
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.20 0.20	B JV				(0.40)	Grass over MADEGROUND (similar to topsoil). Brown, slightly silty, slightly gravelly, fine to coarse SAND with occasional roots and rootlets. Gravel is angular to sub-angular, fine to coarse of natural stone, limestone and brick. *Assumed as loose to medium dense.		
0.50 0.50	B JV			29.21 29.01	0.40 (0.20) 0.60	Light brown, slightly silty, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone.		
0.70 0.70	B JV				(0.40)	Orangish brown mottled brown, slightly silty, slightly gravelly, fine to coarse SAND. Gravel is sub-angular to sub-rounded, fine to coarse of natural stone. *Assumed as loose to medium dense.		
				28.61	1.00	Complete at 1.00m		



Remarks

Location CAT scanned prior to excavation.
 Sides stable during excavation.
 No groundwater encountered during excavation.
 *Based upon trenchside stability characteristics.
 Please note that discolouration of photographs may occur when viewed on screen as a PDF, or when printed as a hard copy.
 Trial pit completed with constant UXO supervision.
 Backfilled with arisings upon completion.

North



Scale (approx)

1:25

Logged By

SD

Checked By

PRS

Appendix 4

Tier 1 Threshold Values for Human Health Risk Assessment and Controlled Water Receptor Threshold Values

Soil Tier 1 Threshold Values (mg/kg) Residential and POS

		Elements and compounds	S4UL	Small Terrace	Med/Large Terrace	Semi-detached	Detached	Residential (without Veg)	POS (Resi)	POS (Park)
		White, yellow & green values are NOAEL with orange values C4SL						C4SL (S4UL) (1% SOM)		
Silty clay	Metals/Semi-metals	Arsenic	37	37 (32.4 CLEA)				40 (40)	79 (79)	168 (170)
		Beryllium	1.7 (inh.)	51 (to be used with caution and superseded)				(1.7)	(2.2)	(63)
		Boron	290	291				(11,000)	(21,000)	(46,000)
		Cadmium	11	22 (11 CLEA)				150 (85)	220 (120)	880 (532)
		Chromium (III)	910	3000				(910)	(1,500)	(33,000)
		Chromium (VI)	6	21 (4.3)				21 (6)	51 (7.7)	250 (220)
		Copper	2,400	2,330 (Phytotoxic pH <6 = 100, pH6-7 = 135, pH >7 = 200)				(7,100)	(12,000)	(44,000)
		Lead	-	200				310	630	1,300
		Mercury (methyl)	11	7.4 (SGV withdrawn)				(15)	(40)	(68)
		Mercury (inorganic)	40	169 (SGV withdrawn)				(56)	(120)	(240)
		Mercury (Hg)	1.2	1.2 (SGV withdrawn)				(1.2)	(16)	(30vap (25.8))
		Nickel	130	(130 S4UL) (Phytotoxic pH <6 = 60, pH6-7 = 75, pH >7 = 110)				(180)	(230)	(800)
		Selenium	250	351				(430)	(1,100)	(1,800)
		Vanadium	410	79				(1,200)	(2,000)	(5,000)
		Zinc	3,700	3,750 (Phytotoxic pH <6 = 200, pH6-7 = 200, pH >7 = 300)				(40,000)	(81,000)	(170,000)
	PAH	Acenaphthene	210	205				(3,000 – 57 s)	(15,000)	(29,000)
		Acenaphthylene	170	168				(2,900 – 86.1 s)	(15,000)	(29,000)
		Anthracene	2,400	2,260				(31,000 – 1.17 v)	(74,000)	(150,000)
		Benzo(a)anthracene	7.2	3.1				(11)	(29)	(49)
		Benzo(a)pyrene	2.2	5 (6% SOM) (0.83 CLEA)				5.3 (3.2)	10 (5.7)	21 (11)
		Benzo(b)fluoranthene	2.6	5.56				(3.9)	(7.1)	(13)
		Benzo(ghi)perylene	320	10.7				(360)	(640)	(1,400)
		Benzo(k)fluoranthene	7.7	8.5				(110)	(190)	(370)
		Chrysene	15	6.0				(30)	(57)	(93)
		Dibenz(ah)anthracene	0.24	0.76				(0.31)	(0.57)	(1.1)
		Fluoranthene	280	257				(1,500)	(3,100)	(6,300)
		Fluorene	170	163				(2,800 – 30.9 s)	(9,900)	(20,000)
		Indeno(123-cd)pyrene	27	3.18				(45)	(82)	(150)
Phenanthrene	95	91.8				(1,300 – 36 s)	(3,100)	(6,200)		
Pyrene	620	563				(3,700)	(7,400)	(15,000)		
Sandy loam	Naphthalene	2.3	1.54	1.71	1.7	1.97	(2.3)	(4,900)	(1,200 – 76.4 s)	
	BTEx	Benzene	0.087	0.2 (1%) (0.079 CLEA)	0.082	0.082	0.085	0.89 (0.38)	140 (72)	190 (90)
		Toluene	130	119	122	122	125	(869)	(56,000)	(87,000 v)
		Ethylbenzene	47	62.5	68	67.9	71.6	(83)	(24,000)	(17,000 v)
		Xylene (based on p)	56	41.7	45.5	45.3	50.9	(70)	(41,000)	(17,000 v)
	Phenol	280	184	207	206	224	(750)	(760)	(760)	
	Aliphatic	5-6	42	30				(42)	(570,000 – 304 s)	(95,000 – 304 s)
		6-8	100	73				(100)	(600,000)	(150,000 – 144 s)
		8-10	27	19				(27)	(13,000)	(14,000 – 78 s)
		10-12	130 (48)	93 (48) ^{vap}				(130 – 48 v)	(13,000)	(21,000 – 48 s)
		12-16	1,100 (24)	740 (24) ^{sol}				(1,100 - 24 v)	(13,000)	(25,000 – 24 s)
		16-35	65,000 (8.48)	45,000 (8.48) ^{sol}				(65,000)	(250,000)	(450,000)
		35-44	65,000 (8.48)	45,000 (8.48) ^{sol}				(65,000)	(250,000)	(450,000)
	Aromatic	8-10	34	27				(47)	(5,000)	(7,200 – 613 v)
		10-12	74	69				(250)	(5,000)	(9,200 – 364 s)
12-16		140	140				(1,800)	(5,100)	(10,000)	
16-21		260 (	250				(1,900)	(3,800)	(7,600)	
21-35		1,100	890				(1,900)	(3,800)	(7,600)	

Notes:

The soil organic matter has been assumed to be 1% as this is the most conservative value for organic compounds. Inorganic compounds unaffected by this parameter.

Silty clay strata appears to prove more conservative threshold values for metals, semi-metals and several PAH compounds. Sandy loam strata appears to prove more conservative threshold values for TPH compounds, phenol and naphthalene.

The assessment of hydrocarbon fractions should be completed additively to determine the total risk of the whole range of compounds present as well as by single TPH fractional units, however this should be undertaken on a sample by sample basis where significant hydrocarbon concentrations have been encountered to derive a compound TPH concentration.

Although benzene has a C4SL value, this has been calculated for small terraced housing and not other housing stock, therefore other housing stock should either adopt the more conservative CLEA thresholds or that of a small terraced property. All thresholds not coloured orange (C4SL) for different housing stock have utilised LQM/CIEH Generic Assessment Criteria for Human Health Risk assessment, 2nd edition, 2009. CLEA values in brackets where C4SL values are available.

Vap denotes where the threshold is exceeded beyond the vapour saturation limit. Sol denotes where the threshold is exceeded beyond the solubility saturation limit.

It should be noted that these threshold values only relate to human health risk assessment and an assessment for potential groundwater risk should be undertaken as a separate risk assessment.

SVOC Threshold Values Taken From EIC/AGS/CL:AIRE Soil Generic Assessment
Criteria for Human Health Risk Assessment

GAC for 1% SOM

Determinand	GAC (mg/kg)
Bis (2-ethylhexyl)phthalate	280
2+3+4-methylphenol	80
2,4-dimethylphenol	19

CONTROLLED WATER RECEPTOR THRESHOLD VALUES (µg/l)

Compound/element		Groundwater Quality Threshold Values ¹ Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters ¹³	Short term (95 th percentile) for fresh waters ¹³	Annual average (AA-EQS) for inland surface waters ¹⁴	Maximum allowable concentration (MAC-EQS) ¹⁴ for inland surface waters ¹⁵
Inorganic elements and compounds	Ammonium	500	-	-	-	-
	Arsenic	10	50	-	-	-
	Boron	1000	-	-	-	-
	Cadmium ⁹	5.0	-	-	≤0.08 (Class 1)	≤0.45 (Class 1)
		-	-	-	0.08 (Class 2)	0.45 (Class 2)
		-	-	-	0.09 (Class 3)	0.6 (Class 3)
		-	-	-	0.15 (Class 4)	0.9 (Class 4)
		-	-	-	0.25 (Class 5)	1.5 (Class 5)
	Chromium (III)	50	4.7	32	-	-
	Chromium (VI)	-	3.4	-	-	-
	Chloride	250,000	-	-	-	-
	Chlorine	-	2	5	-	-
	Copper	2000	1 ⁵	-	-	-
	Cyanide	50	1	5	-	-
	Iron	-	1,000	-	-	-
	Lead	10	-	-	1.2 ⁵	14
	Manganese	-	123 ⁵	-	-	-
	Mercury	1.0	-	-	-	0.07
	Nickel	20	-	-	4 ⁵	34
	Nitrate ²	50,000	-	-	-	-
	Nitrite ²	500	-	-	-	-

Compound/element		Groundwater Quality Threshold Values ¹ Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters ¹³	Short term (95 th percentile) for fresh waters ¹³	Annual average (AA-EQS) for inland surface waters ¹⁴	Maximum allowable concentration (MAC-EQS) ¹⁴ for inland surface waters ¹⁵
	Selenium	10	-	-	-	-
	Sulphate	250,000	-	-	-	-
	Zinc	-	10.9	-	-	-
PAH compounds	Anthracene	-	-	-	0.1	0.1
	Benzo(a)pyrene	0.01	-	-	1.7x10 ⁻⁴	0.27
	Fluoranthene	-	-	-	0.0063	0.12
	Naphthalene	-	-	-	2	130
	PAH compounds (benzo(b)fluoranthene + benzo(k)fluoranthene + benzo(ghi)perylene + indeno(1,2,3-cd)pyrene)	0.1	-	-	1.7x10 ⁻⁴⁽¹²⁾	0.27 ⁽¹²⁾
	Benzo(b)fluoranthene	-	-	-	-	0.017
	Benzo(k)fluoranthene	-	-	-	-	0.017
	Benzo(ghi)perylene	-	-	-	-	8.2x10 ⁻³
	Indeno(1,2,3-cd)pyrene	-	-	-	-	n/a
BTEX compounds	Benzene	1.0	-	-	10	50
	Ethene	-	-	-	-	-
	Toluene	-	74	380	-	-
	Xylene	-	-	-	-	-
VOCs	Carbon tetrachloride	-	-	-	12	n/a
	C10-C13 Chloroalkanes (e.g. chloroethane, bromomethane, chloromethane)	-	-	-	0.4	1.4
	1,2-dichloroethane	3.0	-	-	10	n/a
	Trihalomethanes total (trichloromethane (chloroform) + bromoform +	100	-	-	-	-

Compound/element		Groundwater Quality Threshold Values ¹ Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters ¹³	Short term (95 th percentile) for fresh waters ¹³	Annual average (AA-EQS) for inland surface waters ¹⁴	Maximum allowable concentration (MAC-EQS) ¹⁴ for inland surface waters ¹⁵
	dibromochloromethane + bromodichloromethane)					
	Vinyl chloride	0.5	-	-	-	-
	1,2 dichloroethane	3.0	-	-	-	-
	Trichlorobenzenes	-	-	-	0.4	n/a
	Tetrachloroethane + trichloroethylene	10	-	-	-	-
	Trichloroethylene	-	-	-	10	n/a
	Tetrachloroethane	-	140	1848		
	Tetrachloroethylene	-	-	-	10	n/a
	Trichloromethane (alternative name chloroform)	-	-	-	2.5	n/a
	Tetrachloromethane	3	-	-	-	-
SVOCs	Benzyl butyl phthalate	-	7.5	51	-	-
	Bis(2-ethylhexyl)phthalate (alternative name: di(2-ethylhexyl)-phthalate	-	-	-	1.3	n/a
	Brominated diphenylethers ⁸	-	-	-	na	0.14
	2,4-dichlorophenol	-	4.2	140	-	-
	Hexa-chlorobenzene	-	-	-	-	0.05
	Hexa-chlorobutadiene	-	-	-	-	0.6
	Pentachlorophenol	-	-	-	0.4	1
Other organic compounds	Phenol	-	7.7	46	-	-
Pesticides in	Pesticides & related products ³	-	-	-	-	-

Compound/element		Groundwater Quality Threshold Values ¹ Maximum value	Environmental Quality Standards (EQS)			
			Long term (mean) for fresh waters ¹³	Short term (95 th percentile) for fresh waters ¹³	Annual average (AA-EQS) for inland surface waters ¹⁴	Maximum allowable concentration (MAC-EQS) ¹⁴ for inland surface waters ¹⁵
	Aldrin	0.03	-	-	-	-
	Dieldrin	0.03	-	-	-	-
	Heptachlor	0.03	-	-	-	-
	Heptachlo epoxide	0.03	-	-	-	-
	Other pesticides	0.1	-	-	-	-
	Pesticides total ⁴	0.5	-	-	-	-
Pesti-cides in surface waters	Atrazine	-	-	-	0.6	2.0
	Chlorfenvinphos	-	-	-	0.1	0.3
	Chlorpyrifos (Chlorpyrifosethyl)	-	-	-	0.03	0.1
	Cyclodiene pesticides: aldrin, dieldrin, endrin ¹⁰	-	-	-	0.01	n/a
	Cypermethrin	-	0.0001	0.0004	8x10 ⁻⁵	6x10 ⁻⁴
	Diazinon	-	0.01	0.02	-	-
	DDT total ¹¹	-	-	-	0.025	n/a
	2,4 dichlorophenoxyacetic acid (2,4 D)	-	0.3	1.3	-	-
	Dichlorvos	-	-	-	6x10 ⁻⁴	7x10 ⁻⁴
	Dimethoate	-	0.48	4.0	-	-
	Endosulfan	-	-	-	0.005	0.01
	Heptachlor and hetachlorepoide	-	-	-	2x10 ⁻⁷	3x10 ⁻⁴
	Mecoprop	-	18	187	-	-
	Permethrin	-	0.001	0.01	-	-
	Simazine	-	-	-	1	4
	Terbutryn	-	-	-	0.065	0.34

NOTES

1. Threshold values based on The Water Supply (Water Quality) Regulations 2018
2. The water must satisfy the formula " $[\text{nitrate}]/50 + [\text{nitrite}]/3 \leq 1$ ", where the square brackets signify the concentrations in mg/l for nitrate (NO_3) and nitrite (NO_2).
3. "pesticides and related products" means any of the following, and includes their relevant metabolites, degradation and reaction products— (a) organic insecticide; (b) organic herbicide; (c) organic fungicide; (d) organic nematocide; (e) organic acaricide; (f) organic algicide; (g) organic rodenticide; (h) organic slimicide; (i) any product related to any of (a) to (h) (including any growth regulator).
4. The sum of the concentrations of the individual compounds detected and quantified in the monitoring process.
5. "Bioavailable" meaning the fraction of the dissolved concentration of the metal likely to result in toxic effects as determined using the UKTAG Metal Bioavailability Assessment Tool (also referred to as a PNEC Estimator) for the relevant metal.
6. The Environment Agency (EA) must define the type of river systems according to their alkalinity and altitude and the acid neutralising capacity for the river due to the dissolved carbon content. The definition due to alkalinity and altitude is in Table 1, as follows:

Site altitude	Table 1 - Alkalinity (as mg/l CaCO_3)				
	<10	≥ 10 to <50	≥ 50 to <100	≥ 100 to <200	>200
Under 80m	Type 1	Type 2	Type 3	Type 5	Type 7
Over 80m			Type 4	Type 6	

The quality of the rivers or river sections will then be categorised by the EA, according to the dissolved oxygen content, biological oxygen demand and ammonia levels relative to the type denoted in Table 1. The ammonia standards would be classified as follows in Table 2.

Table 2 -Ammonia standards for rivers (rivers categorised by type in accordance with river type in Table 1 above.				
Total ammonia as nitrogen (mg/l) (90 percentile)				
Type	High	Good	Moderate	Poor
1, 2, 4 and 6	0.2	0.3	0.75	1.1
3, 5 and 7	0.3	0.6	1.1	2.5

7. Ambient background concentrations have been presented in the Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 with regards to the ambient background dissolved zinc concentrations.
8. The EQS refers to the sum of the concentrations of congener numbers 28, 47, 99, 100, 153 and 154.
9. The EQS for cadmium and its compounds is dependent on the water hardness as specified: Class 1: <40mg CaCO_3/l , Class 2: 40 to <50mg CaCO_3/l , Class 3: 50 to <100mg CaCO_3/l , Class 4: 100 to <200mg CaCO_3/l and Class 5: $\geq 200\text{mg CaCO}_3/\text{l}$.
10. EQS relates to the sum of aldrin, dieldrin and endrin.

11. DDT total comprises the sum of the isomers 1,1,1-trichloro-2,2 bis (p-chlorophenyl) ethane, 1,1,1-trichloro-2 (o-chlorophenyl)-2-(p-chlorophenyl) ethane, 1,1 -dichloro-2,2 bis (p-chlorophenyl) ethylene and 1,1-dichloro-2,2 bis (p-chlorophenyl) ethane.
12. For the group of PAH compounds benzo(b)fluoranthene + benzo(k)fluoranthene + benzo(ghi)perylene + indeno(1,2,3-cd)pyrene, the EQS for benzo(a)pyrene must be applied, this being considered to be a marker for these PAH compounds.
13. Fresh water includes rivers and lakes.
14. Where the MAC-EQS is noted as n/a, the AA-EQS values are considered protective against short-term pollution peaks in continuous discharges as they are significantly lower than the values derived on the basis of acute toxicity.
15. Inland surface waters includes rivers and lakes and related artificial or heavily modified water bodies.

Appendix 4

Tier 1 Threshold Values for Human Health Risk Assessment and Controlled Water Receptor Threshold Values

FINAL ANALYTICAL TEST REPORT SUPPLEMENT TO TEST REPORT 23/05666/2

Amendments: Re-issue following query/investigation

Envirolab Job Number: 23/05666
Issue Number: 2

Date: 31 July, 2023

Client: Coopers (Chester) Limited
Coopers
Park House, Sandpiper Court
Chester Business Park
Chester
England
CH4 9QU

Project Manager: (use)/Jackie Lewis
Project Name: Wilbraham Road, Chorlton
Project Ref: 8165
Order No: 9735-JAL/9756 - JAL
Date Samples Received: 09/06/23
Date Instructions Received: 09/06/23
Date Analysis Completed: 28/07/23

Approved by:



Gemma Berrisford
Client Manager

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/1	23/05666/2	23/05666/3	23/05666/4	23/05666/5	23/05666/6	23/05666/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH1	BH1	BH2	BH3	BH4	BH5	MG (TS) CS			
Depth to Top	3.00	6.00	10.00	10.00	8.00	4.00				
Depth To Bottom	3.45	6.45	10.45	10.45	8.45	4.45				
Date Sampled	24-May-23	24-May-23	26-May-23	31-May-23	01-Jun-23	01-Jun-23	07-Jun-23			
Sample Type	SOIL - B	SOIL - B	SOLID	SOIL - B	SOIL - B	SOIL - B	SOIL - B			
Sample Matrix Code	5A	3	7	6A	3	3	4AE			
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	-	-	- ^U	-	-	-	5.89	pH	0.01	A-T-031s
pH BRE _D ^{M#}	7.61	8.26	8.84 ^U	8.71	8.78	8.14	-	pH	0.01	A-T-031s
Ammonium NH ₄ BRE (water sol 2:1) _D	4.38	2.29	1.90	2.34	2.97	12.6	-	mg/l	1	A-T-033s
Chloride BRE, SO ₄ equiv. (water sol 2:1) _D ^{M#}	<7	13	<7 ^U	<7	<7	<7	-	mg/l	7	A-T-026s
Nitrate BRE, SO ₄ equiv. (water sol 2:1) _D	2.8	0.6	<0.4	<0.4	<0.4	<0.4	-	mg/l	0.4	A-T-026s
Sulphate (water sol 2:1) _D ^{M#}	-	-	- ^U	-	-	-	0.01	g/l	0.01	A-T-026s
Sulphate BRE (water sol 2:1) _D ^{M#}	78	29	13 ^U	29	21	31	-	mg/l	10	A-T-026s
Sulphate (acid soluble) _D ^{M#}	-	-	- ^U	-	-	-	470	mg/kg	200	A-T-028s
Sulphate BRE (acid sol) _D ^{M#}	<0.02	0.04	<0.02 ^U	0.03	0.02	0.02	-	% w/w	0.02	A-T-028s
Sulphur BRE (total) _D	0.02	0.06	0.09	0.07	0.10	0.06	-	% w/w	0.01	A-T-024s
Magnesium BRE (water sol 2:1) _D	6	8	3	4	3	4	-	mg/l	1	A-T-SOLMETs
Cyanide (total) _A ^{M#}	-	-	- ^U	-	-	-	<1	mg/kg	1	A-T-042sTCN
Phenol _A	-	-	-	-	-	-	<0.2	mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	-	-	- ^U	-	-	-	1.12	% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	-	-	- ^U	-	-	-	0.0112	N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	-	-	- ^U	-	-	-	16	mg/kg	1	A-T-024s
Beryllium _D	-	-	-	-	-	-	0.9	mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	-	-	- ^U	-	-	-	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	-	-	- ^U	-	-	-	1.3	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	-	-	- ^U	-	-	-	62	mg/kg	1	A-T-024s
Chromium _D ^{M#}	-	-	- ^U	-	-	-	34	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	-	-	-	-	-	-	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	-	-	- ^U	-	-	-	191	mg/kg	1	A-T-024s
Mercury _D	-	-	-	-	-	-	0.58	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	-	-	- ^U	-	-	-	21	mg/kg	1	A-T-024s
Selenium _D ^{M#}	-	-	- ^U	-	-	-	<1	mg/kg	1	A-T-024s
Vanadium _D ^{M#}	-	-	- ^U	-	-	-	26	mg/kg	1	A-T-024s
Zinc _D ^{M#}	-	-	- ^U	-	-	-	136	mg/kg	5	A-T-024s

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/1	23/05666/2	23/05666/3	23/05666/4	23/05666/5	23/05666/6	23/05666/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH1	BH1	BH2	BH3	BH4	BH5	MG (TS) CS			
Depth to Top	3.00	6.00	10.00	10.00	8.00	4.00				
Depth To Bottom	3.45	6.45	10.45	10.45	8.45	4.45				
Date Sampled	24-May-23	24-May-23	26-May-23	31-May-23	01-Jun-23	01-Jun-23	07-Jun-23			
Sample Type	SOIL - B	SOIL - B	SOLID	SOIL - B	SOIL - B	SOIL - B	SOIL - B			
Sample Matrix Code	5A	3	7	6A	3	3	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	-	-	- U	-	-	-	NAD			A-T-045
Asbestos Matrix (visual) _D	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	-	-	-	-	-	-	N/A			A-T-045

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/1	23/05666/2	23/05666/3	23/05666/4	23/05666/5	23/05666/6	23/05666/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH1	BH1	BH2	BH3	BH4	BH5	MG (TS) CS			
Depth to Top	3.00	6.00	10.00	10.00	8.00	4.00				
Depth To Bottom	3.45	6.45	10.45	10.45	8.45	4.45				
Date Sampled	24-May-23	24-May-23	26-May-23	31-May-23	01-Jun-23	01-Jun-23	07-Jun-23			
Sample Type	SOIL - B	SOIL - B	SOLID	SOIL - B	SOIL - B	SOIL - B	SOIL - B			
Sample Matrix Code	5A	3	7	6A	3	3	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	-	-	- U	-	-	-	1.51	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	-	-	- U	-	-	-	0.07	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	-	-	- U	-	-	-	2.34	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	-	-	- U	-	-	-	6.90	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	-	-	- U	-	-	-	5.93	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	-	-	- U	-	-	-	6.05	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	-	-	- U	-	-	-	3.03	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	-	-	- U	-	-	-	2.06	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	-	-	- U	-	-	-	6.67	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	-	-	- U	-	-	-	0.63	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	-	-	- U	-	-	-	14.9	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	-	-	- U	-	-	-	0.86	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	-	-	- U	-	-	-	3.15	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	-	-	- U	-	-	-	0.40	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	-	-	- U	-	-	-	9.82	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	-	-	- U	-	-	-	14.5	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	-	-	- U	-	-	-	78.8	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/1	23/05666/2	23/05666/3	23/05666/4	23/05666/5	23/05666/6	23/05666/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	BH1	BH1	BH2	BH3	BH4	BH5	MG (TS) CS			
Depth to Top	3.00	6.00	10.00	10.00	8.00	4.00				
Depth To Bottom	3.45	6.45	10.45	10.45	8.45	4.45				
Date Sampled	24-May-23	24-May-23	26-May-23	31-May-23	01-Jun-23	01-Jun-23	07-Jun-23			
Sample Type	SOIL - B	SOIL - B	SOLID	SOIL - B	SOIL - B	SOIL - B	SOIL - B			
Sample Matrix Code	5A	3	7	6A	3	3	4AE			
TPH CWG with Clean Up										
Ali >C5-C6 _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	-	-	-	-	-	-	<1	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	-	-	- U	-	-	-	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	-	-	- U	-	-	-	2	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	-	-	- U	-	-	-	3	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	-	-	- U	-	-	-	29	mg/kg	1	A-T-055s
Total Aliphatics _A	-	-	-	-	-	-	35	mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	-	-	-	-	-	-	3	mg/kg	1	A-T-055s
Aro >C10-C12 _A	-	-	-	-	-	-	2	mg/kg	1	A-T-055s
Aro >C12-C16 _A	-	-	-	-	-	-	18	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	-	-	- U	-	-	-	109	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	-	-	- U	-	-	-	327	mg/kg	1	A-T-055s
Total Aromatics _A	-	-	-	-	-	-	460	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	-	-	-	-	-	-	495	mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	-	-	- U	-	-	-	<0.01	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/8	23/05666/9	23/05666/10	23/05666/11				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP223	TP224	TP226	TP215						
Depth to Top	0.50	0.30	0.40	0.50						
Depth To Bottom										
Date Sampled	06-Jun-23	06-Jun-23	06-Jun-23	06-Jun-23						
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B						
Sample Matrix Code	6AE	4AE	4AE	4A						
% Stones >10mm _A	0.2	6.9	<0.1	<0.1				% w/w	0.1	A-T-044
pH _D ^{M#}	-	-	-	6.15				pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	-	-	-	0.06				g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	-	-	-	440				mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	-	-	-	<1				mg/kg	1	A-T-042sTCN
Phenol _A	-	-	-	<0.2				mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	-	-	-	4.01				% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	-	-	-	0.0401				N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	-	-	-	16				mg/kg	1	A-T-024s
Beryllium _D	-	-	-	0.6				mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	-	-	-	<1.0				mg/kg	1	A-T-027s
Cadmium _D ^{M#}	-	-	-	<0.5				mg/kg	0.5	A-T-024s
Copper _D ^{M#}	-	-	-	35				mg/kg	1	A-T-024s
Chromium _D ^{M#}	-	-	-	13				mg/kg	1	A-T-024s
Chromium (hexavalent) _D	-	-	-	<1				mg/kg	1	A-T-040s
Lead _D ^{M#}	-	-	-	96				mg/kg	1	A-T-024s
Mercury _D	<0.17	0.27	0.99	<0.17				mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	-	-	-	11				mg/kg	1	A-T-024s
Selenium _D ^{M#}	-	-	-	<1				mg/kg	1	A-T-024s
Vanadium _D ^{M#}	-	-	-	20				mg/kg	1	A-T-024s
Zinc _D ^{M#}	-	-	-	73				mg/kg	5	A-T-024s

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/8	23/05666/9	23/05666/10	23/05666/11				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP223	TP224	TP226	TP215						
Depth to Top	0.50	0.30	0.40	0.50						
Depth To Bottom										
Date Sampled	06-Jun-23	06-Jun-23	06-Jun-23	06-Jun-23						
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B						
Sample Matrix Code	6AE	4AE	4AE	4A						
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	-	-	-	Chrysotile						A-T-045
Asbestos Matrix (visual) _D	-	-	-	-						A-T-045
Asbestos Matrix (microscope) _D	-	-	-	Cement						A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	-	-	-	Yes						A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) _D	-	-	-	0.589				% w/w	0.001	A-T-054

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/8	23/05666/9	23/05666/10	23/05666/11				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP223	TP224	TP226	TP215						
Depth to Top	0.50	0.30	0.40	0.50						
Depth To Bottom										
Date Sampled	06-Jun-23	06-Jun-23	06-Jun-23	06-Jun-23						
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B						
Sample Matrix Code	6AE	4AE	4AE	4A						
Mercury, Speciated (tot+inorg+org(methyl)+elemental)										
Mercury (Elemental) _D	-	-	< 0.6	-				µg/kg	0.6	Subcon DETS D+G
Mercury (Inorganic) _D	-	-	790	-				µg/kg	100	Subcon DETS D+G
Mercury (Methyl) _D	-	-	< 100	-				µg/kg	100	Subcon DETS D+G
Mercury (SUBCON DETS) _D	-	-	0.82	-				mg/kg	0.05	Subcon DETS D+G

Envirolab Job Number: 23/05666

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05666/8	23/05666/9	23/05666/10	23/05666/11				Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP223	TP224	TP226	TP215						
Depth to Top	0.50	0.30	0.40	0.50						
Depth To Bottom										
Date Sampled	06-Jun-23	06-Jun-23	06-Jun-23	06-Jun-23						
Sample Type	SOIL - B	SOIL - B	SOIL - B	SOIL - B						
Sample Matrix Code	6AE	4AE	4AE	4A						
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	-	2.09	0.58				mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	-	0.06	0.04				mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	-	3.29	0.80				mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.06	-	4.95	2.43				mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.12	-	3.93	2.30				mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.10	-	4.45	2.56				mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	-	1.53	1.09				mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	-	1.55	0.79				mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.15	-	4.99	2.69				mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	-	0.37	-				mg/kg	0.04	A-T-019s
Dibenzo(ah)anthracene _A	-	-	-	0.30				mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.18	-	11.6	5.14				mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	-	1.57	0.36				mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.05	-	1.70	1.10				mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	-	0.58	0.13				mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.10	-	13	3.60				mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.19	-	11.2	5.05				mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.95	-	66.9	29				mg/kg	0.01	A-T-019s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 The results reported herein relate only to the material supplied to the laboratory.
 The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
 Analytical results reflect the quality of the sample at the time of analysis only.
 Opinions and Interpretations expressed are outside our scope of accreditation.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "A"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
 Stones etc. are not removed from the sample prior to analysis
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
 For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
 For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
 All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
 Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
 Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Coopers (Chester) Limited, Coopers, Park House, Sandpiper Court, Chester
Business Park, Chester, England, CH4 9QU

Project: Wilbraham Road, Chorlton

Clients Project No: 8165

Project No: 23/05666

Date Received: 09/06/2023 (am)

Cool Box Temperatures (°C): 16.9,19.9,18.9,17.5

Lab Sample ID	23/05666/11
Client Sample No	
Client Sample ID/Depth	TP215 0.50m
Date Sampled	06/06/23
Deviation Code	
F	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	23/05666/11
Client Sample No	
Client Sample ID/Depth	TP215 0.50m
Date Sampled	06/06/23
PAH-16MS	✓
Cyanide (total)	✓
Fraction of organic carbon	✓
Total Organic Carbon	✓
Sulphate (acid soluble)	✓
Sulphate (water sol 2:1)	✓

Note: If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3 (for water samples $5 \pm 3^{\circ}\text{C}$), ISO 18400-105:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05666/1	23/05666/2	23/05666/3	23/05666/4	23/05666/5	23/05666/6	23/05666/7	23/05666/8	23/05666/9	23/05666/10	23/05666/11
Client Sample No											
Client Sample ID/Depth	BH1 3.00-3.45m	BH1 6.00-6.45m	BH2 10.00-10.45m	BH3 10.00-10.45m	BH4 8.00-8.45m	BH5 4.00-4.45m	MG (TS) CS	TP223 0.50m	TP224 0.30m	TP226 0.40m	TP215 0.50m
Date Sampled	24/05/23	24/05/23	26/05/23	31/05/23	01/06/23	01/06/23	07/06/23	06/06/23	06/06/23	06/06/23	06/06/23
A-T-004s							16/06/2023				
A-T-007s							13/06/2023				
A-T-019s							16/06/2023	13/06/2023		13/06/2023	21/07/2023
A-T-022s							14/06/2023				
A-T-024s	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	24/07/2023
A-T-025w							16/06/2023				
A-T-026s	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023				25/07/2023
A-T-026w							16/06/2023				
A-T-026w (F)							16/06/2023				
A-T-027s							15/06/2023				21/07/2023
A-T-028s	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023				21/07/2023
A-T-030s							16/06/2023				
A-T-031s	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023				21/07/2023
A-T-031w							16/06/2023				
A-T-032s							16/06/2023				25/07/2023
A-T-032w							16/06/2023				
A-T-033s	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023					
A-T-037w							16/06/2023				
A-T-040s							16/06/2023				25/07/2023
A-T-042sTCN							13/06/2023				24/07/2023
A-T-044	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	25/07/2023
A-T-045							14/06/2023				20/07/2023
A-T-050s							15/06/2023				24/07/2023
A-T-050w							16/06/2023				
A-T-054											28/07/2023
A-T-055s							16/06/2023				
A-T-ANCs							16/06/2023				
A-T-SOLMETS	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023					
Calc-As Recd							16/06/2023				
Calc-no stones							16/06/2023				
Probe (w)							16/06/2023				

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05736
Issue Number: 1
Date: 26 July, 2023

Client: Coopers (Chester) Limited
Coopers
Park House, Sandpiper Court
Chester Business Park
Chester
England
CH4 9QU

Project Manager: (use)/Jackie Lewis
Project Name: Wilbraham Road, Chorlton
Project Ref: 8165
Order No: 9737-JAL/9756 - JAL
Date Samples Received: 12/06/23
Date Instructions Received: 12/06/23
Date Analysis Completed: 26/07/23

Approved by:



Sophie France
Client Manager

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
% Stones >10mm _A	15.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	7.86	7.55	7.15	6.09	6.01	6.65	6.66	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.04	0.02	0.03	0.18	0.18	0.01	0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	670	310	1100	540	760	330	300	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenol _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	3.71	2.61	5.08	6.39	0.43	3.24	3.29	% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	0.0371	0.0261	0.0508	0.0639	0.0043	0.0324	0.0329	N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	31	12	61	2	7	14	14	mg/kg	1	A-T-024s
Beryllium _D	0.8	0.7	2.1	<0.5	<0.5	0.8	0.7	mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.9	0.5	2.2	<0.5	<0.5	0.5	0.8	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	143	43	386	9	26	55	62	mg/kg	1	A-T-024s
Chromium _D ^{M#}	22	18	31	4	12	18	14	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	821	141	459	13	67	125	149	mg/kg	1	A-T-024s
Mercury _D	3.28	<0.17	0.67	<0.17	0.17	2.00	1.59	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	30	16	36	5	11	17	14	mg/kg	1	A-T-024s
Selenium _D ^{M#}	2	<1	1	<1	<1	1	<1	mg/kg	1	A-T-024s
Vanadium _D ^{M#}	21	23	46	6	15	23	21	mg/kg	1	A-T-024s
Zinc _D ^{M#}	309	92	566	72	50	84	199	mg/kg	5	A-T-024s
Leachate Prep BS EN 12457-2 (10:1) _A	-	-	-	-	-	-	*			A-T-001
Leachate Prep NRA (10:1) _A	*	-	*	-	-	-	-			A-T-001
pH (leachable) _A	7.92	-	7.23	-	-	-	-	pH	0.01	A-T-031w
Alkalinity (total) (leachable) Colorimetry _A	59	-	<20	-	-	-	-	mg/l Ca CO3	20	A-T-038w
Sulphate (leachable) _A	5.77	-	13.34	-	-	-	-	mg/l	1	A-T-026w
Cyanide (total) (leachable) _A	<0.005	-	<0.005	-	-	-	-	mg/l	0.005	A-T-042wTCN
Phenol (leachable) _A	<0.01	-	<0.01	-	-	-	-	mg/l	0.01	A-T-050w
Arsenic (leachable) _A	8	-	6	-	-	-	-	µg/l	1	A-T-025w
Boron (leachable) _A	<10	-	14	-	-	-	-	µg/l	10	A-T-025w
Beryllium (leachable) _A	<1	-	<1	-	-	-	-	µg/l	1	A-T-025w
Cadmium (leachable) _A	<1	-	<1	-	-	-	-	µg/l	1	A-T-025w
Copper (leachable) _A	72	-	156	-	-	-	-	µg/l	4	A-T-025w

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
Chromium (leachable) _A	21	-	2	-	-	-	-	µg/l	1	A-T-025w
Lead (leachable) _A	1110	-	189	-	-	-	-	µg/l	1	A-T-025w
Mercury (leachable) _A	<0.1	-	<0.1	-	-	-	-	µg/l	0.1	A-T-025w
Nickel (leachable) _A	3	-	4	-	-	-	-	µg/l	2	A-T-025w
Selenium (leachable) _A	<1	-	<1	-	-	-	-	µg/l	1	A-T-025w
Vanadium (leachable) _A	5	-	4	-	-	-	-	µg/l	1	A-T-025w
Zinc (leachable) _A	174	-	160	-	-	-	-	µg/l	2	A-T-025w

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD	-	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual) _D	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	-	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
Mercury, Speciated (tot+inorg+org(methyl)+elemental)										
Mercury (Elemental) _D	< 0.6	-	-	-	-	< 0.6	-	µg/kg	0.6	Subcon DETS D+G
Mercury (Inorganic) _D	2210	-	-	-	-	2500	-	µg/kg	100	Subcon DETS D+G
Mercury (Methyl) _D	< 100	-	-	-	-	<100	-	µg/kg	100	Subcon DETS D+G
Mercury (SUBCON DETS) _D	0.19	-	-	-	-	11	-	mg/kg	0.05	Subcon DETS D+G

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	2.24	0.29	0.57	<0.01	0.22	0.24	2.82	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	1.19 ^U	0.05	0.05 ^U	<0.01 ^U	0.02 ^U	0.02 ^U	0.05 ^U	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	15.7	0.45	0.90	<0.02	0.28	0.35	2.58	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	64.5	1.42	2.71	<0.04	0.67	1.41	4.30	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	47	1.71	2.46	<0.04	0.53	1.35	3.45	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	59.8	1.73	3.10	<0.05	0.66	1.68	4.07	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	18.6	0.85	1.11	<0.05	0.20	0.62	1.49	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	18.9	0.62	1.07	<0.07	0.27	0.63	1.43	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	84	1.93	3.07	<0.06	0.83	1.75	4.64	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	5.06	0.22	0.27	<0.04	<0.04	0.16	0.35	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	130	3.27	6.11	<0.08	1.84	2.90	11	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	2.31	0.20	0.40	<0.01	0.16	0.16	1.62	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	23.5	0.87	1.21	<0.03	0.20	0.61	1.56	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.24	0.07	0.17	<0.03	0.06	0.07	0.40	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	47.9	2.08	4.40	<0.03	1.38	1.68	12.2	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	116	3.11	5.49	<0.07	1.75	2.80	9.27	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	637	18.9	33.1	<0.08	9.07	16.4	61.2	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	0.05	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	0.08	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	0.23	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	2.31	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	1.36	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	1.37	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	0.76	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	0.55	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	2.44	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	0.16	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	4.77	-	0.03	-	-	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	0.02	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	0.77	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	<0.02	-	<0.02	-	-	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	0.35	-	0.04	-	-	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	4.02	-	0.03	-	-	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	19.2	-	0.10	-	-	-	-	µg/l	0.02	A-T-019w

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
SVOC										
4-Bromophenyl phenyl ether _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Hexachlorobenzene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Diethyl phthalate _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Dimethyl phthalate _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Dibenzofuran _A	1500	-	-	-	-	-	202	µg/kg	100	A-T-052s
Carbazole _A	<10000	-	-	-	-	-	293	µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	<10000	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	<50000	-	-	-	-	-	1790	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
4-Nitrophenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
3+4-Methylphenol _A	310	-	-	-	-	-	<100	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2-Nitrophenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2-Methylphenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2-Chlorophenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	174	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
1,4-Dichlorobenzene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
1,3-Dichlorobenzene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
1,2-Dichlorobenzene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2-Chloronaphthalene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
2-Methylnaphthalene _A	306	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Acenaphthylene _A	2810	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Acenaphthene _A	1320	-	-	-	-	-	561	µg/kg	100	A-T-052s
Anthracene _A	17200	-	-	-	-	-	1020	µg/kg	100	A-T-052s
Benzo(a)anthracene _A	78200	-	-	-	-	-	3760	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05736

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Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
Benzo(b)fluoranthene _A	74100	-	-	-	-	-	3590	µg/kg	100	A-T-052s
Benzo(k)fluoranthene _A	30900	-	-	-	-	-	1010	µg/kg	100	A-T-052s
Benzo(a)pyrene _A	72500	-	-	-	-	-	3260	µg/kg	100	A-T-052s
Benzo(ghi)perylene _A	54400	-	-	-	-	-	1560	µg/kg	100	A-T-052s
Chrysene _A	87600	-	-	-	-	-	4160	µg/kg	100	A-T-052s
Fluoranthene _A	209000	-	-	-	-	-	7050	µg/kg	100	A-T-052s
Fluorene _A	2900	-	-	-	-	-	467	µg/kg	100	A-T-052s
Indeno(1,2,3-cd)pyrene _A	75500	-	-	-	-	-	1670	µg/kg	100	A-T-052s
Phenanthrene _A	53800	-	-	-	-	-	4840	µg/kg	100	A-T-052s
Pyrene _A	162000	-	-	-	-	-	6850	µg/kg	100	A-T-052s
Naphthalene _A	259	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Dibenzo(ah)anthracene _A	<10000	-	-	-	-	-	373	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Phenol _A	105	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Pentachlorophenol _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
n-Dioctylphthalate _A	<50000	-	-	-	-	-	<500	µg/kg	500	A-T-052s
n-Dibutylphthalate _A	<10000	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Nitrobenzene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Isophorone _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Hexachloroethane _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Hexachlorobutadiene _A	<100	-	-	-	-	-	<100	µg/kg	100	A-T-052s
Perylene _A	21100	-	-	-	-	-	897	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
SVOC (leachable)										
1,2,4-Trichlorobenzene SVOC (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
1,2-Dichlorobenzene SVOC (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
1,3-Dichlorobenzene SVOC (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
1,4-Dichlorobenzene SVOC (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2,4,5-Trichlorophenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2,4,6-Trichlorophenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2,4-Dichlorophenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2,4-Dimethylphenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2,4-Dinitrotoluene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2,6-Dinitrotoluene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2-Chloronaphthalene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2-Chlorophenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2-Methylnaphthalene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2-Methylphenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
2-Nitrophenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
4-Bromophenyl phenyl ether (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
4-Chloro-3-methylphenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
3+4-Methylphenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
4-Nitrophenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Acenaphthene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Acenaphthylene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Anthracene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Benzo(a)anthracene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Benzo(a)pyrene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Benzo(b)fluoranthene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Benzo(ghi)perylene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Benzo(k)fluoranthene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Bis(2-chloroethoxy)methane (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Bis(2-chloroethyl)ether (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Bis(2-chloroisopropyl)ether (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Bis(2-ethylhexyl)phthalate (leachable) _A	<4	-	-	-	-	-	<4	µg/l	4	A-T-052w
Butylbenzyl phthalate (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
Carbazole (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Chrysene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Dibenzo(ah)anthracene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Dibenzofuran (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Diethyl phthalate (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Dimethyl phthalate (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
n-Dibutylphthalate (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
n-Dioctylphthalate (leachable) _A	<10	-	-	-	-	-	<10	µg/l	10	A-T-052w
Fluoranthene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Fluorene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Hexachlorobenzene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Hexachlorobutadiene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Hexachloroethane (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Indeno(1,2,3-cd)pyrene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Isophorone (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Naphthalene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Nitrobenzene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
n-Nitroso-n-dipropylamine (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Pentachlorophenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Perylene (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Phenanthrene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w
Phenol (leachable) _A	<2	-	-	-	-	-	<2	µg/l	2	A-T-052w
Pyrene (leachable) _A	-	-	-	-	-	-	<2	µg/l	2	A-T-052w

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP229	TP231	TP235	TP235	TP201	TP237	TP233			
Depth to Top	0.50	0.50	0.50	1.50	1.90	0.50	0.50			
Depth To Bottom										
Date Sampled	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23	07-Jun-23			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AB	4AB	4ABE	1	5A	1A	4AE			
TPH CWG with Clean Up										
Ali >C5-C6 _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	-	<1	-	-	-	-	-	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	-	<1	-	-	-	-	-	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	-	<1	-	-	-	-	-	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	-	2	-	-	-	-	-	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	-	18	-	-	-	-	-	mg/kg	1	A-T-055s
Total Aliphatics _A	-	20	-	-	-	-	-	mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	-	4	-	-	-	-	-	mg/kg	1	A-T-055s
Aro >C10-C12 _A	-	1	-	-	-	-	-	mg/kg	1	A-T-055s
Aro >C12-C16 _A	-	13	-	-	-	-	-	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	-	42	-	-	-	-	-	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	-	92	-	-	-	-	-	mg/kg	1	A-T-055s
Total Aromatics _A	-	152	-	-	-	-	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	-	172	-	-	-	-	-	mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s
MTBE _A [#]	-	<0.01	-	-	-	-	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/8							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP233									
Depth to Top	2.00									
Depth To Bottom										
Date Sampled	07-Jun-23									
Sample Type	SOIL - ES									
Sample Matrix Code	6AE									
% Stones >10mm _A	<0.1							% w/w	0.1	A-T-044
pH _D ^{M#}	7.57							pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.02							g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	220							mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1							mg/kg	1	A-T-042sTCN
Phenol _A	<0.2							mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	1.32							% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	0.0132							N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	2							mg/kg	1	A-T-024s
Beryllium _D	1.0							mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0							mg/kg	1	A-T-027s
Cadmium _D ^{M#}	0.7							mg/kg	0.5	A-T-024s
Copper _D ^{M#}	23							mg/kg	1	A-T-024s
Chromium _D ^{M#}	31							mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1							mg/kg	1	A-T-040s
Lead _D ^{M#}	17							mg/kg	1	A-T-024s
Mercury _D	0.20							mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	31							mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1							mg/kg	1	A-T-024s
Vanadium _D ^{M#}	28							mg/kg	1	A-T-024s
Zinc _D ^{M#}	57							mg/kg	5	A-T-024s

Envirolab Job Number: 23/05736

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05736/8							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP233									
Depth to Top	2.00									
Depth To Bottom										
Date Sampled	07-Jun-23									
Sample Type	SOIL - ES									
Sample Matrix Code	6AE									
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01 ^U							mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02							mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05							mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07							mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06							mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04							mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08							mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01							mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03							mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07							mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08							mg/kg	0.01	A-T-019s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 The results reported herein relate only to the material supplied to the laboratory.
 The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
 Analytical results reflect the quality of the sample at the time of analysis only.
 Opinions and Interpretations expressed are outside our scope of accreditation.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "A"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
 Stones etc. are not removed from the sample prior to analysis
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
 For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
 For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
 All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
 Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
 Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Coopers (Chester) Limited, Coopers, Park House, Sandpiper Court, Chester
Business Park, Chester, England, CH4 9QU

Project: Wilbraham Road, Chorlton

Clients Project No: 8165

Project No: 23/05736

Date Received: 12/06/2023 (am)

Cool Box Temperatures (°C): 20.1,19.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	23/05736/8
Client Sample No								
Client Sample ID/Depth	TP229 0.50m	TP231 0.50m	TP235 0.50m	TP235 1.50m	TP201 1.90m	TP237 0.50m	TP233 0.50m	TP233 2.00m
Date Sampled	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23
A-T-004s		16/06/2023						
A-T-007s		23/06/2023						
A-T-019s	19/06/2023	23/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023
A-T-019w	12/07/2023		12/07/2023					
A-T-022s		16/06/2023						
A-T-024s	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-025w	10/07/2023	20/06/2023	10/07/2023					
A-T-026s	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-026w	05/07/2023	20/06/2023	05/07/2023					
A-T-026w (F)		20/06/2023						
A-T-027s	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023
A-T-028s	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-030s		20/06/2023						
A-T-031s	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023
A-T-031w	05/07/2023	20/06/2023	05/07/2023					
A-T-032s	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-032w		20/06/2023						
A-T-037w		20/06/2023						
A-T-038w	05/07/2023		05/07/2023					
A-T-040s	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-042sTCN	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023	14/06/2023
A-T-042wTCN	07/07/2023		07/07/2023					
A-T-044	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023	16/06/2023
A-T-045	16/06/2023	16/06/2023	16/06/2023		16/06/2023	16/06/2023	16/06/2023	
A-T-050s	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023	15/06/2023
A-T-050w	05/07/2023	20/06/2023	05/07/2023					
A-T-052s	19/06/2023						15/06/2023	
A-T-052w	10/07/2023						10/07/2023	
A-T-055s		16/06/2023						
A-T-ANCs		19/06/2023						
Calc-As Recd		16/06/2023						
Calc-no stones		20/06/2023						

Lab Sample ID	23/05736/1	23/05736/2	23/05736/3	23/05736/4	23/05736/5	23/05736/6	23/05736/7	23/05736/8
Client Sample No								
Client Sample ID/Depth	TP229 0.50m	TP231 0.50m	TP235 0.50m	TP235 1.50m	TP201 1.90m	TP237 0.50m	TP233 0.50m	TP233 2.00m
Date Sampled	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23	07/06/23
Probe (w)		20/06/2023						

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05867
Issue Number: 1

Date: 26 July, 2023

Client: Coopers (Chester) Limited
Coopers
Park House, Sandpiper Court
Chester Business Park
Chester
England
CH4 9QU

Project Manager: (use)/Geotech/Jackie Lewis
Project Name: Wilbraham Road, Chorlton
Project Ref: 8165
Order No: P/O 9739 - JAL/9756 - JAL
Date Samples Received: 13/06/23
Date Instructions Received: 14/06/23
Date Analysis Completed: 26/07/23

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
% Stones >10mm _A	<0.1	<0.1	3.7	<0.1	<0.1	10.0	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	7.16	6.91	-	6.20	7.74	7.72	7.35	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.02	0.03	-	0.06	0.07	0.03	0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	1100	1200	-	440	2400	370	450	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	3	3	-	<1	2	<1	<1	mg/kg	1	A-T-042sTCN
Phenol _A	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	16.8	7.07	-	3.07	7.19	4.84	3.49	% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	0.1681	0.0707	-	0.0307	0.0719	0.0484	0.0349	N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	121	32	<1	16	70	21	14	mg/kg	1	A-T-024s
Beryllium _D	4.7	1.3	-	0.9	2.1	1.4	1.1	mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	14.9	621	-	5.1	13.7	3.5	1.9	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	472	135	-	64	3370	163	92	mg/kg	1	A-T-024s
Chromium _D ^{M#}	29	20	-	14	114	22	25	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	-	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	3260	904	-	151	937	264	212	mg/kg	1	A-T-024s
Mercury _D	0.93	1.33	-	0.25	1.27	1.61	0.71	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	67	20	-	17	7220	169	65	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	-	<1	<1	<1	<1	mg/kg	1	A-T-024s
Vanadium _D ^{M#}	76	25	-	23	40	29	29	mg/kg	1	A-T-024s
Zinc _D ^{M#}	2280	171000	-	1400	4510	764	420	mg/kg	5	A-T-024s
Leachate Prep NRA (10:1) _A	-	*	*	-	*	*	-			A-T-001
pH (leachable) _A	-	6.19	-	-	7.54	7.60	-	pH	0.01	A-T-031w
Alkalinity (total) (leachable) Colorimetry _A	-	56	-	-	60	61	-	mg/l Ca CO3	20	A-T-038w
Sulphate (leachable) _A	-	7.82	-	-	14.91	8.62	-	mg/l	1	A-T-026w
Cyanide (total) (leachable) _A	-	<0.005	-	-	<0.005	<0.005	-	mg/l	0.005	A-T-042wTCN
Phenol (leachable) _A	-	<0.01	-	-	<0.01	<0.01	-	mg/l	0.01	A-T-050w
Arsenic (leachable) _A	-	2	3	-	1	2	-	µg/l	1	A-T-025w
Boron (leachable) _A	-	<10	-	-	11	10	-	µg/l	10	A-T-025w
Beryllium (leachable) _A	-	<1	-	-	<1	<1	-	µg/l	1	A-T-025w
Cadmium (leachable) _A	-	35	-	-	<1	<1	-	µg/l	1	A-T-025w
Copper (leachable) _A	-	18	-	-	31	15	-	µg/l	4	A-T-025w
Chromium (leachable) _A	-	<1	-	-	2	<1	-	µg/l	1	A-T-025w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
Lead (leachable) _A	-	178	-	-	12	23	-	µg/l	1	A-T-025w
Mercury (leachable) _A	-	<0.1	-	-	<0.1	<0.1	-	µg/l	0.1	A-T-025w
Nickel (leachable) _A	-	4	-	-	79	3	-	µg/l	2	A-T-025w
Selenium (leachable) _A	-	<1	-	-	<1	<1	-	µg/l	1	A-T-025w
Vanadium (leachable) _A	-	2	-	-	<1	2	-	µg/l	1	A-T-025w
Zinc (leachable) _A	-	23800	-	-	19	16	-	µg/l	2	A-T-025w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	-	NAD	NAD	NAD	NAD			A-T-045
Asbestos Matrix (visual) _D	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	-	N/A	N/A	N/A	N/A			A-T-045

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
Mercury, Speciated (tot+inorg+org(methyl)+elemental)										
Mercury (Elemental) _D	-	< 0.6	-	-	-	< 0.6	-	µg/kg	0.6	Subcon DETS D+G
Mercury (Inorganic) _D	-	2400	-	-	-	1710	-	µg/kg	100	Subcon DETS D+G
Mercury (Methyl) _D	-	< 100	-	-	-	< 100	-	µg/kg	100	Subcon DETS D+G
Mercury (SUBCON DETS) _D	-	2.30	-	-	-	1.62	-	mg/kg	0.05	Subcon DETS D+G

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
PAH-16MS										
Acenaphthene _A ^{M#}	0.24	1.05	-	2.92	0.67	4.41	0.74	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.01	0.10	-	0.08	0.02	1.40	0.02	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.34	1.71	-	4.41	0.70	6.61	0.57	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.93	5.12	-	8.50	1.29	11.2	1.30	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.74	5.27	-	6.42	0.95	11.2	0.94	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.04	5.53	-	7.76	1.14	11	1.16	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.38	2.45	-	2.41	0.64	7.26	0.37	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.34	1.87	-	2.65	0.46	4.87	0.43	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.08	5.83	-	8.91	1.40	15.6	1.47	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.08	0.58	-	0.44	0.08	1.55	0.07	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.47	12.5	-	24.6	3.51	28.1	2.94	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.15	0.72	-	2.39	0.38	4.27	0.34	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.38	2.94	-	2.54	0.59	7.20	0.36	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.07	0.37	-	0.39	0.11	6.50	0.19	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	1.70	8.42	-	19.9	3.85	33.4	3.53	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.21	11.4	-	22.4	2.84	27.4	2.69	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	12.2	65.9	-	117	18.6	182	17.1	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	-	<0.02	-	-	<0.02	0.18	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	-	<0.02	-	-	<0.02	0.03	-	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	-	<0.02	-	-	<0.02	0.04	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	-	<0.02	-	-	<0.02	0.02	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	-	<0.02	-	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	-	<0.02	-	-	<0.02	0.02	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	-	<0.02	-	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	-	<0.02	-	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	-	<0.02	-	-	<0.02	0.04	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	-	<0.02	-	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	-	0.03	-	-	<0.02	0.12	-	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	-	<0.02	-	-	<0.02	0.09	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	-	<0.02	-	-	<0.02	<0.02	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	-	<0.02	-	-	<0.02	0.70	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	-	<0.02	-	-	<0.02	0.25	-	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	-	0.02	-	-	<0.02	0.11	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	-	0.05	-	-	<0.02	1.60	-	µg/l	0.02	A-T-019w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Hexachlorobenzene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Diethyl phthalate _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Dimethyl phthalate _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Dibenzofuran _A	-	641	-	-	-	4950	-	µg/kg	100	A-T-052s
Carbazole _A	-	1010	-	-	-	2720	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	-	<500	-	-	-	<5000	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
4-Nitrophenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
3+4-Methylphenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2-Nitrophenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2-Methylphenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2-Chlorophenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2-Chloronaphthalene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
2-Methylnaphthalene _A	-	179	-	-	-	2720	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Phenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Pentachlorophenol _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
n-Diethylphthalate _A	-	<500	-	-	-	<5000	-	µg/kg	500	A-T-052s
n-Dibutylphthalate _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Nitrobenzene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Isophorone _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Hexachloroethane _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Hexachlorobutadiene _A	-	<100	-	-	-	<1000	-	µg/kg	100	A-T-052s
Perylene _A	-	1730	-	-	-	6640	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
SVOC excluding PAH-16 (leachable)										
1,2,4-Trichlorobenzene SVOC (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
1,2-Dichlorobenzene SVOC (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
1,3-Dichlorobenzene SVOC (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
1,4-Dichlorobenzene SVOC (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2,4,5-Trichlorophenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2,4,6-Trichlorophenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2,4-Dichlorophenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2,4-Dimethylphenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2,4-Dinitrotoluene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2,6-Dinitrotoluene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2-Chloronaphthalene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2-Chlorophenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2-Methylnaphthalene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2-Methylphenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
2-Nitrophenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
4-Bromophenyl phenyl ether (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
4-Chloro-3-methylphenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
3+4-Methylphenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
4-Nitrophenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Bis(2-chloroethoxy)methane (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Bis(2-chloroethyl)ether (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Bis(2-chloroisopropyl)ether (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Bis(2-ethylhexyl)phthalate (leachable) _A	-	<4	-	-	-	<4	-	µg/l	4	A-T-052w
Butylbenzyl phthalate (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Carbazole (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Dibenzofuran (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Diethyl phthalate (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Dimethyl phthalate (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
n-Dibutylphthalate (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
n-Dioctylphthalate (leachable) _A	-	<10	-	-	-	<10	-	µg/l	10	A-T-052w
Hexachlorobenzene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Hexachlorobutadiene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
Hexachloroethane (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Isophorone (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Nitrobenzene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
n-Nitroso-n-dipropylamine (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Pentachlorophenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Perylene (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w
Phenol (leachable) _A	-	<2	-	-	-	<2	-	µg/l	2	A-T-052w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
TPH CWG (leachable) with Clean Up										
Ali >C5-C6 (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
Ali >C6-C8 (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
Ali >C8-C10 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Ali >C10-C12 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Ali >C12-C16 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Ali >C16-C21 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Ali >C21-C35 (leachable) _A	-	-	-	-	-	<20	-	µg/l	20	A-T-055w
Total Aliphatics (leachable) _A	-	-	-	-	-	<20	-	µg/l	10	Calc-As Recd
Aro >C5-C7 (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
Aro >C7-C8 (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
Aro >C8-C10 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Aro >C10-C12 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Aro >C12-C16 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Aro >C16-C21 (leachable) _A	-	-	-	-	-	<10	-	µg/l	10	A-T-055w
Total Aromatics (leachable) _A	-	-	-	-	-	<20	-	µg/l	20	Calc-As Recd
TPH (Ali & Aro >C5-C35) (leachable) _A	-	-	-	-	-	<20	-	µg/l	20	Calc-As Recd
BTEX - Benzene (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
BTEX - Toluene (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
BTEX - Ethyl Benzene (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
BTEX - o Xylene (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
BTEX - m & p Xylene (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
MTBE (leachable) _A	-	-	-	-	-	<1	-	µg/l	1	A-T-022w
Aro >C21-C35 (leachable) _A	-	-	-	-	-	<20	-	µg/l	20	A-T-055w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP243	TP243	TP243	TP244	TP245	TP246	TP247			
Depth to Top	0.50	0.80	1.40	1.20	0.60	1.00	0.50			
Depth To Bottom										
Date Sampled	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	4AB	4AE	1A	5A	4AE	5A	4A			
TPH CWG with Clean Up										
Ali >C5-C6 _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	-	<1	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	-	<1	-	-	-	20	-	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	-	3	-	-	-	46	-	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	-	18	-	-	-	40	-	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	-	228	-	-	-	160	-	mg/kg	1	A-T-055s
Total Aliphatics _A	-	249	-	-	-	266	-	mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	-	3	-	-	-	<1	-	mg/kg	1	A-T-055s
Aro >C10-C12 _A	-	1	-	-	-	118	-	mg/kg	1	A-T-055s
Aro >C12-C16 _A	-	32	-	-	-	1160	-	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	-	171	-	-	-	3280	-	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	-	331	-	-	-	4790	-	mg/kg	1	A-T-055s
Total Aromatics _A	-	538	-	-	-	9350	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	-	787	-	-	-	9610	-	mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
MTBE _A [#]	-	<0.01	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
% Stones >10mm _A	<0.1	8.5	<0.1	<0.1	<0.1	<0.1	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	5.70	7.06	7.83 ^U	5.59	7.84	6.59	-	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01	<0.01 ^U	0.08	0.02	0.03	-	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	990	<200	<200 ^U	590	630	320	-	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	<1 ^U	<1	<1	<1	-	mg/kg	1	A-T-042sTCN
Phenol _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	3.09	0.86	0.22 ^U	3.22	1.90	0.62	-	% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	0.0309	0.0086	0.0022 ^U	0.0322	0.0190	0.0062	-	N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	73	4	<1 ^U	16	67	5	<1	mg/kg	1	A-T-024s
Beryllium _D	0.9	1.0	0.8	0.8	2.0	<0.5	-	mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0 ^U	<1.0	<1.0	<1.0	-	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	2.1	3.6	<0.5 ^U	0.6	3.2	<0.5	-	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	438	43	2 ^U	60	99	21	-	mg/kg	1	A-T-024s
Chromium _D ^{M#}	133	36	13 ^U	13	40	6	-	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	-	mg/kg	1	A-T-040s
Lead _D ^{M#}	1670	81	3 ^U	158	1240	138	-	mg/kg	1	A-T-024s
Mercury _D	0.56	<0.17	<0.17	0.21	<0.17	<0.17	-	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	19	48	8 ^U	17	44	8	-	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1 ^U	<1	<1	<1	-	mg/kg	1	A-T-024s
Vanadium _D ^{M#}	24	23	16 ^U	21	47	7	-	mg/kg	1	A-T-024s
Zinc _D ^{M#}	651	856	202 ^U	85	893	183	-	mg/kg	5	A-T-024s
Leachate Prep NRA (10:1) _A	*	-	-	-	-	-	*			A-T-001
pH (leachable) _A	7.46	-	-	-	-	-	-	pH	0.01	A-T-031w
Alkalinity (total) (leachable) Colorimetry _A	65	-	-	-	-	-	-	mg/l Ca CO3	20	A-T-038w
Sulphate (leachable) _A	5.05	-	-	-	-	-	-	mg/l	1	A-T-026w
Cyanide (total) (leachable) _A	0.033	-	-	-	-	-	-	mg/l	0.005	A-T-042wTCN
Phenol (leachable) _A	<0.01	-	-	-	-	-	-	mg/l	0.01	A-T-050w
Arsenic (leachable) _A	11	-	-	-	-	-	8	µg/l	1	A-T-025w
Boron (leachable) _A	<10	-	-	-	-	-	-	µg/l	10	A-T-025w
Beryllium (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-025w
Cadmium (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-025w
Copper (leachable) _A	96	-	-	-	-	-	-	µg/l	4	A-T-025w
Chromium (leachable) _A	20	-	-	-	-	-	-	µg/l	1	A-T-025w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
Lead (leachable) _A	644	-	-	-	-	-	-	µg/l	1	A-T-025w
Mercury (leachable) _A	<0.1	-	-	-	-	-	-	µg/l	0.1	A-T-025w
Nickel (leachable) _A	3	-	-	-	-	-	-	µg/l	2	A-T-025w
Selenium (leachable) _A	<1	-	-	-	-	-	-	µg/l	1	A-T-025w
Vanadium (leachable) _A	1	-	-	-	-	-	-	µg/l	1	A-T-025w
Zinc (leachable) _A	167	-	-	-	-	-	-	µg/l	2	A-T-025w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	Amosite	NAD	NAD ^U	NAD	NAD	NAD	-			A-T-045
Asbestos Matrix (visual) _D	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) _D	Loose Fibres	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A	N/A	N/A	-			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) _D	0.004	-	-	-	-	-	-	% w/w	0.001	A-T-054

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	<0.01	<0.01 ^U	0.43	0.03	0.04	-	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01 ^U	<0.01	<0.01	0.01	-	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	<0.02	<0.02 ^U	0.30	<0.02	0.11	-	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	<0.04	<0.04	<0.04 ^U	0.47	<0.04	0.26	-	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	<0.04	<0.04	<0.04 ^U	0.34	<0.04	0.26	-	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	<0.05	<0.05	<0.05 ^U	0.44	<0.05	0.25	-	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	<0.05	<0.05 ^U	0.16	<0.05	0.09	-	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	<0.07	<0.07 ^U	0.21	<0.07	<0.07	-	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	<0.06	<0.06	<0.06 ^U	0.67	<0.06	0.31	-	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04 ^U	<0.04	<0.04	<0.04	-	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	<0.08	<0.08	<0.08 ^U	2.01	<0.08	0.77	-	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01 ^U	0.23	0.01	0.04	-	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	<0.03	<0.03	<0.03 ^U	0.14	<0.03	0.10	-	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03 ^U	0.05	<0.03	<0.03	-	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	<0.03	0.07	<0.03 ^U	1.88	0.09	0.68	-	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	<0.07	<0.07	<0.07 ^U	1.88	<0.07	0.68	-	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	<0.08	<0.08	<0.08 ^U	9.21	0.13	3.60	-	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
PAH 16MS (leachable)										
Acenaphthene (leachable) _A	0.04	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Acenaphthylene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Anthracene (leachable) _A	0.04	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)anthracene (leachable) _A	0.03	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(a)pyrene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(b)fluoranthene (leachable) _A	0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(ghi)perylene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Benzo(k)fluoranthene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Chrysene (leachable) _A	0.06	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Dibenzo(ah)anthracene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Fluoranthene (leachable) _A	0.11	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Fluorene (leachable) _A	0.04	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Indeno(123-cd)pyrene (leachable) _A	<0.02	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Naphthalene (leachable) _A	0.04	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Phenanthrene (leachable) _A	0.20	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Pyrene (leachable) _A	0.10	-	-	-	-	-	-	µg/l	0.02	A-T-019w
Total PAH 16MS (leachable) _A	0.68	-	-	-	-	-	-	µg/l	0.02	A-T-019w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
SVOC excluding PAH-16										
4-Bromophenyl phenyl ether _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Hexachlorobenzene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Diethyl phthalate _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Dimethyl phthalate _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Dibenzofuran _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Carbazole _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Butylbenzyl phthalate _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-ethylhexyl)phthalate _A	<500	-	<500	-	<500	-	-	µg/kg	500	A-T-052s
Bis(2-chloroethoxy)methane _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-chloroethyl)ether _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
4-Nitrophenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
3+4-Methylphenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
4-Chloro-3-methylphenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2-Nitrophenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2-Methylphenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
1,2,4-Trichlorobenzene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2-Chlorophenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2,6-Dinitrotoluene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dinitrotoluene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dimethylphenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2,4-Dichlorophenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2,4,6-Trichlorophenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2,4,5-Trichlorophenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
1,4-Dichlorobenzene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
1,3-Dichlorobenzene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
1,2-Dichlorobenzene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2-Chloronaphthalene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
2-Methylnaphthalene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Bis(2-chloroisopropyl)ether _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Phenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Pentachlorophenol _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
n-Nitroso-n-dipropylamine _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
n-Diethylphthalate _A	<500	-	<500	-	<500	-	-	µg/kg	500	A-T-052s
n-Dibutylphthalate _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Nitrobenzene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Isophorone _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Hexachloroethane _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Hexachlorobutadiene _A	<100	-	<100	-	<100	-	-	µg/kg	100	A-T-052s
Perylene _A	<100	-	<100	-	275	-	-	µg/kg	100	A-T-052s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12	23/05867/13	23/05867/14	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP248	TP253	TP253	TP254	TP256	TP256	TP256			
Depth to Top	0.50	0.60	0.70	1.20	0.50	0.90	1.40			
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23			
Sample Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	1A	5A	7	4A	5AE	1	1			
TPH CWG with Clean Up										
Ali >C5-C6 _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	-	-	-	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	-	-	-	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	-	-	_ U	-	-	<1	-	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	-	-	_ U	-	-	1	-	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	-	-	_ U	-	-	5	-	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	-	-	_ U	-	-	54	-	mg/kg	1	A-T-055s
Total Aliphatics _A	-	-	-	-	-	60	-	mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	-	-	-	-	-	2	-	mg/kg	1	A-T-055s
Aro >C10-C12 _A	-	-	-	-	-	1	-	mg/kg	1	A-T-055s
Aro >C12-C16 _A	-	-	-	-	-	4	-	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	-	-	_ U	-	-	6	-	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	-	-	_ U	-	-	18	-	mg/kg	1	A-T-055s
Total Aromatics _A	-	-	-	-	-	32	-	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	-	-	-	-	-	92	-	mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s
MTBE _A [#]	-	-	_ U	-	-	<0.01	-	mg/kg	0.01	A-T-022s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/15	23/05867/16	23/05867/17	23/05867/18	23/05867/19	23/05867/20	23/05867/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP257	TP257	TP258	TP259	TP259	TP239	TP241			
Depth to Top	0.50	1.20	1.70	0.80	1.00	0.50	0.10			
Depth To Bottom										
Date Sampled	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	5AE	1A	3	1A	1A	4AE	4AE			
% Stones >10mm _A	<0.1	<0.1	<0.1	<0.1	<0.1	4.9	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	7.76	5.79	-	6.83	-	-	7.06	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	0.02	-	<0.01	-	-	<0.01	g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	210	<200	-	280	-	-	280	mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	<1	<1	-	<1	-	-	<1	mg/kg	1	A-T-042sTCN
Phenol _A	<0.2	<0.2	-	<0.2	-	-	<0.2	mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	1.91	1.30	-	2.30	-	-	1.71	% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	0.0191	0.0130	-	0.0230	-	-	0.0171	N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	6	<1	<1	12	2	-	4	mg/kg	1	A-T-024s
Beryllium _D	1.1	<0.5	-	0.6	-	-	0.5	mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	-	<1.0	-	-	<1.0	mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.1	<0.5	-	<0.5	-	-	0.6	mg/kg	0.5	A-T-024s
Copper _D ^{M#}	42	4	-	40	-	-	24	mg/kg	1	A-T-024s
Chromium _D ^{M#}	26	3	-	11	-	-	44	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	-	<1	-	-	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	55	7	-	166	-	-	57	mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	-	0.18	-	0.66	<0.17	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	37	4	-	13	-	-	13	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	-	<1	-	-	<1	mg/kg	1	A-T-024s
Vanadium _D ^{M#}	30	3	-	18	-	-	16	mg/kg	1	A-T-024s
Zinc _D ^{M#}	183	11	-	82	-	-	60	mg/kg	5	A-T-024s
Leachate Prep NRA (10:1) _A	-	-	*	-	*	-	-			A-T-001
Arsenic (leachable) _A	-	-	1	-	2	-	-	µg/l	1	A-T-025w

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/15	23/05867/16	23/05867/17	23/05867/18	23/05867/19	23/05867/20	23/05867/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP257	TP257	TP258	TP259	TP259	TP239	TP241			
Depth to Top	0.50	1.20	1.70	0.80	1.00	0.50	0.10			
Depth To Bottom										
Date Sampled	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	5AE	1A	3	1A	1A	4AE	4AE			
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	-	NAD	-	-	NAD			A-T-045
Asbestos Matrix (visual) _D	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	-	-	-			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	-	N/A	-	-	N/A			A-T-045

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/15	23/05867/16	23/05867/17	23/05867/18	23/05867/19	23/05867/20	23/05867/21	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP257	TP257	TP258	TP259	TP259	TP239	TP241			
Depth to Top	0.50	1.20	1.70	0.80	1.00	0.50	0.10			
Depth To Bottom										
Date Sampled	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	09-Jun-23	08-Jun-23	08-Jun-23			
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sample Matrix Code	5AE	1A	3	1A	1A	4AE	4AE			
PAH-16MS										
Acenaphthene _A ^{M#}	0.77	<0.01	-	1.58	-	4.15	0.24	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.04	<0.01	-	0.02	-	0.14	0.01	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.85	<0.02	-	0.71	-	4.73	0.29	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.05	<0.04	-	1.08	-	4.81	0.64	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.87	<0.04	-	0.73	-	3.19	0.65	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.07	<0.05	-	0.89	-	3.71	0.80	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.34	<0.05	-	0.27	-	1.05	0.36	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.44	<0.07	-	0.34	-	1.43	0.30	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.23	<0.06	-	1.30	-	4.94	0.83	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.06	<0.04	-	0.05	-	0.23	0.06	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	4.16	<0.08	-	4.41	-	17	1.75	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.50	<0.01	-	0.83	-	2.77	0.13	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.34	<0.03	-	0.25	-	1.12	0.35	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.19	<0.03	-	0.12	-	2.82	<0.03	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	3.73	<0.03	-	4.84	-	21.1	1.55	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	3.97	<0.07	-	3.96	-	15.3	1.57	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	19.6	<0.08	-	21.4	-	88.5	9.53	mg/kg	0.01	A-T-019s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/22	23/05867/23	23/05867/24					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP241	TP261	TP260							
Depth to Top	0.20	0.20	0.60							
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	4AE	4ABE	1A							
% Stones >10mm _A	<0.1	<0.1	<0.1					% w/w	0.1	A-T-044
pH _D ^{M#}	5.72	6.07	6.84					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01	<0.01					g/l	0.01	A-T-026s
Sulphate (acid soluble) _D ^{M#}	850	420	<200					mg/kg	200	A-T-028s
Cyanide (total) _A ^{M#}	1	<1	<1					mg/kg	1	A-T-042sTCN
Phenol _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Total Organic Carbon _D ^{M#}	3.56	3.13	0.72					% w/w	0.03	A-T-032s
Fraction of organic carbon _D [#]	0.0356	0.0313	0.0072					N/A	0.0003	A-T-032s
Arsenic _D ^{M#}	19	13	<1					mg/kg	1	A-T-024s
Beryllium _D	1.1	0.7	<0.5					mg/kg	0.5	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D ^{M#}	1.0	0.7	<0.5					mg/kg	0.5	A-T-024s
Copper _D ^{M#}	111	58	7					mg/kg	1	A-T-024s
Chromium _D ^{M#}	47	12	13					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	245	132	20					mg/kg	1	A-T-024s
Mercury _D	0.90	0.34	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	27	17	6					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Vanadium _D ^{M#}	24	21	7					mg/kg	1	A-T-024s
Zinc _D ^{M#}	218	80	26					mg/kg	5	A-T-024s

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/22	23/05867/23	23/05867/24					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP241	TP261	TP260							
Depth to Top	0.20	0.20	0.60							
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	4AE	4ABE	1A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual) _D	-	-	-							A-T-045
Asbestos Matrix (microscope) _D	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/22	23/05867/23	23/05867/24					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP241	TP261	TP260							
Depth to Top	0.20	0.20	0.60							
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	4AE	4ABE	1A							
Mercury, Speciated (tot+inorg+org(methyl)+elemental)										
Mercury (Elemental) _D	-	< 0.6	-					µg/kg	0.6	Subcon DETS D+G
Mercury (Inorganic) _D	-	510	-					µg/kg	100	Subcon DETS D+G
Mercury (Methyl) _D	-	< 100	-					µg/kg	100	Subcon DETS D+G
Mercury (SUBCON DETS) _D	-	0.48	-					mg/kg	0.05	Subcon DETS D+G

Envirolab Job Number: 23/05867

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05867/22	23/05867/23	23/05867/24					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP241	TP261	TP260							
Depth to Top	0.20	0.20	0.60							
Depth To Bottom										
Date Sampled	08-Jun-23	09-Jun-23	09-Jun-23							
Sample Type	SOIL	SOIL	SOIL							
Sample Matrix Code	4AE	4ABE	1A							
PAH-16MS										
Acenaphthene _A ^{M#}	0.23	0.18	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.05	0.01	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.40	0.30	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.47	1.01	0.05					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.48	0.88	0.06					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.88	1.13	0.06					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.75	0.50	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.67	0.42	<0.07					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.85	1.28	0.08					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.14	0.08	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	2.96	1.87	0.10					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.14	0.09	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.77	0.50	<0.03					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.06	<0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	2.06	1.50	0.06					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	2.74	1.68	0.10					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	17.6	11.4	0.51					mg/kg	0.01	A-T-019s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 The results reported herein relate only to the material supplied to the laboratory.
 The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
 Analytical results reflect the quality of the sample at the time of analysis only.
 Opinions and Interpretations expressed are outside our scope of accreditation.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "A"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
 Stones etc. are not removed from the sample prior to analysis
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
 For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
 For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
 All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
 Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
 Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Coopers (Chester) Limited, Coopers, Park House, Sandpiper Court, Chester
Business Park, Chester, England, CH4 9QU

Project: Wilbraham Road, Chorlton

Clients Project No: 8165

Project No: 23/05867

Date Received: 14/06/2023 (am)

Cool Box Temperatures (°C): 19.5, 20.1, 19.9, 19.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12
Client Sample No												
Client Sample ID/Depth	TP243 0.50m	TP243 0.80m	TP243 1.40m	TP244 1.20m	TP245 0.60m	TP246 1.00m	TP247 0.50m	TP248 0.50m	TP253 0.60m	TP253 0.70m	TP254 1.20m	TP256 0.50m
Date Sampled	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	09/06/23	09/06/23	09/06/23	09/06/23
A-T-004s		23/06/2023				23/06/2023						
A-T-007s		21/06/2023				21/06/2023						
A-T-019s	23/06/2023	23/06/2023		23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023
A-T-019w		12/07/2023			12/07/2023	12/07/2023		12/07/2023				
A-T-022s		19/06/2023				19/06/2023						
A-T-022w						06/07/2023						
A-T-024s	22/06/2023	21/06/2023	21/06/2023	21/06/2023	22/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-025w		10/07/2023	20/06/2023		07/07/2023	07/07/2023		10/07/2023				
A-T-026s	21/06/2023	21/06/2023		21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-026w		05/07/2023			05/07/2023	05/07/2023		05/07/2023				
A-T-026w (F)		21/06/2023				21/06/2023						
A-T-027s	22/06/2023	22/06/2023		22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023
A-T-028s	21/06/2023	21/06/2023		21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-030s		21/06/2023				21/06/2023						
A-T-031s	21/06/2023	21/06/2023		21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-031w		05/07/2023			05/07/2023	05/07/2023		05/07/2023				
A-T-032s	21/06/2023	21/06/2023		21/06/2023	21/06/2023	21/06/2023	21/06/2023	26/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-032w		21/06/2023				21/06/2023						
A-T-037w		21/06/2023				21/06/2023						
A-T-038w		05/07/2023			05/07/2023	05/07/2023		05/07/2023				
A-T-040s	21/06/2023	21/06/2023		22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023	22/06/2023
A-T-042sTCN	20/06/2023	20/06/2023		20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-042wTCN		07/07/2023			07/07/2023	07/07/2023		07/07/2023				
A-T-044	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-045	18/06/2023	18/06/2023		18/06/2023	18/06/2023	18/06/2023	18/06/2023	18/06/2023	18/06/2023	18/06/2023	18/06/2023	18/06/2023
A-T-050s	19/06/2023	19/06/2023		19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023	19/06/2023
A-T-050w		05/07/2023			05/07/2023	05/07/2023		05/07/2023				
A-T-052s		20/06/2023				21/06/2023		20/06/2023		20/06/2023		20/06/2023
A-T-052w		10/07/2023				10/07/2023						
A-T-054								30/06/2023				
A-T-055s		20/06/2023				20/06/2023						
A-T-055w						06/07/2023						

Lab Sample ID	23/05867/1	23/05867/2	23/05867/3	23/05867/4	23/05867/5	23/05867/6	23/05867/7	23/05867/8	23/05867/9	23/05867/10	23/05867/11	23/05867/12
Client Sample No												
Client Sample ID/Depth	TP243 0.50m	TP243 0.80m	TP243 1.40m	TP244 1.20m	TP245 0.60m	TP246 1.00m	TP247 0.50m	TP248 0.50m	TP253 0.60m	TP253 0.70m	TP254 1.20m	TP256 0.50m
Date Sampled	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	08/06/23	09/06/23	09/06/23	09/06/23	09/06/23
A-T-ANCs		21/06/2023				21/06/2023						
Calc-As Recd		20/06/2023				06/07/2023						
Calc-no stones		21/06/2023				21/06/2023						
Probe (w)		21/06/2023				21/06/2023						

Lab Sample ID	23/05867/13	23/05867/14	23/05867/15	23/05867/16	23/05867/17	23/05867/18	23/05867/19	23/05867/20	23/05867/21	23/05867/22	23/05867/23	23/05867/24
Client Sample No												
Client Sample ID/Depth	TP256 0.90m	TP256 1.40m	TP257 0.50m	TP257 1.20m	TP258 1.70m	TP259 0.80m	TP259 1.00m	TP239 0.50m	TP241 0.10m	TP241 0.20m	TP261 0.20m	TP260 0.60m
Date Sampled	09/06/23	09/06/23	09/06/23	09/06/23	09/06/23	09/06/23	09/06/23	08/06/23	08/06/23	08/06/23	09/06/23	09/06/23
A-T-004s	23/06/2023											
A-T-007s	21/06/2023											
A-T-019s	23/06/2023		23/06/2023	23/06/2023		23/06/2023		23/06/2023	23/06/2023	23/06/2023	23/06/2023	23/06/2023
A-T-019w												
A-T-022s	19/06/2023											
A-T-022w												
A-T-024s	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-025w	21/06/2023	20/06/2023			20/06/2023		20/06/2023					
A-T-026s	21/06/2023		21/06/2023	21/06/2023		21/06/2023			21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-026w	21/06/2023											
A-T-026w (F)	21/06/2023											
A-T-027s	22/06/2023		22/06/2023	22/06/2023		22/06/2023			22/06/2023	22/06/2023	22/06/2023	22/06/2023
A-T-028s	21/06/2023		21/06/2023	21/06/2023		21/06/2023			21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-030s	21/06/2023											
A-T-031s	21/06/2023		21/06/2023	21/06/2023		21/06/2023			21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-031w	21/06/2023											
A-T-032s	22/06/2023		21/06/2023	21/06/2023		21/06/2023			21/06/2023	21/06/2023	21/06/2023	21/06/2023
A-T-032w	21/06/2023											
A-T-037w	21/06/2023											
A-T-038w												
A-T-040s	22/06/2023		22/06/2023	22/06/2023		22/06/2023			22/06/2023	22/06/2023	22/06/2023	22/06/2023
A-T-042sTCN	20/06/2023		20/06/2023	20/06/2023		20/06/2023			20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-042wTCN												
A-T-044	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023	20/06/2023
A-T-045	18/06/2023		18/06/2023	18/06/2023		18/06/2023			18/06/2023	18/06/2023	18/06/2023	18/06/2023
A-T-050s	19/06/2023		19/06/2023	19/06/2023		19/06/2023			19/06/2023	19/06/2023	19/06/2023	19/06/2023
A-T-050w	21/06/2023											
A-T-052s												
A-T-052w												
A-T-054												
A-T-055s	20/06/2023											
A-T-055w												
A-T-ANCs	21/06/2023											
Calc-As Recd	20/06/2023											

Lab Sample ID	23/05867/13	23/05867/14	23/05867/15	23/05867/16	23/05867/17	23/05867/18	23/05867/19	23/05867/20	23/05867/21	23/05867/22	23/05867/23	23/05867/24
Client Sample No												
Client Sample ID/Depth	TP256 0.90m	TP256 1.40m	TP257 0.50m	TP257 1.20m	TP258 1.70m	TP259 0.80m	TP259 1.00m	TP239 0.50m	TP241 0.10m	TP241 0.20m	TP261 0.20m	TP260 0.60m
Date Sampled	09/06/23	09/06/23	09/06/23	09/06/23	09/06/23	09/06/23	09/06/23	08/06/23	08/06/23	08/06/23	09/06/23	09/06/23
Calc-no stones	21/06/2023											
Probe (w)	21/06/2023											

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 23/05879
Issue Number: 1
Date: 23 June, 2023

Client: Coopers (Chester) Limited
Coopers
Park House, Sandpiper Court
Chester Business Park
Chester
England
CH4 9QU

Project Manager: (use)/Jackie Lewis
Project Name: Wilbraham Road, Chorlton
Project Ref: 8165
Order No: 9740 - SD
Date Samples Received: 14/06/23
Date Instructions Received: 15/06/23
Date Analysis Completed: 23/06/23

Approved by:



Gemma Berrisford
Client Manager

Envirolab Job Number: 23/05879

Client Project Name: Wilbraham Road, Chorlton

Client Project Ref: 8165

Lab Sample ID	23/05879/1							Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	TP240									
Depth to Top	0.50									
Depth To Bottom										
Date Sampled	08-Jun-23									
Sample Type	SOIL - B									
Sample Matrix Code	4A									
% Stones >10mm _A	<0.1							% w/w	0.1	A-T-044
Mercury _D	<0.17							mg/kg	0.17	A-T-024s

Report Notes

General

This report shall not be reproduced, except in full, without written approval from Envirolab.
 The results reported herein relate only to the material supplied to the laboratory.
 The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **six weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
 Analytical results reflect the quality of the sample at the time of analysis only.
 Opinions and Interpretations expressed are outside our scope of accreditation.
 The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client.
 A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Key

Superscript "#"	Accredited to ISO 17025
Superscript "M"	Accredited to MCertS
Superscript "U"	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript "A"	Analysis performed on as-received Sample
Subscript "D"	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript "A"	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
N/A	Not applicable

Asbestos

Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
 Stones etc. are not removed from the sample prior to analysis
 Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing, and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).
 For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
 For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any "A" subscripts
 All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.
 Results "with Clean up" indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.
 Where these humic substances have been identified in any IDs from "TPH CWG with clean up" please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the accreditation range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Units 7&8 Sandpits Business Park, Mottram Road, Hyde, SK14 3AR
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Coopers (Chester) Limited, Coopers, Park House, Sandpiper Court, Chester
Business Park, Chester, England, CH4 9QU

Project: Wilbraham Road, Chorlton

Clients Project No: 8165

Project No: 23/05879

Date Received: 15/06/2023 (am)

Cool Box Temperatures (°C): 20.9

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	23/05879/1
Client Sample No	
Client Sample ID/Depth	TP240 0.50m
Date Sampled	08/06/23
A-T-024s	23/06/2023
A-T-044	20/06/2023

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Final Test Report

Envirolab Job Number: 23/05666
Issue Number: 1

Date: 16-Jun-23

Client: Coopers (Chester) Limited
Coopers
Park House, Sandpiper Court
Chester Business Park
Chester
England, CH4 9QU

Project Manager: (use)/Jackie Lewis
Project Name: Wilbraham Road, Chorlton
Project Ref: 8165
Order No: 9735-JAL

Date Samples Received: 9-Jun-23
Date Instructions Received: 9-Jun-23
Date Analysis Completed: 16-Jun-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

Sample Details								
Lab Sample ID	Method	ISO17025	MCERTS	23/05666/7	Landfill Waste Acceptance Criteria Limits			
Client Sample Number					Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Client Sample ID				MG (TS) CS				
Depth to Top								
Depth to Bottom								
Date Sampled				07/06/2023				
Sample Type				Soil - B				
Sample Matrix Code				4AE				
Solid Waste Analysis								
pH (pH Units) _D	A-T-031	N	N	5.89		-	>6	-
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.03		-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	<0.01		-	to be evaluated	to be evaluated
Loss on Ignition (%) _D	A-T-030	N	N	9.5		-	-	10
Total Organic Carbon (%) _D	A-T-032	N	N	1.12		3	5	6
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	79.7		100	-	-
Mineral Oil (mg/kg) _{A EH_CU_1D_AL}	A-T-007	N	N	<10		500	-	-
Sum of 7 PCBs (mg/kg) _A	A-T-004	N	N	<0.007		1	-	-
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01		6	-	-
Eluate Analysis				10:1	10:1	Limit values for compliance leaching test using		
				mg/l	mg/kg	BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic	A-T-025	N	N	0.006	0.060	0.5	2	25
Barium	A-T-025	N	N	0.116	1.160	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.01	0.04	1	5
Chromium	A-T-025	N	N	0.003	0.030	0.5	10	70
Copper	A-T-025	N	N	0.043	0.430	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.005	0.01	0.2	2
Molybdenum	A-T-025	N	N	<0.001	<0.01	0.5	10	30
Nickel	A-T-025	N	N	0.006	0.060	0.4	10	40
Lead	A-T-025	N	N	0.159	1.590	0.5	10	50
Antimony	A-T-025	N	N	0.002	0.020	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.01	0.1	0.5	7
Zinc	A-T-025	N	N	0.060	0.600	4	50	200
Chloride	A-T-026	N	N	6	55	800	15000	25000
Fluoride	A-T-026	N	N	0.5	5.0	10	150	500
Sulphate as SO ₄	A-T-026	N	N	9	95	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	<20	<200	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	20.60	206	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	6.2				
Conductivity (µS/cm)	A-T-037			38				
Mass Sample (kg)				0.204				
Dry Matter (%)	A-T-044	N	N	85.9				
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Final Test Report

Envirolab Job Number: 23/05736
Issue Number: 1

Date: 26-Jun-23

Client: Coopers (Chester) Limited
Coopers
Park House, Sandpiper Court
Chester Business Park
Chester
England, CH4 9QU

Project Manager: (use)/Jackie Lewis
Project Name: Wilbraham Road, Chorlton
Project Ref: 8165
Order No: 9737-JAL

Date Samples Received: 12-Jun-23
Date Instructions Received: 12-Jun-23
Date Analysis Completed: 23-Jun-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Sophie France
Client Service Manager

Sample Details					Landfill Waste Acceptance Criteria Limits			
Lab Sample ID	Method	ISO17025	MCERTS	23/05736/2				
Client Sample Number					Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Client Sample ID				TP231				
Depth to Top				0.5				
Depth to Bottom								
Date Sampled				07/06/2023				
Sample Type				Soil - ES				
Sample Matrix Code				4AB				
Solid Waste Analysis								
pH (pH Units) _D	A-T-031	N	N	7.55		-	>6	-
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.11		-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.03		-	to be evaluated	to be evaluated
Loss on Ignition (%) _D	A-T-030	N	N	5.2		-	-	10
Total Organic Carbon (%) _D	A-T-032	N	N	2.61		3	5	6
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	19.1		100	-	-
Mineral Oil (mg/kg) _{A EH_CU_1D_AL}	A-T-007	N	N	17		500	-	-
Sum of 7 PCBs (mg/kg) _A	A-T-004	N	N	<0.007		1	-	-
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01		6	-	-
Eluate Analysis				10:1	10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
				mg/l	mg/kg			
Arsenic	A-T-025	N	N	0.002	0.020	0.5	2	25
Barium	A-T-025	N	N	0.039	0.390	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.01	0.04	1	5
Chromium	A-T-025	N	N	<0.001	<0.01	0.5	10	70
Copper	A-T-025	N	N	0.007	0.070	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.005	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.006	0.060	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.02	0.4	10	40
Lead	A-T-025	N	N	0.008	0.080	0.5	10	50
Antimony	A-T-025	N	N	0.003	0.030	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.01	0.1	0.5	7
Zinc	A-T-025	N	N	0.008	0.080	4	50	200
Chloride	A-T-026	N	N	<1.00	<10	800	15000	25000
Fluoride	A-T-026	N	N	0.8	8.0	10	150	500
Sulphate as SO ₄	A-T-026	N	N	8	81	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	72	720	4000	60000	100000
Phenol Index	A-T-050	N	N	0.01	0.10	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<2.0	<200	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	7.8				
Conductivity (µS/cm)	A-T-037	N	N	144				
Mass Sample (kg)				0.213				
Dry Matter (%)	A-T-044	N	N	82.3				
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Final Test Report

Envirolab Job Number: 23/05867
Issue Number: 1

Date: 26-Jun-23

Client: Coopers (Chester) Limited
Coopers
Park House, Sandpiper Court
Chester Business Park
Chester
England, CH4 9QU

Project Manager: (use)/Geotech/Jackie Lewis
Project Name: Wilbraham Road, Chorlton
Project Ref: 8165
Order No: P/O 9739 - JAL

Date Samples Received: 13-Jun-23
Date Instructions Received: 14-Jun-23
Date Analysis Completed: 26-Jun-23

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

HWOL TPH Code: EH_CU_1D_AL: Extractable hydrocarbons - i.e. everything extracted by the solvent(s), Clean-up - e.g. by florisil, silica gel, GC - Single coil gas chromatography, Aliphatics only

Approved by:



Richard Wong
Client Manager

Sample Details								
Lab Sample ID	Method	ISO17025	MCERTS	23/05867/2	Landfill Waste Acceptance Criteria Limits			
Client Sample Number					Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Client Sample ID				TP243				
Depth to Top				0.8				
Depth to Bottom								
Date Sampled				08/06/2023				
Sample Type				Soil				
Sample Matrix Code				4AE				
Solid Waste Analysis								
pH (pH Units) _D	A-T-031	N	N	6.91	-	>6	-	
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	1.06	-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.06	-	to be evaluated	to be evaluated	
Loss on Ignition (%) _D	A-T-030	N	N	22	-	-	10	
Total Organic Carbon (%) _D	A-T-032	N	N	7.07	3	5	6	
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	66.4	100	-	-	
Mineral Oil (mg/kg) _{A EH_CU_1D_AL}	A-T-007	N	N	564	500	-	-	
Sum of 7 PCBs (mg/kg) _A	A-T-004	N	N	<0.007	1	-	-	
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01	6	-	-	
Eluate Analysis				10:1	10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
				mg/l	mg/kg			
Arsenic	A-T-025	N	N	0.004	0.040	0.5	25	
Barium	A-T-025	N	N	0.375	3.750	20	300	
Cadmium	A-T-025	N	N	0.228	2.280	0.04	5	
Chromium	A-T-025	N	N	<0.001	<0.01	0.5	70	
Copper	A-T-025	N	N	0.021	0.210	2	100	
Mercury	A-T-025	N	N	<0.0005	<0.005	0.01	2	
Molybdenum	A-T-025	N	N	0.001	0.010	0.5	30	
Nickel	A-T-025	N	N	0.004	0.040	0.4	40	
Lead	A-T-025	N	N	0.368	3.680	0.5	50	
Antimony	A-T-025	N	N	0.005	0.050	0.06	5	
Selenium	A-T-025	N	N	<0.001	<0.01	0.1	7	
Zinc	A-T-025	N	N	48.500	485.000	4	200	
Chloride	A-T-026	N	N	<1.00	<10	800	25000	
Fluoride	A-T-026	N	N	8.8	88.0	10	500	
Sulphate as SO ₄	A-T-026	N	N	3	29	1000	50000	
Total Dissolved Solids	A-T-035	N	N	34	340	4000	100000	
Phenol Index	A-T-050	N	N	<0.01	<0.1	1	-	
Dissolved Organic Carbon	A-T-032	N	N	<2.0	<200	500	1000	
Leach Test Information								
pH (pH Units)	A-T-031	N	N	6.4				
Conductivity (µS/cm)	A-T-037			68				
Mass Sample (kg)				0.235				
Dry Matter (%)	A-T-044	N	N	74.4				
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Sample Details								
Lab Sample ID	Method	ISO17025	MCERTS	23/05867/6	Landfill Waste Acceptance Criteria Limits			
Client Sample Number					Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Client Sample ID				TP246				
Depth to Top				1				
Depth to Bottom								
Date Sampled				08/06/2023				
Sample Type				Soil				
Sample Matrix Code				5A				
Solid Waste Analysis								
pH (pH Units) _D	A-T-031	N	N	7.72	-	>6	-	
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.08	-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.05	-	to be evaluated	to be evaluated	
Loss on Ignition (%) _D	A-T-030	N	N	8.5	-	-	10	
Total Organic Carbon (%) _D	A-T-032	N	N	4.84	3	5	6	
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	184	100	-	-	
Mineral Oil (mg/kg) _{A EH_CU_1D_AL}	A-T-007	N	N	129	500	-	-	
Sum of 7 PCBs (mg/kg) _A	A-T-004	N	N	<0.007	1	-	-	
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01	6	-	-	
Eluate Analysis				10:1 mg/l	10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic	A-T-025	N	N	<0.001	<0.01	0.5	2	25
Barium	A-T-025	N	N	0.042	0.420	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.01	0.04	1	5
Chromium	A-T-025	N	N	<0.001	<0.01	0.5	10	70
Copper	A-T-025	N	N	0.006	0.060	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.005	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.014	0.140	0.5	10	30
Nickel	A-T-025	N	N	<0.002	<0.02	0.4	10	40
Lead	A-T-025	N	N	0.004	0.040	0.5	10	50
Antimony	A-T-025	N	N	0.002	0.020	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.01	0.1	0.5	7
Zinc	A-T-025	N	N	0.224	2.240	4	50	200
Chloride	A-T-026	N	N	<1.00	<10	800	15000	25000
Fluoride	A-T-026	N	N	1.2	12.0	10	150	500
Sulphate as SO ₄	A-T-026	N	N	5	54	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	59	590	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<2.0	<200	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	7.5				
Conductivity (µS/cm)	A-T-037	N	N	118				
Mass Sample (kg)				0.222				
Dry Matter (%)	A-T-044	N	N	78.8				
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Sample Details					Landfill Waste Acceptance Criteria Limits			
Lab Sample ID	Method	ISO17025	MCERTS	23/05867/13				
Client Sample Number					Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill	
Client Sample ID				TP256				
Depth to Top				0.9				
Depth to Bottom								
Date Sampled				09/06/2023				
Sample Type				Soil				
Sample Matrix Code				1				
Solid Waste Analysis								
pH (pH Units) _D	A-T-031	N	N	6.59	-	>6	-	
ANC to pH 4 (mol/kg) _D	A-T-ANC	N	N	0.04	-	to be evaluated	to be evaluated	
ANC to pH 6 (mol/kg) _D	A-T-ANC	N	N	0.04	-	to be evaluated	to be evaluated	
Loss on Ignition (%) _D	A-T-030	N	N	4.7	-	-	10	
Total Organic Carbon (%) _D	A-T-032	N	N	0.62	3	5	6	
PAH Sum of 17 (mg/kg) _A	A-T-019	N	N	3.61	100	-	-	
Mineral Oil (mg/kg) _{A EH, CU, 1D, AL}	A-T-007	N	N	14	500	-	-	
Sum of 7 PCBs (mg/kg) _A	A-T-004	N	N	<0.007	1	-	-	
Sum of BTEX (mg/kg) _A	A-T-022	N	N	<0.01	6	-	-	
Eluate Analysis				10:1	10:1	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
				mg/l	mg/kg			
Arsenic	A-T-025	N	N	0.007	0.070	0.5	2	25
Barium	A-T-025	N	N	0.032	0.320	20	100	300
Cadmium	A-T-025	N	N	<0.001	<0.01	0.04	1	5
Chromium	A-T-025	N	N	<0.001	<0.01	0.5	10	70
Copper	A-T-025	N	N	0.012	0.120	2	50	100
Mercury	A-T-025	N	N	<0.0005	<0.005	0.01	0.2	2
Molybdenum	A-T-025	N	N	0.012	0.120	0.5	10	30
Nickel	A-T-025	N	N	0.006	0.060	0.4	10	40
Lead	A-T-025	N	N	0.035	0.350	0.5	10	50
Antimony	A-T-025	N	N	0.027	0.270	0.06	0.7	5
Selenium	A-T-025	N	N	<0.001	<0.01	0.1	0.5	7
Zinc	A-T-025	N	N	0.303	3.030	4	50	200
Chloride	A-T-026	N	N	4	39	800	15000	25000
Fluoride	A-T-026	N	N	0.3	3.0	10	150	500
Sulphate as SO ₄	A-T-026	N	N	30	301	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	40	400	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.1	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	23.00	230	500	800	1000
Leach Test Information								
pH (pH Units)	A-T-031	N	N	6.5				
Conductivity (µS/cm)	A-T-037	N	N	79				
Mass Sample (kg)				0.206				
Dry Matter (%)	A-T-044	N	N	85.1				
Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation								

Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Appendix 6

Source Signature Ratio Plots

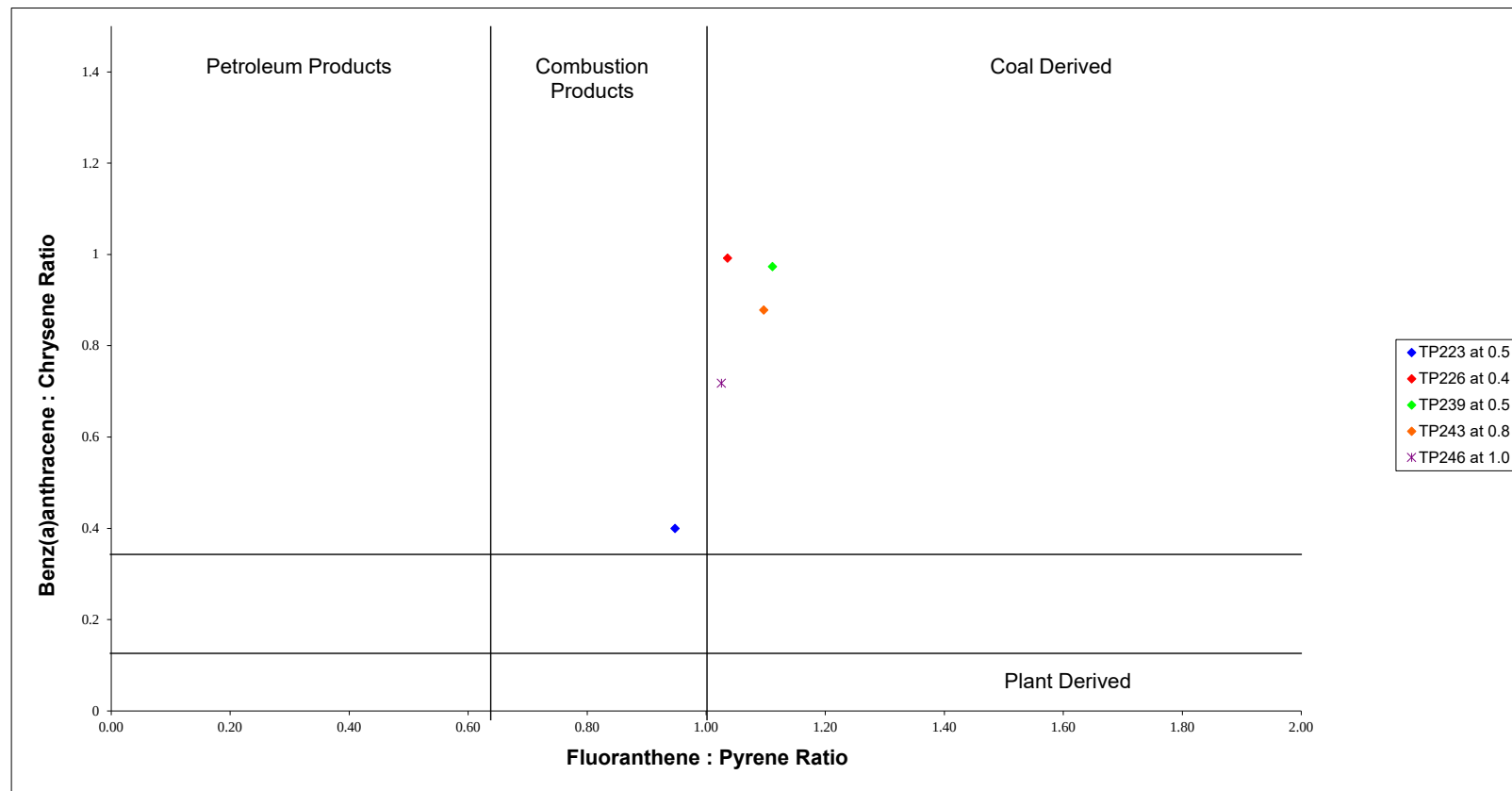
Source Signature Double Ratio Plot

Coopers Project Number:	8165
Laboratory Reference Number:	23/05666, 23/05867, 23/05867

Sample Type:	Made ground in southern ponds
Laboratory:	EnviroLab

Sample No.	TP223 at 0.5	TP226 at 0.4	TP239 at 0.5	TP243 at 0.8	TP246 at 1.0
Benzo(a)anthracene	0.06	4.95	4.81	5.12	11.2
Chrysene	0.15	4.99	4.94	5.83	15.6
Fluoranthene	0.18	11.6	17	12.5	28.1
Pyrene	0.19	11.2	15.3	11.4	27.4

All concentrations are in mg/kg



Source Signature Double Ratio Plot Explanation Sheet

When coal forms, organic matter is converted to coal via low grade metamorphism. The geological process which converts the fresh organic matter to a carbon based strata is noted to comprise carbonisation as well as dehydrogenation. The carbonisation process forms methane gases as well as partially converts the material into hydrocarbon based products. As carbonisation progresses, the volume of volatile gases diminish as these are driven from the strata and complex organic compounds are formed. The slow cracking of the organic material over many millions of years, where a constant heat flow is present will eventually strip the material of hydrogen, nitrogen and oxygen, producing purer carbon products. The presence of the PAH concentrations encountered to date within the samples analysed are not beyond what may be expected for a coal. Other methods of PAH formation comprise the partial combustion of fuel such as coal and petroleum.

To determine whether the source of the PAH compounds are petroleum or pyrogenically (from coal fragments) formed, a source signature double ratio plot assessment was undertaken. This method of appraisal compares a ratio of comparative compound pairs for 4 No. PAH compounds. This means that the properties of the comparative PAH compounds are similar (such as aqueous solubility, molecular weight, Kow) and have diagnostic source ratios which should retain their relative concentrations and hence their ratio remain constant. Coopers have adopted a classification of double ratio PAH compounds fluoranthene/pyrene and benzo(a)anthracene/chrysene in accordance with Costa and Sauer 2005. These have been considered the most appropriate pairing to determine a differentiation between petroleum fuels, coal, coal derived products, combustion products and natural plant matter (such as peat and lignin).

The method for differentiating petroleum-based hydrocarbon concentrations from natural organic units is by determining the rates of combustion and the relative losses of PAH compounds within samples analysed. Forensic environmental scientists, situated predominately within the United States, have investigated the relationships between many combinations of PAH compounds and it is generally considered the 4 No. compounds mentioned above have a suitable and representative correlation for this assessment.

The method of assessment requires the 2 ratios of the 2 pairs of diagnostic source ratio compounds to be calculated, and the results plotting on a graph. The graph has areas compartmentalised into petroleum, combustion and coal derived sources, with plant derived sources situated in the bottom right hand corner. These designations have been derived from ALcontrol Geochem's extensive knowledge with regards to PAH signatures as well as the extensive work completed by Environmental Forensic scientists such as H J Costa and T C Sauer. ALcontrol Geochem have been using this method for tracing hydrocarbon sources for many years and have pooled their extensive database of material type traces for their graphic representation (refer to Figure 1 below).

PAH compounds can be both created and lost through combustion. With regards to petroleum derived products, the fresh compounds tend to be situated on the mid left hand side of the graph, with combusted and heavier fuels moving north east across the graph. Coal is generally positioned in the top right area of the graph, with combustion products such as ash and clinker, soot and burnt coal being situated between coal and petroleum sections. It should be noted that smokeless fuels appear within the mid petroleum derived column as the processes involved in the formation of this fuel includes the removal of certain PAH compounds.

Peat forms PAH compounds due to the degradation of organic matter and is represented in the bottom right hand corner of the graph. Asphalt and coal tar derived tarmac can also be determined from this form of analysis.

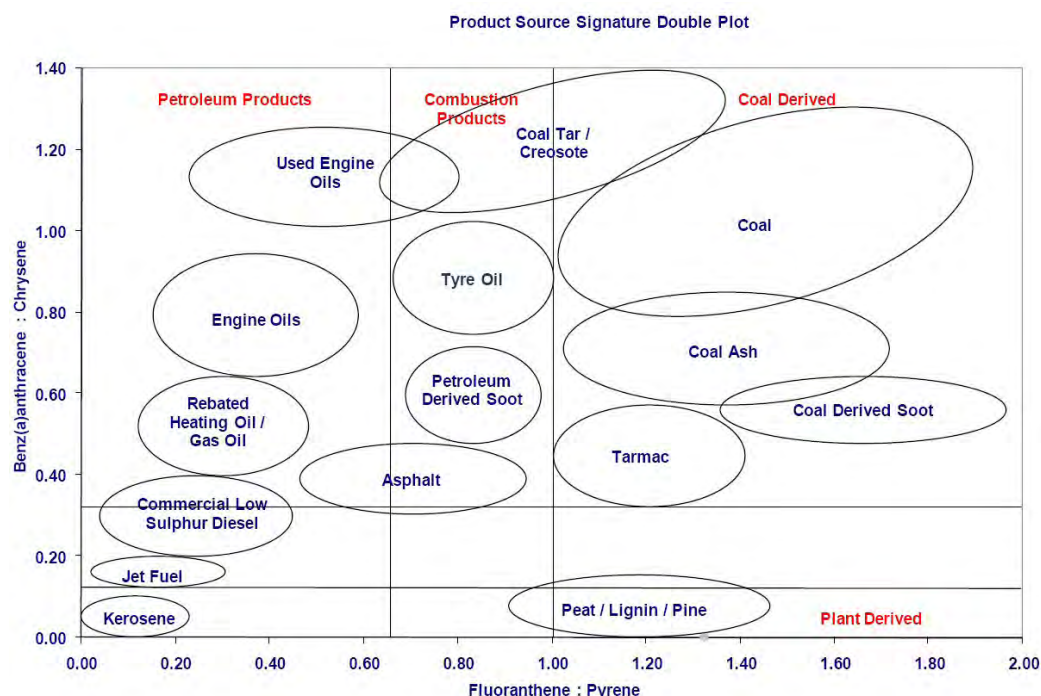


Figure 1: Key to source signature double ratio plots based on conjectured source.

Double ratio plots – references

Double ratio plots have been developed as a result of expanding our Environment Forensic capabilities and is based on the following references amongst others.

Yunker, M. B., Macdonald, R. W., Vingarzin, R., Mitchell, R. H., Goyette, D., and Sylvestre, S. 2002. PAH in the Fraser River basin: A critical appraisal of PAH ratios as indicators of PAH source and composition. *Organic Geochemistry* 33:489-515.

Costa, H. J., and Sauer, T. C., Jr. 2005. Technical Note - Forensic Approaches and Considerations in Identifying PAH Background. *Environmental Forensics*, 6:9-16.

As for how robust the technique is, for low concentrations, or where the PAHs being used to determine the ratios are very similar it will not be completely reliable, but we have found that in most cases it offers a very good correlation with visual and/or site histories. Ratios other than those on the flier can also be used.

Environmental forensics is basically a matter of using the most appropriate ratios to identify sources and correlate spills. There are hundreds of possible combinations, and it is very much a case of experience and knowledge as to which will give the most meaningful answers, as no two sites are the same.

The Fluoranthene:Pyrene vs Benz(a)anthracene:chrysene ratios have been found to be the best in identifying the sources of PAH compounds with regard to petroleum, petrogenic (coal), combustion (ash and clinker) or recently formed (peat).

Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Appendix 7

CL:AIRE Decision Support Tool Spreadsheets

Decision Support Tool for Receptor Risk Ranking

Stage 1		Score
Hazard Identification		
Select ACM type (run model for each type to generate 'Worst Case' output)	Free dispersed fibres/fibre bundles	2
Extent of degradation of ACMs	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	No visible ACMs/fibre bundles	0
Asbestos fibre type	Chrysotile alone	0
Sub-total		10
Hazard ranking		Low

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.
It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

Stage 2	
Emission Factors	Score
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Trace quantities - <0.0001 to <0.001 %wt/wt
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Negligible
Activity type and effect on deterioration of ACMs	No disturbance activity
Best description of primary host material matrix	Made Ground - Recycled Aggregate, Track Ballast
Sub-total	
4	
Exposure ranking	
Very Low	

Stage 3 Pathway and Receptor Sensitivity		Score
Receptor category	Residential	No score required
Age of Receptor	Infant (under 5)	4
Duration of exposure/site occupancy	< 1 hour in any single day (e.g. frequent but short exposure event)	1
Receptor ranking		5 Medium
Combined hazard, exposure and receptor ranking		Low
Pathway: Distance of Receptor from Source	In or within 10m of area of disturbance	4
Pathway: Depth to impacted material	Material buried at depth, unlikely to be disturbed except for deeper construction related excavation	8
Pathway ranking		4B Very Low
Overall ranking		Negligible

Project Reference	8165ssi
Site Name	Wilbraham Road, Chorlton
Client	Anwyl Homes
Run by	J A Lewis
Date	02-Aug-23
Reviewed by	
Characterisation of scenario being evaluated	Infant playing in garden for up to 1 hour per day, with made ground present at 0.6m below a geotextile membrane.
Interpretation of scenario ranking by DST	



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Asbestos in Soil and Construction & Demolition Materials

Project Reference	8165ssi
Site Name	Wilbraham Road, Chorlton
Client	Anwyl Homes
Run by	J A Lewis
Date	02-Aug-23
Scenario details	Build phase of works - risk to groundworks contractors

Decision Support Tool for CAR2012 Work Categories

Stage 1

Hazard Factors

Score

Select ACM type (run model for each type to generate 'Worst Case' output)
Extent of degradation of ACMs at outset of work
Friability and degree of bonding by matrix (ACM matrix, not ground materials)
Distribution of Visible Asbestos Across Affected Area
Amount of asbestos fibre in selected ACM/fibre type as % of host material

Free dispersed fibres/fibre bundles	2
Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
No visible ACMs/fibre bundles	0
Trace quantities - <0.0001 to 0.001 %wt/wt	0

Sub-total

0

Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs

Hazard ranking

Negligible

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool.

It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.



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Asbestos in Soil and Construction & Demolition Materials

Stage 2

Exposure Factors

Score

Anticipated airborne fibre concentration - Control Limit or SALI?

<0.001 fibres/ml

0

Anticipated duration of exposure to asbestos

> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)

4

Activity type and effect on deterioration of ACMs during work

Low intensity, no or minimal deterioration expected

0

Best description of primary host material matrix (soil/made ground)

Made Ground - Recycled Aggregate, Track Ballast

4

Respirable fibre index for ACM - RIVM report 711701034 (2003)

Negligible

0

Sub-total

8

Exposure ranking

Low

Combined hazard and exposure ranking

8

Very Low



Joint Industry Working Group

Asbestos in Soil and Construction & Demolition Materials

Stage 3

Risk Assessment Outputs

Probable Licensing Status	CAR do not apply
RPE*	None
Dust Suppression**	None
Hygiene/Decontamination***	None

*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.

**Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)

***Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Appendix 8

CLEA 1.071 Models

Report generated 02/10/2023

Report title Wilbraham Road, Chorlton

Created by J A Lewis at Coopers

**BASIC SETTINGS**

Land Use Residential without produce

Building Detached house

Receptor Female (res)

Start age class 1

End age class 6

Exposure Duration 6 years

Soil Clay

Exposure Pathways

Direct soil and dust ingestion

Consumption of homegrown produce

Soil attached to homegrown produce

*
*
*

Dermal contact with indoor dust

Dermal contact with soil

*
*

Inhalation of indoor dust

Inhalation of soil dust

Inhalation of indoor vapour

Inhalation of outdoor vapour

*
*
✓
✓



Land Use Residential without produce

Receptor Female (res)

Age Class	Exposure Frequencies (days yr ⁻¹)						Occupation Periods (hr day ⁻¹)		Soil to skin adherence factors (mg cm ⁻²)		Direct soil ingestion rate (g day ⁻¹)	Max exposed skin factor					
	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with indoor dust	Dermal contact with soil	Inhalation of dust and vapour, indoor	Inhalation of dust and vapour, outdoor	Indoors	Outdoors	Indoor			Body weight (kg)	Body height (m)	Inhalation rate (m ³ day ⁻¹)	Indoor (m ² m ⁻²)	Outdoor (m ² m ⁻²)	Total skin area (m ²)
1	180	0	180	180	365	365	23.0	1.0	0.06	1.00	0.10	5.60	0.7	8.5	0.32	0.26	3.43E-01
2	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	9.80	0.8	13.3	0.33	0.26	4.84E-01
3	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	12.70	0.9	12.7	0.32	0.25	5.82E-01
4	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	15.10	0.9	12.2	0.35	0.28	6.36E-01
5	365	0	365	365	365	365	19.0	1.0	0.06	1.00	0.10	16.90	1.0	12.2	0.35	0.28	7.04E-01
6	365	0	365	365	365	365	19.0	1.0	0.06	1.00	0.10	19.70	1.1	12.2	0.33	0.26	7.94E-01
7	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	22.10	1.2	12.4	0.22	0.15	8.73E-01
8	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	25.30	1.2	12.4	0.22	0.15	9.36E-01
9	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	27.50	1.3	12.4	0.22	0.15	1.01E+00
10	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	31.40	1.3	12.4	0.22	0.15	1.08E+00
11	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	35.70	1.4	12.4	0.22	0.14	1.19E+00
12	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	41.30	1.4	13.4	0.22	0.14	1.29E+00
13	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	47.20	1.5	13.4	0.22	0.14	1.42E+00
14	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	51.20	1.6	13.4	0.22	0.14	1.52E+00
15	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	56.70	1.6	13.4	0.21	0.14	1.60E+00
16	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	59.00	1.6	13.4	0.21	0.14	1.63E+00
17	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.00	1.6	14.8	0.33	0.27	1.78E+00
18	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.90	1.6	12.0	0.33	0.27	1.80E+00

Consumption Rates



Age Class	Consumption rates (α FW kg^{-1} bodyweight day^{-1}) by Produce Group											
	MEAN RATES						90TH PERCENTILE RATES					
	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit
1							7.12E+00	1.07E+01	1.60E+01	1.83E+00	2.23E+00	3.82E+00
2							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
3							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
4							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
5							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
6							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
7							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
8							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
9							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
10							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
11							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
12							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
13							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
14							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
15							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
16							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
17							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00
18							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00

Top 2 applied? No

Where top 2 method is applied, two produce categories use 90th percentile rates, while the remainder use the mean. Produce categories vary on a chemical-by-chemical basis. Where top 2 method is not used, all produce categories for all chemicals assume 90th percentile rates.

Building Detached house

Building footprint (m ²)	6.80E+01
Living space air exchange rate (hr ⁻¹)	5.00E-01
Living space height (above ground, m)	4.80E+00
Living space height (below ground, m)	0.00E+00
Pressure difference (soil to enclosed space, Pa)	3.10E+00
Foundation thickness (m)	1.50E-01
Floor crack area (cm ²)	6.60E+02
Dust loading factor (µg m ⁻³)	5.00E+01

Soil Clay

Porosity, Total (cm ³ cm ⁻³)	5.90E-01
Porosity, Air-Filled (cm ³ cm ⁻³)	1.20E-01
Porosity, Water-Filled (cm ³ cm ⁻³)	4.70E-01
Residual soil water content (cm ³ cm ⁻³)	2.40E-01
Saturated hydraulic conductivity (cm s ⁻¹)	9.93E-04
van Genuchten shape parameter <i>m</i> (dimensionless)	2.97E-01
Bulk density (g cm ⁻³)	1.07E+00
Threshold value of wind speed at 10m (m s ⁻¹)	7.20E+00
Empirical function (<i>F_s</i>) for dust model (dimensionless)	1.22E+00
Ambient soil temperature (K)	2.83E+02
Soil pH	7.00E+00
Soil Organic Matter content (%)	4.00E+00
Fraction of organic carbon (g g ⁻¹)	2.32E-02
Effective total fluid saturation (unitless)	6.57E-01
Intrinsic soil permeability (cm ²)	1.33E-08
Relative soil air permeability (unitless)	4.96E-01
Effective air permeability (cm ²)	6.58E-09

Soil - Vapour Model

Depth to top of source (no building) (cm)	0
Depth to top of source (beneath building) (cm)	65
Default soil gas ingress rate?	Yes
Soil gas ingress rate ($\text{cm}^3 \text{s}^{-1}$)	2.50E+01
Building ventilation rate ($\text{cm}^3 \text{s}^{-1}$)	4.53E+04
Averaging time surface emissions (yr)	6
Finite vapour source model?	No
Thickness of contaminated layer (cm)	200

Air Dispersion Model

Mean annual windspeed at 10m (m s^{-1})	5.00
Air dispersion factor at height of 0.8m *	2400.00
Air dispersion factor at height of 1.6m *	0.00
Fraction of site cover ($\text{m}^2 \text{m}^{-2}$)	0.75

* Air dispersion factor in $\text{g m}^{-2} \text{s}^{-1}$ per kg m^{-3} **Soil - Plant Model**

	Dry weight conversion factor	Homegrown fraction		Soil loading factor	Preparation correction factor
	g DW g^{-1} FW	Average	High		
		dimensionless		g g^{-1} DW	dimensionless
Green vegetables	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	0.103	0.06	0.40	1.00E-03	1.00E+00
Tuber vegetables	0.210	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	0.058	0.06	0.40	1.00E-03	6.00E-01
Shrub fruit	0.166	0.09	0.60	1.00E-03	6.00E-01
Tree fruit	0.157	0.04	0.27	1.00E-03	6.00E-01

Gardener type None

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RESULTS

[illegible]

vapour - indoor and outdoor - clay detached

[illegible]

[illegible]

vapour - indoor and outdoor - clay detached

[illegible]

vapour - indoor and outdoor - clay detached



	Average Daily Exposure ($\text{mg kg}^{-1} \text{ bw day}^{-1}$)	Distribution by Pathway (%)
	Direct soil ingestion Consumption of homegrown produce and attached soil Dermal contact with soil and dust Inhalation of dust Inhalation of vapour Background (oral) Background (inhalation)	Direct soil ingestion Consumption of homegrown produce Dermal contact with soil and dust Inhalation of dust Inhalation of vapour (indoor) Inhalation of vapour (outdoor) Background (oral) Background (inhalation)
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Report generated 02/10/2023

Report title Wilbraham Road, Chorlton

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**BASIC SETTINGS**

Land Use Residential without produce

Building Semi-detached house

Receptor Female (res)

Start age class 1

End age class 6

Exposure Duration 6 years

Soil Clay

Exposure Pathways

Direct soil and dust ingestion

Consumption of homegrown produce

Soil attached to homegrown produce

Dermal contact with indoor dust

Dermal contact with soil

Inhalation of indoor dust

Inhalation of soil dust

Inhalation of indoor vapour

Inhalation of outdoor vapour





Land Use Residential without produce

Receptor Female (res)

Age Class	Exposure Frequencies (days yr ⁻¹)						Occupation Periods (hr day ⁻¹)		Soil to skin adherence factors (mg cm ⁻²)		Direct soil ingestion rate (g day ⁻¹)	Max exposed skin factor					
	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with indoor dust	Dermal contact with soil	Inhalation of dust and vapour, indoor	Inhalation of dust and vapour, outdoor	Indoors	Outdoors	Indoor			Body weight (kg)	Body height (m)	Inhalation rate (m ³ day ⁻¹)	Indoor (m ² m ⁻²)	Outdoor (m ² m ⁻²)	Total skin area (m ²)
1	180	0	180	180	365	365	23.0	1.0	0.06	1.00	0.10	5.60	0.7	8.5	0.32	0.26	3.43E-01
2	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	9.80	0.8	13.3	0.33	0.26	4.84E-01
3	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	12.70	0.9	12.7	0.32	0.25	5.82E-01
4	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	15.10	0.9	12.2	0.35	0.28	6.36E-01
5	365	0	365	365	365	365	19.0	1.0	0.06	1.00	0.10	16.90	1.0	12.2	0.35	0.28	7.04E-01
6	365	0	365	365	365	365	19.0	1.0	0.06	1.00	0.10	19.70	1.1	12.2	0.33	0.26	7.94E-01
7	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	22.10	1.2	12.4	0.22	0.15	8.73E-01
8	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	25.30	1.2	12.4	0.22	0.15	9.36E-01
9	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	27.50	1.3	12.4	0.22	0.15	1.01E+00
10	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	31.40	1.3	12.4	0.22	0.15	1.08E+00
11	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	35.70	1.4	12.4	0.22	0.14	1.19E+00
12	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	41.30	1.4	13.4	0.22	0.14	1.29E+00
13	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	47.20	1.5	13.4	0.22	0.14	1.42E+00
14	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	51.20	1.6	13.4	0.22	0.14	1.52E+00
15	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	56.70	1.6	13.4	0.21	0.14	1.60E+00
16	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	59.00	1.6	13.4	0.21	0.14	1.63E+00
17	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.00	1.6	14.8	0.33	0.27	1.78E+00
18	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.90	1.6	12.0	0.33	0.27	1.80E+00

Consumption Rates



Age Class	Consumption rates (α FW kg^{-1} bodyweight day^{-1}) by Produce Group											
	MEAN RATES						90TH PERCENTILE RATES					
	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit
1							7.12E+00	1.07E+01	1.60E+01	1.83E+00	2.23E+00	3.82E+00
2							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
3							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
4							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
5							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
6							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
7							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
8							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
9							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
10							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
11							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
12							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
13							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
14							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
15							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
16							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
17							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00
18							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00

Top 2 applied? No

Where top 2 method is applied, two produce categories use 90th percentile rates, while the remainder use the mean. Produce categories vary on a chemical-by-chemical basis. Where top 2 method is not used, all produce categories for all chemicals assume 90th percentile rates.

Building Semi-detached house**Soil** Clay

Building footprint (m ²)	4.30E+01
Living space air exchange rate (hr ⁻¹)	5.00E-01
Living space height (above ground, m)	4.80E+00
Living space height (below ground, m)	0.00E+00
Pressure difference (soil to enclosed space, Pa)	3.10E+00
Foundation thickness (m)	1.50E-01
Floor crack area (cm ²)	5.25E+02
Dust loading factor (µg m ⁻³)	5.00E+01

Porosity, Total (cm ³ cm ⁻³)	5.90E-01
Porosity, Air-Filled (cm ³ cm ⁻³)	1.20E-01
Porosity, Water-Filled (cm ³ cm ⁻³)	4.70E-01
Residual soil water content (cm ³ cm ⁻³)	2.40E-01
Saturated hydraulic conductivity (cm s ⁻¹)	9.93E-04
van Genuchten shape parameter <i>m</i> (dimensionless)	2.97E-01
Bulk density (g cm ⁻³)	1.07E+00
Threshold value of wind speed at 10m (m s ⁻¹)	7.20E+00
Empirical function (<i>F_s</i>) for dust model (dimensionless)	1.22E+00
Ambient soil temperature (K)	2.83E+02
Soil pH	7.00E+00
Soil Organic Matter content (%)	4.00E+00
Fraction of organic carbon (g g ⁻¹)	2.32E-02
Effective total fluid saturation (unitless)	6.57E-01
Intrinsic soil permeability (cm ²)	1.33E-08
Relative soil air permeability (unitless)	4.96E-01
Effective air permeability (cm ²)	6.58E-09

Soil - Vapour Model

Depth to top of source (no building) (cm)	0
Depth to top of source (beneath building) (cm)	65
Default soil gas ingress rate?	Yes
Soil gas ingress rate ($\text{cm}^3 \text{s}^{-1}$)	2.50E+01
Building ventilation rate ($\text{cm}^3 \text{s}^{-1}$)	2.87E+04
Averaging time surface emissions (yr)	6
Finite vapour source model?	No
Thickness of contaminated layer (cm)	200

Air Dispersion Model

Mean annual windspeed at 10m (m s^{-1})	5.00
Air dispersion factor at height of 0.8m *	2400.00
Air dispersion factor at height of 1.6m *	0.00
Fraction of site cover ($\text{m}^2 \text{m}^{-2}$)	0.75

* Air dispersion factor in $\text{g m}^{-2} \text{s}^{-1}$ per kg m^{-3} **Soil - Plant Model**

	Dry weight conversion factor	Homegrown fraction		Soil loading factor	Preparation correction factor
		Average	High		
	$\text{g DW g}^{-1} \text{FW}$	dimensionless		$\text{g g}^{-1} \text{DW}$	dimensionless
Green vegetables	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	0.103	0.06	0.40	1.00E-03	1.00E+00
Tuber vegetables	0.210	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	0.058	0.06	0.40	1.00E-03	6.00E-01
Shrub fruit	0.166	0.09	0.60	1.00E-03	6.00E-01
Tree fruit	0.157	0.04	0.27	1.00E-03	6.00E-01

Gardener type None

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RESULTS

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	Average Daily Exposure ($\text{mg kg}^{-1} \text{ bw day}^{-1}$)	Distribution by Pathway (%)
	Direct soil ingestion Consumption of homegrown produce and attached soil Dermal contact with soil and dust Inhalation of dust Inhalation of vapour Background (oral) Background (inhalation)	Direct soil ingestion Consumption of homegrown produce and attached soil Dermal contact with soil and dust Inhalation of dust Inhalation of vapour (indoor) Inhalation of vapour (outdoor) Background (oral) Background (inhalation)
1 TPH Aliphatic >C10-12	0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.45E-01 5.57E+96 6.06E+95	0.00 0.00 0.00 0.00 49.98 0.02 0.00
2 TPH Aromatic >C12-16	0.00E+00 0.00E+00 0.00E+00 0.00E+00 3.00E-02 5.57E+96 6.06E+95	0.00 0.00 0.00 0.00 49.86 0.14 0.00
3 TPH Aromatic >C16-21	0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.50E-02 5.57E+96 0.00E+00	0.00 0.00 0.00 0.00 49.33 0.67 50.00
4 TPH Aromatic >C21-35	0.00E+00 0.00E+00 0.00E+00 0.00E+00 1.50E-02 5.57E+96 0.00E+00	0.00 0.00 0.00 0.00 30.70 19.30 50.00
5 Naphthalene	0.00E+00 0.00E+00 0.00E+00 0.00E+00 6.90E-04 3.94E-04 1.70E-04	0.00 0.00 0.00 0.00 80.25 0.01 0.00
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Report generated 03/10/2023



Report title Wilbraham Road, Chorlton

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BASIC SETTINGS

Land Use Residential without produce

Building Detached house

Receptor Female (res)

Start age class 1

End age class 6

Exposure Duration 6 years

Soil Sand

Exposure Pathways

Direct soil and dust ingestion



Consumption of homegrown produce



Soil attached to homegrown produce



Dermal contact with indoor dust



Dermal contact with soil



Inhalation of indoor dust



Inhalation of soil dust



Inhalation of indoor vapour



Inhalation of outdoor vapour





Land Use Residential without produce

Receptor Female (res)

Age Class	Exposure Frequencies (days yr ⁻¹)						Occupation Periods (hr day ⁻¹)		Soil to skin adherence factors (mg cm ⁻²)		Direct soil ingestion rate (g day ⁻¹)	Max exposed skin factor					
	Direct soil ingestion	Consumption of homegrown produce	Dermal contact with indoor dust	Dermal contact with soil	Inhalation of dust and vapour, indoor	Inhalation of dust and vapour, outdoor	Indoors	Outdoors	Indoor			Body weight (kg)	Body height (m)	Inhalation rate (m ³ day ⁻¹)	Indoor (m ² m ⁻²)	Outdoor (m ² m ⁻²)	Total skin area (m ²)
1	180	0	180	180	365	365	23.0	1.0	0.06	1.00	0.10	5.60	0.7	8.5	0.32	0.26	3.43E-01
2	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	9.80	0.8	13.3	0.33	0.26	4.84E-01
3	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	12.70	0.9	12.7	0.32	0.25	5.82E-01
4	365	0	365	365	365	365	23.0	1.0	0.06	1.00	0.10	15.10	0.9	12.2	0.35	0.28	6.36E-01
5	365	0	365	365	365	365	19.0	1.0	0.06	1.00	0.10	16.90	1.0	12.2	0.35	0.28	7.04E-01
6	365	0	365	365	365	365	19.0	1.0	0.06	1.00	0.10	19.70	1.1	12.2	0.33	0.26	7.94E-01
7	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	22.10	1.2	12.4	0.22	0.15	8.73E-01
8	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	25.30	1.2	12.4	0.22	0.15	9.36E-01
9	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	27.50	1.3	12.4	0.22	0.15	1.01E+00
10	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	31.40	1.3	12.4	0.22	0.15	1.08E+00
11	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	35.70	1.4	12.4	0.22	0.14	1.19E+00
12	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	41.30	1.4	13.4	0.22	0.14	1.29E+00
13	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	47.20	1.5	13.4	0.22	0.14	1.42E+00
14	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	51.20	1.6	13.4	0.22	0.14	1.52E+00
15	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	56.70	1.6	13.4	0.21	0.14	1.60E+00
16	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	59.00	1.6	13.4	0.21	0.14	1.63E+00
17	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.00	1.6	14.8	0.33	0.27	1.78E+00
18	0	0	0	0	0	0	0.0	0.0	0.00	0.00	0.00	70.90	1.6	12.0	0.33	0.27	1.80E+00



Consumption Rates

Age Class	Consumption rates (α FW kg^{-1} bodyweight day^{-1}) by Produce Group											
	MEAN RATES						90TH PERCENTILE RATES					
	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit	Green veg	Root veg	Tuber veg	Herb. Fruit	Shrub fruit	Tree fruit
1							7.12E+00	1.07E+01	1.60E+01	1.83E+00	2.23E+00	3.82E+00
2							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
3							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
4							6.85E+00	3.30E+00	5.46E+00	3.96E+00	5.40E-01	1.20E+01
5							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
6							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
7							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
8							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
9							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
10							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
11							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
12							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
13							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
14							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
15							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
16							3.74E+00	1.77E+00	3.38E+00	1.85E+00	1.60E-01	4.26E+00
17							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00
18							2.94E+00	1.40E+00	1.79E+00	1.61E+00	2.20E-01	2.97E+00

Top 2 applied? No

Where top 2 method is applied, two produce categories use 90th percentile rates, while the remainder use the mean. Produce categories vary on a chemical-by-chemical basis. Where top 2 method is not used, all produce categories for all chemicals assume 90th percentile rates.

Building Detached house

Building footprint (m ²)	6.80E+01
Living space air exchange rate (hr ⁻¹)	5.00E-01
Living space height (above ground, m)	4.80E+00
Living space height (below ground, m)	0.00E+00
Pressure difference (soil to enclosed space, Pa)	3.10E+00
Foundation thickness (m)	1.50E-01
Floor crack area (cm ²)	6.60E+02
Dust loading factor (µg m ⁻³)	5.00E+01

Soil Sand

Porosity, Total (cm ³ cm ⁻³)	5.40E-01
Porosity, Air-Filled (cm ³ cm ⁻³)	3.00E-01
Porosity, Water-Filled (cm ³ cm ⁻³)	2.40E-01
Residual soil water content (cm ³ cm ⁻³)	7.00E-02
Saturated hydraulic conductivity (cm s ⁻¹)	7.36E-03
van Genuchten shape parameter <i>m</i> (dimensionless)	3.51E-01
Bulk density (g cm ⁻³)	1.18E+00
Threshold value of wind speed at 10m (m s ⁻¹)	7.20E+00
Empirical function (<i>F_s</i>) for dust model (dimensionless)	1.22E+00
Ambient soil temperature (K)	2.83E+02
Soil pH	7.00E+00
Soil Organic Matter content (%)	6.00E+00
Fraction of organic carbon (g g ⁻¹)	3.48E-02
Effective total fluid saturation (unitless)	3.62E-01
Intrinsic soil permeability (cm ²)	9.83E-08
Relative soil air permeability (unitless)	7.68E-01
Effective air permeability (cm ²)	7.54E-08

**Soil - Vapour Model**

Depth to top of source (no building) (cm)	0
Depth to top of source (beneath building) (cm)	65
Default soil gas ingress rate?	Yes
Soil gas ingress rate ($\text{cm}^3 \text{s}^{-1}$)	2.50E+01
Building ventilation rate ($\text{cm}^3 \text{s}^{-1}$)	4.53E+04
Averaging time surface emissions (yr)	6
Finite vapour source model?	No
Thickness of contaminated layer (cm)	200

Air Dispersion Model

Mean annual windspeed at 10m (m s^{-1})	5.00
Air dispersion factor at height of 0.8m *	2400.00
Air dispersion factor at height of 1.6m *	0.00
Fraction of site cover ($\text{m}^2 \text{m}^{-2}$)	0.75

* Air dispersion factor in $\text{g m}^{-2} \text{s}^{-1}$ per kg m^{-3} **Soil - Plant Model**

	Dry weight conversion factor	Homegrown fraction		Soil loading factor	Preparation correction factor
		Average	High		
	$\text{g DW g}^{-1} \text{FW}$	dimensionless		$\text{g g}^{-1} \text{DW}$	dimensionless
Green vegetables	0.096	0.05	0.33	1.00E-03	2.00E-01
Root vegetables	0.103	0.06	0.40	1.00E-03	1.00E+00
Tuber vegetables	0.210	0.02	0.13	1.00E-03	1.00E+00
Herbaceous fruit	0.058	0.06	0.40	1.00E-03	6.00E-01
Shrub fruit	0.166	0.09	0.60	1.00E-03	6.00E-01
Tree fruit	0.157	0.04	0.27	1.00E-03	6.00E-01

Gardener type None

CLEA Software Version 1.071

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Report generated 03-Oct-23

Report title Wilbraham Road, Chorlton

Created by J A Lewis at Coopers



RESULTS

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vapour - indoor and outdoor - sand detached



	Average Daily Exposure ($\text{mg kg}^{-1} \text{ bw day}^{-1}$)	Distribution by Pathway (%)
	Direct soil ingestion Consumption of homegrown produce and attached soil Dermal contact with soil and dust Inhalation of dust Inhalation of vapour Background (oral) Background (inhalation)	Direct soil ingestion Consumption of homegrown produce Dermal contact with soil and dust Inhalation of dust Inhalation of vapour (indoor) Inhalation of vapour (outdoor) Background (oral) Background (inhalation)
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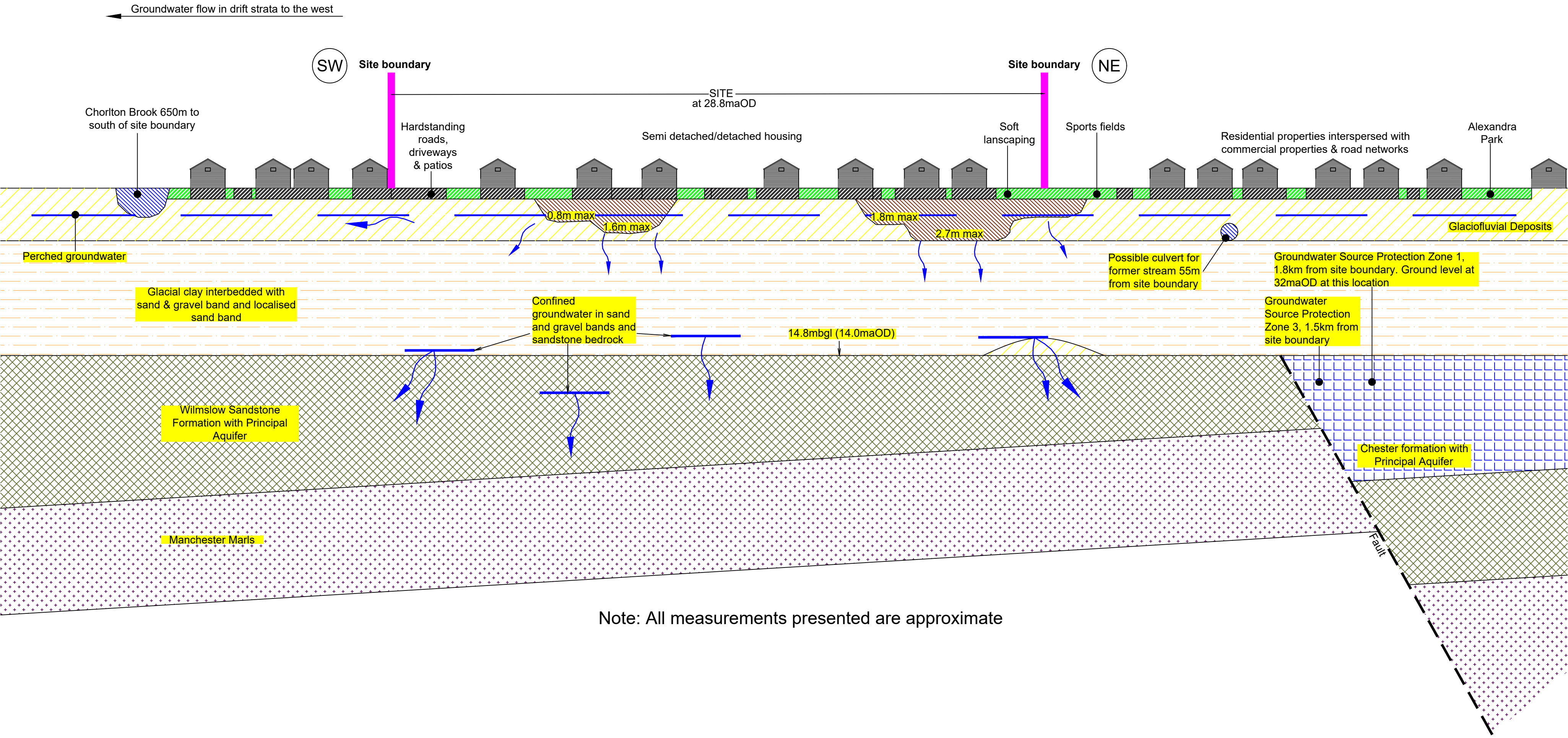
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Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Appendix 9

Conceptual Site Model for Controlled Waters

Controlled Waters Conceptual Site Model



Appendix 10

Chemical Analysis Results Collated by E3P



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Analytical Report Number : 22-59035-2

Replaces Analytical Report Number: 22-59035-1, issue no. 2
Client references/information amended.

Project / Site name:	Land off Wilbraham Road, Chorlton, Manchester	Samples received on:	17/05/2022
Your job number:	15 8 11	Samples instructed on/ Analysis started on:	17/05/2022
Your order number:	001140	Analysis completed by:	24/05/2022
Report Issue Number:	2	Report issued on:	04/11/2022
Samples Analysed:	2 water samples		


Signed:

Anna Goc
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-59035

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001140

Lab Sample Number	2279732	2279733
Sample Reference	WS101	WS103
Sample Number	None Supplied	None Supplied
Depth (m)	None Supplied	None Supplied
Date Sampled	16/05/2022	16/05/2022
Time Taken	None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection Accreditation Status

General Inorganics

pH	pH Units	N/A	ISO 17025	7.1	7.1
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	9.71	8.41

Total Phenols

Total Phenols (monohydric)	µg/l	1	ISO 17025	< 1.0	1.1
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Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	75	89
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0

Arsenic (dissolved)	µg/l	0.15	ISO 17025	10.1	11.6
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02	0.02
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.2	< 0.2
Copper (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	430	430
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.8	2.7
Selenium (dissolved)	µg/l	0.6	ISO 17025	< 0.6	< 0.6
Zinc (dissolved)	µg/l	0.5	ISO 17025	4.1	3.8

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH1 (C10 - C40) <small>EH_ID_TOTAL_MS</small>	µg/l	10	ISO 17025	< 10	< 10
--	------	----	-----------	------	------

TPH-CWG - Aliphatic >C5 - C6 <small>HS_ID_AL</small>	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 <small>HS_ID_AL</small>	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 <small>HS_ID_AL</small>	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) <small>HS+EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) <small>HS+EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10

Analytical Report Number: 22-59035

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001140

Lab Sample Number				2279732	2279733
Sample Reference				WS101	WS103
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				16/05/2022	16/05/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		

VOCs

Chloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Vinyl Chloride	µg/l	1	NONE	< 1.0	< 1.0
Trichlorofluoromethane	µg/l	1	NONE	< 1.0	< 1.0
1,1-Dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
2,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1-Dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Trichloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromodichloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/l	1	ISO 17025	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3-Dichloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
Dibromochloromethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Tetrachloroethene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromoethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Chlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
Styrene	µg/l	1	ISO 17025	< 1.0	< 1.0
Tribromomethane	µg/l	1	ISO 17025	< 1.0	< 1.0
o-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/l	1	ISO 17025	< 1.0	< 1.0
Isopropylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Bromobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
n-Propylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
2-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
4-Chlorotoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
tert-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
sec-Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
p-Isopropyltoluene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0

Analytical Report Number: 22-59035

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001140

Lab Sample Number				2279732	2279733
Sample Reference				WS101	WS103
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				16/05/2022	16/05/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
Butylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0
Hexachlorobutadiene	µg/l	1	ISO 17025	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/l	1	ISO 17025	< 1.0	< 1.0

SVOCs

Aniline	µg/l	0.05	NONE	< 0.05	< 0.05
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05
2-Chlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroethyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05
1,3-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
1,2-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
1,4-Dichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroisopropyl)ether	µg/l	0.05	NONE	< 0.05	< 0.05
2-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachloroethane	µg/l	0.05	NONE	< 0.05	< 0.05
Nitrobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
4-Methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Isophorone	µg/l	0.05	NONE	< 0.05	< 0.05
2-Nitrophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4-Dimethylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
Bis(2-chloroethoxy)methane	µg/l	0.05	NONE	< 0.05	< 0.05
1,2,4-Trichlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
2,4-Dichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
4-Chloroaniline	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachlorobutadiene	µg/l	0.05	NONE	< 0.05	< 0.05
4-Chloro-3-methylphenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4,6-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2,4,5-Trichlorophenol	µg/l	0.05	NONE	< 0.05	< 0.05
2-Methylnaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05
2-Chloronaphthalene	µg/l	0.05	NONE	< 0.05	< 0.05
Dimethylphthalate	µg/l	0.05	NONE	< 0.05	< 0.05
2,6-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05
Dibenzofuran	µg/l	0.05	NONE	< 0.05	< 0.05
4-Chlorophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05
Diethyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
4-Nitroaniline	µg/l	0.05	NONE	< 0.05	< 0.05
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Azobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Bromophenyl phenyl ether	µg/l	0.05	NONE	< 0.05	< 0.05
Hexachlorobenzene	µg/l	0.05	NONE	< 0.05	< 0.05
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01



Analytical Report Number: 22-59035

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001140

Lab Sample Number				2279732	2279733
Sample Reference				WS101	WS103
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				16/05/2022	16/05/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status		
Butyl benzyl phthalate	µg/l	0.05	NONE	< 0.05	< 0.05
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01
3&4-Methylphenol	µg/l	0.1	NONE	< 0.10	< 0.10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-59035

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 *for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 dphenylcarbazine followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Monohydric phenols in water - LOW LEVEL 1 ug/l	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Semi-volatile organic compounds in water	Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Volatile organic compounds in water	Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Low level total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector

Analytical Report Number : 22-59035

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
GC	Gas Chromatography				
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))				
CU	Clean-up - e.g. by Florisil®, silica gel				
1D	GC - Single coil/column gas chromatography				
2D	GC-GC - Double coil/column gas chromatography				
Total	Aliphatics & Aromatics				
AL	Aliphatics				
AR	Aromatics				
#1	EH_2D_Total but with humics mathematically subtracted				
#2	EH_2D_Total but with fatty acids mathematically subtracted				
-	Operator - understore to separate acronyms (exception for +)				
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total				



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Analytical Report Number : 22-49240-2

Replaces Analytical Report Number: 22-49240-1, issue no. 2
Client references/information amended.

Project / Site name:	Land off Wilbraham Road, Chorlton, Manchester	Samples received on:	31/03/2022
Your job number:	15 811	Samples instructed on/ Analysis started on:	31/03/2022
Your order number:	001139	Analysis completed by:	08/04/2022
Report Issue Number:	2	Report issued on:	04/11/2022
Samples Analysed:	5 leachate samples - 22 soil samples		


Signed:

Anna Goc
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224147	2224148	2224149	2224150	2224151
Sample Reference				TP101	TP101	TP102	TP103	TP103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.80	0.50	0.10	0.50
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.6	15	13	20	15
Total mass of sample received	kg	0.001	NONE	0.4	0.4	0.4	0.4	0.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	LFT	N/A	LFT	LFT	LFT

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.1	6.6	7.7	6.1	6.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	1.1
Total Sulphate as SO ₄	mg/kg	50	MCERTS	520	87	140	700	490
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.005	0.0045	0.023	0.013	0.01
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	10	9	47	26	20
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	5	4.5	23.3	12.8	10
Sulphide	mg/kg	1	MCERTS	5.1	1.4	1.1	2.8	3
Total Sulphur	mg/kg	50	MCERTS	320	52	59	390	320
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.4	0.3	0.5	4.1	3.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	1	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	2.8	0.81
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.8	0.44
Phenanthrene	mg/kg	0.05	MCERTS	0.97	< 0.05	< 0.05	20	4
Anthracene	mg/kg	0.05	MCERTS	0.2	< 0.05	< 0.05	3.4	0.8
Fluoranthene	mg/kg	0.05	MCERTS	1.7	< 0.05	< 0.05	27	6.7
Pyrene	mg/kg	0.05	MCERTS	1.7	< 0.05	< 0.05	26	6.4
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.9	< 0.05	< 0.05	14	3.5
Chrysene	mg/kg	0.05	MCERTS	0.88	< 0.05	< 0.05	12	3.3
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.89	< 0.05	< 0.05	14	3.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.53	< 0.05	< 0.05	4.1	1.2
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.94	< 0.05	< 0.05	13	3.5
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.43	< 0.05	< 0.05	5.2	1.6
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	1.6	0.41
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.52	< 0.05	< 0.05	6.4	1.9

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	9.65	< 0.80	< 0.80	150	38.4
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.9	1.4	3.2	23	19
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	6	4.6	8.8	18	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	13	10	63	79
Lead (aqua regia extractable)	mg/kg	1	MCERTS	54	5	9.1	200	940
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	0.7	2.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.7	7.4	14	19	17

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224147	2224148	2224149	2224150	2224151
Sample Reference	TP101	TP101	TP102	TP103	TP103
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.80	0.50	0.10	0.50
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	20	15
				31	95
				130	130

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS ID AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 HS ID AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 HS ID AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 EH CU ID AL	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 EH CU ID AL	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 EH CU ID AL	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 EH CU ID AL	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) EH CU+HS ID AL	mg/kg	10	MCERTS	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 HS ID AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 HS ID AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 HS ID AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 EH CU ID AR	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 EH CU ID AR	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 EH CU ID AR	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 EH CU ID AR	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) EH CU+HS ID AR	mg/kg	10	MCERTS	-	-	-	-	-

TPH (C5 - C6) HS ID TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS ID TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS ID TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH CU ID TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH CU ID TOTAL	mg/kg	4	MCERTS	4.7	< 4.0	< 4.0	19	< 4.0
TPH (C16 - C21) EH CU ID TOTAL	mg/kg	1	MCERTS	7.3	< 1.0	< 1.0	49	18
TPH (C21 - C35) EH CU ID TOTAL	mg/kg	1	MCERTS	26	< 1.0	< 1.0	87	32
TPH (C35 - C40) EH CU ID TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 EH CU+HS ID TOTAL	mg/kg	10	MCERTS	38	< 10	< 10	150	50

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224147	2224148	2224149	2224150	2224151
Sample Reference				TP101	TP101	TP102	TP103	TP103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.80	0.50	0.10	0.50
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224147	2224148	2224149	2224150	2224151
Sample Reference				TP101	TP101	TP102	TP103	TP103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.80	0.50	0.10	0.50
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224152	2224153	2224154	2224155	2224156
Sample Reference				TP104	TP105	TP106	TP106	TP107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	1.40	0.10	0.80	0.10
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	16	12	9.4	13
Total mass of sample received	kg	0.001	NONE	0.4	0.4	0.4	0.8	0.4

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	LFT	N/A	LFT	N/A	LFT

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.9	7.3	5.5	5.7	5.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	570	98	560	150	550
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.015	0.0057	0.011	0.0022	0.0051
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	29	11	21	4.4	10
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	14.7	5.7	10.5	2.2	5.1
Sulphide	mg/kg	1	MCERTS	4.7	3.5	1.9	1.1	1.5
Total Sulphur	mg/kg	50	MCERTS	400	290	350	96	460
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	3.8	1.1	3.7	1	5.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	1
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.37	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1.6	< 0.05	0.27	< 0.05	0.33
Fluorene	mg/kg	0.05	MCERTS	0.93	< 0.05	< 0.05	< 0.05	0.18
Phenanthrene	mg/kg	0.05	MCERTS	7	1.1	2	0.58	1.8
Anthracene	mg/kg	0.05	MCERTS	1.1	0.25	0.39	< 0.05	0.37
Fluoranthene	mg/kg	0.05	MCERTS	6.9	1.2	3.3	0.47	3.1
Pyrene	mg/kg	0.05	MCERTS	6.4	1.2	3.4	0.49	3.1
Benzo(a)anthracene	mg/kg	0.05	MCERTS	3.1	0.54	2.1	0.3	1.9
Chrysene	mg/kg	0.05	MCERTS	3.1	0.59	1.7	0.24	1.6
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.8	0.47	1.8	< 0.05	1.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.4	0.17	1.1	< 0.05	0.77
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3	0.49	2	< 0.05	1.9
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.2	< 0.05	0.84	< 0.05	0.82
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.36	< 0.05	0.21	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	< 0.05	1	< 0.05	1.1

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	40.6	5.91	20	2.08	18.8
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	3.5	14	2.1	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	NONE	< 4.0	< 4.0	< 4.0	< 4.0	27
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	26	14	4.8	31
Copper (aqua regia extractable)	mg/kg	1	MCERTS	48	25	37	13	40
Lead (aqua regia extractable)	mg/kg	1	MCERTS	240	14	100	16	100
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.9	< 0.3	< 0.3	< 0.3	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	16	32	13	5.4	11

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224152	2224153	2224154	2224155	2224156
Sample Reference	TP104	TP105	TP106	TP106	TP107
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	1.40	0.10	0.80	0.10
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	64	58

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	MCERTS	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	MCERTS	-	-	-	-	-

TPH (C5 - C6) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0	< 4.0	4.2	< 4.0	< 4.0
TPH (C16 - C21) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	20	< 1.0	11	8.5	12
TPH (C21 - C35) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	44	< 1.0	26	16	28
TPH (C35 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_1D_TOTAL	mg/kg	10	MCERTS	64	< 10	41	25	39

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224152	2224153	2224154	2224155	2224156
Sample Reference				TP104	TP105	TP106	TP106	TP107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	1.40	0.10	0.80	0.10
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224152	2224153	2224154	2224155	2224156
Sample Reference				TP104	TP105	TP106	TP106	TP107
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	1.40	0.10	0.80	0.10
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224157	2224158	2224159	2224160	2224161
Sample Reference	TP108	TP109	TP109	TP110	TP111
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.90	0.10	0.50	0.70	2.00
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	10
Total mass of sample received	kg	0.001	NONE	0.4	0.4

Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	LFT	LFT	LFT	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.4	5.8	6.2	7.1	6.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	7.9	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	75	670	430	1300	180
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0021	0.003	0.0048	0.029	0.03
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	4.3	6	9.6	58	60
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	2.1	3	4.8	28.8	29.9
Sulphide	mg/kg	1	MCERTS	< 1.0	2.1	3.2	3.6	20
Total Sulphur	mg/kg	50	MCERTS	56	430	310	1100	1800
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.5	3.2	3.5	4.2	1.6

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.41	1.6	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.51	2.4	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.3	1.5	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	3.6	13	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.74	3.2	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	6.8	18	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	6.5	19	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	3.9	9.6	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	3.1	8.2	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	3.9	6.3	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.6	4.3	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	3.9	6.1	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.7	3.6	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.48	0.94	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.1	3.8	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	39.5	102	-	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	1.5	15	21	64	4.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	5	31	17	29	7.4
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10	55	150	480	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	7.8	140	180	670	23
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	2.9	1.9	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.6	13	18	41	8.6

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224157	2224158	2224159	2224160	2224161
Sample Reference	TP108	TP109	TP109	TP110	TP111
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.90	0.10	0.50	0.70	2.00
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	17	76
				110	420
				20	

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	-	-	-	8.5	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	25	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	-	-	-	100	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	MCERTS	-	-	-	130	< 10

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	MCERTS	-	-	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	-	-	-	34	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	210	< 10
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	-	-	-	410	19
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	MCERTS	-	-	-	650	27

TPH (C5 - C6) HS_1D_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	-	-
TPH (C6 - C8) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH (C8 - C10) HS_1D_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	-	-
TPH (C10 - C12) EH_CU_1D_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0	4.9	-	-
TPH (C12 - C16) EH_CU_1D_TOTAL	mg/kg	4	MCERTS	< 4.0	5.5	12	-	-
TPH (C16 - C21) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	< 1.0	18	35	-	-
TPH (C21 - C35) EH_CU_1D_TOTAL	mg/kg	1	MCERTS	< 1.0	38	59	-	-
TPH (C35 - C40) EH_CU_1D_TOTAL	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-
TPH Total C5 - C40 EH_CU+HS_1D_TOTAL	mg/kg	10	MCERTS	< 10	62	110	-	-

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Chloroethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Bromomethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Vinyl Chloride	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Trichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224157	2224158	2224159	2224160	2224161
Sample Reference				TP108	TP109	TP109	TP110	TP111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.10	0.50	0.70	2.00
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Trichloroethene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Dibromomethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Tetrachloroethene	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Styrene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Tribromomethane	µg/kg	1	NONE	-	-	-	< 1.0	< 1.0
o-Xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Bromobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Butylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	< 1.0	< 1.0
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	< 1.0	< 1.0

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224157	2224158	2224159	2224160	2224161
Sample Reference				TP108	TP109	TP109	TP110	TP111
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.90	0.10	0.50	0.70	2.00
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	< 0.05	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	1.4	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	1.5	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	0.53	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	8.7	0.43
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	2.8	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	-	-	5.6	0.25
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	50	2.3
Anthracene	mg/kg	0.05	MCERTS	-	-	-	12	0.51
Carbazole	mg/kg	0.3	MCERTS	-	-	-	2.7	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	< 0.3	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	73	2.9
Pyrene	mg/kg	0.05	MCERTS	-	-	-	63	2.5
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	42	1.2
Chrysene	mg/kg	0.05	MCERTS	-	-	-	36	1.1
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	35	0.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	22	0.59
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	37	0.89
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	16	0.41
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	4.4	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	19	0.48

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224162	2224163	2224164	2224165	2224166
Sample Reference	TP112	TP113	TP114	WS101	WS102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.10	0.40	0.80	0.40
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	12
Total mass of sample received	kg	0.001	NONE	0.4	0.4

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	GF1	GF1	GF1	N/A	GF1

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5	5.5	6.7	6.4	6.6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	630	880	420	55	570
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.0045	0.011	0.012	0.0038	0.015
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	8.9	21	25	7.6	31
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	4.5	10.5	12.3	3.8	15.4
Sulphide	mg/kg	1	MCERTS	8.5	3	6.7	1	2
Total Sulphur	mg/kg	50	MCERTS	420	740	460	< 50	420
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	4.5	4.8	3	0.3	4

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	1.1	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.57	< 0.05	5.2	< 0.05	0.92
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	1.7	< 0.05	6.8	< 0.05	2.3
Fluorene	mg/kg	0.05	MCERTS	1.1	< 0.05	5.4	< 0.05	1.5
Phenanthrene	mg/kg	0.05	MCERTS	13	1.1	32	< 0.05	13
Anthracene	mg/kg	0.05	MCERTS	2.8	< 0.05	10	< 0.05	2.3
Fluoranthene	mg/kg	0.05	MCERTS	16	1.6	32	< 0.05	16
Pyrene	mg/kg	0.05	MCERTS	15	1.5	28	< 0.05	14
Benzo(a)anthracene	mg/kg	0.05	MCERTS	8.1	0.96	18	< 0.05	8
Chrysene	mg/kg	0.05	MCERTS	6.8	0.75	12	< 0.05	6.8
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	7.2	0.78	15	< 0.05	7
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	3.7	0.63	6.6	< 0.05	3.4
Benzo(a)pyrene	mg/kg	0.05	MCERTS	7.6	0.96	13	< 0.05	6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	3.5	0.41	6	< 0.05	2.7
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.91	< 0.05	1.8	< 0.05	0.78
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	3.9	0.57	7.6	< 0.05	3.5

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	92.2	9.32	201	< 0.80	88.8
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	14	30	1.4	20
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	NONE	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	32	28	5.4	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	53	32	370	11	62
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140	120	170	3.6	150
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.7	0.4	2.5	< 0.3	0.7
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	13	37	8.1	22

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224162	2224163	2224164	2224165	2224166
Sample Reference	TP112	TP113	TP114	WS101	WS102
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.10	0.40	0.80	0.40
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	50	57
				77	18
					81

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS 1D AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8 HS 1D AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10 HS 1D AL	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12 EH CU 1D AL	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16 EH CU 1D AL	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21 EH CU 1D AL	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35 EH CU 1D AL	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35) EH CU+HS 1D AL	mg/kg	10	MCERTS	-	-	-	-	-

TPH-CWG - Aromatic >EC5 - EC7 HS 1D AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8 HS 1D AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10 HS 1D AR	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12 EH CU 1D AR	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16 EH CU 1D AR	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21 EH CU 1D AR	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35 EH CU 1D AR	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35) EH CU+HS 1D AR	mg/kg	10	MCERTS	-	-	-	-	-

TPH (C5 - C6) HS 1D TOTAL	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8) HS 1D TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10) HS 1D TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12) EH CU 1D TOTAL	mg/kg	2	MCERTS	19	< 2.0	22	< 2.0	7
TPH (C12 - C16) EH CU 1D TOTAL	mg/kg	4	MCERTS	33	< 4.0	24	< 4.0	12
TPH (C16 - C21) EH CU 1D TOTAL	mg/kg	1	MCERTS	75	9.9	76	< 1.0	26
TPH (C21 - C35) EH CU 1D TOTAL	mg/kg	1	MCERTS	150	23	96	< 1.0	58
TPH (C35 - C40) EH CU 1D TOTAL	mg/kg	10	MCERTS	52	< 10	< 10	< 10	< 10
TPH Total C5 - C40 EH CU+HS 1D TOTAL	mg/kg	10	MCERTS	320	33	220	< 10	100

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chloroethane	µg/kg	1	NONE	-	-	-	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-	-	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-	-	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224162	2224163	2224164	2224165	2224166
Sample Reference				TP112	TP113	TP114	WS101	WS102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.10	0.40	0.80	0.40
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-	-	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224162	2224163	2224164	2224165	2224166
Sample Reference				TP112	TP113	TP114	WS101	WS102
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.10	0.40	0.80	0.40
Date Sampled				30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224167	2224168
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				0.10	2.60
Date Sampled				30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	22	12
Total mass of sample received	kg	0.001	NONE	0.4	0.4

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	GFI	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.2	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	780	220
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	0.053	0.04
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	110	80
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	52.7	40
Sulphide	mg/kg	1	MCERTS	1	44
Total Sulphur	mg/kg	50	MCERTS	470	740
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	4.9	1.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	1.3	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.4	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.25	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	2.4	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.46	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	3.6	< 0.05
Pyrene	mg/kg	0.05	MCERTS	3.4	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.3	< 0.05
Chrysene	mg/kg	0.05	MCERTS	1.6	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.2	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.4	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.2	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.94	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.3	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	22.5	< 0.80
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	7.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	NONE	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38	33
Copper (aqua regia extractable)	mg/kg	1	MCERTS	51	27
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	13
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.9	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	17	38

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224167	2224168
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				0.10	2.60
Date Sampled				30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	76	63

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-
Toluene	µg/kg	1	MCERTS	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-
o-xylene	µg/kg	1	MCERTS	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.001	MCERTS	-	-
TPH-CWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.001	MCERTS	-	-
TPH-CWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.001	MCERTS	-	-
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	-	-
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	-	-
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	-	-
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	-	-
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_ID_AL	mg/kg	10	MCERTS	-	-

TPH-CWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.001	MCERTS	-	-
TPH-CWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.001	MCERTS	-	-
TPH-CWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.001	MCERTS	-	-
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	-	-
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	-	-
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	-	-
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_ID_AR	mg/kg	10	MCERTS	-	-

TPH (C5 - C6) HS_ID_TOTAL	mg/kg	1	NONE	< 1.0	< 1.0
TPH (C6 - C8) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1
TPH (C8 - C10) HS_ID_TOTAL	mg/kg	0.1	MCERTS	< 0.1	< 0.1
TPH (C10 - C12) EH_CU_ID_TOTAL	mg/kg	2	MCERTS	< 2.0	< 2.0
TPH (C12 - C16) EH_CU_ID_TOTAL	mg/kg	4	MCERTS	7.3	< 4.0
TPH (C16 - C21) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	25	< 1.0
TPH (C21 - C35) EH_CU_ID_TOTAL	mg/kg	1	MCERTS	49	< 1.0
TPH (C35 - C40) EH_CU_ID_TOTAL	mg/kg	10	MCERTS	< 10	< 10
TPH Total C5 - C40 EH_CU+HS_ID_TOTAL	mg/kg	10	MCERTS	81	< 10

VOCs

Chloromethane	µg/kg	1	ISO 17025	-	-
Chloroethane	µg/kg	1	NONE	-	-
Bromomethane	µg/kg	1	ISO 17025	-	-
Vinyl Chloride	µg/kg	1	NONE	-	-
Trichlorofluoromethane	µg/kg	1	NONE	-	-
1,1-Dichloroethene	µg/kg	1	NONE	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	-	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-
1,1-Dichloroethane	µg/kg	1	MCERTS	-	-
2,2-Dichloropropane	µg/kg	1	MCERTS	-	-
Trichloromethane	µg/kg	1	MCERTS	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224167	2224168
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				0.10	2.60
Date Sampled				30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-	-
1,2-Dichloroethane	µg/kg	1	MCERTS	-	-
1,1-Dichloropropene	µg/kg	1	MCERTS	-	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	-	-
Benzene	µg/kg	1	MCERTS	-	-
Tetrachloromethane	µg/kg	1	MCERTS	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-
Toluene	µg/kg	1	MCERTS	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-
Styrene	µg/kg	1	MCERTS	-	-
Tribromomethane	µg/kg	1	NONE	-	-
o-Xylene	µg/kg	1	MCERTS	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	-	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	-	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	-	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	-	-
Butylbenzene	µg/kg	1	MCERTS	-	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	-	-
Hexachlorobutadiene	µg/kg	1	MCERTS	-	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number				2224167	2224168
Sample Reference				WS103	WS104
Sample Number				None Supplied	None Supplied
Depth (m)				0.10	2.60
Date Sampled				30/03/2022	30/03/2022
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224169	2224170	2224171	2224172	2224173
Sample Reference	TP103	TP106	TP109	TP110	TP111
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.80	0.50	0.70	2.00
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	7	6.9	7	7.9	7.3
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Total Phenols

Total Phenols (monohydric)	µg/l	1	ISO 17025	3	3.3	2.9	2.7	3
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
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Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	< 1.0	< 1.0	1.8	< 1.0	66
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.5	1.4	2.1	1.2	1.3
Copper (dissolved)	µg/l	0.7	ISO 17025	19	7.9	19	15	14
Lead (dissolved)	µg/l	1	ISO 17025	19	4.4	14	6.9	4
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	4.4	5.1	6	4.3	5.5
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	4.8	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	22	7.8	16	10	6.4

Monoaromatics & Oxygenates

Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Your Order No: 001139

Lab Sample Number	2224169	2224170	2224171	2224172	2224173
Sample Reference	TP103	TP106	TP109	TP110	TP111
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.50	0.80	0.50	0.70	2.00
Date Sampled	30/03/2022	30/03/2022	30/03/2022	30/03/2022	30/03/2022
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status		

Petroleum Hydrocarbons

TPH1 (C10 - C40) <small>EH_ID_TOTAL_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
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TPH-CWG - Aliphatic >C5 - C6 <small>HS_ID_AL</small>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 <small>HS_ID_AL</small>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 <small>HS_ID_AL</small>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 <small>EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) <small>HS+EH_ID_AL_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 <small>HS_ID_AR</small>	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 <small>EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) <small>HS+EH_ID_AR_MS</small>	µg/l	10	NONE	< 10	< 10	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2224147	TP101	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2224148	TP101	None Supplied	0.8	Brown sandy gravel.
2224149	TP102	None Supplied	0.5	Brown clay and sand with gravel.
2224150	TP103	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2224151	TP103	None Supplied	0.5	Brown loam and clay with gravel and vegetation.
2224152	TP104	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
2224153	TP105	None Supplied	1.4	Brown clay.
2224154	TP106	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2224155	TP106	None Supplied	0.8	Brown loam and sand with gravel and vegetation.
2224156	TP107	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2224157	TP108	None Supplied	0.9	Brown sand with gravel.
2224158	TP109	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
2224159	TP109	None Supplied	0.5	Brown loam and clay with gravel and vegetation.
2224160	TP110	None Supplied	0.7	Brown loam and clay with gravel and vegetation.
2224161	TP111	None Supplied	2	Brown clay and sand with gravel and vegetation.
2224162	TP112	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2224163	TP113	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2224164	TP114	None Supplied	0.4	Brown loam and sand with gravel and vegetation.
2224165	WS101	None Supplied	0.8	Brown sand with gravel.
2224166	WS102	None Supplied	0.4	Brown loam and clay with gravel and vegetation.
2224167	WS103	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
2224168	WS104	None Supplied	2.6	Brown clay.

Analytical Report Number : 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in leachate - LOW LEVEL 1 ug/l	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
TPH1 (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
TPHCWG (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in leachates (Monoaromatics)	Determination of BTEX and MTBE in leachates by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Total cyanide in leachate - 1µg/l	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C. Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
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Analytical Report Number : 22-49240

Project / Site name: Land off Wilbraham Road, Chorlton, Manchester

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
HS	Headspace Analysis				
MS	Mass spectrometry				
FID	Flame Ionisation Detector				
GC	Gas Chromatography				
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))				
CU	Clean-up - e.g. by Florisil®, silica gel				
1D	GC - Single coil/column gas chromatography				
2D	GC-GC - Double coil/column gas chromatography				
Total	Aliphatics & Aromatics				
AL	Aliphatics				
AR	Aromatics				
#1	EH_2D_Total but with humics mathematically subtracted				
#2	EH_2D_Total but with fatty acids mathematically subtracted				
_	Operator - understore to separate acronyms (exception for +)				
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total				

Supplementary Site Investigation for land off Wilbraham Road, Chorlton

Appendix 11

Drinking Water Supply Risk Assessment

IWNL CONTAMINATED LAND ASSESSMENT

To be completed by Ground Investigation Consultant

Site Name and Address	Land off Wilbraham Road, Chorlton		
Brief Description of Site Use	☐ Greenfield ☒ Brownfield		
Check any which apply to Historic or Current Site Use	<div style="display: flex; justify-content: space-between;"> <div> ☐ Chemical Works ☐ Paper Manufacture ☐ Fuel Storage ☐ Scrap Yards ☐ Tanneries ☐ Petrol Stations ☐ Print Works </div> <div> ☐ Timber Yards ☐ Gas Works ☐ Railway Yards ☐ Landfill Sites ☐ Hazardous waste treatment ☐ Vehicle repair/manufacture/storage ☒ None of these </div> </div>		
Intrusive Site Investigation completed?	☒ Yes Dates(s): January 2023 & October 2023 ☐ No	Was groundwater encountered?	☒ Yes Depth encountered: Perched between 1m & 2.2m ☐ No
Testing at UKAS Accredited Laboratory	☐ Yes ☐ No	Sample Results Tested From:	☒ Existing ground materials ☐ Remediated materials ☐ Imported capping materials
Are high hydrocarbon results / ash and clinker observations isolated to certain areas? (See Table 1)	☒ Yes ☐ No ☐ N/A If yes, please provide map displaying sample locations and results.		
If decision based on existing ground materials.			
Remediation Required?	☒ Yes ☐ No	Would remediation strategy mitigate risk?	☐ Yes ☒ No Post remediation sampling required before pipe selection can be being reassessed.
Comments	<p>The site was agricultural land with ponds which became infilled. The site was converted to a sports ground.</p> <p>The site investigation has assessed the natural ground, madeground (similar to topsoil) and madeground with chemical analysis being appropriate to these site uses discussed in detail in the desk study (see E3P "Phase I desk study", Reference No. 15-811-R1-6, dated January 2023).</p> <p>Reference also needs to be made to the reports:</p> <ul style="list-style-type: none"> E3P "Phase II geoenvironmental site assessment", Reference No. 15-811-R2-6, dated January 2023 E3P "Remediation and enabling works strategy", Reference No. 15-811-R3-2, dated January 2023 Coopers "Supplementary site investigation for land off Wilbraham Road, Chorlton", Reference No. 8165ssi, dated October 2023 <p>Madeground (similar to topsoil) was recorded across the site and has been identified as needing to be removed from site due to the risk posed to human health.</p> <p>Madeground was identified within the former ponds, the Coopers risk assessments concluding that this can remain in-situ, should this be the commercial preference. Due to elevated concentrations of metals, PAH (16) compounds, and slight elevated concentrations of SVOCs and TPH compounds in relation to human health risk, an inert cover will be required in the soft landscaping in the gardens.</p>		

IWNL CONTAMINATED LAND ASSESSMENT
To be completed by Ground Investigation Consultant

The area of the made ground has been delineated (see Drawing No. 8165/01 presented within Coopers Supplementary Site Investigation Report Reference No. 8165ssi, dated October 2023)

The made ground has been adequately characterised. Should this remain in situ no additional chemical analysis will be required. Should the made ground be removed from site, this will be validated.

Any imported soils will be chemically analysed to ensure they are suitable for use on site.

IWNL CONTAMINATED LAND ASSESSMENT

To be completed by Ground Investigation Consultant

Table 1: Pipeline Selection Risk Assessment Summary

Test Group	Threshold mg/kg	Maximum concentration mg/kg	Location and depth if over threshold value/observed
Total VOCs	0.5	<0.001	N/A
Total BTEX & MTBE	0.1	<0.001	N/A
Total SVOCs excluding PAHs and substances marked with *	2	7.67	TP110 at 0.7m, TP246 at 1m
EC5-EC10 aliphatic and aromatic hydrocarbons	2	4	TP231 at 0.5m
EC10-EC16 aliphatic and aromatic hydrocarbons	10	1344	WS102 at 0.4, TP110 at 0.7m, TP243 at 0.8m, TP246 at 1m, TP256 at 0.9m
EC16-EC40 aliphatic and aromatic hydrocarbons	500	8270	TP110 at 0.7m, TP246 at 1m
Phenols* (from SVOC analysis)	2	<0.1	N/A
Cresols and chlorinated phenols* (from SVOC analysis)	2	<0.1	N/A
Total PAH [investigatory threshold]	200	922	TP110 at 0.7m, TP114 at 0.4m, TP229 at 0.5m
Benzo(a)Pyrene [investigatory threshold]	10	47	TP114 at 0.4m, TP229 at 0.5m, TP246 at 1m
Naphthalene [investigatory threshold]	50	<0.1	N/A
Anthracene [investigatory threshold]	100	<0.1	N/A
Fluoranthene [investigatory threshold]	100	209	TP229 at 0.5m
Pyrene [investigatory threshold]	100	162	TP229 at 0.5m
Ethers*	0.5	N/A	N/A
Nitrobenzene*	0.5	N/A	N/A
Ketones*	0.5	N/A	N/A
Aldehydes*	0.5	N/A	N/A
Amines	0.5	N/A	N/A
Corrosive	-	N/A	N/A
Window Observations (check if observed under Maximum concentration column)	Ash and/or Clinker	☒	TP246 at 1m, TP231 at 0.5m, TP229 at 0.5m

Declaration	<p>I confirm that if any further site investigation is needed and carried out, I will be required to submit an additional copy of table 1 with the relevant supporting information. I understand that failure to supply any of the required information may delay the project from being progressed.</p> <p>I confirm that:</p> <p>☐ all sample results are below the thresholds listed in Table 1 OR</p> <p>☒ there are samples above the thresholds listed in Table 1</p> <p>I confirm that:</p> <p>☐ all Window Observations are clear of ash and/or clinker OR</p> <p>☒ there are Window Observations with ash and/or clinker</p>
Name, Job Title and Professional Accreditation	<p>J A Lewis</p> <p>Senior Geo-environmental Engineer</p> <p>Professional Qualification(s)</p>
Company	MCIWEM C.WEM, C.Sci, C.Env.
Contact Details	<p>jlewis@coopers.co.uk</p> <p style="text-align: right;">IWNL will only contact you with a query about this form.</p>

IWNL CONTAMINATED LAND ASSESSMENT
To be completed by Ground Investigation Consultant

Signature and Date	 A handwritten signature in blue ink, appearing to read "J A Lewis".
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Supplementary Site Investigation for land off Wilbraham Road, Chorlton

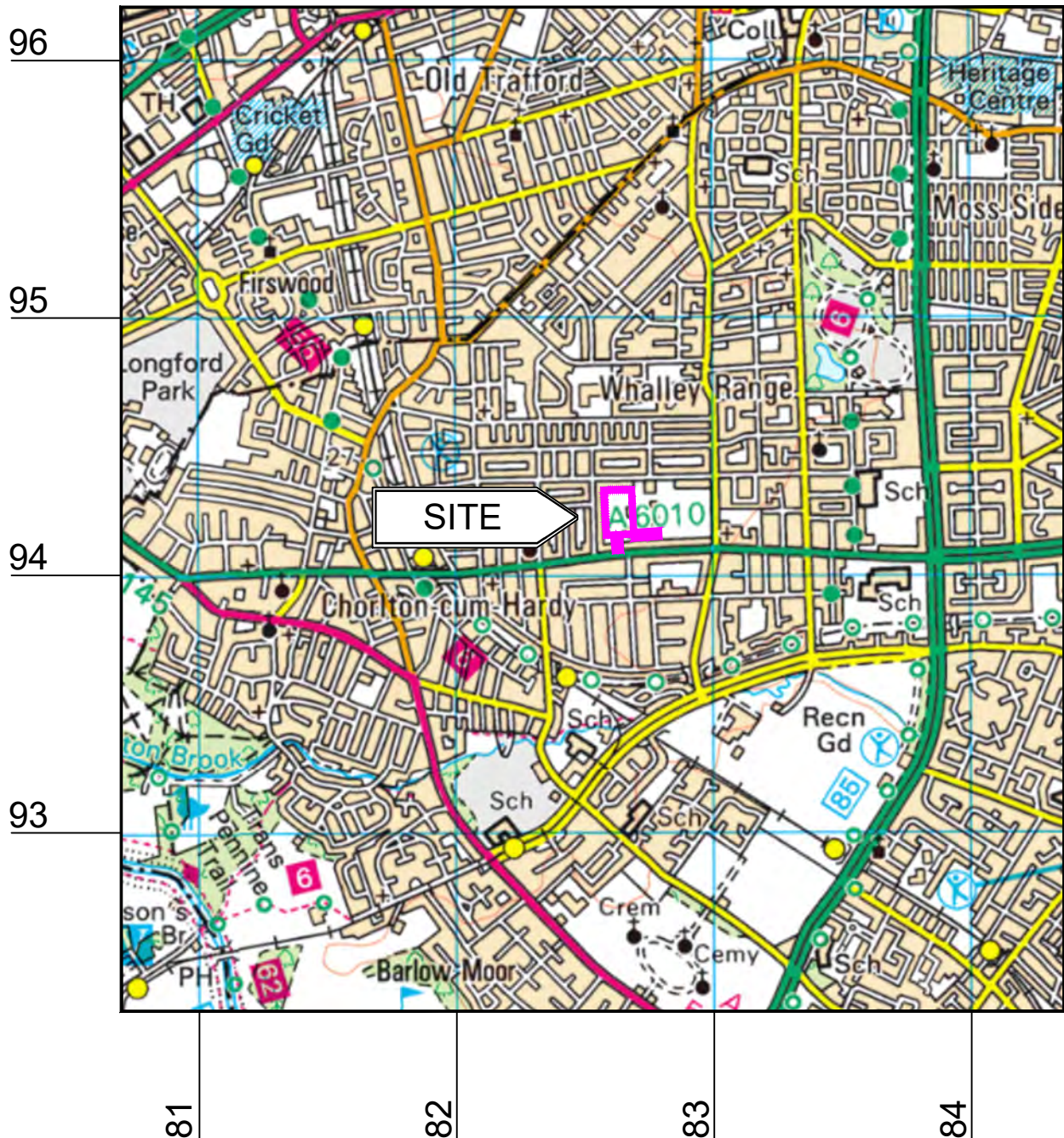
Appendix 12**Reference Drawings**

<u>Reference</u>	<u>Rev</u>	<u>Title</u>
8215/L1	-	Site Location Plan
8215/01	-	Site Plan



National Grid reference
of the proposed site.

SJ 826 942



0 200 400 600 800 1000 1500 2000

SCALE BAR (m)

