Report prepared at
Garage Court
r/o 66-74 Farmlands
Joel Street
Pinner
HA5 2LN

On behalf of
Kearns Developments Limited

Report reference
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Aviron Associates Limited

Report Quality Management			
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1.0 PROJECT AND SITE INFORMATION

1.1 APPOINTMENT

Aviron Associates Limited (Aviron) was retained by Kearns Developments Limited (the "Client") to prepare a tier 1 Preliminary Risk Assessment (PRA) and complete a Site Investigation (SI) leading towards a tier 2 Generic Quantitative Risk Assessment (GQRA) of the following premises:

Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN (hereafter referred to as the "site").

The PRA forms a tier 1 assessment, addressing London Borough of Hillingdon Grant of Planning Permission Condition 7 (i) (a), by completing a desk-top study with a site walkover to identify potential areas of contaminative concern associated with the proposed development of the site. The PRA will then form a preliminary Conceptual Site Model (CSM) with recommendations for any further investigation or risk assessment.

The SI, addressing Condition 7 (i) (b) will investigate the pollutant linkages established within the PRA in order to produce suitable data for the preparation of a tier 2 GQRA to refine the CSM and as necessary provide recommendations for any further investigation or tier 3 Detailed Quantitative Risk Assessment (DQRA). Alternatively, it may be possible to make remediation recommendations immediately following the GQRA.

In addition, geotechnical issues shall be investigated to provide recommendations for new foundations, drainage and pavement design.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

1.2 THE SITE

Table 1.2 provides a summary of site details and surrounding area.

Table 1.2: Site Details	
Site Location	The site is located to the rear of 66-74 Farmlands, Pinner in the London Borough of Hillingdon, approximately 1.8 kilometres (km) to the west of Pinner Station. **Figure 1** is presented as the Site Location Plan.
National Grid Ref.	Centred at approximately 510420, 189230.
Current Land Use	The site comprises the former site of two long terraces of single storey lockup garages, that have been recently demolished. **Figure 2** is presented as the Pre-Clearance Site Layout Plan. **Figure 3** is presented as the Site Photographs.

Table 1.2: Site Details	
Surrounding Land Use	The site lies within an urban residential setting. Residential properties are located immediately to the north, south, and west, with the B472 forming the eastern boundary and residential housing beyond.
Proposed Land Use	The proposed development comprises the removal of the existing buildings and the construction of four residential houses, including private gardens and parking locally. **Figure 4** is presented as the Proposed Development Plan.

1.3 SITE WALKOVER SURVEY

A site walkover survey was completed and included an inspection of the site and surrounding area, where safe and accessible. The purpose of the survey was to identify any potential on-site or nearby contaminative activities or potential sources of land contamination. Additionally, as part of the survey any features which may affect site re-development in terms of physical site and ground conditions were noted.

Table 1.3 provides a description of site features observed during the walkover survey and also current Ordnance Survey maps made available at the time of report writing.

Table 1.3: Summary of Site Walkover Survey	
Physical Site Characteristics	
Existing Structures	Site recently cleared. Previously in use as two terraces of single storey lock up garages of brick construction under flat felt roofs. Access via Farmlands (road) to the south.
Basements	None observed at the time of inspection.
Visual Topography and Site Surfacing	Generally level. The previous surfacing, now almost entirely cleared, comprised predominantly concrete with a strip of soft landscaping opposite the garage along the eastern boundary.
Retaining Structures and Slopes	None observed at the time of inspection.
Drainage Issues	None observed at the time of inspection.
Surface Waters	None observed at the time of inspection.
Trees and Hedges	Isolated off-site trees and hedges along the fenceline of the southeastern boundary.
Made and Infilled Ground	Should be anticipated beneath the previous buildings and hardstanding.
Contaminative Characteristics	
Above or Underground Storage Tanks (ASTs/USTs) and Drums	No ASTs/USTs observed at the time of inspection.

Table 1.3: Summary of Site Walkover Survey	
Fuel Interceptors	None observed at the time of inspection.
Waste Storage and Disposal	None observed at the time of inspection.
Hazardous Material Storage and Use	None observed at the time of inspection.
Asbestos Containing Materials (ACMs)	None observed at the time of inspection.
Boiler Houses	None observed at the time of inspection.
Sub-stations	None observed at the time of inspection.
Surface Staining	None observed at the time of inspection.
Potentially Contaminative Activities	Potentially contaminative activities observed include the use of the site as lock-up garages.

1.3.1 Summary of Physical Site Characteristics

Consideration should be made towards the make-up and competency of the underlying strata, the influence of trees locally on the proposed development buildings.

1.3.2 Summary of Contaminative Site Characteristics

It is possible that ACMs may have been incorporated in the structure of the previous garages. Potentially there could have been minor oil spillages from any vehicle storage and maintenance activities, but no issues have been reported at the site.

2.0 DESK STUDY REVIEW

Historical Ordnance Survey (OS) maps were obtained as part of the Envirocheck database search within report package reference 394055057 dated 22 January 2026, included within **Appendix I**. Database information within the Envirocheck report also includes reference to the hydrogeology, hydrology, subsidence and mining risk and ground gas hazards in the site area and is summarised in the following sections. A summary of the ground hazards for construction purposes is also included.

2.1 HISTORICAL REVIEW

Historical Ordnance Survey (OS) maps were reviewed, and the historical development of the site and the surrounding land is summarised in the following table.

Table 2.1: History of the Site and Surrounding Land

Date (scale)	Site History	Surrounding Land History
1862-75 (1:2,500) 1868 (1:10,560) 1883 (1:10,560) 1896 (1:2,500) 1897 (1:10,560)	The site is shown as predominantly open land, with a possible field boundary in the northern part of the site, adjacent the later named Joel Street to the east. By the late 19th century, three attached buildings are shown within the northern part of the site, associated with the adjacent Haydon Hall Farm.	The site is located within a rural setting, with numerous farms and cottages shown in the vicinity including the later named Hayden Hall Farm to the north. By the late 19th century, a branch of the Metropolitan Railway had been constructed approximately 700m northeast through Pinner Green. The Joel Street Farm Ditch is marked 30m to the southeast flowing in a southerly direction, and another drainage ditch appears to be located just to the west of the site, flowing into the adjacent stream. The River Pinn is approximately 450m southeast. Ponds and water wells are shown in the wider area.
1913 (1:2,500) 1916 (1:10,560)	No apparent changes are shown on site.	Surrounding land uses remain similar to those previously recorded, with the addition of an old brick works approximately 950m southeast.
1935 (1:2,500) 1935 (1:10,560) 1938 (1:10,560)	No apparent changes are shown on site.	Substantial residential development is shown within the wider area, including to the northeast beyond the railway at Pinner Green, and expanding from the east and southeast. The former stream to the east appears to have been partly culverted.
1948-50 (aerial photograph) (1:10,560)	No apparent changes are shown on site.	No notable changes are shown within the surrounding area.
1959 (1:2,500)	No apparent changes are shown on site.	Beyond Haydon Hall Farm to the north, two additional buildings are shown.

Table 2.1: History of the Site and Surrounding Land		
Date (scale)	**Site History**	**Surrounding Land History**
1960 (1:10,000) 1960 (1:1,250) 1965-68 (1:10,000)		Substantial residential infill development is evident within the surrounding area, with fewer areas of open land. A garage is shown approximately 900m northwest and a depot approximately 450m northeast.
1969-74 (1:1,250) 1974 (1:1,250) 1975-76 (1:10,000)	Two terraces of small structures, consistent with the recently demolished lock-up garages is shown inside the western boundary.	The surrounding area continues to undergo urban development, characterised by medium- to high-density residential housing and associated infrastructure. Housing development, comprising Farmlands is shown immediately north and west of the site by 1976, replacing the former farm to the north.
1980 (1:1,250) 1985 (1:25,050 Russian Map) 1989 (1:1,250)	No apparent changes are shown on site.	No notable changes are shown within the surrounding area.
1990-93 (1:10,000) 1991 (1:1,250) 1999 (1:10,000) 1999 (1:1,250) 2006 (1:10,000)	No apparent changes are shown on site.	No notable changes are shown within the surrounding area.
2026 (1:10,000) 2026 walkover	No apparent changes are shown on site.	No notable changes are shown within the surrounding area.
Note: All distances are approximate.		

2.1.1 Anecdotal Evidence

No anecdotal evidence at the time of report writing.

2.1.2 Summary of Historical Landuses

A review of historical Ordnance Survey mapping indicates that the site was predominantly open land from the mid to late 19th century, with a possible field boundary shown within the northern part of the site. By the late 19th century, buildings had been constructed in the northern part of the site, which formed part of Haydon Hall Farm. Mapping from 1969 indicates that the site had been redeveloped by this time, with two terraces of small structures shown inside the western boundary, consistent with the footprint of the garage buildings recently present on site. Subsequent mapping shows no significant changes to the site layout through to the present day. A site walkover undertaken in 2026 confirmed no material changes to the site condition.

Historically, the site was located within a predominantly rural setting, characterised by farmland, cottages and agricultural uses, with the River Pinn located approximately 450m southeast and a branch of the Metropolitan Railway constructed approximately 700m northeast by the late 19th century. During the early to mid-20th century, surrounding land uses remained largely unchanged, although an old brick works was identified approximately 950m southeast.

From the 1930s onwards, substantial residential development occurred within the wider area, particularly to the northeast beyond the railway and extending from the east and southeast, with continued infill development through the mid to late 20th century. By the latter half of the 20th century, the surrounding area had become predominantly urban in character, comprising medium- to high-density residential housing and associated infrastructure, with no notable changes identified on recent mapping.

2.1.3 Planning History

A review of the London Borough of Hillingdon planning portal indicates that the only planning records associated with the site relate to the current redevelopment proposals. The relevant planning application is summarised below.

Planning Reference: 77586/APP/2023/2460
Proposal: Demolition of existing single-storey garages and construction of four two-bedroom, two-storey dwellings with associated parking and landscaping.
Decision: Approved by the London Borough of Hillingdon Planning Committee on 14 March 2024.

2.2 GEOLOGY, HYDROGEOLOGY AND HYDROLOGY

2.2.1 Anticipated Geology

Relevant geological information has been determined using the British Geological Survey (BGS) extract sheet 256 of North London, which have been summarised in table 2.1.1 below.

Table 2.2.1: Anticipated Geology

Stratum	Age	Possible Thickness (m)	Typical Description	Aquifer Status
Artificial/Made Ground - Not recorded	N/A	N/A	N/A	N/A
Superficial - Not recorded	N/A	N/A	N/A	N/A

Solid Lambeth Group	Ypresian	Up to 39 m in the west of the London Basin.	Clay, Silt and Sand	Secondary (A) Aquifer

Reference to Infilled Ground (Artificial Deposit) is nearly 1km to the southeast and is noted on the historical mapping as worked ground.

The geology of the Lambeth Group is described as "vertically and laterally variable sequences mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate".

There are no records of mass movement or fault lines in the Envirocheck report for premises within 250m of the site.

2.2.2 Ground Conditions – BGS Borehole

The following selection of the nearest most relevant BGS recorded logs for historical drilling located within 1000m of the site is summarised in table 2.2.2.

Table 2.2.2: Borehole Records

BGS ID (distance and direction from site, m)	Depth of borehole m bgl	Lithological sequence metres (m) below ground level (bgl)	Other notes/ Aquifer Status
TQ18NW203 (587m north) Joel Street Stables	35m	London Clay GL - 18.5m Woolwich and Reading Beds (now Lambeth Group) 18.5 – 20.0m Upper Chalk 20.0 – 35.0m	Water level at 23.8m (10/01/05)
TQ18NW2/A-F (218m south) HAYDON HALL RUISLIP 1-6	6.1m	Loamy Topsoil to 0.30m bgl CLAY and loam in layers to 6.1m bgl	Water level at 4.9m (8/02/39)

2.2.3 Anticipated Ground Conditions

Reference to the anticipated geology, BGS borehole records and anecdotal information indicate that the following anticipated ground conditions are likely at the site:

- MADE GROUND – associated with the various buildings, construction and historical use of the site.
- Lambeth Group – Clay, Silt and Sand.

Groundwater is noted in the site area at depths of around 4m and greater than 20m bgl, as noted and is likely to fluctuate seasonally.

2.2.4 Hydrogeology

The hydrogeology of the site has been determined by the solid geology of the Lambeth Group, which is classified by the Environment Agency as a secondary (A) aquifer.

According to the Environment Agency, secondary (A) aquifer are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Both the Envirocheck report and the Environment Agency website (March 2026) indicate that the site is located within an Environment Agency source protection zone (SPZ) III (total catchment). A zone II (outer protection zone) is located 886m to the west.

The groundwater vulnerability for the site is noted as 'Secondary Bedrock Aquifer - Medium Vulnerability' in connection with the Lambeth Group.

The Envirocheck report indicates that the site is located in a groundwater flooding susceptibility area, where there is 'Potential for Groundwater Flooding to Occur at Surface'.

The Envirocheck report indicates that there are references to groundwater abstraction licences for potable use for premises within 2000m of the site. The nearest abstraction point is located 1642m to the northwest in connection with public water supply.

2.2.5 Hydrology

The nearest surface water feature is located 30m to the southeast of the site, referencing a drainage ditch (inland river) which is 168m long and referenced as Joel Street Farm Ditch in the Envirocheck report.

The Envirocheck report indicates that there are no references to potable water supply surface water abstraction licences for premises within 2000m of the site.

The Envirocheck report indicates that there are no references to discharge consents within 250m of the site.

The Envirocheck report indicates that there no references to Local Authority Pollution Prevention and Controls within 250m of the site. The nearest permit relates to a Petrol Filling Station 713m to the south.

One Pollution Incident to Controlled Waters is noted within 250m of the site, at a location 224m to the northeast, where the pollutant 'Storm Sewage' is shown to have caused a Category 3, minor incident.

The site is not located in an area that is at risk of 'flooding' or 'extreme flooding' but the area immediately to the east is. Immediately adjacent to the south-east is an area indicated at the extent of flooding from rivers or sea without defences. The site is located in a Flood Zone 1, described as having a low probability of flooding from rivers and the sea. It is not in an area benefitting from flood defences.

The site is located in a surface water 1 in 100 and 1 in 1000 year flood extent.

2.3 LANDFILLS AND BIO-GROUND GAS

2.3.1 Landfills, Waste Management Facilities and Infilled Ground

The Envirocheck report indicates that there are no historical landfill sites, Local Authority recorded landfill sites or potentially infilled land (non-water) within 500m of the site.

The Envirocheck report indicates that there are two references to potentially infilled land (or water) within 250m of the site; there is unknown Filled Ground (Pond, marsh, river, stream, dock etc) at distances of 34m to the north-west, at the location of a former pond on the historical mapping and 192m to the south on the 1916 and 1938 maps respectively.

2.3.2 Preliminary Risk Assessment (PRA) – Bio-Ground Gas

Table 2.3.2 summarises the gas risk for the site, based on the above information gained through the desk-based research.

In accordance with current guidance (CIRIA C665), the gas generation potential for each source has been individually assessed, with references to potential gassing risk made according to the following definitions: Negligible, Very Low, Low, Moderate, High and Very High. The definitions are explained in Section 10.0 of the guidance.

The objective of this exercise is to determine if potentially unacceptable bio-ground gas risks exist, and whether further investigation and assessment is necessary.

Table 2.3.2: Preliminary Risk Assessment (PRA) – Bio-Ground Gas			
Potential Source	**Risk**	**Risk Rating**	**Rationale**
Made Ground (CO_2 + CH_4)	Human health Explosion	Very Low	Made Ground should be anticipated due the existing and former construction/use within the site. Significant organic degradable material is not however expected, and the risk of ground gas generation from Made Ground beneath the site is considered to be low.
Alluvial Strata (CO_2 + CH_4)	Human health Explosion	Negligible	No Alluvial deposits within 250m of the site.
Landfills (CO_2 + CH_4)	Human health Explosion	Negligible	No historical landfill within 250m of the site.
Infilled Ground + Burial Sites (CO_2 + CH_4)	Human health Explosion	Very Low	Potentially infilled ground noted within 250m of the site.
Coal and Mining (CO_2 + CH_4)	Human health Explosion	Negligible	Not located in a coal mining area or a non-coal mining area.
Soil Vapours	Human health Explosion	Very Low	Potentially low soil vapour risk from the use of the site as garages, for vehicle servicing, maintenance and repair, and small-scale storage of fuels, engine oil, waste oil and other potentially volatile substances such as de-greasing agents.
COMBINED RISK RATING = VERY LOW			

A VERY LOW combined risk from ground gas ingress and explosion is considered applicable to the site.

2.4 RADON GAS

Information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is included in a 'lower probability radon area' (less than 1% of homes are estimated to be at or above the Action Level)'. ***No protective measures are considered necessary in the construction of new dwellings or extensions, according to the British Geological Survey.***

The information can be verified through checking on the interactive radon map for Great Britain provided by the UK Health Security Agency (UKHSA) and the British Geological Survey (BGS).

The HSA website (ukradon.org) can be used to purchase radon reports, where an address-specific radon report may be obtained. It should however be noted that for redevelopment sites, a GeoReport provided by the British Geological Survey may be more appropriate.

2.5 GROUND STABILITY, NATURAL CAVITIES AND MINING HAZARDS

Table 2.5 indicates potential ground stability, natural cavities and mining hazards identified within the Envirocheck report for the site. These will be considered in terms of the proposed development and detailed in the following section 2.5, Preliminary Ground Hazards Summary.

Table 2.5: Ground Stability, Natural Cavities and Mining	
Hazard	**Ground Stability and Natural Cavities Hazard Potential**
Potential for Collapsible Ground Stability	Very Low
Potential for Compressible Ground Stability	No Hazard
Potential for Ground Dissolution	No Hazard
Landslides	Very Low
Running Sands	Very Low
Shrink-Swell Clay	Moderate
Natural Cavities	None within 500m
Hazard	**Mining Hazard Potential**
BGS recorded mineral sites	None within 500m
Coal mining affected areas	Not located in a coal mining affected area
Mining instability	No Hazard
Man-made mining cavities	None within 500m
Non coal mining areas of Great Britain	Unlikely
Potential mining areas	No Hazard
Infilled Land	No potentially infilled land (non-water) recorded within the site extents
Other mining/quarrying	None within 500m.

2.6 PRELIMINARY GROUND HAZARDS SUMMARY

The following Table 2.6 provides a summary of the preliminary ground hazards identified with the ground and groundwater conditions and historical site use as determined from the desk-based information accumulated within the PRA. The following key plan should be considered in regard of plausible risk:

❍ - Further action required. Potentially plausible hazard.

❍ - Unlikely to represent a hazard, no further consideration required.

Table 2.6: Preliminary Ground Hazards Summary		
Ground Hazard	**Plausible**	**Description**
Topographic		
Site constraints	❍	Restricted site access including buildings and hardstanding.
Slopes, embankments, cuttings	❍	Foundation type and construction difficulties. Remedial measures to stabilise slopes, embankments and cuttings, and mitigate risks of landslides.
Man-made		
Filled ground/ made ground/ infilled basements	❍	Foundation type and construction difficulties associated with the development of the site. Potential for filled ground associated with the historical development.
Existing foundations and below ground structures	❍	Foundation type and construction difficulties. Obstructions to new construction. Influence of existing and adjacent foundations to new construction. Vibration associated with the construction technique.
Mining instability	❍	Foundation type and construction difficulties. Appropriate mining investigation.
Ground chemistry	❍	Made Ground is heterogenous and subject to composition may present a risk of sulphate and sulphide attack on buried concrete.
Unexploded Ordnance	❍	Detailed unexploded ordnance (UXO) risk assessment did not form part of our project instruction.
Geological		
Frost action	❍	Susceptibility of soils affected at pavement and foundation formation. Provision of non-frost susceptible materials.
Lateral soil instability	❍	Foundation type and construction difficulties. Provision of temporary works – shoring.
Soft clays, silts and compressible soils	❍	Foundation type and construction difficulties. Sufficient bearing resistance to support the proposed construction.
Shrinkable soils	❍	Foundation type and construction difficulties. Influence of trees on foundation depths. Potential for desiccation to have occurred and heave protection.

Table 2.6: Preliminary Ground Hazards Summary		
Ground Hazard	**Plausible**	**Description**
		NHBC Standards Chapter 4.2, Building Near Trees.
Ground dissolution of soluble rocks	❍	Risk of ground dissolution of soluble rocks in the area of the site noted to be 'no hazard'. Foundation type and construction difficulties. Dynamic probing, torque readings. A quantitative risk of ground dissolution of soluble rocks did not form part of our project instruction.
Ground chemistry	❍	Natural soils in the area present a risk of sulphate and sulphide attack on buried concrete.
Hydrogeological/Hydrological		
Elevated or rising groundwater	❍	Foundation type and construction difficulties. Provision of temporary works – dewatering (possibly well-points) in shallow excavations due to surface water flooding. Provision of temporary works – shoring. Reduced bearing resistance. Effectiveness of soakaway drainage or deep borehole soakaways.
Fluvial or coastal scour/erosion	❍	Foundation type and construction difficulties. Remedial or preventative measures.
❍ - Further action required. Potentially plausible hazard. ❍ - Unlikely to represent a hazard, no further consideration required.		

Any proposed new construction will need to consider obstructions and the increased thicknesses of made ground locally, the required bearing resistance of the proposed buildings, existing foundations and the influence of trees and root bowls.

A suitable ground investigation would confirm an appropriate foundation solution.

Although shallow soakaway drainage may be successful in the Lambeth Group, discharging water into potentially contaminated soils above a secondary (A) aquifer may not be acceptable.

An alternative to soil infiltration may therefore be required.

3.0 REGULATORY INFORMATION, CONSULTATIONS AND OTHER

Unless otherwise stated regulatory database information has been obtained from the Envirocheck report included as **Appendix I.**

3.1 STATUTORY REGISTERS AND AUTHORISATIONS

Table 3.1 includes the statutory registers and authorisations that relate to the site and surrounding area. Pertinent registers and authorisations will be used in conjunction with the desk-based review to determine the preliminary environmental risk.

Table 3.1: Statutory Registers and Authorisations

Item	0 – 250m	251 – 500m
Contaminated Land Register Entries and Notices	0	0
Records of Licensed Discharge Consents	0	0
Prosecutions Relating to Controlled Waters	0	0
Enforcements and Prohibition Notices	0	0
Integrated Pollution Controls	0	0
Integrated Pollution Prevention and Control	0	0
Local Authority Integrated Pollution Prevention and Control	0	0
Local Authority Pollution Prevention and Controls	0	0
Local Authority Pollution Prevention and Control Enforcements	0	0
Pollution Incidents to Controlled Waters	1 – 223m NE, storm sewage, minor incident	6
Substantiated Pollution Incident	0	1 – 360m SE, suspended solids, category 2 - significant
Prosecutions Relating to Authorised Processes	0	0
Registered Radioactive Substances	0	0
Records of Water Industry Act Referrals	0	0

Table 3.1: Statutory Registers and Authorisations		
Item	**0 – 250m**	**251 – 500m**
Explosive Sites	0	0
Planning Hazardous Substance Consents/Planning Hazardous Substance Enforcements	0	0
Notification of Installations Handling Hazardous Substances (NIHHS) Facilities and Control of Major Accident Hazards Facilities (COMAH)	0	0
Fuel Stations	0	0
Contemporary Trade Directory Entries	There are no Contemporary Trade Directory Entries for any premises within 100m of the site:	
Points of Interest - Manufacturing and Production	There are no Points of Interest - Manufacturing and Production Entries within 100m of the site:	
Underground Electrical Cables	0	0
Item	**Immediate Vicinity**	
Sensitive Land Uses	0	

3.2 CONSULTEES

3.2.1 Local Authority - Contaminated Land Officer

The Local Authority Environmental Health Department has not been contacted as part of our project instruction.

3.2.2 Local Authority - Building Control Officer

The Local Authority Building Control Officer has not been contacted as part of our project instruction.

3.2.3 Local Authority - Archaeological Officer

The Local Authority Archaeological Officer has not been contacted as part of our project instruction.

3.2.4 Local Authority - Petroleum Officer

The Local Authority Petroleum Officer has not been contacted as part of our project instruction.

3.2.5 Environment Agency - Contaminated Land and Groundwater

The Contaminated Land and Groundwater Team of Environment Agency has not been contacted as part of our project instruction.

3.2.6 Coal Authority and Mining Searches UK

The Coal Authority and Mining Searches UK have not been contacted as part of our project instruction.

4.0 PRELIMINARY RISK ASSESSMENT

4.1 METHODOLOGY

A tier 1 PRA and CSM have been prepared in accordance with the technical approach on Land Contamination Risk Management (LCRM), which replaced 'CLR11'. Possible hazards identified by a potential source of contamination and sensitive receptors have been assessed via a source-pathway-receptor (SPR) model in accordance with current UK protocols. A risk may only exist where a plausible SPR linkage is viable and where the quantity or concentration of a contaminant (source) is sufficient to cause harm. Under the statutory definition "Contamination" may only exist where contaminants pose a risk of harm to a receptor. Risk may be defined as a function of the likelihood and severity of any adverse effects resulting from a contamination event in accordance with CIRIA C552. A summary of how risk is derived and the associated definition is presented in tables 4.1.1 and 4.1.2.

Table 4.1.1: Risk Ratings Matrix

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

Table 4.1.2: Risk Ratings Definition

Risk Rationale	Definition
Very high risk	A high probability that severe harm could occur to determined receptor from identified contaminant - OR - evidence exists that severe harm to receptor is currently occurring. Urgent investigation and remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
High risk	Harm is likely to occur to determined receptor from identified contaminant. Urgent investigation and short-term risk minimisation remediation followed by longer term fit for purpose remediation should be considered. If demonstrated this risk is likely to result in substantial liability.
Moderate Risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is relatively unlikely that any harm would be severe or should harm occur it is likely to be relatively mild.
Moderate/low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that any harm would be severe or should harm occur it is probable to be relatively mild.
Low risk	It is possible that harm could occur to a determined receptor from identified contaminant. It is unlikely that such harm, if indeed present, would at worst be mild.
Very low risk	There is a low possibility that harm could occur to a receptor. In such event the harm would not be severe.

4.2 POTENTIAL SOURCES OF CONTAMINATION

Based on the desk-study and walkover survey completed, table 4.2 presents a summary of the potential sources identified.

Table 4.2: Potential Sources

Source	Description	Key Contaminants of Concern
1. Soil contamination	Risk of soil contamination associated with the former and recent buildings and use of the site as lock-up garages, and the possibility of the presence of Made Ground and infill.	Metals, hydrocarbons (TPH/PAH), asbestos, VOC.
2. Asbestos	Risk of Asbestos Containing Soils (ACS) and Asbestos Containing Materials (ACMs) from previous and recent buildings across the site.	Asbestos.
3. Groundwater	Site is underlain by a secondary (A) aquifer. The site is located in a Source Protection Zone III (SPZIII).	Depth to groundwater unknown at the site. Logs from the nearest boreholes suggest that groundwater could lie between 4-24m bgl. Groundwater may be anticipated at shallow depth beneath the site.
4. Ground gases/vapours	Very low risk of hazardous ground gases is anticipated.	Hazardous bio-ground gas. Complete precautionary bio-ground gas monitoring.

TPH – Total Petroleum Hydrocarbons. PAH – Polycyclic Aromatic Hydrocarbons. VOC – Volatile Organic Compounds

4.3 PATHWAYS

A pathway is one or more routes or means that a receptor can be exposed to, or affected by, a contaminant.

Table 4.3: Plausible Pathways

On-Site and Locally
Direct contact; to humans and infrastructure
Underlying geology/hydrogeology; comprising a secondary (A) aquifer
Inhalation and ingestion
Surface run-off/drainage

4.4 RECEPTORS

A receptor is either a living organism, a group of organisms, an ecological system, controlled waters or property that could be harmed or polluted by a contaminant. Table 4.4 examines the potential receptors.

Table 4.4: Potential Receptors			
Receptor	**Description**	**Comments**	**Plausible**
Construction workers	Groundworkers and general construction works.	Construction works proposed within the site.	Yes
End users	Occupants of the proposed development.	Landscaped areas proposed around the site.	Yes
Adjacent land users	Occupants of surrounding residencies.	Adjacent residential dwellings which could be affected by run-off or migration.	Yes
Soft landscaping	Areas of new planting.	Landscaped areas proposed around the site.	Yes
Water supply pipes	Plastic pipework for potable water supply may be affected if laid in contaminated soils.	New supply required for redevelopment.	Yes
Buildings & infrastructure	Buried concrete for new foundations may be in contact with aggressive ground (sulphur attack).	New building works proposed.	Yes
Groundwater	Controlled waters (aquifers) beneath the site.	Site underlain by a secondary (A) aquifer Potable water supply licence for premises 1642m from the site (i.e. within 2000m). The site is located in a SPZIII.	Yes
Surface waters	Controlled water such as lakes, streams, rivers or coastal waters.	Inland river within vicinity.	Yes
Ecological receptors	Sensitive areas of ecological significance defined under Part 2A of EPA 1990.	Area within Nitrate Vulnerable Zone (surface waters). No other sensitive areas of ecological significance defined under Part 2A of EPA 1990.	No

4.5 SUMMARY OF POLLUTANT LINKAGES FOR PROPOSED LAND USE - INITIAL CSM

The initial CSM is based upon the proposed site end use and the information currently consulted relating to various risk sources and plausible pollutant linkages and is presented within table 4.5.

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
Source 1 Soil contamination	Construction workers	Direct contact	Low Likelihood	Mild	Low ***Note 1.*** On site contaminative features of interest including recent garage buildings. Potential asbestos arising from former and recent building materials. Made Ground across the site may contain common soil contaminants. Short term risk to adults not expected to be significant. Provided suitable **Personal Protective Equipment (PPE) is worn.**	1
	End users	Direct contact	Likely	Medium	Moderate/Low *See Note 1.* Increased risk due to chronic exposure and presence of children.	2
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low ***Note 2.*** Site is underlain by a secondary (A) aquifer. Site is level, enclosed and until recently, covered in hardstanding. No evidence of surface staining.	3
	Soft landscaping	Root uptake	Low Likelihood	Mild	Low ***Note 3.*** Potential for made ground has been identified which may impact soft landscaping and root development.	4
	Water supply pipes	Direct contact	Low Likelihood	Mild	Low *Note 1.*	5
	Buildings & infrastructure	Direct contact	Low Likelihood	Mild	Low ***Note 4.*** Aggressive ground conditions within Made Ground could attack concrete (sulphur attack).	6

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
	Groundwater	Vertical migration through hydrogeology	Unlikely	Medium	Low ***Note 5.*** Site is underlain by a secondary (A) aquifer. The site is located in a SPZIII. Soil contaminants may leach downwards to secondary (A) aquifer beneath the site. However, the site was until recently hard surfaced, restricting pathway to controlled water receptor.	7
	Surface water	Run-off	Unlikely	Mild	Very Low ***Note 6.*** Inland river 30m away.	8
	Ecology	Direct contact via run-off	Unlikely	Mild	Very Low *See Note 2.*	9
Source 2 Asbestos	Construction workers	Inhalation	Likely	Mild	Moderate/Low ***Note 7.*** Potential for ACMs in former and recent buildings.	19
	End users	Inhalation	Low Likelihood	Medium	Low *See Note 7* *Any asbestos present likely to be of bonded cement. Will be removed as part of the redevelopment.*	20
	Adjacent land users	Inhalation	Low Likelihood	Mild	Very Low *See Note 7.* Distance and dispersion in outdoor air limits risk.	21
Source 3 Groundwater	Construction workers End users Adjacent land users Water supply pipes	Direct contact	Low Likelihood	Mild	Low ***Note 8.*** The site is noted to be underlain by a secondary (A) aquifer. The site is located in a SPZIII. Soil contaminants may leach downwards due to secondary (A) aquifer beneath the site.	22

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
					However, the site was until recently, hard surfaced, restricting pathway to controlled water receptor.	
	Soft landscaping	Root uptake	Low Likelihood	Mild	Low *See Note 3.*	23
	Groundwater Surface water Ecology	Lateral migration through hydrogeology	Low Likelihood	Mild	Low *See Note 5.*	24
Source 4 Ground gases and Soil vapours (on/off site source)	Construction workers	Inhalation of vapours/gas	Low Likelihood	Minor	Very Low ***Note 9.*** No significant source of ground gas identified.	25
	End users	Inhalation of vapours/gas	Low Likelihood	Minor	Very Low *See Note 9.*	26

The overall environmental risk classification for the site is considered to be generally **LOW** and as such pollutant linkages should be examined further by means of site investigation.

4.6 CONSIDERATIONS FOR SITE INVESTIGATION

The following provides a summary to outline further investigation in order complete the risk assessment:

1. **Investigation of soil contamination.** This should be completed on both a spatial and targeted basis. Spatial coverage should be achieved in order to targeted areas of the site where potential sources of contamination may exist and ideally where these sources overlay a pathway for risk to exist (i.e. within proposed garden areas). Local sources of contamination at the site comprises the existing garages and made ground. Other sources of contamination, which are applicable at other sites, could be any historical landfills and infilled ground.

2. **Investigation of groundwater contamination.** Monitoring wells should be installed and if encountered groundwater samples can be obtained for analysis. Alternatively deeper soil samples for suitable analysis to enable risk assessment.

3. **Investigation of hazardous bio-ground gases and soil vapours.** Monitoring wells should be installed to enable routine and precautionary bio-ground gas and vapour monitoring.

To assess the Low risk the following analysis should be completed:

- Aviron's "**ES-1**" of laboratory analysis shall be applied to future site investigations which includes; arsenic, barium, cadmium, total chromium, copper, nickel, zinc, lead, mercury, selenium, water soluble boron, total cyanide, total sulphate, water soluble sulphide, speciated Polycyclic Aromatic Hydrocarbons (PAH), speciated Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and Methyl Tert-Butyl Ether (MTBE), organic matter, total phenols, pH and asbestos. **Provides broad analysis of common soil contaminants.**

- Volatile Organic Compounds (VOC). **To determine the risk associated with the use/disposal of solvents.**

- Waste Acceptance Criteria (WAC). **To enable waste soil classification.**

The listed suite of analysis is considered suitable and will provide a screening for the majority of commonly found soil contaminants, which shall be followed through into the site investigation (section 5.0).

5.0 SITE INVESTIGATION WORK

5.1 METHOD STATEMENT AND SITE INVESTIGATION APPROACH

A method statement detailing how the site investigation was to be conducted was produced in accordance with current statuary guidance, best practices and the Client's instructions.

A health and safety plan was completed before site work commenced. Site investigation staff were briefed on the potential contaminants likely to be encountered, and the appropriate personal protective equipment (PPE) to be adopted for this type of investigation.

The site investigation was conducted in accordance with British Standards; BS5930:2015+A1 'Code of Practice for Ground Investigation', BS1377-1:2016 'Methods of test for soils for Civil Engineering Purposes' and BS10175:2011+A2:2017 'Investigation of Potentially Contaminated sites'.

5.2 SITE INVESTIGATION METHODS

Section 4.5 prepared an initial CSM where pollutant linkages with a greater risk than low would require suitable investigation. Table 5.2 presents what it considered to be a suitable method and rationale of investigation which was completed on 19 February 2026.

Table 5.2: Rationale of the Site Investigation Positions

Locations	Rationale	Monitoring Wells
Window Sample (WS) Boreholes		
WS1 to WS5 were positioned along the length of the development area of the site to provide spatial coverage targeting the proposed buildings, and shallow soils for sampling and testing. Boreholes WS1, WS3 and WS5 were located along the length of the former terrace of garages, and WS5 to target the former buildings in the north of the site associated with Haydon Hall Farm.		Monitoring wells were installed into WS1, WS3, WS4 and WS5 to enable (precautionary) ground gas and groundwater monitoring.

Exploratory Hole Location Plans are enclosed as **Figures 5** and **6**.

All intrusive locations were pre-cleared prior to the ground investigation works using a Cable Avoidance Tool (CAT) and tracing of manhole covers, which was completed to endeavour service avoidance during this exercise.

5.2.1 Window Sample Drilling

Window sample boreholes WS1 to WS5 were drilled to depths of up to 3.0m bgl using an Archway Dart drilling rig. The purpose of the window sampling was to evaluate ground conditions at shallow depths, collect soil samples for geochemical and geotechnical laboratory analysis and to determine soil strength by means of SPTs.

The action of window sampling also enables the installation of monitoring wells to determine standing groundwater levels and ground gas testing.

Standard Penetration Tests were undertaken at 1m intervals to depths of up to 3.0m bgl within the boreholes in accordance with BS EN SO 22476-3 "Standard Penetration Test 2005". Drilling refusal (SPT N>50) occurred routinely in the overlying soils where the drilling was terminated to prevent jamming, and damage to the drilling rig and tooling.

Disturbed soil samples were also collected from bored arisings for geochemical and geotechnical laboratory tests which are further discussed within section 6.0.

5.2.2 Dynamic Cone Penetrometer (DCP/TRL)

Four Dynamic Cone Penetrometer (DCP) tests (DCP1-DCP4) were undertaken to determine design parameters (California Bearing Ratio, or CBR) for road pavement construction in accordance with the Transport Research Laboratory (TRL), commencing at ground level, to a depth of 0.9 m bgl.

The tests were undertaken at the locations included in **Figures 5** and **6**.

5.3 GROUND CONDITIONS

The exploratory hole logs and photographs are presented within **Appendix II**.

Detailed strata descriptions are shown on the respective exploratory hole logs though in general ground conditions are summarised in table 5.3.

Table 5.3: Summary of Ground Conditions			
Unit	**Description**	**From (m bgl)**	**To (m bgl)**
Made Ground	Silty sandy gravelly CLAY	GL	0.1 – 1.3
Lambeth Group	Firm silty sandy gravelly CLAY	0.1 – 1.3	0.9 – 1.7
	Medium dense, dense and very dense clayey and very clayey gravelly SAND, with CLAY parting locally in WS4 2.9-3.0m	0.9 – 1.7	3.0+

5.3.1 Field Observations

No visual or olfactory evidence of contamination observed during the logging and sampling procedure of the investigation works.

No significant roots or rootlets were recorded in the overlying soils during the investigation works.

5.4 GROUNDWATER LEVELS

5.4.1 Groundwater Levels: During Site Investigation Works

Groundwater was encountered during the site investigation works at the depths detailed in table 5.4.1.

Table 5.4.1: Groundwater During Investigation		
Location	**Depth – bgl (during GI)**	**Comments**
WS1, WS2, WS4	Dry to between 1.0m and 3.0m	Perched water locally at 0.7m and 0.76m
WS3	0.76m	
WS5	0.7m	

5.4.2 Groundwater and Gas Monitoring Wells

Selected boreholes were converted to monitoring wells to enable standing groundwater level monitoring and ground gas monitoring. Wells were installed into 101mm diameter window sample boreholes using 63mm external diameter and 50mm internal diameter HDPE standpipe. Table 5.4.2 describes the construction of the wells.

Table 5.4.2: Monitoring Well Construction			
Location	**Depth of plain pipe and bentonite seal (m)**	**Response zone; depth of slotted pipe with gravel screen (m)**	**Depth of install (m)**
WS1	Ground level (GL)-0.5	0.5-0.93	0.93
WS3	GL-1.0	1.0-1.56	1.56
WS4	GL-1.0	1.0-2.78	2.78
WS5	GL-1.0	1.0-1.85	1.85

5.4.3 Groundwater and Gas Post-Investigation Monitoring

In all instances and prior to completing groundwater monitoring and field measurements bulk ground gases and soil vapours were monitored using a GFM 435 Gas Analyser and miniRAE Photon-Ionisation Detector (PID) on the dates shown in table 5.4.3, which provides standing level groundwater 'dips' during post-investigation monitoring.

Table 5.4.3: Groundwater Monitoring Depths				
Location / Date	**Depth – bgl WS1**	**Depth – bgl WS3**	**Depth – bgl WS4**	**Depth – bgl WS5**
13 March 2026	Dry to 1.01m	1.01m	1.56m	1.33m
24 March 2026	Dry to 1.01m	1.02m	1.58m	1.36m
15 April 2026	Dry to 1.01m	1.14m	1.71m	1.54m
13 May 2026	Dry to 1.01m	1.26m	1.89m	1.79m

Ground gas monitoring is discussed in section 9.0 of this report.

Field monitoring sheets are enclosed in **Appendix III**.

6.0 LABORATORY ANALYSIS

6.1 SOIL GEOCHEMICAL TESTING

Table 6.1 details the soil samples that were collected and submitted for geochemical analysis.

Table 6.1: Soil Geochemical Testing

Objective and Strata Sampled	Samples	Analysis	No. Tests
Non-targeted/spatial coverage basis to provide baseline chemical concentrations of soils			
To obtain samples of **Shallow Made Ground** (<0.5m deep) across the site. Material at shallow depths is the greatest risk to human health via the dermal contact, ingestion and inhalation pathways and thus is the most intensely assessed stratum.	**WS1 (0.2m)**, WS2 (0.2m), WS3 (0.2m), WS4 (0.2m)	ES-1 **+ VOC in bold**	4 **1**
To obtain samples of **Deeper Made Ground** (>0.5m deep) to provide analysis of the underlying infill associated with the sites former use as an inert landfill.	**WS5 (0.6m)**	ES-1 **+ VOC in bold**	1 **1**
To obtain samples of **Natural Soils** (>0.5m deep) to provide analysis of the underlying natural unit of strata.	WS1 (0.6m), WS3 (0.6m)	ES-1	2
To determine waste classification by collection of a composite sample of Shallow **Made Ground** (<1m deep).	Comp (0.1-0.3m)	WAC	1

Chemical sampling and testing targeted the overlying units of Made Ground whereby virtue of surface deposition historical contaminants are most likely to be recorded. The purpose of sampling slightly deeper natural strata is to generate a baseline understanding of natural soil chemistry and to understand phytotoxic elements at depths of root growth and potential impact to controlled waters.

The analytical suites were chosen to provide a suitable screening in accordance with the potential contaminants identified within the site conceptualisation presented within section 4.5.

Soil samples for environmental quality analysis were sent to Normec I2 Analytical (i2).

6.2 SOIL GEOTECHNICAL TESTING

A programme of geotechnical laboratory testing was undertaken at Geo Site and Testing Services Limited and i2. Testing was completed on the fine and coarse soils encountered beneath the site. The test procedures used were generally in accordance with the methods described in BS EN ISO17892 and/or BS1377:1990. Details of testing used are provided in table 6.2.

Table 6.2: Soil Geotechnical Testing		
Test	**Standard**	**Number of Samples**
Atterberg Limits (and Moisture Content) *The objective of Atterberg limits and moisture content testing is to determine plasticity and volume change potential of fine (clay and silt) soils and the potential for desiccation to have occurred*	BS EN ISO17892: Part 1:2014 +A1:2022 BS EN ISO 17892: Part 12:2018 +A2:2022	5 (5)
Particle Size Distribution (PSD) *The objective of PSD testing is to determine grading of coarse (sand and gravel) soils*	BS EN ISO 17892 Part 4: 2016	6
Aviron LC Suite - pH, water soluble sulphate, total sulphate & total sulphur *To enable concrete classification to be specified*	UKAS accredited	8 (including 6 within the ES-1 analysis)

6.3 SOIL SAMPLING PROTOCOL

All soil samples were collected from bored or excavated arisings using a trowel and following Aviron's standard protocols for soil sampling. To avoid cross contamination, the sampling equipment was cleaned using de-ionised water after each sample was retrieved.

Clean latex gloves were used each time a soil sample was collected, and all samples were placed into clean sterilised jars for submission to the UKAS/MCERTS accredited laboratory.

All sample containers were labelled on-site immediately prior to filling. These samples were identified by a label placed on the body of each container and the following information was recorded; site name, date collected, unique sample number, soil sample depth.

Samples for geochemical analysis were then placed into a cool box containing ice packs to maintain refrigerated conditions following collection and transport to the laboratory. Ice packs were changed every twenty-four hours where necessary to maintain cool conditions and suppress volatiles.

7.0 ENVIRONMENTAL INTERPRETATIVE GUIDANCE

7.1 GENERIC QUANTITATIVE RISK ASSESSMENT

The purpose of a tier 2 GQRA is to determine the suitability of the site for the proposed development end use.

The determinand concentrations, which are measured in the soil samples through laboratory analysis, are compared with guidance values which are appropriate to the receptor under consideration. The guidance values or screening criteria applied are industry adopted generic values which can be used, where appropriate in conjunction with statistical modelling.

The guidance values are used to assess the analytical results to ascertain whether there is a risk that the site is contaminated, as defined under Part IIA of the EPA 1990.

Where there are exceedances of guidance values, there is an assessment of the conceptual site model to appraise each of the identified pollutant linkages which leads through to recommendations for further investigation, remediation and/or tier 3 Detailed Quantitative Risk Assessment (DQRA).

7.2 GUIDANCE USED FOR ASSESSING SOIL CONTAMINATION

Aviron has followed the technical approach on Land Contamination Risk Management (LCRM), accessed on gov.uk website and other available guidance to assess contaminant concentrations.

The following are published screening criteria for soils which are used in Aviron's GQRA, stated in the order of preference:

- Category 4 Screening Levels (C4SLs) prepared by the Department of Environmental Food and Rural Affairs (DEFRA) and published March 2014.
- Phase 2 C4SLs prepared by CL:AIRE and published May 2021.
- Suitable 4 Use Levels (S4ULs) prepared by Land Quality Management/Chartered Institute of Environmental Health (LQM/CEIH) and published December 2014. LQM acknowledgement for use of S4ULs. *"Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3275. All rights reserved".*
- Soil Guidance Values (SGVs) prepared by the Environment Agency (EA)/DEFRA and published 2009.
- Soil Generic Assessment Criteria (GAC) prepared by Environment Industries Commission (EIC)/Association of Geotechnical and Geoenvironmental Specialists (AGS)/Contaminated Land:

Application In Real Environments (CL:AIRE) and published 2010.

7.3 GUIDANCE USED FOR THE ASSESSMENT OF HAZARDOUS GROUND GAS

The principal influence for causing the migration of landgas in the ground is changes to barometric pressure. The most onerous landgas emission conditions on a site are usually observed following days of low or rapidly falling barometric pressure below 1000 millibars (mb).

Monitoring is usually performed over a period of several weeks or months in order to increase the chances of visiting the site on days when the conditions for monitoring worst-case results are correct. Gas monitoring results collected solely during high pressure conditions (>1000mb) may not provide a true value for worst case emission rates from the site.

Methane is produced by a number of processes, which can be biological or chemical in nature. The principal process is from the biogenic decay of organic material and is commonly found associated with landfill and organic marsh deposits or river silts. Methane can also be found associated with coal workings. It is explosive at concentrations of between 5 and 15%, with 5% being termed the lower explosive limit (LEL).

In assessing the risks from hazardous ground gas, reference has been made to the guidance from BS 8485:2015 'Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings' and CIRIA Report C665 'Assessing risks posed by hazardous ground gases to buildings' 2007 which adopts a risk characterisation strategy based on the maximum flow (L/hour) and maximum steady stated concentration (% v/v) of methane and carbon dioxide from a site to derive gas screening values (GSV) in litres/hour which are comparable with the Modified Wilson and Card classification (shown in Table 8.5 of C665) for any site which isn't intended to be developed as low-rise housing with vented underfloor void.

It is noted monitoring shall be routine and precautionary.

8.0 ASSESSMENT OF GEOCHEMICAL SOIL RESULTS

Since the development proposals comprise the construction of housing the most appropriate assessment criteria will be the residential (with plant uptake) end use values, which are obtained from the guidance listed in section 6.2.

In order to select the appropriate Soil Organic Matter (SOM) value for appraisal of PAH and TPH the mean average SOM value was determined from the laboratory dataset and accordingly the 1% SOM value was selected.

Laboratory certificates of chemical analysis are presented in **Appendix IV** along with the chemical assessment criteria.

8.1 ASSESSMENT OF SOIL GEOCHEMICAL RESULTS

Table 8.1 provides a summary of the results for each unit of strata analysis analysed when compared to the relevant assessment criteria and identified samples where contaminated exceedances have been identified.

Table 8.1: Soil Geochemical Testing

Strata Sampled	Samples	Determinant	Measured Conc. (mg/kg)	Guidance Conc. (mg/kg)
Shallow Made Ground	WS1 (0.2m)	All determinants recorded at acceptable concs.	n/a	n/a
	WS2 (0.2m)	All determinants recorded at acceptable concs.	n/a	n/a
	WS3 (0.2m)	All determinants recorded at acceptable concs.	n/a	n/a
	WS4 (0.2m)	All determinants recorded at acceptable concs.	n/a	n/a
Deeper Made Ground	WS5 (0.6m)	All determinants recorded at acceptable concs.	n/a	n/a
Natural Ground	WS1 (0.6m)	All determinants recorded at acceptable concs.	n/a	n/a
	WS3 (0.6m)	All determinants recorded at acceptable concs.	n/a	n/a

6.2 DISCUSSION OF SOIL GEOCHEMICAL RESULTS

All analytical determinands have been recorded at acceptable concentrations and are considered to be found in 'low' (based on professional judgement) concentrations.

No abnormal conditions were identified within the samples submitted for testing from across the site.

It is considered currently and historical land uses have not chemically impacted the site.

Notwithstanding and following removal of buildings there always remains potential for undiscovered contamination. It is recommended a discovery strategy is enacted and as necessary in the event of contaminative discoveries, suitable remediation (and subsequent verification) is undertaken to the requirement and approval of the Local Planning Authority.

Following this, and regardless of whether remediation is necessary, a suitable Verification report should be prepared upon completion of the development to demonstrate the suitable contaminative condition of the site such that it is fit for purpose.

8.3 WASTE MANAGEMENT

WAC test results for Made Ground sample COMP (0.1-0.3m) are enclosed within **Appendix IV** and suggest soils tested by Aviron are of an inert waste classification.

Formal waste classification should be completed by the appointed waste management contractor with the benefit of both WAC and soil chemical test results.

It is possible that unexpected contamination maybe encountered during the redevelopment.

9.0 HAZARDOUS GROUND GAS MONITORING

9.1 STRATEGY

As previously presented within table 5.4.2 monitoring well installations were constructed in order to provide ground gas monitoring following the outcome of the preliminary ground gas assessment within section 2.3.

A very low combined risk from ground gas ingress and explosion is considered and monitoring was completed as a precautionary to provide quantitative data to a previously completed qualitative risk assessment.

The installation of the monitoring wells have response zones to enable the capture of ground gases which may possibly migrate through granular units beneath proposed homes. Each monitoring well was completed with a 1m thick bentonite seal from ground level to prevent atmospheric influence.

9.2 MONITORING

The presence of soil vapours was determined prior to bulk ground gas monitoring using a MiniRAE Photon Ionisation Detector (PID) from RAEs Systems. The presence of hazardous bio-gases including methane (CH4), carbon dioxide (CO_2) and oxygen (O_2) was determined using a GFM Infra-Red Gas Analyser from Ribble Enviro Limited. The flow rate and atmospheric pressure, in millibars (mb), was also measured during the monitoring process. Depth to groundwater was measured using an electronic dip meter.

Monitoring work was completed on the dates specified within table 9.2 which also summarises weather conditions and atmosphere pressure. To determine rising or falling pressures local 'online' weather trends from the Met Office and/or the monitoring apparatus were consulted.

Table 9.2: Background Gas Monitoring Data

Date	Atmospheric Pressure	Rising/Falling Pressure?	Worst Case Conditions?	Groundwater above response zone?
13 March 2026	992mB	Falling	Yes	No
24 March 2026	1005mB	Falling	No	No
15 April 2026	1013mB	Falling	No	No
13 May 2026	1001mB	Falling	No	No

Note 2 of C665 indicates 'worst case' conditions occur during falling and sub-1000mB atmospheric pressures. Section 5.5.1 of C665 indicates 'worst case' conditions are likely to occur during weather conditions such as rainfall, frost or dry weather.

9.3 MONITORING

Table 9.3 summaries the results obtained which are enclosed in **Appendix III**.

Table 9.3: Summary of Monitoring Results

Gas	Measured Conc. Range (% v/v)		Comments
	Low	High	
CH_4	0.0 (<0.1)	0.0 (<0.1)	Methane was not detected (<0.1%) and thus is below the guidance value of 1% at which point the characteristic situation is advised to increase to CS2.
CO_2	0.1	1.8	Carbon dioxide has been detected at concentrations below the guidance value of 5% at which point the characteristic situation is advised to increase to CS2.
O_2	18.9	20.2	Oxygen has been recorded at ambient concentrations, above 16% the point where it is considered there is potential for asphyxiation.
Vapour*	0.0 (<0.1)	0.0 (<0.1)	Vapour (PID) concentrations have not been recorded. This concurs with the ground conditions and geochemical laboratory results suggesting the absence of soil vapour risk to new homes.

*vapour concentration in parts per million (ppm)

It is considered the integrity of the monitoring wells has not been compromised as there is no evidence of surface damage which may affect the underlying installations. There is a bentonite seal within the bored annulus preventing escape of ground gases and entry of atmospheric gases. The gas valve remained closed prior to all monitoring occasions so passive venting of ground gas is unlikely to have occurred as site visits were unannounced.

9.4 INTERPRETATION OF DATA

Under normal use of the site (i.e. above ground), the risk presented by methane and carbon dioxide is dependent on both the concentrations and the rate of flow. In accordance with Wilson and Card methodology specified in the CIRIA C655 document, Gas Screening Values (GSV) were determined using the formula below.

GSV =	(Maximum steady concentration / 100) x Flow rate
GSV measured in litres per hour (l/hr)	Maximum steady concentration measured in percent (%) Flow rate measured in l/hr.

Based on the maximum concentrations and flows recorded, the **GSV** for **methane** was **0.0 L/hr** and the **GSV** for **carbon dioxide** was **0.0 L/hr**.

Based on the GSV for carbon dioxide which is below 0.07l/h, along with the maximum recorded concentrations for carbon dioxide (<5%) and methane (<1%) the site is considered to fall within Characteristic Situation 1 (CS1).

Bio-ground gas protection is not considered necessary.

9.5 RADON GAS

Information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is included in a 'lower probability radon area' (less than 1% of homes are estimated to be at or above the Action Level)'. ***No protective measures are considered necessary in the construction of new dwellings or extensions, according to the British Geological Survey.***

The information can be verified through checking on the interactive radon map for Great Britain provided by the UK Health Security Agency (UKHSA) and the British Geological Survey (BGS).

The HSA website (ukradon.org) can be used to purchase radon reports, where an address-specific radon report may be obtained. It should however be noted that for redevelopment sites, a GeoReport provided by the British Geological Survey may be more appropriate.

10.0 REVISED RISK ASSESSMENT

10.1 REVISED SOURCES OF CONTAMINATION

Following completion of the site investigation and interpretation of test results the following sources of contamination are considered to exist.

Table 10.1: Revised Sources			
Source	**Description**	**Comments**	**On/off-site**
1r. Undiscovered contamination	Potential for undiscovered soil contamination following floor slab removal of barn/stable.	Enact discovery strategy	On

10.2 REVISED CONCEPTUAL SITE MODEL

Following interpretation of the laboratory results, site dynamics and the revision of potential soil contaminants within table 10.1 a revised conceptual model has been prepared and is presented in table 10.2.

Table 10.2: Refined Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
Source 1r Undiscovered contamination	Construction workers	Direct contact	Unlikely	Mild	Very Low ***Note 10.*** No evidence of soil contamination following investigation. However, there remains potential for discovery, albeit limited risk, during groundworks. **Action. Enact Discovery Strategy and any subsequent (and as necessary) remediation and verification.**	27
	End users	Direct contact	Unlikely	Mild	Very Low *See Note 10.*	28
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low *See Note 10.*	29
	Soft landscaping	Root uptake	Unlikely	Mild	Very Low *See Note 10.*	30
	Water supply pipes	Direct contact	Unlikely	Mild	Very Low	31

Table 10.2: Refined Conceptual Site Model (for plausible pollutant linkage pathways)						
Source	**Receptor**	**Pathway**	**Probability**	**Consequence**	**Risk & Justification**	**Linkage No.**
					See Note 10.	
	Buildings & infrastructure	Direct contact	Unlikely	Mild	Low ***Note 11.*** Non-aggressive ground conditions encountered. See section 11.7.	32
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low *See Note 10.*	33
	Surface waters	Vertical and lateral migration through hydrogeology	Unlikely	Mild	Very Low *See Note 10.*	34
	Ecology	Direct contact via run-off	Unlikely	Mild	Very Low *See Note 10.*	35

10.3 RISK COMMENTARY

10.3.1 Contamination Risk from Soil to Human Health – Construction Workers

Concentrations of soil determinands are unlikely to present a short-term exposure risk to adult construction workers, specifically from the dermal contact, ingestion and inhalation pathways. Nonetheless construction workers should ensure suitable PPE is worn which would include:

- Gloves to prevent dermal contact with contaminated soils. It is advised that disposable latex gloves are worn beneath the outer 'work' gloves. This shall prevent skin contact with any contaminated soils which may come into contact with the outer 'work' gloves.
- To prevent ingestion of contaminated soils construction workers should avoid putting hands or objects in their mouth whilst on-site.
- To prevent ingestion of contaminated soils prior to eating or drinking construction workers should ensure their hands are properly washed, rinsed and dried. The use of latex gloves shall restrict any contamination from soils from coming into contact with the skin.
- To prevent inhalation of contamination soils construction workers should wear dust masks on dry and

windy days. On damp or wet still days the risk of dust inhalation is low.

Notwithstanding there always remains risk for undiscovered contamination and thus a Discovery Strategy should be enacted. Enclosed as **Appendix V** is the Discovery Strategy which should be affixed to the site office notice board and the content of which should form the formal site induction for each operative.

10.3.2 Contamination Risk from Soil to Human Health – End Users

No visual or olfactory evidence of soil contamination was observed during the ground investigation. A soil sampling and geochemical testing scheme of the in-situ Made Ground and natural strata was completed as part of this assessment which recorded concentrations of a wide variety of analytical determinands to below the relevant end use criteria. It is considered that nether current nor previous site uses have impacted the site and remedial work is not considered necessary.

10.3.3 Contamination Risk from Soil to Human Health – Domestic Water Supply

Special design for domestic water supply is unlikely. However, to be certain, it is advised that the report should be provided to the local water authority to ensure the correct materials are chosen for water supply pipes. Following the formal withdrawal of WRAS Guidance Note No. 9-04-03 (October 2002), it is recommended that the following reference should be consulted:

Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites" (Ref 10/WM/03/21 by the UK Water Industry Research Ltd (UKWIR); ISBN: 1 84057 5697

Generally, all services should be placed within dedicated runs, and then backfilled with clean imported material.

10.3.4 Contamination Risk from Soils to Controlled Waters

It is not considered that soils present a risk to groundwater/controlled waters given the absence of contaminative site history, no evidence of abnormal ground conditions and also the absence of soil contamination.

10.3.5 Contamination Risk from Groundwater

It is not considered contaminated groundwater exists beneath the site.

10.3.6 Risk from Ground Gas

Following completion of the PRA a very low combined risk from ground gas ingress and explosion is considered. No significant risk sources such as made ground, landfills or soils contained abundant organic

matter were identified.

To further evaluate ground gas risk one round of monitoring has been completed, during worst-case conditions, in accordance with our instruction which recorded acceptable GSV and maximum concentrations within in site. The concentrations recorded suggest Characteristic Situation 1 (CS1).

Bio-ground gas protection is not considered necessary.

At the time of reporting radon protection is also not necessary.

11.0 GEOTECHNICAL ASSESSMENT

This section provides a geotechnical assessment in connection with the proposed development as described above and considers the GEO Limit State: failure or excessive deformation of the ground, in accordance with EN 1997 Eurocode 7: Geotechnical Design (and the UK National Annex to Eurocode 7) where applicable.

It is assumed for the purposes of this assessment that the finished ground floor levels of the proposed development buildings are the same as the ground levels at each of the exploratory hole locations.

The assessment of the stability of any slopes or retaining structures across or adjacent the site, the requirement for additional retaining structures and the requirements for cut and fill that may be required to facilitate construction is outside the scope of this report.

Where applicable the following assessment includes bearing resistance assuming conventional construction only and no allowances have been made for interaction between existing adjacent foundations and proposed foundations or loads.

Eurocode 7 Section 2.1 Basis for Geotechnical Design indicates that for each geotechnical design situation it shall be verified that no limit state is exceeded. Geotechnical design requirements have been established by three Geotechnical Categories, 1, 2 and 3. For the purpose of this assessment the development is Geotechnical Category 2: which include conventional types of structure and foundation with no exceptional risk or difficult or loading conditions.

Designs for structures in Geotechnical Category 2 should normally include quantitative geotechnical data and analysis to ensure that the fundamental requirements are satisfied. Routine procedures for field and laboratory testing and for design and execution may be used for Geotechnical Category 2 designs.

11.1 GROUND MODEL

The following table 11.1 provides the ground model for the site as determined from ground conditions encountered in external areas during the site investigation works.

Table 11.1: Ground Model				
Stratum	**Description**	**Top of Stratum (m bgl)**	**Bottom of Stratum (m bgl)**	**Average Thickness (m)**
Made Ground	Silty sandy gravelly CLAY	GL	0.1 – 1.3	0.44
Lambeth Group	Firm silty sandy gravelly CLAY	0.1 – 1.3	0.9 – 1.7	0.84
	Medium dense, dense and very dense clayey and very clayey gravelly SAND, with CLAY parting locally in WS4 2.9-3.0m	0.9 – 1.7	3.0+	-
Groundwater				
Perched water encountered during the investigation works at depths of 0.76m and 0.7m bgl in WS3 and WS5. Groundwater noted in the installations in WS1 and WS4 at depths as shallow as 1.01m bgl during return monitoring in March 2026.				

11.2 FOUNDATION DESIGN CONCEPT

The ground model and the following considerations will need to be taken in account in determining the foundation solution for the proposed development buildings:

- Overlying soils comprising medium volume change potential CLAY and the influence of trees.
- Desiccation in the overlying CLAY soils to depths of up to 1.4m bgl.
- Temporary works requirements, including dewatering, within the constraints of the site and neighbouring premises.

The fine soils present at shallow depth beneath the site are classified as CLAYs of intermediate and locally low and high plasticity showing predominantly medium volume change potential (VCP), above predominantly SAND of negligible VCP.

Assumed maximum 'characteristic action' (or line load) of 120kN/m run on conventional shallow foundations 0.6m wide on SAND, at the anticipated foundation formation level of between 1.0m and 1.7m bgl may be acceptable for the proposed buildings subject to the above considerations.

It is assumed that the 'characteristic action' comprises a vertical permanent action. Further information regarding the permanent actions and variable actions (making up the 'characteristic actions') applied to the foundations may be required along with confirmation of the foundation type and foundation dimensions.

11.2 EXCAVATION CONDITIONS

Excavation of the materials encountered during the ground investigation should be achieved using conventional hydraulic excavation techniques.

11.2.1 Temporary Works

From the ground investigation undertaken, temporary excavations in the natural fine soils may remain stable in the short term. However, due to the predominantly coarse soils encountered and the requirement for excavations to facilitate the construction in elevated water, care should be taken to ensure that instability of excavations does not affect existing structures and services (e.g. foundations, roads, boundary walls or buildings) both on and off-site. Temporary support may therefore be required in order to achieve this.

Further advice should be sought from the appointed structural engineer and specialist contractor regarding temporary works. General guidance can be found within CIRIA Report 97: Trenching Practice, dated 2001.

Care should be taken to ensure that falls from excavation faces do not adversely affect the integrity of foundation concrete.

All excavations on site should be in accordance with HSE guidelines and stability should be practically maintained at all times.

11.2.2 Dewatering

Groundwater was encountered during the return monitoring in March 2026 at depths of between 1.01m and 1.56m bgl.

Groundwater is expected to rise in wetter winter months, and fall in drier summer months, and ongoing groundwater monitoring is recommended to determine the seasonal groundwater level below the site.

On the basis of the data obtained; dewatering may be required in shallow excavations beneath the site (as of March 2026).

11.3 EXISTING SERVICES/SUBSTRUCTURES

Due to the historical development of the site and site environs, existing services or sub-structures should be anticipated. Where existing services or sub-structures are encountered during excavations for the proposed foundations, all new foundations should be extended downwards to fully penetrate all redundant former construction.

11.4 BEARING STRATA

Bearing resistance for the SAND at the anticipated foundation formation level of 1.0m to 1.7m bgl is provided below pending confirmation of the required foundation actions, foundation widths, foundation depths and tolerable settlement.

11.4.1 Atterberg Limits and Material Properties

Atterberg limits tests conducted on the overlying fine soils across the site at depths of 0.9m to 1.4m bgl indicate that the strata comprise inorganic CLAY of intermediate and locally low and high plasticity (CL/CI/CH). The modified plasticity index was determined to be between 11% and 37% indicating soils of medium volume change potential (VCP).

The results of particle size distribution analysis indicate that the coarse soils below the overlying clay comprise clayey and very clayey fine to medium SAND and locally sandy GRAVEL of negligible volume change potential. CLAY parting encountered locally in WS4 at 2.9-3.0m bgl assumed to be of medium VCP.

For the purposes of this assessment and in accordance with NHBC Standards Chapter 4.2, Building Near Trees, the CLAY soils overlying the site are classified as being of medium volume change potential above SAND, at the anticipated foundation formation level at 1.0m to 1.7m bgl, of negligible volume change potential.

11.4.2 Desiccation

Using the ratio of the water content (WC) to the liquid limit (LL) (an empirical indicator of desiccation, after Driscoll, 1983), the test results indicate that the fine soils overlying the site are potentially desiccated (WC:LL ratio 0.43-0.47). An assessment in accordance with BRE Digest 412 Desiccation in Clay Soils 1996, also indicates that the shear strength, moisture content and liquidity index profiles are shown to be inconsistent between the sampling points indicating that desiccation is likely to have occurred to the maximum sampled and tested depths of up to 1.4m bgl.

Desiccated fine soils (silt and clay) result from moisture being withdrawn from the soil, typically by root action. Heave forces occur following the re-hydration of these soils, by swelling on account of increased moisture content. Moisture content within fine soils can increase due to seasonal weather variations (rain) and also the removal of trees, whereby moisture is no longer being drawn from the soil by root action. The effect of heave is increased when trees are removed. The upward heave force can lift foundations causing structural damage (cracking of masonry, movement of door/window frames). Conversely during periods of dry weather, the moisture content reduces causing fine soils to shrink and the upward heave force to reduce; in such an event the foundation (re)settles.

To remove the risk of continued and abnormal movement beneath the base of new foundations due to swelling and shrinking of fine soils the foundations should be placed beneath the desiccated zone.

Foundations should therefore be extended beneath the potentially desiccated zone, and into the non-shrinkable SAND beneath, and mitigation measures to prevent heave in the fine soils encountered across the site should be incorporated into the below ground construction in accordance with NHBC Standards Chapter 4.2 Building Near Trees.

The soil sampling and testing undertaken provides for a preliminary assessment only based on limited sampling and testing locations. To enable a comprehensive desiccation assessment, consideration should be given to additional soil sampling, in-situ testing and profiling and laboratory analysis including soil suction tests.

11.4.3 Design Parameters

Characteristic values for design parameters for the strata encountered beneath the site are included in Table 11.4.3 below. In the absence of laboratory triaxial test data an estimated critical state angle of shearing resistance (ϕ'_{crit}) of 25° and 34° is assumed for the CLAY and SAND soils at relatively shallow depth beneath the site respectively, using Tables 2 and 4 of BS8002:1994 September 2001. The undrained cohesion of the fine soils is assumed to be zero. The coarse soils are assumed to be moderately graded and sub-angular.

Table 11.4.3: Design Parameters

Stratum	Volume Change Potential	Unit Weight $\gamma_{,k}$ (kN/m³)	Critical State Angle of Friction $\phi'_{cv,k}$ (degrees)
CLAY, up to 1.7m bgl	Medium	18	25
SAND at the foundation formation level of 1.0-1.7m bgl	Negligible	19	34

For assessment purposes a characteristic value of the angle of shearing resistance (ϕ) of 34° has been assumed for the SAND strata at the foundation formation level of 1.0-1.7m bgl. The characteristic value of the angle of shearing resistance was derived using the relationship between ϕ and the minimum SPT N-value (N>20) after Peck, Hanson and Thornburn (Foundation Engineering, 1967).

Bearing capacity factors determined by Vesic (Analysis of Ultimate Loads of Shallow Foundations, 1973) have been applied. It is assumed that groundwater will rise to the base of foundations.

Please note that when using this data for design purposes, the effects of eccentric loading are taken into account, and that the bearing pressure is limited to account for maximum tolerable settlement beneath the structures and adjacent properties.

Geotechnical laboratory material property test results are presented within **Appendix VI.**

11.5 TREE INFLUENCE ON FOUNDATIONS

When considering the influence of trees on foundations, the material properties of the strata beneath the site and the distance and species of the trees to the foundations are the determining factors.

For the purposes of this assessment the CLAY soils overlying the site are classified as being of medium volume change potential above SAND, at the anticipated foundation formation level at 1.0m to 1.7m bgl, of negligible volume change potential.

Provided foundations are extended into the SAND at 1.0-1.7m bgl of negligible volume change potential, an adjustment to foundation depths is unlikely to be required in accordance with NHBC Standards Chapter 4.2, Building Near Trees.

Mitigation measures to prevent heave in the CLAY soils encountered at shallow depths across the site should be incorporated into the below ground construction.

Should roots or desiccated soils be encountered during the groundworks, and/or previously unidentified trees or tree stumps encountered during the site preparation works, foundations should be extended beneath the roots/desiccated soils and/or the depth adjusted to accommodate the species of tree/tree stump encountered. A record of the findings associated with roots, desiccated soils and trees/tree stumps should be kept during the groundworks phase.

Mitigation measures to protect existing tree species during the construction process will also need to be considered.

11.6 FOUNDATION TYPE, DEPTH AND ALLOWABLE BEARING PRESSURE

11.6.1 Strip/Trench Fill Foundations

Foundations should be extended beneath the overlying MADE GROUND and CLAY soils and any disturbed ground following removal of remnant obstructions.

The underlying medium dense SAND encountered at depths of between of 1.0m and 1.7m bgl, may be suitable on which to cast conventional shallow foundations 0.6m wide.

Using the assumed maximum vertical characteristic action of 120kN/m run (including the net increase due to foundation concrete when compared to excavated soils), and Design Approach 1 of Eurocode 7 (checking for a limit state of rupture or excessive deformation), Combination 1 and Combination 2 are both satisfied where the vertical design actions (V_d) is less than the design value of the vertical bearing resistance (Rd) in each case. The GEO limit state requirement is therefore satisfied.

It is assumed that the action is vertical, and it is also assumed that the base of the foundations and the ground surface are horizontal. The vertical design actions include the trench fill foundations, assumed to be a maximum thickness of 1.7m (should deeper foundations be proposed), and also accounts for overburden. It is also assumed that groundwater will rise to the base of foundations.

The vertical characteristic action of **120kN/m run** corresponds to the bearing resistance in Table 11.6.1 of **200kN/m²** when applied to trench fill foundations 0.6m wide constructed on **SAND** at depths of 1.0-1.7m bgl, in the area of the exploratory holes completed and the proposed development buildings.

The serviceability state is satisfied with the total settlement being restricted to **25mm**.

Table 11.6.1: Bearing Resistance

Exploratory Hole Location	Strata Type	Depth BGL (m)	Footing Width (m)	Bearing Resistance (kN/m²)	Comment
WS1, WS2	SAND	1.0	0.6	200	Foundations should be extended beneath overlying MADE GROUND and clay soils and disturbed ground locally.
WS3		1.1			
WS4		1.7			
WS5		1.55			

Foundations should be extended beneath MADE GROUND, clay, roots and desiccated soils if encountered. Mitigation measures to prevent heave also required in accordance with NHBC 4.2 Building Near Trees. Consider existing and former trees.

Consider temporary works due to potentially unstable coarse soils in elevated water.

Bearing resistance includes the net increase in loads from foundation concrete when compared to excavated soils.

Please note that increasing foundation widths to accommodate an increased line load will result in an increase in the total settlement anticipated.

Notwithstanding the above it is recommended that the formation beneath each section of the proposed re-development works is inspected to assess the competency of the bearing strata prior to pouring of foundation concrete. The formation should not be allowed to loosen due to surface water, rainwater or groundwater ingress prior to pouring of foundation concrete.

It should be noted that the design actions and design layout/dimensions of the proposed works have not been supplied and the above bearing resistance accounts for conventional construction only. The moments resulting in eccentricity of loadings, and the settlement, sliding and overturning and the requirements for propping would need to be considered in the design of any retaining structures.

It should also be noted that the above recommendations have been made using data in window sample boreholes completed.

11.6.2 Floor Slabs and Heave

Due to the potential for desiccation to have occurred in the overlying CLAY soils, it is recommended that the ground floor slabs beneath the proposed development buildings are suspended on ground beams.

Mitigation measures to prevent heave in the overlying fine soils encountered should also be incorporated into the below ground construction.

Mitigation measures to prevent heave should extend to all aspects of in-ground construction, which may include services such as drainage and manholes.

11.7 CONCRETE CLASSIFICATION

In accordance with Building Research Establishment (BRE) Special Digest 1: 2005 - Concrete in Aggressive Ground, the following laboratory test data has been used to derive classifications for buried concrete (Table C1, natural ground locations) beneath the site:

- Soluble Sulphate (2:1 extract) – 0.0103 to 0.181g/l
- pH – 6.2 to 8.2
- Total Sulphate SO_4 – 0.0089 – 0.097%
- Total Sulphur – 0.005 to 0.046%
- Total Potential Sulphate – 0.015 to 0.138%
- Oxidisable Sulphide < 0.3%

"*BRE guidance suggests that 'if significant number of determination of oxidisable sulphides is above 0.3%, then use the results of total potential sulphate to determine the concrete class*".

Oxidisable sulphide has not been calculated above 0.3% SO_4 in the samples tested and does not exceed the threshold where the concrete classification is based on oxidisable sulphide and total potential sulphate.

Based on the results obtained for soluble sulphate, the Design Sulphate (DS) Class for buried concrete beneath the site is DS-1. For foundations constructed above the groundwater level, the Aggressive Chemical Environment for Concrete (ACEC) Class is AC-1s, and for foundations constructed below the groundwater level the ACEC is AC-1.

It should be noted that additional considerations for the determination of concrete class and appropriate aggregate use are set out in BRE Special Digest 1. These are considerations specific to the soil type, the proposed development and the type of concrete foundations to be used at the site.

Laboratory results for the pH, sulphate and sulphur testing are included within **Appendix IV**.

11.8 PAVEMENT DESIGN

The results of DCP/TRL testing indicate CBR values typically reducing (bottoming out) at ~ 3.4-4.0%, as the DCP probe potentially penetrated the overlying horizons.

It is recommended that in-situ or laboratory CBR tests are undertaken at road pavement formation level (once known) to confirm the CBR values determined.

The results of DCP testing are enclosed in **Appendix VI**.

11.9 SOAKAWAY DRAINAGE

Due to poor infiltration anticipated in the overlying CLAY soils and seasonally elevated water, shallow soakage drainage in the overlying soils is not expected to be effective for the new development, and an alternative to shallow soakaways should be sought.

12.0 CONCLUSIONS AND RECOMMENDATIONS

This tier 1 PRA desk study and Site Investigation including tier 2 GQRA has provided an assessment of the site's history, geo-environmental setting and an evaluation of ground conditions.

12.1 ENVIRONMENTAL

Table 12.1 summarises the pertinent environmental risks providing advice on further works and assessment.

Table 12.1: Environment Risk Summary

Medium	Item	Risk Description	Comments/Recommendations
Soils	1	Potential for undiscovered soil contamination beneath hardstanding following removal of floor slabs and during groundworks excavations.	Refer to the Discovery Strategy within **Appendix V** to enable management of any events of contamination discovery.
	2	Any imported Topsoil should it be required, should be chemically suitable for use in private gardens.	Import suitable Topsoil (BS3882) to sustain planting.
	3	Ensure material encountered is suitable for desired water main.	Consult local water authority prior to water main installation.
	n/a	No abnormal ground conditions encountered and all concentrations of analytical determinands acceptable. In-situ soils are not considered to be contaminated.	
Radon	4	Information from the Envirocheck report (using data supplied by the BGS) indicates that 'The property is included in a 'lower probability radon area' (less than 1% of homes are estimated to be at or above the Action Level)'. ***No protective measures are considered necessary in the construction of new dwellings or extensions, according to the British Geological Survey.*** The information can be verified through checking on the interactive radon map for Great Britain provided by the UK Health Security Agency (UKHSA) and the British Geological Survey (BGS). The HSA website (ukradon.org) can be used to purchase radon reports, where an address-specific radon report may be obtained. It should however be noted that for redevelopment sites, a GeoReport provided by the British Geological Survey may be more appropriate.	
Bio-Ground Gas	n/a	Preliminary risk assessment and gas monitoring has determined very low risk from ground gas. Four rounds of monitoring including a single 'worst-case' visit have been completed which has determined acceptable gaseous concentrations. Bio-ground gas protection is not considered necessary.	
Groundwater	n/a	Ground conditions are not considered to present a risk to groundwater or controlled waters.	

Once the above risks have been evaluated/implemented the environmental risk assessment can be considered complete and the development suitable for occupancy.

12.2 GROUND HAZARDS SUMMARY

This report and the Clients preferred foundation solution should be presented to the Local Authority or appropriate build warranty provider for approval prior to construction.

Table 12.2 summarises the pertinent Ground Hazards Summary.

Table 12.2: Ground Hazards Summary

Construction Issue	Ground Hazard	Recommendation
Below Ground Obstructions	Remnant hardstanding plus possible shallow foundations from previous buildings.	Shallow obstructions likely to be removed with conventional excavation plant and hydraulic breaking equipment.
Foundations	Potential for desiccation to have occurred in the overlying CLAY soils. Feasibility of conventional shallow foundations extended into non-shrinkable SAND are subject to ground disturbance due to the removal of remnant obstructions, and the requirements of temporary works including dewatering. Shallow excavations in MADE GROUND and SAND not expected to be stable in the short term. Groundwater encountered during the return monitoring at depths as shallow as 1.01m bgl (March 2026).	Extend foundations into non-shrinkable SAND. Foundations in medium dense SAND, where an allowable bearing pressure of 200kN/m^2 would apply to foundations 0.6m wide, (equivalent to a line load of 120kN/m run) at depths of 1.0-1.7m bgl. Excavations stability subject to design requirements. Shoring of excavations may be required. Seasonal dewatering may also be required in shallow excavations. CLAY and SAND soils encountered across the site are classified as being of medium and negligible volume change potential respectively (NHBC Chapter 4.2, Building Near Trees)
Floor Slabs and Heave	Suspended.	Heave protection required in the overlying desiccated soils, and fine soils within the influence of trees. Mitigation measures to prevent heave should extend to all aspects of in-ground construction, which may include services such as drainage and manholes.
Buried Concrete	Non-aggressive ground conditions encountered.	Concrete classification determined as DS-1, AC-1s/AC-1.
Pavements	CBR value bottoming out at 3.4-4.0% in the overlying soils.	Consider in-situ or laboratory CBR tests at road pavement formation level once known.
Drainage	Shallow soakaway drainage unlikely to be suitable given the poor infiltration anticipated in the overlying clay soils and seasonally elevated water.	Consider alternative to soakaway drainage.

13.0 PROJECT INSTRUCTION AND LIMITATIONS

13.1 SCOPE OF WORKS

The following scope of work was undertaken to an agreed brief set out in Aviron's proposal and involves the following:

- Undertake one days of window sample boreholes to depths of up to 5.0m bgl, including SPTs at 1m intervals.
- Install four of the boreholes with monitoring pipe to enable return gas and groundwater readings.
- DCP/CBR testing to provide preliminary pavement design information.
- Log the strata within each exploratory hole noting any water strikes.
- Collect disturbed soil samples from exploratory holes and submit for geochemical laboratory tests to determine the presence or absence of soil contaminants, and geotechnical material property tests to enable foundation recommendations and allow roadway and drainage design.
- All soil samples shall be collected in accordance with the instruction and ground conditions and submitted to UKAS/MCERTS accredited laboratories for testing.
- Prepare an interpretative GERA report to interpret ground conditions with respect to potential environmental risks and provide recommendations for foundation design and engineering parameters.

Aviron has relied upon information received from the Client and their agents as accurate, unless contradicted by written documentation or site observations.

13.2 PUBLISHED GUIDANCE

This report follows the technical approach presented on Land contamination risk management (LCRM), accessed on gov.uk website. The guidance replaced the Contaminated Land Report 11 (CLR11) "Model Procedures for the Management of Land Contamination" prepared by the Environment Agency in 2004. CLR11, which was withdrawn in 2020, provided guidance on the application of management processes when assessing potentially contaminated land.

This project and report have been designed to fulfil the information requirements set out in LCRM.

This report is additionally prepared in accordance with current guidance notes, standards and practices as set out by the Environment Agency and statutory organisations in order to establish potential and significant contaminant linkages as defined in Part IIA of the Environmental Protection Act 1990.

13.3 LIMITATIONS

Aviron's scope of work has been designed to meet the timeframe and as such it may follow that further work would be prudent upon evaluation of the ground conditions. The scope of work provided shall provide a view of site conditions and understanding of potential geo-environmental risks and possible mitigation procedures.

The information used in this report has been derived from the site investigation, which in turn were based on known current and historical land uses identified at the site and surrounding area, available to Aviron at the time of the investigation.

Intrusive points chosen relate to the data collected and the risk assessment and recommendations will rely on these points only. It therefore follows that some areas of the site will not be examined. It is always possible that some areas not investigated may contain conditions which would be impossible to determine due to lack of evidence or time and budget restrictions.

This report provides recommendations for foundation design based upon the ground conditions encountered and where possible makes predictions for possible variations in ground conditions. However, it is always possible that not all variations in ground conditions can be accounted for and shall also be dependent upon design loadings and foundation construction techniques used. It should be acknowledged that ground conditions may vary from intrusive point to intrusive point and without undertaking continuous investigation it is impossible to entirely understand variations in ground conditions. Our recommendations should therefore not supersede the project's Consulting Structural and Civil Engineers design.

This report comprises a Ground Investigation Report in accordance with BS EN 1997-2, unless otherwise stated. This report does not constitute a Geotechnical Design Report (BS EN 1997-2) and geotechnical recommendations in this report are for guidance only.

In accordance with the BS EN 1998-1:2004+A1:2013 'Eurocode 8: Design of Structures for Earthquake Resistance – Part 1', the UK is located in an area of very low seismicity, and seismic loading need not be considered.

Unless otherwise stated, a preliminary or detailed risk assessment of unexploded ordnance (UXO) is outside the scope of this report.

Also, unless otherwise stated, an assessment of invasive species such as Japanese Knotweed and Himalayan Balsam is outside the scope of this report.

Should changes in legislation, statutory requirements or industry practices occurred following issue of this report, this report should be viewed in light of these changes.

Should a notable time period elapse between the date issue of this report and the date of application of this report changes to site dynamics may occur and in particular the site inspection notes may no longer be applicable should any change of use occur to the site in the interim.

14.0 REFERENCES AND OTHER SOURCES OF INFORMATION

Landmark Envirocheck database search report package reference 394055057 dated 22 January 2026

British Geological Survey Website. www.bgs.ac.uk

BRE Special Digest 1:2005. Concrete in Aggressive Ground

BRE D412. Desiccation in Clay Soils. 1996

BS1377-1:2016. Methods of test for soils for Civil Engineering Purposes

BS5930:2015+A1:2020. British Standards Institute. Code of Practice for Ground Investigations

BS8004:2015+A1:2020. British Standards Institute. Code of Practice for Foundations

BS10175:2011+A2:2017. British Standards Institute. Investigation of Potentially Contaminated Land - Code of Practice

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BS EN ISO 14688-2:2004 Geotechnical investigation and testing – Identification and Classification of Soil – Principles for a Classification

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Figures

1	Site Location Plan
2	Existing Site Layout Plan
3	Site Photographs
4	Proposed Development Plan
5	Exploratory Hole Location Plan - Existing Layout
6	Exploratory Hole Location Plan - Proposed Development

Legend

Approximate Site Boundary

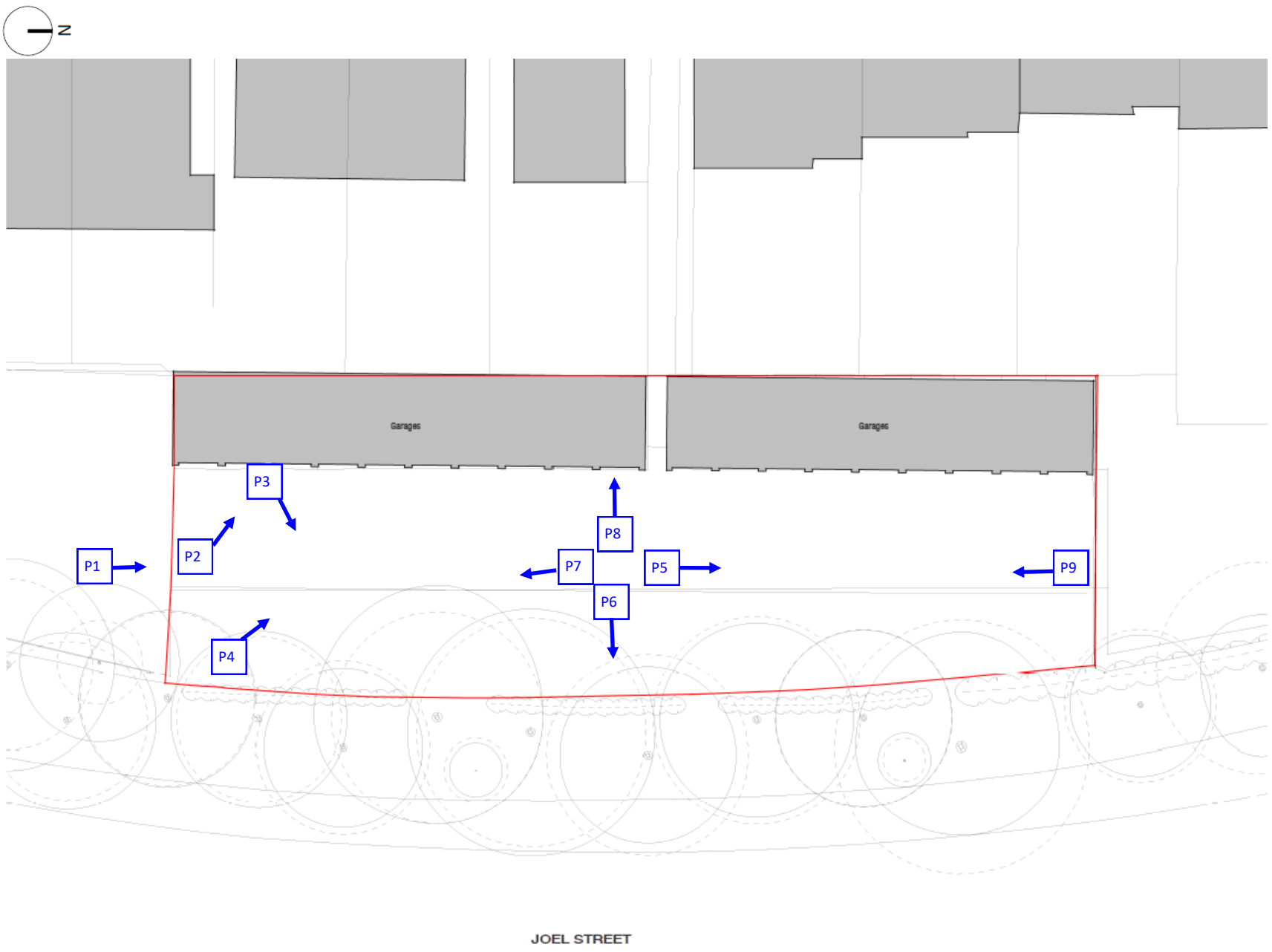
Notes

Drawing supplied by Client

Figure 1

Drawing Title	Site Location Plan
Project Number	25-262.01
Project Title	Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN
Drawn by	DN
Checked by	JB
Scale	NTS

Aviron Associates Limited - Badgemore House - Gravel Hill - Henley on Thames - RG9 4NR - T: 01491 413 722 - M: 07787 771 686 - E: james@aviron.co.uk



Legend

Approximate Site Boundary

Notes

Drawing supplied by Client

Figure 2

Drawing Title

Pre-Clearance Site Layout Plan

Project Number	25-262.01
Project Title	Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN
Drawn by	DN
Checked by	JB
Scale	NTS

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Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Legend

Notes

Figure 3

Drawing Title

Site Photographs

Project Number	25-262.01
Project Title	Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN
Drawn by	DN
Checked by	JB
Scale	NTS

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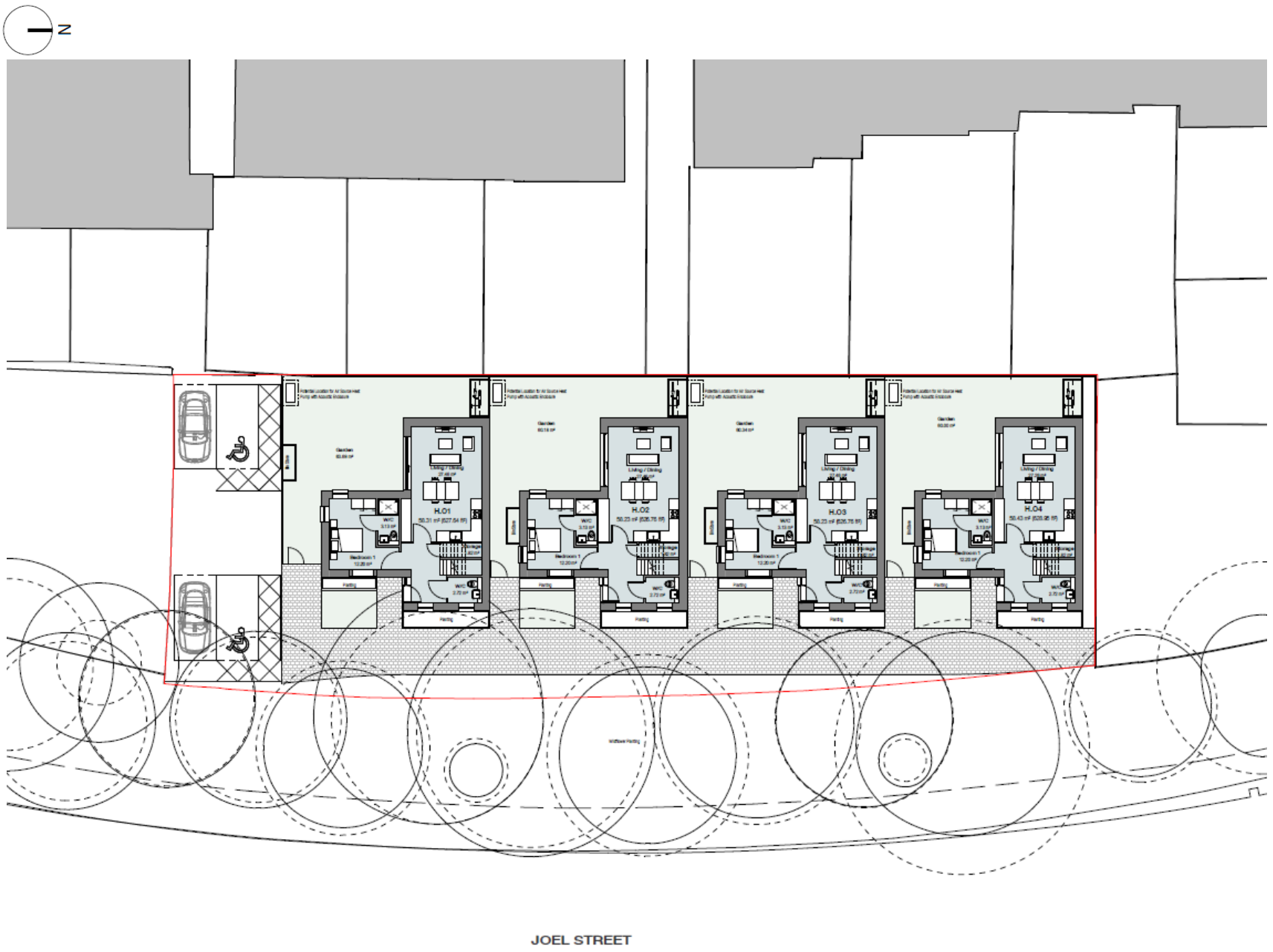

Legend

Approximate Site Boundary

Notes

Drawing supplied by Client

Figure 4

Drawing Title

Proposed Development Plan

Project Number	25-262.01

Project Title

Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

Drawn by	DN
Checked by	JB
Scale	NTS

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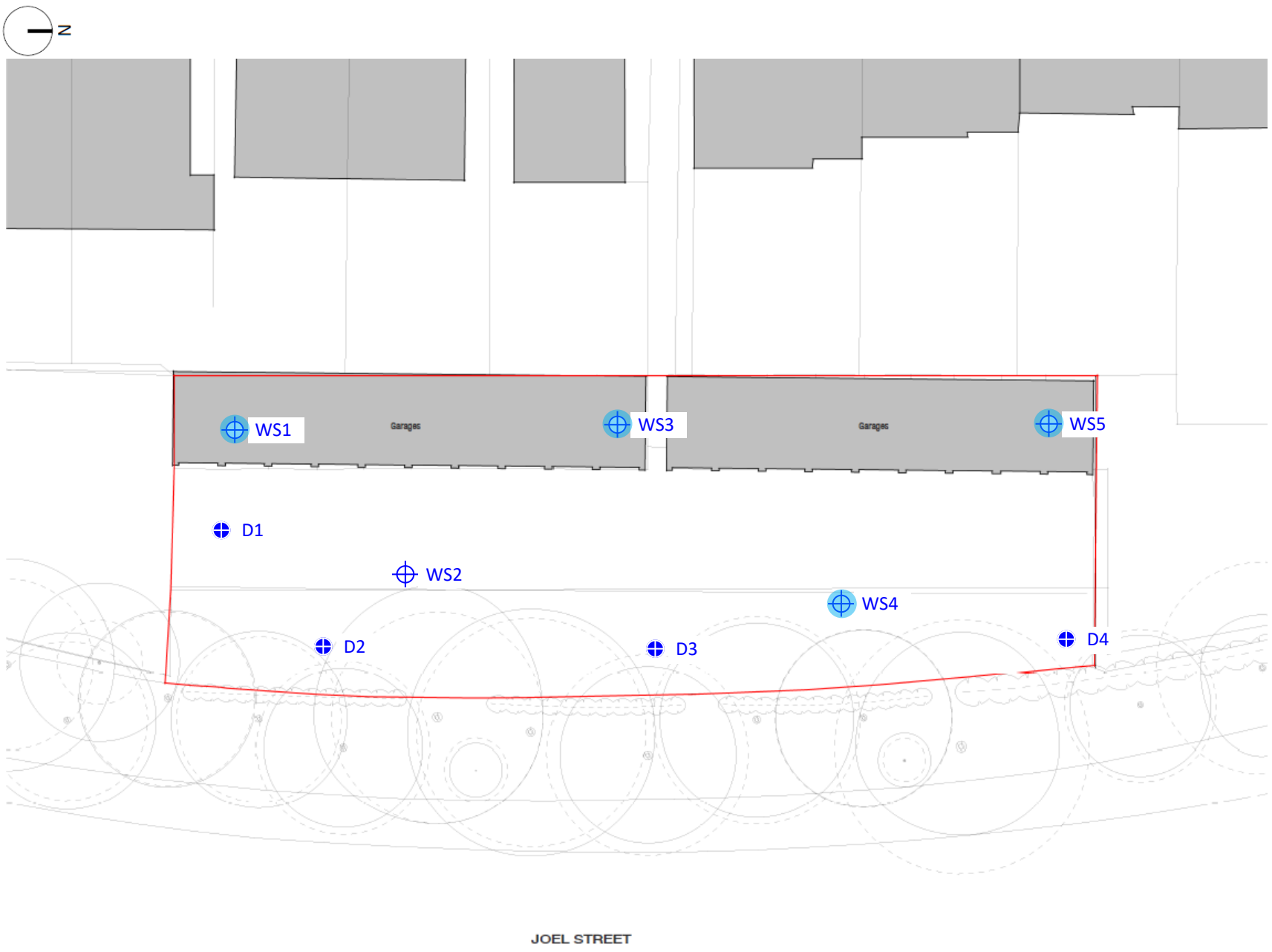

Legend

- Window Sample Borehole
- Monitoring Well
- DCP/CBR

Notes

Figure 5

Drawing Title

Exploratory Hole Location Plan - Pre-Clearance Layout

Project Number	25-262.01
Project Title	Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN
Drawn by	DN
Checked by	JB
Scale	NTS

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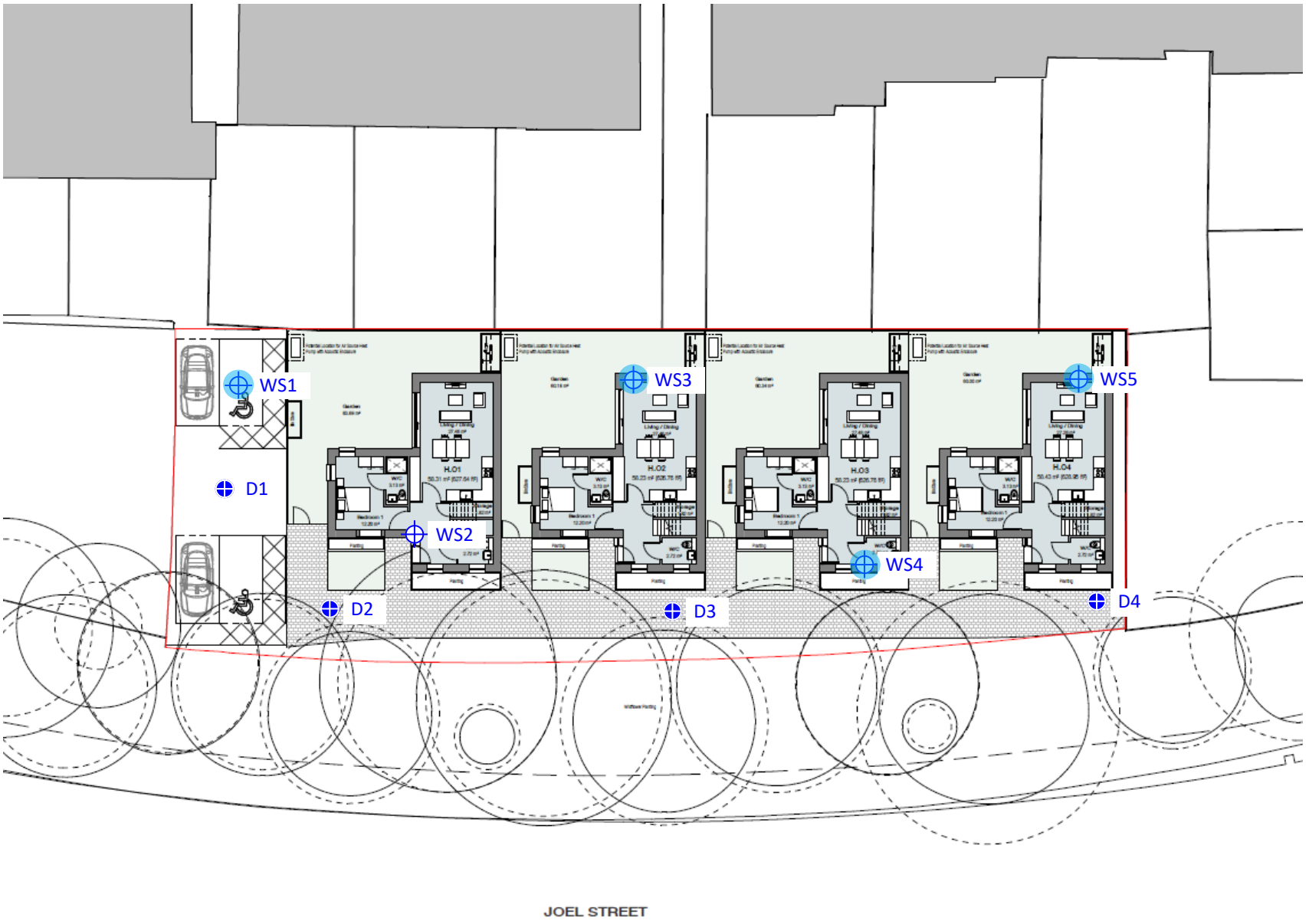

Legend

- Window Sample Borehole
- Monitoring Well
- DCP/CBR

Notes

Figure 6

Drawing Title

Exploratory Hole Location Plan - Proposed Development

Project Number	25-262.01

Project Title

Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

Drawn by	DN
Checked by	JB
Scale	NTS

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Appendices

I	Envirocheck Database Reports
II	Exploratory Hole Logs and Photographs
III	Field Monitoring Results
IV	Soil Contamination Results and Assessment Criteria
V	Discovery Strategy
VI	Soil Geotechnical Results

Appendix

I Envirocheck Database Reports

Appendix

II Exploratory Hole Logs and Photographs

WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN		25-262.01	WS1
Client:	Start:	End:	Sheet:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	19/02/2026	19/02/2026	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
Archway Dart (DO)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 75mm	75mm	75mm	75mm	75mm	75mm	N' Value	Notes
Brown silty sandy gravelly CLAY. Gravel is fine rounded of flint. (MADE GROUND)		(0.2) 0.2		0.2	1	ES								
Firm orange brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded of flint.		(0.7)		0.6	2	ES								
		0.9		0.9	1	D								
Very dense orange brown clayey silty sandy GRAVEL. Gravel is fine to coarse sub-rounded to angular of flint.		1.0		1.0		SPT	12	14	15	17	18		50	For 210mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
19/02/2026	100	1.00				19/02/2026	-	-	-	-	

Remarks		By
No roots. No groundwater encountered in borehole. No visual or olfactory evidence of contamination. Monitoring well installed to 0.93m	Logged	OC
SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN		25-262.01	WS2
Client:	Start:	End:	Sheet:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	19/02/2026	19/02/2026	1 of 1
Method/Plant Used:	Co-ordinates:	Ground Level:	
Archway Dart (DO)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Brown silty sandy gravelly CLAY. Gravel is fine rounded of flint. (MADE GROUND)		(0.3) **0.3**		0.2	1	ES								
Firm orange brown silty sandy gravelly CLAY. gravel is fine to medium sub-rounded of flint.		(0.25) **0.55**												
Firm orange brown silty sandy gravelly CLAY. Gravel is fine to coarse sub-rounded to angular of flint.		(0.2) **0.75**												
Firm to stiff orange brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded of flint.		(0.25) **1.0**		0.9 1.0	2 3	D ES/SPT	6	10	14	17	19		50	For 220mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
19/02/2026	100	1.00				19/02/2026	-	-	-	-	

Remarks		By
No roots. No groundwater encountered in borehole. No visual or olfactory evidence of contamination. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	OC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN		25-262.01	WS3
Client:	**Start:**	**End:**	**Sheet:**
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	19/02/2026	19/02/2026	1 of 1
Method/Plant Used:	**Co-ordinates:**	**Ground Level:**	
Archway Dart (DO)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 75mm	75mm	75mm	75mm	75mm	75mm	N' Value	Notes
Brown silty sandy gravelly CLAY. Gravel is fine rounded of flint. (MADE GROUND)		(0.2) 0.2		0.2	1	ES								
Firm orange brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded of flint.		(0.3) 0.5												
Firm orange brown silty sandy gravelly CLAY. Gravel is fine to coarse sub-rounded to angular of flint.		(0.6) 1.1		0.9	2	D	4	4	5	12	12	12	41	
				1.1	3	D								
Dense becoming very dense orange brown silty very clayey gravelly becoming slightly gravelly fine to coarse becoming fine to medium SAND. Gravel is fine to medium sub-rounded to angular of flint.		(0.9) 2.0		1.9	4	D								
				2.0	5	ES/SPT	10	10	12	13	15	10	50	For 275mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
19/02/2026	100	1.00				19/02/2026	-	0.76	-	-	

Remarks		By
No roots. Ground water encountered in borehole at 0.76m after 20 minutes. No visual or olfactory evidence of contamination. Monitoring well installed to 1.56m SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	OC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:	Project No.	Borehole:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	25-262.01	WS4

Client:	Start:	End:	Sheet:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	19/02/2026	19/02/2026	1 of 1

Method/Plant Used:	Co-ordinates:	Ground Level:
Archway Dart (DO)	NT	NT

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests Depth	No	Type	SPT Results 75mm	75mm	75mm	75mm	75mm	75mm	N' Value	Notes
Brown silty sandy gravelly CLAY. Gravel is fine rounded of flint. (MADE GROUND)		(0.2) 0.2		0.2	1	ES								
Firm orange brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded of flint.		0.3 (0.2)												
Firm orange brown silty sandy gravelly CLAY. Gravel is fine to coarse sub-rounded to angular of flint.		0.5 (1.2)												
Stiff orange brown silty sandy gravelly CLAY. Gravel is fine to medium sub-rounded of flint.				0.9	2	D								
				1.0		SPT	5	6	6	7	7	7	27	
		1.7												
Orange brown silty very clayey gravelly fine to medium SAND. Gravel is fine to medium sub-rounded to angular of flint.		(0.3) 2.0		1.9	3	D								
				2.0		SPT	7	7	7	7	8	7	29	
Medium dense to dense orange brown silty very clayey gravelly fine to coarse SAND. Gravel is fine to coarse sub-rounded to angular of flint.		(0.8) 2.8												
Stiff orange brown silty sandy slightly gravelly CLAY. Gravel is fine to medium sub-rounded of flint.		(0.2) 3.0		2.9	4	D								
				3.0		SPT	25		37	13			50	For 95mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
19/02/2026	100	1.00				19/02/2026	-	-	-	-	

Remarks		By
No roots. No groundwater encountered in borehole. No visual or olfactory evidence of contamination. Monitoring well installed to 2.78m. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	OC
	Checked	OB
		Scale 01:25

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WINDOW SAMPLE LOG

Site:		Project No.	Borehole:
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN		25-262.01	WS5
Client:	**Start:**	**End:**	**Sheet:**
Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	19/02/2026	19/02/2026	1 of 1
Method/Plant Used:	**Co-ordinates:**	**Ground Level:**	
Archway Dart (DO)	NT	NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests			SPT Results						N' Value	Notes
				Depth	No	Type	75mm	75mm	75mm	75mm	75mm	75mm		
Soft to firm brown and grey brown silty sandy gravelly CLAY. Gravel is fine rounded of flint and occasional brick fragments. (MADE GROUND)		(1.3)		0.6	1	ES								
				0.9	2	D								
				1.0		SPT	1	1	1	2	2	2	7	
		1.3												
Firm dark orange brown silty sandy gravelly CLAY. Gravel is fine to coarse sub-rounded to angular of flint.		(0.25)		1.4	3	D								
		1.55												
Dense to very dense orange brown silty very clayey slightly gravelly fine to medium SAND. Gravel is fine to coarse sub-rounded to angular of flint.		(0.45)		1.9	4	D								
		2.0		2.0		SPT	11	11	12	14	15	9	50	For 255mm

Casing record			Chiselling records			Water level observations (depths in metres below gl)					
Date	Diameter (mm)	Depth (m)	Time	From (m)	To (m)	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
19/02/2026	100	1.00				19/02/2026	-	0.70	-	-	

Remarks		By
No roots. Ground water encountered in borehole at 0.70m. No visual or olfactory evidence of contamination. Monitoring well installed to 1.85m. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample	Logged	OC
	Checked	OB
		Scale 01:25

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Exploratory Hole Photos

Project Number 25-262.01 **Project Title** Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN **Taken by** OC **Date** 19/02/2026

WS1 arisings

WS2 arisings

WS3 arisings

WS4 arisings

WS5 arisings

Appendix

III Field Monitoring Results

MONITORING DATA SHEET

SITE Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

PROJECT 25-262.01

VISIT NUMBER 1

DATE 13/03/2026

EQUIPMENT GFM435 + MiniRAE

TAKEN BY OC

Record of Stable Concentrations										Interpretation		
Location	Time	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Baro. Prs. (mB)	PID (ppm)	Water (m bgl)	Base Well (m bgl)	CH4 GSV (l/h)	CO2 GSV (l/h)	CS
Site	13:52		0.0	0.0	20.4	992	0.0					
WS1	13:53	0.0	0.0	1.8	19.1	992	0.0	Dry	1.01	0	0	CS-1
WS3	13:57	0.0	0.0	1.4	18.9	992	0.0	1.01	1.61	0	0	CS-1
WS4	14:04	0.0	0.0	0.1	20.2	992	0.0	1.56	2.78	0	0	CS-1
WS5	14:14	0.0	0.0	0.6	19.5	992	0.0	1.33	1.85	0	0	CS-1

Weather Observations					
State of Ground	Cloud Cover	Wind	Rain	Air Temperature °C	
Dry	Clear	Calm	None	Before	9
Moist	Sunny	Light	Slight		
Wet	Slight	Moderate	Moderate	After	9
Snow	Cloudy	Strong	Heavy		
Frozen	Overcast				
	Fog/Mist				

Pressure Observations			
Source	Pressure Records		Trend
Metoffice	Location	**London**	Falling
GFM435	Time	**06:00**	Steady
	Pressure	**1001**	Rising

Notes	
Worst case conditions? (<1000mB and Falling)	Yes

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MONITORING DATA SHEET

SITE Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

PROJECT 25-262.01

VISIT NUMBER 2

DATE 24/03/2026

EQUIPMENT GFM435 + MiniRAE

TAKEN BY OC

Record of Stable Concentrations										Interpretation		
Location	Time	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Baro. Prs. (mB)	PID (ppm)	Water (m bgl)	Base Well (m bgl)	CH4 GSV (l/h)	CO2 GSV (l/h)	CS
Site	14:31		0.0	0.0	20.4	1005	0.0					
WS1	14:36	0.0	0.0	1.5	19.1	1005	0.0	Dry	1.01	0	0	CS-1
WS3	14:43	0.0	0.0	0.9	19.4	1005	0.0	1.02	1.61	0	0	CS-1
WS4	14:51	0.0	0.0	0.2	19.8	1005	0.0	1.58	2.78	0	0	CS-1
WS5	14:59	0.0	0.0	0.8	19.2	1005	0.0	1.36	1.85	0	0	CS-1

Weather Observations						Pressure Observations				Notes	
State of Ground	Cloud Cover	Wind	Rain	Air Temperature °C		Source	Pressure Records		Trend		
Dry	Clear	Calm	None	Before	12	Metoffice	Location	London	Falling		
Moist	Sunny	Light	Slight			GFM435	Time	06:00	Steady		
Wet	Slight	Moderate	Moderate	After	12		Pressure	1005	Rising	Worst case conditions? (<1000mB and Falling)	No
Snow	Cloudy	Strong	Heavy								
Frozen	Overcast										
	Fog/Mist										

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MONITORING DATA SHEET

SITE Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

PROJECT 25-262.01

VISIT NUMBER 3

DATE 15/04/2026

EQUIPMENT GFM435 + MiniRAE

TAKEN BY OC

Record of Stable Concentrations										Interpretation		
Location	Time	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Baro. Prs. (mB)	PID (ppm)	Water (m bgl)	Base Well (m bgl)	CH4 GSV (l/h)	CO2 GSV (l/h)	CS
Site	12:15		0.0	0.0	20.4	1013	0.0					
WS1	12:21	0.0	0.0	1.6	19.3	1013	0.0	Dry	1.01	0	0	CS-1
WS3	12:27	0.0	0.0	0.6	19.7	1013	0.0	1.14	1.61	0	0	CS-1
WS4	12:34	0.0	0.0	0.2	19.8	1013	0.0	1.71	2.78	0	0	CS-1
WS5	12:41	0.0	0.0	0.9	19.2	1013	0.0	1.54	1.85	0	0	CS-1

Weather Observations						Pressure Observations				Notes	
State of Ground	Cloud Cover	Wind	Rain	Air Temperature °C		Source	Pressure Records		Trend		
Dry	Clear	Calm	None	Before	14	Metoffice	Location	London	Falling		
Moist	Sunny	Light	Slight			GFM435	Time	06:00	Steady		
Wet	Slight	Moderate	Moderate	After	14		Pressure	1014	Rising	Worst case conditions? (<1000mB and Falling)	No
Snow	Cloudy	Strong	Heavy								
Frozen	Overcast										
	Fog/Mist										

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MONITORING DATA SHEET

SITE Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN
PROJECT 25-262.01

VISIT NUMBER 4
DATE 13/05/2026

EQUIPMENT GFM435 + MiniRAE
TAKEN BY OC

Record of Stable Concentrations										Interpretation		
Location	Time	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Baro. Prs. (mB)	PID (ppm)	Water (m bgl)	Base Well (m bgl)	CH4 GSV (l/h)	CO2 GSV (l/h)	CS
Site	10:05		0.0	0.0	20.4	1001	0.0					
WS1	10:11	0.0	0.0	1.5	19.2	1001	0.0	Dry	1.01	0	0	CS-1
WS3	10:24	0.0	0.0	0.7	19.5	1001	0.0	1.26	1.61	0	0	CS-1
WS4	10:31	0.0	0.0	0.3	19.7	1001	0.0	1.89	2.78	0	0	CS-1
WS5	10:40	0.0	0.0	0.8	19.5	1001	0.0	1.79	1.85	0	0	CS-1

Weather Observations						Pressure Observations				Notes	
State of Ground	Cloud Cover	Wind	Rain	Air Temperature °C		Source	Pressure Records		Trend		
Dry	Clear	Calm	None	Before	12	Metoffice	Location	London	Falling		
Moist	Sunny	Light	Slight			GFM435	Time	06:00	Steady		
Wet	Slight	Moderate	Moderate	After	12		Pressure	1005	Rising	Worst case conditions? (<1000mB and Falling)	No
Snow	Cloudy	Strong	Heavy								
Frozen	Overcast										
	Fog/Mist										

Aviron Associates Limited
Badgemore House - Badgemore Park - Gravel Hill - Henley on Thames - RG9 4NR
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Appendix

IV Soil Contamination Results and Assessment Criteria

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Analytical Report Number : 26-008865

Project / Site name:	Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	**Samples received on:**	20/02/2026
Your job number:	25 262 01	**Samples instructed on/ Analysis started on:**	20/02/2026
Your order number:	25 262 01	**Analysis completed by:**	04/03/2026
Report Issue Number:	1	**Report issued on:**	04/03/2026
Samples Analysed:	10 soil samples - 1 leachate sample		

Signed:

Rachel Chappell
Key Account Manager
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
air	- once the analysis is complete

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

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

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: 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN
Your Order No: 25 262 01

Lab Sample Number				837570	837571	837572	837573	837574
Sample Reference				WS1	WS2	WS3	WS4	WS5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.20	0.20	0.60
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	23	22	14	22
Total mass of sample received	kg	0.1	NONE	1	0.8	1	1	0.9
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MWI	MWI	MWI	MWI	MWI
Analysis completed	N/A	N/A	N/A	03/03/2026	03/03/2026	03/03/2026	03/03/2026	03/03/2026
General Inorganics								
pH (L005B)	pH Units	N/A	MCERTS	-	-	-	-	-
pH (L099)	pH Units	N/A	MCERTS	7	7.2	8	7.5	7.8
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	470	670	970	260	340
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	240	40	330	21	360
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	118	19.8	167	10.3	181
Total Sulphur	mg/kg	50	MCERTS	210	360	460	100	440
Organic Matter (automated)	%	0.1	MCERTS	1.5	4.2	3	1.2	0.9
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-	-	-	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	-	-	-
Acid Neutralisation Capacity	+/- mmol/kg	-9999	NONE	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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	0.06	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.68	0.19	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.14	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.11	1.7	0.6	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.1	1.5	0.51	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.07	0.71	0.27	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.69	0.33	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.09	0.92	0.42	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.39	0.2	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.79	0.35	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.06	0.45	0.19	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.1	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.07	0.52	0.23	< 0.05	< 0.05
Coronene	mg/kg	0.05	NONE	-	-	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	8.53	3.27	< 0.80	< 0.80

Analytical Report Number: 26-008865
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Your Order No: 25 262 01

Lab Sample Number				837570	837571	837572	837573	837574
Sample Reference				WS1	WS2	WS3	WS4	WS5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.20	0.20	0.60
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	10	12	12	10	18
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	1.3	1.7	0.6	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	24	27	24	23	44
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	20	24	12	23
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26	83	78	54	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	17	18	16	67
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.5	< 1.0	< 1.0	1.1	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	55	89	88	54	81
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	0.025	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
Mineral Oil (EC10 - EC40) $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	-	-	-	-	-
VOCs								
Chloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Chloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Bromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Chloroform	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0	-	-	-	< 7.0

Analytical Report Number: 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN
Your Order No: 25 262 01

Lab Sample Number				837570	837571	837572	837573	837574
Sample Reference				WS1	WS2	WS3	WS4	WS5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.20	0.20	0.60
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0	-	-	-	< 6.0
Trichloroethene	µg/kg	10	MCERTS	< 10	-	-	-	< 10
Dibromomethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10	-	-	-	< 10
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0	-	-	-	< 6.0
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Chlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Styrene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Bromoform	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Bromobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0	-	-	-	< 8.0
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	-	< 5.0

Total BTEX	µg/kg	10	MCERTS	-	-	-	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	-	-	-

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Your Order No: 25 262 01

Lab Sample Number				837570	837571	837572	837573	837574
Sample Reference				WS1	WS2	WS3	WS4	WS5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.20	0.20	0.20	0.20	0.60
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	-	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	-	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2
Your Order No: 25 262 01

Lab Sample Number				837575	837576	837577	837578	837579
Sample Reference				WS1	WS3	COMP	WS2	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.60	0.60	0.10-0.30	1.00	2.00
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	17	23	14	15
Total mass of sample received	kg	0.1	NONE	0.9	1.1	2	0.8	0.6
Asbestos								
Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	-	-	-
Asbestos Analyst ID	N/A	N/A	N/A	MWI	MWI	-	-	-
Analysis completed	N/A	N/A	N/A	03/03/2026	03/03/2026	-	-	-
General Inorganics								
pH (L005B)	pH Units	N/A	MCERTS	-	-	7.8	-	-
pH (L099)	pH Units	N/A	MCERTS	6.2	7.7	-	7.4	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Total Sulphate as SO_4	mg/kg	50	MCERTS	340	380	-	94	89
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	170	290	-	25	76
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	0.0127	0.0381
Water Soluble SO_4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	12.7	38.1
Water Soluble SO_4 16hr extraction (2:1)	mg/l	1.25	MCERTS	86.2	143	-	-	-
Total Sulphur	mg/kg	50	MCERTS	140	130	-	< 50	< 50
Organic Matter (automated)	%	0.1	MCERTS	0.4	0.5	-	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-	0.4	-	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	4.3	-	-
Acid Neutralisation Capacity	+/- mmol/kg	-9999	NONE	-	-	8.8	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	-
Coronene	mg/kg	0.05	NONE	-	-	< 0.05	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	-	-	-

Analytical Report Number: 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2
Your Order No: 25 262 01

Lab Sample Number				837575	837576	837577	837578	837579
Sample Reference				WS1	WS3	COMP	WS2	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.60	0.60	0.10-0.30	1.00	2.00
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	< 0.85	-	-
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	34	19	-	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	1.1	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	45	43	-	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	22	20	-	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	16	20	-	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	34	26	-	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	62	64	-	-	-
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-	-	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-	-	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-	-	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	-	-	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-	-	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	-	-	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	-	-	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	-	-	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	-	-	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	-	-	-
Mineral Oil (EC10 - EC40) $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	-	-	< 10	-	-
VOCs								
Chloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Chloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	-	-	-	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	-	-	-	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
1,1-Dichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	NONE	-	-	-	-	-
Chloroform	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	-	-	-	-

Analytical Report Number: 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2
Your Order No: 25 262 01

Lab Sample Number				837575	837576	837577	837578	837579
Sample Reference				WS1	WS3	COMP	WS2	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.60	0.60	0.10-0.30	1.00	2.00
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
1,1-Dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Carbontetrachloride	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	10	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	5	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	-	-	-	-
Dibromochloromethane	µg/kg	5	MCERTS	-	-	-	-	-
Tetrachloroethene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	-	-	-	-
Chlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
Styrene	µg/kg	5	MCERTS	-	-	-	-	-
Bromoform	µg/kg	5	MCERTS	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Isopropylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	-	-	-	-
Bromobenzene	µg/kg	5	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Butylbenzene	µg/kg	5	MCERTS	-	-	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	-	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	-	-	-	-

Total BTEX	µg/kg	10	MCERTS	-	-	< 10	-	-

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 52	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 101	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 138	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-

Analytical Report Number: 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2
Your Order No: 25 262 01

Lab Sample Number				837575	837576	837577	837578	837579
Sample Reference				WS1	WS3	COMP	WS2	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.60	0.60	0.10-0.30	1.00	2.00
Date Sampled				19/02/2026	19/02/2026	19/02/2026	19/02/2026	19/02/2026
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
PCB Congener 153	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
PCB Congener 180	mg/kg	0.001	MCERTS	-	-	< 0.001	-	-
Total PCBs	mg/kg	0.007	MCERTS	-	-	< 0.007	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

Your Order No: 25 262 01

Lab Sample Number	837577
Sample Reference	COMP
Sample Number	None Supplied
Water Matrix	N/A
Depth (m)	0.10-0.30
Date Sampled	19/02/2026
Time Taken	None Supplied

Analytical Parameter (Leachate Analysis)	Units	Test Limit of detection	Test Accreditation Status	
10:1 WAC Leachate				
Arsenic	mg/l	0.001	ISO 17025	0.00229
Barium	mg/l	0.00005	ISO 17025	0.0102
Cadmium	mg/l	0.0001	ISO 17025	< 0.000100
Chromium	mg/l	0.0004	ISO 17025	0.0023
Copper	mg/l	0.0007	ISO 17025	0.0049
Mercury	mg/l	0.0005	ISO 17025	< 0.000500
Molybdenum	mg/l	0.0004	ISO 17025	0.00274
Nickel	mg/l	0.0003	ISO 17025	0.0068
Lead	mg/l	0.001	ISO 17025	0.0013
Antimony	mg/l	0.0017	ISO 17025	< 0.0017
Selenium	mg/l	0.004	ISO 17025	< 0.0040
Zinc	mg/l	0.0004	ISO 17025	0.015
Chloride	mg/l	0.15	ISO 17025	1.6
Fluoride	mg/l	0.05	ISO 17025	0.82
Sulphate	mg/l	0.045	ISO 17025	6.4
Total dissolved solids	mg/l	6	ISO 17025	53
Total monohydric phenols	mg/l	0.01	ISO 17025	< 0.010
Dissolved organic carbon	mg/l	0.1	NONE	10.4
10:1 WAC Leachate				
Arsenic	mg/kg	0.01	NONE	0.0229
Barium	mg/kg	0.0005	NONE	0.102
Cadmium	mg/kg	0.001	NONE	< 0.00100
Chromium	mg/kg	0.004	NONE	0.023
Copper	mg/kg	0.007	NONE	0.049
Mercury	mg/kg	0.005	NONE	< 0.00500
Molybdenum	mg/kg	0.004	NONE	0.0274
Nickel	mg/kg	0.003	NONE	0.068
Lead	mg/kg	0.01	NONE	0.013
Antimony	mg/kg	0.017	NONE	< 0.017
Selenium	mg/kg	0.04	NONE	< 0.040
Zinc	mg/kg	0.004	NONE	0.15
Chloride	mg/kg	1.5	NONE	16
Fluoride	mg/kg	0.5	NONE	8.2
Sulphate	mg/kg	0.45	NONE	64
Total dissolved solids	mg/kg	60	NONE	530
Total monohydric phenols	mg/kg	0.1	NONE	< 0.10
Dissolved organic carbon	mg/kg	1	NONE	104

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Waste Acceptance Criteria Analytical Results

Report No:	**26-008865**						
					Client:	**Aviron Associates Ltd**	
Location	**Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**						
Lab Reference (Sample Number)	837577				**Landfill Waste Acceptance Criteria**		
					Limits		
Sampling Date	19/02/2026				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	COMP						
Depth (m)	0.10-0.30						
Solid Waste Analysis							
TOC (%)**	0.4				3%	5%	6%
Loss on Ignition (%) **	4.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg) $_{EH\_1D\_CU\_AL}$	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.8				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	8.8				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.00229			0.0229	0.5	2	25
Barium *	0.0102			0.102	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.0023			0.023	0.5	10	70
Copper *	0.0049			0.049	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	0.00274			0.0274	0.5	10	30
Nickel *	0.0068			0.068	0.4	10	40
Lead *	0.0013			0.013	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.015			0.15	4	50	200
Chloride *	1.6			16	800	15000	25000
Fluoride*	0.82			8.2	10	150	500
Sulphate *	6.4			64	1000	20000	50000
TDS*	53			530	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	10.4			104	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2						
Dry Matter (%)	77						
Moisture (%)	23						

Results are expressed on a dry weight basis, after correction for moisture content where applicable.

*= UKAS accredited (liquid eluate analysis only)

Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation

** = MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

* 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 *
837570	WS1	None Supplied	0.2	Brown clay and sand with gravel and vegetation
837571	WS2	None Supplied	0.2	Brown loam and clay with gravel and vegetation
837572	WS3	None Supplied	0.2	Brown clay and loam with gravel and vegetation
837573	WS4	None Supplied	0.2	Brown clay and sand with gravel
837574	WS5	None Supplied	0.6	Brown sandy clay with gravel
837575	WS1	None Supplied	0.6	Brown clay and sand with gravel
837576	WS3	None Supplied	0.6	Brown clay and sand with gravel
837577	COMP	None Supplied	0.10-0.30	Grey clay
837578	WS2	None Supplied	1	Brown sandy clay
837579	WS3	None Supplied	2	Brown sandy clay

Analytical Report Number : 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in Soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques	In-house method based on HSG 248, 2021	A001B	D	ISO 17025
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
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.	L019B	D	NONE
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	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	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	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
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	L038B	D	MCERTS
Speciated PAHs and/or Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS	In-house method based on USEPA 8270	L064B	D	MCERTS
BTEX and/or Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS	In-house method based on USEPA 8260	L073B	W	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID with carbon banding aliphatic and aromatic	In-house method	L076B	D	MCERTS
Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic (Summed Bands).	Calculation	L076B/L088-PL	D/W	NONE
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	L080-PL	W	MCERTS
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	L080-PL	W	MCERTS

Analytical Report Number : 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	Determination of total petroleum hydrocarbons in soil by HS-GC/MS with carbon banding aliphatic and aromatic	In-house method	L088-PL	W	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
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	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 (Walkley Black Method)	In-house method	L009B	D	MCERTS
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
One stage WAC 10:1 leachate preparation	One stage batch test at a liquid to solid ratio of 10 L/kg	BS EN 12457-2-2002	L043B	W	ISO 17025
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047-PL	D	MCERTS
Total petroleum hydrocarbons by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025

Analytical Report Number : 26-008865
Project / Site name: Garage Court, r o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)
Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	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.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.
The result for sum should be interpreted with caution

Residential with Homegrown Produce
Soil Screening Values
Private Gardens

Determinant	1% SOM (mg/kg)	2.5% SOM (mg/kg)	6% SOM (mg/kg)	Criteria
METALS, SEMI-METALS, INROGANICS + PAH				
Arsenic	37	37	37	C4SL/LQM S4UL
Boron	290	290	290	LQM S4UL
Cadmium	11	11	11	LQM S4UL
Chromium III	910	910	910	LQM S4UL
Chromium IV	6	6	6	LQM S4UL
Copper	2,400	2,400	2,400	LQM S4UL
Mercury	1.2	1.2	1.2	LQM S4UL
Nickel	180	180	180	LQM S4UL
Lead	200	200	200	LQM S4UL
Selenium	250	250	250	LQM S4UL
Zinc	3,700	3,700	3,700	LQM S4UL
Free Cyanide	34	34	34	ATRISK
Acenaphthene	210	510	1100	LQM S4UL
Acenaphthylene	170	420	920	LQM S4UL
Anthracene	2,400	5,400	11,000	LQM S4UL
Benzo(a)anthracene	7.2	11	13	LQM S4UL
Benzo(a)pyrene	2.2	2.7	3	LQM S4UL
Benzo(b)fluoranthene	2.6	3.3	3.7	LQM S4UL
Benzo(ghi)perylene	320	340	350	LQM S4UL
Benzo(k)fluoranthene	77	93	100	LQM S4UL
Chrysene	15	22	27	LQM S4UL
Dibenz(ah)anthracene	0.24	0.28	0.3	LQM S4UL
Fluoranthene	280	560	890	LQM S4UL
Fluorene	170	400	860	LQM S4UL
Indeno(123-cd)pyrene	27	36	41	LQM S4UL
Naphthalene	2.3	5.6	13	LQM S4UL
Phenanthrene	95	220	440	LQM S4UL
Pyrene	620	1,200	2,000	LQM S4UL
Phenols	280	550	1,100	LQM S4UL
TOTAL PETROLEUM HYDOCARBONS				
Benzene	0.087	0.17	0.37	LQM S4UL
Toluene	130	290	660	LQM S4UL
Ethlybenzene	47	110	260	LQM S4UL
o-xylene	60	140	330	LQM S4UL
m-xylene	59	140	320	LQM S4UL
p-xylene	56	130	310	LQM S4UL
Aliphatic EC 5-6	42	78	160	LQM S4UL
Aliphatic EC >6-8	100	230	530	LQM S4UL
Aliphatic EC >8-10	27	65	150	LQM S4UL
Aliphatic EC >10-12	130	330	760	LQM S4UL
Aliphatic EC >12-16	1,100	2,400	4,300	LQM S4UL
Aliphatic EC >16-35	65,000	92,000	110,000	LQM S4UL
Aliphatic EC >35-44	65,000	92,000	110,000	LQM S4UL
Aromatic EC 5-7 (benzene)	70	140	300	LQM S4UL
Aromatic EC >7-8 (toluene)	130	290	660	LQM S4UL
Aromatic EC >8-10	34	83	190	LQM S4UL
Aromatic EC >10-12	74	180	380	LQM S4UL
Aromatic EC >12-16	140	330	660	LQM S4UL
Aromatic EC >16-21	260	540	930	LQM S4UL
Aromatic EC >21-35	1,100	1,500	1,700	LQM S4UL
Aromatic EC >35-44	1,100	1,500	1,700	LQM S4UL
Aromatic EC >44-70	1,600	1,800	1,900	LQM S4UL
ASBESTOS				
None Detectable			Aviron Adopted Value	

Appendix

V Discovery Strategy

HOW TO IDENTIFY CONTAMINATED SOILS
AND
WHAT TO DO?

ARE YOU AWARE YOU MAY BE WORKING WITH CONTAMINATED SOILS?

YES

ARE YOU WEARING PPE? HAVE YOU A PERMIT TO DIG?

YES

WHEN DIGGING IS THE SOIL :

FREE FROM ANY UNUSUAL COLOUR LIKE BLUE, GREEN, BLACK?

FREE FROM FUNNY SMELLS LIKE FUEL, SOLVENTS, GAS?

FREE FROM CEMENT FRAGMENTS OR FIBROUS MATERIAL?

FREE FROM HAZARDOUS CONTAINERS LIKE OIL/FUEL DRUMS OR TANKS?

FREE FROM RUSTED METALS, SHARPS ETC?

YES

CONTINUE WORKING SAFELY

NO

SAFELY **STOP** WORK
CONTACT YOUR SUPERVISOR.

SUPERVISOR CALL
AVIRON ASSOCIATES LIMITED
TO DISCUSS AND DETERMINE
ACTION PLAN

NO

SPEAK TO SUPERVISOR.
GET PPE AND PERMIT TO DIG.

YOU SHOULD HAVE PPE AND PERMIT TO DIG?

YES

NO

DO NOT START WORK UNTIL YOU HAVE PPE AND PERMIT TO DIG.

NO

DO NOT START WORK.
SPEAK TO YOUR SUPERVISOR BEFORE STARTING AND COMPLETE YOUR TOOL BOX TALK.

YOU SHOULD BE AWARE AND READY NOW?

NO

LEAVE SITE.
SEEK FURTHER TRAINING.

AVIRON ASSOCIATES LIMITED

OFFICE 01491 413 722
JAMES 07787 771 686

Appendix

VI Soil Geotechnical Results

Laboratory Report

UKAS TESTING 2788

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES A PHENNA GROUP COMPANY

Contract Number: 84923

Client Ref: **25-262.01**
Client PO: **25-262.01**

Date Received: **25-02-2026**
Date Completed: **10-03-2026**
Report Date: **10-03-2026**

Client: **Aviron Associates LTD**

This report has been checked and approved by:

Contract Title: **Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**
For the attention of: **Orlando**

Shaun Jones
Laboratory manager

Description	Qty
Determination of water content BS EN ISO 17892-1:2014 - * UKAS	5
1 point Liquid & Plastic Limit.. BS EN ISO 17892-12 - * UKAS	5
Particle Size Distribution BS EN ISO 17892-4 : 5.1 - * UKAS	6

Notes: **Observations and Interpretations are outside the UKAS Accreditation**
*** - denotes test included in laboratory scope of accreditation**
 # - denotes test carried out by approved contractor
@ - denotes non accredited tests

Approved Signatories:
Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician) - Jason Jenkins (Business Development Manager)
Luke Williams (Senior Laboratory Technician) - Paul Evans (Director) - Richard John (Quality/Technical Manager)
Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager) - Vince Williams (Site Technician)
Wayne Honey (HR & HSE Manager)

GEO Site & Testing Services Ltd
Unit 3-4 Heol Aur, Dafen Ind Est, Llanelli, Carmarthenshire SA14 8QN
Tel: 01554 784 040 Fax: 01554 784 040 info@gstl.co.uk https://gstl.co.uk

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX BS 1377-2:2022 Clause 5.3 BS EN ISO 17892-12:2018+A2:2022 1 Point Liquid Limit BS EN ISO 17892-1:2014+A1:2022 Determination of Water Content	
Contract Number	84923	
Project Name	Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	
Date Tested	06/03/2026	
	DESCRIPTIONS	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Descriptions
WS2	2	D	0.90	-	1.00	Brown silty sandy CLAY
WS3	3	D	0.90	-	1.00	Brown fine to medium gravelly silty CLAY
WS4	6	D	0.90	-	1.00	Brown fine to medium gravelly silty sandy CLAY
WS5	9	D	0.90	-	1.00	Grey gravelly silty CLAY
WS5	10	D	1.40	-	1.50	Grey silty sandy CLAY
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		
				-		

Operator
Ben. S

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	WATER CONTENT, LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX BS 1377-2:2022 Clause 5.3 BS EN ISO 17892-12:2018+A2:2022 1 Point Liquid Limit BS EN ISO 17892-1:2014+A1:2022 Determination of Water Content	
Contract Number	84923	
Project Name	Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN	
Date Tested	06/03/2026	
Test Comments	80g/30° Fall cone used	

Sample/Hole Reference	Sample Number	Sample Type	Depth (m)			Water Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing 0.425mm %	Factor Applied	Remarks
WS2	2	D	0.90	-	1.00	20.5	48	16	32	96	1.004	CI Intermediate Plasticity
WS3	3	D	0.90	-	1.00	21.0	45	17	28	93	1.012	CI Intermediate Plasticity
WS4	6	D	0.90	-	1.00	14.9	33	18	15	90	1.009	CL Low Plasticity
WS5	9	D	0.90	-	1.00	34.9	69	28	41	92	1.016	CH High Plasticity
WS5	10	D	1.40	-	1.50	18.5	33	22	11	100	1.004	CL Low Plasticity
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
				-								
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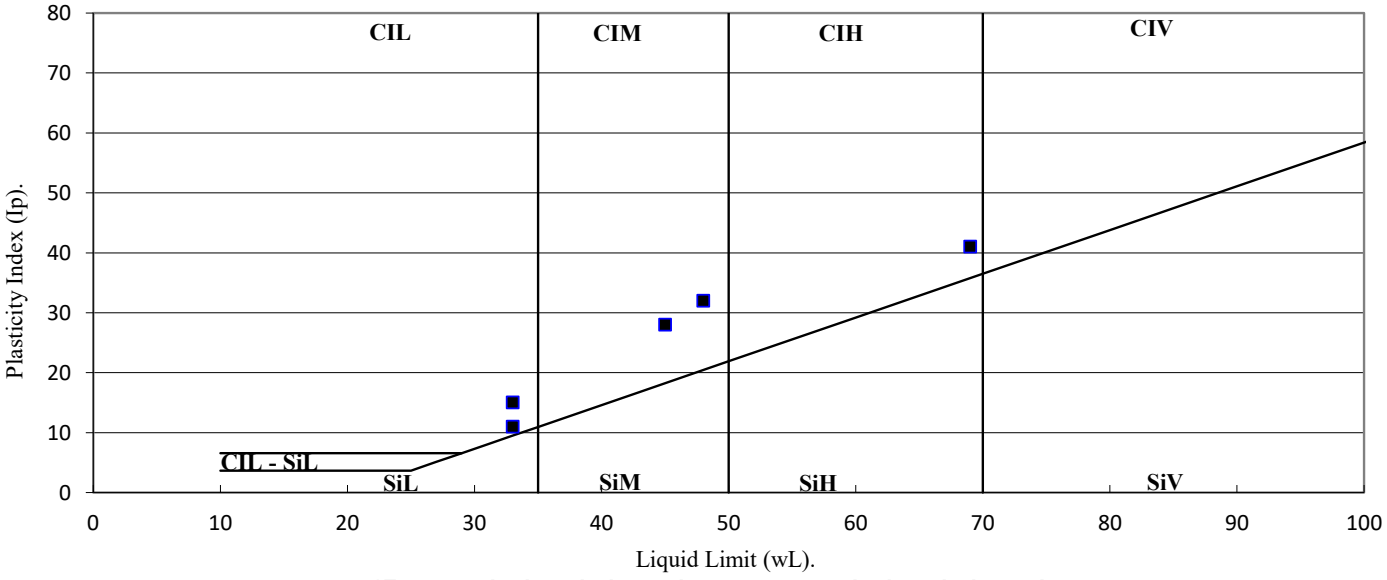
				-								
				-								
				-								

SYMBOLS : NP = Non Plastic

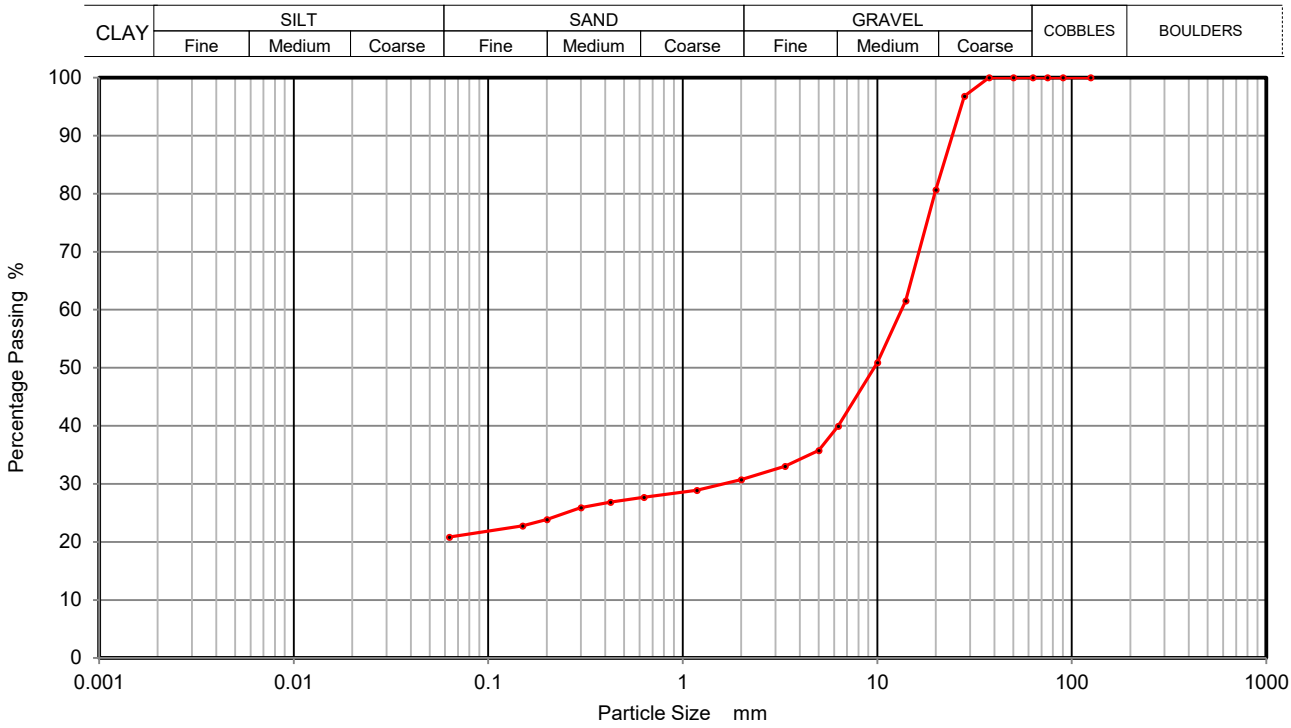
PLASTICITY CHART
BS EN ISO 14688-2:2018 Clause 4.4



***For sample descriptions please see sample descriptions sheet**

Operator
Ben. S

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS 1377-2:2022 Clause 10 & BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**84923**
		Borehole/Pit No.	**WS1**
Project Name	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Sample No.	**1**
Sample Description	Brown fine to coarse sandy silty/clayey fine to coarse GRAVEL	Depth Top	**0.90**
		Depth Base	**1.00**
Date Tested	03/03/2026	Sample Type	**D**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	97		
20	81		
14	62		
10	51		
6.3	40		
5	36		
3.35	33		
2	31		
1.18	29		
0.63	28		
0.425	27		
0.30	26		
0.20	24		
0.15	23		
0.063	21		

Sample Proportions	% dry mass
Cobbles	0
Gravel	69
Sand	10
Silt and Clay	21

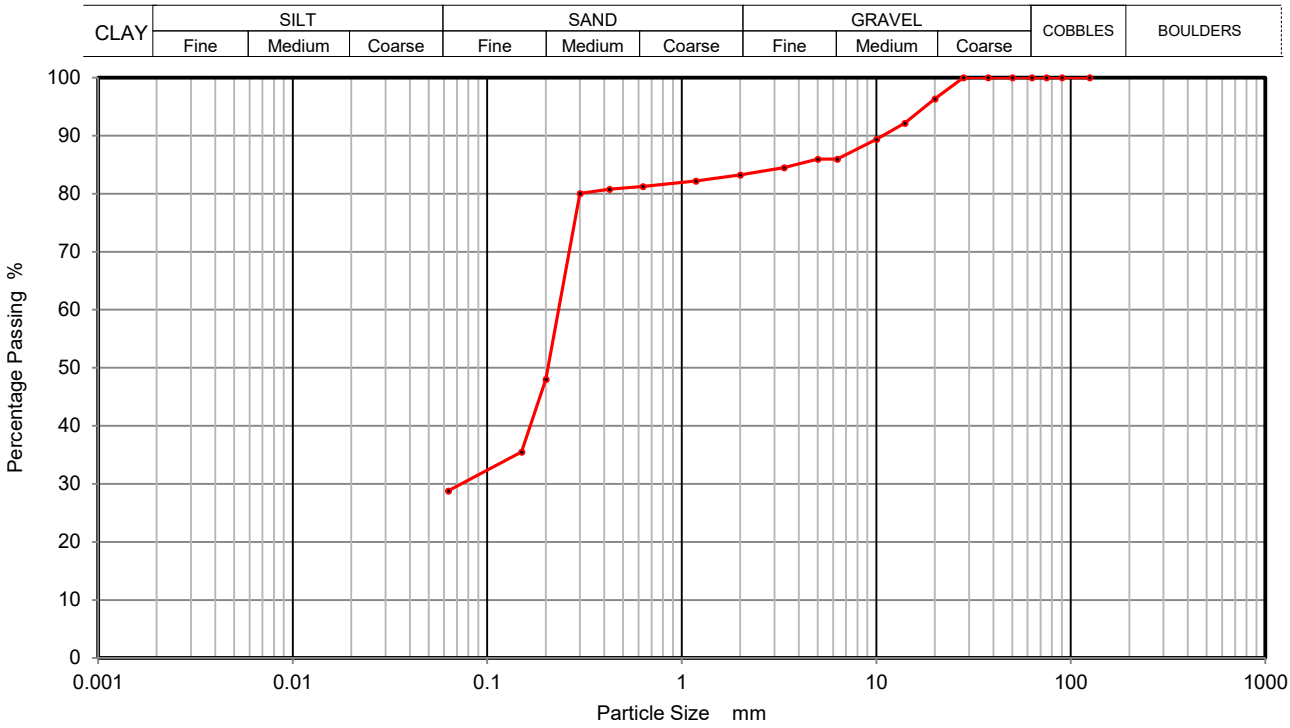
Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Corey. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS 1377-2:2022 Clause 10 & BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**84923**
		Borehole/Pit No.	**WS3**
Project Name	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Sample No.	**4**
Sample Description	Brown fine to coarse gravelly silty/clayey fine to coarse SAND	Depth Top	**1.10**
		Depth Base	**1.20**
Date Tested	03/03/2026	Sample Type	**D**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	96		
14	92		
10	89		
6.3	86		
5	86		
3.35	84		
2	83		
1.18	82		
0.63	81		
0.425	81		
0.30	80		
0.20	48		
0.15	35		
0.063	29		

Sample Proportions	% dry mass
Cobbles	0
Gravel	17
Sand	54
Silt and Clay	29

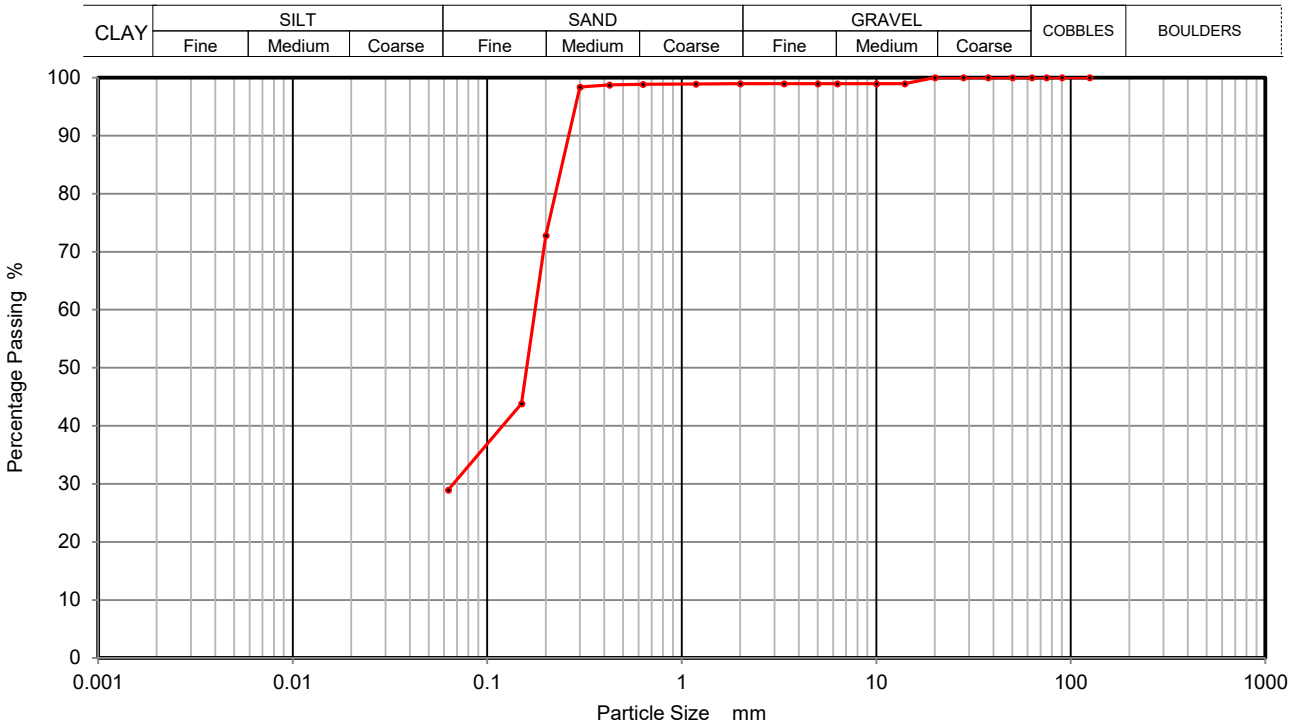
Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Corey. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS 1377-2:2022 Clause 10 & BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**84923**
		Borehole/Pit No.	**WS3**
Project Name	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Sample No.	**5**
Sample Description	Brown gravelly silty/clayey fine to coarse SAND	Depth Top	**1.90**
		Depth Base	**2.00**
Date Tested	03/03/2026	Sample Type	**D**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	99		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	99		
0.63	99		
0.425	99		
0.30	98		
0.20	73		
0.15	44		
0.063	29		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	70
Silt and Clay	29

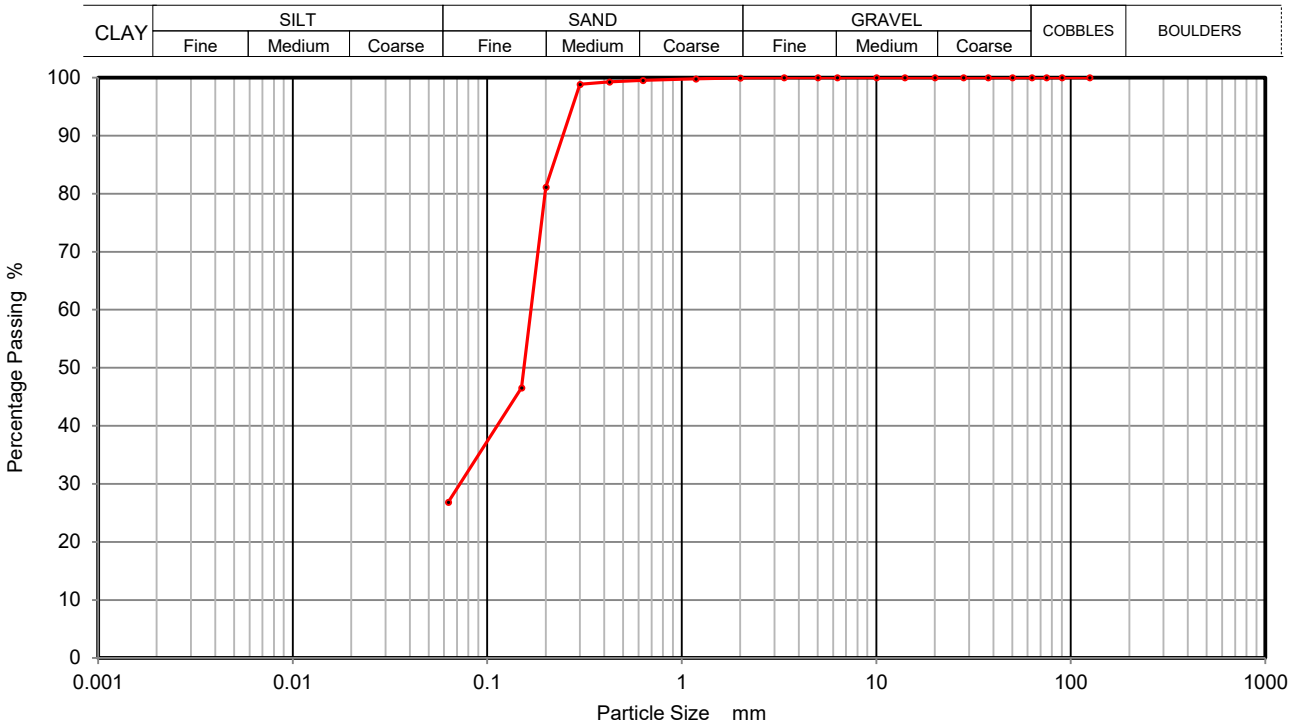
Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Corey. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS 1377-2:2022 Clause 10 & BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**84923**
		Borehole/Pit No.	**WS4**
Project Name	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Sample No.	**7**
Sample Description	Brown silty/clayey fine to coarse SAND	Depth Top	**1.90**
		Depth Base	**2.00**
Date Tested	03/03/2026	Sample Type	**D**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.63	100		
0.425	99		
0.30	99		
0.20	81		
0.15	47		
0.063	27		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	73
Silt and Clay	27

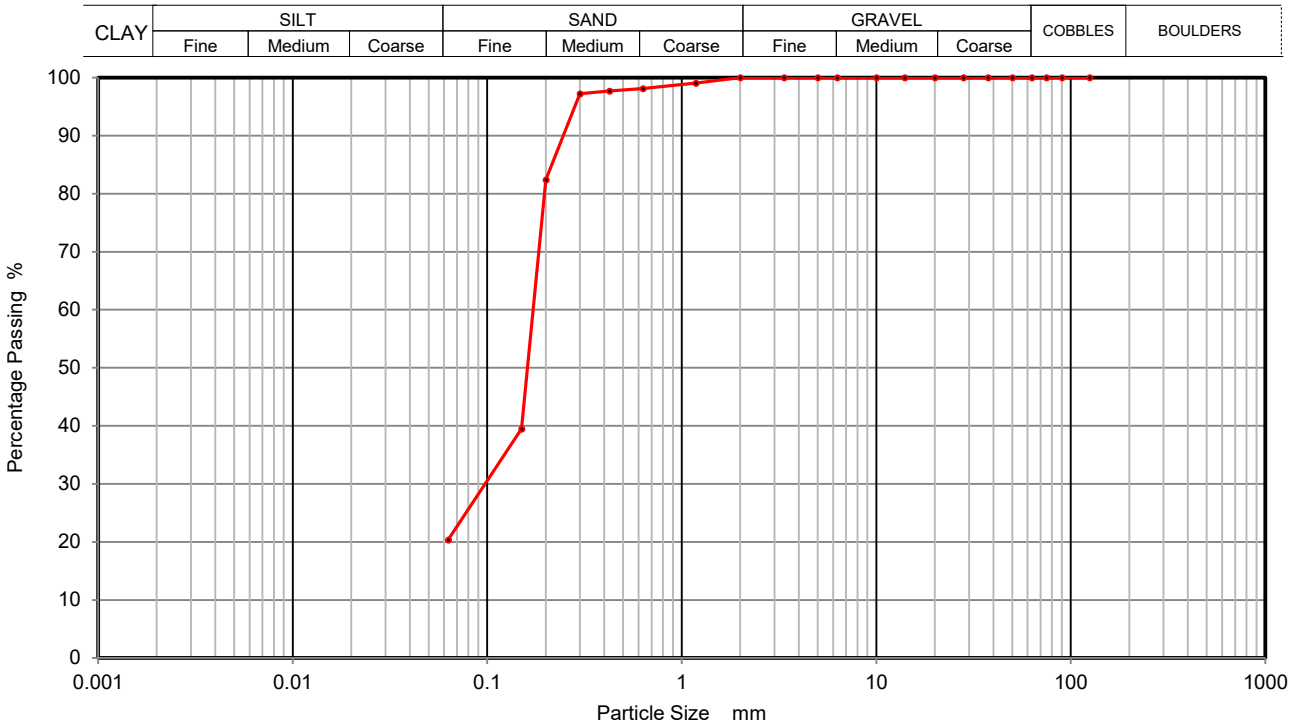
Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Corey. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS 1377-2:2022 Clause 10 & BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**84923**
		Borehole/Pit No.	**WS5**
Project Name	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Sample No.	**11**
Sample Description	Brown silty/clayey fine to coarse SAND	Depth Top	**1.90**
		Depth Base	**2.00**
Date Tested	03/03/2026	Sample Type	**D**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.63	98		
0.425	98		
0.30	97		
0.20	82		
0.15	39		
0.063	20		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	80
Silt and Clay	20

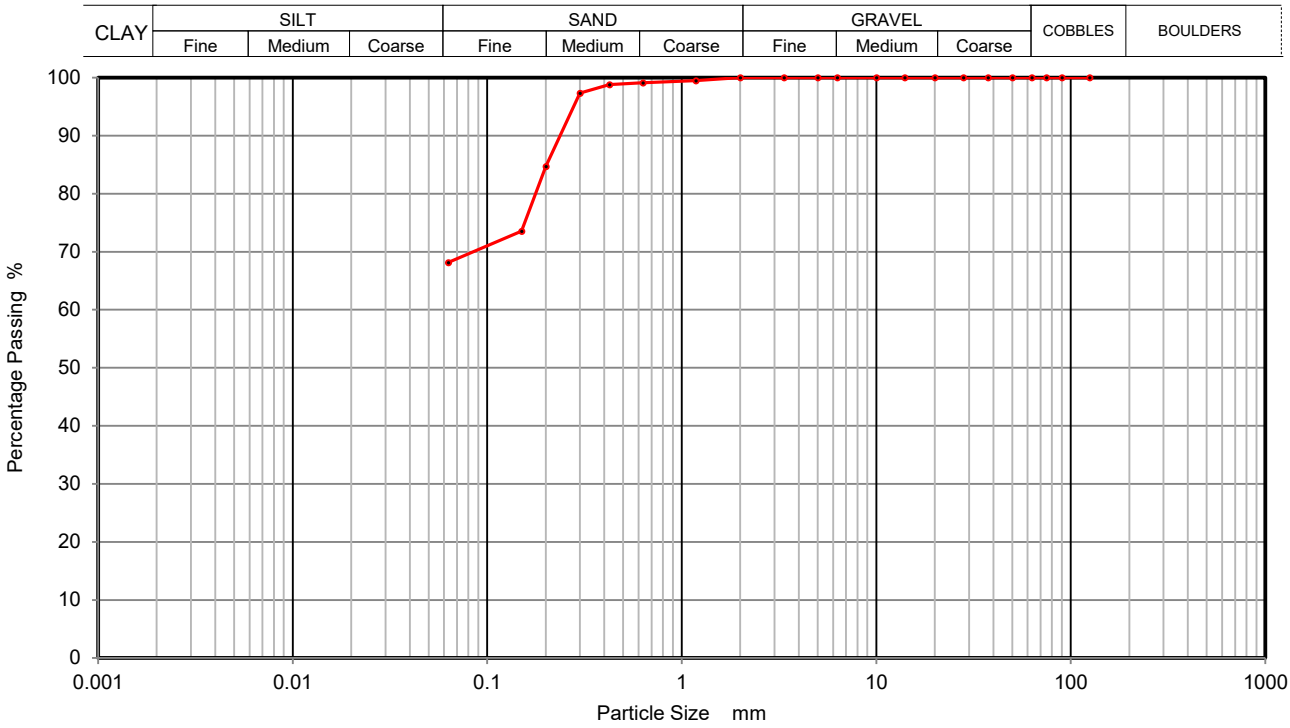
Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Corey. J

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**PARTICLE SIZE DISTRIBUTION BS 1377-2:2022 Clause 10 & BS EN ISO 17892-4:2016 Wet Sieve, Clause 5.2**	Contract Number	**84923**
		Borehole/Pit No.	**WS4**
Project Name	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Sample No.	**8**
Sample Description	Brown fine to coarse sandy SILT/CLAY	Depth Top	**2.90**
		Depth Base	**3.00**
Date Tested	03/03/2026	Sample Type	**D**



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.63	99		
0.425	99		
0.30	97		
0.20	85		
0.15	74		
0.063	68		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	32
Silt and Clay	68

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Corey. J

Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP1**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet, harder MG**		Zero Error (mm): **20**	Approx AOD (m):

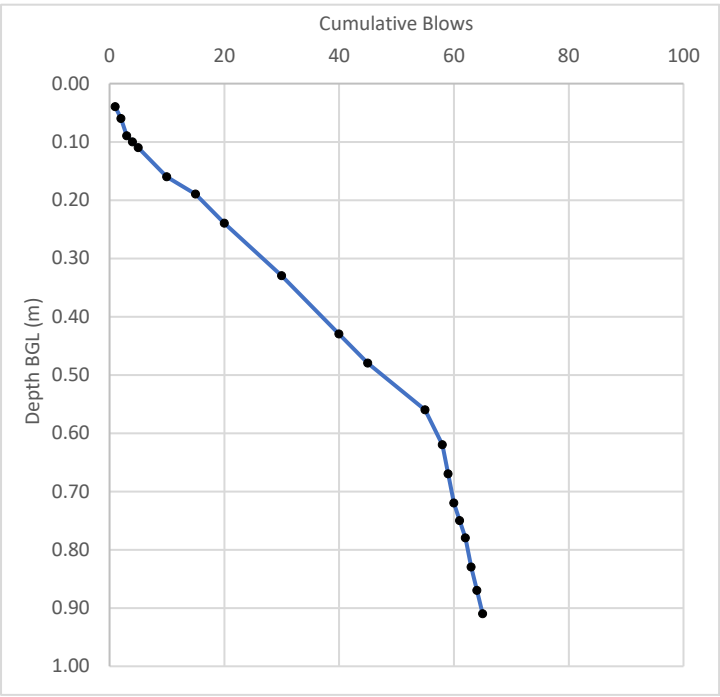
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		30	0.010	-0.010		
1	1	60	0.040	-0.040	30.0	8.3
1	2	80	0.060	-0.060	20.0	12.7
1	3	110	0.090	-0.090	30.0	8.3
1	4	120	0.100	-0.100	10.0	26.5
1	5	130	0.110	-0.110	10.0	26.5
5	10	180	0.160	-0.160	10.0	26.5
5	15	210	0.190	-0.190	6.0	45.4
5	20	260	0.240	-0.240	10.0	26.5
10	30	350	0.330	-0.330	9.0	29.6
10	40	450	0.430	-0.430	10.0	26.5
5	45	500	0.480	-0.480	10.0	26.5
10	55	580	0.560	-0.560	8.0	33.5
3	58	640	0.620	-0.620	20.0	12.7
1	59	690	0.670	-0.670	50.0	4.8
1	60	740	0.720	-0.720	50.0	4.8
1	61	770	0.750	-0.750	30.0	8.3
1	62	800	0.780	-0.780	30.0	8.3
1	63	850	0.830	-0.830	50.0	4.8
1	64	890	0.870	-0.870	40.0	6.1
1	65	930	0.910	-0.910	40.0	6.1

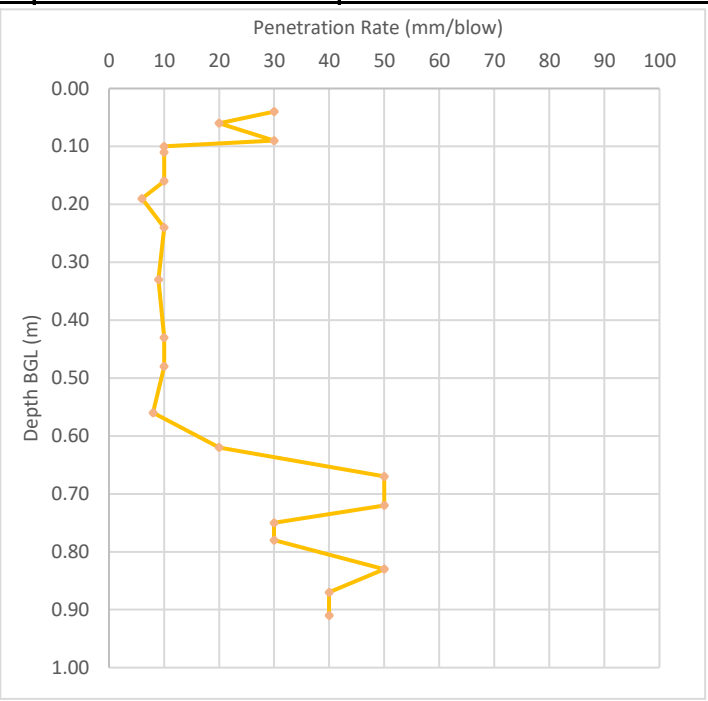
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

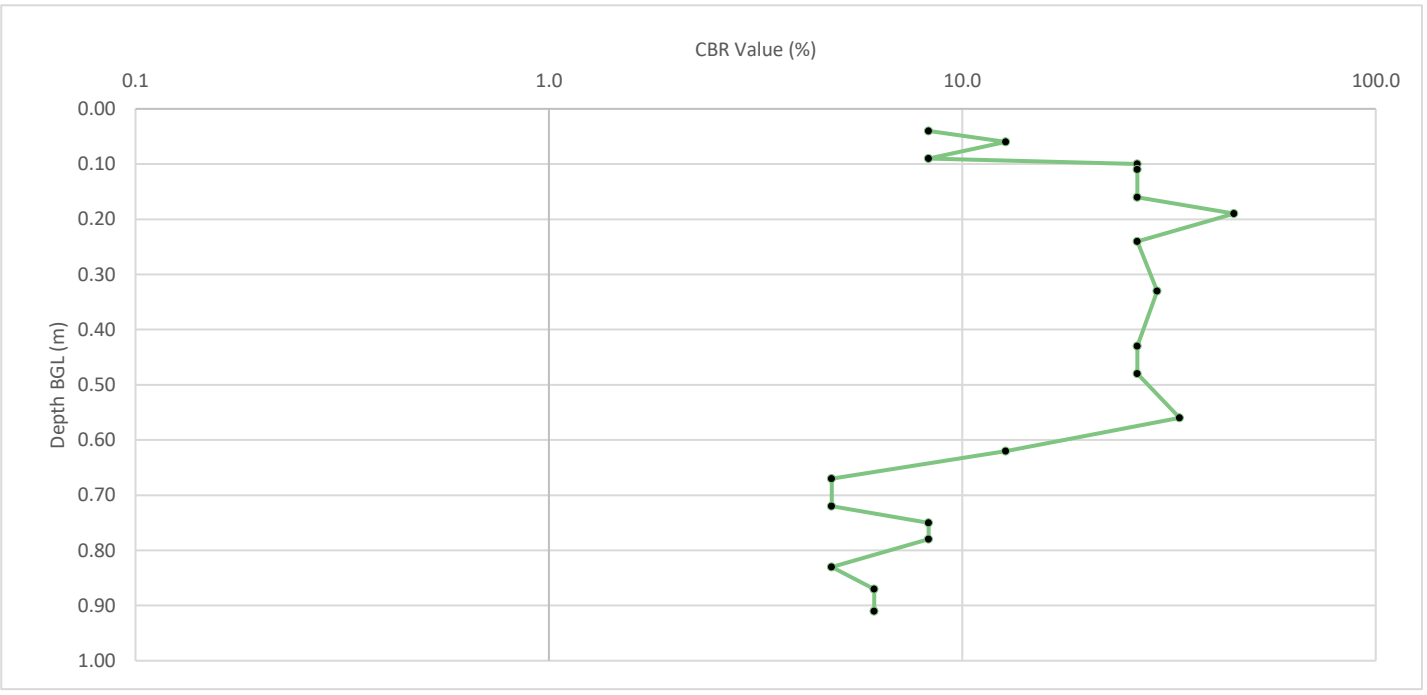
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP1**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet, harder MG**		Zero Error (mm): **20**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP2**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet**		Zero Error (mm): **20**	Approx AOD (m):

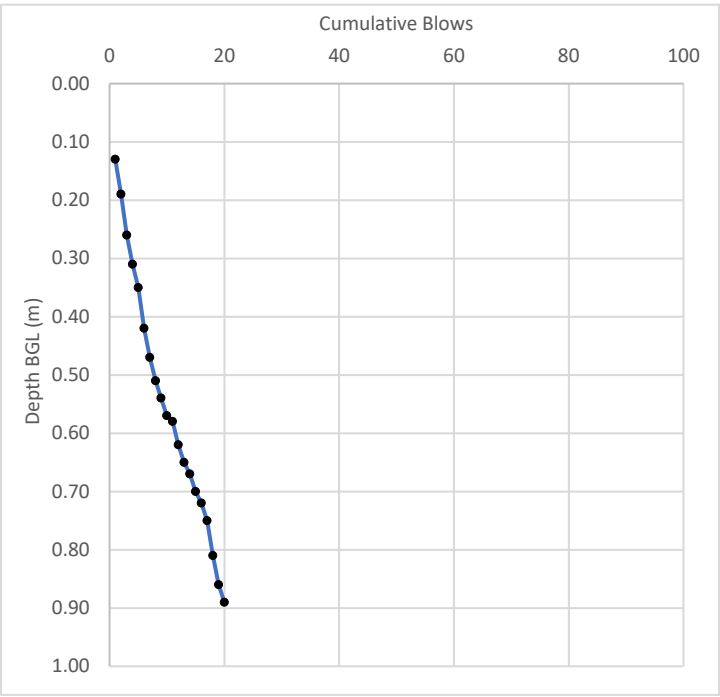
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		60	0.040	-0.040		
1	1	150	0.130	-0.130	90.0	2.6
1	2	210	0.190	-0.190	60.0	4.0
1	3	280	0.260	-0.260	70.0	3.4
1	4	330	0.310	-0.310	50.0	4.8
1	5	370	0.350	-0.350	40.0	6.1
1	6	440	0.420	-0.420	70.0	3.4
1	7	490	0.470	-0.470	50.0	4.8
1	8	530	0.510	-0.510	40.0	6.1
1	9	560	0.540	-0.540	30.0	8.3
1	10	590	0.570	-0.570	30.0	8.3
1	11	600	0.580	-0.580	10.0	26.5
1	12	640	0.620	-0.620	40.0	6.1
1	13	670	0.650	-0.650	30.0	8.3
1	14	690	0.670	-0.670	20.0	12.7
1	15	720	0.700	-0.700	30.0	8.3
1	16	740	0.720	-0.720	20.0	12.7
1	17	770	0.750	-0.750	30.0	8.3
1	18	830	0.810	-0.810	60.0	4.0
1	19	880	0.860	-0.860	50.0	4.8
1	20	910	0.890	-0.890	30.0	8.3

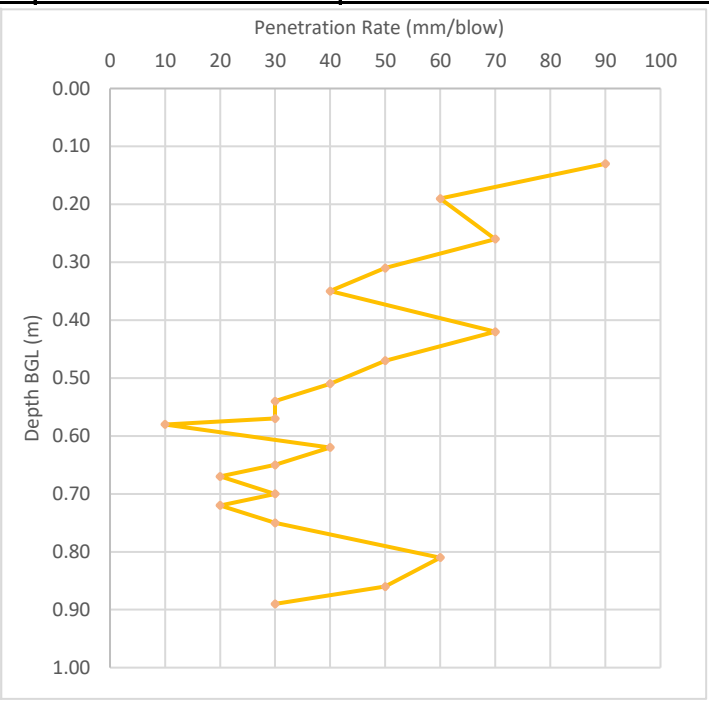
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

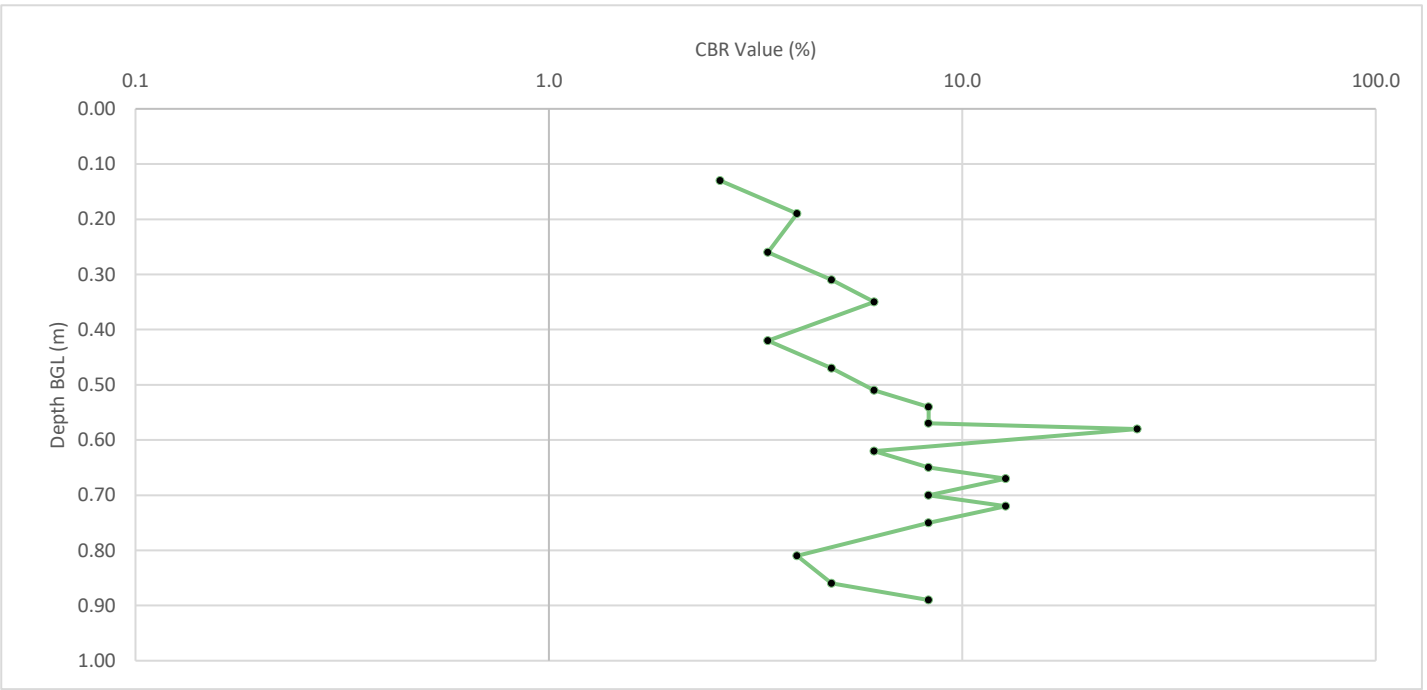
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP2**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet**		Zero Error (mm): **20**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP3**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet**		Zero Error (mm): **20**	Approx AOD (m):

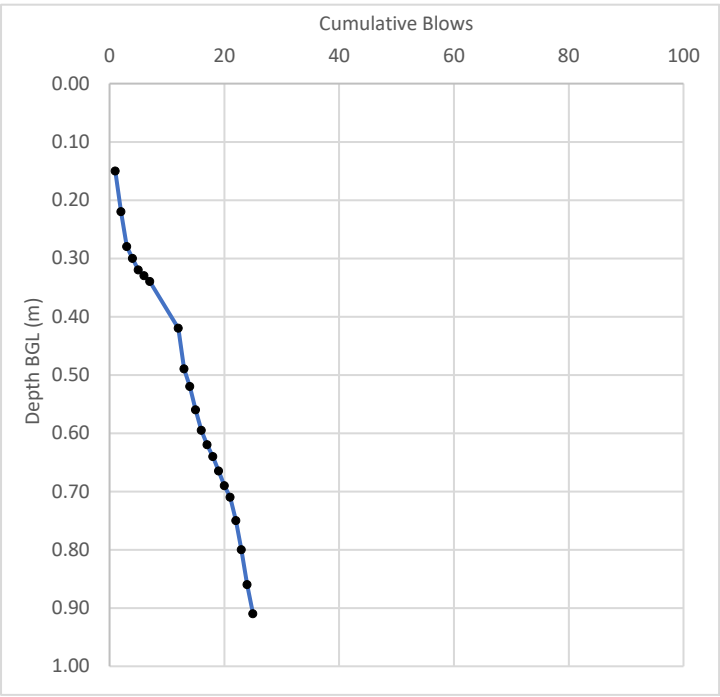
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		70	0.050	-0.050		
1	1	170	0.150	-0.150	100.0	2.3
1	2	240	0.220	-0.220	70.0	3.4
1	3	300	0.280	-0.280	60.0	4.0
1	4	320	0.300	-0.300	20.0	12.7
1	5	340	0.320	-0.320	20.0	12.7
1	6	350	0.330	-0.330	10.0	26.5
1	7	360	0.340	-0.340	10.0	26.5
5	12	440	0.420	-0.420	16.0	16.1
1	13	510	0.490	-0.490	70.0	3.4
1	14	540	0.520	-0.520	30.0	8.3
1	15	580	0.560	-0.560	40.0	6.1
1	16	615	0.595	-0.595	35.0	7.0
1	17	640	0.620	-0.620	25.0	10.1
1	18	660	0.640	-0.640	20.0	12.7
1	19	685	0.665	-0.665	25.0	10.1
1	20	710	0.690	-0.690	25.0	10.1
1	21	730	0.710	-0.710	20.0	12.7
1	22	770	0.750	-0.750	40.0	6.1
1	23	820	0.800	-0.800	50.0	4.8
1	24	880	0.860	-0.860	60.0	4.0
1	25	930	0.910	-0.910	50.0	4.8

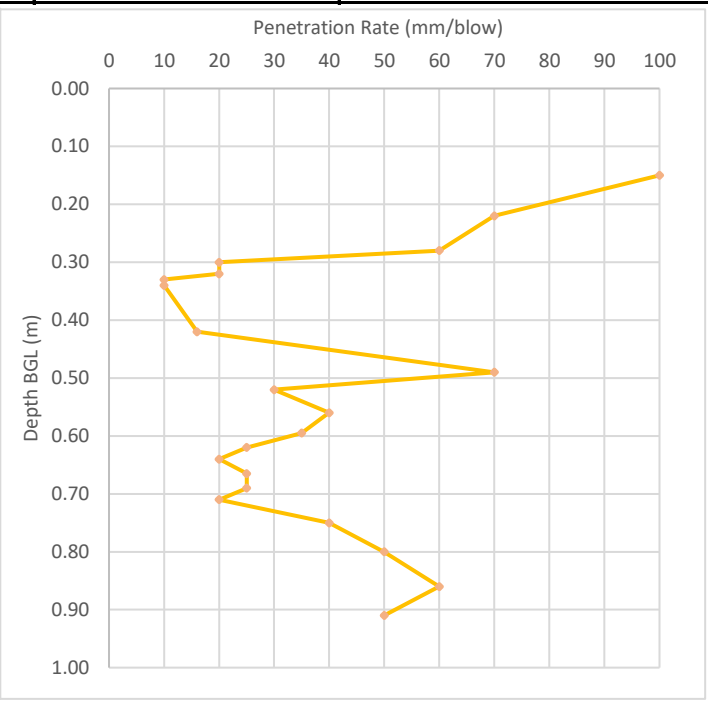
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

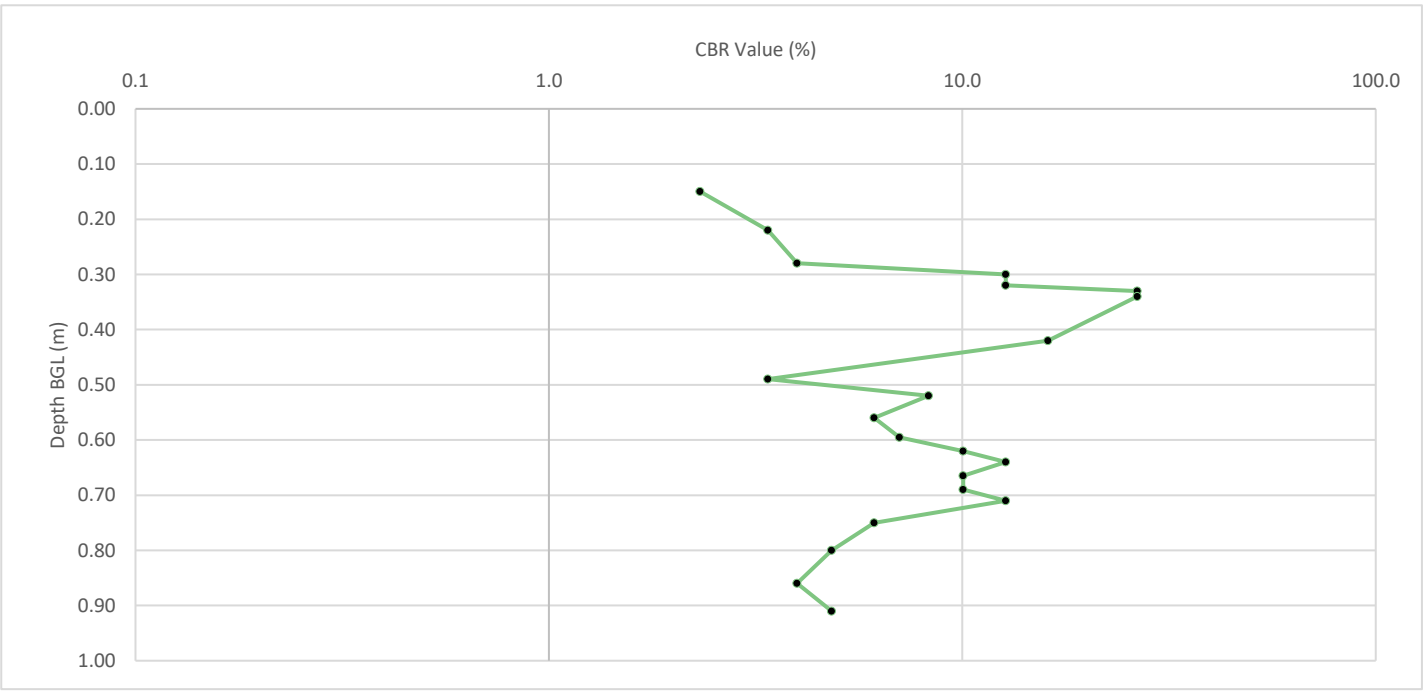
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP3**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet**		Zero Error (mm): **20**	Approx AOD (m):







Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP4**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet**		Zero Error (mm): **20**	Approx AOD (m):

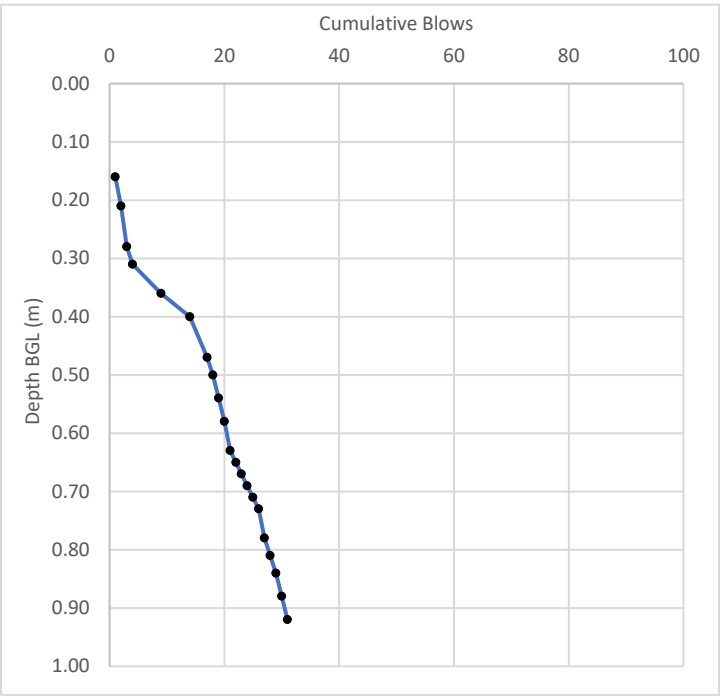
Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		80	0.060	-0.060		
1	1	180	0.160	-0.160	100.0	2.3
1	2	230	0.210	-0.210	50.0	4.8
1	3	300	0.280	-0.280	70.0	3.4
1	4	330	0.310	-0.310	30.0	8.3
5	9	380	0.360	-0.360	10.0	26.5
5	14	420	0.400	-0.400	8.0	33.5
3	17	490	0.470	-0.470	23.3	10.8
1	18	520	0.500	-0.500	30.0	8.3
1	19	560	0.540	-0.540	40.0	6.1
1	20	600	0.580	-0.580	40.0	6.1
1	21	650	0.630	-0.630	50.0	4.8
1	22	670	0.650	-0.650	20.0	12.7
1	23	690	0.670	-0.670	20.0	12.7
1	24	710	0.690	-0.690	20.0	12.7
1	25	730	0.710	-0.710	20.0	12.7
1	26	750	0.730	-0.730	20.0	12.7
1	27	800	0.780	-0.780	50.0	4.8
1	28	830	0.810	-0.810	30.0	8.3
1	29	860	0.840	-0.840	30.0	8.3
1	30	900	0.880	-0.880	40.0	6.1
1	31	940	0.920	-0.920	40.0	6.1

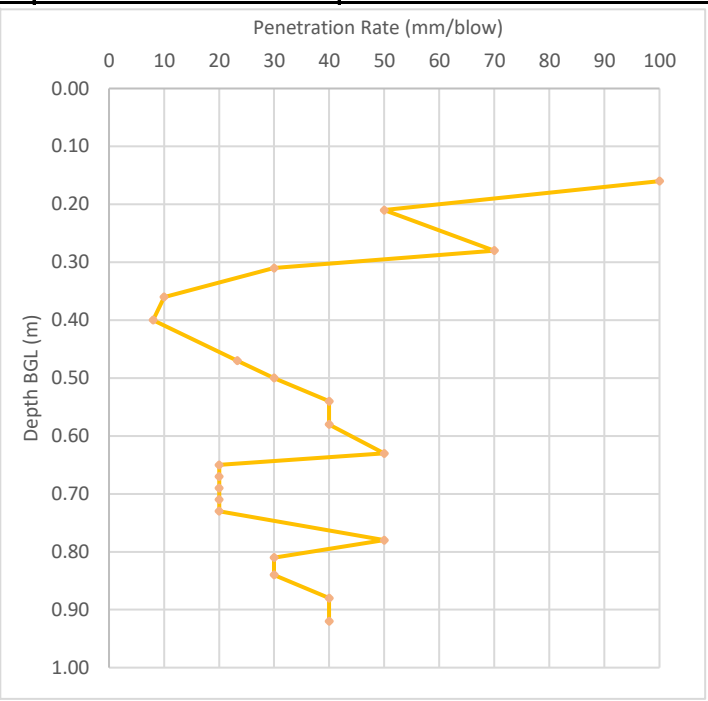
TRRL Road Note 8 Equation: Log_{10} (CBR) = 2.48 - 1.057 Log_{10} (mm/blow)

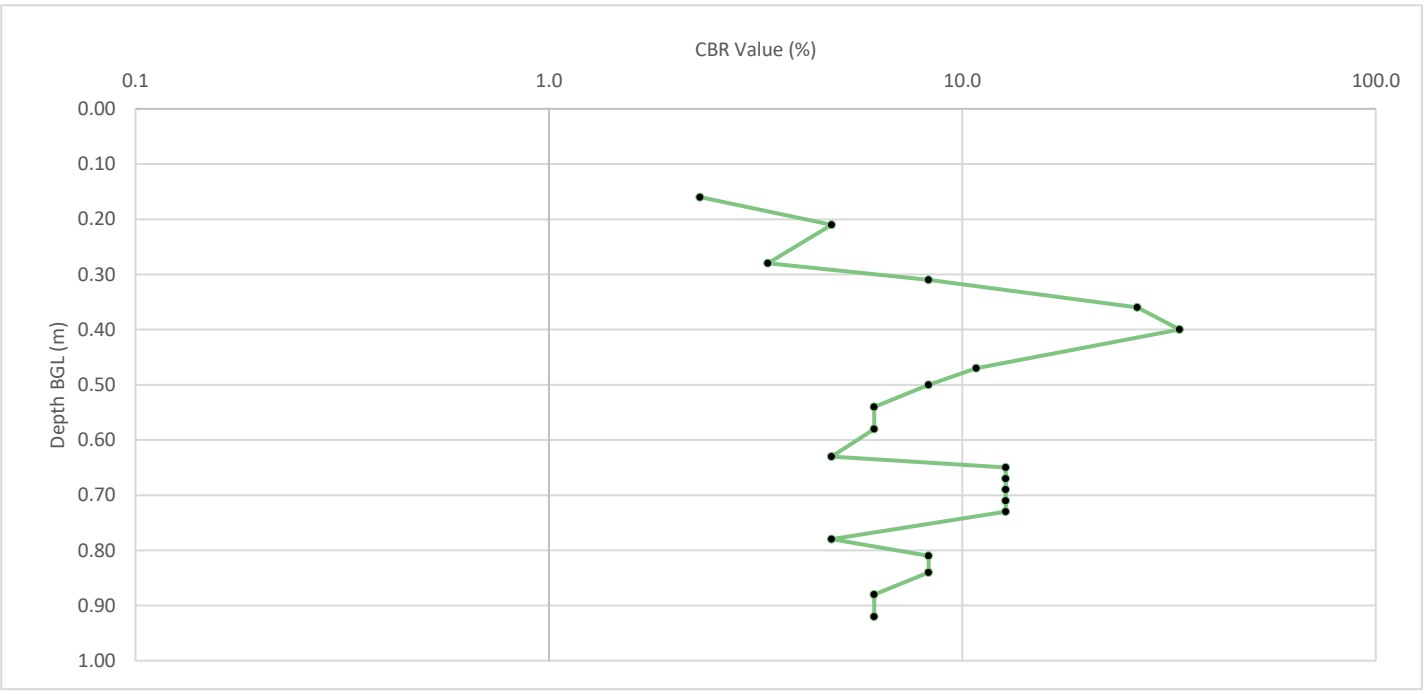
Cone Angle 60°

Dynamic Cone Penetrometer

Project:	**Garage Court, r/o 66-74 Farmlands, Joel Street, Pinner, HA5 2LN**	Project No: **25-262.01**	DCP Location: **DCP4**
Client:	**Kearns Developments Limited**	Operator: **OC**	Date: **19/02/2206**
Surface Conditions & Observations: **Slightly wet**		Zero Error (mm): **20**	Approx AOD (m):







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