



Report prepared at

Land west of Selsfield Road
Ardingly
West Sussex
RH17 6TH

On behalf of

Antler Homes plc

Report reference

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Prepared by

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 Antler Homes plc (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:

Land west of Selsfield Road, Ardingly, West Sussex, RH17 6TH (hereafter referred to as the “site”).

The PRA forms a tier 1 assessment with 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 (or contaminated land investigation) 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 west of Selsfield Road, at the junction of Cobb Lane and High Street (B2028), on the northern outskirts of Ardingly, approximately 6 kilometres (km) to the north of Haywards Heath. Figure 1 is presented as the Site Location Plan.
National Grid Ref.	Centred at approximately 534540, 129870.
Current Land Use	The site, an irregular shaped parcel of land, comprises open grassed fields in the southern section of the South of England Events Centre. Access to the site is provided in the east via South Gate, off Selsfield Road, and is surfaced in tarmac. Figure 2 is presented as the Existing Site Layout Plan.

Table 1.2: Site Details

	Figure 3 is presented as the Site Photographs.
Surrounding Land Use	The site is located in a rural setting to the south and east of the main South of England Event Centre, to the north of Ardingly cricket ground and to the west of residential premises on Selsfield Road, Cobb Lane and High Street.
Proposed Land Use	The proposed development comprises the construction of 35 new homes in a mix of detached, semi-detached and attached houses with private gardens, a new access road, a SUDS basin and LAP, and landscaped borders of open space. Figure 4 is presented as the Proposed Development Plan.

1.3 SITE WALKOVER SURVEY

A site walkover survey was undertaken and included an inspection of the site and surrounding area, where safe and accessible. The purpose of the survey is 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	None observed.
Basements	None observed.
Visual Topography and Site Surfacing	A Wider Overlay drawing by Flight Surveys (reference 044-SRA-107, 5 Aug 2025) supplied by the Client indicates that the site slopes gently downwards in a south-westerly direction from approximately 124.5 metres (m) above Ordnance Datum (AOD) in the northeast to 118.5m AOD in the southwest. The site is surfaced mostly in grass, and locally with tarmac along part of the access road, and gravel along tracks inside the western boundary and into the centre of the site.
Retaining Structures and Slopes	The site slopes gently downwards in a south-westerly direction.
Drainage Issues	None observed.
Surface Waters	None observed.
Trees and Hedges	Mature and semi-mature trees and hedges line all but the western the boundary, as well as sparsely wooded areas internally in the southeast.

Table 1.3: Summary of Site Walkover Survey

Made and Infilled Ground	Made ground should be anticipated beneath the tarmac and gravel access road and tracks.
Contaminative Characteristics	
Above or Underground Storage Tanks (ASTs/USTs) and Drums	None observed.
Fuel Interceptors	None observed.
Waste Storage and Disposal	None observed.
Hazardous Material Storage and Use	None observed.
Asbestos Containing Materials (ACMs)	None observed.
Boiler Houses	None observed.
Sub-stations	None observed.
Surface Staining	None observed.
Potentially Contaminative Activities	No potentially contaminative activities observed.

1.3.1 Summary of Physical Site Characteristics

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

1.3.2 Summary of Contaminative Site Characteristics

No significant potentially contaminative activities observed.

2.0 DESK STUDY REVIEW

Historical Ordnance Survey (OS) maps were obtained as part of the Envirocheck database search within report package reference 402679047 dated 18 May 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
1875 (1:2,500) 1879 (1:10,560)	The site is shown to have comprised undeveloped land adjacent to the later named Selsfield Road. Tree-line field boundary separating the site, east from west. Trig station marked in the southwest of the site. The southwestern site extents are defined at this time by a field boundary and track.	The site is in a predominately rural area, with the later named Selsfield Road to the east. Several areas of worked ground within 500m of the site including a quarry and a brick field. Gravel pit marked to within 50m south of the site in Gowers Wood. Water wells and ponds marked in the wider site area. Cobb Brook 290m to the northeast, and a spring 300m to the southwest.
1897 (1:2,500) 1899 (1:10,560) 1910 (1:2,500) 1912 (1:10,560) 1937 (1:2,500) 1947 (aerial photograph) 1952 (1:10,560)	The southeastern site extents are defined at this time by a field boundary, partly tree-lined by 1910. The aerial photograph shows that the field boundary separating the site, east from west, is no longer tree-lined.	Recreation ground marked against the southeastern site boundary, with a small, detached building shown by 1910. Old gravel pit to the south shown to have been extended to within 25m of the site, marked as Gower's Pit by 1910. Worked ground associated with the former brick field to the south shown as a brick works, with extended worked ground to the south. Partially infilling of the brick works shown by 1937. Other areas of worked ground marked as old gravel pits, and old quarry. Pair of semi-detached cottages marked to the east of the site at the end of Cobb Lane.
1956 (1:2,500) 1963 (1:10,560)	No notable changes identified.	Small, detached building in the recreation ground to the south, marked as a pavilion. Residential development noted in Gowers Close to the southeast.

Table 2.1: History of the Site and Surrounding Land

Date (scale)	Site History	Surrounding Land History
1972-77 (1:2,500) 1974-80 (1:10,000)	The site is shown within the grounds of a Showground (South of England Agricultural Society). An access road into the showgrounds is shown inside the northern site boundary.	Extensive showgrounds and showring marked to the north and west. Selsfield Road shown to have been widened. Additional pavilion shown within the recreation ground to the south. Former Gower's Pit shown to have been infilled, with progressive residential development shown in the area as Holmans. Worked ground of the former brick field to the south no longer marked and redeveloped as Munnion Road by 1974.
1982 (1:2,500)	No notable changes identified.	Smaller of the two former pavilions to the south no longer marked. Tennis courts shown within the former infilled Gower's Pit.
1993 (1:2,500) 1995 (1:2,500)	No notable changes identified.	St Peter's Primary School marked to the southwest.
1999 (aerial photograph) 2000-2026 incl. (1:10,000) 2026 current edition 2026 (aerial photograph)	Tracks marked inside the western boundary and entering the centre of the site. Sparse overgrowth and trees shown in the aerial photograph in the southeast.	Caravan and mobile home storage area marked to the north of the site.
Walkover	The site has remained in use as a showground since the 1970's.	No notable changes identified.
Note: All distances are approximate.		

2.1.1 Anecdotal Evidence

No anecdotal evidence made available prior to report writing.

2.1.2 Summary of Historical Landuses

A review of the historical Ordnance Survey maps show that the site comprised mostly undeveloped land until sometime prior to 1972, when the site was in use as a showground.

The surrounding area is mostly rural with several areas of former worked ground shown including gravel pits, quarries and a brick field.

Progressive residential development is noted in the site area, including the former Gower's Pit and the brick field to the south.

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 302 of Horsham, 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 None indicated on site	N/A	N/A	N/A	N/A
Superficial None indicated on site	N/A	N/A	N/A	N/A
Solid Cuckfield Stone Bed	Valanginian	1.5 to 4.4m, up to 8.3m	Sandstone, calcareous in part, fissile and flaggy with some parts showing cross-bedding, load casts and flute casts. Thin mudstone containing plant debris.	Secondary (A) aquifer

The Envirocheck report indicates that there no superficial strata within 250m of the site.

There is one reference to potentially infilled land (non-water) within 250m of the site, at the location of the former Gower's Pit, noted as Unknown Filled Ground (Pit, quarry etc), at a location 21m to the south.

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

2.2.2 Ground Conditions – BGS Borehole and Trial Pit Records

There are two available BGS recorded logs for historical drilling or excavation works for premises located within 500m the site. A summary of the records is included in Table 2.2.2 below.

Table 2.2.2: BGS Borehole Records			
BGS Reference	Distance from Site (Direction)	Geology (Depth to base, metres (m) below ground level (bgl))	Groundwater depth
TQ33SW12 South Of England Showground Ardingly Nov 2018	260m (NW)	Sandy CLAY to 8.0m bgl	Not encountered
TQ32NW77 Oak Inn Street Lane Ardingly BH2 Feb 2020	298m (S)	CLAY and flint to 2.0m bgl CLAY with interbedded bands of SANDSTONE to 15.0m bgl	Not encountered

2.2.3 Summary of Anticipated Ground Conditions

 Cuckfield Stone Bed – CLAY over CLAY interbedded with bands of SANDSTONE

2.2.4 Hydrogeology

The hydrogeology of the site has been determined by the solid geology of the Cuckfield Stone Bed, which is classified by the Environment Agency as a secondary (A) aquifer. According to the Environment Agency, Secondary (A) aquifers comprise permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

Both the Envirocheck report and the Environment Agency website (July 2026) indicate that the site is not located within an Environment Agency source protection zone (SPZ).

The groundwater vulnerability for the site is noted as 'Secondary Bedrock Aquifer - High Vulnerability' in connection with the Cuckfield Stone Bed.

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

The Envirocheck report indicates that there are no references to groundwater abstraction licences for premises within 1000m of the site, including for public potable water supply.

2.2.5 Hydrology

The nearest OS NGD water networks link is located 290m to the northeast of the site (a permanent surface level watercourse), comprising the Cobb Brook.

The Envirocheck report indicates that there are no references to surface water abstraction licences for premises within 1000m of the site, including public potable water supply.

The Envirocheck report indicates that there are no references to discharge consents, Local Authority pollution prevention and controls or pollution incidents to controlled waters within 250m of the site.

The site is not located in an area that is at risk of 'extreme flooding' or '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.

The Envirocheck report indicates that a small area in the southwest of the site is located in a 1 in 1000 year surface water 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 located within 250m of the site.

The Envirocheck report indicates that there is one reference to potentially infilled land (non-water) within 250m of the site, at the location of the former Gower Pit, marked on the historical mapping.

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	Nominal Made Ground is anticipated associated with the agricultural and possible equestrian use of the site, including beneath the access road and tracks within the site, the existing mounds and possibly other entry/exit points. Organic degradable material is not however expected, and the risk of ground gas generation from Made Ground is considered to be very low.
Alluvial Strata (CO ₂ + CH ₄)	Human health Explosion	Negligible	No alluvium within 250m of the site.
Landfills (CO ₂ + CH ₄)	Human health Explosion	Negligible	No landfills within 250m of the site.
Infilled Ground + Burial Sites (CO ₂ + CH ₄)	Human health Explosion	Low	Potentially infilled land within 250m of the site, at the location of the former Gower Pit, however now redeveloped as tennis courts surrounded by housing.
Coal and Mining (CO ₂ + CH ₄)	Human health Explosion	Negligible	Not located in a coal mining area. Non-coal mining area of Great Britain noted to be 'negligible'.
Soil Vapours	Human health Explosion	Negligible	Small scale lubricant storage and the electrical generating unit locally within the site the constitute soil vapour risks
COMBINED RISK RATING = LOW			

A low combined risk from ground gas ingress and explosion is considered, which has been increased from 'very low' on the basis the filling of the locally infilled ground is unknown.

It is recommended that gas monitoring is undertaken to complete the gas risk assessment.

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	No Hazard
Shrink-Swell Clay	No Hazard
Natural Cavities	None within 500m
Hazard	Mining Hazard Potential
BGS recorded mineral sites	60m S – Gower's Pit - Sandstone – <i>opencast, ceased</i> 60m S – Gower's Pit – Sand and Gravel – <i>opencast, ceased</i> 243m S – Ardingly Pit– Sandstone – <i>opencast, ceased</i>
Coal mining affected areas	Not located in a coal mining affected area
Man-made mining cavities	None within 500m
Mining instability	No Hazard
Non coal mining areas of Great Britain	Highly unlikely
Potential mining areas	No Hazard
Infilled Land	No potentially infilled land (non-water or water) recorded within the site extents.
Other mining/quarrying	None recorded within the site extents. Historical mapping indicates worked ground to within some 20m or so at the location of the former Gower's Pit.

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 hardstanding within the access road locally.
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, locally beneath the access road and tracks and the existing mounds.
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 locally 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.

Table 2.6: Preliminary Ground Hazards Summary

Ground Hazard	Plausible	Description
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. 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 'negligible'. 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 the requirements of cut and fill, the required bearing resistance of the proposed buildings and the influence of trees and root bowls.

A suitable ground investigation would confirm an appropriate foundation solution.

Shallow soakaway drainage may be effective in the Cuckfield Stone Bed soils subject to soil infiltration testing and groundwater monitoring.

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	1
Local Authority Pollution Prevention and Control Enforcements	0	0
Pollution Incidents to Controlled Waters	0	1
Substantiated Pollution Incident	0	0
Prosecutions	0	1
Registered Radioactive Substances	0	0
Records of Water Industry Act Referrals	0	0
Explosive Sites	0	0

Table 3.1: Statutory Registers and Authorisations

Item	0 – 250m	251 – 500m
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	1
Contemporary Trade Directory Entries	Contemporary Trade Directory Entries within the site or within 250m of the site: 249m SE: F W Mays Co Ltd - Car Dealers - Inactive	
Points of Interest - Manufacturing and Production	No Points of Interest - Manufacturing and Production Entries within the site or within 250m of the site:	
Underground Electrical Cables	0	0
Item	Immediate Vicinity	
Sensitive Land Uses	Site located in High Weald Area of Outstanding Natural Beauty Several areas of ancient woodland within 250m of the site, from 111m NE to 232m NE	

3.2 CONSULTEEES

3.2.1 Local Authority - Contaminated Land Officer

The Local 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	Key Contaminants of Concern	Description	Plausible?
1. Site-wide soil contamination	Metals, hydrocarbons (TPH/PAH), asbestos.	Limited risk of soil contamination within the site associated with current and historical land use.	Yes
2. Local soil contamination	Metals, hydrocarbons (TPH/PAH), asbestos.	Limited risk of soil contamination within the existing mounds. No on-site structures noted on the historical mapping, but an unidentified activity may have taken place, or temporary agricultural buildings may have been located on-site.	Yes
3. Asbestos	Asbestos	Limited risk of Asbestos Containing Soils (ACS) and Asbestos Containing Materials (ACMs). No buildings.	Yes
4. Groundwater	Groundwater may be located at shallow depth beneath the site.	Site is underlain by a secondary (A) aquifer. Not located in an SPZ.	Yes
5. Ground gases/vapours	Hazardous bio-ground gas. Complete routine bio-ground gas monitoring.	Significant hazardous ground gas sources are not anticipated on-site. However, potential for organic infilled materials at nearby former Gravel Pit and Brickfields	Yes

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; shallow geology comprising 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 secondary (A) aquifer. No potable water supply licences for premises within 1000m of the site. The site is not located in an SPZ.	Yes
Surface waters	Controlled water such as lakes, streams, rivers or coastal waters.	No main rivers within 250m of the site.	No
Ecological receptors	Sensitive areas of ecological significance defined under Part 2A of EPA 1990.	Site is located in High Weald Area of Outstanding Natural Beauty.	Yes

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 Site-wide soil contamination	Construction workers	Direct contact	Unlikely	Mild	Very Low <i>Note 1.</i> Site in use as agricultural land or pasture. It is not occupied with buildings. No potential for significant made ground and contaminants that may normally be associated with any buildings.	1
	End users	Direct contact	Low Likelihood	Mild	Low <i>See Note 1.</i>	2
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low <i>Note 2.</i> Site is underlain by a secondary (A) aquifer. Domestic buildings off-site to the E and SW. Site predominantly soft surfaced.	3
	Soft landscaping	Root uptake	Unlikely	Mild	Very Low <i>Note 3.</i> Potential for significant Made Ground has not been identified.	4
	Water supply pipes	Direct contact	Low Likelihood	Mild	Low <i>Note 1.</i>	5
	Buildings & infrastructure	Direct contact	Low Likelihood	Mild	Low <i>Note 1.</i>	6
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low <i>Note 4.</i> Site is underlain by a secondary aquifer. The site is not located in an SPZ. Site predominantly soft surfaced, potential for significant Made Ground or contamination has not been identified.	7
	Surface water	Run-off	Unlikely	Mild	Very Low <i>Note 5.</i> No main rivers in the vicinity of the site. Cobb Brook 290m away.	8

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification	Linkage No.
					Limited pathway by geology to controlled water receptors.	
	Ecology	Direct contact via run-off	Unlikely	Mild	Low <i>See Note 2.</i>	9
Source 2 Local soil contamination	Construction workers	Direct contact	Unlikely	Mild	Very Low <i>Note 6.</i> Existing mounds locally. No other on site contaminative features identified, however may have included temporary activities or unmarked buildings historically. Local Made Ground possible at site entry points and along the access road and tracks and mounds.	10
	End users	Direct contact	Low likelihood	Mild	Low <i>See Note 6.</i>	11
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Low <i>See Note 6.</i>	12
	Soft landscaping	Root uptake	Low likelihood	Mild	Low <i>See Note 6.</i>	13
	Water supply pipes	Direct contact	Low likelihood	Mild	Low <i>See Note 6.</i>	14
	Buildings & infrastructure	Direct contact	Low likelihood	Mild	Low <i>See Note 6.</i>	15
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low <i>See Note 4.</i>	16
	Surface water	Run-off	Unlikely	Mild	Very Low <i>See Note 5.</i>	17
	Ecology	Direct contact via run-off	Unlikely	Mild	Very Low <i>See Note 2.</i>	18

Table 4.5: Initial Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification	Linkage No.
Source 3 Asbestos	Construction workers	Inhalation	Low likelihood	Minor	Very Low <i>Note 7.</i> No potential for ACMs due to absence of buildings.	19
	End users	Inhalation	Low likelihood	Minor	Low <i>See Note 7.</i>	20
	Adjacent land users	Inhalation	Unlikely	Mild	Very Low <i>See Note 7.</i>	21
Source 4 Groundwater	Construction workers End users Adjacent land users Water supply pipes	Direct contact	Unlikely	Mild	Very Low <i>Note 8.</i> Site is underlain by a secondary aquifer. The site is not located in an SPZ. Site predominantly soft surfaced, but pathway partially restricted by geology to controlled water receptors. Groundwater contamination from site unlikely as risk of soil contamination is low.	22
	Soft landscaping	Root uptake	Unlikely	Mild	Very Low <i>See Note 8.</i>	23
	Groundwater Surface water Ecology	Lateral migration through hydrogeology	Unlikely	Mild	Very Low <i>See Note 8.</i>	24
Source 5 Ground gases and Soil vapours (on/off site source)	Construction workers	Inhalation of vapours/gas	Unlikely	Minor	Very Low <i>Note 9.</i> No significant notable sources of ground gas identified, however, unknown infilled land/gravel pits/brickfields locally identified from historical searches.	25
	End users	Inhalation of vapours/gas	Low likelihood	Mild	Low <i>See Note 10.</i>	26

The overall environmental risk classification for the site is considered to be generally **LOW** for the site.

4.5 CONSIDERATIONS FOR SITE INVESTIGATION

Further site investigation should comprise the following:

1. **Investigation of soil contamination.** This should be completed on both a spatial basis and targeted to the existing mounds. Spatial coverage should be achieved in order to target 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).
2. **Investigation of hazardous bio-ground gases and soil vapours.** Monitoring wells should be installed to enable suitable bio-ground gas and vapour monitoring.

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.

- 🌱 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.**

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.

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 statutory 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', BSEN ISO 17892 Parts 1-12, 'Geotechnical investigation and testing. Laboratory testing of soil', 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 22 and 23 June 2026.

Table 4.2: Rationale of the Site Investigation Positions	
Locations and Rationale	Monitoring Wells
Window Sample (WS) Boreholes	
WS1 to WS6 were positioned around the development area of the site to provide spatial coverage targeting the proposed development buildings, and shallow soils for sampling and testing. The boreholes were also located adjacent and remote from trees to determine corresponding material properties profiles.	Monitoring wells were installed into WS1, WS4 and WS6 to enable gas and groundwater monitoring.
Trial Pits (SP, TP)	
SP1 to SP4 were positioned around the site for sampling and testing and to enable soil infiltration testing for soakaway design. TP1 to TP3 were positioned within the existing mounds for sampling and testing and to enable a visual assessment of the ground conditions.	Not installed.

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 WS6 were drilled to depths of up to 3.8m bgl using 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 3.8m bgl within the boreholes in accordance with BS EN SO 22476-3 "Standard Penetration Test 2005". Drilling refusal (SPT N>50) occurred routinely at depths of between 1.0m and 3.8m bgl where the drilling was terminated to prevent damage to the drilling rig and jamming the tooling. The original drilling depth of 5.0m bgl was therefore not achieved.

Disturbed soil samples were also collected from bored arisings for geochemical sampling and laboratory testing for screening for human health risk assessment and geotechnical laboratory tests which are further discussed within section 6.0.

5.2.2 Trial Pitting

Four trial pits (SP1 and SP4) were excavated using a 2.5 tonne 360-degree tracked excavator to depths of up to 2.0m bgl, to determine the shallow ground conditions across the site and to enable soil infiltration testing.

Three further trial pits (TP1 to TP3) were also excavated using a 2.5 tonne 360-degree tracked excavator to depths of up to 1.4m bgl, to visually assess the shallow ground conditions within the existing mounds and to enable geochemical sampling and laboratory testing for screening for human health risk assessment.

The trial pits also complement the window sample boreholes targeting specific areas of the site and to assess the overlying ground conditions.

5.2.3 Dynamic Cone Penetrometer (DCP/TRL)

Seven Dynamic Cone Penetrometer (DCP) tests (DCP1-DCP7) 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 aforementioned 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)
Reworked Topsoil/ Made Ground	Clayey silty gravelly SAND. Extending to greater depth in TP1-TP3 within the mounds.	GL	0.3 – 0.8
Cuckfield Stone Bed	Interbedded firm and stiff becoming very stiff silty sandy gravelly CLAY, and medium dense and dense becoming very dense clayey silty gravelly SAND and sandy GRAVEL.	0.3 – 0.8	3.8+

5.3.1 Field Observations

No visual or olfactory evidence of contamination noted during the investigation works.

Roots and rootlets were recorded locally in WS1 to 1.2m, SP2 to 0.1m TP1 to 0.7m and TP2 to 0.6m bgl.

5.4 GROUNDWATER LEVELS

5.4.1 Groundwater Levels: During Site Investigation Works

Groundwater encountered during the site investigation works is detailed in table 5.4.1.

Table 5.4.1: Groundwater During Investigation

Location	Depth – bgl (during GI)	Comments
WS1-WS6	Dry to depths of up to 3.8m bgl	No groundwater encountered during the ground investigation works
SP1-SP4	Dry to depths of up to 2.0m bgl	
TP1-TP3	Dry to depths of up to 1.4m bgl	

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)-1.0	1.0-3.8	3.8
WS4	GL-1.0	1.0-1.0	1.0
WS6	GL-1.0	1.0-2.8	2.8

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 WS4	Depth – bgl WS6
6 July 2026	Dry to 3.82m	Dry to 1.0m	Dry to 2.87m

No groundwater was encountered during the return monitoring to the maximum installed depth of 3.82m bgl.

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 which were collected and submitted for geochemical analysis.

Table 5.1: Soil Geochemical Testing			
Location	Strata Sampled	Objective	Analysis
WS1 (0.1m)	Reworked Topsoil/ Made Ground	Shallow sample to determine baseline concentrations of Reworked Topsoil/Made Ground in the northeast of the site	ES-1
WS4 (0.2m)	Reworked Topsoil/ Made Ground	Shallow sample to determine baseline concentrations of Reworked Topsoil/Made Ground in the centre-west of the site	ES-1
WS6 (0.3m)	Reworked Topsoil/ Made Ground	Shallow sample to determine baseline concentrations of Reworked Topsoil/Made Ground in the southwest of the site	ES-1
WS2 (0.8m)	Natural Clay	Deeper sample to determine baseline concentrations of natural strata in the east of the site	ES-1
WS5 (0.6m)	Natural Clay	Deeper sample to determine baseline concentrations of natural strata in the southwest of the site	ES-1
TP1 (0.4m)	Reworked Topsoil/ Made Ground	Shallow sample to determine baseline concentrations of Reworked Topsoil/Made Ground in the existing mound at the location of the proposed SUDS basin	ES-1
TP2 (0.3m)	Reworked Topsoil/ Made Ground	Shallow sample to determine baseline concentrations of Reworked Topsoil/Made Ground in the existing mound at the location of the proposed SUDS basin	ES-1
TP3 (0.6m)	Reworked Topsoil/ Made Ground	Shallow sample to determine baseline concentrations of Reworked Topsoil/Made Ground in the existing mound in the west of the site	ES-1
COMP (0.1-0.3m)	Reworked Topsoil/ Made Ground	Representative sample of Reworked Topsoil/Made Ground to enable waste soil classification.	Waste Acceptance Criteria (WAC)

Chemical sampling and testing targeted the overlying units of Reworked Topsoil/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.

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 Limited (i2).

6.2 SOIL GEOTECHNICAL TESTING

A programme of geotechnical laboratory testing was undertaken at Geotechnical Site and Testing Laboratories Limited (GSTL) and i2. Testing was completed on the fine and chalk soils encountered beneath the site. The test procedures used were generally in accordance with the methods described in BS1377-1:2016 and/or BS EN ISO 17892. 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) <i>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</i>	BS EN ISO 17892 Part 1: 2014+A1:2022 Water content Part 12: 2018 +A2:2022 Liquid & plastic limit	4 (4)
Particle Size Distribution (PSD) <i>The objective of PSD testing is to determine grading of coarse (sand and gravel) soils</i>	BS EN ISO 17892 Part 4: 2016	6
Aviron LC Suite - pH, water soluble sulphate, total sulphate & total sulphur <i>To enable concrete classification to be specified</i>	UKAS accredited	10 (including 8 within the Suite 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 proposed development and end use.

The site investigation shall collect soil samples whereby determinant chemical measured in the soil through laboratory analysis have been compared with guidance values which are appropriate to the receptor under consideration. The guidance values or screening criteria applied shall be industry adopted generic values which following a screening of the laboratory analysis shall determine whether or not a site is contaminated, as defined under Part IIA of the EPA 1990 and specification in regard of the proposed development and identified receptors.

Where exceedances of guidance values or recorded a GQRA is can be used to appraise risk and make recommendations in regard of 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.

Details of the methodology and Aviron's position on the adoption of guidance values is outlined below.

The available chemical data, from soil samples tested, is sorted into appropriate datasets depending on sampling regime and ground conditions. An initial GQRA is completed using the relevant and industry available screening criteria and where appropriate, statistical modelling. Risks to human health shall be initially assessed by comparing soil chemical data against various published screening criteria. These have been sourced from the following and in 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.

Aviron have adopted the above hierarchy in response to LCRM recommendations.

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.

8.0 ASSESSMENT OF GEOCHEMICAL SOIL RESULTS

Development proposed include private gardens and therefore the residential with homegrown produce from the guidance listed in section 6.2 shall be selected.

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 on the basis of the average SOM values. Laboratory certificates of chemical analysis are presented in **Appendix IV** along with the chemical assessment criteria.

8.1 ASSESSMENT OF SOIL GEOCHEMICAL RESULTS

Table 7.1 provides a summary of the exceedances of geochemical results for each sample analysed when compared to the relevant assessment criteria.

Table 7.1: Summary of Geochemical Exceedances				
Location	Strata	Determinant	Measured Conc. (mg/kg)	Guidance Conc. (mg/kg)
WS1 (0.1m)	Reworked Topsoil/ Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
WS4 (0.2m)	Reworked Topsoil/ Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
WS6 (0.3m)	Reworked Topsoil/ Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
WS2 (0.8m)	Natural Clay	All determinants recorded at acceptable concentrations	n/a	n/a
WS5 (0.6m)	Natural Clay	All determinants recorded at acceptable concentrations	n/a	n/a
TP1 (0.4m)	Reworked Topsoil/ Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
TP2 (0.3m)	Reworked Topsoil/ Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
TP3 (0.6m)	Reworked Topsoil/ Made Ground	All determinants recorded at acceptable concentrations	n/a	n/a
COMP (0.1-0.3m)	Reworked Topsoil/ Made	WAC test suggests inert waste soil	n/a	n/a

	Ground			
Notes: Barium EIC Generic Acceptance Criteria (EIC GAC) is 1300mg /kg (Residential) Chromium is assumed to be chromium II (not chromium IV).				

7.2 DISCUSSION OF SOIL GEOCHEMICAL EXCEEDANCES

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, of a light agricultural nature, have not chemically impacted the site.

7.3 WASTE MANAGEMENT

WAC test results for soil 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 low combined risk from ground gas ingress and explosion is considered as a result of material, which could be organic, and may have been infilled into local and historical gravel pits and brickfields.

The installation of the monitoring wells have suitable response zones to enable the capture of ground gases which may possibly migrate through granular and fractured 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 (CO₂) and oxygen (O₂) 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?
6 July 2026	1002mb	Steady	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	1.1	3.4	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	17.1	19.2	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)	Very low (PID) concentrations have 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)

Monitoring positions remained constant and intact. No replacement monitoring positions were installed during the period of this project. No damage was observed to the monitoring wells during works.

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 **0.0l/hr**.

Based on the GSV for carbon dioxide which is between below 0.07l/h the site would ordinality conform the Characteristic Situation 1 (CS1). However, during both monitoring events groundwater was above the response zone which may limited the migration of ground gases from the off-site potential source of ground gases (infilled land/brickfields/gravel pits within 250m).

Bio-ground gas protection is unlikely to be required however, it is recommended a prolonged period of gas monitoring is undertaken to complete the gas risk assessment, specifically to target worst-case conditions. This action will conclude the requirement for bio-ground gas protection.

9.5 RADON

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

Table 10.1 summarises the sources of contamination are considered to exist, following completion of the site investigation and interpretation of test results.

Table 10.1: Revised Sources		
Source	Description	Key Contaminants of Concern/Comments
Revised Potential Sources		
1r. Undiscovered contamination	Potential for undiscovered soil contamination during groundwater excavations.	Buried waste from agricultural uses. Ensure a watching brief during excavations.
2r. Bio-ground gases/vapours	Ground gas concentrations are considered to represent CS1 and gas protection is unlikely considered necessary.	
No Longer Considered to be Potential Sources		
Site-wide and local soil contamination	Based on the site history, the ground conditions beneath the site and the laboratory results it is not considered site-wide (or local) soil contamination exists at the site.	n/a
Groundwater	Groundwater contamination is not considered to exist beneath the site	n/a
Bio-ground gases/vapours	Ground gas concentrations are considered to represent CS1 and gas protection is not considered necessary.	n/a

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 <i>Note 11.</i> No evidence of soil contamination following investigation. However, there is a small possibility of	1

Table 10.2: Refined Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification	Linkage No.
					undiscovered contamination. Action. Enact a Watching Brief during groundworks.	
	End users	Direct contact	Unlikely	Mild	Very Low <i>See Note 11.</i>	2
	Adjacent land users	Direct contact via run-off	Unlikely	Mild	Very Low <i>See Note 11.</i>	3
	Soft landscaping	Root uptake	Unlikely	Mild	Very Low <i>See Note 11.</i>	4
	Water supply pipes	Direct contact	Unlikely	Mild	Very Low <i>See Note 11.</i>	5
	Buildings & infrastructure	Direct contact	Unlikely	Mild	Low <i>Note 12. Non-aggressive ground conditions encountered. See section 11.7.</i>	6
	Groundwater	Vertical migration through hydrogeology	Unlikely	Mild	Very Low <i>See Note 11.</i>	7
	Surface waters	Vertical and lateral migration through hydrogeology	Unlikely	Mild	Very Low <i>See Note 11.</i>	8
	Ecology	Direct contact via run-off	Unlikely	Mild	Very Low <i>See Note 11.</i>	9
2r. Bio-ground gases/vapours	Construction workers	Inhalation of vapours/gas	Unlikely	Mild	Very Low <i>Note 13. Ambient gaseous concentrations. Very low risk in outdoor air.</i>	10
	End users	Inhalation of vapours/gas	Low likelihood	Mild	Low <i>Note 14. Ambient gaseous concentrations and low flow rates suggesting a GSV of CS1.</i> Action. Continue to gas monitoring during periods of	11

Table 10.2: Refined Conceptual Site Model (for plausible pollutant linkage pathways)

Source	Receptor	Pathway	Probability	Consequence	Risk & Justification	Linkage No.
					worst-case conditions to complete the gas risk assessment.	

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.

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 Topsoil 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 neither 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 Low combined risk from ground gas ingress and explosion is considered, whereby a limited potential source of bio-ground gas is considered to be potentially infilled land at the location of former brickfields and gravel pits within 250m of the site.

To further evaluate ground gas risk one round of monitoring has been completed 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 unlikely to be required however, it is recommended a prolonged period of gas monitoring is undertaken to complete the gas risk assessment, specifically to target worst-case conditions. This action will conclude the requirement for bio-ground gas protection.

10.3.7 Risk from Radon

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.

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 level 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 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)
Reworked Topsoil /Made Ground	Clayey silty gravelly SAND. Extending to greater depth in TP1-TP3 within the mounds.	GL	0.3 – 0.8	0.47
Cuckfield Stone Bed	Interbedded firm and stiff becoming very stiff silty sandy gravelly CLAY, and medium dense and dense becoming very dense clayey silty gravelly SAND and sandy GRAVEL.	0.3 – 0.8	3.8+	-
Notes				
Desiccation noted locally to depths of up to 1.5m bgl.				
Groundwater				
No groundwater encountered during the investigation or return monitoring to the maximum investigative or installed depth of 3.8m bgl (June/July 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:

- 🌳 Medium volume change potential CLAY soils and the influence of trees.
- 🌳 Desiccated CLAY soils locally to depths of 1.5m bgl (WS1, WS2, SP1).
- 🌳 Adequate bearing resistance to support the proposed development buildings.
- 🌳 Requirements of temporary works in coarse and potentially spalling soils.

The CLAY soils present at shallow depth beneath the site are of high plasticity and medium volume change potential, and the SAND and GRAVEL are of negligible volume change potential.

Assumed maximum 'characteristic action' (or line load) of 140kN/m run on conventional shallow foundations 1.0m wide on either at least firm CLAY or medium dense SAND and GRAVEL, at the anticipated foundation formation level of between 1.0m and 1.5m bgl may be acceptable for the proposed buildings subject to the above considerations. Further adjustments to foundation depths may be required due to the influence of trees, in accordance with NHBC Chapter 4.2, Building Near Trees.

It is assumed that the 'characteristic actions' 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 and breaking equipment. Locally where drilling refusal occurred (SPT $N > 50$) at relatively shallow depth, more substantial machinery may be required.

11.2.1 Temporary Works

From the ground investigation undertaken, excavations in the natural fine soils may remain stable in the short term. However, due to the potential for coarse and potentially spalling soils, and the requirements for excavations to facilitate the construction, 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, and temporary support may be required in order to achieve this.

Further advice should therefore 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

No groundwater was encountered during the investigation works or the return monitoring to the maximum investigative or installed depth of 3.8m bgl (as of June/July 2026).

On the basis of the data obtained; dewatering is not expected to be required in shallow excavations beneath the site (as of June/July 2026).

11.3 EXISTING SERVICES/SUBSTRUCTURES

Due to the historical use of the site and site environs, existing services or sub-structures should be anticipated.

Where foundations or obstructions 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 at least firm CLAY and medium dense SAND and GRAVEL at the anticipated foundation formation level of 1.0m to 1.5m 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 samples at depths of 1.0m and 1.5m bgl indicate that the fine soils across the site comprise inorganic CLAY of high plasticity (CH). The modified plasticity index was determined to be between 19% and 30% indicating soils of medium and locally low volume change potential (VCP).

The results of particle size distribution analysis indicate that the coarse soils comprise clayey silty sandy GRAVEL of negligible VCP. The fine soils are shown to comprise silty sandy very gravelly CLAY.

For the purposes of this assessment and in accordance with NHBC Standards Chapter 4.2, Building Near Trees, the CLAY soils across the site are classified as being of medium volume change potential and the coarse SAND and GRAVEL are of negligible volume change potential.

11.4.2 Desiccation

Using the ratio of the moisture content (MC) to the liquid limit (LL) (an empirical indicator of desiccation, after Driscoll, 1983), the test results indicate that the CLAY strata across the site are potentially desiccated (MC:LL ratio 0.27-0.32). Although the soils the Cuckfield Stone Bed are known to be heavily overconsolidated, where a MC:LL ratio of <0.5 is typical, an assessment in accordance with BRE Digest 412 Desiccation in Clay Soils, 1996, including a number of material properties and shear strength profiles indicates that desiccation is expected to have occurred locally to depths of 1.5m bgl (WS1, WS2, SP1).

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.

Mitigation measures to prevent heave in the desiccated soils and fine soils encountered across the site should be incorporated into the below ground construction within the influence of trees in accordance with NHBC 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

In the absence of laboratory triaxial test data a characteristic constant volume (also known as critical state) effective angle of shearing resistance ($\phi'_{cv,k}$) of 23° and 32° is assumed for the CLAY and SAND/GRAVEL beneath the site using the principles to establish the determinands in Table 2 and 3 of BS8004:2015+A1:2020, Code of Practice for Foundations, March 2020. It is assumed that the undrained cohesion of the fine soils is zero. The coarse soils are assumed to be rounded and moderately graded.

Characteristic values for design parameters for the strata encountered beneath the site are included in Table 11.4.3 below.

Table 11.4.3: Design Parameters			
Strata	Volume Change Potential	Unit Weight (kN/m ³)	Critical State Angle of Shearing Resistance (ϕ'_{crit})
CLAY	Medium	18-19	23
SAND/GRAVEL	Negligible	19	32

A characteristic value of undrained shear strength ($C_{U,k}$) of 70kN/m² is assumed for firm CLAY at the anticipated foundation level of 1.0m to 1.5m bgl. The characteristic value of undrained shear strength was derived using the results of the empirical relationships between C_U and the SPT N_{60} value ($E_r=69\%$, $N_{60}=14$), plasticity index after Stroud M.A and the results of laboratory testing (The Standard Penetration Test in Insensitive Clays and Soft Rocks, Proceedings of the European Symposium on Penetration Testing, 2, 367-376 (1975).

A characteristic value of the angle of shearing resistance (ϕ) of 32° has been assumed for the SAND and GRAVEL at the anticipated foundation formation level of 1.0m to 1.5m bgl, derived using the relationship between ϕ and the minimum SPT N-value (Er 69%, $N_{60} > 14$) 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.

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 V**.

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 across the site are classified as being of medium-volume change potential, and an adjustment to foundation depths in accordance with NHBC Standards Chapter 4.2, Building Near Trees, 2021 may therefore be required.

Should foundations be extended into SAND and GRAVEL soils, no further adjustment to foundation depths is required.

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 prevent heave in desiccated soils to 1.5m bgl (WS1, WS2, SP1) and the overlying CLAY soils encountered across the site within the influence of trees should be incorporated into the below ground construction in accordance with NHBC Chapter 4.2 Building Near Trees.

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

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

11.6 FOUNDATION TYPE, DEPTH AND ALLOWABLE BEARING PRESSURE

11.6.1 Trench Fill/Strip Foundations

Should the depths of foundations, the adjustments in accordance with NHBC Standards and the requirements of temporary works be overcome, conventional shallow foundations in at least firm CLAY and medium dense SAND and GRAVEL at the anticipated foundation formation depths of 1.0m to 1.5m bgl may be suitable for the proposed buildings.

Using assumed maximum vertical characteristic actions of 140kN/m run (1.0-1.5m bgl) 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) are less than the design value of the vertical bearing resistances (R_d) 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 1.5m, and also accounts for overburden. It is also assumed that groundwater will not rise above the base of foundations.

The vertical characteristic action of **140kN/m run** corresponds to the bearing resistance in Table 11.6.1 of **140kN/m²** when applied to trench fill foundations 1.0m wide constructed on at least firm **CLAY** and medium dense **SAND** and **GRAVEL** at depths of 1.0m to 1.5m bgl, in the area of 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	Approx. Depth BGL (m)	Footing Width (m)	Bearing Resistance (kN/m ²)	Comment
Firm CLAY/medium dense SAND/GRAVEL WS1, WS2, SP1	1.5	1.0	140	Extend foundations beneath potentially desiccated soils to 1.5m bgl. Consider medium volume change potential soils and adjustments to foundation depths in accordance with NHBC Chapter 4.2.
Firm CLAY/medium dense SAND/GRAVEL WS3, WS4, WS5, WS6	1.0	1.0	140	Consider medium volume change potential soils and adjustments to foundation depths in accordance with NHBC Chapter 4.2.
Arboricultural survey required to enable an assessment of the influence of trees.				

Consider temporary works due to coarse and potentially spalling soils.

The total settlement beneath trench fill foundations 1.0m wide is anticipated to be less than 25mm for the soils encountered.

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

Include mitigation measures to accommodate differential movement between foundations spanning CLAY and SAND and GRAVEL soils.

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 soften or 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 and trial pits completed.

11.6.2 Floor Slabs and Heave

Due to the potential for desiccation to have occurred, 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 within the influence of trees and in areas where desiccation was observed in WS1, WS2 and SP1 to 1.5m.

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 shallow buried concrete (Table C1, natural ground locations) beneath the site:

 Soluble Sulphate (2:1 extract)	– 0.0041 – 0.103g/l
 pH	– 5.4 to 8.0

 Total Sulphate SO ₄	– 0.013 – 0.084%
 Total Sulphur	– 0.0072 – 0.045%
 Total Potential Sulphate	– 0.0216 – 0.135%
 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% SO₄ in the sample 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 above and below the groundwater level (secondary (A) aquifer), the Aggressive Chemical Environment for Concrete (ACEC) Class is AC-1s and AC-2z respectively.

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 that CBR values ‘bottom out’ at around 2.1% to 3.5% locally, once the probe had penetrated the overlying soils.

Due to the potential for desiccation to have artificially increased the CBR values, consideration should be given to adopting an estimated CBR value of 3% and 4% which may be appropriate for thin and thick construction respectively for ‘silty clay’ (PI 30%) in accordance with Design Guidance for Road Pavement Foundations IAN 73 06 HD25[rev1] 2009.

Where sufficient SAND and GRAVEL soils are exposed at road pavement foundation formation, an estimated CBR value of 20% would apply.

Any soft spots should be removed and replaced with suitably compacted materials to grade, and elsewhere the road pavement formation should be scarified and proof rolled.

Results of DCP/TRL testing are enclosed within **Appendix V**.

11.9 SOAKAWAY DESIGN

11.9.1 Investigation Design

In order to attempt a 'compliant' infiltration test in accordance with Building Research Establishment (BRE) Digest D365, February 2016, Soakaway Design trial pits should be excavated and then filled and drained with three cycles of water. The time taken for the water to drain to 25% full within the trial pit is the determining factor in order to complete a successful and compliant infiltration test.

Following review of the ground conditions and data available it was considered unlikely the full three-cycles of testing would be achieved within the day and thus, in such a situation a default position as described below is taken in order to maximise the value of time over the duration of the plant allocated for the investigation:

-  **Day 1.** Excavate pits and secure with panels to prevent falls. Commence first cycle of filling/draining.
-  **End of Day 1 into evening/night of Day 1 to Day 2.** Commence second cycle of filling/draining on the presumption the first cycle concludes during the first day. The second cycle of draining is likely to occur during the night-time and will not be fully monitored. However, experience tells us that the third cycle of draining more often than not yields the slowest infiltration rate as a result of the test pit being fully saturated/drained on two previous cycles. Therefore, conducting this test in a secured pit, over-night, makes best endeavours to utilise 'time' in an efficient manner and seeks to complete a third cycle of testing within a pit which has been previously saturated on two occasions.
-  **Day 2.** Where applicable, complete monitoring of the second cycle. Commence third cycle of filling/draining and backfill pits.

Therefore, two days of testing (as outlined above) were proposed to complete compliant infiltration tests (3-cycles) within the pits.

11.9.2 Investigation Completion

Soil infiltration tests were undertaken within trial pits SP1 to SP4 in general accordance with Building Research Establishment (BRE) Digest D365, February 2016, Soakaway Design.

The trial pits were excavated to depths of up to 2.0m bgl and tested to determine the suitability for permeable pavements and conventional soakaways in the overlying soils encountered at these locations.

Excavation of the trial pits was completed at a steady rate and the trial pits were rapidly filled with a tankered water supply. The subsequent fall in water level was observed over the time period specified within the table of results.

Water filling was completed within each trial pit in the manner described within table 11.9.1 along with infiltration rates and comments. Soil infiltration test results are included within **Appendix VI**.

Table 11.9.2: Soil Infiltration Rates				
Location (Test no.)	Testing depths (m bgl)	Strata Tested	Infiltration Rate (m/s)	Comments
SP1-F1	0.53-2.0	SAND/CLAY/ GRAVEL	1.19×10^{-6} (extrapolated)	The test commenced on day 1 and was observed for 6 hours (360 minutes) whereby water levels fell from 0.53m bgl to 0.87m bgl reaching 75% full. The test pit was secured overnight and on day 2 the water level was taken at 1.39m bgl following 1,400 minutes of 'testing'. A further ~6 hours of observations was made on day 2 up to 1,800 minutes where the final water level was taken at 1.52m bgl. The test failed to reach 25% full at the end of the day 2 shift. It is anticipated that 25% full would be reached at approximately 1,900 minutes and would yield a rate of 1.19×10^{-6} m/s by means of extrapolation.
SP2-F1	0.29-1.1	SAND	1.50×10^{-6}	The test commenced on day 1 and was observed for ~6 hours (340 minutes) whereby water levels fell from 0.29m bgl to 0.64m bgl, almost reaching 50% full. The test pit was secured overnight and on day 2 the water level was taken at 0.93m bgl following 1,380 minutes of 'testing' where the final water level passed through the 25% full level.
SP2-F2	0.43-1.1	SAND	1.28×10^{-6} (extrapolated)	A second cycle of water filling was attempted on day 2 which was observed for ~5 hours (320 minutes) where water levels fell from 0.43m bgl to 0.63m bgl, passing through the 75% full level. There was insufficient time in the day 2 shift to observe the fall in water levels to below 25% full, which a line of extrapolation predicts (linear regression) to be at approximately 1,420 minutes. There was insufficient time to complete a third cycle of testing.
SP3-F1	0.2-1.0	CLAY	1.11×10^{-6}	The test commenced on day 1 and was observed for ~6 hours (320 minutes) whereby water levels fell from 0.20m bgl to 0.32m bgl reaching 75% full.

Table 11.9.2: Soil Infiltration Rates

Location (Test no.)	Testing depths (m bgl)	Strata Tested	Infiltration Rate (m/s)	Comments
				The test pit was secured overnight and on day 2 the water level was taken at 0.51m bgl following 1,420 minutes of 'testing' where the final water level passed through the 25% full level.
SP3-F2	0.16-1.0	CLAY	1.29x10 ⁻⁶ (extrapolated)	A second cycle of water filling was attempted on day 2 which was observed for 5 hours (300 minutes) where water levels fell from 0.16m bgl to 0.235m bgl. There was insufficient time in the day 2 shift to observe the fall in water levels to below 25% full, which a line of extrapolation predicts (linear regression) to be at approximately 1,480 minutes. There was insufficient time to complete a third cycle of testing.
SP4-F1	0.22-0.66	SAND	3.53x10 ⁻⁶ (extrapolated)	The test commenced on day 1 and was observed for ~6 hours (340 minutes) whereby water levels fell from 0.22m bgl to 0.48m bgl reaching approximately 40% full. There was insufficient time in the day 1 shift to observe the fall in water levels to below 25% full, which a line of extrapolation predicts (linear regression) to be at approximately 460 minutes.
SP4-F2	0.2-0.66	SAND	1.92x10 ⁻⁶ (extrapolated)	A second cycle of water filling was attempted on day 2 which was observed for ~5 hours (320 minutes) where water levels fell from 0.20m bgl to 0.39m bgl. There was insufficient time in the day 2 shift to observe the fall in water levels to below 25% full, which a line of extrapolation predicts (linear regression) to be at approximately 820 minutes. There was insufficient time to complete a third cycle of testing.

Shallow soakaway drainage is unlikely to be effective at the proposed development.

In order to determine infiltration rate the test results obtained from SP1 to SP4, over approximately 6 hours of observation, were extrapolated to provide similar and poor rates in the range of 1x10⁻⁶ m/s. These rates may be optimistic as in practice the rate of infiltration slows over-time and thus is not likely to conform to the linear regression applied within the graphical plots of **Appendix VI**.

Notwithstanding the rates determined (based on professional experience) are considered to be below the technical limit of what is suitable for soakaway drainage. It is noted that should a fully compliant BRE D365 be completed, which requires 3-consecutive cycles of filling and draining of test pits, the infiltration rates

recorded are likely to reduce on the second cycle and reduce further on the third cycle due to continued saturation of the surrounding strata.

As such a calculated design rate, following what is anticipated to be 4-5 days of testing, is expected to be worse than the extrapolated results above. Accordingly conventional soakaway drainage is not expected to be suitable given the poor infiltration recorded and discussion of results.

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, albeit very limited risk.	Enact watching brief during groundworks.
	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.
	No abnormal ground conditions encountered and all concentrations of analytical determinands acceptable. In-situ soils are not considered to be contaminated.		
Bio-Ground Gas	5	Preliminary risk assessment has determined low risk from bio-ground gas as a result of potentially infilled land where historical gravel pits and brickfields were located. In accordance with our instruction a single round of bio-ground monitoring has been completed which suggests acceptable gaseous concentrations equivalent to CS1. Bio-ground gas protection is unlikely to be required, however gas monitoring should continue during worst-case conditions during a prolonged period. The further monitoring will conclude the gas risk assessment and recommendations for bio-ground gas protection.	
Radon	n/a	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.	
Groundwater	n/a	Ground conditions are not considered to present a notable 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	Foundations and made ground should be anticipated at shallow depth from the historical use of the site.	Shallow obstructions likely to be removed with conventional excavation plant and hydraulic breaking equipment. Locally where drilling refusal occurred (SPT N>50) at relatively shallow depth, more substantial machinery may be required.
Foundations	Potentially desiccated soils noted locally to depths of 1.5m bgl (WS1, WS2, SP1). Conventional shallow foundations at the anticipated formation level of circa 1.0m to 1.5m bgl in at least firm CLAY and medium dense SAND and GRAVEL are subject to adequate bearing resistance, further increased adjustments to foundation depths due to the influence of trees in accordance with NHBC Chapter 4.2, and the requirements of temporary works. Shallow excavations in fine soils during dry conditions may be stable in the short term, however instability expected to occur in coarse and potentially spalling soils. No groundwater encountered to the maximum investigative and installed depth of 3.8m bgl in June/July 2026.	Bearing resistance of 140kN/m² may be acceptable for trench fill foundations at 1.0m to 1.5m bgl, subject to design requirements. Dewatering not expected to be required in shallow excavations (June/July 2026). Excavations stability in coarse and potentially spalling soils subject to design requirements. CLAY soils determined as medium volume change potential (NHBC Chapter 4.2, Building Near Trees) and SAND/GRAVEL of negligible volume change potential.
Floor Slabs and Heave	Suspended	Heave protection required in clay soils within the influence of trees and in the area of WS1, WS2 and SP1 where potential desiccation observed. 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	Slightly aggressive ground conditions encountered.	Concrete classification determined as DS-1, AC-1s/AC-2z above/below groundwater respectively.
Pavements	Estimated CBR value of 3% or 4% for	Complete CBR testing once road pavement

Table 12.2: Ground Hazards Summary

Construction Issue	Ground Hazard	Recommendation
	thin and thick construction for 'silty clay' (IAN 73 06 HD25[rev1] 2009). Where sufficient SAND and GRAVEL soils are exposed at road pavement foundation formation, an estimated CBR value of 20% would apply.	foundation formation depth known.
Drainage	Shallow soakaways are not considered suitable due to the relatively impermeable clay soils encountered.	Consideration alternative to shallow 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 day of window sample boreholes to depths of up to 5.0m bgl, including SPTs at 1m intervals.
- ✦ Install three of the boreholes with monitoring pipe to enable return gas and groundwater readings.
- ✦ Machine trial pitting to enable a visual assessment of soils at relatively shallow depth and to enable soil targeted soil sampling to enhance the human health risk assessment, and to facilitate soil infiltration testing.
- ✦ CBR/CDP testing to determine preliminary design parameters for road pavement design.
- ✦ 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 402679047 dated 18 May 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 - General requirements and sample preparation

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BS EN ISO 14688-1:2018 Geotechnical investigation and testing – Identification and Classification of Soil – Identification and Description

BS EN ISO 14688-2:2018 Geotechnical investigation and testing – Identification and Classification of Soil – Principles for a Classification

BS EN ISO 17892 – Parts 1-12 Geotechnical investigation and testing. Laboratory testing of soil

BS EN ISO 22475-1:2021 Geotechnical investigation and testing - Sampling Methods and Groundwater Measurements

BS EN ISO 22476-3:2005+A1:2011 Standard Penetration Test

BS EN 1997-1.2004+A1:2013 Eurocode 7 Geotechnical Design Part 1 General Rules

BS EN 1997-2.2007 Eurocode 7 Geotechnical Design Part 2 Ground Investigation and Testing

NA+A2 to BS NA+A1:2014 to EN 1997-1.2004+A1:2013 UK National Annex to Eurocode 7 Geotechnical Design - General Rules

NA to BS EN 1997-2:2007 UK National Annex to Eurocode 7 Geotechnical Design - Ground Investigation and Testing

BS 8485:2015 Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

CIRIA Report C665 'Assessing risks posed by hazardous ground gases to buildings' 2007

DEFRA and Environment Agency, 2004. Model Procedures for the Management of Land Contamination, Contaminated Land Report 11

Environment Agency Website: www.environment-agency.gov.uk

Jardine, Maswose, Burland. 1985. Field and Laboratory Measurements of Soil Stiffness. Proceedings of the 11th International Conference on Soil Mechanics and Foundation Engineering, San Francisco

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LQM/CIEH: Paul Nathanail, Caroline McCaffrey, Andy Gillett, Richard Ogden and Judith Nathanail. 2014. The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham. ISBN 978-0-9931084-0-2. "Copyright Land Quality Management Limited reproduced with permission; Publication number S4UL3275. All rights reserved"

NHBC (2017). National House Building Council Standards. Chapter 4

NHBC Guidance on Methane and Carbon Dioxide 2007 (Boyle and Witherington, 2007)

Peck, Hanson and Thornburn. Foundation Engineering. 1967

Somerville, S. H., Control of groundwater for temporary works, CIRIA Report 113 (1986).

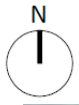
SP1010 - Development of Category 4 Screening Levels for Land Affected by Contamination. Final Project Report (Revision 2). Contaminated Land: Applications In Real Environmental (CL:AIRE). September 2014

SR2: Human health toxicological assessment of contaminants in soil, Science Report SC050021/SR2, Environment Agency, August 2008

SR7: Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values, Science Report SC050021/SR7, Environment Agency, November 2008

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

Figure 1

Drawing Title

Site Location Plan

Project Number 26-186.01

Project Title

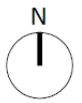
Land west of Selsfield Road, Ardingly, West
Sussex, RH17 6UL

Drawn by DN

Checked by JB

Scale NTS





Legend

-  Approximate Site Boundary
-  Existing Mounds

Notes

Figure 2

Drawing Title

Existing Site Layout Plan

Project Number 26-186.01

Project Title

Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Drawn by DN

Checked by JB

Scale NTS





Photo 1



Photo 2



Photo 3



Photo 4

Legend

Notes

Figure 3

Drawing Title

Site Photographs

Project Number 26-186.01

Project Title

Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Drawn by DN

Checked by JB

Scale NTS





Legend

— Approximate Site Boundary

Notes

Figure 4

Drawing Title

Proposed Development Plan

Project Number 26-186.01

Project Title

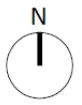
Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Drawn by DN

Checked by JB

Scale NTS





Legend

-  Window Sample Borehole
-  Monitoring Well
-  Mechanical Trial Pits
-  CBR/DCP TRL
-  Existing mounds

Notes

Figure 5

Drawing Title

Exploratory Hole Location Plan -
Existing Layout

Project Number 26-186.01

Project Title

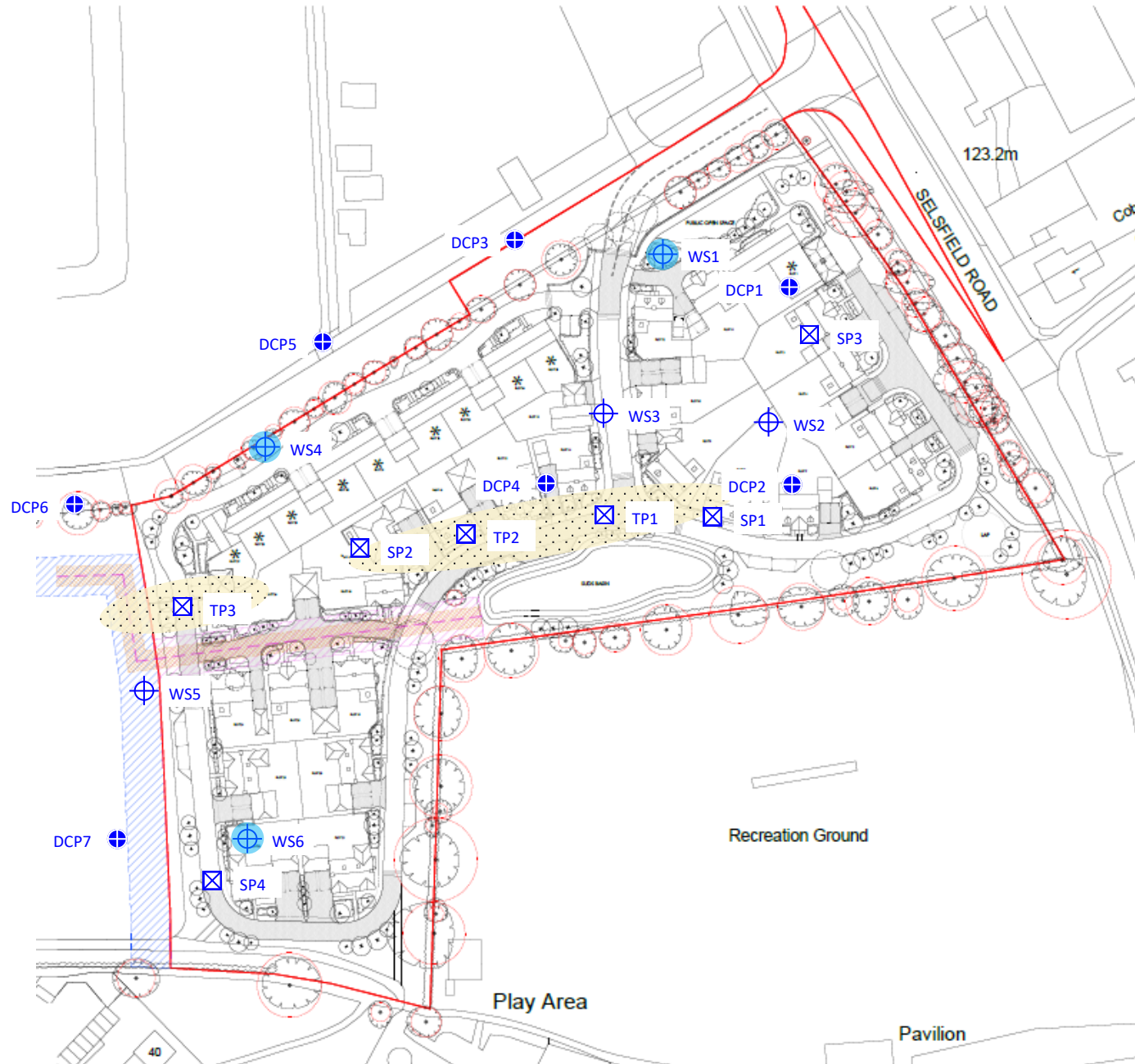
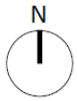
Land west of Selsfield Road, Ardingly, West
Sussex, RH17 6UL

Drawn by DN

Checked by JB

Scale NTS





Legend

-  Window Sample Borehole
-  Monitoring Well
-  Mechanical Trial Pits
-  CBR/DCP TRL
-  Existing mounds

Notes

Figure 6

Drawing Title

Exploratory Hole Location Plan -
Proposed Development

Project Number 26-186.01

Project Title

Land west of Selsfield Road, Ardingly, West
Sussex, RH17 6UL

Drawn by DN

Checked by JB

Scale NTS



Appendices

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

Appendix

I Envirocheck Database Reports

Appendix

II Exploratory Hole Logs and Photographs



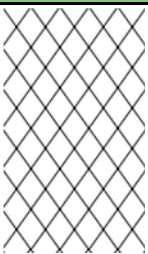
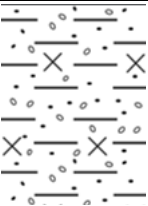
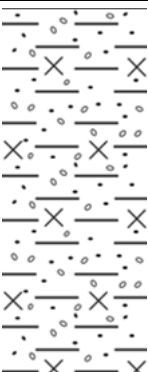
WINDOW SAMPLE LOG

Site: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL				Project No. 26-186.01		Borehole: WS1			
Client: Antler Homes plc				Start: 22/06/2026		End: 22/06/2026		Sheet: 1 of 1	
Method/Plant Used: Archway Dart (3D)			Co-ordinates: NT			Ground Level: 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		
Light brown grey clayey silty sandy gravely fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. Reworked topsoil. Rare rootlets. (MADE GROUND)		(0.3) 0.3		0.1	1	ES								
Light brown yellow silty very sandy GRAVEL. Gravel is fine to medium sub-angular of sandstone. Rare rootlets. (CUCKFIELD STONE BED)		(0.3) 0.6												
Firm to stiff dark brown dark orange mottled dark grey slightly clayey sandy very gravelly fine to coarse SILT. Gravel is fine to medium sun-angular of sandstone. Rare rootlets. (CUCKFIELD STONE BED)		(0.5) 1.1		1.0		SPT	5	4	4	4	4	4	16	
Stiff light brown orange silty sandy gravelly CLAY. Gravel is fine to medium sub-angular of sandstone. Rare rootlets to 1.2m. (CUCKFIELD STONE BED)		(0.6) 1.7		1.5	2	D								
Medium dense dark brown dark orange slightly clayey very silty very gravelly coarse SAND. Gravel is medium to coarse angular to sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.5) 2.2		2.0	3	LC/SPT	15	10	7	6	5	4	22	
Firm to stiff light brown light orange silty sandy very gravelly CLAY Gravel is medium to coarse sub-angular of sandstone. Occasional bands of orange brown SAND. (CUCKFIELD STONE BED)		(1.3) 3.5		2.5	4	D								
				3.0		SPT	2	2	3	3	3	3	12	
				3.3	5	D								
Very dense poorly laminated dark brown dark orange silty very sandy GRAVEL. Gravel is medium to coarse angular to sub-angular of sandstone. Gravel is weak. (CUCKFIELD STONE BED)		(0.3) 3.8		3.8		SPT	21	4	31	19			50	For 125mm

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
22/06/2026	101	1.00				22/06/2026	-	-	-	Dry	
Remarks									By		
No groundwater encountered. No visual or olfactory evidence of contamination. Rare rootlets noted to 1.2m bgl. Gas and groundwater monitoring well installed to 3.8m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample								Logged	AC		
								Checked	OB	Scale 01:25	



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		
Light brown grey clayey very silty sandy slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint and occasionally sandstone. Occasional sub-angular fine to coarse gravel size fragments of brick. Reworked topsoil. (MADE GROUND)		(0.6) 0.6		0.1 - 0.3	1	WAC								
Firm to stiff light brown orange mottled light grey silty sandy gravelly CLAY. Gravel is fine to medium sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.5) 1.1												
Very stiff light brown light orange silty sandy very gravelly CLAY. Gravel is fine to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.9) 2.0												
				2.0	4	D/SPT	8	10	10	12	14	14	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
22/06/2026	101	1.00				22/06/2026	-	-	-	Dry	
Remarks									By		
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample								Logged	AC		
								Checked	OB	Scale 01:25	

[illegible]

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
22/06/2026	101	1.00				22/06/2026	-	-	-	Dry	
Remarks									By		
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample								Logged	AC		
								Checked	OB	Scale 01:25	

[illegible]

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
22/06/2026	101	1.00				22/06/2026	-	-	-	Dry	
Remarks									By		
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Gas and groundwater monitoring well installed to 1.0m. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample								Logged	AC		
								Checked	OB	Scale 01:25	

[illegible]

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
22/06/2026	101	1.00				22/06/2026	-	-	-	Dry	
Remarks									By		
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Borehole backfilled with arisings. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample								Logged	AC		
								Checked	OB	Scale 01:25	



WINDOW SAMPLE LOG

Site:				Project No.		Borehole:		
Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL				26-186.01		WS6		
Client:			Start:		End:		Sheet:	
Antler Homes plc			22/06/2026		22/06/2026		1 of 1	
Method/Plant Used:		Co-ordinates:			Ground Level:			
Archway Dart (3D)		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		
Light brown grey clayey very silty sandy slightly gravely fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of sandstone. Occasional sub-angular fine to coarse gravel size fragments of brick. Reworked topsoil. (MADE GROUND)		(0.5)		0.3	1	ES								
Dark brown dark orange slightly clayey very silty very gravelly coarse SAND. Gravel is medium to coarse angular to sub-angular of sandstone. (CUCKFIELD STONE BED)		0.5 (0.6)		1.0	2	D/SPT	2	5	5	5	4	4	18	
Stiff becoming very stiff light brown light orange silty sandy very gravelly CLAY. Gravel is fine to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		1.1 (1.7)		2.0	3	D/SPT	7	5	5	5	6	10	26	
		2.8		2.8	4	D/SPT	16	9	20	25	5		50	For 160mm

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
22/06/2026	101	1.00				22/06/2026	-	-	-	Dry	
Remarks									By		
No groundwater encountered. No visual or olfactory evidence of contamination. No roots present in borehole. Gas and groundwater monitoring well installed to 2.8m bgl. SPT: Standard Penetration Test, HP: Hand Penetrometer, B: Bulk Sample, D: Disturbed Sample								Logged	AC		
								Checked	OB	Scale 01:25	



WS1 arisings



WS2 arisings



WS3 arisings



WS4 arisings



WS5 arisings



WS6 arisings



TRIAL PIT LOG

Project: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL				Project No. 26-186.01	Trial Pit: TP1
Client: Antler Homes plc			Start: 22/06/2026	End: 22/06/2026	Sheet: 1 of 1
Method/Plant Used: 2.5T Excavator (3D)		Co-ordinates: NT		Ground Level: NT	

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests									Laboratory Test Details
				Depth	No	Type							
Light brown grey clayey very silty sandy slightly gravely fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint and occasionally sandstone. Rare sub-angular fine to coarse gravel size fragments of brick. Rare plastic waste. Reworked topsoil. Rootlets to 0.7m. (MADE GROUND)		(0.75) 0.75		0.4	1	ES							
Dark brown grey very clayey very silty very sandy GRAVEL. Gravel is medium to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.55) 1.3											

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.80	0.30	1.30	22/06/2026	-	-	-	Dry	

Remarks				By		Scale 01:25
Rootlets noted to 0.7m bgl. No groundwater encountered in trial pit. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.				Logged	AC	
				Checked	OB	



TRIAL PIT LOG

Project: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL					Project No. 26-186.01		Trial Pit: TP2									
Client: Antler Homes plc				Start: 22/06/2026		End: 22/06/2026		Sheet: 1 of 1								
Method/Plant Used: 2.5T Excavator (3D)			Co-ordinates: NT			Ground Level: NT										
Description of Strata	Legend	Depth (m bgl) <i>(thickness)</i>	Well Cnstr.	Samples/Tests										Laboratory Test Details		
				Depth	No	Type										
Light brown grey clayey very silty sandy slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint and occasionally sandstone. Rare sub-angular fine to coarse gravel size fragments of brick. Rare plastic waste. Reworked topsoil. Rootlets to 0.6m. (MADE GROUND)		(0.7)		0.3	1	ES										
Firm dark dark brown grey silty sandy very gravelly CLAY. Gravel is fine to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		0.7 (0.6)														
		1.3														

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.40	0.30	1.30	22/06/2026	-	-	-	Dry	
Remarks Rootlets noted to 0.6m bgl. No groundwater encountered in trial pit. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.						By		
						Logged	AC	
						Checked	OB	Scale 01:25



TRIAL PIT LOG

Project: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL						Project No. 26-186.01		Trial Pit: TP3										
Client: Antler Homes plc					Start: 22/06/2026		End: 22/06/2026		Sheet: 1 of 1									
Method/Plant Used: 2.5T Excavator (3D)			Co-ordinates: NT				Ground Level: NT											
Description of Strata	Legend	Depth (m bgl) <i>(thickness)</i>	Well Cnstr.	Samples/Tests										Laboratory Test Details				
				Depth	No	Type												
Light brown grey clayey very silty sandy slightly gravelly fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint and occasionally sandstone. Rare sub-angular fine to coarse gravel size fragments of brick. Reworked topsoil. (MADE GROUND)		(0.8)		0.6	1	ES												
		0.8																
Dark brown grey slightly clayey silty very gravelly coarse SAND. Gravel is medium to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.6)																
		1.4																

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
2.00	0.30	1.40	22/06/2026	-	-	-	Dry	
Remarks						By		
No roots present in trial pit. No groundwater encountered in trial pit. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.						Logged	AC	
						Checked	OB	
								Scale 01:25



TRIAL PIT LOG

Project: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL					Project No. 26-186.01		Trial Pit: SP1								
Client: Antler Homes plc				Start: 22/06/2026		End: 22/06/2026		Sheet: 1 of 1							
Method/Plant Used: 2.5T Excavator (3D)			Co-ordinates: NT			Ground Level: NT									
Description of Strata	Legend	Depth (m bgl) <i>(thickness)</i>	Well Cnstr.	Samples/Tests										Laboratory Test Details	
				Depth	No	Type									
Brown clayey silty sandy gravely fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. Reworked topsoil. (MADE GROUND)		(0.3) 0.3		1.0	1	D									
Light brown dark orange very clayey silty very gravelly coarse SAND. Gravel is medium to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.6) 0.9													
Firm light brown orange silty sandy gravelly CLAY. Gravel is fine to medium sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.3) 1.2													
Light brown yellow silty very sandy GRAVEL. Gravel is fine to medium sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.8) 2.0													
				2.0	2	D									

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.70	0.30	2.00	22/06/2026	-	-	-	Dry	
Remarks No roots present in trial pit. No groundwater encountered in trial pit. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.						By		
						Logged	AC	
						Checked	OB	Scale 01:25



Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.90	0.30	1.10	22/06/2026	-	-	-	Dry	
Remarks						By		
Rootlets noted to 0.1m bgl. No groundwater encountered in trial pit. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.					Logged	AC		Scale 01:25
					Checked	OB		



TRIAL PIT LOG

Project: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL						Project No. 26-186.01		Trial Pit: SP3							
Client: Antler Homes plc					Start: 22/06/2026		End: 22/06/2026		Sheet: 1 of 1						
Method/Plant Used: 2.5T Excavator (3D)			Co-ordinates: NT				Ground Level: NT								
Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests										Laboratory Test Details	
				Depth	No	Type									
Light brown grey clayey silty sandy gravelly fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. Reworked topsoil. (MADE GROUND)		(0.3) 0.3		1.0	1	D									
Stiff light brown dark orange silty sandy very gravelly CLAY. Gravel is fine to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.7) 1.0													

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.20	0.30	0.60	22/06/2026	-	-	-	Dry	
Remarks No roots present in trial pit. No groundwater encountered in trial pit. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.						By		
						Logged	AC	
						Checked	OB	Scale 01:25



TRIAL PIT LOG

Project: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL		Project No. 26-186.01	Trial Pit: SP4
Client: Antler Homes plc		Start: 22/06/2026	End: 22/06/2026
Method/Plant Used: 2.5T Excavator (3D)		Co-ordinates: NT	Ground Level: NT

Description of Strata	Legend	Depth (m bgl) (thickness)	Well Cnstr.	Samples/Tests										Laboratory Test Details
				Depth	No	Type								
Light brown grey clayey silty sandy gravelly fine to coarse SAND. Gravel is fine to coarse sub-angular to rounded of flint. Occasional sub-angular fine to coarse gravel size fragments of brick. Reworked topsoil. (MADE GROUND)		(0.3) 0.3												
Light brown dark orange very clayey silty very gravelly fine to coarse SAND. Gravel is medium to coarse sub-angular of sandstone. (CUCKFIELD STONE BED)		(0.36) 0.66												

Dimensions (m)			Water level observations (depths in metres below gl)					
Length	Width	Depth	Date	Water strike	Water level (after 20mins)	Flow	Standing level	Remarks
1.30	0.30	0.66	22/06/2026	-	-	-	Dry	
Remarks No roots present in trial pit. No groundwater encountered in trial pit. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.						By		
						Logged	AC	
						Checked	OB	Scale 01:25



TP1



TP2



TP3



TP1 arisings



TP2 arisings



TP3 arisings



SP1



SP2



SP3



SP1 arisings



SP2 arisings



SP3 arisings



SP4



SP4 arisings

Appendix

III Field Monitoring Results

MONITORING DATA SHEET

SITE Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL
PROJECT 26-186.01



VISIT NUMBER 1
DATE 06/07/2026

EQUIPMENT GFM435 + MiniRAE
TAKEN BY CD

Record of Stable Concentrations										Interpretation		
Location	Time	Flow (l/h)	CH4 (% v/v)	CO2 (% v/v)	O2 (% v/v)	Baro. Pres. (mB)	PID (ppm)	Water (m bgl)	Base Well (m bgl)	CH4 GSV (l/h)	CO2 GSV (l/h)	CS
Site	11:24		0.0	0.0	20.4	1002	0.0		n/a	n/a	n/a	n/a
WS1	11:25	0.0	0.0	3.4	17.1	1002	0.0	dry	3.82	0.0	0.0	CS-1
WS4	11:30	0.0	0.0	1.1	19.2	1002	0.0	dry	1.00	0.0	0.0	CS-1
WS6	11:42	0.0	0.0	2.8	18.1	1002	0.0	dry	2.87	0.0	0.0	CS-1

Weather Observations						Pressure Observations				Notes	
State of Ground	Cloud Cover	Wind	Rain	Air Temperature °C		Source	Pressure Records		Trend		
						Metoffice	Location	Reigate	Falling		
Dry	Clear	Calm	None	Before	26	GFM435	Time	09:00	Steady	Worst case conditions? (<1000mB and Falling)No	
Moist	Sunny	Light	Slight			Pressure	1001	Rising			
Wet	Slight	Moderate	Moderate	After	26						
Snow	Cloudy	Strong	Heavy								
Frozen	Overcast										
	Fog/Mist										

Appendix

IV Soil Contamination Results and Assessment Criteria

Aviron Associates Ltd
Badgemore House
Henley
Oxfordshire
RG9 4NR

i2 Analytical Ltd.
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Croxley Green
Business Park,
Watford,
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t:

t: 01923 225404

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e: james@aviron.co.uk; orlando@aviron.co.uk; david@aviron.co.uk; avironassociates@gmail.com;
alex@aviron.co.uk

e: info-i2analytical@normecgroup.com

Analytical Report Number : 26-034223

Project / Site name:	Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Samples received on:	23/06/2026
Your job number:	26 186 01	Samples instructed on/ Analysis started on:	24/06/2026
Your order number:	26 186 01	Analysis completed by:	09/07/2026
Report Issue Number:	1	Report issued on:	09/07/2026
Samples Analysed:	11 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: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Your Order No: 26 186 01

Lab Sample Number	963014	963015	963016	963017	963018
Sample Reference	TP1	TP2	TP3	WS1	WS4
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)	0.40	0.30	0.60	0.10	0.20
Date Sampled	22/06/2026	22/06/2026	22/06/2026	22/06/2026	22/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Mass of stone >10mm	%	0.1	NONE	< 0.1	< 0.1	27.3	30.9	< 0.1
Moisture Content	%	0.01	NONE	9.6	15	11	14	9.9
Total mass of sample received	kg	0.1	NONE	0.9	1	0.9	1.3	1.3

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	CZJ	CZJ	DSA	DSA	DSA
Analysis completed	N/A	N/A	N/A	07/07/2026	07/07/2026	07/07/2026	07/07/2026	07/07/2026

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	-	-	-	-	-
pH (L099)	pH Units	N/A	MCERTS	8	7.3	7.4	6.6	7
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	840	420	330	180	430
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	210	15	17	20	11
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	103	7.47	8.34	10.1	5.27
Total Sulphur	mg/kg	50	MCERTS	450	230	210	72	140
Organic Matter (automated)	%	0.1	MCERTS	3.3	2.4	2.2	< 0.1	1.3
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
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 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	0.37	0.09	0.07	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	0.08	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1	0.25	0.2	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	0.92	0.24	0.19	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.49	0.13	0.14	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.52	0.15	0.13	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.78	0.24	0.2	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.3	0.07	0.07	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.6	0.18	0.17	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.38	0.1	0.09	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.06	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.44	0.12	0.11	< 0.05	< 0.05
Coronene	mg/kg	0.05	NONE	-	-	-	-	-

Analytical Report Number: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Your Order No: 26 186 01

Lab Sample Number	963014	963015	963016	963017	963018
Sample Reference	TP1	TP2	TP3	WS1	WS4
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)	0.40	0.30	0.60	0.10	0.20
Date Sampled	22/06/2026	22/06/2026	22/06/2026	22/06/2026	22/06/2026
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 PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	5.97	1.56	1.36	< 0.80	< 0.80
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	-	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	11	13	4.4	12
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	0.8	0.9	0.2	0.6
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	0.2	< 0.2	< 0.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	20	19	16	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	78	45	26	25	19
Lead (aqua regia extractable)	mg/kg	1	MCERTS	52	33	33	12	15
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	14	15	17	21	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.4	< 1.0	1.6	2.4	2.3
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	140	75	66	38	47

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	31	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_ID_AL	mg/kg	10	NONE	31	< 10	< 10	< 10	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	37	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_ID_AR	mg/kg	10	NONE	37	< 10	< 10	< 10	< 10

Mineral Oil (EC10 - EC40) EH_CU_ID_AL	mg/kg	10	NONE	-	-	-	-	-
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 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
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Total BTEX	µg/kg	10	MCERTS	-	-	-	-	-
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Analytical Report Number: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Your Order No: 26 186 01

Lab Sample Number	963014	963015	963016	963017	963018
Sample Reference	TP1	TP2	TP3	WS1	WS4
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)	0.40	0.30	0.60	0.10	0.20
Date Sampled	22/06/2026	22/06/2026	22/06/2026	22/06/2026	22/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

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	-	-	-	-	-
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: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6U

Your Order No: 26 186 01

Lab Sample Number	963019	963020	963021	963022	963023
Sample Reference	WS6	WS2	WS5	COMP	WS1
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)	0.30	0.80	0.60	0.10-0.30	2.00
Date Sampled	22/06/2026	22/06/2026	22/06/2026	22/06/2026	22/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Mass of stone >10mm	%	0.1	NONE	< 0.1	26.5	14.9	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.2	9.8	12	11	13
Total mass of sample received	kg	0.1	NONE	1	0.9	1.1	2	0.4

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	-	-
Asbestos Analyst ID	N/A	N/A	N/A	DSA	DSA	DSA	-	-
Analysis completed	N/A	N/A	N/A	07/07/2026	07/07/2026	07/07/2026	-	-

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	-	-	-	6.2	-
pH (L099)	pH Units	N/A	MCERTS	6.3	7.5	7.3	-	5.4
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	290	240	130	-	620
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	8.2	8.7	12	-	21
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	0.0104
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	10.4
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	4.1	4.33	6.02	-	-
Total Sulphur	mg/kg	50	MCERTS	130	120	110	-	360
Organic Matter (automated)	%	0.1	MCERTS	1.1	0.8	0.3	-	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-	-	1	-
Loss on Ignition @ 450°C	%	0.2	MCERTS	-	-	-	3.4	-
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	-	-	-	-4.4	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.13	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.12	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.06	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.09	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	0.1	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Coronene	mg/kg	0.05	NONE	-	-	-	< 0.05	-

Analytical Report Number: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6U

Your Order No: 26 186 01

Lab Sample Number	963019	963020	963021	963022	963023
Sample Reference	WS6	WS2	WS5	COMP	WS1
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)	0.30	0.80	0.60	0.10-0.30	2.00
Date Sampled	22/06/2026	22/06/2026	22/06/2026	22/06/2026	22/06/2026
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 PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	< 0.80	-	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-	-	-	< 0.85	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.9	4.5	4.4	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	0.4	0.3	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	21	21	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	18	24	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	15	10	11	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	16	18	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	1.6	1.3	1	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	41	42	43	-	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_ID_AL	mg/kg	10	NONE	< 10	< 10	< 10	-	-

TPHCWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	-	-
TPHCWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	-	-
TPHCWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPHCWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPHCWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-
TPHCWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_ID_AR	mg/kg	10	NONE	< 10	< 10	< 10	-	-

Mineral Oil (EC10 - EC40) EH_CU_ID_AL	mg/kg	10	NONE	-	-	-	< 10	-
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	-

Total BTEX	µg/kg	10	MCERTS	-	-	-	< 10	-
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Analytical Report Number: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6U

Your Order No: 26 186 01

Lab Sample Number	963019	963020	963021	963022	963023
Sample Reference	WS6	WS2	WS5	COMP	WS1
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)	0.30	0.80	0.60	0.10-0.30	2.00
Date Sampled	22/06/2026	22/06/2026	22/06/2026	22/06/2026	22/06/2026
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

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	-
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: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6U

Your Order No: 26 186 01

Lab Sample Number	963024			
Sample Reference	WS4			
Sample Number	None Supplied			
Water Matrix	N/A			
Depth (m)	0.90			
Date Sampled	22/06/2026			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Mass of stone >10mm	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	15
Total mass of sample received	kg	0.1	NONE	0.9

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	-
Analysis completed	N/A	N/A	N/A	-

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	-
pH (L099)	pH Units	N/A	MCERTS	7.3
Total Cyanide	mg/kg	1	MCERTS	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	170
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	8.9
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.00445
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.45
Water Soluble SO ₄ 16hr extraction (2:1)	mg/l	1.25	MCERTS	-
Total Sulphur	mg/kg	50	MCERTS	95
Organic Matter (automated)	%	0.1	MCERTS	-
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	-
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-
Coronene	mg/kg	0.05	NONE	-

Analytical Report Number: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UJ

Your Order No: 26 186 01

Lab Sample Number	963024			
Sample Reference	WS4			
Sample Number	None Supplied			
Water Matrix	N/A			
Depth (m)	0.90			
Date Sampled	22/06/2026			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-
Total WAC-17 PAHs	mg/kg	0.85	NONE	-

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.01	MCERTS	-
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	-
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	-
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	-
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	-

TPHCWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.01	MCERTS	-
TPHCWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.02	MCERTS	-
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	-
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	-
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	-
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	-

Mineral Oil (EC10 - EC40) _{EH_CU_ID_AL}	mg/kg	10	NONE	-
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VOCs

MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	-
Benzene	µg/kg	5	MCERTS	-
Toluene	µg/kg	5	MCERTS	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	8	MCERTS	-
o-Xylene	µg/kg	5	MCERTS	-

Total BTEX	µg/kg	10	MCERTS	-
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Analytical Report Number: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6U

Your Order No: 26 186 01

Lab Sample Number	963024			
Sample Reference	WS4			
Sample Number	None Supplied			
Water Matrix	N/A			
Depth (m)	0.90			
Date Sampled	22/06/2026			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

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	-
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: 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Your Order No: 26 186 01

Lab Sample Number	963022			
Sample Reference	COMP			
Sample Number	None Supplied			
Water Matrix	N/A			
Depth (m)	0.10-0.30			
Date Sampled	22/06/2026			
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	< 0.00100
Barium	mg/l	0.00005	ISO 17025	0.0067
Cadmium	mg/l	0.0001	ISO 17025	< 0.000100
Chromium	mg/l	0.0004	ISO 17025	0.00065
Copper	mg/l	0.0007	ISO 17025	0.003
Mercury	mg/l	0.0005	ISO 17025	< 0.000500
Molybdenum	mg/l	0.0004	ISO 17025	< 0.000400
Nickel	mg/l	0.0003	ISO 17025	< 0.00030
Lead	mg/l	0.001	ISO 17025	< 0.0010
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	0.0055
Chloride	mg/l	0.15	ISO 17025	0.81
Fluoride	mg/l	0.05	ISO 17025	0.12
Sulphate	mg/l	0.045	ISO 17025	1.6
Total dissolved solids	mg/l	6	ISO 17025	11
Total monohydric phenols	mg/l	0.01	ISO 17025	< 0.010
Dissolved organic carbon	mg/l	0.1	NONE	9.28

10:1 WAC Leachate

Arsenic	mg/kg	0.01	NONE	< 0.0100
Barium	mg/kg	0.0005	NONE	0.067
Cadmium	mg/kg	0.001	NONE	< 0.00100
Chromium	mg/kg	0.004	NONE	0.0065
Copper	mg/kg	0.007	NONE	0.03
Mercury	mg/kg	0.005	NONE	< 0.00500
Molybdenum	mg/kg	0.004	NONE	< 0.00400
Nickel	mg/kg	0.003	NONE	< 0.0030
Lead	mg/kg	0.01	NONE	< 0.010
Antimony	mg/kg	0.017	NONE	< 0.017
Selenium	mg/kg	0.04	NONE	< 0.040
Zinc	mg/kg	0.004	NONE	0.055
Chloride	mg/kg	1.5	NONE	8.1
Fluoride	mg/kg	0.5	NONE	1.2
Sulphate	mg/kg	0.45	NONE	16
Total dissolved solids	mg/kg	60	NONE	110
Total monohydric phenols	mg/kg	0.1	NONE	< 0.10
Dissolved organic carbon	mg/kg	1	NONE	92.8

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

i2 Analytical

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Waste Acceptance Criteria Analytical Results							
Report No:	26-034223						
					Client: Aviron Associates Ltd		
Location	Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL						
Lab Reference (Sample Number)	963022				Landfill Waste Acceptance Criteria		
Sampling Date	22/06/2026				Limits		
Sample ID	COMP				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Depth (m)	0.10-0.30						
Solid Waste Analysis							
TOC (%)**	1				3%	5%	6%
Loss on Ignition (%) **	3.4				--	--	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)**	6.2				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	-4.4				--	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 *	< 0.00100			< 0.0100	0.5	2	25
Barium *	0.0067			0.067	20	100	300
Cadmium *	< 0.000100			< 0.00100	0.04	1	5
Chromium *	0.00065			0.0065	0.5	10	70
Copper *	0.003			0.03	2	50	100
Mercury *	< 0.000500			< 0.00500	0.01	0.2	2
Molybdenum *	< 0.000400			< 0.00400	0.5	10	30
Nickel *	< 0.00030			< 0.0030	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0055			0.055	4	50	200
Chloride *	0.81			8.1	800	15000	25000
Fluoride*	0.12			1.2	10	150	500
Sulphate *	1.6			16	1000	20000	50000
TDS*	11			110	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	9.28			92.8	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	2						
Dry Matter (%)	89						
Moisture (%)	11						
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 : 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

* 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 *
963014	TP1	None Supplied	0.4	Brown loam and sand with gravel and vegetation
963015	TP2	None Supplied	0.3	Brown loam and sand with gravel and vegetation
963016	TP3	None Supplied	0.6	Brown loam and sand with vegetation and stones
963017	WS1	None Supplied	0.1	Brown loam and sand with gravel and stones
963018	WS4	None Supplied	0.2	Brown clay and sand with gravel and vegetation
963019	WS6	None Supplied	0.3	Brown clay and sand with gravel and vegetation
963020	WS2	None Supplied	0.8	Brown clay and sand with vegetation and stones
963021	WS5	None Supplied	0.6	Brown clay and sand with gravel and stones
963022	COMP	None Supplied	0.10-0.30	Brown clay and sand with vegetation
963023	WS1	None Supplied	2	Brown clay and sand with vegetation
963024	WS4	None Supplied	0.9	Brown clay

Analytical Report Number : 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

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 : 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

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 on 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 : 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

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 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Analytical Report Number : 26-034223

Project / Site name: Land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
COMP	None Supplied	L	963022	b	One stage WAC 10:1 leachate preparation	L043B	b
TP1	None Supplied	S	963014	b	Asbestos identification in Soil	A001B	b
TP2	None Supplied	S	963015	b	Asbestos identification in Soil	A001B	b
TP3	None Supplied	S	963016	b	Asbestos identification in Soil	A001B	b
WS1	None Supplied	S	963017	b	Asbestos identification in Soil	A001B	b
WS2	None Supplied	S	963020	b	Asbestos identification in Soil	A001B	b
WS4	None Supplied	S	963018	b	Asbestos identification in Soil	A001B	b
WS5	None Supplied	S	963021	b	Asbestos identification in Soil	A001B	b
WS6	None Supplied	S	963019	b	Asbestos identification in Soil	A001B	b



LAND CONTAMINATION INTERPRETATIVE GUIDANCE

GENERIC ASSESSMENT CRITERIA (GACs)

Residential with Homegrown Produce - Private Gardens				
Determinand	1% SOM (mg/kg)	2.5% SOM (mg/kg)	6% SOM (mg/kg)	Source/Criteria
Arsenic	37	27	27	C4SL/LQM S4UL
Boron	290	290	290	LQM S4UL
Cadmium	11	11	11	LQM S4UL
Chromium (III)	910	910	910	LQM S4UL
Copper	2,400	2,400	2,400	LQM S4UL
Mercury (organic)	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	1,100	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

Residential with Homegrown Produce - Private Gardens				
Determinand	1% SOM (mg/kg)	2.5% SOM (mg/kg)	6% SOM (mg/kg)	Source/Criteria
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
Benzene	0.087	0.17	0.37	LQM S4UL
Toluene	130	290	660	LQM S4UL
Ethylbenzene	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 C >5-6	42	78	160	LQM S4UL
Aliphatic C >6-8	100	230	530	LQM S4UL
Aliphatic C >8-10	27	65	150	LQM S4UL
Aliphatic C >10-12	130	330	760	LQM S4UL
Aliphatic C >12-16	1,100	2,400	4,300	LQM S4UL
Aliphatic C >16-35	65,000	92,000	110,000	LQM S4UL
Aromatic C 5-7 (benzene)	70	140	300	LQM S4UL
Aromatic C >7-8 (toluene)	130	290	660	LQM S4UL
Aromatic C >8-10	34	83	190	LQM S4UL
Aromatic C >10-12	74	180	380	LQM S4UL
Aromatic C >12-16	140	330	660	LQM S4UL
Aromatic C >16-21	260	540	930	LQM S4UL
Aromatic C >21-35	1,100	1,500	1,700	LQM S4UL
Asbestos	ND	ND	ND	Aviron Adopted Value

Residential with Homegrown Produce - Private Gardens				
Determinand	1% SOM (mg/kg)	2.5% SOM (mg/kg)	6% SOM (mg/kg)	Source/Criteria
Notes: Barium EIC Generic Acceptance Criteria (EIC GAC) is 1300mg /kg (Residential). Chromium is assumed to be chromium III (not chromium IV). Cyanide GAC is 'residential with produce'. ND – Not Detected.				

GENERIC QUANTITATIVE RISK ASSESSMENT

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

The site investigation shall collect soil samples whereby determinant chemical measured in the soil through laboratory analysis have been compared with guidance values which are appropriate to the receptor under consideration. The guidance values or screening criteria applied shall be industry adopted generic values which following a screening of the laboratory analysis shall determine whether or not a site is contaminated, as defined under Part IIA of the EPA 1990 and specification in regard of the proposed development and identified receptors.

Where exceedances of guidance values or recorded a GQRA is can be used to appraise risk and make recommendations in regard of further investigation, remediation and/or tier 3 Detailed Quantitative Risk Assessment (DQRA).

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.

Details of the methodology and Aviron's position on the adoption of guidance values is outlined below.

The available chemical data, from soil samples tested, is sorted into appropriate datasets depending on sampling regime and ground conditions. An initial GQRA is completed using the relevant and industry available screening criteria and where appropriate, statistical modelling. Risks to human health shall be initially assessed by comparing soil chemical data against various published screening criteria. These have been sourced from the following and in 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.

Aviron have adopted the above hierarchy in response to LCRM recommendations.

Appendix

V Soil Geotechnical Results



Laboratory Report



Contract Number: 87639

Client Ref: **26-186.01**

Client PO: **26-186.01**

Date Received: **29-06-2026**

Date Completed: **23-07-2026**

Report Date: **23-07-2026**

Client: **Aviron Associates LTD**

This report has been checked and approved by:

Contract Title: **land West of Selsfield Road, Ardingly, We**

For the attention of: **Orlando**

Luke Williams
Senior Laboratory Technician

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

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician) - Jason Jenkins (Business Development Manager)

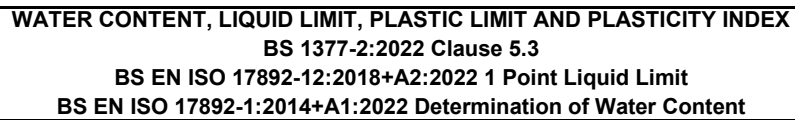
Luke Williams (Senior Laboratory Technician) - Paul Evans (Director) - Richard John (Quality/Technical Manager)

Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager) - Wayne Honey (HR & HSE Manager)

GEO Site & Testing Services Ltd

Unit 3-4 Heol Aur, Dafen Ind Est, Llanelli, Carmarthenshire SA14 8QN

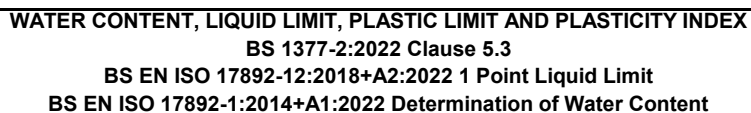
Tel: 01554 784 040 Fax: 01554 784 040 info@gstl.co.uk https://gstl.co.uk



Contract Number	87639	
Project Name	land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL	
Date Tested	20/07/2026	
	DESCRIPTIONS	

[illegible]

Operator
Liam.D



PARTICLE SIZE DISTRIBUTION

BS 1377-2:2022 Clause 10 &

BS EN ISO 17892-4:2016

Wet Sieve, Clause 5.2

Contract Number

87639

Borehole/Pit No.

WS1

Project Name

land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Sample No.

2

Sample Description

Brown fine to coarse sandy fine to coarse gravelly silty CLAY

Depth Top

2.50

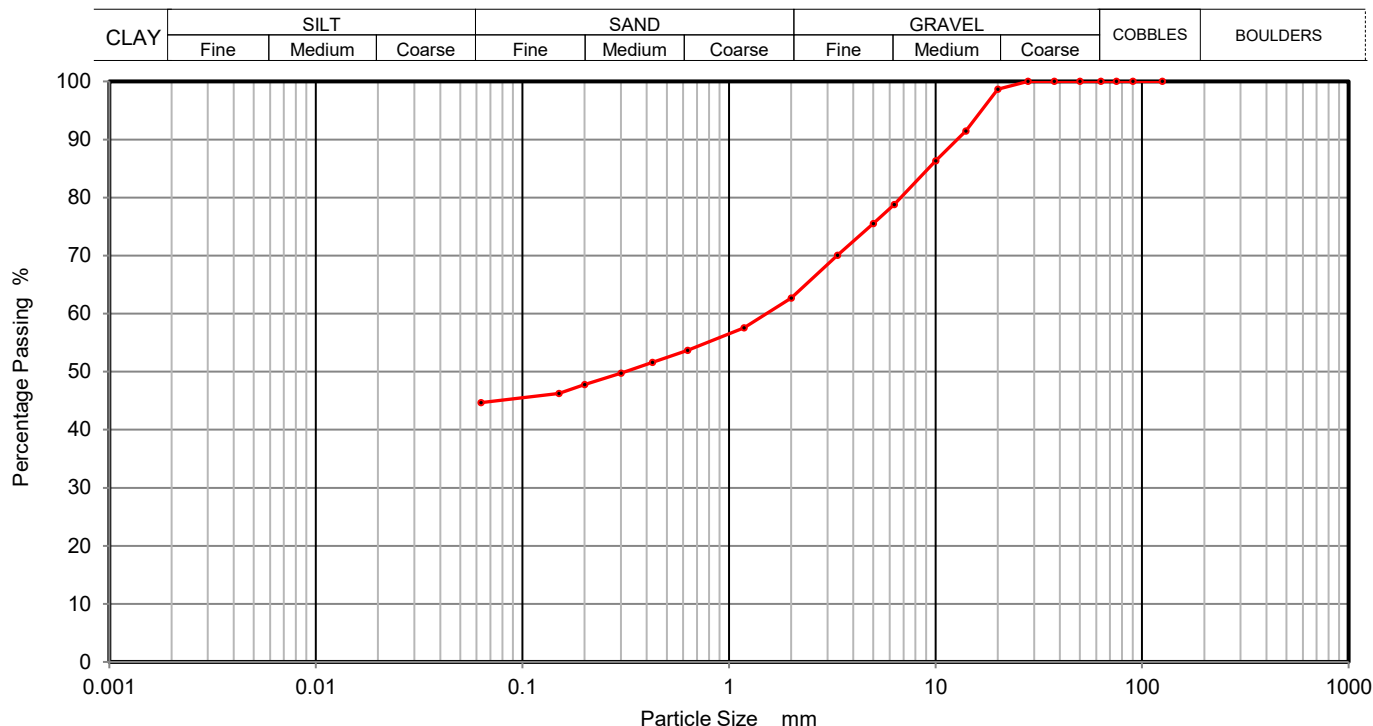
Depth Base

Date Tested

14/07/2026

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	99		
14	91		
10	86		
6.3	79		
5	76		
3.35	70		
2	63		
1.18	58		
0.63	54		
0.425	52		
0.30	50		
0.20	48		
0.15	46		
0.063	45		

Sample Proportions	% dry mass
Cobbles	0
Gravel	37
Sand	18
Silt and Clay	45

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Aidan.H

PARTICLE SIZE DISTRIBUTION

BS 1377-2:2022 Clause 10 &

BS EN ISO 17892-4:2016

Wet Sieve, Clause 5.2

Contract Number

87639

Borehole/Pit No.

WS1

Project Name

land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Sample No.

3

Sample Description

Brown fine to coarse sandy silty/clayey fine to coarse GRAVEL

Depth Top

3.30

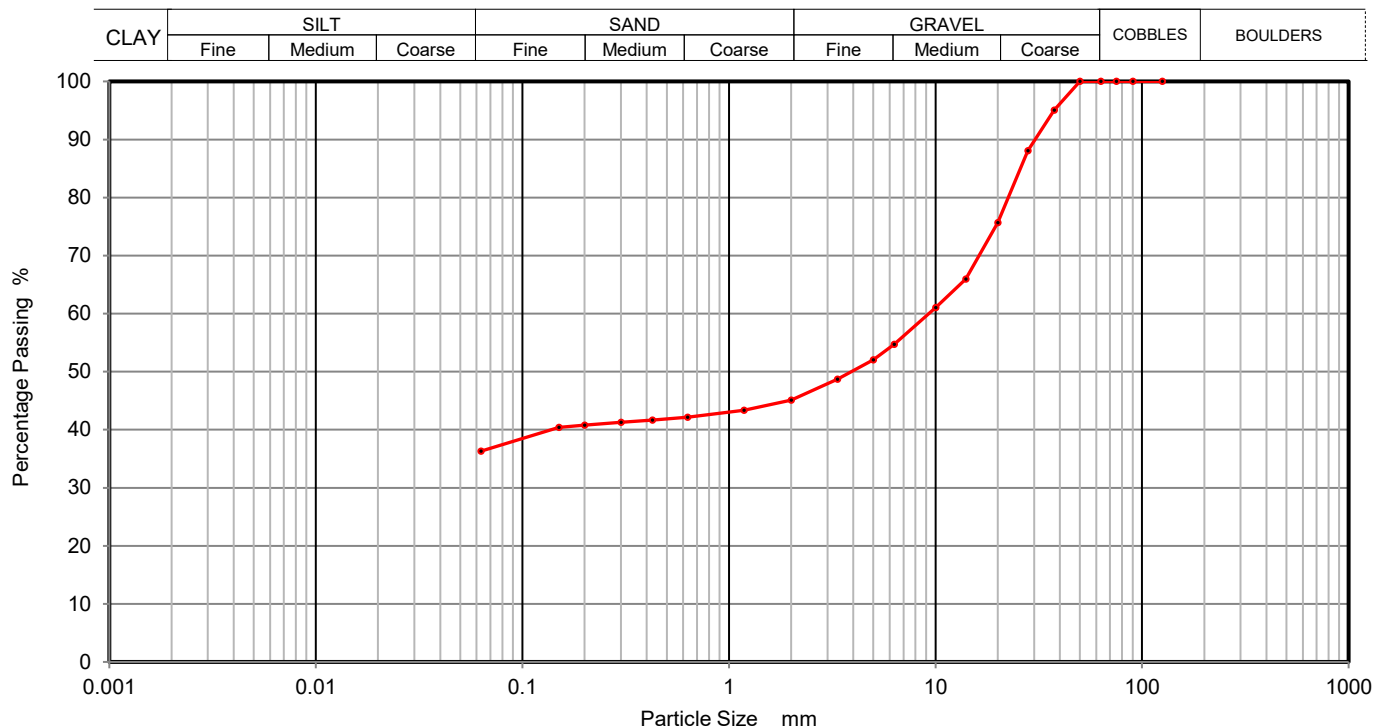
Depth Base

Date Tested

14/07/2026

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	95		
28	88		
20	76		
14	66		
10	61		
6.3	55		
5	52		
3.35	49		
2	45		
1.18	43		
0.63	42		
0.425	42		
0.30	41		
0.20	41		
0.15	40		
0.063	36		

Sample Proportions	% dry mass
Cobbles	0
Gravel	55
Sand	9
Silt and Clay	36

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Aidan.H

PARTICLE SIZE DISTRIBUTION

BS 1377-2:2022 Clause 10 &

BS EN ISO 17892-4:2016

Wet Sieve, Clause 5.2

Contract Number

87639

Borehole/Pit No.

WS2

Project Name

land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Sample No.

5

Sample Description

Brown fine coarse sandy fine to coarse gravelly silty CLAY

Depth Top

2.00

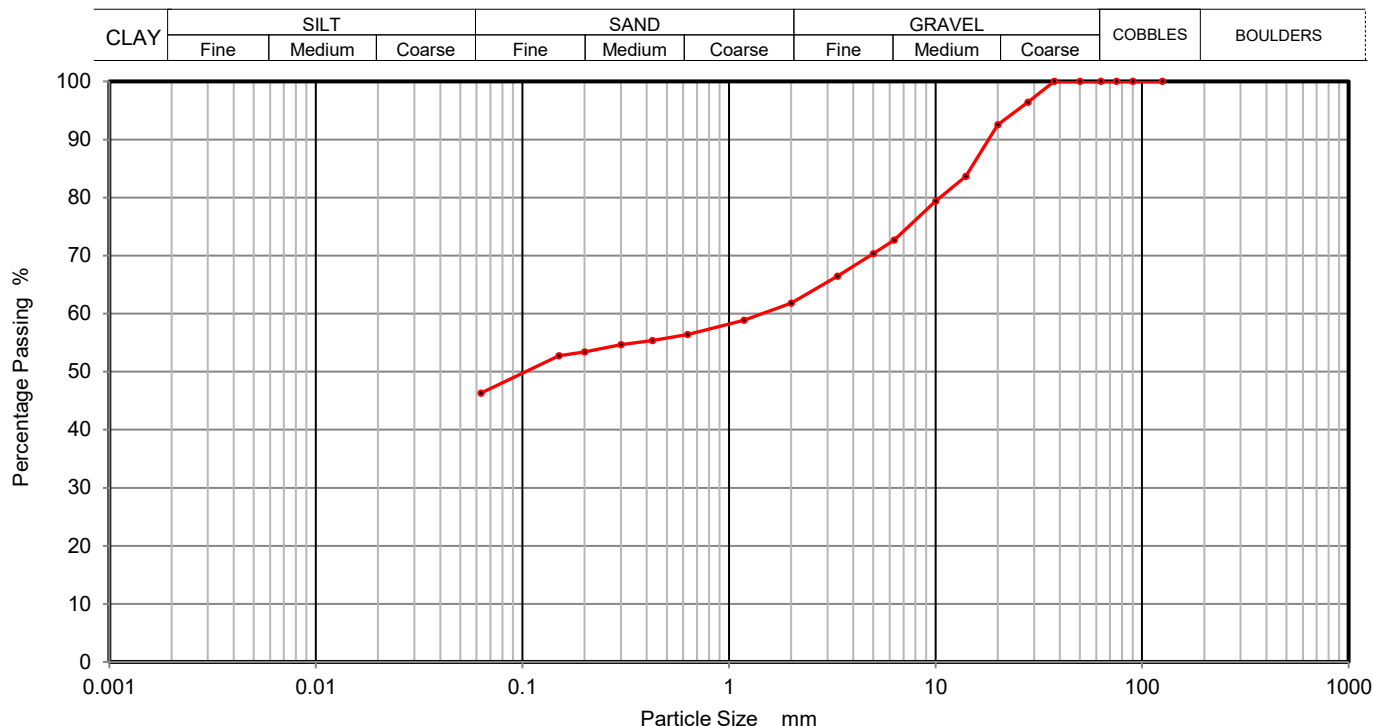
Depth Base

Date Tested

14/07/2026

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	96		
20	93		
14	84		
10	79		
6.3	73		
5	70		
3.35	66		
2	62		
1.18	59		
0.63	56		
0.425	55		
0.30	55		
0.20	53		
0.15	53		
0.063	46		

Sample Proportions	% dry mass
Cobbles	0
Gravel	38
Sand	16
Silt and Clay	46

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Aidan.H

PARTICLE SIZE DISTRIBUTION

BS 1377-2:2022 Clause 10 &

BS EN ISO 17892-4:2016

Wet Sieve, Clause 5.2

Contract Number

87639

Borehole/Pit No.

WS5

Project Name

land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Sample No.

7

Sample Description

Brown fine to coarse sandy silty/clayey fine to coarse GRAVEL with cobbles

Depth Top

1.00

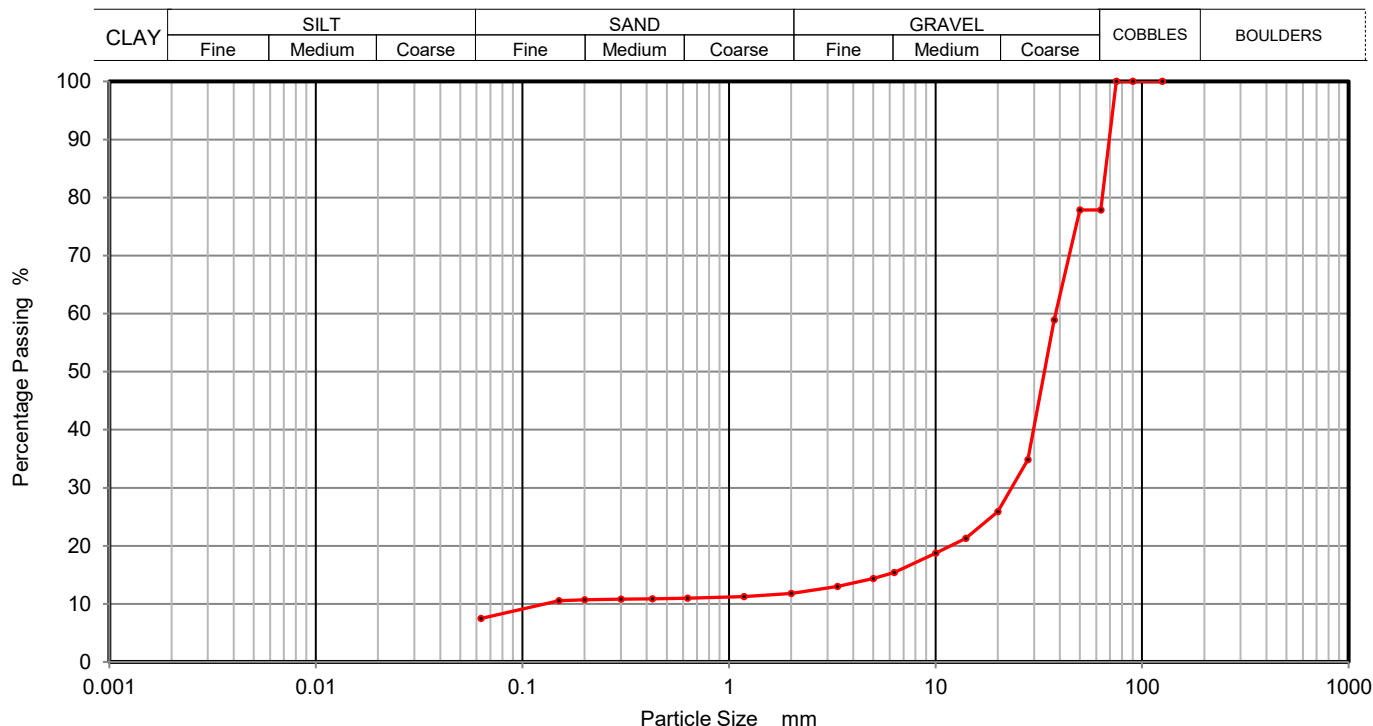
Depth Base

Date Tested

14/07/2026

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	78		
50	78		
37.5	59		
28	35		
20	26		
14	21		
10	19		
6.3	15		
5	14		
3.35	13		
2	12		
1.18	11		
0.63	11		
0.425	11		
0.30	11		
0.20	11		
0.15	11		
0.063	7		

Sample Proportions	% dry mass
Cobbles	22
Gravel	66
Sand	5
Silt and Clay	7

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Aidan.H

PARTICLE SIZE DISTRIBUTION

BS 1377-2:2022 Clause 10 &

BS EN ISO 17892-4:2016

Wet Sieve, Clause 5.2

Contract Number

87639

Borehole/Pit No.

WS6

Project Name

land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Sample No.

8

Sample Description

Brown fine to coarse sandy fine to coarse gravelly silty CLAY

Depth Top

2.00

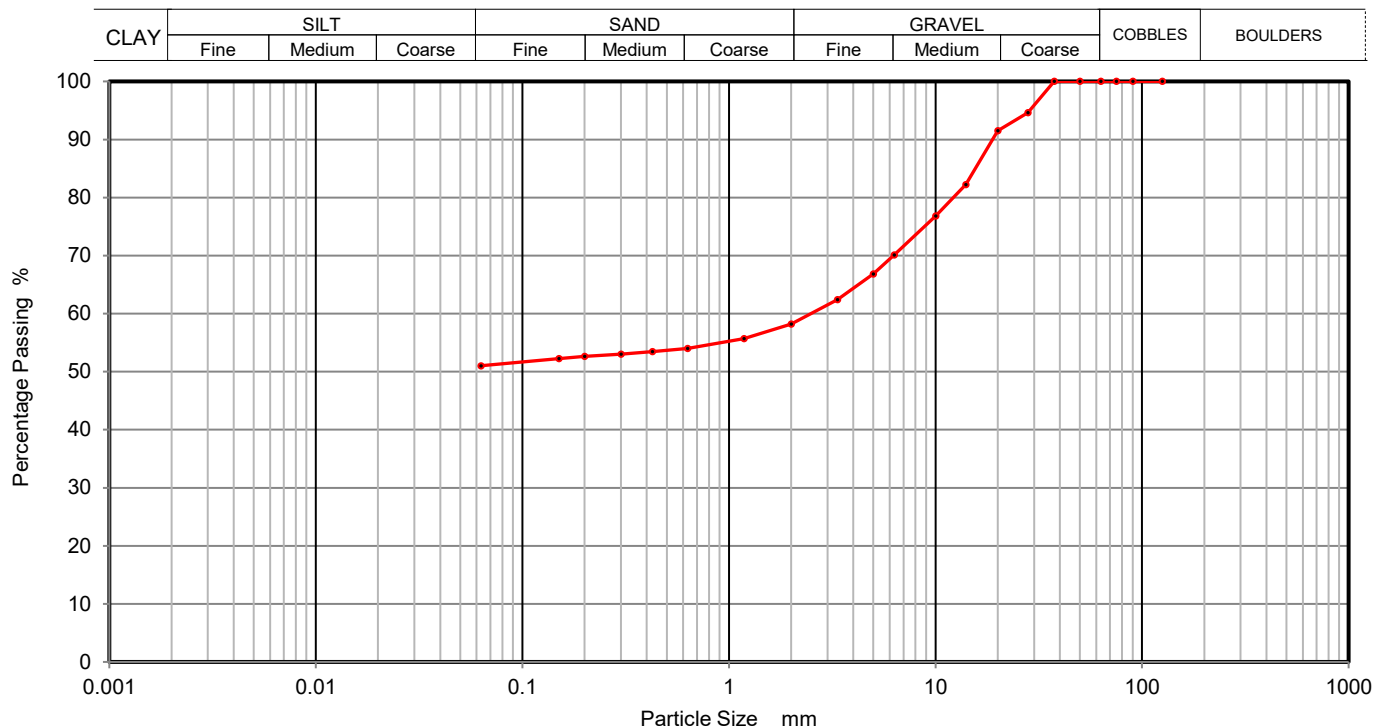
Depth Base

Date Tested

14/07/2026

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	95		
20	91		
14	82		
10	77		
6.3	70		
5	67		
3.35	62		
2	58		
1.18	56		
0.63	54		
0.425	53		
0.30	53		
0.20	53		
0.15	52		
0.063	51		

Sample Proportions	% dry mass
Cobbles	0
Gravel	42
Sand	7
Silt and Clay	51

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Aidan.H

PARTICLE SIZE DISTRIBUTION

BS 1377-2:2022 Clause 10 &

BS EN ISO 17892-4:2016

Wet Sieve, Clause 5.2

Contract Number

87639

Borehole/Pit No.

SP3

Project Name

land West of Selsfield Road, Ardingly, West Sussex, RH17 6UL

Sample No.

9

Sample Description

Brown fine to coarse sandy fine to coarse gravelly silty CLAY

Depth Top

1.00

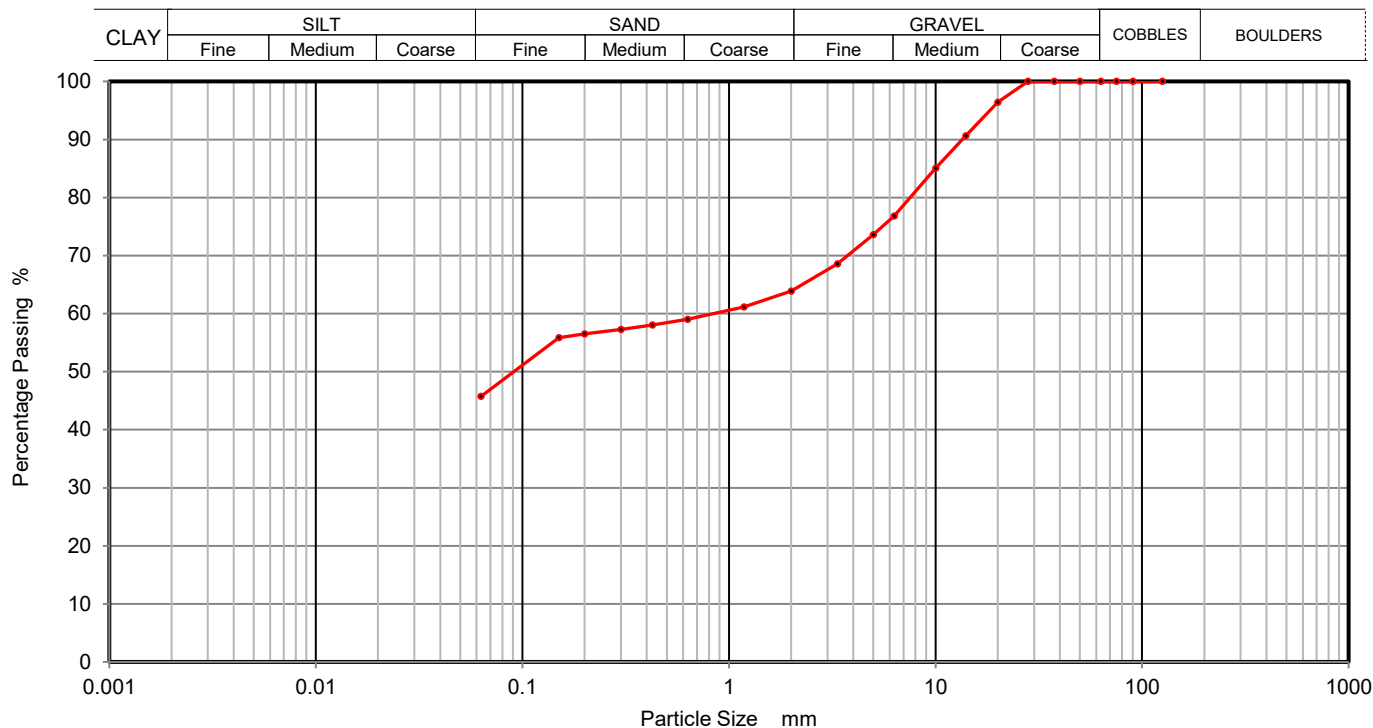
Depth Base

Date Tested

14/07/2026

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	91		
10	85		
6.3	77		
5	74		
3.35	69		
2	64		
1.18	61		
0.63	59		
0.425	58		
0.30	57		
0.20	56		
0.15	56		
0.063	46		

Sample Proportions	% dry mass
Cobbles	0
Gravel	36
Sand	18
Silt and Clay	46

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Aidan.H



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP1
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	

Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		105	0.071	-0.071		
1	1	141	0.107	-0.107	36.0	6.8
1	2	165	0.131	-0.131	24.0	10.5
1	3	191	0.157	-0.157	26.0	9.6
1	4	207	0.173	-0.173	16.0	16.1
1	5	232	0.198	-0.198	25.0	10.1
1	6	254	0.220	-0.220	22.0	11.5
1	7	277	0.243	-0.243	23.0	11.0
1	8	301	0.267	-0.267	24.0	10.5
1	9	323	0.289	-0.289	22.0	11.5
1	10	347	0.313	-0.313	24.0	10.5
1	11	366	0.332	-0.332	19.0	13.4
1	12	388	0.354	-0.354	22.0	11.5
1	13	394	0.360	-0.360	6.0	45.4
1	14	406	0.372	-0.372	12.0	21.8
1	15	413	0.379	-0.379	7.0	38.6
1	16	426	0.392	-0.392	13.0	20.1
1	17	437	0.403	-0.403	11.0	23.9
1	18	442	0.408	-0.408	5.0	55.1
1	19	452	0.418	-0.418	10.0	26.5
5	24	495	0.461	-0.461	8.6	31.1
5	29	532	0.498	-0.498	7.4	36.4
5	34	557	0.523	-0.523	5.0	55.1
5	39	567	0.533	-0.533	2.0	145.1
5	44	574	0.540	-0.540	1.4	211.6
10	54	587	0.553	-0.553	1.3	228.9
20	74	611	0.577	-0.577	1.2	249.1
20	94	636	0.602	-0.602	1.3	238.5
20	114	664	0.630	-0.630	1.4	211.6
20	134	691	0.657	-0.657	1.4	219.9

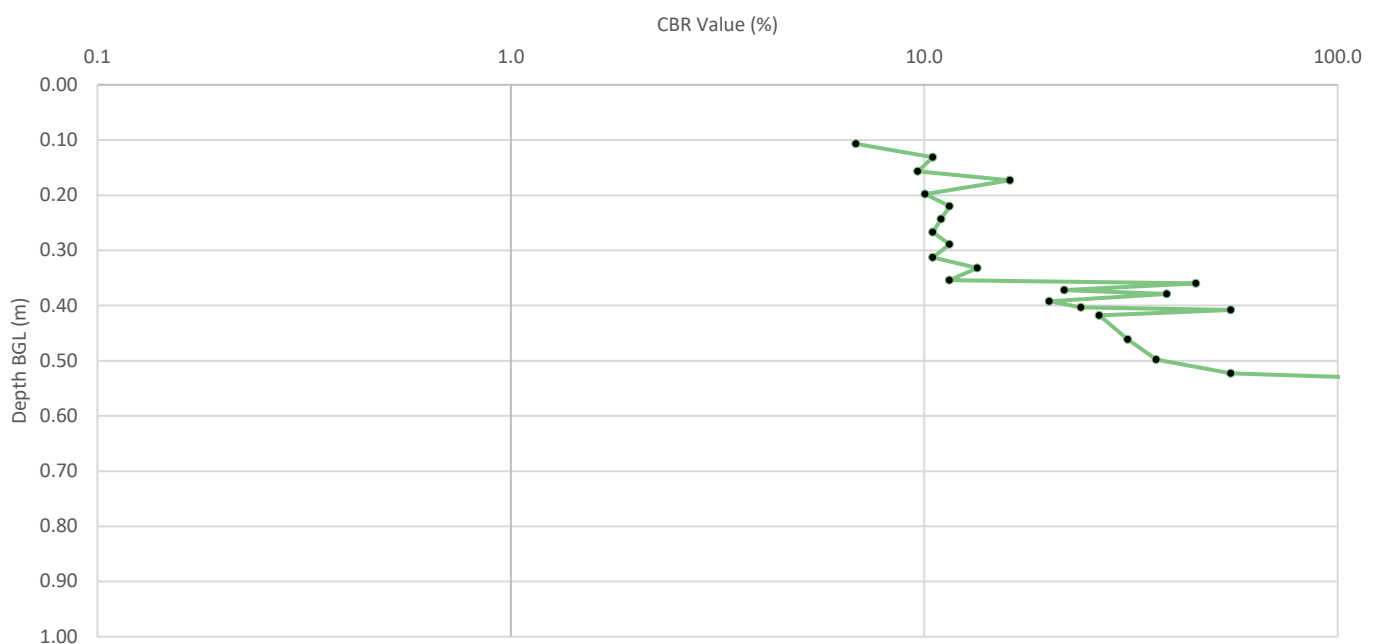
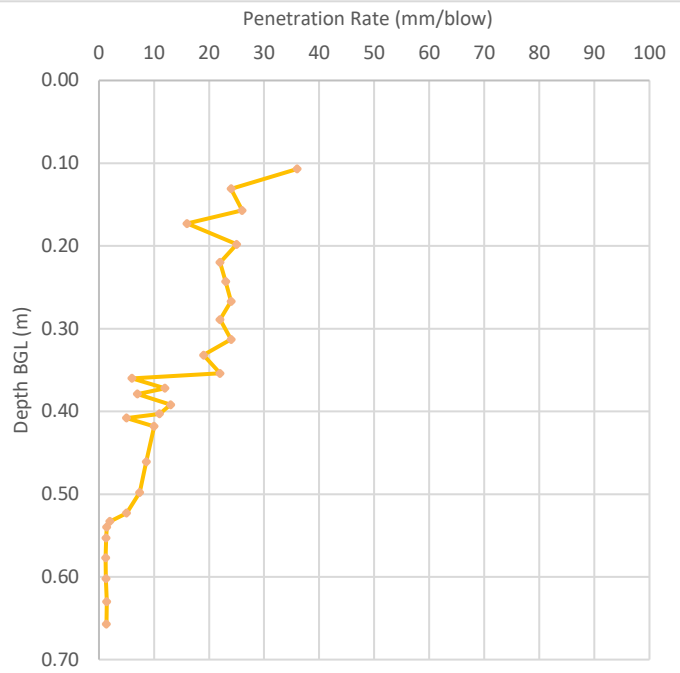
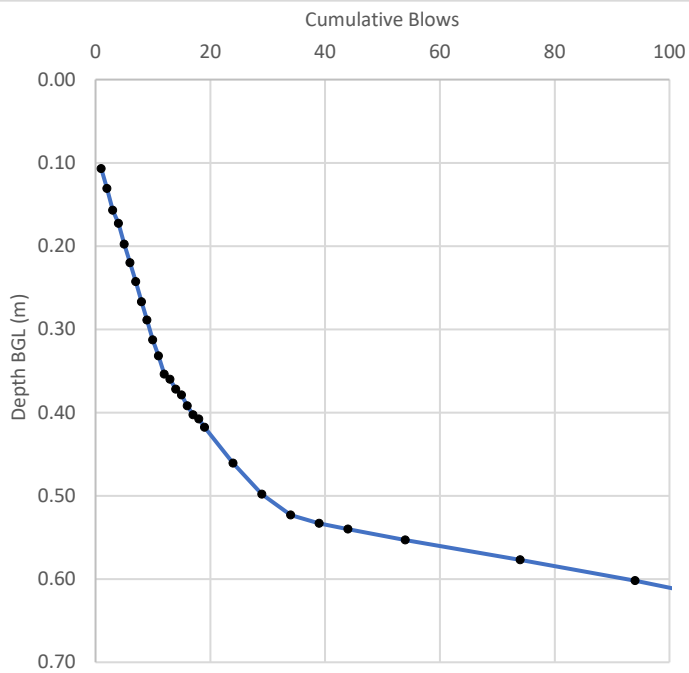
TRRL Road Note 8 Equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \log_{10}(\text{mm/blow})$

Cone Angle 60°



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP1
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	





Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP2
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	

Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		93	0.059	-0.059		
1	1	139	0.105	-0.105	46.0	5.3
1	2	164	0.130	-0.130	25.0	10.1
1	3	190	0.156	-0.156	26.0	9.6
1	4	212	0.178	-0.178	22.0	11.5
1	5	228	0.194	-0.194	16.0	16.1
1	6	244	0.210	-0.210	16.0	16.1
1	7	260	0.226	-0.226	16.0	16.1
1	8	279	0.245	-0.245	19.0	13.4
1	9	289	0.255	-0.255	10.0	26.5
1	10	302	0.268	-0.268	13.0	20.1
1	11	316	0.282	-0.282	14.0	18.6
1	12	330	0.296	-0.296	14.0	18.6
1	13	342	0.308	-0.308	12.0	21.8
1	14	357	0.323	-0.323	15.0	17.3
1	15	366	0.332	-0.332	9.0	29.6
1	16	381	0.347	-0.347	15.0	17.3
1	17	394	0.360	-0.360	13.0	20.1
5	22	452	0.418	-0.418	11.6	22.6
5	27	501	0.467	-0.467	9.8	27.1
5	32	537	0.503	-0.503	7.2	37.5
5	37	552	0.518	-0.518	3.0	94.6
5	42	562	0.528	-0.528	2.0	145.1
10	52	581	0.547	-0.547	1.9	153.2
10	62	602	0.568	-0.568	2.1	137.9
10	72	616	0.582	-0.582	1.4	211.6
20	92	642	0.608	-0.608	1.3	228.9
40	132	689	0.655	-0.655	1.2	254.7
20	152	716	0.682	-0.682	1.4	219.9

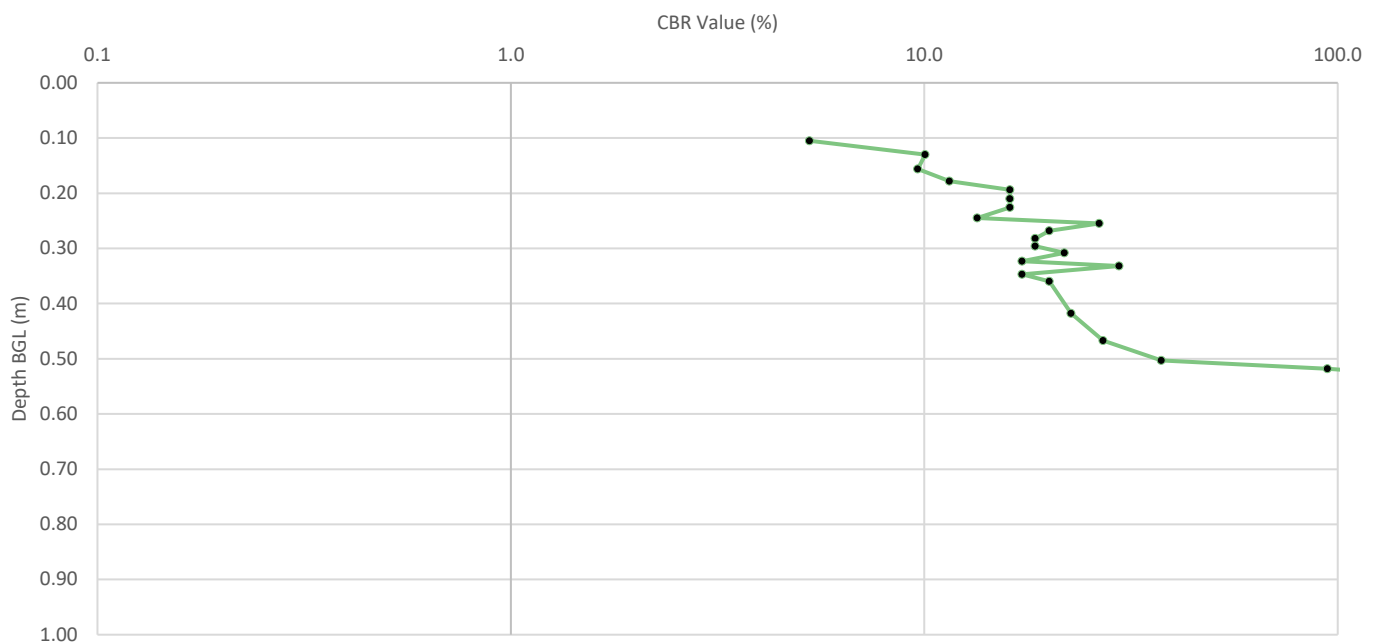
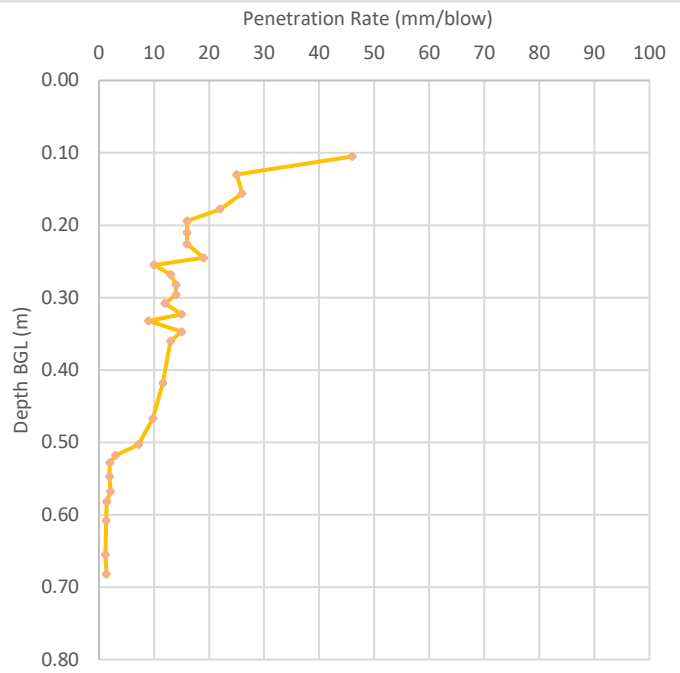
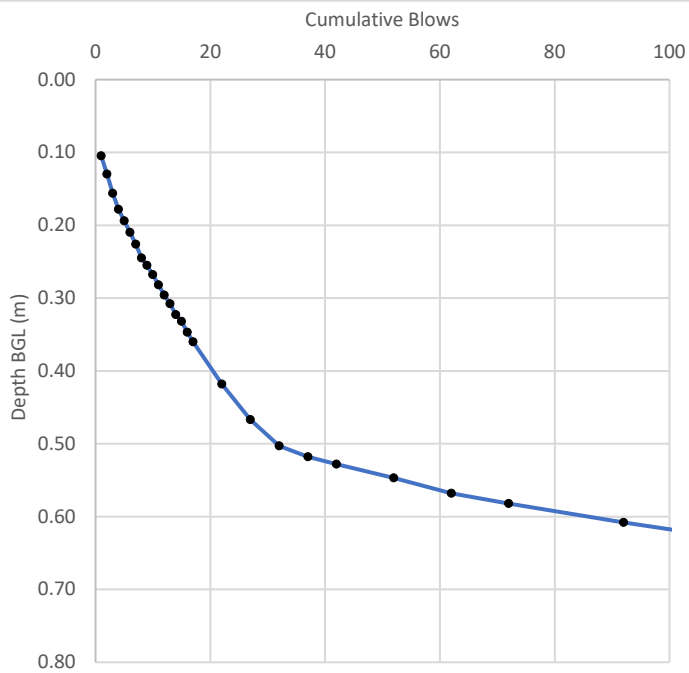
TRRL Road Note 8 Equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \log_{10}(\text{mm/blow})$

Cone Angle 60°



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP2
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	





Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP3
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	

Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		77	0.043	-0.043		
1	1	113	0.079	-0.079	36.0	6.8
1	2	134	0.100	-0.100	21.0	12.1
1	3	153	0.119	-0.119	19.0	13.4
1	4	176	0.142	-0.142	23.0	11.0
1	5	193	0.159	-0.159	17.0	15.1
1	6	206	0.172	-0.172	13.0	20.1
1	7	218	0.184	-0.184	12.0	21.8
1	8	232	0.198	-0.198	14.0	18.6
1	9	241	0.207	-0.207	9.0	29.6
1	10	252	0.218	-0.218	11.0	23.9
1	11	263	0.229	-0.229	11.0	23.9
1	12	272	0.238	-0.238	9.0	29.6
1	13	289	0.255	-0.255	17.0	15.1
1	14	301	0.267	-0.267	12.0	21.8
1	15	311	0.277	-0.277	10.0	26.5
1	16	317	0.283	-0.283	6.0	45.4
1	17	328	0.294	-0.294	11.0	23.9
1	18	338	0.304	-0.304	10.0	26.5
1	19	346	0.312	-0.312	8.0	33.5
1	20	351	0.317	-0.317	5.0	55.1
1	21	356	0.322	-0.322	5.0	55.1
1	22	361	0.327	-0.327	5.0	55.1
5	27	413	0.379	-0.379	10.4	25.4
1	28	476	0.442	-0.442	63.0	3.8
1	29	573	0.539	-0.539	97.0	2.4
1	30	673	0.639	-0.639	100.0	2.3
3	33	744	0.710	-0.710	23.7	10.7
1	34	770	0.736	-0.736	26.0	9.6
1	35	791	0.757	-0.757	21.0	12.1
1	36	812	0.778	-0.778	21.0	12.1
1	37	819	0.785	-0.785	7.0	38.6
1	38	843	0.809	-0.809	24.0	10.5
3	41	912	0.878	-0.878	23.0	11.0

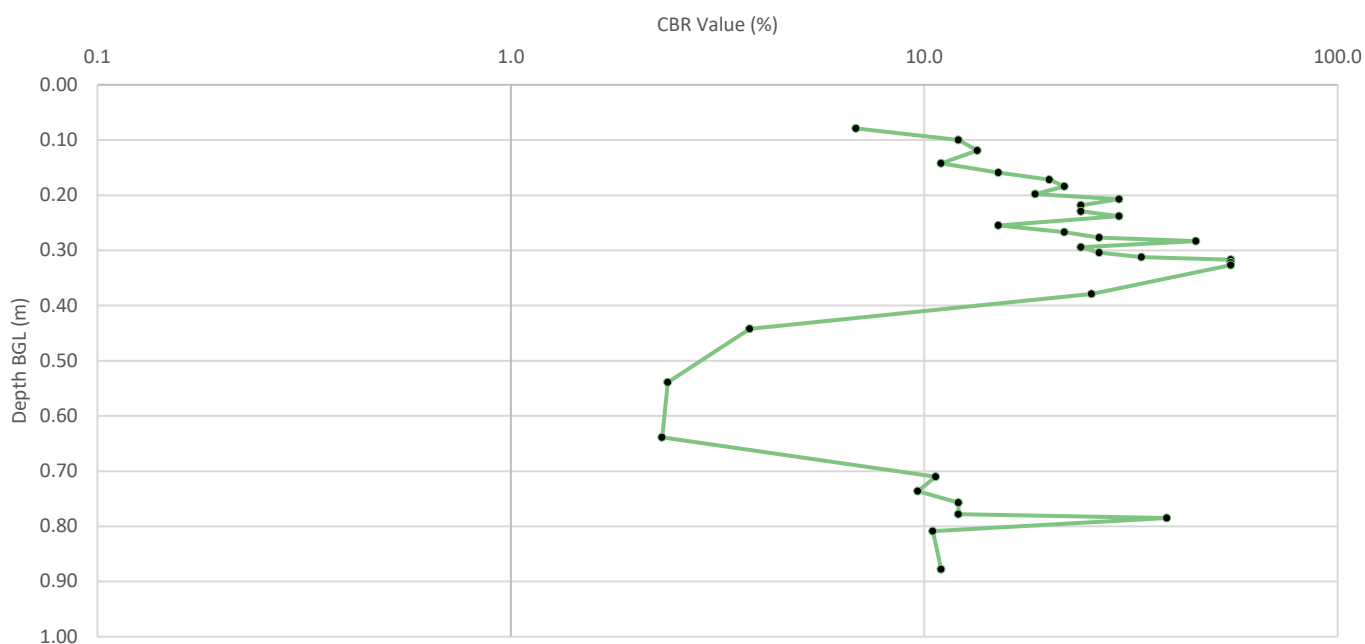
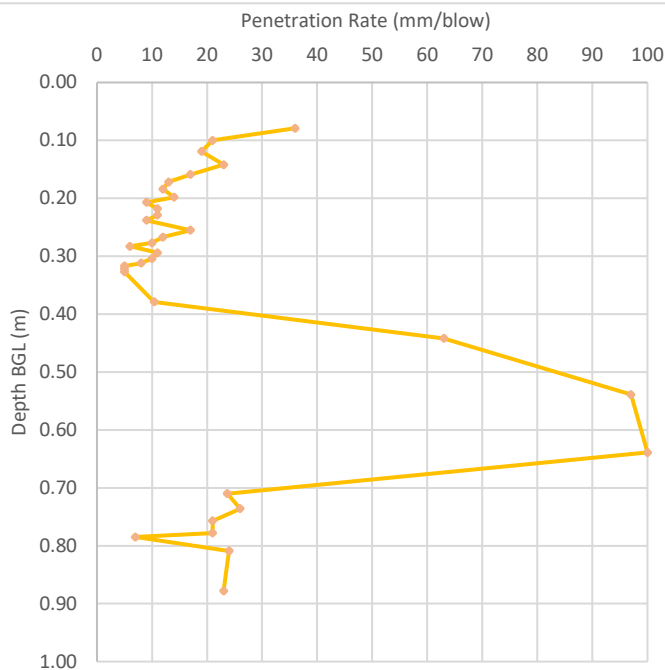
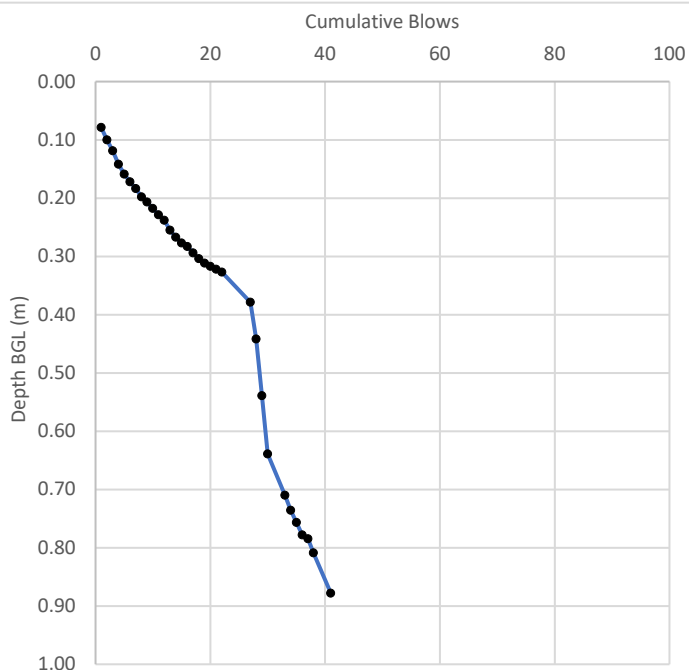
TRRL Road Note 8 Equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \log_{10}(\text{mm/blow})$

Cone Angle 60°



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP3
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	





Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP4
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	

Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		74	0.040	-0.040		
1	1	129	0.095	-0.095	55.0	4.4
1	2	170	0.136	-0.136	41.0	6.0
1	3	185	0.151	-0.151	15.0	17.3
1	4	229	0.195	-0.195	44.0	5.5
1	5	256	0.222	-0.222	27.0	9.3
1	6	283	0.249	-0.249	27.0	9.3
1	7	311	0.277	-0.277	28.0	8.9
1	8	341	0.307	-0.307	30.0	8.3
1	9	368	0.334	-0.334	27.0	9.3
1	10	385	0.351	-0.351	17.0	15.1
1	11	410	0.376	-0.376	25.0	10.1
1	12	425	0.391	-0.391	15.0	17.3
1	13	440	0.406	-0.406	15.0	17.3
5	18	496	0.462	-0.462	11.2	23.5
5	23	539	0.505	-0.505	8.6	31.1
5	28	560	0.526	-0.526	4.2	66.3
5	33	601	0.567	-0.567	8.2	32.7
5	38	645	0.611	-0.611	8.8	30.3
5	43	668	0.634	-0.634	4.6	60.2
10	53	690	0.656	-0.656	2.2	131.2
5	58	703	0.669	-0.669	2.6	110.0
5	63	718	0.684	-0.684	3.0	94.6
20	83	775	0.741	-0.741	2.9	99.8
10	93	806	0.772	-0.772	3.1	91.3
20	113	869	0.835	-0.835	3.2	89.8
10	123	904	0.870	-0.870	3.5	80.3
5	128	923	0.889	-0.889	3.8	73.6

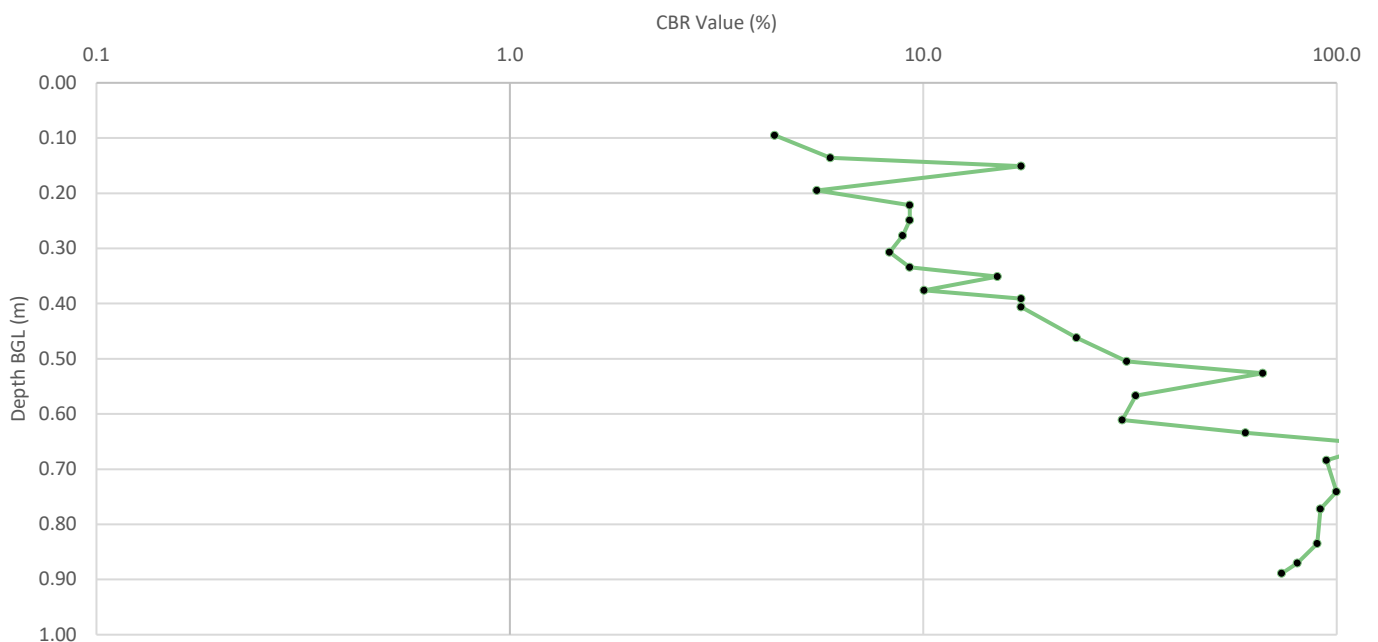
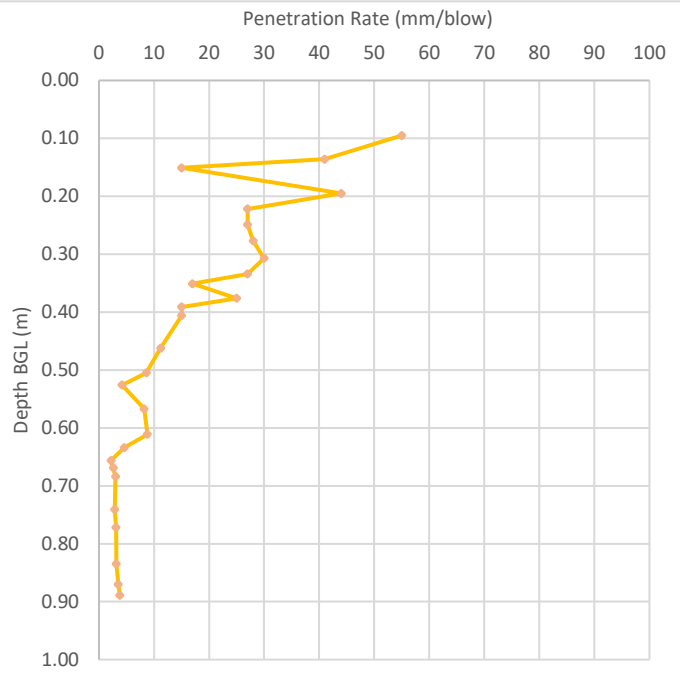
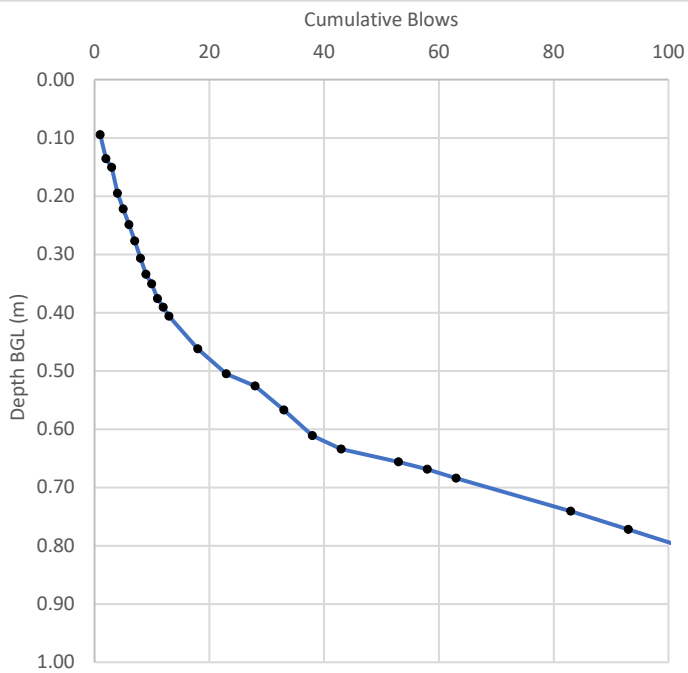
TRRL Road Note 8 Equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \log_{10}(\text{mm/blow})$

Cone Angle 60°



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP4
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	





Dynamic Cone Penetrometer

Project: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No: 26-186.01	DCP Location: DCP5
Client: Antler Homes plc	Operator: AC / CD	Date: 23/06/2026
Surface Conditions & Observations: Grass over topsoil	Zero Error (mm): 34	Approx AOD (m):

Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		62	0.028	-0.028		
1	1	91	0.057	-0.057	29.0	8.6
1	2	112	0.078	-0.078	21.0	12.1
1	3	136	0.102	-0.102	24.0	10.5
1	4	152	0.118	-0.118	16.0	16.1
1	5	168	0.134	-0.134	16.0	16.1
1	6	183	0.149	-0.149	15.0	17.3
1	7	192	0.158	-0.158	9.0	29.6
1	8	207	0.173	-0.173	15.0	17.3
1	9	220	0.186	-0.186	13.0	20.1
1	10	233	0.199	-0.199	13.0	20.1
1	11	256	0.222	-0.222	23.0	11.0
1	12	257	0.223	-0.223	1.0	302.0
1	13	277	0.243	-0.243	20.0	12.7
1	14	289	0.255	-0.255	12.0	21.8
1	15	306	0.272	-0.272	17.0	15.1
1	16	312	0.278	-0.278	6.0	45.4
5	21	386	0.352	-0.352	14.8	17.5
1	22	397	0.363	-0.363	11.0	23.9
1	23	449	0.415	-0.415	52.0	4.6
1	24	516	0.482	-0.482	67.0	3.5
1	25	571	0.537	-0.537	55.0	4.4
1	26	604	0.570	-0.570	33.0	7.5
1	27	637	0.603	-0.603	33.0	7.5
5	32	667	0.633	-0.633	6.0	45.4
5	37	699	0.665	-0.665	6.4	42.4
2	39	733	0.699	-0.699	17.0	15.1
1	40	767	0.733	-0.733	34.0	7.3
1	41	808	0.774	-0.774	41.0	6.0
1	42	847	0.813	-0.813	39.0	6.3
1	43	888	0.854	-0.854	41.0	6.0
1	44	934	0.900	-0.900	46.0	5.3

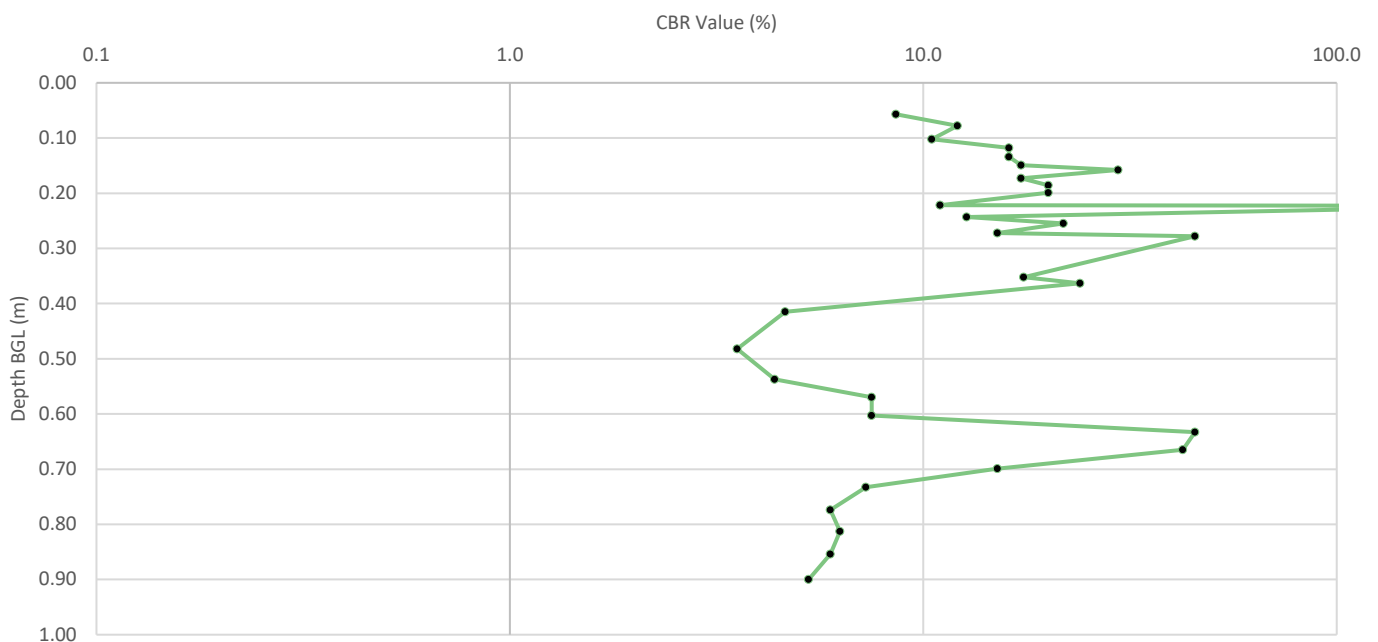
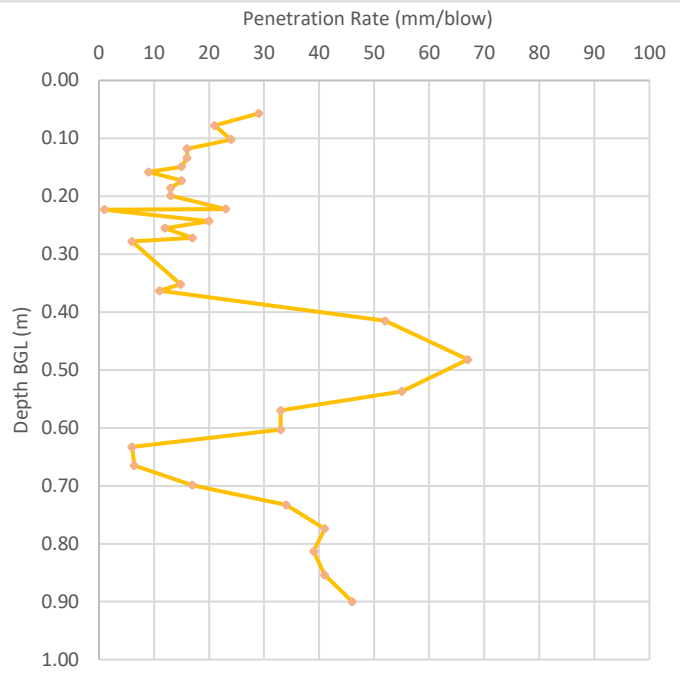
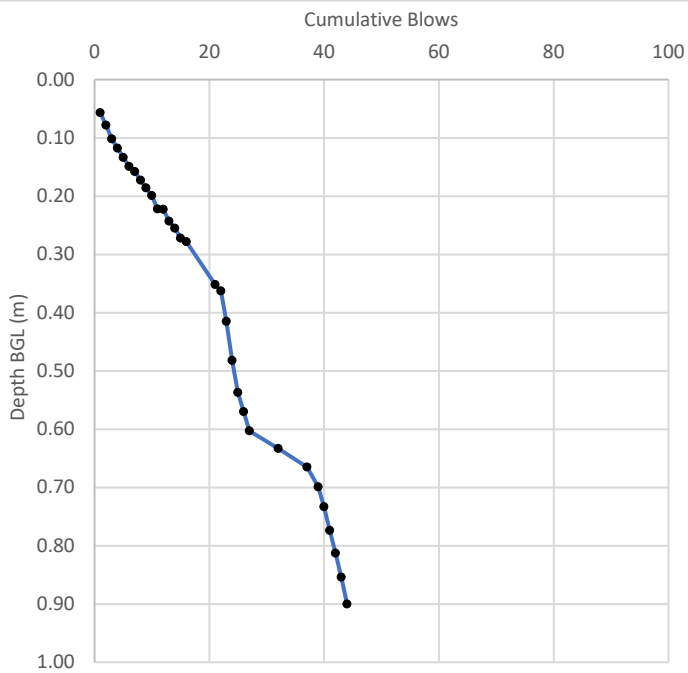
TRRL Road Note 8 Equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \log_{10}(\text{mm/blow})$

Cone Angle 60°



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP5
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	





Dynamic Cone Penetrometer

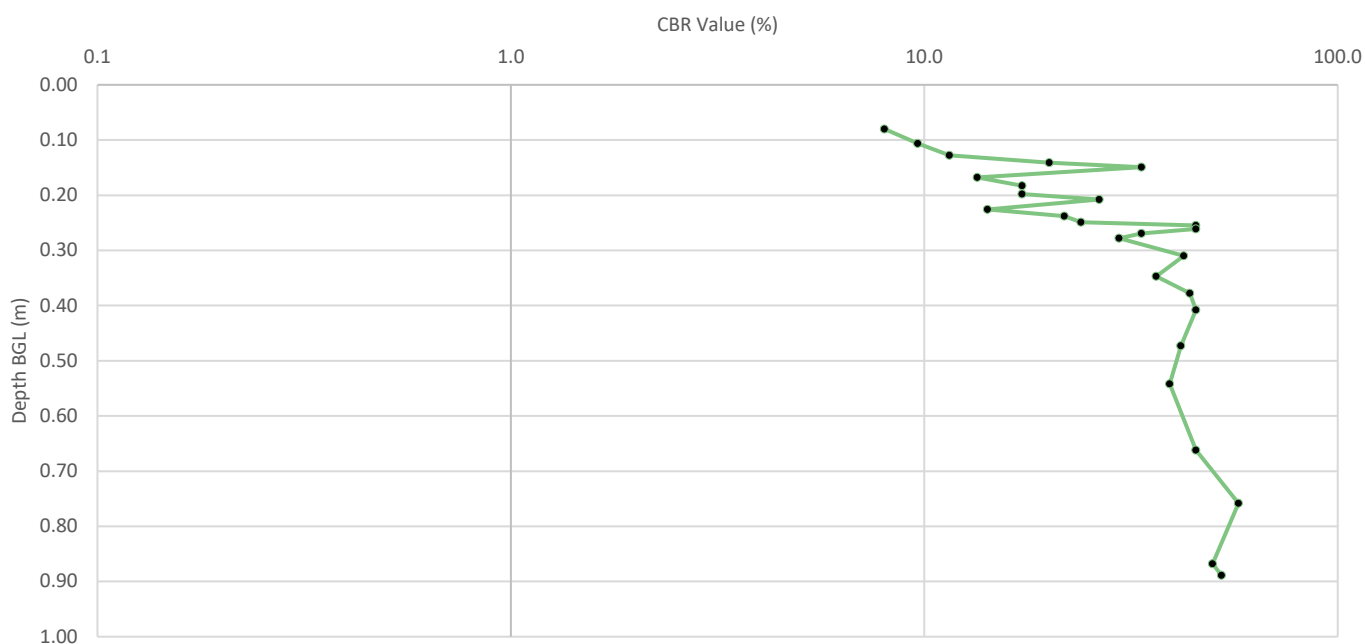
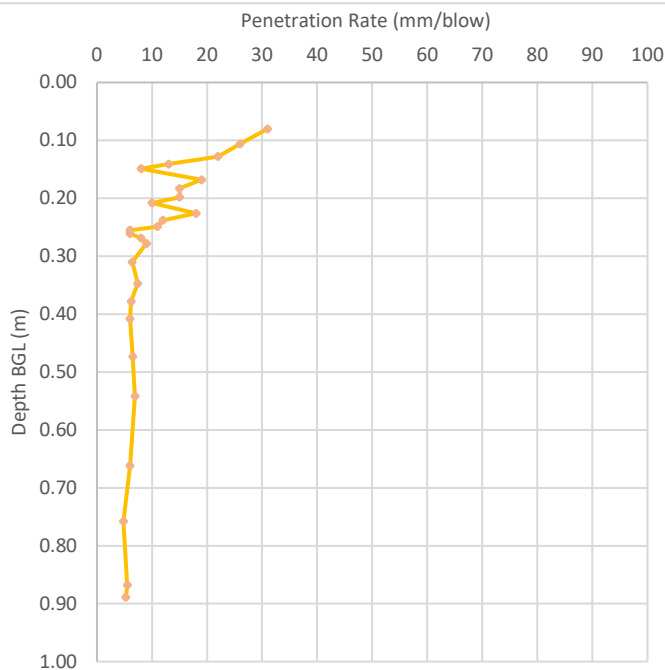
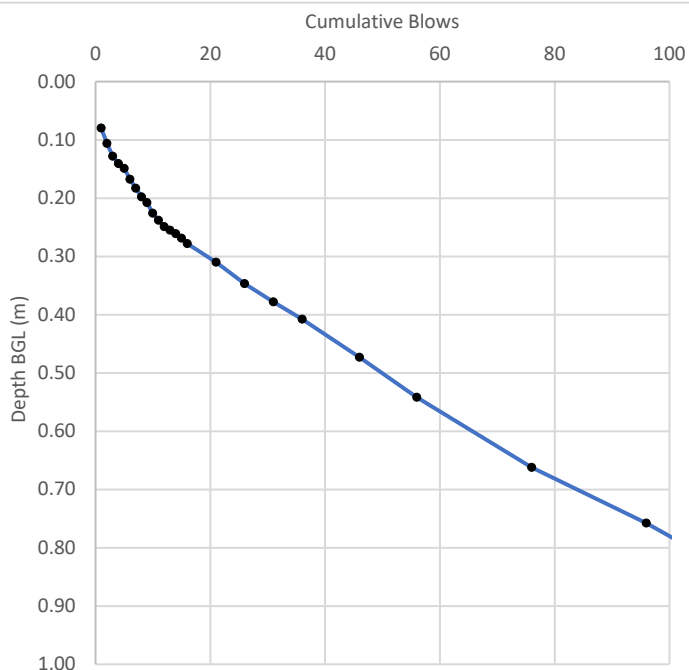
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Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	

Blows	Cumulative Blows	Cumulative Penetration Depth (mm)	Depth Bgl (m)	AOD (m)	Penetration Rate (mm/blow)	CBR Value (%)
0		83	0.049	-0.049		
1	1	114	0.080	-0.080	31.0	8.0
1	2	140	0.106	-0.106	26.0	9.6
1	3	162	0.128	-0.128	22.0	11.5
1	4	175	0.141	-0.141	13.0	20.1
1	5	183	0.149	-0.149	8.0	33.5
1	6	202	0.168	-0.168	19.0	13.4
1	7	217	0.183	-0.183	15.0	17.3
1	8	232	0.198	-0.198	15.0	17.3
1	9	242	0.208	-0.208	10.0	26.5
1	10	260	0.226	-0.226	18.0	14.2
1	11	272	0.238	-0.238	12.0	21.8
1	12	283	0.249	-0.249	11.0	23.9
1	13	289	0.255	-0.255	6.0	45.4
1	14	295	0.261	-0.261	6.0	45.4
1	15	303	0.269	-0.269	8.0	33.5
1	16	312	0.278	-0.278	9.0	29.6
5	21	344	0.310	-0.310	6.4	42.4
5	26	381	0.347	-0.347	7.4	36.4
5	31	412	0.378	-0.378	6.2	43.9
5	36	442	0.408	-0.408	6.0	45.4
10	46	507	0.473	-0.473	6.5	41.8
10	56	576	0.542	-0.542	6.9	39.2
20	76	696	0.662	-0.662	6.0	45.4
20	96	792	0.758	-0.758	4.8	57.5
20	116	902	0.868	-0.868	5.5	49.8
4	120	923	0.889	-0.889	5.3	52.3



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP6
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	





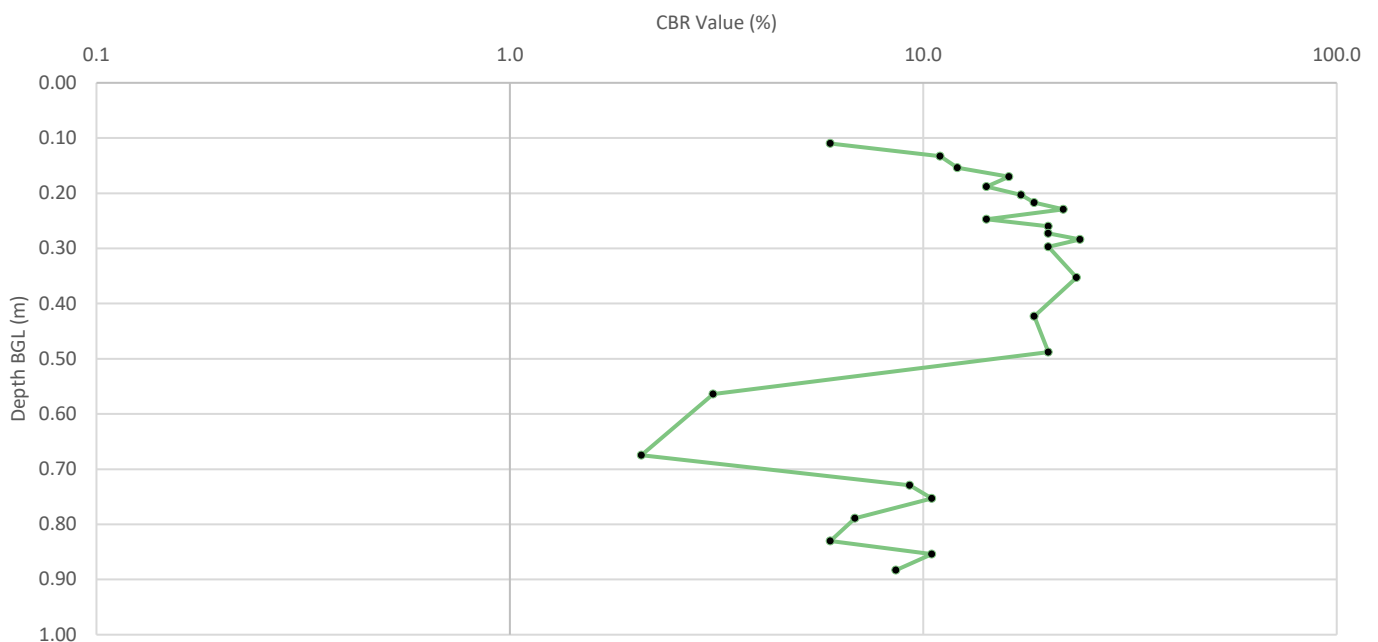
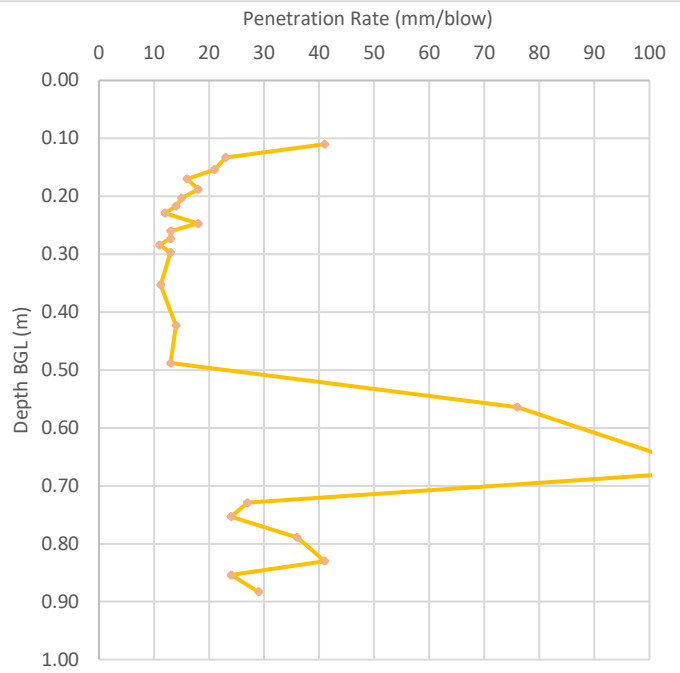
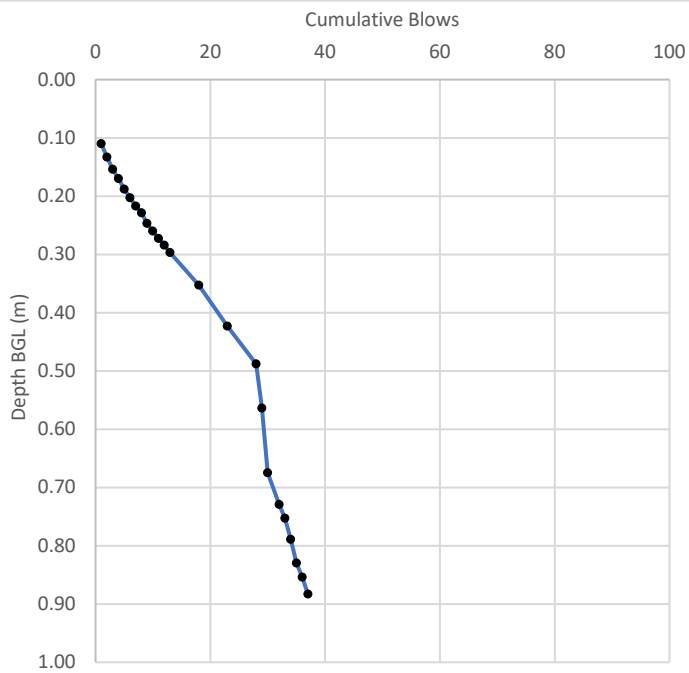
Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP7
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations: Grass over topsoil		Zero Error (mm):	34	Approx AOD (m):	

[illegible]



Dynamic Cone Penetrometer

Project:	Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL	Project No:	26-186.01	DCP Location:	DCP7
Client:	Antler Homes plc	Operator:	AC / CD	Date:	23/06/2026
Surface Conditions & Observations:	Grass over topsoil	Zero Error (mm):	34	Approx AOD (m):	



Appendix

VI Soil Infiltration Test Results

Soil Infiltration Test

26-186.01: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL



Test Pit SP1 - F1

Date: 22-23/06/2026

Readings Recorded By: CD

Pit Dimensions: 1.7m(l) x 0.3m(w) x 1.9m(d)
Start Water Level: 0.53m

Actual Storage Volume: 0.97 m³
Effective Depth: 1.37 m

Time (mins)	Depth BGL (m)
0	0.530
1	0.530
2	0.540
3	0.540
4	0.540
5	0.550
10	0.560
20	0.580
30	0.610
60	0.670
100	0.710
140	0.740
200	0.780
300	0.830
360	0.870
1400	1.390
1600	1.470
1720	1.520
1800	1.540

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

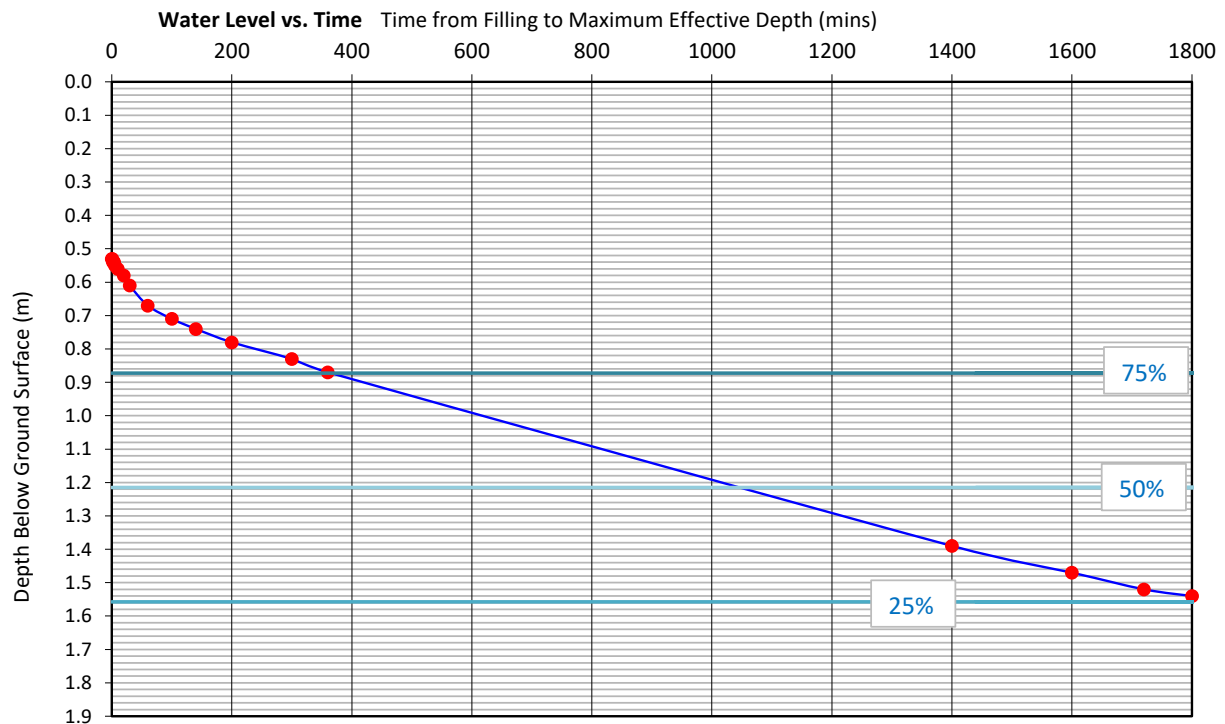
Effective Storage Volume, V : 1.7m x 0.3m x 1.37m
 V : 0.6987 m³

V_{p75-25} : 0.349 m³

Effective Internal Surface Area, a_{p50} : 2.329m² + 0.411m² + 0.51m²
 a_{p50} : 3.250 m²

Time of water level fall, t_{p75-25} : 1900 - 390 mins
 t_{p75-25} : 1510 mins
 t_{p75-25} : 90600 secs

Soil infiltration rate, f : 0.34935/(3.25 x 90600)
 f : 1.19E-06 ms⁻¹



Soil Infiltration Test

26-186.01: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL



Test Pit SP2 - F1

Date: 22-23/06/2026

Readings Recorded By: CD

Pit Dimensions: 1.9m(l) x 0.3m(w) x 1.1m(d)
Start Water Level: 0.29m

Actual Storage Volume: 0.63 m³
Effective Depth: 0.81 m

Time (mins)	Depth BGL (m)
0	0.290
1	0.300
2	0.300
3	0.310
4	0.310
5	0.320
10	0.330
30	0.370
60	0.420
90	0.460
120	0.490
150	0.520
240	0.590
270	0.610
340	0.640
1380	0.930

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

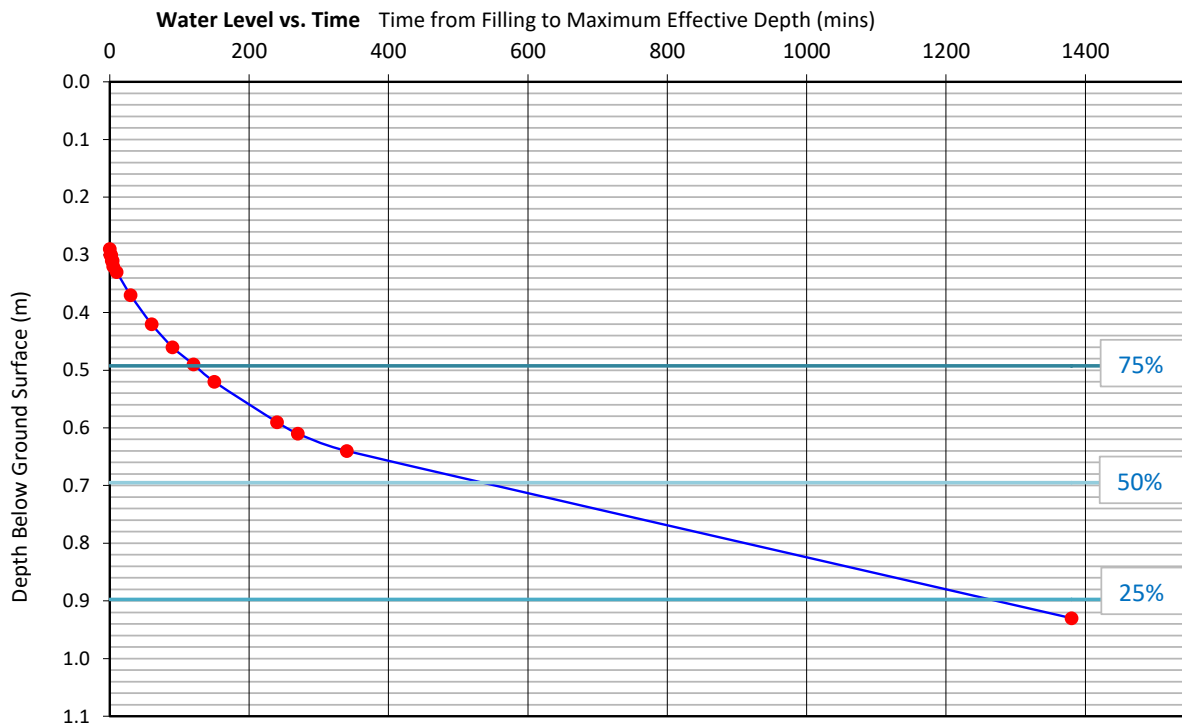
Effective Storage Volume, V : 1.9m x 0.3m x 0.81m
 V : 0.4617 m³

V_{p75-25} : 0.231 m³

Effective Internal Surface Area, a_{p50} : 1.539m² + 0.243m² + 0.57m²
 a_{p50} : 2.352 m²

Time of water level fall, t_{p75-25} : 1250 - 160 mins
 t_{p75-25} : 1090 mins
 t_{p75-25} : 65400 secs

Soil infiltration rate, f : 0.23085/(2.352 x 65400)
 f : 1.50E-06 ms⁻¹



Soil Infiltration Test

26-186.01: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL



Test Pit SP2 - F2

Date: 23/06/2026

Readings Recorded By: CD

Pit Dimensions: 1.9m(l) x 0.3m(w) x 1.1m(d)
Start Water Level: 0.43m

Actual Storage Volume: 0.63 m³
Effective Depth: 0.67 m

Time (mins)	Depth BGL (m)
0	0.430
1	0.430
2	0.430
3	0.430
4	0.430
5	0.430
10	0.440
20	0.460
30	0.470
40	0.490
60	0.510
80	0.540
120	0.570
140	0.580
320	0.630

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

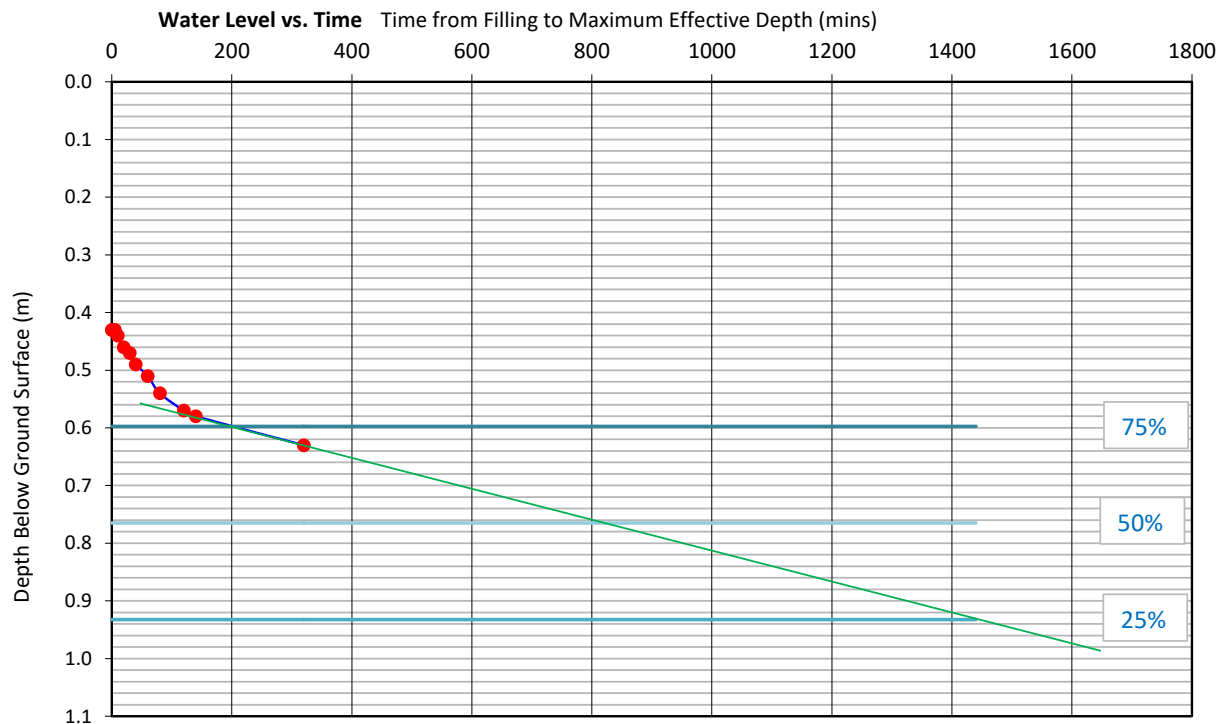
Effective Storage Volume, V : 1.9m x 0.3m x 0.67m
 V : 0.3819 m³

V_{p75-25} : 0.191 m³

Effective Internal Surface Area, a_{p50} : 1.273m² + 0.201m² + 0.57m²
 a_{p50} : 2.044 m²

Time of water level fall, t_{p75-25} : 1420 - 200 mins
 t_{p75-25} : 1220 mins
 t_{p75-25} : 73200 secs

Soil infiltration rate, f : 0.19095/(2.044 x 73200)
 f : 1.28E-06 ms⁻¹



Soil Infiltration Test

26-186.01: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL



Test Pit SP3 - F1

Date: 22-23/06/2026

Readings Recorded By: CD

Pit Dimensions: 1.2m(l) x 0.3m(w) x 0.6m(d)
Start Water Level: 0.2m

Actual Storage Volume: 0.22 m³
Effective Depth: 0.40 m

Time (mins)	Depth BGL (m)
0	0.200
1	0.210
2	0.210
3	0.210
4	0.210
5	0.210
10	0.210
20	0.215
30	0.220
60	0.240
100	0.260
120	0.265
200	0.290
280	0.310
320	0.320
1420	0.510

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

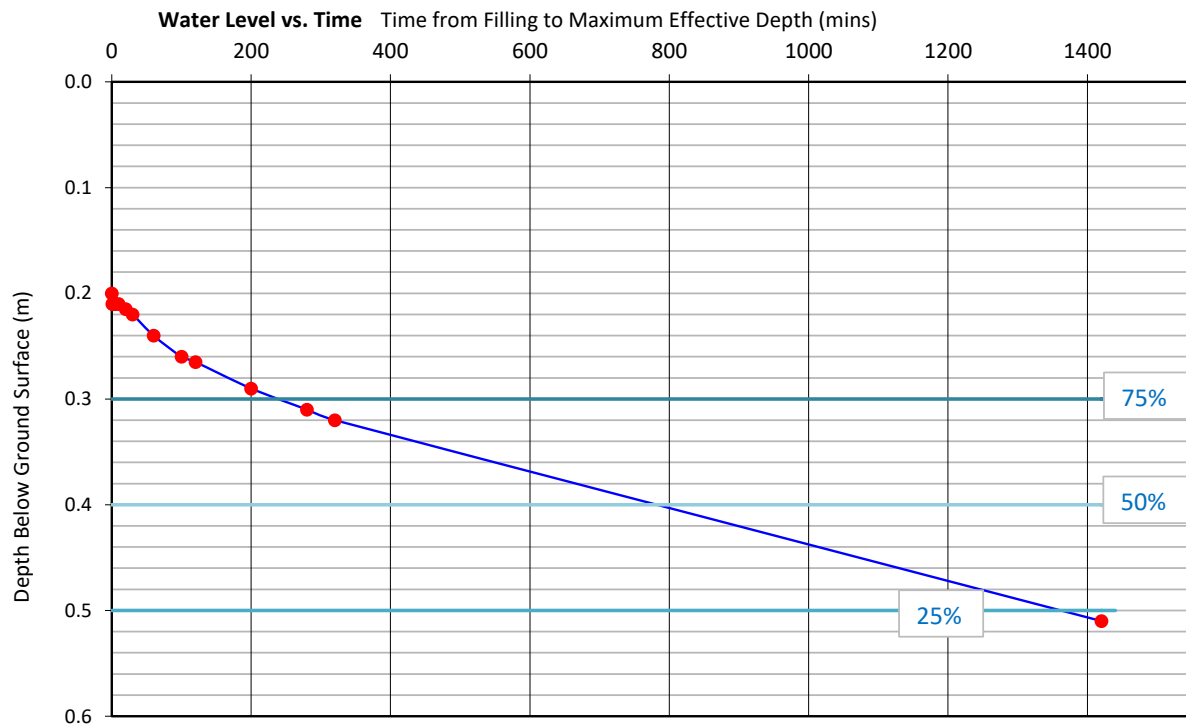
Effective Storage Volume, V : 1.2m x 0.3m x 0.4m
 V : 0.144 m³

V_{p75-25} : 0.072 m³

Effective Internal Surface Area, a_{p50} : 0.48m² + 0.12m² + 0.36m²
 a_{p50} : 0.960 m²

Time of water level fall, t_{p75-25} : 1380 - 250 mins
 t_{p75-25} : 1130 mins
 t_{p75-25} : 67800 secs

Soil infiltration rate, f : 0.072/(0.96 x 67800)
 f : 1.11E-06 ms⁻¹



Soil Infiltration Test

26-186.01: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL



Test Pit SP3 - F2

Date: 23/06/2026

Readings Recorded By: CD

Pit Dimensions: 1.2m(l) x 0.3m(w) x 0.6m(d)
Start Water Level: 0.16m

Actual Storage Volume: 0.22 m³
Effective Depth: 0.44 m

Time (mins)	Depth BGL (m)
0	0.160
1	0.160
2	0.160
3	0.160
4	0.160
5	0.160
10	0.160
20	0.170
30	0.170
40	0.170
60	0.180
80	0.180
100	0.190
120	0.190
140	0.200
300	0.235

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

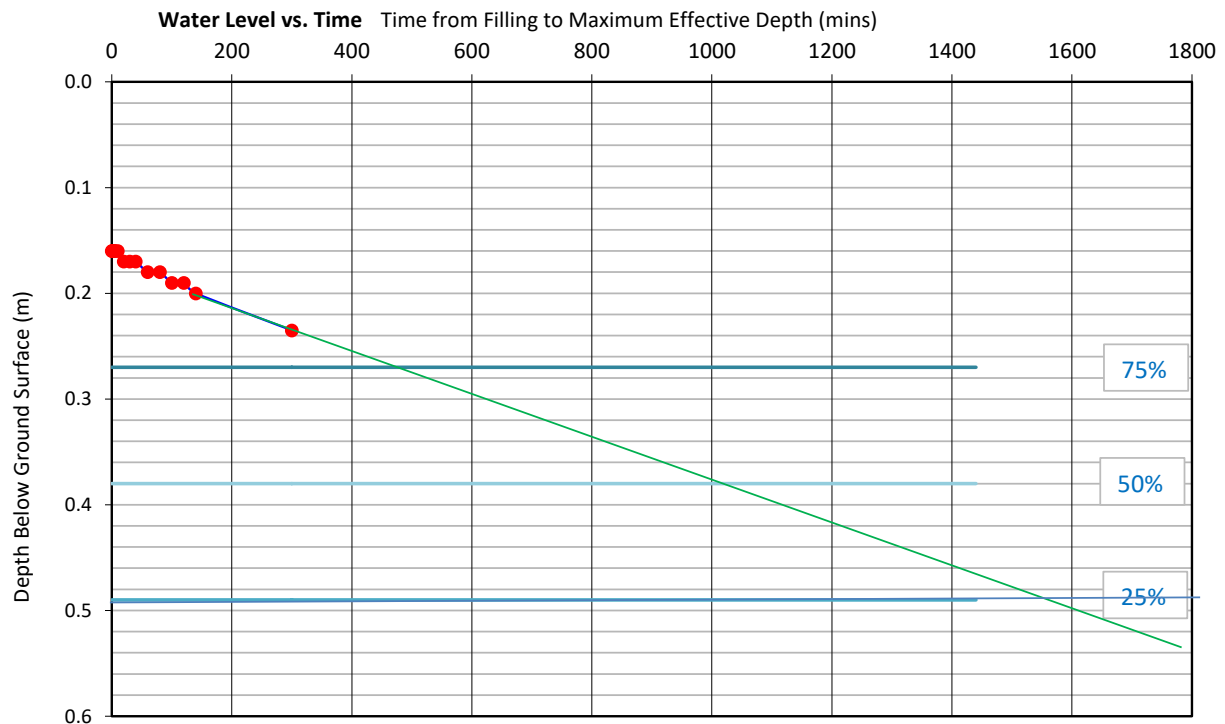
Effective Storage Volume, V : 1.2m x 0.3m x 0.44m
 V : 0.1584 m³

V_{p75-25} : 0.079 m³

Effective Internal Surface Area, a_{p50} : 0.528m² + 0.132m² + 0.36m²
 a_{p50} : 1.020 m²

Time of water level fall, t_{p75-25} : 1480 - 480 mins
 t_{p75-25} : 1000 mins
 t_{p75-25} : 60000 secs

Soil infiltration rate, f : 0.0792/(1.02 x 60000)
 f : 1.29E-06 ms⁻¹



Soil Infiltration Test

26-186.01: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL



Test Pit SP4 - F1

Date: 22/06/2026

Readings Recorded By: CD

Pit Dimensions: 1.3m(l) x 0.3m(w) x 0.66m(d)
Start Water Level: 0.22m

Actual Storage Volume: 0.26 m³
Effective Depth: 0.44 m

Time (mins)	Depth BGL (m)
0	0.220
1	0.230
2	0.240
3	0.250
4	0.250
5	0.250
10	0.260
20	0.270
30	0.280
60	0.310
340	0.480

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

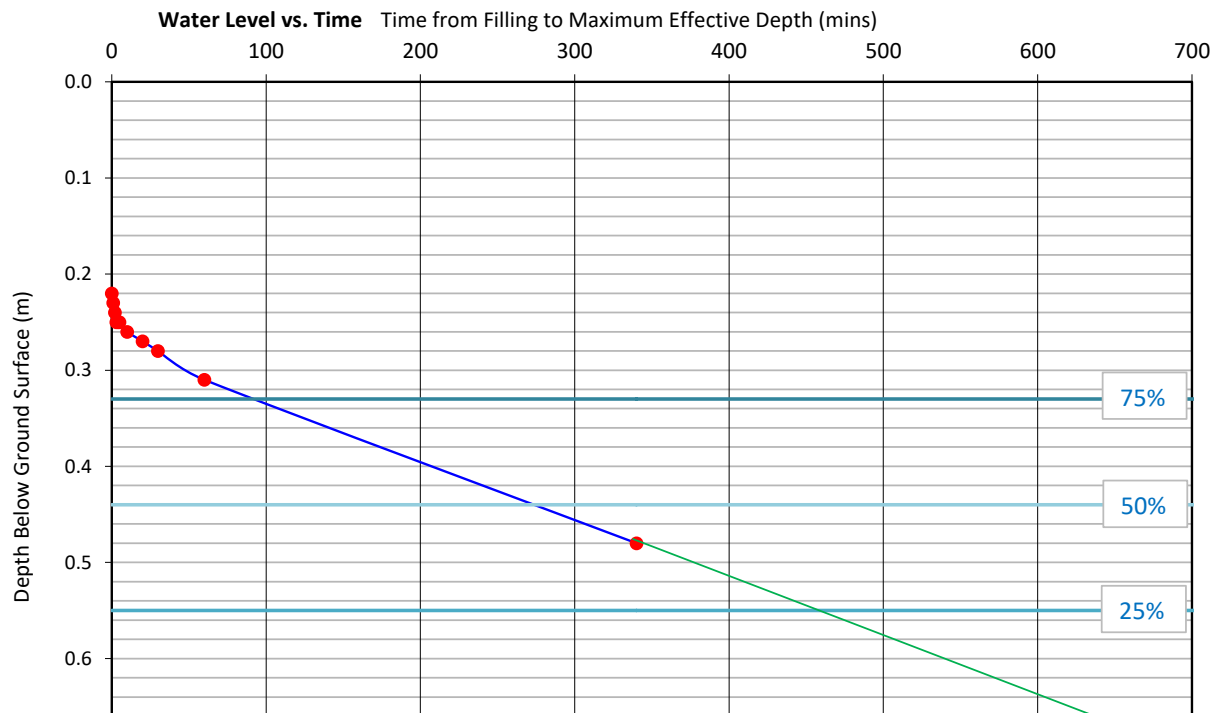
Effective Storage Volume, V : 1.3m x 0.3m x 0.44m
 V : 0.1716 m³

V_{p75-25} : 0.086 m³

Effective Internal Surface Area, a_{p50} : 0.572m² + 0.132m² + 0.39m²
 a_{p50} : 1.094 m²

Time of water level fall, t_{p75-25} : 460 - 90 mins
 t_{p75-25} : 370 mins
 t_{p75-25} : 22200 secs

Soil infiltration rate, f : 0.0858/(1.094 x 22200)
 f : 3.53E-06 ms⁻¹



Soil Infiltration Test

26-186.01: Land west of Selsfield Road, Ardingly, West Sussex, RH17 6UL



Test Pit SP4 - F2

Date: 23/06/2026

Readings Recorded By: CD

Pit Dimensions: 1.3m(l) x 0.3m(w) x 0.66m(d)
Start Water Level: 0.2m

Actual Storage Volume: 0.26 m³
Effective Depth: 0.46 m

Time (mins)	Depth BGL (m)
0	0.200
1	0.210
2	0.210
3	0.210
4	0.210
5	0.220
10	0.220
20	0.230
30	0.240
40	0.250
60	0.260
80	0.280
100	0.290
120	0.310
140	0.320
320	0.390

$$\text{Soil infiltration rate, } f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Effective Storage Volume, V : 1.3m x 0.3m x 0.46m
 V : 0.1794 m³

V_{p75-25} : 0.090 m³

Effective Internal Surface Area, a_{p50} : 0.598m² + 0.138m² + 0.39m²
 a_{p50} : 1.126 m²

Time of water level fall, t_{p75-25} : 820 - 130 mins
 t_{p75-25} : 690 mins
 t_{p75-25} : 41400 secs

Soil infiltration rate, f : 0.0897/(1.126 x 41400)
 f : 1.92E-06 ms⁻¹



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