GROUND INVESTIGATION REPORT

The Mill Academy, Worsbrough, Barnsley

Report: 26063-GI

Date: July 2026

Client:
Barnsley Metropolitan Borough Council
Westgate Plaza One
PO Box 634
Barnsley
S70 9GG

Abbeydale Geoscience Limited | 4 Neville Street, Wakefield, WF1 5EF
Tel: 01924 376622 | E-mail: hello@abbeydalegeo.com | www.abbeydalegeo.com
Company Registration No. 06707508 | VAT: 947 1373 08

GROUND INVESTIGATION REPORT

THE MILL ACADEMY, WORSBROUGH, BARNSLEY

DOCUMENT VERIFICATION

	Prepared By:	Approved By:
Name:	Glyn Hogg	Richard Saville
Qualifications:	MSci FGS	BSc CGeol FGS
Position:	Senior Consultant	Director
Signature:		R. Saville

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1

2. INTRODUCTION 2
   - 2.1. Project Scope
   - 2.2. Objectives
   - 2.3. Limitations

3. THE SITE 3
   - 3.1. Existing Conditions

4. PREVIOUS ASSESSMENT 6

5. FIELDWORK 7
   - 5.1. Strategy
   - 5.2. Exploratory Hole Locations
   - 5.3. Trial Pits
   - 5.4. Window Sample Holes

6. LABORATORY TESTING 9

7. GROUND CONDITIONS 9

8. GEOTECHNICAL CONSIDERATIONS 11
   - 8.1. General
   - 8.2. Mining Precautions
   - 8.3. Foundations
   - 8.4. Highways & Hardstanding
   - 8.5. Excavations
   - 8.6. Surface Water Drainage
   - 8.7. Chemical Precautions
   - 8.8. Ground Source Heating

9. ENVIRONMENTAL RISK ASSESSMENT 13
9.1. Proposed Site Use
9.2. Potential Pathways
9.3. Human Health Risk Assessment
9.4. Environmental Receptors
9.5. Ground Gases
9.6. Invasive Species
9.7. Conceptual Site Model
9.8. Remediation Requirements

10. SOIL MANAGEMENT 16
10.1. Reuse of Existing Soils
10.2. Disposal of Unsuitable Soils
10.3. Imported Soils

11. REGULATORY APPROVAL 17

12. CONCLUSIONS 17

APPENDICES

APPENDIX A - PROPOSED LAYOUT DRAWINGS ..... A

APPENDIX B - SUMMARY TABLES ..... B

APPENDIX C - EXPLORATORY HOLE LOGS C

APPENDIX D - LABORATORY TESTING RESULTS ..... D

APPENDIX E - CONCEPTUAL SITE MODEL ..... E

APPENDIX F - SOAKAWAY TEST RESULTS ..... F

GROUND INVESTIGATION REPORT

THE MILL ACADEMY, WORSBROUGH, BARNSLEY

1. EXECUTIVE SUMMARY

Development Proposals	• New access road and retaining wall.
Past Site Development	• The site remained as undeveloped agricultural land until 1973 when the school was constructed.
Made Ground	• Thin localised made ground was encountered only in WS01.
Natural Soil	• Medium volume change potential clay found across the site to depths of up to 2.50m bgl.
Bedrock	• Siltstone and mudstone bedrock found from as shallow as 2.30m bgl.
Groundwater	• No groundwater encountered during ground investigation.
Shallow Mining	• The risk of unrecorded shallow coal mining is low based on the available data and ground investigation findings.
Environmental Assessment	• No chemical levels above threshold values found in test results.
Ground Gases	• No ground gas risks for proposed site developments.
Remediation	• No remediation is considered necessary based on the current development proposals and laboratory test results.
Foundations	• Foundations into stiff clay or siltstone bedrock suitable for retaining wall.
Drainage	• Soakaways unsuitable due to low permeability. Attenuation and controlled discharge to the existing surface water drainage network will need to be considered.
Geotechnical Considerations	• Consider excavating and blinding off coal seam if encountered during foundation pits.
Further Investigation	• Plate load tests may be required to confirm CBR values during road construction.

2. INTRODUCTION

2.1. Project Scope

On the instruction of Barnsley Metropolitan Borough Council (BMBC), a Phase 2 Ground Investigation was carried out by Abbeydale Geoscience Limited at a site at the Mill Academy, off Lobwood road, in Worsbrough, Barnsley. See Figure 1.

When writing this report, the proposed development was a circular access road around the existing school of Mill Academy along with a new retaining wall, at or close to, existing ground levels. If there are changes to these proposals, then some modification to the comments and recommendations given may be required. The proposed site layout provided by the client is included as Appendix A.

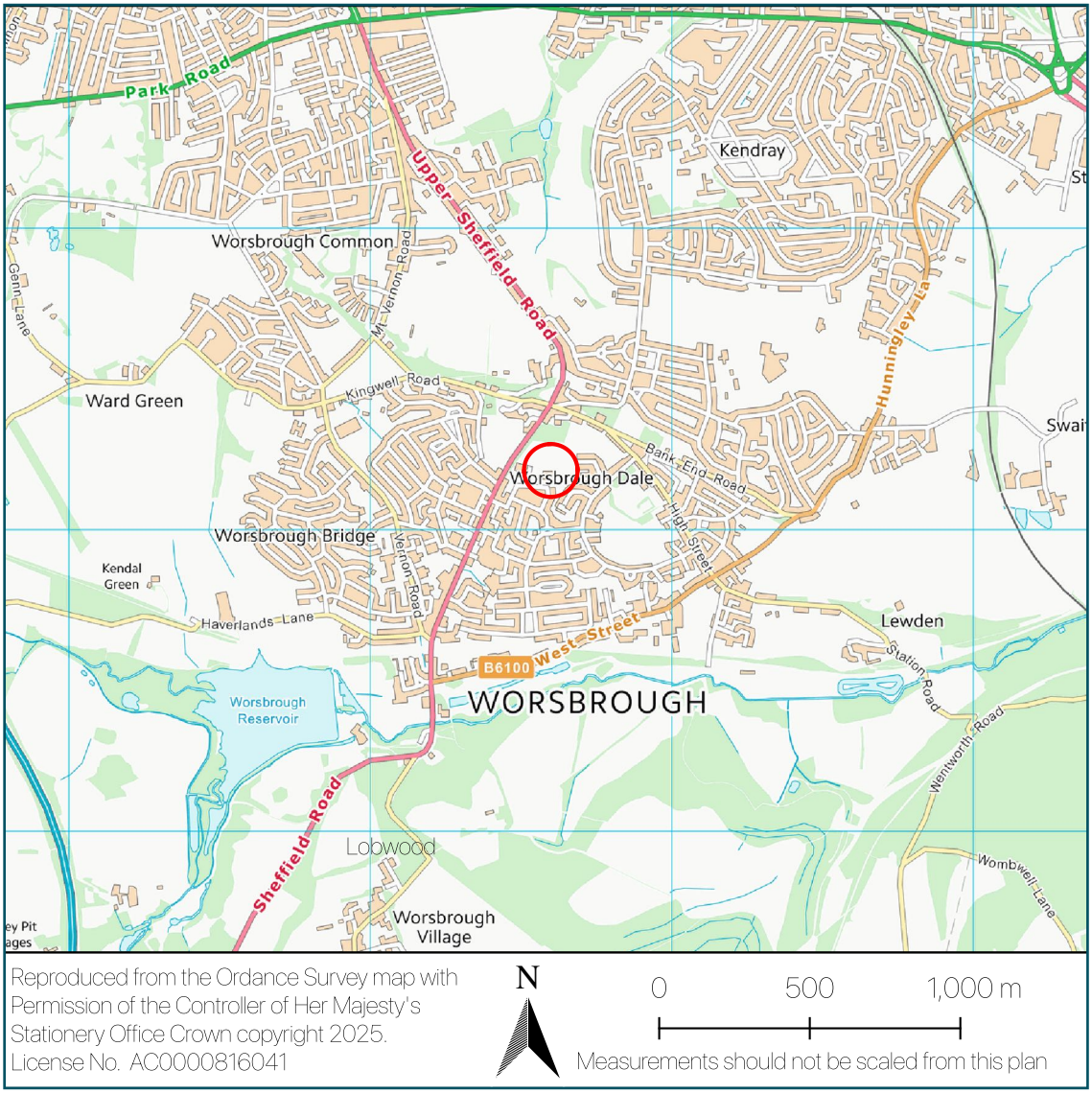


FIGURE 1 - LOCATION PLAN

A Phase 1 Desk Study report for the site was produced by Abbeydale Geoscience Ltd in May 2026 (Ref: 26063-DS). Where information from this previous report has been used, it is clearly referenced within the text of this ground investigation report.

2.2. Objectives

This ground investigation report has been commissioned to advance the current understanding of the geotechnical and geo-environmental conditions at the site, in the context of the proposed development.

A core objective is to identify any potential geotechnical or geo-environmental risks the ground conditions may present to the project itself and to future site receptors. Through the intrusive investigation and associated risk assessments, the report aims to provide clear recommendations regarding the perceived risks to future receptors.

The report will then highlight any recommendations for further assessment, ground engineering, or environmental remediation measures prior to part of the proposed development, to further quantify the potential risks and the extent of any mitigation measures.

2.3. Limitations

This report was prepared for BMBC, their advisors, and financiers. It should not be shared with others without Abbeydale Geoscience's and our client's written permission. Unauthorised parties who obtain this report do so at their own risk, and the authors owe them no duty of care or skill.

The ground investigation report's comments and recommendations are based on a review of available information, ground conditions during the intrusive investigation, and laboratory testing results. Other conditions on the site may exist and have not been considered. Responsibility cannot be accepted for conditions not revealed by this investigation.

3. THE SITE

3.1. Existing Conditions

The site is situated on the south side of Barnsley, in Worsbrough centred on National Grid Reference 435586, 404164, with a site area of around 0.70 hectares (ha).

The site is a regular parcel of land with a sloping topography across the site, sloping downwards from north to south with a topography change from 93.0 m AOD to 87.0 m AOD.

The site is currently occupied by The Mill Academy with a generally square-shaped building located centrally with a flat roof. The surrounding area comprises both soft and hard landscaping.

To the front (southern) side of the site, there is an area of lawned soft landscaping with two mature trees and areas of more mature managed shrubs. Centrally located within this lawned area is a tarmac path connecting Lobwood road to the school entrance. The western edge of this path is defined by a 1.0 m

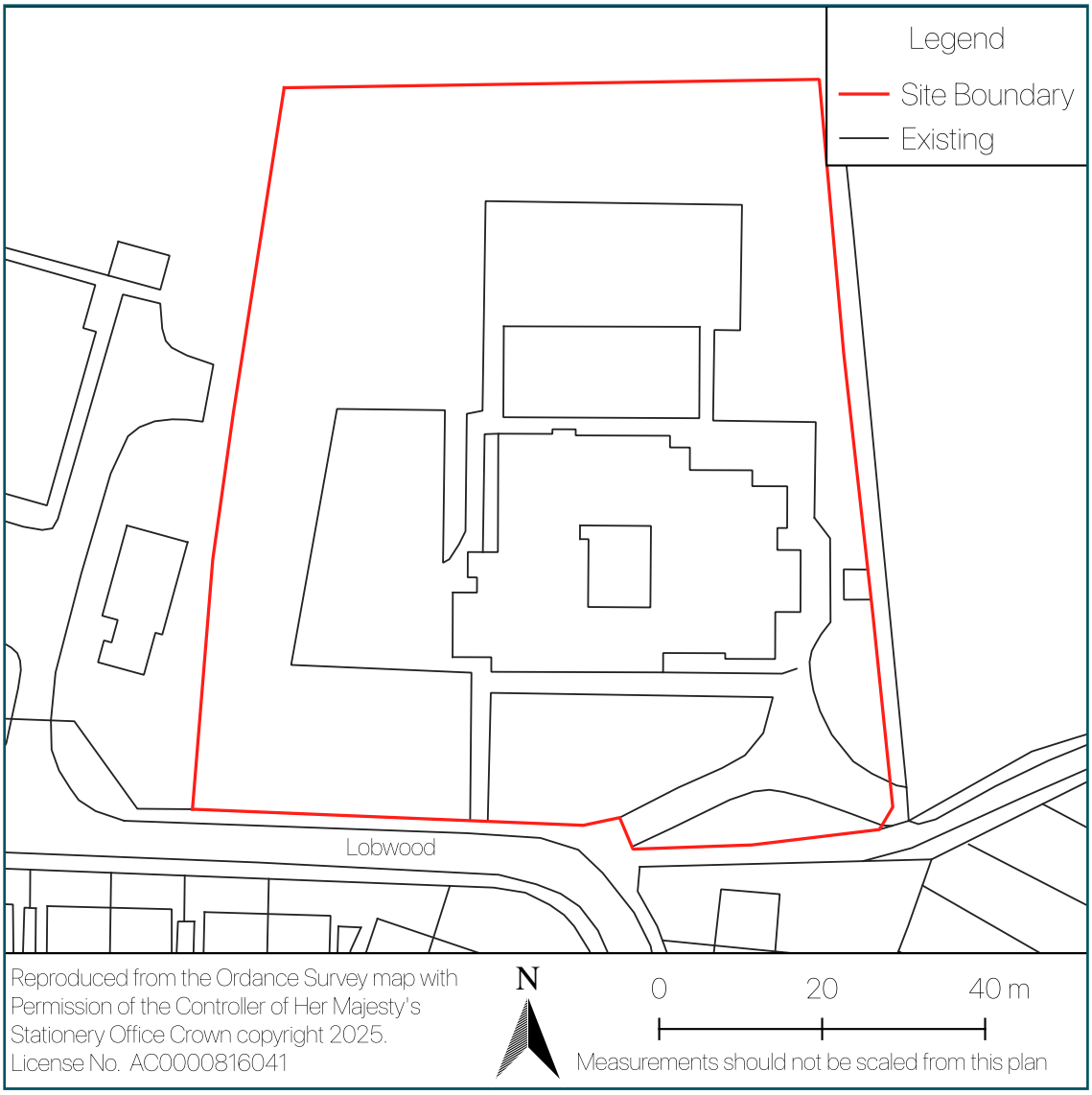


FIGURE 2 - SITE PLAN

high metal fence. To the east of the path, on the lawned area, general waste was observed where a bin had fallen over. The entrance to the school building is also located on the southern side, with a concrete sloping ramp providing access. A 2.60 m wide tarmac path runs parallel and adjacent to the southern side of the building.

In the south-western corner of the site, a large tree stump was noted.

Moving to the western side of the site, the majority of the area is occupied by a tarmac playground. The playground is divided in half from west to east by a 1.00 m high metal fence. A further 1.00 m high metal fence defines the eastern

boundary of the playground. Two wooden shelters are located within the playground area, the most southerly of which has a metal-clad roof and is labelled as the school fire assembly location. Adjacent to the western side of the school building is a covered outdoor area containing craft activity supplies and general waste. Numerous vehicle tyres are scattered across the playground, likely associated with outdoor activities. Along the western site boundary (between the playground's western edge and the boundary), a strip of sparsely vegetated land was observed.

Beyond the playground, moving to the rear (northern) side of the site, the 2.60m wide tarmac path continues around the building. Beyond this is a grassed sloped area, rising by approximately 2.00m AOD. The slope is divided centrally from north to south by a 1.00m high fence and a set of concrete slabbed steps. A large playing field and tarmac sports court, with metal football nets and basketball hoops, are located at the top (northern side) of the site. At the north-eastern corner of the school building, a significant amount of general waste and indoor school furniture was noted. A strong gas smell was detected in this area.

To the eastern side of the site, a tarmac car parking area is present, along with a metal bike rack. This car park is accessed via the school access road, a wide tarmac road entered through a 3.80 m wide metal gate connecting to Lobwood Road on the site's southern boundary.

Numerous service covers were noted across the site, predominantly within the southern lawned area.

The site boundaries are defined by metal fencing: a 2.00m high fence along the northern, eastern, and southern boundaries, and a 1.00m high metal fence along the western boundary.

Beyond the site, a pavement runs adjacent and parallel to the southern boundary, beyond which lies Lobwood road. The western boundary adjoins a primary school, with playing fields directly adjacent. The northern boundary also adjoins playing fields associated with the neighbouring primary school. The eastern boundary is adjacent to a stone wall marking the edge of St Thomas's Cemetery.

There were no notable signs of potential contamination identified during the surface inspection of the site, including no evidence of stressed or unhealthy vegetation that may indicate contamination.

The current site layout is shown in Figure 2.

3.2. Proposed Development

The proposed development comprises the construction of a circular access road around the existing school building at The Mill Academy. The road will be constructed at, or close to, existing ground levels and is anticipated to be approximately 500mm thick.

Parking spaces, including motorcycle parking, will be provided to the northern side of the access road, where a retaining wall approximately 60.00m in length and 2.00m in height will be constructed.

The existing road at the south-eastern corner of the site will be landscaped to provide an area for potential tree planting.

4. PREVIOUS ASSESSMENT

A Phase 1 Desk Study was previously prepared for the site by Abbeydale Geoscience Ltd, ref: 26063-DS, dated May 2026. A summary of the main findings of the Phase 1 report is tabulated below. For full descriptions, the previous Phase 1 report should be consulted.

Site Description	• Site is currently occupied by The Mill Academy School. • There is a slope across the site, rising in elevation from south to north.
History (site)	• The site remained as undeveloped agricultural land until 1973 when the school was constructed.
History (surrounding area)	• In 1855 the site is situated in a rural setting with numerous quarries and collieries within 500 m of the site. • Early residential growth in 1890 with the development of Lobwood Lane. • In 1892 St Thomas's cemetery is labelled adjacent to the site. • Between 1929 - 2026 there is significant residential development in the surrounding area. • Between 1973-1977 Worsbrough Lobwood Infants School was constructed.
Geology	• Undifferentiated Middle Coal Measures; likely mudstone and siltstone.
Hydrogeology	• Groundwater anticipated within underlying bedrock sequence.
Hydrology	• No notable hydrology features within 250 m of the site.
Flooding	• Site is within Flood Zone 1. • An area of surface water flooding is present centrally on site; 1 in 1000 return period to a depth of between 0.1 m - 0.3 m. • Negligible risk from groundwater flooding.
Mining & Quarrying	• Moderate risk of unrecorded shallow mine workings. • Deep workings recorded in Coal Measures strata; too deep to pose a risk to the surface stability of the site. • No quarrying recorded on or immediately adjacent to the site.
Surface Water Drainage	• Soakaways unlikely to be feasible based on mudstone bedrock. • Suitability can be assessed further once ground conditions are confirmed.
Preliminary Environmental Assessment	• No significant potential risks identified. • Future receptors will not be exposed to underlying soils due to highway use. • Intrusive investigation should include a geo-environmental assessment.
Geotechnical Appraisal	• Top Beamshaw coal seam anticipated at shallow depth. Not likely to have been worked unrecorded in the past. • Depth to natural sub-grade should be confirmed prior to detailed design.

Recommendations	• Intrusive investigation recommended to confirm ground conditions and suitable founding stratum for new access road.

5. FIELDWORK

5.1. Strategy

Based on the Phase 1 report, the topsoil was highlighted as the most likely source of any potential contamination; therefore, the ground investigation fieldwork focused on obtaining samples of the existing topsoil for human health risk assessment purposes.

Fieldwork was undertaken on 20th April 2026 in general accordance with BS5930:2015 and BS10175:2011(+A2:2017). The findings of the previously prepared Phase 1 report guided the scope of investigation undertaken, to provide further information on the ground conditions present and confirm the potential risks to future receptors.

Detailed descriptions of the strata encountered are recorded in the exploratory hole logs in Appendix C.

Representative disturbed samples of the strata encountered were taken throughout the course of the fieldwork, to allow geotechnical and environmental laboratory testing to be undertaken on a selection of the samples obtained.

The sampling depths were taken based on a combination of professional judgement and the ground conditions encountered, or at regular depths through the strata profile. Where known, the sampling depths took account of proposed finished ground levels post-development, the likely source of potential contamination, and the likely receptors.

On completion of fieldwork, the samples were returned to Abbeydale Geoscience's office for scheduling of laboratory testing.

5.2. Exploratory Hole Locations

The relative ground levels and positions of the exploratory holes undertaken were assessed relative to existing features using a tape measure; the approximate locations of which are shown in Figure 3.

As no specific source of potential contamination was identified from the Phase 1 Desk Study information and Conceptual Site Model, generally non-targeted exploratory hole locations were employed to confirm the ground conditions across the site and allow representative samples to be taken for geotechnical and environmental laboratory testing.

The locations of exploratory holes were restricted due to the presence of existing buildings and services that were present at the time of undertaking the intrusive works, with the central area of the site occupied by the school buildings.

5.3. Trial Pits

To allow a detailed assessment of the shallow soils and weathered bedrock, a total of two trial pits (TP01 to TP02) were excavated using a Kubota U27-4 3-tonne tracked excavator with a 600mm wide toothed bucket to depths of 1.60m below ground level (bgl).

The trial pits were logged by an Abbeydale Geoscience consultant from the arisings and examination of the sides and base of the trial pit from the surface. An assessment of the excavatability of the ground encountered and the stability of each pit was also recorded.

Soakaway tests were undertaken in both trial pits in general accordance with BRE 365:2016. The pits were observed to be stable prior to the tests commencing. The fall of the water in the pits was monitored by our geoscience consultant, and the results are presented in Appendix F.

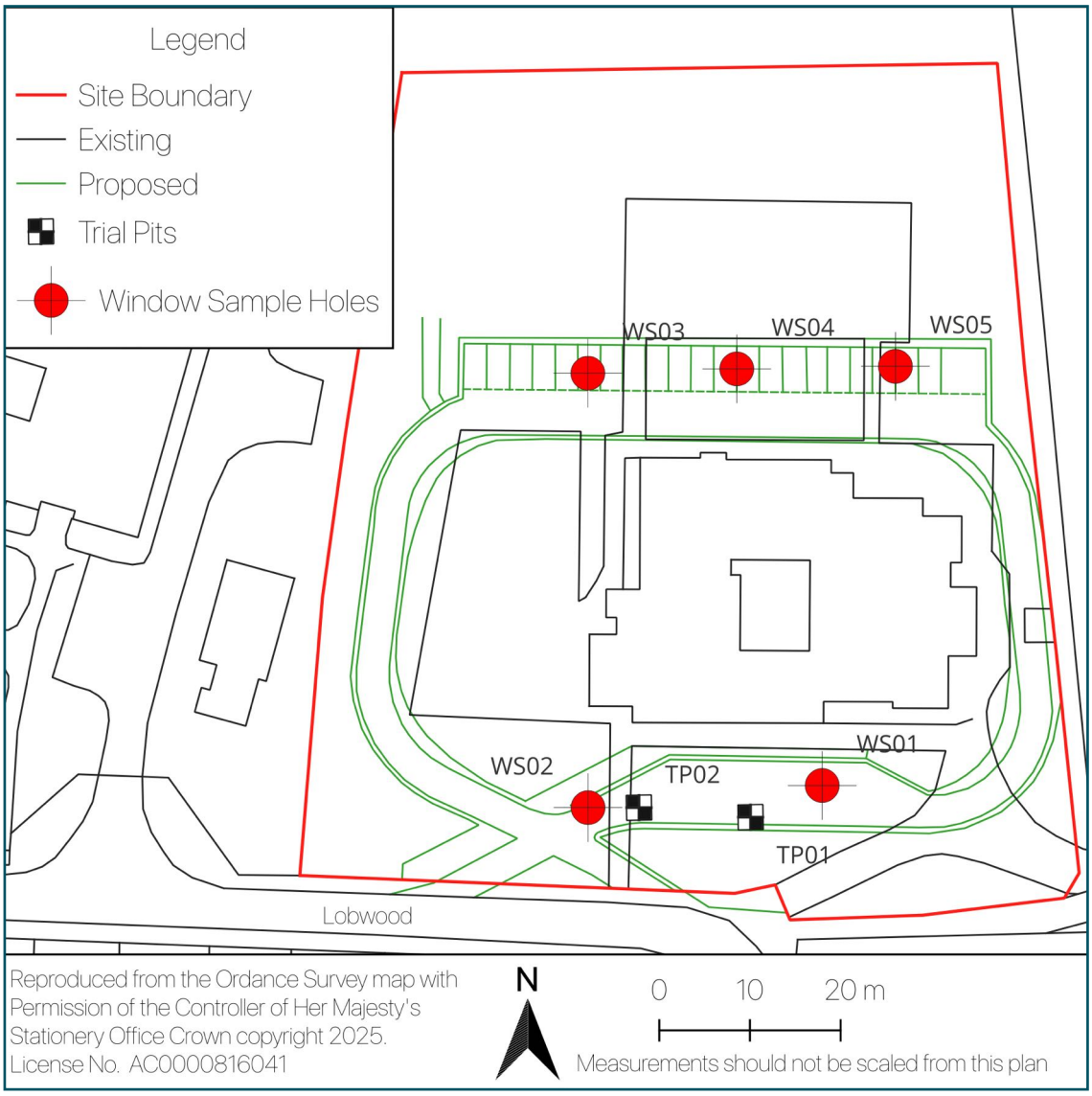


FIGURE 3 - EXPLORATORY HOLE PLAN

On completion, the trial pits were backfilled with arisings to leave them in a safe state.

5.4. Window Sample Holes

A total of five window sample holes (WS01 to WS05) were carried out across the site to depths of 3.00m bgl, using a tracked window sample rig.

As part of the window sampling, in situ Standard Penetration Tests (SPTs) or Cone Penetration Tests (CPTs) were undertaken based on the ground conditions encountered, to provide in situ relative strength information. The SPTs utilised a 50mm split spoon sampler with a 70° taper, with the CPTs using a solid cone with a 90° taper, driven using a 63.5kg hammer dropping 750mm. The blow counts are recorded for every 75mm driven, as detailed on the appended exploratory logs along with the resultant N values for each test. Where a refusal (N>50) was encountered, the total number of blows over the total penetration distance is recorded.

On completion, the window sample holes were backfilled with arisings to leave them in a safe state.

6. LABORATORY TESTING

Geotechnical laboratory testing was undertaken by Professional Soils Laboratory Ltd (PSL) in accordance with BS1377. To assess the geotechnical characteristics of the natural soils, five samples were sent to PSL for Plasticity Index (Atterberg Limits) testing, with natural moisture content testing carried out on the remainder of samples of natural soils obtained for comparison with the plasticity index testing results. The geotechnical testing results are summarised in Table 1 and shown graphically in Figures 6.

Samples were also sent to i2 Analytical for chemical analysis. See Tables 2A to 2C. The samples were analysed for a range of heavy metals, polycyclic aromatic hydrocarbons, and total petroleum hydrocarbons that commonly pose a potential risk to human health receptors.

All of the laboratory testing certificates are included in Appendix D.

7. GROUND CONDITIONS

The ground conditions encountered are recorded in detail in the exploratory logs appended to this report (Appendix C) and summarised on a geological section, Figure 4. Any diagram of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance purposes only. If deemed critical, confirmation of intermediate ground conditions should be sought.

From the surface of each exploratory hole, topsoil was encountered to a maximum depth of 0.60 m bgl. The topsoil generally consisted of clayey gravelly sand containing sandstone.

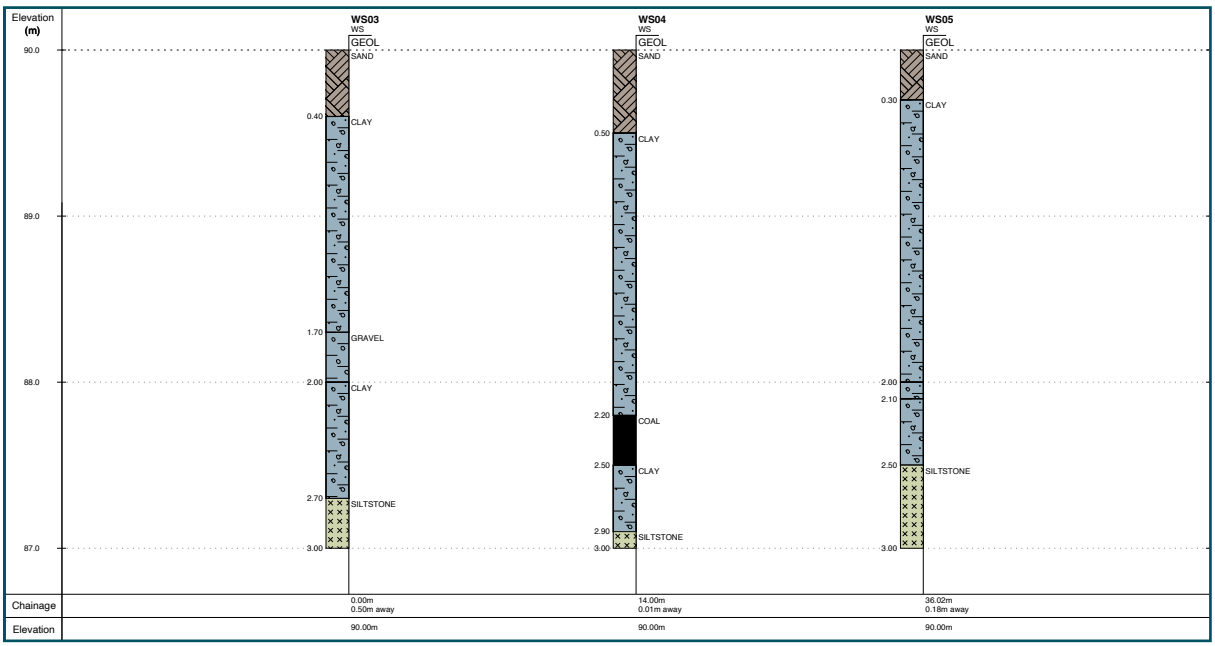


FIGURE 4 - GEOLOGICAL SECTION

With the exception of WS01, natural soils were found beneath the topsoil, consisting of stiff sandy gravelly clay containing coal and sandstone, and at greater depth, mudstone. These clay soils were found to depths of up to 2.90 m bgl.

In WS01, a thin made ground was found beneath the topsoil consisting of dark brown clayey gravelly sand containing brick and sandstone.

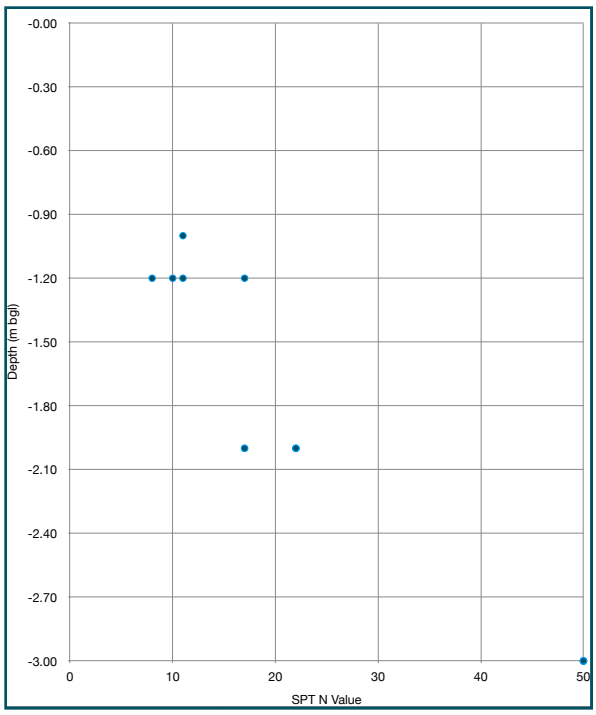


FIGURE 5 - N VALUE VS DEPTH GRAPH

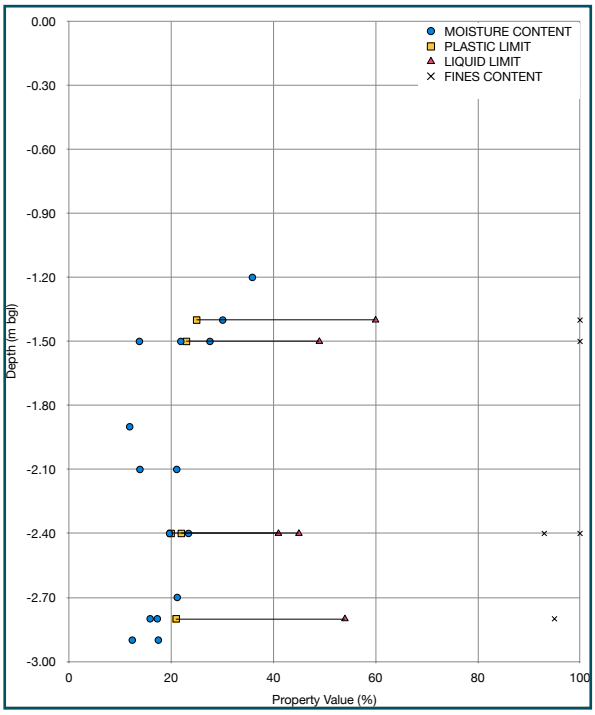


FIGURE 6 - INDEX PROPERTIES VS DEPTH GRAPH

Three SPTs carried out within the gravelly clay residual soil ranged from N8 to N22 with a mean of N16.

Modified plasticity index values of the clay soils ranged between 20% and 35%, equating to medium volume change potential in accordance with NHBC Ch.4.2 “Building near trees”. Plasticity index testing undertaken on four samples of the gravelly clay residual soil, summarised graphically on Figure 6, generally recorded moisture content values to be at or below the plastic limit value of the sample.

Underlying the clay residual soils, bedrock was encountered in the form of mudstone and siltstone. In WS01 and WS02 at the south side of the site, mudstone was found from top depths of 2.30m and 2.60m bgl respectively. In WS03-WS05 situated at the northern side of the site, siltstone bedrock was encountered from 2.50m to 2.90m bgl. Each of the window sample boreholes terminated after a N50 SPT result on the bedrock at 3.00m bgl.

Coal was encountered in three of the window sample boreholes, found in WS02, WS03 and WS04. In WS02, the coal was of poor quality, found between 2.80m to 3.00m bgl recovered as clayey gravel of coal and black shale. The calorific value of the coal in WS02 was recorded as 0.922 MJ/Kg, which confirms that this coal was of poor quality, and was closer to black shale.

In WS03, the coal was found at 1.20m to 1.30m as a band of black gravelly clay. The coal in WS04 was encountered at 2.20m to 2.50m bgl, consisting of black gravel. The calorific value of the coal in WS04 was recorded as 12.2 MJ/Kg, which is consistent with the lowest grade of coal, lignite.

Groundwater was not encountered during the ground investigation works.

8. GEOTECHNICAL CONSIDERATIONS

8.1. General

An outline plan was available when completing this report. We understand that a circular access road around the existing school of the Mill Academy is to be constructed, along with a new retaining wall at, or close to, existing ground levels. The proposed ground loadings were not known but for the purposes of this report are assumed to be less than 100 kN/m. If there are changes to these proposals, then some modification to the comments and recommendations given may be required.

8.2. Mining Precautions

From an assessment of available data, the risk of unrecorded shallow coal mining affecting the site is assessed as **low** at this stage. The Consultant’s coal mining report obtained as part of the previous Phase 1 report does not highlight the potential for any probable unrecorded mine workings, and the Top Beamshaw coal is noted in the geological memoir to have been of little value.

If coal, voids, loose ground, unusual odours or gas emissions are encountered during construction, works should stop in the affected area and specialist advice should be sought.

8.3. Foundations

For the proposed ~2m high retaining wall in the northern portion of the site, strip footings founded at least 250mm into the siltstone bedrock encountered between 2.50m bgl and 2.90m bgl should provide a nett allowable bearing pressure of at least 100 kPa, assuming a nominal acceptable settlement of 25mm is tolerable.

Plasticity index testing carried out on samples of the natural cohesive soils found the soils to be medium volume change potential in accordance with NHBC Ch.4.2, with an applicable minimum founding depth of 900mm bgl.

If foundation pits encounter the coal seam found in the window sample boreholes, consideration should be given to digging out and blinding off the coal seam.

8.4. Highways & Hardstanding

Highways and hardstanding areas will need to be constructed on re-engineered material. For design purposes, a California Bearing Ratio (CBR) of 2.5% may be assumed provided that the formation is proof rolled and any soft spots removed.

For the proposed new access road, an unbound highway construction using Type 1 granular fill onto the existing natural cohesive soils should be considered. In-situ plate load testing should be carried out to confirm available CBR values.

8.5. Excavations

Some difficulties in excavation of trenches for foundations in the bedrock should be anticipated. Temporary support of excavations may need to be considered within made ground or where greater than 1.20m deep.

Dewatering of excavations may also need to be considered, particularly if any seepages or groundwater are encountered.

8.6. Surface Water Drainage

As part of the investigation, in-situ soakaway tests were carried out in TP01 and TP02; the results are in Appendix F.

The trial pits encountered cohesive natural soils and did not encounter bedrock. The permeability ranged between 2.00×10^{-5} m/s to 2.00×10^{-7} m/s in TP01, and 1.06×10^{-5} m/s to 8.55×10^{-7} m/s in TP02. Reviewing the soakaway test data, a design soil infiltration rate of 2.00×10^{-7} m/s would be recommended for TP01, and an infiltration rate of 8.55×10^{-7} m/s for TP02.

Given the low soil infiltration rates, soakaways are not considered to be suitable for surface water drainage of impermeable areas. This is mainly due to the size of the soakaway that would be required, and it is very unlikely that soil infiltration would be quick enough to half-drain the soakaway in a 24-hour period, which is a design requirement of BRE 365:2016.

Attenuation and controlled off-site discharge into the existing surface water drainage network will therefore need to be considered. All drainage measures will need to be designed in accordance with Sustainable Drainage Systems (SuDS) requirements.

8.7. Chemical Precautions

To assess the potential for chemical attack of any buried concrete substructures by the existing soils, sulphate and pH testing was undertaken on five samples of the topsoil and made ground as part of the chemical analysis suite. It indicates that Class DS-1 (ACEC Class AC-1s) can be used on this site in accordance with BRE Special Digest 1:2005.

8.8. Ground Source Heating

Providing space heating and hot water using ground source heating could be considered for this site. If this method of heating is being proposed, then a further assessment of the site and its underlying geology would be required to determine the most efficient ground loop configuration for the required heat load of the proposed building(s).

9. ENVIRONMENTAL RISK ASSESSMENT

Contaminated Land is defined under Part 2A of the Environmental Protection Act 1990, implemented through Section 57 of the Environment Act 1995. This supports a 'suitable for use' based approach to the risk assessment of contaminated land. The evaluation is based on an assessment of plausible pollutant linkages, referred to as the **source - pathway - receptor** model, based on the current or proposed use of the site.

A **pollutant linkage** is the relationship between a contaminant, a pathway, and a receptor. Unless all three elements are present, there is not considered to be a potential pollutant linkage.

However, where a potential pollutant linkage is deemed to be present, the resultant risk is based on the consequence should the event occur, and the probability that the event will occur, as outlined in CIRIA C552. A tabulated summary of the resultant risk matrix is provided below for contextual purposes.

Part 2A states that for land to be defined as Contaminated Land by the Local Authority, it needs to be in such a condition that:

- Significant harm is being caused, or there is a significant possibility of such harm being caused.

- Pollution of controlled waters is being caused, or likely to be caused.

		Consequence (C)			
		Severe	**Medium**	**Mild**	**Minor**
Probability (P)	**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

RISK MATRIX FOR ENVIRONMENTAL RISK ASSESSMENT (BASED ON CIRIA C552)

9.1. Proposed Site Use

We understand that the current development proposal is for a new access road and retaining wall. A proposed layout plan is included in Appendix A.

Although much of the site will become covered by hardstanding, areas of soft landscaping will remain where site users could come into contact with underlying soils.

There is also a lesser potential for any construction workers to come into contact with existing soils, and standard precautionary measures should be employed to reduce the potential for dermal contact and/or inhalation of dust or vapours. Good hygiene practises and facilities should also be provided as a standard precautionary measure.

Based on the proposed end use of the site, any chemical testing should be compared against current Soil Guideline Values for a land use scenario of public open space when carrying out a Generic Quantitative Risk Assessment (GQRA); however, for this report, residential with homegrown produce parameters have been used, which is explained in Section 9.3.

9.2. Potential Pathways

- Dermal contact (indoor and outdoor).
- Ingestion of soil and indoor dust.
- Indirect ingestion (indoor and outdoor).
- Inhalation of dust (indoor and outdoor).
- Inhalation of vapours (indoor and outdoor).
- Leaching to groundwater.
- Surface water run-off.

- Direct contact with concrete substructures.
- Migration through the ground (vertical and horizontal).

9.3. Human Health Risk Assessment

The historic OS maps show the site to have been previously unoccupied with a subsequent low risk of potential contamination resulting from this usage.

No obvious visual or olfactory signs of potential contamination were identified during the ground investigation fieldwork.

Although no obvious evidence of potential contamination was noted during the intrusive ground investigation works, the topsoil was highlighted as the most likely source of any contamination. Chemical testing therefore focused on these soils, to determine their chemical suitability for reuse or retention close to the surface in any proposed soft landscaping areas.

Soil chemical testing, summarised on Tables 2A, 2B and 2C, indicates that all results are below the relevant Generic Quantitative Risk Assessment (GQRA) criteria for public open space, and also for the more sensitive residential with homegrown produce land use scenario.

Based on the chemical test results, the site's topsoil is chemically suitable for retention at the surface in proposed soft landscaping public open space areas, and does not pose a potential risk to future site users.

9.4. Environmental Receptors

No groundwater or signs of possible seepages were noted in any of the exploratory holes undertaken, and due to the low chemical levels identified in the soils, there was not deemed to be a necessity to undertake any leachate testing on samples of the existing topsoil or made ground.

9.5. Ground Gases

According to the Groundsure Enviro Insight included in the Desk Study report, the site is within a radon-affected area of between 1% to 3% as defined by the Health Protection Agency (HPA), and no radon protection measures are required to be installed in any new buildings in accordance with Building Research Establishment (BRE) document BRE report BR211:2023.

No recorded landfill sites have been identified within 250 m of the site. However, the cemetery adjacent to the site's eastern boundary represents a potential source of ground gas generation. In addition, if unrecorded mine workings are present beneath the site, these could constitute a considerable potential source of gas generation.

However, given that the proposed development comprises only an access road for private use, with no enclosed indoor spaces, the risk posed by ground gases to potential receptors is considered to be **negligible**.

Based on the above information, the overall risk from ground gases is considered to be **negligible** at this stage. Further assessment or monitoring would only be considered necessary if any enclosed spaces or new buildings were being proposed.

9.6. Invasive Species

The vegetation in and around the site has been examined. No obvious signs of potential invasive plant species were noted during the site walkover undertaken. However, because weedkiller could have been applied prior to carrying out our walkover survey, not seeing any signs of invasive plants during our brief time on site cannot be a guarantee that they are not present on or around the site.

9.7. Conceptual Site Model

Using the information presented above and the **source-pathway-receptor** model, a Conceptual Site Model (CSM) has been formulated to determine whether a potentially significant pollutant linkage is perceivable and what potential risks are posed to the identified future receptor from each potential contaminant source.

The CSM is tabulated in Appendix E. Where required, the CSM should be updated as further investigation and/or development works progress to reflect the potential risks to future receptors, especially if any previously unidentified ground conditions are encountered.

9.8. Remediation Requirements

The chemical test results and Conceptual Site Model indicate that remediation is not required to reduce the risk to future receptors.

10. SOIL MANAGEMENT

10.1. Reuse of Existing Soils

The chemical test results show that no elevations have been recorded in the made ground and topsoil, and the topsoil is suitable for retention at the surface in any proposed soft landscaping areas.

10.2. Disposal of Unsuitable Soils

Any waste arising from development of the site, such as excess soil or material deemed unsuitable for retention on site, should be disposed of in accordance with the Duty of Care Regulations. If any soils are being disposed directly to a landfill, then additional Waste Acceptance Criteria (WAC) testing or a formal waste code assigned to any soils to be removed from the site.

10.3. Imported Soils

Any imported soils are required to be brought to the site to facilitate the proposed development; they will need to be validated to confirm their chemical suitability and that they do not pose a risk to future receptors. The soils should

be validated in accordance with Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG) guidance *"Verification Requirements for Cover Systems"* version 4.1, dated June 2021.

The scope and frequency of analysis required to validate any imported soils will be dependent on the source and/or historical setting of the source site and the volume of soils imported to the site.

The soils would also need to be tested to ensure that they meet the textural requirements of BS 3882:2017 for topsoil and BS8601 for subsoil as well.

11. REGULATORY APPROVAL

The conclusions and recommendations in this report are based on a review of available information and observations made during the site walkover survey undertaken. The conclusions cannot be guaranteed to gain regulatory approval if this report is required as part of a planning application. If it is required as such, it should be passed to the relevant regulatory bodies for their comment and approval.

12. CONCLUSIONS

The intrusive ground investigation has confirmed that the site generally comprises topsoil over stiff natural cohesive soils with only localised thin made ground encountered in one exploratory hole. Mudstone and siltstone bedrock were encountered between approximately 2.30m and 2.90m bgl, with thin coal seams identified in the western exploratory holes. Groundwater was not encountered during the investigation.

Laboratory testing indicates that the natural cohesive soils are of medium volume change potential. Strip foundations founded into siltstone are considered appropriate for the proposed retaining wall, while the proposed access road should be constructed on suitably prepared subgrade with confirmation of CBR values by plate load testing where required.

Chemical testing identified no contaminant concentrations exceeding the relevant Generic Quantitative Risk Assessment criteria. No remediation is therefore considered necessary. The existing topsoil is suitable for reuse within landscaped areas around the academy rather than being disposed off-site.

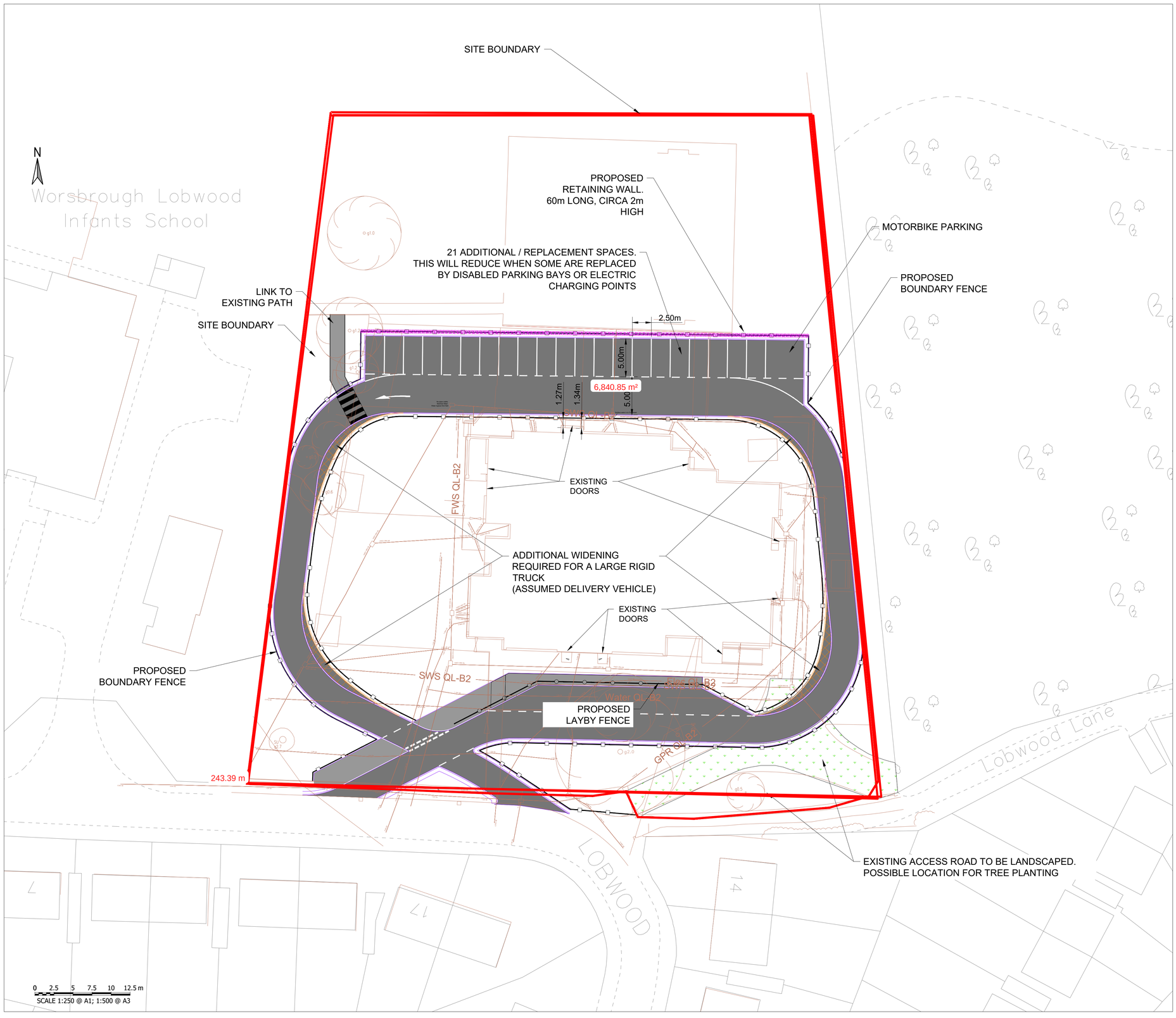
Soakaway testing demonstrated low infiltration rates within the cohesive soils. Infiltration drainage is therefore unlikely to be feasible, and surface water should instead be managed through attenuation and controlled discharge to the existing drainage network in accordance with SuDS principles.

Based on the findings of the investigation and the current development proposals, no additional intrusive investigation is considered necessary before construction of the new access road or new retaining wall.

If unexpected ground conditions, contamination, or evidence of former mining are encountered during construction, further specialist advice should be sought before works continue.

Report 26063-GI | July 2026

APPENDIX A - PROPOSED LAYOUT DRAWINGS



DRAFT ISSUE

This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright & Database Rights (2023). Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. AC0000851104 (2023).

Rev.	By	Amendments	Date
A	ICG	FIRST ISSUE	03.03.26

BARNSLEY
Metropolitan Borough Council

Project
MILL SITE ENTRANCE

Drawing title
LOOP ROAD OPTION

Scale	Drawn	Checked	Date
AS SHOWN	ICG		FEB 2026

Drawing No.	File
BMBC1004-GA-05	FILE

Paul Castle Service Director
Growth & Sustainability Directorate
Environment & Transportation (Business Unit 6)
P.O. Box 601, Westgate Plaza One, Westgate
Barnsley. S70 9FA
Tel. (01226) 770770

COMPUTER.FILE.NAME

APPENDIX B - SUMMARY TABLES

Exploratory Hole	Depth (m bgl)	Moisture Content (%)	Liquid Limit - LL (%)	Plastic Limit - PL (%)	Plasticity Index - IP (%)	Passing 0.425mm (%)	Modified Plasticity - IP' (%)	PSD D_{60}	PSD D_{10}	Dry Density (Mg/m^3)	Bulk Density (Mg/m^3)
WS01	1.50	21.9	49	23	26.0	100	26				
WS01	2.10	13.9									
WS01	2.80	17.3									
WS02	1.40	30.1	60	25	35.0	100	35				
WS02	2.10	21.1									
WS02	2.70	21.2									
WS03	1.20	35.9									
WS03	1.90	11.9									
WS03	2.40	23.4	41	20	21.0	93	19.53				
WS03	2.90	12.4									
WS04	1.50	13.8									
WS04	2.90	17.5									
WS05	1.50	27.6									
WS05	2.40	19.7	45	22	23.0	100	23				
WS05	2.80	15.9	54	21	33.0	95	31.35				

Abbeydale Geoscience
4 Neville Street, Wakefield, West Yorkshire, WF1 5EF
Tel: 01924 376622 | hello@abbeydalegeo.com

GEOTECHNICAL RESULTS SUMMARY

Site: The Mill Academy, Barnsley
Project #: 26063-GI
Client: BMBC

TABLE 1

Sample Ref.	Arsenic	Beryllium	Boron (water soluble)	Cadmium	Chromium III	Chromium VI	Copper	Lead	Mercury	Nickel	Selenium	Vanadium	Zinc		SO4 (2:1) mg/l	pH	Cyanide	Phenols (total)		Asbestos ID
WS01/0.60m	-	-	-	-	-	-	-	-	-	-	-	-	-		-	6.8	-	-		Not-detected
WS02/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-		-	6.9	-	-		Not-detected
WS03/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-		-	6.2	-	-		Not-detected
WS04/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-		-	6.1	-	-		Not-detected
WS05/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-		-	6.3	-	-		Not-detected
WS02/2.90m	-	-	-	-	-	-	-	-	-	-	-	-	-		-	6.1	-	-		-
WS04/2.40m	-	-	-	-	-	-	-	-	-	-	-	-	-		-	5.6	-	-		-

GQRA Threshold Value (mg/kg)	37	1.7	290	11	910	6	2400	200	1.2	130	250	410	3700		500	N/A	50	120		
Maximum (mg/kg)	17	1	1.5	0.3	17	1.8	42	110	0.3	14	1.0	27	76		18.4	6.9	1.0	1.0		
Minimum (mg/kg)	8.6	0.63	0.6	0.2	12	1.8	21	28	0.3	12	1.0	21	50		1.25	5.6	1.0	1.0		

Abbeydale Geoscience
4 Neville Street, Wakefield, West Yorkshire, WF1 5EF
Tel: 01924 376622 | hello@abbeydalegeo.com

NOTES:

1. All values are given in mg/kg unless otherwise stated.
2. All chemical levels below relevant GQRA threshold values shown as "-"
3. For actual chemical results refer to laboratory testing certificates.

CHEMICAL ASSESSMENT TABLE:
RESIDENTIAL WITH HOMEGROWN PRODUCE

Site: The Mill Acadmey
Project #: 26063
Client: Barnsley Metropolitan Borough Council

TABLE 2A

Sample Ref.	Napthalene	Acenapthalene	Acenapthene	Flourene	Phenanthrene	Anthracene	Flouranthene	Pyrene	Benzo(a) anthracene	Chrysene	Benzo(b) flouranthene	Benzo(k) flouranthene	Benzo(a) pyrene	Indeno(123cd) pyrene	Dibenz(ah) anthracene	Benzo(ghi) perylene		Soil Organic Matter (%)
WS01/0.60m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		4.5
WS02/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		4.4
WS03/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		4
WS04/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		4.3
WS05/0.20m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		5.6
WS02/2.90m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
WS04/2.40m	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
GQRA Threshold Value (mg/kg)	2.3	170	210	170	95	2400	280	620	7.2	15	2.6	77	2.2	27	0.24	290		
Maximum (mg/kg)	0.1	0.08	0.17	0.18	1.9	0.42	3.3	2.7	1.3	1.3	1.4	0.79	1.3	0.62	0.19	0.63		
Minimum (mg/kg)	0.05	0.05	0.05	0.05	0.09	0.05	0.29	0.27	0.18	0.19	0.23	0.05	0.2	0.11	0.05	0.11		

Abbeydale Geoscience

4 Neville Street, Wakefield, West Yorkshire, WF1 5EF
Tel: 01924 376622 | hello@abbeydalegeo.com

NOTES:

1. All values are given in mg/kg unless otherwise stated.
2. All chemical levels below relevant GQRA threshold values shown as “-“
3. For actual chemical results refer to laboratory testing certificates.
4. GQRA assumes 1% Soil Organic Matter (SOM) unless stated otherwise

CHEMICAL ASSESSMENT TABLE (SPECIATED PAH): RESIDENTIAL WITH HOMEGROWN PRODUCE

Site: The Mill Acadmey

Project #: 26063

Client: Barnsley Metropolitan Borough Council

TABLE 2B

Sample ref.	ALIPHATIC HYDROCARBONS								AROMATIC HYDROCARBONS						
	Ali C5-C6	Ali C6-C8	Ali C8-C10	Ali C10-C12	Ali C12-C16	Ali C16-C21	Ali C21-C35		Aro C5-C7	Aro C7-C8	Aro C8-C10	Aro C10-C12	Aro C12-C16	Aro C16-C21	Aro C21-C35
WS01/0.60m	-	-	-	-	-	-	-		-	-	-	-	-	-	-
WS02/0.20m	-	-	-	-	-	-	-		-	-	-	-	-	-	-
WS03/0.20m	-	-	-	-	-	-	-		-	-	-	-	-	-	-
WS04/0.20m	-	-	-	-	-	-	-		-	-	-	-	-	-	-
WS05/0.20m	-	-	-	-	-	-	-		-	-	-	-	-	-	-
WS02/2.90m	-	-	-	-	-	-	-		-	-	-	-	-	-	-
WS04/2.40m	-	-	-	-	-	-	-		-	-	-	-	-	-	-
GQRA Threshold Value (mg/kg)	42	100	27	130	1100	65000	65000		70	130	34	74	140	260	1100
Maximum (mg/kg)	0.010	0.010	0.010	1.0	2.0	8.0	8.0		0.010	0.010	0.020	1.0	2.0	10	10
Minimum (mg/kg)	0.010	0.010	0.010	0.01	2.0	8.0	8.0		0.010	0.010	0.020	1.0	2.0	10	10

Abbeydale Geoscience

4 Neville Street, Wakefield, West Yorkshire, WF1 5EF
Tel: 01924 376622 | hello@abbeydalegeo.com

NOTES:

1. All values are given in mg/kg unless otherwise stated.
2. All chemical levels below relevant GQRA threshold values shown as "-"
3. For actual chemical results refer to laboratory testing certificates.
4. GQRA assumes 1% Soil Organic Matter (SOM) unless stated otherwise

CHEMICAL ASSESSMENT TABLE (BANDED TPH): RESIDENTIAL WITH HOMEGROWN PRODUCE

Site: The Mill Acadmey
Project #: 26063
Client: Barnsley Metropolitan Borough Council

TABLE 2C

APPENDIX C - EXPLORATORY HOLE LOGS

Window Sampler

WS01

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	435592.00	404160.00	89.00	1:50

Project Name	Project No.	Start Date	End Date
The Mill Academy, Barnsley	26063	2026-04-20	2026-04-20

Client
Barnsley MBC

Consultant
GH & PC

Contractor
RP Drilling Ltd

Inst/ Backfill	Water Levels	Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Legend	Description
		0.20	ES			(0.50)		Loose brown slightly clayey gravelly SAND with low cobble content. Gravel is fine to coarse, sub-angular sandstone. Cobbles are sub-angular sandstone. (Topsoil)
		0.60	ES		88.50	0.50		
						(0.30)		Loose dark brown clayey gravelly SAND. Gravel is fine to coarse, sub-angular to angular brick and sandstone.
					88.20	0.80		
		1.20	SPT(C)	N=10 (1,1/2,2,3,3)				Stiff mottled grey orange brown sandy gravelly CLAY with low cobble content. Gravel is fine to coarse, sub-angular coal and sandstone. Cobbles are sub-angular sandstone.
		1.50	D			(1.20)		*Becoming very stiff. (1.70 - 2.00m)*
		2.00	SPT(C)	N=22 (3,3/5,5,5,7)	87.00	2.00		
		2.10	D			(0.30)		Hard brown grey very sandy gravelly CLAY. Gravel is fine to coarse, sub-angular mudstone.
					86.70	2.30		
						(0.40)		Brown grey MUDSTONE, recovered as a clay matrix.
					86.30	2.70		
		2.80	D			(0.30)		Brown grey MUDSTONE, recovered as a dense gravel. Mudstone is extremely weak.
		3.00	SPT(C)	N=50 for 245mm (11,10/12,14,16,8 for 20mm)	86.00	3.00		*End of Borehole at 3.00m*

Remarks
CAT scan and hand pits to 1.20m to check for services. Backfilled with arising on completion.

Method, Plant, Stability, Dimensions		Logger
0.00 - 1.20m	IP	GH
0.00 - 3.00m	WLS	GH

Window Sampler

WS02

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	435567.00	404161.00	89.00	1:50

Project Name	Project No.	Start Date	End Date
The Mill Academy, Barnsley	26063	2026-04-20	2026-04-20

Client
Barnsley MBC

Consultant
GH & PC

Contractor
RP Drilling Ltd

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.20	ES			(0.60)		Loose dark brown very clayey gravelly SAND. Gravel is fine to coarse, sub-angular brick and sandstone. (Topsoil)
					88.40	0.60		Stiff mottled grey orange brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular coal and sandstone.
		1.00	SPT(C)	N=11 (2,2/2,2,3,4)				
		1.20	PP	98.07 (kPa)		(1.30)		
		1.40	D					
					87.10	1.90		
		2.00	SPT(C)	N=22 (4,3/4,5,5,8)		(0.30)		Hard brown grey gravelly CLAY. Gravel is fine to coarse, sub-angular mudstone.
		2.10	D		86.80	2.20		
						(0.40)		Hard dark grey orange sandy gravelly CLAY. Gravel is fine to coarse, sub-angular mudstone and sandstone
					86.40	2.60		
		2.70	D			(0.20)		Brown grey MUDSTONE, recovered as a clayey gravel. Mudstone is extremely weak.
		2.90	D		86.20	2.80		
		3.00	SPT(C)	N=50 for 50mm (25 for 50mm)		(0.20)		
					86.00	3.00		COAL and black SHALE, recovered as a clayey gravel.
								End of Borehole at 3.00m

Remarks
CAT scan and hand pits to 1.20m to check for services. Backfilled with arising on completion.

Method, Plant, Stability, Dimensions		Logger
0.00 - 1.20m	IP	GH
0.00 - 3.00m	WLS	GH

Window Sampler

WS03

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	435567.00	404208.00	90.00	1:50

Project Name	Project No.	Start Date	End Date
The Mill Academy, Barnsley	26063	2026-04-20	2026-04-20

Client
Barnsley MBC

Consultant
GH & PC

Contractor
RP Drilling Ltd

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.20	ES			(0.40)		Loose dark brown very clayey gravelly SAND. Gravel is fine to coarse, sub-angular brick clinker and sandstone. (Topsoil)
					89.60	0.40		Stiff mottled grey orange brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular coal and sandstone.
						(1.30)		
		1.20	SPT(C)	N=11 (2,2/2,2,3,4)				*Band of COAL recovered as very gravelly clay. (1.20 - 1.30m)*
		1.20	PP	294.2 (kPa)				
		1.20	D					
					88.30	1.70		
						(0.30)		Orange clayey GRAVEL. Gravel is fine to coarse, subangular of sandstone.
		1.90	D					
		2.00	SPT(C)	N=17 (3,3/3,4,5,5)	88.00	2.00		Grey brown soft wet sandy gravelly CLAY. Gravel is fine to coarse, angular siltstone.
		2.40	D			(0.70)		
					87.30	2.70		Grey weak SILTSTONE recovered as gravel.
						(0.30)		
		2.90	D					
		3.00	SPT(C)	N=50 for 275mm (13,10/12,12,14,12 for 50mm)	87.00	3.00		*End of Borehole at 3.00m*

Remarks
CAT scan and hand pits to 1.20m to check for services. Backfilled with arising on completion.

Method, Plant, Stability, Dimensions		Logger
0.00 - 1.20m	IP	GH
0.00 - 3.00m	WLS	GH

Window Sampler

WS04

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	435581.00	404208.00	90.00	1:50

Project Name	Project No.	Start Date	End Date
The Mill Academy, Barnsley	26063	2026-04-20	2026-04-20

Client
Barnsley MBC

Consultant
GH & PC

Contractor
RP Drilling Ltd

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.20	ES			(0.50)		Loose pale brown clayey gravelly SAND. Gravel is fine to coarse, sub-angular to angular brick, coal and sandstone. (Topsoil)
					89.50	0.50		Stiff mottled grey orange brown sandy gravelly CLAY with low cobble content. Gravel is fine to coarse, sub-angular coal and sandstone. Cobbles are sub-angular sandstone.
		1.20	SPT(C)	N=17 (1,2/2,4,5,6)				
		1.20	PP	117.68 (kPa)		(1.70)		
		1.50	D					
		1.80	PP	176.52 (kPa)				
		2.00	SPT(C)	N=17 (2,2/4,4,4,5)				
					87.80	2.20		
		2.40	D			(0.30)		Black COAL recovered as gravel.
					87.50	2.50		
						(0.40)		Hard pale grey sandy gravelly CLAY. Gravel is fine to coarse, angular siltstone.
		2.90	D		87.10	2.90		
		3.00	SPT(C)	N=50 for 60mm (13,12 for 40mm/50 for 60mm)	87.00	(0.10) 3.00		Extremely weak SILTSTONE recovered as gravel.
								End of Borehole at 3.00m

Remarks
CAT scan and hand pits to 1.20m to check for services. Backfilled with arising on completion.

Method, Plant, Stability, Dimensions		Logger
0.00 - 1.20m	IP	GH
0.00 - 3.00m	WLS	GH

Window Sampler

WS05

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
WS	435603.00	404209.00	90.00	1:50

Project Name	Project No.	Start Date	End Date
The Mill Academy, Barnsley	26063	2026-04-20	2026-04-20

Client
Barnsley MBC

Consultant
GH & PC

Contractor
RP Drilling Ltd

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Type/ Ref	Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Description
		0.20	ES			(0.30)		Loose pale brown clayey gravelly SAND. Gravel is fine to coarse, sub-angular to angular brick, coal and sandstone. (Topsoil)
					89.70	0.30		Stiff mottled grey orange brown sandy gravelly CLAY. Gravel is fine to coarse, sub-angular coal and sandstone.
		1.20	SPT(C)	N=8 (1,2/2,2,2,2)		(1.70)		
		1.20	PP	176.52 (kPa)				
		1.50	D					
		1.80	PP	294.2 (kPa)				
		2.00	SPT(C)	N=22 (4,4/4,4,6,8)	88.00	2.00		
					87.90	(0.10)		Hard dark brown black sandy very gravelly CLAY. Gravel is fine to coarse, sub-angular to angular mudstone.
						2.10		
		2.40	D			(0.40)		
					87.50	2.50		Stiff mottled gey brown yellow sandy very gravelly CLAY. Gravel is sub-angular to angular siltstone.
		2.80	D			(0.50)		Brown grey weak SILTSTONE recovered as clayey gravel.
		3.00	SPT(C)	N=50 for 300mm (9,9/10,12,14,14)	87.00	3.00		*End of Borehole at 3.00m*

Remarks
CAT scan and hand pits to 1.20m to check for services. Backfilled with arising on completion.

Method, Plant, Stability, Dimensions		Logger
0.00 - 1.20m	IP	GH
0.00 - 3.00m	WLS	GH

Trial Pit

TP01

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	435586.00	404155.00	89.00	1:25

Project Name	Project No.	Start Date	End Date
The Mill Academy, Barnsley	26063	2026-06-09	2026-06-09

Client
Barnsley MBC

Consultant
GH & PC

Contractor
RP Drilling Ltd

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
						(0.60)		Loose brown slightly clayey gravelly SAND with low cobble content. Gravel is fine to coarse, sub-angular sandstone. Cobbles are sub-angular sandstone. (Topsoil)
					88.40	0.60		Stiff mottled grey orange brown sandy gravelly CLAY with low cobble content. Gravel is fine to coarse, sub-angular coal and sandstone. Cobbles are sub-angular sandstone.
						(1.00)		
					87.40	1.60		*End of Trial Pit at 1.60m*

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

Remarks
CAT used to scan for underground services prior to excavation. Backfilled with arising on completion.

Method, Plant, Stability, Dimensions
0.00 - 1.60m TP Kubota U274
Stable
L = 2.20m
W = 0.60m

Logger
GH

Trial Pit

TP02

Sheet 1 of 1

Hole Type	Easting	Northing	Ground Level (m)	Scale
TP	435574.00	404157.00	89.00	1:25

Project Name	Project No.	Start Date	End Date
The Mill Academy, Barnsley	26063	2026-06-09	2026-06-09

Client
Barnsley MBC

Consultant
GH & PC

Contractor
RP Drilling Ltd

Inst/ Backfill	Water Levels	Samples and Tests: Depth (m)	Samples and Tests: Type/ Ref	Samples and Tests: Results	Level (m)	Depth (thickness) (m)	Strata: Legend	Strata: Description
						(0.60)		Loose dark brown very clayey gravelly SAND. Gravel is fine to coarse, sub-angular brick and sandstone. (Topsoil)
					88.40	0.60		Stiff mottled grey orange brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-angular coal and sandstone.
						(1.00)		
					87.40	1.60		*End of Trial Pit at 1.60m*

0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0

Remarks
CAT used to scan for underground services prior to excavation. Backfilled with arising on completion.

Method, Plant, Stability, Dimensions
0.00 - 1.60m TP Kubota U274
Stable
L = 2.90m
W = 0.60m

Logger
GH

APPENDIX D - LABORATORY TESTING RESULTS

LABORATORY REPORT

Contract Number: PSL26/3369

Report Date: 14 May 2026

Client's Reference: 26063/4599

Client Name: Abbeydale
4 Neville Street
Wakefield
WF1 5EF

For the attention of: Glyn Hogg

Contract Title: Mill Academy

Date Received: 21/04/2026
Date Commenced: 21/04/2026
Date Completed: 14/05/2026

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins (Managing Director)	R Berriman (Associate Director)	S Royle (Laboratory Manager)
L Knight (Assistant Laboratory Manager)	S Eyre (Senior Technician)	D Nicholson (Senior Technician)

5 – 7 Hexthorpe Road,
Hexthorpe,
Doncaster,
DN4 0AR
Tel: 01302 768098
Email: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
WS01			1.50		Brown mottled grey slightly sandy CLAY.
WS01			2.10		Brown slightly gravelly silty CLAY.
WS01			2.80		Brown mottled grey highly weathered MUDSTONE.
WS02			1.40		Brown mottled grey CLAY.
WS02			2.10		Brown slightly gravelly CLAY.
WS02			2.70		Brown mottled grey highly weathered MUDSTONE.
WS03			1.20		Brown mottled grey CLAY.
WS03			1.90		Brown mottled grey CLAY.
WS03			2.40		Brown mottled grey slightly sandy slightly gravelly CLAY.
WS03			2.90		Brown slightly sandy CLAY.
WS04			1.50		Brown mottled grey slightly sandy slightly gravelly CLAY.
WS04			2.90		Brown mottled grey highly weathered MUDSTONE.
WS05			1.50		Brown mottled grey CLAY.
WS05			2.40		Brown mottled grey CLAY.
WS05			2.80		Brown mottled grey highly weathered MUDSTONE.

SUMMARY OF SOIL CLASSIFICATION TESTS

BS 1377 - Part 2 : 2022 in accordance with BS EN ISO 17892 (as below)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Water Content %	Linear Shrinkage	Particle Density Mg/m^3	Liquid Limit %	Plastic Limit %	Plasticity Index %	Passing 0.425mm %	Remarks
WS01			1.50		21.9			49	23	26	100	Medium Plasticity CIM
WS01			2.10		13.9							
WS01			2.80		17.3							
WS02			1.40		30.1			60	25	35	100	High Plasticity CIH
WS02			2.10		21.1							
WS02			2.70		21.2							
WS03			1.20		35.9							
WS03			1.90		11.9							
WS03			2.40		23.4			41	20	21	93	Medium Plasticity CIM
WS03			2.90		12.4							
WS04			1.50		13.8							
WS04			2.90		17.5							
WS05			1.50		27.6							
WS05			2.40		19.7			45	22	23	100	Medium Plasticity CIM
WS05			2.80		15.9			54	21	33	95	High Plasticity CIH

Water Content - BS 1377 - Part 2 : 2022 : Clause 4 in accordance with BS EN ISO 17892 - 1 : 2014 + A1 : 2022
Linear Shrinkage - BS 1377 - Part 2 : 2022 : Clause 7
Particle Density (Gas Jar method) - BS 1377 - Part 2 : 2022 : Clause 9
Liquid, Plastic Limit & Plasticity Index - BS 1377 - Part 2 : 2022 : Clause 5 & 6 in accordance with BS EN ISO 17892 - 12 : 2018 + A2 : 2022

SYMBOLS : NP = Non Plastic

UKAS TESTING 4043

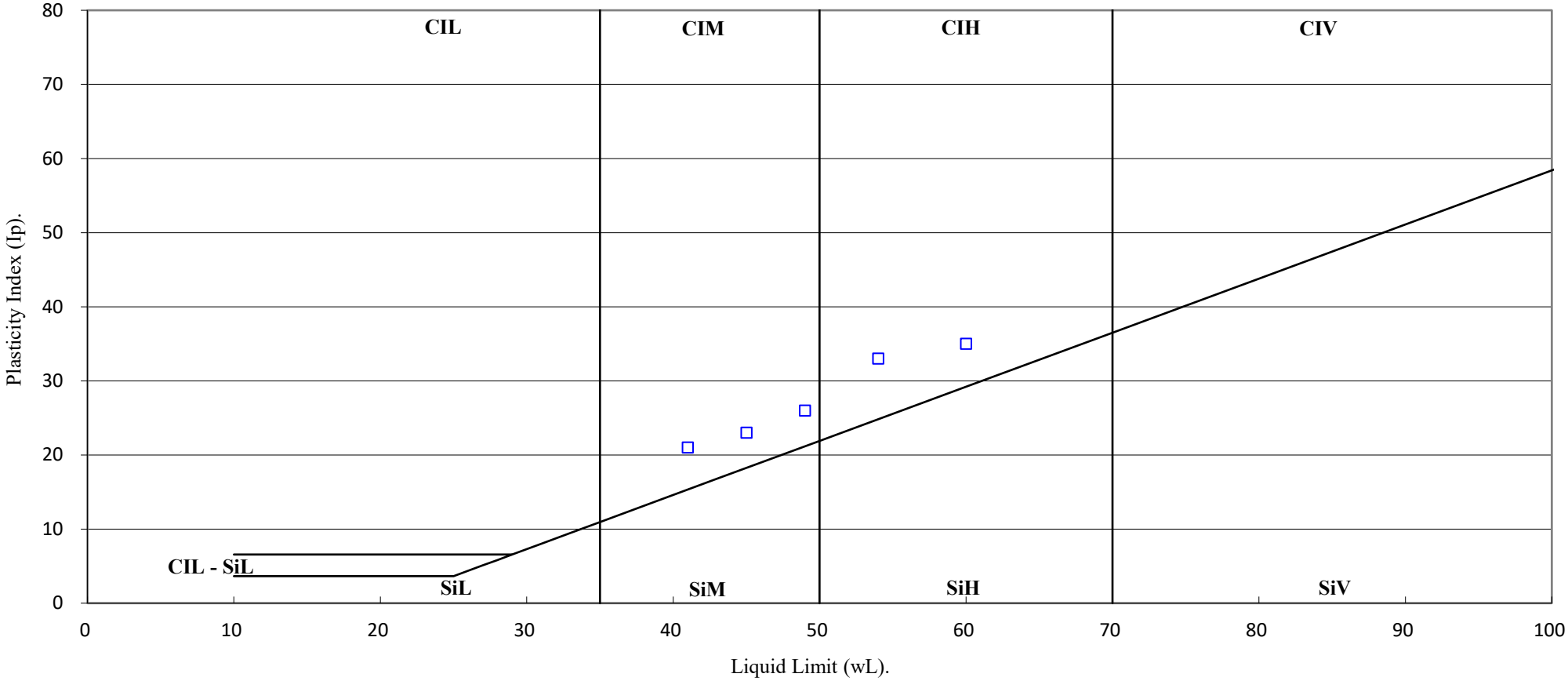
PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Mill Academy

Contract No:
PSL26/3369
Client Ref:
26063/4599

PLASTICITY CHART

BS EN ISO 14688-2:2017 Clause 4.4



UKAS TESTING 4043 / PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY	**Mill Academy**	**Contract No:** PSL26/3369 **Client Ref:** 26063/4599

Abbeydale Geoscience Limited
4 Neville Street
Wakefield
West Yorkshire
WF1 5EF

t: 1924376622

e: Glyn@abbeydalebec.com; hello@abbeydalegeo.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: info-i2analytical@normecgroup.com

Preliminary Report Number : 26-021074

Project / Site name:	Mill Academy	**Samples received on:**	22/04/2026
Your job number:	26063	**Samples instructed on/ Analysis started on:**	22/04/2026
Your order number:	4600	**Analysis completed by:**	not complete
Report Issue Number:		**Report issued on:**	30/04/2026
Samples Analysed:	7 soil samples		

Signed:

Trevor Hill
Customer Service
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.

Preliminary reports provided at the request of the client should be considered as incomplete and have not been through the complete quality control procedure.
Results contained in preliminary reports may be subject to change and therefore should not be used as a basis for decision making, except at the risk of the client.
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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-021074
Project / Site name: Mill Academy
Your Order No: 4600

Lab Sample Number				896999	897000	897001	897002	897003
Sample Reference				WS01	WS02	WS03	WS04	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.60	0.20	0.20	0.20	0.20
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
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	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	19	18	20	14	18
Total mass of sample received	kg	0.1	NONE	0.6	0.6	0.6	0.7	0.4
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	OGR	OGR	OGR	OGR	OGR
Analysis completed	N/A	N/A	N/A	30/04/2026	30/04/2026	30/04/2026	30/04/2026	30/04/2026
General Inorganics								
pH (L099)	pH Units	N/A	MCERTS	6.8	6.9	6.2	6.1	6.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO_4 1hr extraction	mg/kg	2.5	MCERTS	37	< 2.5	30	18	23
Water Soluble SO_4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	18.4	< 1.25	15.2	9	11.7
Organic Matter (automated)	%	0.1	MCERTS	4.5	4.4	4	4.3	5.6
Calorific Value	MJ/Kg	0.12	ISO 17025	-	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.1	< 0.05	0.07	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	0.06	0.08	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.17	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.06	0.18	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.6	1.9	0.26	0.09	0.14
Anthracene	mg/kg	0.05	MCERTS	0.14	0.42	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	1.5	3.3	0.81	0.29	0.41
Pyrene	mg/kg	0.05	MCERTS	1.4	2.7	0.72	0.27	0.36
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.85	1.3	0.53	0.18	0.21
Chrysene	mg/kg	0.05	MCERTS	0.85	1.3	0.57	0.19	0.25
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	1.3	1.4	0.74	0.23	0.28
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.43	0.79	0.39	< 0.05	0.16
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.95	1.3	0.6	0.2	0.24
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.56	0.62	0.33	0.11	0.14
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.18	0.19	0.11	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.13	0.63	0.31	0.11	0.13
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	9.09	16.3	5.44	1.67	2.32

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-021074
Project / Site name: Mill Academy
Your Order No: 4600

Lab Sample Number				896999	897000	897001	897002	897003
Sample Reference				WS01	WS02	WS03	WS04	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.60	0.20	0.20	0.20	0.20
Date Sampled				Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	17	15	16	13	8.6
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1	0.85	0.8	0.74	0.63
Boron (water soluble)	mg/kg	0.2	MCERTS	1.3	1.5	1.1	0.6	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.3	0.3	0.3	0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	U/S *U/S g	< 1.8	U/S *U/S g	U/S *U/S g	U/S *U/S g
Chromium (III)	mg/kg	1	NONE	U/S *U/S g	12	U/S *U/S g	U/S *U/S g	U/S *U/S g
Chromium (hexavalent) by IC	mg/kg	1.8	NONE	< 1.80	-	< 1.80	< 1.80	< 1.80
Chromium (III) by IC	mg/kg	1	NONE	17	-	12	15	14
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	17	12	12	15	14
Copper (aqua regia extractable)	mg/kg	1	MCERTS	42	29	30	24	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	59	110	46	33	28
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	13	12	14	12
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	27	21	23	24	22
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	76	57	54	50	50
Petroleum Hydrocarbons								
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
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
SUBCON								
Loss on Ignition				-	-	-	-	-

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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-021074
Project / Site name: Mill Academy
Your Order No: 4600

Lab Sample Number				897004	897005
Sample Reference				WS02	WS04
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				2.90	2.40
Date Sampled				Deviating	Deviating
Time Taken				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
Moisture Content	%	0.01	NONE	15	26
Total mass of sample received	kg	0.1	NONE	0.2	0.2
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 (L099)	pH Units	N/A	MCERTS	6.1	5.6
Total Cyanide	mg/kg	1	MCERTS	-	-
Free Cyanide	mg/kg	1	MCERTS	-	-
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	68	83
Water Soluble SO_4 1hr extraction	mg/kg	2.5	MCERTS	-	-
Water Soluble SO_4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-
Organic Matter (automated)	%	0.1	MCERTS	-	-
Calorific Value	MJ/Kg	0.12	ISO 17025	0.922	12.2
Total Phenols					
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-
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	-	-
Total PAH					
Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 26-021074
Project / Site name: Mill Academy
Your Order No: 4600

Lab Sample Number				897004	897005
Sample Reference				WS02	WS04
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				2.90	2.40
Date Sampled				Deviating	Deviating
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		
Heavy Metals / Metalloids					
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-	-
Chromium (III)	mg/kg	1	NONE	-	-
Chromium (hexavalent) by IC	mg/kg	1.8	NONE	-	-
Chromium (III) by IC	mg/kg	1	NONE	-	-
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	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-
Petroleum Hydrocarbons					
TPHCWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	-	-
TPHCWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	-	-
TPHCWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	-
TPHCWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	-	-
TPHCWG - Aliphatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	-	-
TPHCWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.01	MCERTS	-	-
TPHCWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.02	MCERTS	-	-
TPHCWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	-	-
TPHCWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	-	-
TPHCWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	-
TPHCWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	-	-
TPHCWG - Aromatic >EC5 - EC35 $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	-	-
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	-	-
SUBCON					
Loss on Ignition				to follow	to follow

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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-021074
Project / Site name: Mill Academy

* 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 *
896999	WS01	None Supplied	0.6	Brown clay and loam with gravel and vegetation
897000	WS02	None Supplied	0.2	Brown loam and sand with gravel and vegetation
897001	WS03	None Supplied	0.2	Brown loam and clay with gravel and vegetation
897002	WS04	None Supplied	0.2	Brown loam and sand with gravel and vegetation
897003	WS05	None Supplied	0.2	Brown loam and sand with gravel and vegetation
897004	WS02	None Supplied	2.9	Black clay and sand with peat
897005	WS04	None Supplied	2.4	Black clay and sand with peat

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-021074
Project / Site name: Mill Academy

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
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038B	D	MCERTS
Hexavalent chromium in soil by Ion Chromatography	Determination of hexavalent chromium in alkaline soil extract by use of ion chromatography with spectrophotometric detection	In-house method	L130B	W	NONE
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
Chromium III in soil	In-house method by calculation from total Cr and Cr VI	In-house method by calculation	L080-PL/L130B	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry	In-house method	L080-PL	W	MCERTS
Free cyanide in soil	Determination of free 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
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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-021074
Project / Site name: Mill Academy

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 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
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
Calorific Value of soil	Determination of the calorific value of soil by combustion in a controlled environment	Calorific Value of Soil by Bomb Calorimeter	L013B	D	ISO 17025
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Loss on Ignition (Subcon) (BS 1377-3:2018+A1 2021)					NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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

*U/S g- Unsuitable for analysis due to high colour intensity.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-021074

Project / Site name: Mill Academy

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
WS01	None Supplied	S	896999	a	Asbestos identification in Soil	A001B	a
WS01	None Supplied	S	896999	a	BTEX and/or Volatile organic compounds in soil	L073B	a
WS01	None Supplied	S	896999	a	Boron, water soluble, in soil	L038B	a
WS01	None Supplied	S	896999	a	Chromium III in soil	L080-PL/L130B	a
WS01	None Supplied	S	896999	a	Free cyanide in soil	L080-PL	a
WS01	None Supplied	S	896999	a	Hexavalent chromium in soil	L080-PL	a
WS01	None Supplied	S	896999	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
WS01	None Supplied	S	896999	a	Metals in soil by ICP-OES	L038B	a
WS01	None Supplied	S	896999	a	Monohydric phenols in soil	L080-PL	a
WS01	None Supplied	S	896999	a	Organic matter (Automated) in soil	L009B	a
WS01	None Supplied	S	896999	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS01	None Supplied	S	896999	a	Sulphate, water soluble, in soil (1hr extraction)	L038B	a
WS01	None Supplied	S	896999	a	Total cyanide in soil	L080-PL	a
WS01	None Supplied	S	896999	a	Total petroleum hydrocarbons with carbon banding by GC-FID in soil	L076B	a
WS01	None Supplied	S	896999	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
WS01	None Supplied	S	896999	a	Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	L088-PL	a
WS01	None Supplied	S	896999	a	pH in soil (automated)	L099-PL	a
WS02	None Supplied	S	897000	a	Asbestos identification in Soil	A001B	a
WS02	None Supplied	S	897000	a	BTEX and/or Volatile organic compounds in soil	L073B	a
WS02	None Supplied	S	897000	a	Boron, water soluble, in soil	L038B	a
WS02	None Supplied	S	897000	a	Chromium III in soil	L080-PL/L130B	a
WS02	None Supplied	S	897000	a	Free cyanide in soil	L080-PL	a
WS02	None Supplied	S	897000	a	Hexavalent chromium in soil	L080-PL	a
WS02	None Supplied	S	897000	a	Metals in soil by ICP-OES	L038B	a
WS02	None Supplied	S	897000	a	Monohydric phenols in soil	L080-PL	a
WS02	None Supplied	S	897000	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS02	None Supplied	S	897000	a	Sulphate, water soluble, in soil (1hr extraction)	L038B	a
WS02	None Supplied	S	897000	a	Total cyanide in soil	L080-PL	a
WS02	None Supplied	S	897000	a	Total petroleum hydrocarbons with carbon banding by GC-FID in soil	L076B	a
WS02	None Supplied	S	897000	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
WS02	None Supplied	S	897000	a	Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	L088-PL	a
WS02	None Supplied	S	897000	a	pH in soil (automated)	L099-PL	a
WS02	None Supplied	S	897004	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS02	None Supplied	S	897004	a	pH in soil (automated)	L099-PL	a
WS03	None Supplied	S	897001	a	Asbestos identification in Soil	A001B	a
WS03	None Supplied	S	897001	a	BTEX and/or Volatile organic compounds in soil	L073B	a
WS03	None Supplied	S	897001	a	Boron, water soluble, in soil	L038B	a
WS03	None Supplied	S	897001	a	Chromium III in soil	L080-PL/L130B	a
WS03	None Supplied	S	897001	a	Free cyanide in soil	L080-PL	a
WS03	None Supplied	S	897001	a	Hexavalent chromium in soil	L080-PL	a
WS03	None Supplied	S	897001	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
WS03	None Supplied	S	897001	a	Metals in soil by ICP-OES	L038B	a
WS03	None Supplied	S	897001	a	Monohydric phenols in soil	L080-PL	a
WS03	None Supplied	S	897001	a	Organic matter (Automated) in soil	L009B	a
WS03	None Supplied	S	897001	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS03	None Supplied	S	897001	a	Sulphate, water soluble, in soil (1hr extraction)	L038B	a
WS03	None Supplied	S	897001	a	Total cyanide in soil	L080-PL	a
WS03	None Supplied	S	897001	a	Total petroleum hydrocarbons with carbon banding by GC-FID in soil	L076B	a
WS03	None Supplied	S	897001	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
WS03	None Supplied	S	897001	a	Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	L088-PL	a
WS03	None Supplied	S	897001	a	pH in soil (automated)	L099-PL	a
WS04	None Supplied	S	897002	a	Asbestos identification in Soil	A001B	a
WS04	None Supplied	S	897002	a	BTEX and/or Volatile organic compounds in soil	L073B	a
WS04	None Supplied	S	897002	a	Boron, water soluble, in soil	L038B	a

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 26-021074

Project / Site name: Mill Academy

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
WS04	None Supplied	S	897002	a	Chromium III in soil	L080-PL/L130B	a
WS04	None Supplied	S	897002	a	Free cyanide in soil	L080-PL	a
WS04	None Supplied	S	897002	a	Hexavalent chromium in soil	L080-PL	a
WS04	None Supplied	S	897002	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
WS04	None Supplied	S	897002	a	Metals in soil by ICP-OES	L038B	a
WS04	None Supplied	S	897002	a	Monohydric phenols in soil	L080-PL	a
WS04	None Supplied	S	897002	a	Organic matter (Automated) in soil	L009B	a
WS04	None Supplied	S	897002	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS04	None Supplied	S	897002	a	Sulphate, water soluble, in soil (1hr extraction)	L038B	a
WS04	None Supplied	S	897002	a	Total cyanide in soil	L080-PL	a
WS04	None Supplied	S	897002	a	Total petroleum hydrocarbons with carbon banding by GC-FID in soil	L076B	a
WS04	None Supplied	S	897002	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
WS04	None Supplied	S	897002	a	Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	L088-PL	a
WS04	None Supplied	S	897002	a	pH in soil (automated)	L099-PL	a
WS04	None Supplied	S	897005	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS04	None Supplied	S	897005	a	pH in soil (automated)	L099-PL	a
WS05	None Supplied	S	897003	a	Asbestos identification in Soil	A001B	a
WS05	None Supplied	S	897003	a	BTEX and/or Volatile organic compounds in soil	L073B	a
WS05	None Supplied	S	897003	a	Boron, water soluble, in soil	L038B	a
WS05	None Supplied	S	897003	a	Chromium III in soil	L080-PL/L130B	a
WS05	None Supplied	S	897003	a	Free cyanide in soil	L080-PL	a
WS05	None Supplied	S	897003	a	Hexavalent chromium in soil	L080-PL	a
WS05	None Supplied	S	897003	a	Hexavalent chromium in soil by Ion Chromatography	L130B	a
WS05	None Supplied	S	897003	a	Metals in soil by ICP-OES	L038B	a
WS05	None Supplied	S	897003	a	Monohydric phenols in soil	L080-PL	a
WS05	None Supplied	S	897003	a	Organic matter (Automated) in soil	L009B	a
WS05	None Supplied	S	897003	a	Speciated PAHs and/or Semi-volatile organic compounds in soil	L064B	a
WS05	None Supplied	S	897003	a	Sulphate, water soluble, in soil (1hr extraction)	L038B	a
WS05	None Supplied	S	897003	a	Total cyanide in soil	L080-PL	a
WS05	None Supplied	S	897003	a	Total petroleum hydrocarbons with carbon banding by GC-FID in soil	L076B	a
WS05	None Supplied	S	897003	a	Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil (Summed Bands)	L076B/L088-PL	a
WS05	None Supplied	S	897003	a	Total petroleum hydrocarbons with carbon banding by HS-GC/MS in soil	L088-PL	a
WS05	None Supplied	S	897003	a	pH in soil (automated)	L099-PL	a

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

APPENDIX E - CONCEPTUAL SITE MODEL

Ref.	Hazard	Source	Pathway	Receptor	Pollutant Linkage ?	Current anticipated risk (1) *	Comment	Action	Residual Risk *^
1	Heavy metals	Made Ground	Ingestion of soil & indoor dust	Residents	✅	Very low / 100%	Ground investigation required to confirm risk potential	Subject to findings of Ground Investigation	Very Low
2	Carcinogenic PAHs	Made Ground	Ingestion of soil & indoor dust	Residents	✅	Very low / 100%	Ground investigation required to confirm risk potential	Subject to findings of Ground Investigation	Very Low
3	TPH	Made Ground	Ingestion of soil & indoor dust	Residents	✅	Very low / 100%	Ground investigation required to confirm risk potential	Subject to findings of Ground Investigation	Very Low
4	Sulphate	Made Ground	Ingestion of soil & indoor dust	Residents	✅	Very low / 100%	Ground investigation required to confirm risk potential	Subject to findings of Ground Investigation	Very Low
5	Leachable metals	Made Ground	Leaching to groundwater	Groundwater	✅	Very low / 100%	Ground investigation required to confirm risk potential	Subject to findings of Ground Investigation	Very Low
6	Leachable PAH	Made Ground	Leaching to groundwater	Groundwater	✅	Very low / 100%	Ground investigation required to confirm risk potential	Subject to findings of Ground Investigation	Very Low
7	Ground gases	Made Ground	Vertical migration through	Residents	✅	Very low / 100%	Further action not required	No further action deemed necessary	Very Low
8	Mine gases	Bedrock	Vertical migration through	Residents	✅	Very low / 100%	No risks at levels present	No further action deemed necessary	Very Low
9	Radon	Bedrock	Vertical migration through	Residents	✅	Very low / 100%	No risks at levels present	No further action deemed necessary	Very Low
10	Invasive plant species	Invasive plant species	Contact with concrete substructures	On site buildings	✅	Very low / 100%	None identified during site walkover survey undertaken	Maintain vigilance during construction	Very Low
11	Trees	On site trees	Changes to soil moisture regime	On site buildings	✅	Moderate / 25%	Residual soils found to be medium potential for volume change.	Minimum founding depths of 900mm bgl.	Very Low
12	Flooding	River	Over land flow	Residents	✅	Very low / 100%	Site not within designated flood risk zone	No further action deemed necessary	Very Low

Abbeydale Geoscience

4 Neville Street WF1 5EF | Tel: 01924 376622 | hello@abbeydalegeo.com

NOTES:

(1) Anticipated risk over percentage site area.

* Refer to Risk Matrix Table within report text.

^ Anticipated risk after carrying out action

CONCEPTUAL MODEL TABLE

Client : Barnsley Metropolitan Borough Council

Project : The Mill Academy, Worsbrough, Barnsley

Job No : 26063

Appendix E

APPENDIX F - SOAKAWAY TEST RESULTS

Abbeydale
Geoscience Limited

SOAKAWAY TEST

TP No TP01

Client : Barnsley MBC	**Location No.** 26063	**Test No.** 1
Equipment & Method : Excavator	**Location** The Mill Academy	**Date** 09-Jun-26
		Logged by GH

TRIAL PIT DETAILS

	Width(m)	Length(m)	Depth (m) bD.
at start	0.60	2.20	0.00
at base	0.60	1.80	1.60

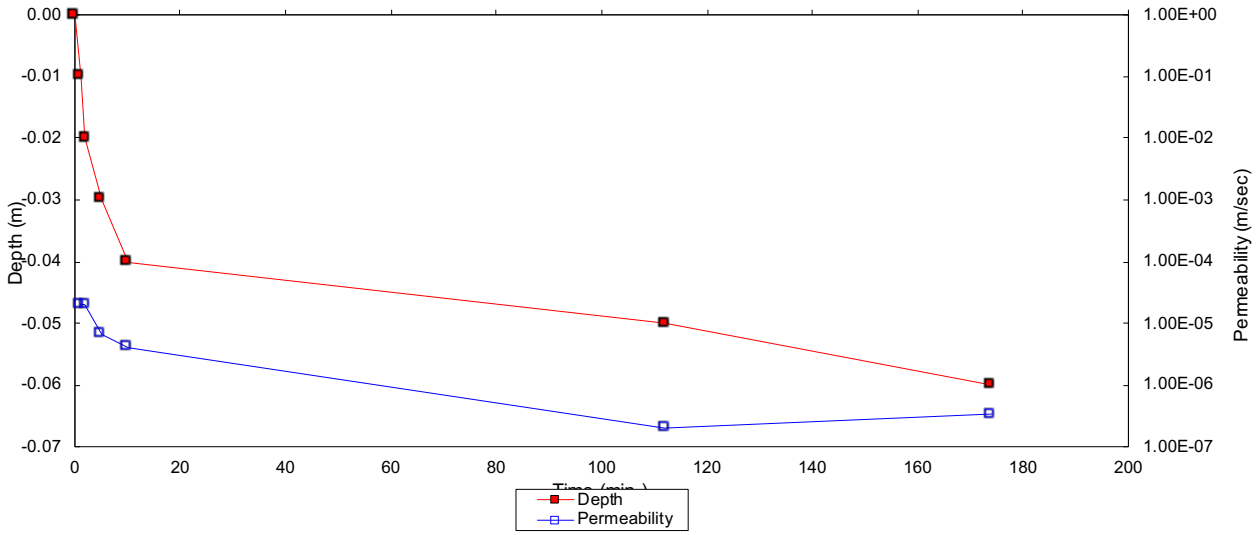
For detail of strata encountered see trial pit log

Datum above Ground Level	0.00	m
Volume of water discharged	1.92	m³
Perm strata height	1.60	m
Time discharged	174.00	Min.
Perm Base used	Yes	

DEPTH OF WATER DURING SOAKAWAY TEST

Time (min.)	Depth (m)	Permeability (m/Sec)	Time (min.)	Depth (m)	Permeability (m/Sec)	Time (min.)	Depth (m)	Permeability (m/Sec)
0	0.00	0	0	0.00		0	0.00	0
1	0.01	1.99E-05	0	0.00	0	0	0.00	0
2	0.02	2.00E-05	0	0.00		0	0.00	0
5	0.03	6.73E-06	0	0.00		0	0.00	0
10	0.04	4.06E-06	0	0.00		0	0.00	0
112	0.05	2.00E-07	0	0.00		0	0.00	0
174	0.06	3.32E-07	0	0.00		0	0.00	0
0	0.00		0	0.00		0	0.00	0
0	0.00		0	0.00		0	0.00	0
0	0.00		0	0.00		0	0.00	0
0	0.00	0	0	0.00		0	0.00	0
0	0.00		0	0.00	0	0	0.00	0
0	0.00		0	0.00	0	0	0.00	0

SOAKAWAY RATE



NOTE: *Soakaway testing carried out in general accordance with BRE Digest 365 (2016) for England and Wales*

Abbeydale
Geoscience Limited

SOAKAWAY TEST

TP No
TP02

Client :	Location No.	Test No.
Barnsley MBC	26063	1
Equipment & Method :	**Location**	**Date**
Excavator	The Mill Academy	09-Jun-26
		Logged by GH

TRIAL PIT DETAILS

	Width(m)	Length(m)	Depth (m) bD.
at start	0.60	2.90	0.00
at base	0.60	2.40	1.60

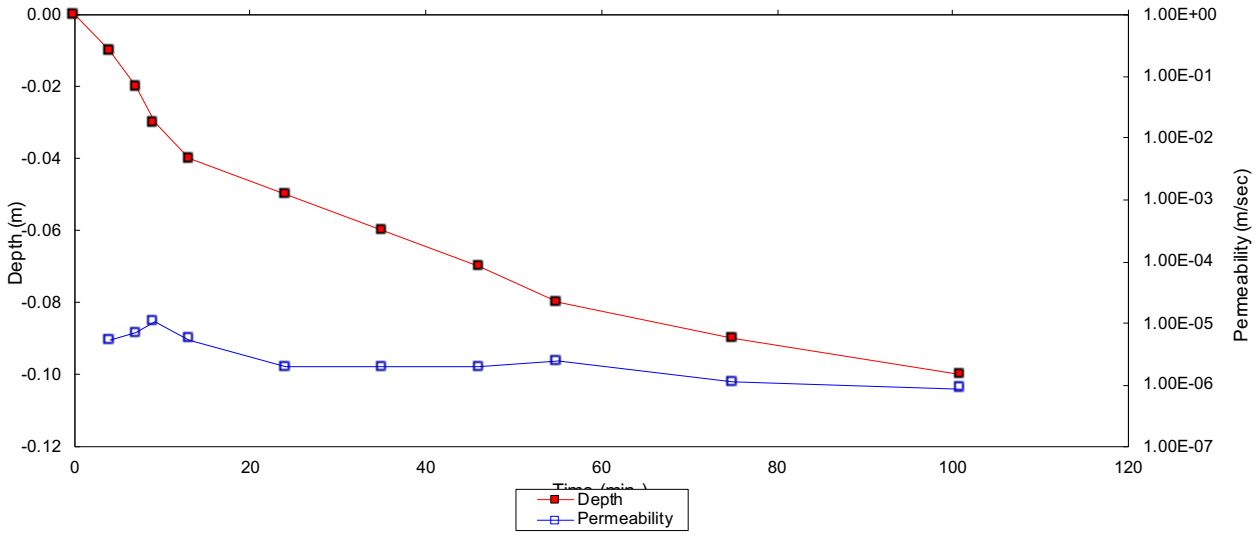
For detail of strata encountered see trial pit log

Datum above Ground Level	0.00	m
Volume of water discharged	2.54	m³
Perm strata height	1.60	m
Time discharged	174.00	Min.
Perm Base used	Yes	

DEPTH OF WATER DURING SOAKAWAY TEST

Time (min.)	Depth (m)	Permeability (m/Sec)	Time (min.)	Depth (m)	Permeability (m/Sec)	Time (min.)	Depth (m)	Permeability (m/Sec)
0	0.00	0	0	0.00		0	0.00	0
4	0.01	5.24E-06	0	0.00	0	0	0.00	0
7	0.02	7.03E-06	0	0.00		0	0.00	0
9	0.03	1.06E-05	0	0.00		0	0.00	0
13	0.04	5.34E-06	0	0.00		0	0.00	0
24	0.05	1.96E-06	0	0.00		0	0.00	0
35	0.06	1.97E-06	0	0.00		0	0.00	0
46	0.07	1.98E-06	0	0.00		0	0.00	0
55	0.08	2.44E-06	0	0.00		0	0.00	0
75	0.09	1.10E-06	0	0.00		0	0.00	0
101	0.10	8.55E-07	0	0.00		0	0.00	0
0	0.00		0	0.00	0	0	0.00	0
0	0.00		0	0.00	0	0	0.00	0

SOAKAWAY RATE



NOTE: *Soakaway testing carried out in general accordance with BRE Digest 365 (2016) for England and Wales*