

PROPOSED RESIDENTIAL REDEVELOPMENT

WILDMANS OF URCHFONT, WILTSHIRE

Phase 2 Geo-Environmental Site Assessment Report & Proposed Remediation Strategy

PROJECT NO. P1827

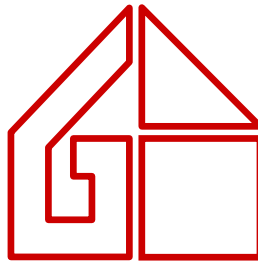
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1. Introduction

1.1 Terms of Reference

Ground Investigation Limited has been commissioned by Gaiger Brothers Limited (the Client), to carry out a Phase 2 Geo-Environmental Site Assessment at the site of a proposed new residential development at the garage premises known as Wildmans of Urchfont in Wiltshire.

This report presents the findings of the intrusive ground investigation works undertaken, including a geotechnical interpretation, together with generic quantitative assessments of risks to human health and risks arising from potentially hazardous ground gas. A qualitative assessment of potential risks to controlled waters is also included.

A Phase 1 Assessment of Land Quality (desk study) has previously been undertaken at the site on behalf of the Client (Ref. 1), the findings of which should be considered in the context of this Phase 2 assessment.

A further phase of intrusive investigatory works is expected to be undertaken in due course following demolition, which will target the buildings and other areas inaccessible during this investigation, following which this Phase 2 Geo-Environmental Site Assessment will be updated.

1.2 Site Location

The site address is Wildmans of Urchfont, High Street, Urchfont, Wiltshire, SN10 4QH and its approximate National Grid Reference is 404140, 157020.

Detailed information concerning the site interior and its boundaries is provided within the earlier desk study (Ref. 1).

A topographical survey of the site showing the existing layout is presented as the base to Figure 1.

1.3 Proposed Development

The proposed development is understood to involve the construction of five 3/4-bedroom dwellings with small private gardens, garages, a new access road and turning area, together with associated car parking areas.

A plan provided by the Client showing the proposed development layout is presented as the base to Figure 2.

1.4 Objectives

The primary objectives of this assessment are summarised as follows.

- (i) Examine the physical ground and groundwater conditions at the site.
- (ii) Identify and investigate potentially significant geotechnical and geo-environmental hazards.

- (iii) Consider ground contamination in relation to threats posed to human health and controlled waters.
- (iv) Advise on the need for remedial actions, or further investigation, to address potentially unacceptable human health or environmental risks associated with identified ground contamination hazards.
- (v) Advise on geotechnical conditions, identify foundation options, and provide advice relating to ground engineering matters in the context of the proposed development.

1.5 Scope of Work

In order to achieve the objectives summarised in Section 1.4 above, the following general scope of work has been carried out.

- (i) Fieldworks involving the drilling of six continuous percussion boreholes, together with the installation of monitoring wells in all boreholes for subsequent gas/groundwater monitoring purposes.
- (ii) In-situ monitoring of groundwater levels, gas concentrations and flow rates following completion of the initial fieldworks, within each of the monitoring wells.
- (iii) Laboratory chemical analysis, together with geotechnical classification testing of soil samples recovered from the encountered strata.
- (iv) Preparation of this Phase 2 Geo-Environmental Site Assessment addressing ground engineering and contamination issues relating to the proposed development.

1.6 Report Structure

This report is presented in five sections, the contents of which are summarised below.

- **Section 1** provides an introduction to the report. It identifies the site location, summarises the proposed development, and outlines the objectives of the study and the general scope of work.
- **Section 2** describes the fieldworks and laboratory testing that have been carried out.
- **Section 3** provides a description of the physical ground and groundwater conditions revealed by the investigation.
- **Section 4** considers ground contamination hazards in respect of chronic human health risks, risks to controlled waters and risks arising from potentially hazardous ground gas, and discusses the potential aggressive environment for concrete used below ground level.
- **Section 5** considers the ground conditions in relation to ground engineering and geotechnical matters of likely significance in the context of the proposed development. Advice is given for the design of foundations and ground floor slabs.

2. Fieldworks & Laboratory Testing

2.1 General

The general scope of the fieldworks and laboratory testing for the site is summarised below.

- The intrusive investigatory works comprised the drilling of six continuous percussion boreholes, extending to depths ranging between approximately 0.7 and 4.0 m below the existing ground level.
- In-situ standard penetration tests (SPTs) were completed at approximate 1 m intervals within the boreholes.
- Gas/groundwater monitoring wells were installed within all six boreholes, to provide the facility for subsequent gas and groundwater level monitoring.
- Disturbed samples of the strata revealed within the exploratory holes were extracted at regular intervals.
- General observations were recorded concerning the incidence and behaviour of groundwater seepages, together with any obvious visual or olfactory evidence of ground or groundwater contamination.
- Laboratory chemical analysis was carried out on selected soil samples recovered from the exploratory holes.
- Laboratory geotechnical testing was carried out on selected soil samples recovered from the exploratory holes.

This section of the report describes the fieldworks which have been completed and provides details of the subsequent laboratory testing.

2.2 Intrusive Investigatory Works

The intrusive investigatory works were undertaken on the 28th of August 2025, under the supervision of GI.

Targeting Rationale

The positions of investigation were determined on the basis of the proposed development layout, taking into consideration the observations made during the initial site walkover and the locations of potential point sources of contamination, these being specifically targeted where possible.

Areas near to the USTs were specifically targeted, together with the areas adjacent to the locations of the ASTs (for oil / waste oil). General coverage was also provided across the external areas where end-of-life vehicles, fuel drums, black oily staining, and other such potential point sources of contamination were observed.

As mentioned previously, a further phase of intrusive investigatory works is to be undertaken in due course which will target the buildings and other areas inaccessible during this investigation, following demolition.

The fieldworks are described in detail under the subheadings below.

2.2.1 Lined Continuous Percussion Boreholes

A rubber tracked Archway Competitor Dart rig was used to form the continuous percussion boreholes. Where underground services were expected, careful hand excavation was initially employed to a nominal 1 m depth to mitigate the risk of damage. Lined steel core barrels of 1 m length, and progressively reducing diameter, were then percussively driven into the ground, enabling the extraction of virtually continuous disturbed 'core' samples of the subsoil within polythene liners.

Sub-samples were collected from the polythene liners, and sealed in polythene tubs and amber glass jars, as appropriate, before being dispatched to the laboratory in refrigerated containers for analysis.

Boring commenced initially at approximately 100 mm diameter, following the breaking out of the surface hardstanding at some locations, reducing progressively with depth to some 70 mm. Standard penetration tests (SPTs) were carried out at approximate 1 m intervals, the results of which are included on the individual borehole records.

As the drilling progressed, details of the strata succession were recorded, together with observations concerning the incidence and behaviour of groundwater ingress and any obvious visual or olfactory evidence of soil or groundwater contamination.

Gas/groundwater monitoring standpipes were installed within all six boreholes, being constructed from 50 mm nominal diameter uPVC slotted screen, connected to the surface by a 1 m long section of plain pipe, with a bentonite seal, gas valve and secure steel cover at ground level. The installation details are presented on the individual borehole records.

Engineering records of the continuous percussion boreholes are presented in Appendix A.

2.2.2 Field Monitoring

Following completion of the intrusive investigatory works, two return visits have been undertaken to date for gas and groundwater monitoring purposes. During each of these visits, concentrations of methane, carbon dioxide, carbon monoxide, hydrogen sulphide and oxygen, together with gas flow rates, were measured within the monitoring wells using a Gas Data GFM436 portable infrared gas analyser. This instrument was also used to record the prevailing atmospheric pressure conditions.

A cable reel interface dipmeter was used to determine standing water levels within the installations.

The results of the field monitoring are presented in Appendix B.

2.3 Laboratory Testing

Geotechnical classification tests have been completed on selected soil samples, together with chemical tests appropriate for the consideration of potentially harmful effects on human health and controlled waters, and aggressive effects towards buried concrete.

The types of tests undertaken on the selected samples are summarised under the following headings.

2.3.1 Chemical Tests

Chemical analysis has been undertaken as follows, based on the contaminants of concern identified within Section 5.2.3 of this report:

- (i) inorganics suite comprising: metals/semi-metals, cyanides, total and water soluble sulphate, pH and asbestos screening;
- (ii) organics suite comprising: speciated polycyclic aromatic hydrocarbons (PAHs), speciated total petroleum hydrocarbons (TPHs) including BTEX compounds, volatile organic compounds (VOCs) including MTBE, phenols and soil organic matter (SOM); and
- (iii) waste acceptance criteria (WAC) testing was also completed on a number of combined soil samples.

Provision was made for chemical testing to be undertaken on a number of groundwater samples recovered from the monitoring wells. However, the monitoring regime revealed groundwater to be absent from the installations. Further tests will therefore be completed on leachate preparations from a number of the soil samples during the next phase of investigation, to provide additional data for consideration of risks to controlled waters.

The laboratory test certificates are presented in Appendix C.

2.3.2 Geotechnical Classification Tests

The following types of geotechnical classification tests have been undertaken:

- (i) Particle size distributions (wet sieve); and
- (iii) BRE SD1 sulphate and pH suite.

The geotechnical classification test results are presented in Appendix D.

3. Physical Ground & Groundwater Conditions

3.1 General

The exploratory holes have established that within the depth of investigation the site is underlain by the following general sequence of strata (from ground level down).

- (i) Made Ground; and
- (ii) Upper Greensand Formation.

The general characteristics of the strata, as inferred from field observations, in-situ SPT results, and laboratory test results are discussed below.

3.2 Strata Descriptions

3.2.1 Made Ground

All of the window sampler boreholes were commenced through a surface layer of asphalt or concrete.

WS1 to WS3 encountered a surface of medium strong, light grey concrete with around 50-60 % limestone and flint aggregate in a brown sand matrix. A loose gravel surface initially covered the concrete at WS1.

WS4 to WS6 extended through a surface of extremely weak black asphalt with an estimated 70-80 % limestone aggregate.

The obvious anthropogenic deposits of Made Ground extended beneath the hard surfacing to depths ranging between 0.25 and 1.40 m, however, deeper disturbance was noted near the fuel tanks positions, as discussed further below.

The deepest anthropogenic Made Ground was encountered in WS1, extending to 1.4 m depth, comprising loose gravel of brick, glass, clinker, asphalt and concrete, with occasional voids and varying fractions of clay, sand and cobbles, over very loose greenish grey sand with some carbonaceous traces and rare brick fragments.

At WS2, which targeted the southern extent of the area where the redundant USTs are located, medium dense sand was found to overlie loose greenish grey sand with rare brick and pipe to 1.3 m depth. Following on from this, between 1.3 and 3.0 m depth, the deposits have tentatively been interpreted as reworked natural soils owing to their low density. In this regard, the materials appeared of a natural composition described as dark greyish green, gravelly sand with occasional dark grey carbonaceous speckling, with the coarse component being quartzitic sandstone. Reworked natural soils would not be unexpected close to the USTs and are probably associated with the earlier excavations undertaken to install the tanks.

At WS3 and WS4, medium dense, yellowish brown or pinkish grey, sandy gravel of limestone, brick, flint and quartz was found to 0.25 and 0.40 m depth respectively. Limestone cobbles were encountered beneath the asphalt in WS5 and WS6 to between 0.3 and 0.1 m depth.

At WS6, which targeted an area of oil-stained ground adjacent to the waste oil tanks, Made Ground extended to 0.5 m depth and comprised dense, yellowish brown and greenish grey, sandy, cobbly gravel

of sandstone, flint and brick. A strong hydrocarbon odour was noted throughout the Made Ground at this location.

It should be appreciated that deeper Made Ground and/or disturbance will be encountered between the selected positions of investigation, associated for example with buried structures such as the known USTs and further disturbance will result from the removal of these structures.

SPT N-values in the Made Ground and potentially reworked soils ranged between 1 and 4, confirming the very poor engineering characteristics of these materials.

3.2.2 Upper Greensand Formation

Beneath the Made Ground, deposits of the Upper Greensand Formation were encountered, extending thereafter to the full depth of the investigation, consistent with the published British Geological Survey mapping.

As discussed above, suspected reworked deposits of the Upper Greensand Formation were encountered between 1.3 and 3.0 m depth in WS2 likely associated with excavations undertaken to install the fuel tanks.

Generally, however, the in-situ natural deposits were of an at least medium dense state, becoming dense then very dense with increasing depth, typically comprising a greyish green, slightly silty sand. In places, the materials were streaked yellowish brown or orangish brown, with rare reddish brown speckling, and with some gravel of quartzitic sandstone and flint.

Within the shallower unconsolidated deposits of the Upper Greensand Formation, SPT N-values typically ranged between 27 and 41, although an anomalous value of 6 was recorded at 3 m depth in WS2, possibly as a result of the reworked materials, reflecting the adjacent fuel tank.

Towards the base of the boreholes, N-values were consistently >50 within very dense deposits, thereafter possibly tending to weakly cemented sandstone materials. In this regard, at depths of between 0.7 and 4.0 m, the borehole sampling sections refused on suspected very dense or intact sandstone, whilst the base of the SPT cone refused at depths of between 0.86 and 4.35 m. It should be noted in this context, notwithstanding the obvious disturbance associated with pre-existing subsurface construction (e.g. USTs etc) that an irregular bedrock profile is often exhibited by the Upper Greensand Formation, whereby weakly cemented sandstone horizons are interbedded or interdigitated with more extensively weathered uncemented sands.

The results of the geotechnical classification tests completed on selected samples indicate that Upper Greensand Formation is typically composed of 0 to 24 % gravel, 65 to 90 % sand and 10 to 16 % clay/silt sized particles, confirming its dominantly non-plastic characteristics (Ref. 2).

3.3 Groundwater

No groundwater was encountered in any of the exploratory holes during the relatively brief period of the fieldworks.

Subsequent relatively short term monitoring of the borehole installations undertaken to date, following completion of the fieldworks (Appendix B) has revealed that the boreholes remained dry. It is recommended that further monitoring is undertaken in due course and that if practical the monitoring wells are retained for possible further use when the buildings are demolished.

It should be noted that subsequent variations in groundwater and hydrological conditions could occur in response to future seasonal or climatic changes.

4. Ground and Groundwater Contamination

4.1 Introduction

The findings of the initial desk-based research and subsequent intrusive investigation have been considered in accordance with the requirements of the LCRM framework (Ref. 3), whereby a conceptual model of possible pollutant linkage has been developed for the site, which is described in the context of the proposed residential development.

The conceptual model considers the relationship between potential contamination sources, pathways and receptors in the light of the available information concerning the site history, geology, hydrology, and environmental setting, together with details of the proposed development, as set out in the preceding sections of this report.

This section of the report considers the level of risk posed by potential contaminants to human health and controlled waters in the context of the proposed development.

4.2 Revised Conceptual Site Model

4.2.1 Ground and Groundwater Conditions

It is possible to summarise the general ground and groundwater conditions as follows, on the basis of the information contained within the preceding sections of this report and presented in the initial desk study (Ref. 1):

- The revealed succession comprises a typically granular Made Ground containing anthropogenic deposits, followed locally by reworked deposits of the Upper Greensand Formation. In-situ naturally deposited sand and sandstone of the Upper Greensand Formation was then encountered, extending thereafter to the full depth of the investigation, consistent with the mapped geology examined by the desk study.
- The encountered deposits of Made Ground to the north of the site extended to depths of between 0.25 and 0.50 m below ground level. However, to the south, at the positions of WS1 and WS2, Made Ground extended to 1.3-1.4 m depth, with the aforementioned reworked materials in WS2 extending to at least 3.0 m depth. Further relatively deep deposits of Made Ground will be present between the exploratory hole positions, associated for example with the underground fuel storage tanks (USTs) and their subsequent removal, together with other buried structures/sub-structures.
- Visual and/or olfactory evidence of hydrocarbons was observed in WS3 and WS6. A faint odour was locally observed in WS3, whilst strong odours and staining were observed in WS6 throughout the shallow soil column. In this context, WS6 specifically targeted an area where significant hydrocarbon staining was present across the ground surface.
- Historic underground fuel storage tanks (USTs), with associated supply pipes, interceptors etc are present beneath the site, whilst further buried structures and infrastructure elsewhere at the site, cannot entirely be discounted.
- No groundwater was encountered within the boreholes during the period of the investigation. Subsequent relatively short term monitoring of the borehole installations during the period following completion of the fieldworks has revealed that the boreholes remained dry during

each of the visits. Further monitoring is expected to be combined with the subsequent phase of investigation.

4.2.2 Possible Sources of Contamination

It is possible to make the following comments in relation to possible sources of contamination at the site in the light of the findings of the desk-based research (Ref. 1), site inspection, and intrusive investigatory works referred to herein.

- Based on our examination of historical mapping, the site appears to have been occupied by outbuildings of an unknown use, as well as possibly a blacksmith, from at least as far back as the date of publication of the earliest OS mapping until construction of the original garage and filling station believed to date from between the 1960s and 1980s. The northernmost garage buildings were then constructed between around the 1980s and mid-1990s. Whilst the recent use of the site as a garage and filling station, with associated vehicle repair workshop represents the most significant driver for considering potential risks from ground contamination, it needs to be acknowledged that the earlier use, as well as other recent activities, could also introduce a risk of soil contamination.
- With regards to the recent use of the site as a garage and formerly a filling station, with associated servicing and repair workshops, and MOT testing areas, potential contamination could occur in the form of metals, semi-metals, fuels, oils, polycyclic aromatic hydrocarbons, volatile organics and acids/alkalis. Contamination of the site surface could occur as a result of spillage and leakage of fuel and oil particularly within the workshop and forecourt area, together with leakage into the soil from underground fuel tanks and/or any above ground fuel storage facilities. In this regard, significant hydrocarbon staining of the site surface was observed in the north-east of the site, which has been targeted by the intrusive investigation described herein.
- The three identified underground fuel storage tanks in the southern part of the site, together with the above ground waste oil tanks in the east, as well as the old oil drums and fuel containers, represent the most significant primary sources of potential contamination, whilst secondary sources in the form of contaminated soils could be present within the soils surrounding these features or, for example, in the subsoils beneath the heavily stained surfacing. In this context, the intrusive investigatory works encountered both visual and olfactory evidence of hydrocarbon contamination at the positions of WS3 and WS6 in the form of odours and some staining.
- The possible historic use of part of the site as a blacksmith introduces a possibility of contamination primarily with metallic and carbonaceous materials, which could lead to elevated concentrations of contaminants such as metals, semi-metals and polycyclic aromatic hydrocarbons, for example.
- The uncontrolled demolition of earlier buildings containing asbestos could potentially contaminate the site surface and underlying soils. It should be acknowledged in this context that there were previous buildings at the site, which were demolished prior to the garage being developed. Consideration of the potential for asbestos to be present within above ground structures is not within the scope of this report, however, it should be noted that potential ACMs were observed during the site walkover. Furthermore, chrysotile asbestos was encountered within the shallow Made Ground at the locations of WS1 and WS6. It will be important in this regard to ensure an asbestos survey is undertaken and any possible asbestos-containing materials removed prior to demolition works being undertaken.
- Deposits of Made Ground would technically be considered to represent a source of gas generation potential. These deposits were typically of modest thickness, and in general no

significant inclusions of putrescible or deleterious materials were encountered. On this basis these deposits would be considered to constitute a relatively low risk source. However, it should be appreciated that a greater thickness of Made Ground is present locally in the south of the site, and for example, associated with the USTs and their supporting structures and pipework etc. The olfactory evidence of hydrocarbon contamination noted in two of the boreholes could be considered a potential vapour source.

- Considering potential risks from off-site sources of contamination or ground gas, there do not appear to be any nearby sources of significant migration potential. Indeed, no landfills or other waste sources have been identified within the likely zone of influence.

4.2.3 Contaminants of Concern

Based on the summary presented in Section 5.2.2 above, acknowledging recent and past historic use of the site as a garage, filling station and possible blacksmiths, the following broad range of potential contaminants has been considered in quantifiable terms by this assessment:

- Metals and semi-metals: arsenic, boron, cadmium, chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium and zinc.
- Organic compounds: total petroleum hydrocarbons including BTEX compounds, volatile organic compounds including MTBE, phenols and polycyclic aromatic hydrocarbons.
- Inorganic compounds: cyanides, sulphates and asbestos.
- Acids and alkalis.
- Methane and carbon dioxide.

Careful vigilance was also exercised throughout the intrusive investigatory works for visual or olfactory evidence of hydrocarbon contamination and/or likely asbestos containing materials.

4.2.4 Receptors and Pathways

4.2.4.1 Chronic Human Health Risks

In respect of chronic human health risks arising from the presence of potentially contaminated soils at the site following completion of the proposed development, the eventual occupiers of the proposed dwellings are considered the most vulnerable receptors.

The most significant pathways for the purposes of assessing the risk posed to the identified receptors, from the aforementioned list of contaminants, would be considered to be ingestion and dermal contact with soil and fugitive soil dust within soft landscaped areas, together with the indoor inhalation of soil vapours/gases, arising from volatile organic contaminants and/or other ground gas.

The standard residential land use (with plant uptake) is considered to be most appropriate for this assessment. A generic quantitative assessment of potential chronic human health risks is presented accordingly in Section 5.3 below.

4.2.4.2 Acute Human Health Risks

During construction, site workers, occupiers of adjacent properties and members of the public could potentially be exposed to contaminants present in the ground via a number of pathways, including dermal contact with contaminated soils, ingestion of airborne particulate matter during bulk earthmoving

operations or exposure to soil vapours. Such risks will need to be addressed in the context of the pre-construction health and safety plan prepared by the building/groundworks contractor.

The normal precautions anticipated on any site of this nature would be expected to include the provision of appropriate personal protective equipment and hygiene facilities, together with effective measures to suppress airborne particulate matter during earthmoving activities.

Particular consideration should be afforded to the potential for asbestos containing materials to be present in the granular Made Ground brought to the surface during the initial groundworks.

A careful watching brief should be exercised in the above context and further specialist advice sought where appropriate.

4.2.4.3 Hazardous Ground Gas

Potential risks from hazardous ground gas are quantitatively considered in Section 5.4 below, on the basis of the gas monitoring data recorded at the monitoring well positions to date, following completion of the intrusive investigatory works.

4.2.4.4 Water Supply Pipework

Consideration will need to be afforded to the specification of the water supply pipework connecting the properties, acknowledging the past automotive land use and the presence of potential contaminative features such as USTs, coupled with obvious visual staining of the soils.

In the above context, notwithstanding the laboratory test data and consideration of remedial options a requirement for Protecta-line aluminium lined barrier pipework would be envisaged.

4.2.4.5 Controlled Waters

The Envirocheck report ascribes a bedrock aquifer designation of Principal Aquifer to the Upper Greensand Formation. The site does not, however, lie in the immediate proximity of any known groundwater abstractions and is not located within an Environment Agency Source Protection Zone.

In the above regard, the nearest licensed groundwater abstraction relates to a number of boreholes some 150-280 m to the north at Manor Farm for 'General Farming and Domestic' use. A small surface water receptor lies around 85 m north, however.

Acknowledging that contaminants of concern, such as mobile petroleum hydrocarbons, could have the potential to migrate into the underlying Principal Aquifer, the site location is considered relatively sensitive. However, making reference to the data available to date from the soil sampling exercise, the detected concentrations of the potentially mobile BTEX and light-end volatile TPH fractions at the selected positions were very low, being consistently below laboratory detection limits, suggesting the risk of such contamination impacting water quality in the wider environment is probably relatively low.

Notwithstanding the above, based on the aforementioned considerations at least a basic quantitative groundwater risk assessment would be considered prudent in the context of the proposed development. In this regard, unless groundwater samples can be collected from the monitoring wells, this is expected to be undertaken following the second phase on intrusive works utilising leachate preparations from recovered soil samples. A hydrogeological risk assessment (HRA) may be required subject to the outcome of these works.

4.3 Assessment of Chronic Human Health Risks

4.3.1 Methodology

Chronic human health risks associated with possible land contamination at the site have been assessed using the generic quantitative risk assessment (GQRA) methods published by DEFRA and the Environment Agency in the context of the LCRM framework (Ref. 3).

At the time of writing, Generic Assessment Criteria (GAC) have been issued from several different sources for the use in generic quantitative risk assessments for contaminated land, currently including the following:

- (i) Category 4 Screening Levels (C4SLs) issued by Defra in 2013 for 6 contaminants (Ref. 4);
- (ii) Soil Guideline Values (SGVs) issued by the Environment Agency in 2009 for some 11 contaminants (Ref. 5); and
- (iii) Suitable 4 Use Levels (S4ULs) issued by the Chartered Institute of Environmental Health (CIEH)/Land Quality Management in 2014 for some 80+ contaminants (Ref. 6).

As an initial first stage risk assessment process, acknowledging the fact that almost all potential contaminants of concern are covered, and that the methodology is the most contemporary, the S4ULs have been used in this GQRA. However, in the case of lead (Pb), only one GAC is presently published, which is the DEFRA C4SL, such that this value has been used in the GQRA.

The GQRA presented herein is based on the generic residential land use as described in the Environment Agency publication SR3 (Ref. 7).

4.3.2 Sampling and Laboratory Testing

For the purposes of gauging chronic human health risks, attention has focussed on examining contamination levels in soil samples recovered from the near surface Made Ground. In addition, some deeper subsoil samples have been analysed, collected from exploratory holes targeting the UST locations and areas exhibiting evidence of hydrocarbon contamination.

The soil samples have been analysed for suites of potential contaminants of concern based on those identified in Section 5.2.3, with a number of these tests specifically targeting hydrocarbons and VOCs, acknowledging the existing and former site use.

A second phase of intrusive investigatory works is expected to be undertaken when the property is vacant, such that further tests will be carried out in due course and this report will be revised and updated accordingly.

The results of the laboratory chemical analyses conducted on the selected soil samples are presented in Appendix C.

4.3.3 Risk Assessment

Table 1 summarises the laboratory test data and compare measured contaminant concentrations in the selected soil samples with their respective GAC.

An initial screening of the results shows that the majority of the potential contaminants of concern, including all the metals/semi-metals, TPH fractions, VOCs, cyanides and phenols are present at levels which are below the GAC for a sensitive residential development.

However, a number of potential contaminants of concern, dominantly heavy-end PAH compounds, were detected at concentrations above their GAC in one sample, together with two instances of chrysotile asbestos being detected, such that further consideration is provided below.

The critical exposure pathways from asbestos in the near surface soils would be via the inhalation of airborne dusts and fibres, whilst for the elevated heavy-end PAH compounds, would be via ingestion and dermal contact with soils and soil dust, together with the uptake of edible plants grown in the soils.

It should also be appreciated, that hydrocarbon odours and/or staining were noted at several locations and that notwithstanding their chemistry, the physical composition of a significant proportion of the near surface soils would be such that they would be considered unsuitable as surface cover in garden areas or other areas of soft landscaping.

We consider therefore, given the site history, physical and chemical composition of the soils and visual/olfactory evidence of hydrocarbons, that suitable remedial actions will be required to mitigate possible chronic human health risks at the site. Fundamentally, such remedial actions could either involve the removal of the source/s of contamination or the removal of the critical exposure pathways discussed above.

As discussed previously, this conclusion should be reviewed and appropriately amended following the second phase of intrusive investigatory works, if warranted.

Further consideration of the most appropriate methods for remedial actions in respect of human health risks at the site is provided below, based on the available findings to date.

5.3.4 Proposed Remediation Strategy

5.3.4.1 Recommended Remedial Works (Human Health)

Due to the locally elevated concentrations of PAHs and detections of chrysotile asbestos, as detailed above, acknowledging the fact that the Made Ground contains inclusions of physically unacceptable materials and occasional evidence of hydrocarbon contamination, we advise that provision should be made for the use of a clean cover system in areas of residential gardens and other soft landscaped areas.

Subject to the agreement of the regulators and warranty providers, 600 mm thickness of suitable, certified clean imported soil should be placed in the private garden areas of residential properties and 300-450 mm thickness in areas of communal soft landscaping. The clean soils should be placed over a geotextile membrane to separate the imported materials from the underlying in-situ soils. This membrane will also act as a “no dig barrier” and marker for post-construction verification purposes.

Notwithstanding the above, within the permanently hard surfaced areas of the site, such as the access road and car parking areas, and beneath the footprint of the housing, the soils will be effectively encapsulated, therefore mitigating the risks to the eventual occupiers from direct exposure to the soils.

All imported topsoil and subsoil used in the remedial works should be derived from a suitably certified clean source and precautions should be undertaken to ensure that the imported clean soil is not intermixed with site won materials. The importation of topsoil, subsoil and other fill materials provides the opportunity for new contamination hazards to be introduced onto a site. Soils must not be contaminated with significant quantities of concrete, brick, plastics, metal, asbestos, glass, tarmac or

organic matter such as wood/timber. All imported soil must comply with relevant Generic Assessment Criteria (GAC) for residential gardens.

The recommended remedial works should be undertaken by an experienced contractor and fully validated on completion, with the associated data presented in a verification report.

Considering the variable nature of the Made Ground established during this investigation and acknowledging the past land use, it will be important to ensure that careful vigilance is exercised during the groundworks phase of construction and associated remedial works for other evidence of contamination.

The proposed remedial measures should be agreed with the regulatory authorities and any warranty providers prior to the works commencing.

5.3.4.2 Fuel Storage Facilities

Specific remedial actions will need to be taken to address the presence of the underground fuel storage tanks beneath the site. Given the environmental sensitivity of the site location in terms of its aquifer status, coupled with the sensitivity of the proposed residential end use, it is inevitable that the tanks will require removal. Careful consideration will need to be afforded to this operation in the context of the proximity of site boundaries and the potential to undermine adjacent properties/infrastructure. Temporary works may be required to enable safe removal if tanks are located in close proximity to structures and it is recommended engineering advice is sought where necessary in this regard.

Where tanks are removed, any surrounding or underlying contaminated soils should also be excavated and disposed of to a suitably licensed facility. Sampling of the sides and base of the resultant excavation will need to be undertaken to validate that this exercise has been completed to an acceptable standard, and samples of the excavated soil will need to be analysed to provide waste acceptance parameters.

Associated pipework such as the supply lines to the pumps should also be removed, together with any significantly hydrocarbon impacted soils in their immediate vicinity, or if encountered elsewhere at the site.

The data provided by the validation exercise, including chemical tests certificates for the in-situ soils surrounding and underlying the tanks following their removal, should be presented in a verification report upon completion of the development.

5.3.4.3 Visual Hydrocarbon Impact and Unexpected Contamination

Where significant visual evidence of hydrocarbons or other contamination is encountered during the groundworks phase of construction, as will be the case in the north-east of the site where obvious surface staining is present and deeper hydrocarbon impact is apparent from investigation findings, it is recommended that the soils are removed from site.

The affected soils should be excavated, stockpiled on heavy duty polythene sheeting and covered to prevent run-off, pending appropriate analysis to determine parameters for appropriate off-site disposal.

A discover strategy is advocated in respect of any further areas of obvious contamination, for example with hydrocarbons, which may be encountered for example during the subsequent demolition works or groundworks.

It should be acknowledged in the above context that the reporting of any unexpected contamination to the Council's contaminated land team is a normal requirement of the planning authorities.

5.3.4.4 Water Supply Services

The presence of localised visual and/or olfactory evidence of petroleum hydrocarbons, together with detectable and in places appreciable concentrations of some PAHs, suggest that precautions will need to be taken to protect water supply services, and non-permeable barrier pipe will need to be specified. This will also be a likely requirement of the water supply regulator.

In the above regard, it is also recommended that all services are installed within clean corridors surrounded by inert materials in order to mitigate the risk that subsequent maintenance workers could be exposed to contaminated soils.

4.4 Gas Risk Assessment

4.4.1 Methodology

Risks arising from the possible presence of methane and carbon dioxide gas have been assessed using the methodology described in CIRIA C665 (Ref. 8).

4.4.2 Possible Gas Sources

The deposits of Made Ground and the possible presence of degrading organic contaminants are considered to be sources of potential gas generation potential. In the absence of appreciable concentrations of putrescible organic constituents, however, acknowledging the generally limited thicknesses of Made Ground revealed by the investigation, the deposits would be considered to comprise a relatively low risk source.

Considering potential off-site sources, no nearby active or historic landfills, or other likely sources of ground gas, were identified by the desk-based research (Ref. 1) within the likely zone of influence of the site.

According to the desk study, the site lies within a lower probability radon area, such that no statutory requirement for radon protection measures is identified.

4.4.3 Gas Monitoring

In order to examine the soil gas regime at the site, six monitoring wells were constructed within the boreholes. These observation wells have been monitored for gas concentrations and gas flow rates on two occasions to date, on the 5th and 23rd September 2025, at atmospheric pressures of 1002 and 1011 mB. The gas monitoring data are presented in Appendix B.

Recorded flow rates were consistently <0.1 % (i.e. below the detection limit of the instrument), whilst carbon dioxide ranged between 0.7 and 13.6 %. Concentrations of methane were also below the laboratory detection limits.

4.4.4 Gas Screening Value and Characterisation

The gas screening value (GSV) for the site has been calculated as follows.

$$\text{GSV} = (0.1 \text{ L/hr}) \times (13.6 \% \text{ vol. CO}_2) = 0.0136 \text{ L/hr}$$

In the absence of any measurable gas flows, the borehole flow rate has, for the purpose of calculating a safe GSV, been taken as 0.1 L/hr which is the limit of detection for the field measuring device. The gas concentration of 13.6 % by volume used to calculate the GSV relates to the maximum recorded concentration of carbon dioxide.

Based solely on this GSV, the site's gas classification would be Characteristic Situation 1 (CS1) as defined in CIRIA C665, or NHBC 'Green', such that no special precautions would be warranted. However, as the maximum concentration of carbon dioxide exceeds 5%, the guidance indicates that basic protective measures should be provided as a precautionary measure. It would also be recommended in this context that given the site history, coupled with the presence of USTs, and localised olfactory evidence of hydrocarbons that the protective measures are also designed to mitigate any risk from hydrocarbon vapours.

Accordingly, subject to the approval of the regulators and warranty providers, suitable protection could involve the combination of a ventilated sub-floor void with a beam and block floor and proprietary VOC membrane, all joints and service penetrations being taped and sealed. The gas membrane would be expected to be fitted by an experienced installer under an appropriate quality regime.

The published guidance suggests, that for a high sensitivity development (i.e. residential) and a low generation potential source, ideally, nine gas readings should be undertaken during a six-month period. The guidance indicates, however, that there is a balance to be considered between the cost of additional monitoring and the increase in technical confidence which will result. In this regard, as precautionary measures have been recommended on the basis of the monitoring undertaken to date, further monitoring is considered unlikely to affect our recommendations. However, some further monitoring is expected to take place as part of the next phase of investigation and this report will be reviewed and amended as necessary.

4.5 Waste Acceptance Criteria Tests

Waste Acceptance Criteria (WAC) testing was undertaken on two samples of the encountered Made Ground. The results of the WAC tests are presented in Appendix C.

All of the determinands from the sample recovered from WS2 at 0.6 m depth are below Inert Waste Landfill criteria limits. However, the sample from WS6 at 0.3 m depth recorded elevated mineral oils, as would be expected given the observed hydrocarbon impact and surface staining at this location.

Notwithstanding the above, two of the shallow soil samples taken from WS1 and WS6 recorded chrysotile asbestos as loose fibres, which could significantly impact disposal costs.

It should also be noted in the above context, that some more significant concentrations of TPH and PAH were detected within the general suites of tests in other samples, suggesting that none of the Made Ground would be expected to classify as inert. Moreover, some of the natural ground could be impacted by hydrocarbons.

It would be beneficial in the above regard to carefully separate the Made Ground from the natural soils and further subdivide the natural materials where evidence of hydrocarbon impact is present. Further tests may be advantageous on 'as dug' materials taken from stockpiles.

The full results of the laboratory analyses should be presented to prospective landfill recipients of excavation spoil derived from the site, for consideration in the context of their specific license conditions.

Should any potentially more significantly contaminated materials be encountered during the subsequent groundworks, it is recommended they are separated and independently stockpiled, pending further analysis.

The above should be reviewed following completion of the subsequent phase of investigation expected to be undertaken post-demolition.

4.6 Aggressive Chemical Environment for Concrete

The aggressive chemical environment for concrete (ACEC) for the site has been estimated using the methodology described in BRE Special Digest 1 (see Ref. 13).

Concentrations of water soluble sulphate, total sulphate and total potential sulphate, together with pH values have been measured in a total of twelve samples recovered from the encountered strata. Comparison between the total potential sulphate and acid soluble sulphate concentrations indicates that pyrite is unlikely to be present.

On the above basis, concrete conforming to ACEC Class AC-1 and DS-1 would be expected to perform satisfactorily, assuming mobile groundwater conditions.

5. Ground Engineering

5.1 Context

This section of the report considers the ground conditions in the context of the engineering design and construction of the proposed development. Preliminary advice is given in relation to the design of foundations and ground floor slabs.

Particularly careful consideration will need to be afforded on this site to the potential impact of pre-existing subsurface construction and associated disturbance on the ability to construct traditional foundations. It should be appreciated in this context that a number of underground storage tanks are located within the development that will require decommissioning and removal.

5.2 Site Preparation

Prior to commencing the earthworks or ground works, all live services on, and in the vicinity of, the proposed development should be accurately located and, if necessary, diverted or protected. The ends of existing drains and sewers no longer required because of alterations to the drainage layout should be effectively sealed so as to prevent any residual or persisting seepages from adversely affecting the integrity and/or stability of the formations and/or foundations.

Any old foundations and sub-structures (e.g. USTs etc) should be cleared. Sub-structure walls should be grubbed up to well below any proposed shallow foundations. Basements or service conduits, and surface voids resulting from the site preparation work, should be filled with well compacted, acceptable granular material (e.g. DoT Type 1, or similar approved).

Specific remedial actions will need to be taken to address the presence of the USTs, as discussed in previous sections of this report. Where tanks are known to be present or are unexpectedly encountered, they will likely need to be removed from site together with the supply pipes and any surrounding bund structures. Where surrounding or underlying contaminated soils are encountered, they should be also excavated and disposed of to a suitably licensed facility. Sampling of the sides and base of the resultant excavation will need to be undertaken to validate that this exercise has been completed to an acceptable standard, and samples of the excavated soil will need to be analysed to provide waste acceptance parameters. Engineering advice should be sought regarding the potential impact of tank removal works on nearby structures/infrastructure and associated temporary works designed if required.

5.3 Excavations

Excavations to the depth achieved during the investigation will likely be within the capability of conventional mechanical excavators. However, deeper excavations extending into the underlying cemented sandstone horizons could prove significantly more arduous, and may require the use of heavier plant and/or hydraulic breaking equipment, as could be the case for any significant buried obstructions such as fuel tank supports and foundations.

Excavations to depths of 1.2 m or greater should be provided with full support to statutory requirements or sloped back at safe angles. Adequate support should be provided to any excavation that may affect the stability or integrity of adjacent structures, road or services, including particular reference to the excavations required to remove the USTs.

On the basis of the observations made during the recent fieldworks, groundwater seepages are likely to be controlled by the use of a suitably screened sump-pump. Any water arising from the works should be channelled to, and discharged at, suitable approved locations in accordance with the usual engineering protocols, albeit affording particular consideration where any hydrocarbon impact is apparent, possibly requiring specialist disposal in such circumstances.

It should be appreciated, as mentioned above, that subsequent variations in groundwater and hydrological conditions could occur in response to future seasonal or climatic changes. The reported observations may not therefore be fully representative of the groundwater regime at the site throughout the year, particularly acknowledging the fieldworks followed a prolonged period of dry summer weather.

5.4 Foundations

Based on the encountered ground conditions, we would consider that relatively conventional spread foundations should be suitable for the majority of the proposed development area. However, the adopted formation levels will need to reflect the significant thicknesses of Made Ground and disturbance associated with pre-existing subsurface construction (e.g. buried tanks etc) in addition to the natural subsoil conditions. It will be essential in this regard that all of the proposed units are founded entirely within the undisturbed natural ground, and it should be acknowledged that relatively deep disturbance is likely to be encountered locally, for example near the north-eastern corner of Plot 1, which is close to the buried fuel tanks.

Potential foundation solutions are discussed accordingly in more detail under the following sub-headings.

6.3.1 Traditional Spread Foundations

In the northern area of the site, beyond WS1, WS2 and the USTs, a net allowable bearing capacity in the order of 125 kN/m² could generally be assumed for strip foundations up to 1.0 m in width, bearing within the undisturbed weathered Upper Greensand Formation, below any Made Ground, disturbed/reworked or softened subsoils. These deposits were typically encountered from around 0.3 to 1.0 m depth within WS3 to WS6, based on the in-situ SPT N-values. It is suggested that minimum foundation depths within such materials for preliminary design purposes are taken as 0.75 m or a nominal 0.2 m into the natural ground, whichever the deeper.

The suggested bearing capacity could be increased to around 150 kN/m² at similar levels for square pad foundations, acknowledging the inherent rigidity of such an arrangement.

However, as discussed above, foundations will need to be significantly deepened within areas of deeper Made Ground (i.e. WS1, WS2 and in the area of USTs) to ensure they are constructed within homogeneous undisturbed strata.

In determining appropriate formation levels, consideration should also be afforded to the potential for differential settlement to occur, such that the foundations should be constructed entirely within the same stratum. In this regard, the foundations may require local deepening to achieve a homogeneous formation. It would be inadvisable, for example, for the foundations of an individual structure to span between for example, medium dense sand and relatively competent intact cemented sandstone 'bedrock' bedrock horizons. The inclusion of reinforcement may be considered a prudent precaution within ground conditions of this type.

The suggested bearing capacities should ensure that total and differential settlements remain within normal acceptable limits (i.e. total settlements less than 25mm). Indeed, for structures founded entirely in the cemented sandstone bedrock, settlements would be expected to be minimal.

Shallow groundwater may be present during certain times of the year or inclement weather, although none was found throughout the monitoring period. Particularly careful consideration will need to be afforded in this regard to the control of groundwater, and it should be acknowledged, as noted above, that groundwater entry could impact on excavation stability and hamper the ability to construct traditional foundations, particularly within areas of relatively deep disturbance, for example in the vicinity of WS1, WS2 and USTs.

An advantage of traditional foundations on a site of this nature, notwithstanding the potential geotechnical difficulties associated with deep Made Ground/disturbance due to subsurface construction, would be that they could not create preferential contaminant migration pathways down into the underlying aquifer. Consequently, a proposal to utilise traditional spread foundations could potentially be beneficial in subsequent negotiations with the regulatory authorities.

All designs and site works should be assessed and supervised by a suitably qualified Engineer.

6.3.2 Specialist Foundation Solutions

Based on the current proposed layout (see Figs 1 and 2), the dwellings do not appear to extend over the footprint of the USTs, however, it cannot be discounted that the associated disturbance extends beyond the exact footprint of the tanks. Depending on consideration of engineering, environmental and economic factors, and subject to the approval of the regulators, the following foundation construction methods could possibly be utilised in the southern area of the site, if necessary around WS1, WS2 and the USTs. In this context, the possible requirement for specialist foundations of this type could be further assessed by undertaking some further trial pitting works targeting the planned layout once the buildings have been demolished and associated underground services disconnected.

- Piled or mini-piled foundations could possibly be employed, extending into the sandstone 'bedrock' of the Upper Greensand Formation. Any piled foundations would be expected to be designed by an experienced and competent specialist piling contractor who should select appropriate design parameters and guarantee safe working loads together with maximum total and differential settlements, which should be within acceptable tolerances for the proposed structures. The choice of piling technique should be agreed with the contractor and should reflect the environmental sensitivity of the site location, coupled with the potential for such foundations to create preferential contamination pathways.
- Soil parameters for the strata to be penetrated will depend on the piling technique selected and the precise method of working. Driven piles should only be considered if vibrations and environmental constraints can be maintained within acceptable limits. Assurances should be sought in this respect with regards to the surrounding retaining walls, buildings and road infrastructure. The piling contractor should monitor the pile installations and confirm that the encountered ground conditions are as good as, or better than, assumed in the design. Whilst the majority of the present small diameter window sampler boreholes terminated at effective 'refusal' on probable intact sandstone 'bedrock', it should be appreciated that piling contractors or warranty providers could require deeper boreholes to confirm design parameters. In this regard it should also be appreciated that the presence of relatively shallow competent Upper Greensand Formation strata within areas outside of the footprint of the USTs, for example, could hamper the installation of piles to sufficient depth and would probably rule out the use of a number of traditional pile types, possibly necessitating a specialist rotary system incorporating Odex casings.

- Vibrated stone columns (VSC) could be installed into the ground to increase the load bearing characteristics. The suitability and design of any specific solution based on VSC will depend on the layout and loading details of the structures together with the type of foundation and the particular ground conditions. The advice of a specialist ground treatment contractor(s) would need to be sought in order to confirm the suitability of the ground with respect to their particular proprietary systems and where appropriate to provide information on suitable treatment and costs. As with the possible use of piled foundations, full consideration would be required concerning the potential for such foundations to create preferential contamination pathways and assurances would need to be sought regarding vibration/displacement damage. In this regard the use of VSC would generally be considered less favourable for use on potentially contaminated land and/or in close proximity to other structures and may be ruled out on the basis of the surrounding retaining walls.

Acknowledging the environmental sensitivity of the location, piling or other deep penetrative ground improvement techniques could only be considered with the approval of the Local Authority and would be subject to further consultation with the EA and the submission of detailed method statements for approval. Based on the current layout and findings to date, however, it is considered relatively unlikely that specialist foundations of this type will prove necessary.

5.5 Ground Floor Slabs

The design and construction of the ground floor slabs for the proposed housing should afford consideration to the variable and in places significant depth of Made Ground. Moreover, it should be appreciated that a requirement has been identified for basic precautionary gas / hydrocarbon vapour protective measures to be incorporated into the floor slab design.

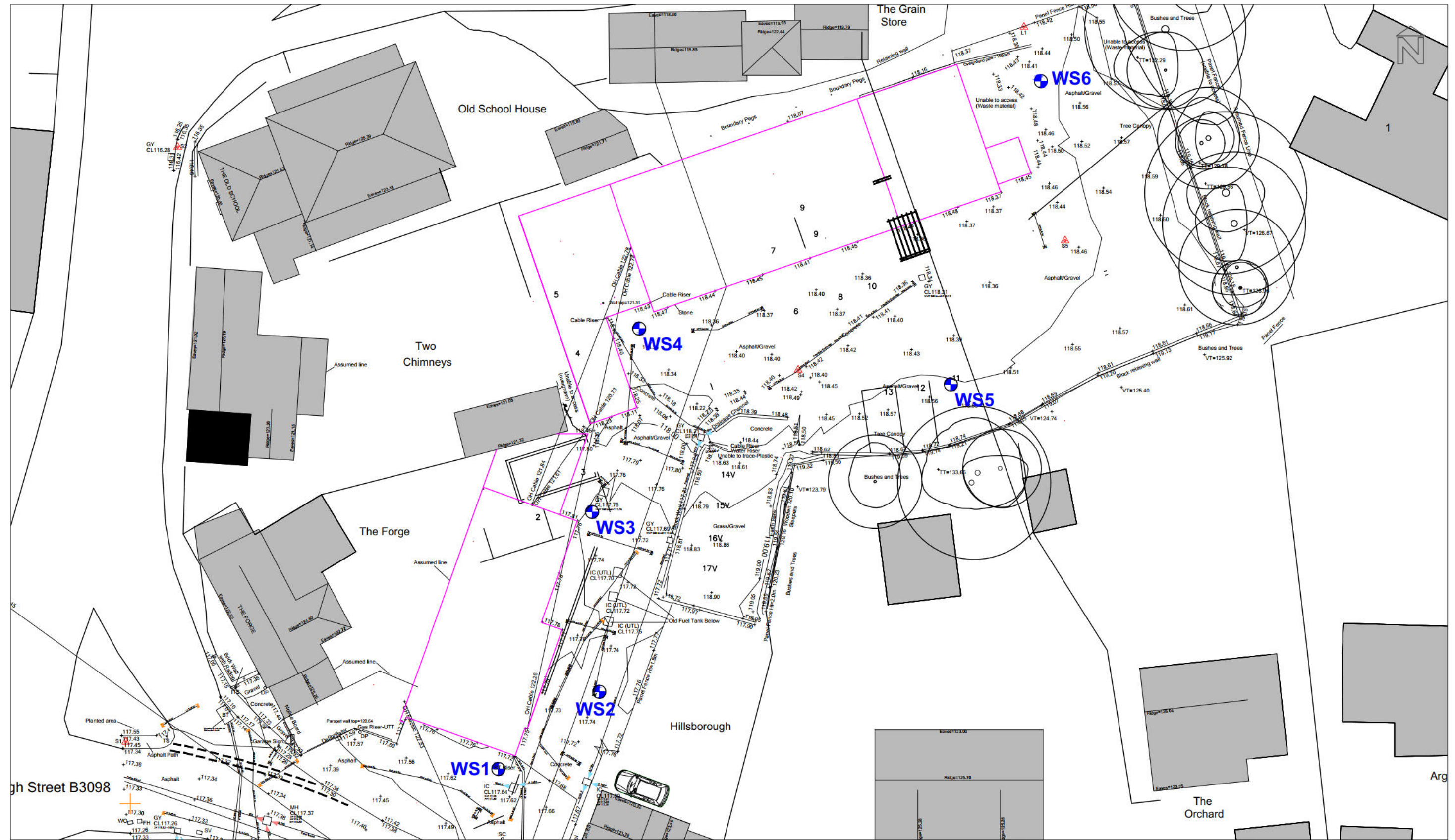
Based on the aforementioned considerations, acknowledging the presence of Made Ground in excess of 0.6 m, coupled with other anticipated disturbance due to pre-existing subsurface construction, suspended ground floor slabs would prove the most secure and practical solution. A beam and block type floor construction may be most practical to construct for a development of the type proposed.

TABLES

Wildmans of Urchfont, Devizes												
Table 1 - Estimation of Chronic Human Health Risks for Standard Residential Land Use with Plant Uptake (1 % SOM)												
Contaminant	Units	GAC	Pass criteria?	WS1	WS2	WS2	WS3	WS3	WS4	WS6	WS6	WS6
				0.5m	0.6m	2.5m	0.5m	1.7m	0.5m	0.3m	0.8m	1.2m
pH value	-	-	-	8.5	8.1	-	8.7	-	8	8.2	8.4	-
Soil Organic Matter	%	-	-	3.6	1.5	-	0.3	-	0.5	3.2	0.8	-
Asbestos Fibres Screen	-	-	-	CHRY	NAI	-	NAI	-	NAI	CHRY	NAI	-
Metals and inorganics	Arsenic	mg/kg	37	✓	12	7.2	-	8	-	7.8	11	7.6
	Boron	mg/kg	290	✓	1.1	1.3	-	0.7	-	0.8	0.9	0.8
	Cadmium	mg/kg	11	✓	0.4	< 0.2	-	< 0.2	-	< 0.2	0.5	< 0.2
	Chromium	mg/kg	910	✓	20	35	-	37	-	38	29	36
	Chromium (VI)	mg/kg	6	✓	< 1.8	< 1.8	-	< 1.8	-	< 1.8	< 1.8	< 1.8
	Copper	mg/kg	2400	✓	50	15	-	4.5	-	3.1	12	3.2
	Lead	mg/kg	200 ^{CASL}	✓	160	21	-	6.4	-	4.1	43	3.7
	Inorganic Mercury	mg/kg	40	✓	0.5	< 0.3	-	< 0.3	-	< 0.3	< 0.3	< 0.3
	Nickel	mg/kg	130	✓	33	11	-	8.1	-	8.2	9.2	8.7
	Selenium	mg/kg	250	✓	< 1.0	< 1.0	-	< 1.0	-	< 1.0	< 1.0	< 1.0
Organics	Zinc	mg/kg	3700	✓	170	47	-	28	-	25	87	19
	Cyanide	mg/kg	41 ^{GI}	✓	< 1.0	< 1.0	-	< 1.0	-	< 1.0	< 1.0	< 1.0
PAHs	Phenols	mg/kg	120	✓	< 1.0	< 1.0	-	< 1.0	-	< 1.0	< 1.0	< 1.0
	Naphthalene	mg/kg	15	✓	< 0.05	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05
	Acenaphthylene	mg/kg	170	✓	0.11	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05
	Acenaphthene	mg/kg	210	✓	0.08	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05
	Fluorene	mg/kg	170	✓	0.12	< 0.05	-	< 0.05	-	< 0.05	0.2	< 0.05
	Phenanthrene	mg/kg	95	✓	1.9	< 0.05	-	< 0.05	-	< 0.05	0.58	< 0.05
	Anthracene	mg/kg	2400	✓	0.53	< 0.05	-	< 0.05	-	< 0.05	0.15	< 0.05
	Fluoranthene	mg/kg	280	✓	5.6	< 0.05	-	< 0.05	-	< 0.05	0.72	< 0.05
	Pyrene	mg/kg	620	✓	4.6	< 0.05	-	< 0.05	-	< 0.05	0.92	< 0.05
	Benzo(a)anthracene	mg/kg	7.2	✓	2.6	< 0.05	-	< 0.05	-	< 0.05	0.27	< 0.05
	Chrysene	mg/kg	15	✓	2.7	< 0.05	-	< 0.05	-	< 0.05	0.43	< 0.05
	Benzo(b)fluoranthene	mg/kg	2.6	✓	3.8	< 0.05	-	< 0.05	-	< 0.05	0.6	< 0.05
	Benzo(k)fluoranthene	mg/kg	77	✓	1.7	< 0.05	-	< 0.05	-	< 0.05	0.17	< 0.05
	Benzo(a)pyrene	mg/kg	2.2	✓	2.8	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05
	Indeno(1,2,3-c,d)pyrene	mg/kg	27	✓	1.9	< 0.05	-	< 0.05	-	< 0.05	0.27	< 0.05
	Dibenzo(ah)anthracene	mg/kg	0.24	✓	0.49	< 0.05	-	< 0.05	-	< 0.05	< 0.05	< 0.05
	Benzo(g,h,i)perylene	mg/kg	320	✓	2.1	< 0.05	-	< 0.05	-	< 0.05	0.5	< 0.05
BTEX	Benzene	mg/kg	0.087	✓	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Toluene	mg/kg	130	✓	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Ethyl Benzene	mg/kg	47	✓	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	Xylenes	mg/kg	56	✓	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013	<0.013
TPHs (Aromatics)	>nC ₉ -nC ₇	mg/kg	70	✓	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
	>nC ₉ -nC ₈	mg/kg	130	✓	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
	>nC ₉ -nC ₁₀	mg/kg	34	✓	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
	>nC ₁₀ -nC ₁₂	mg/kg	74	✓	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.6	< 1.0	< 1.0
	>nC ₁₂ -nC ₁₆	mg/kg	140	✓	< 2.0	< 2.0	8.5	< 2.0	< 2.0	9	< 2.0	< 2.0
	>nC ₁₆ -nC ₂₁	mg/kg	260	✓	25	< 10	35	< 10	< 10	40	< 10	< 10
TPHs (Aliphatics)	>nC ₂₁ -nC ₃₅	mg/kg	1100	✓	89	< 10	170	< 10	< 10	< 10	130	< 10
	>nC ₉ -nC ₆	mg/kg	42	✓	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
	>nC ₉ -nC ₈	mg/kg	100	✓	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
	>nC ₉ -nC ₁₀	mg/kg	27	✓	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
	>nC ₁₀ -nC ₁₂	mg/kg	130	✓	1.2	< 1.0	13	< 1.0	< 1.0	11	1.1	< 1.0
	>nC ₁₂ -nC ₁₆	mg/kg	1100	✓	6	< 2.0	38	< 2.0	< 2.0	34	3.6	2.1
	>nC ₁₆ -nC ₂₁	mg/kg	65000	✓	16	< 8.0	170	< 8.0	< 8.0	150	21	< 8.0
VOC	All VOCs in suite	mg/kg	-	✓	<0.01	-	-	<0.01	-	-	<0.01	<0.01

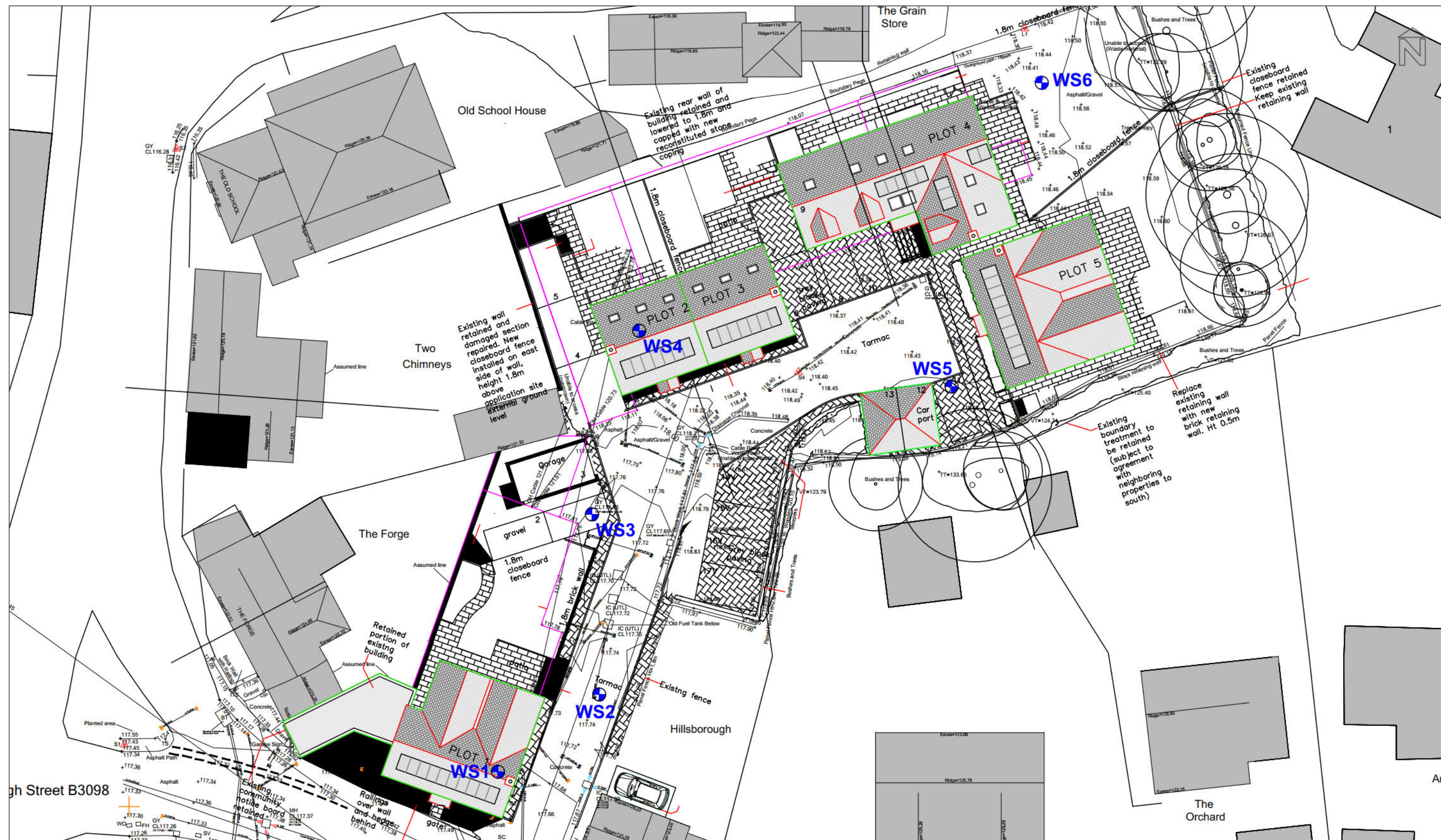
Notes	
GAC	Generic Assessment Criteria. All GAC are S4ULs published by CIEH/LQM in 2014, unless otherwise stated.
CASL	Category 4 Screening Level published by DEFRA in 2013.
GI	GAC derived in-house by GI.
NAI	No asbestos identified.
CHRY	Chrysotile asbestos identified.
Value	Shaded cells indicate samples in which GAC is exceeded.

FIGURES



Key:
 Window Sampling Borehole Location

 Ground Investigation Unit 3, Westfield Court, Barns Ground, Kenn, Clevedon, BS21 6FQ Tel: 01275 876903 Email: mail@ground-investigation.com	Site: Urchfont Garage, Devizes		FIGURE 1 Exploratory Hole Locations Topographical Survey
	Client: Gaiger Bros Limited		
	Project No: P1827.2	Scale: NTS	
	Filename: P1827.Figure1.dwg		



Key:

 Window Sampling Borehole Location



Ground Investigation
Unit 3, Westfield Court, Barns Ground, Kenn,
Clevedon, BS21 6FQ
Tel: 01275 876903
Email: mail@ground-investigation.com

Site:
Urchfont Garage, Devises

Client:
Gaiger Bros Limited

Project No:
P1827.2

Scale:
NTS

Filename:
P1827.Figure2.dwg

FIGURE 2

Exploratory Hole Locations

Proposed Layout

APPENDIX A

Engineering Records of Window Sampler Boreholes



Continuous Percussion Borehole Record

Hole ID

WS1

Sheet 1 of 1 (0.00m-5.00m)

All dimensions in metres

Scale 1:25

Site: Urchfont Garage, Devizes**Client:** Gaiger Bros Limited**Job No:** P1827**Method/Plant Used:** Archway Dart.**Start date:** 28/08/25**End Date:** 28/08/25**Logged By:** MB**Easting:****Northing:****Elevation:**
SAMPLES & IN-SITU TESTS
Water
STRATA
**Backfill
& Inst**

Depth	Type / No	Result / Remark	Legend	Depth (thick.)	Description	Backfill & Inst
0.50	E-1			0.15	Loose gravel surfacing over medium strong light grey Concrete comprising 50-60% fine to coarse angular to subangular limestone and flint aggregate in a brown sand matrix. MADE GROUND	
				(0.65)	Loose dark grey clayey sandy cobbly Gravel with occasional voids noted throughout. Sand is fine to coarse. Gravel is fine to coarse subangular to angular of brick, glass, clinker, asphalt, concrete. MADE GROUND	
1.00	E-2			0.80		
1.00-1.45	C	N=1 (0,0:0,0,0,1)		(0.60)	Very loose greyish green slightly silty fine to medium Sand with occasional carbonaceous traces and very rare fine subangular brick fragments. MADE GROUND	
				1.40		
				(0.40)	Medium dense greyish green slightly silty fine to medium SAND. UPPER GREENSANDS FORMATION	
1.85	D-1			1.80		
2.00-2.40	C	N>50 (7,11:12,14,16,8/25mm)		(0.20) 2.00	Dense greyish green slightly silty fine to medium SAND. UPPER GREENSANDS FORMATION	
					...Refusal on suspected very dense sand or intact sandstone.	

Boring Progress and Water Observations					Water Strikes					Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Strike Depth	Flow Rate	Post Strike Depth	Elapsed Minutes	Depth Sealed	Depth	Diameter (mm)	Depth	Diameter (mm)
										1.00 2.00	101 87		

General Remarks:

- 1) Exploratory location hand excavated to 1.0 m depth prior to commencement of drilling.
- 2) No groundwater encountered.
- 3) Borehole installed with a monitoring standpipe to 2.0 m depth.



Ground Investigation

Continuous Percussion Borehole Record

Hole ID
WS2

Sheet 1 of 1 (0.00m-5.00m)
All dimensions in metres
Scale 1:25

Site: Urchfont Garage, Devizes

Client: Gaiger Bros Limited

Job No: P1827

Method/Plant Used: Archway Dart.

Start date: 28/08/25

End Date: 28/08/25

Logged By: MB

Easting:

Northing:

Elevation:

SAMPLES & IN-SITU TESTS

Water

STRATA

Backfill
& Inst

Depth	Type / No	Result / Remark	Legend	Depth (thick.)	Description	Backfill & Inst
0.00				0.10	Medium strong light grey Concrete comprising 50-60% fine to coarse angular to subangular limestone and flint aggregate in a brown sand matrix.	
				0.20	MADE GROUND	
0.60	E-1				Medium dense yellowish brown very gravelly fine to coarse Sand. Gravel is fine to coarse angular to subangular of limestone, brick fragments, flint.	
					MADE GROUND	
					Loose dark grey slightly gravelly silty fine to medium Sand. Gravel is fine to coarse subangular of brick and pipe fragments.	
					MADE GROUND	
1.00-1.45	C	N=3 (0,1:0,1,1,1)		(1.10)		
				1.30		
2.00	D-1				Very loose to loose dark greyish green slightly silty slightly gravelly fine to coarse Sand with occasional dark grey carbonaceous speckles. Gravel is fine to medium subrounded of quartzitic sandstone.	
2.00-2.45	C	N=4 (0,1:1,1,1,1)		(1.70)	UPPER GREENSANDS FORMATION (REWORKED)	
2.50	E-2					
3.00-3.45	C	N=6 (1,2:1,1,2,2)		3.00		
				(0.50)	Loose tending to medium dense light greyish green with yellowish brown streaks slightly silty slightly gravelly fine to medium SAND. Gravel is fine to medium subangular to subrounded of quartzitic sandstone.	
					UPPER GREENSANDS FORMATION	
3.50	D-2			3.50		
				(0.50)	Medium dense tending to dense light greyish green with yellowish brown streaks slightly silty slightly gravelly fine to medium SAND. Gravel is fine to medium subangular to subrounded of quartzitic sandstone.	
					UPPER GREENSANDS FORMATION	
4.00-4.35	C	N>50 (8,10:15,18,17/50mm)		4.00		
					...Refusal on suspected very dense sand or intact sandstone.	

Boring Progress and Water Observations

Water Strikes

Date	Time	Hole Depth	Casing Depth	Water Depth	Strike Depth	Flow Rate	Post Strike Depth	Elapsed Minutes	Depth Sealed	Depth	Diameter (mm)	Depth	Diameter (mm)
										1.00	101		
										2.00	87		
										3.00	77		
										4.00	68		

General Remarks:

- 1) Exploratory location hand excavated to 1.0 m depth prior to commencement of drilling.
- 2) No groundwater encountered.
- 3) Borehole installed with a monitoring standpipe to 4.0 m depth.

**Continuous Percussion Borehole Record**

Hole ID

WS3

Sheet 1 of 1 (0.00m-5.00m)

All dimensions in metres

Scale 1:25

Site: Urchfont Garage, Devizes**Client:** Gaiger Bros Limited**Job No:** P1827**Method/Plant Used:** Archway Dart.**Start date:** 28/08/25**End Date:** 28/08/25**Logged By:** MB**Easting:****Northing:****Elevation:****SAMPLES & IN-SITU TESTS**

Water

STRATA**Backfill
& Inst**

Depth	Type / No	Result / Remark	Legend	Depth (thick.)	Description	Backfill & Inst
0.11				0.11	Medium strong light grey Concrete comprising 50-60% fine to coarse angular to subangular limestone and flint aggregate in a brown sand matrix.	
0.25				0.25	MADE GROUND	
0.50	E-1			(0.75)	Medium dense yellowish brown very sandy Gravel. Sand is fine to coarse. Gravel is fine to coarse subangular to angular of limestone, quartz, flint and brick fragments.	
					MADE GROUND	
					Loose light greyish green slightly silty slightly gravelly fine to medium SAND. Gravel is fine to medium subangular to subrounded of quartzitic sandstone and flint.	
					UPPER GREENSANDS FORMATION	
					...Faint hydrocarbon odour noted.	
1.00-1.45	C	N=27 (4,7:6,6,7,8)		1.00	Medium dense light greyish green with occasional yellowish brown streaks slightly silty slightly gravelly fine to medium SAND. Gravel is fine to medium subangular to subrounded of quartzitic sandstone and flint.	
1.20	D-1			(0.60)	UPPER GREENSANDS FORMATION	
1.70	E-2			1.60	Dense light greyish green slightly silty slightly gravelly fine to medium SAND. Gravel is fine to medium subangular to subrounded of quartzitic sandstone and flint.	
1.80	D-2			(0.40)	UPPER GREENSANDS FORMATION	
2.00-2.37	C	N>50 (8,13:14,16,20/70mm)		2.00	...Refusal on suspected very dense sand or intact sandstone.	

Boring Progress and Water Observations					Water Strikes					Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Strike Depth	Flow Rate	Post Strike Depth	Elapsed Minutes	Depth Sealed	Depth	Diameter (mm)	Depth	Diameter (mm)
										1.00 2.00	101 87		

General Remarks:

- 1) Exploratory location hand excavated to 1.0 m depth prior to commencement of drilling.
- 2) No groundwater encountered.
- 3) Borehole installed with a monitoring standpipe to 2.0 m depth.



Continuous Percussion Borehole Record

Hole ID

WS4

Sheet 1 of 1 (0.00m-5.00m)

All dimensions in metres

Scale 1:25

Site: Urchfont Garage, Devizes

Method/Plant Used: Archway Dart.

Client: Gaiger Bros Limited

Start date: 28/08/25

End Date: 28/08/25

Logged By: MB

Job No: P1827

Easting:

Northing:

Elevation:

SAMPLES & IN-SITU TESTS

 Water
 Level

STRATA
**Backfill
& Inst**

Depth	Type / No	Result / Remark	Legend	Depth (thick.)	Description	Backfill & Inst
0.00				0.02	Extremely weak black Asphalt comprising 70-80% fine to coarse subangular limestone aggregate.	
				(0.38)	MADE GROUND Medium dense pinkish grey sandy Gravel. Sand is fine to coarse. Gravel is fine to coarse subangular of predominantly limestone with rare brick fragments and flint.	
				0.40	MADE GROUND	
0.50	E-1			(0.40)	Medium dense light greyish green slightly silty slightly gravelly fine to medium SAND with occasional carbonaceous traces. Gravel is fine to medium subrounded of quartzitic sandstone.	
				0.80	UPPER GREENSANDS FORMATION	
1.00	D-1				Dense light greyish green slightly silty slightly gravelly fine to medium SAND with occasional carbonaceous traces. Gravel is fine to medium subrounded of quartzitic sandstone.	
1.00-1.45	C	N=36 (3,6;9,9,9,9)		(1.70)	UPPER GREENSANDS FORMATION	
2.00-2.45	C	N=41 (8,9;11,10,10,10)		2.50		
2.20	D-2				Dense tending to very dense light greyish green silty slightly gravelly fine to medium SAND with occasional deep reddish brown speckles. Gravel is fine to medium subrounded of quartzitic sandstone.	
				(0.50)	UPPER GREENSANDS FORMATION	
2.80	D-3			3.00	...Occasional orangish brown streaks noted from 2.80 m depth.	
3.00-3.42	C	N>50 (8,10;12,13,15,10/40mm)			...Refusal on suspected very dense sand or intact sandstone.	

Boring Progress and Water Observations					Water Strikes					Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Strike Depth	Flow Rate	Post Strike Depth	Elapsed Minutes	Depth Sealed	Depth	Diameter (mm)	Depth	Diameter (mm)
										1.00 2.00 3.00	101 87 77		

General Remarks:

- 1) Exploratory location hand excavated to 1.0 m depth prior to commencement of drilling.
- 2) No groundwater encountered.
- 3) Borehole installed with a monitoring standpipe to 3.0 m depth.



Continuous Percussion Borehole Record

Hole ID
WS5

Sheet 1 of 1 (0.00m-5.00m)
All dimensions in metres
Scale 1:25

Site: Urchfont Garage, Devizes

Client: Gaiger Bros Limited

Job No: P1827

Method/Plant Used: Archway Dart.

Start date: 28/08/25

End Date: 28/08/25

Logged By: MB

Easting:

Northing:

Elevation:

SAMPLES & IN-SITU TESTS

Water

STRATA

Backfill
& Inst

Depth	Type / No	Result / Remark	Legend	Depth (thick.)	Description	Backfill & Inst
0.40	E-1	N>50 (25/50mm37,13/30mm)		0.02	Extremely weak black Asphalt comprising 70-80% fine to coarse subangular limestone aggregate.	
0.65	D-1			(0.28)	MADE GROUND Medium dense pinkish grey sandy gravelly irregular limestone Cobbles. Sand is fine to coarse. Gravel is fine to coarse subangular of limestone.	
0.70-0.86	C			0.30	MADE GROUND Dense greyish green slightly silty slightly gravelly fine to medium SAND with occasionally sandy clay inclusions. Gravel is fine to coarse subangular of quartzitic sandstone.	
				0.60	UPPER GREENSANDS FORMATION Very dense greyish green slightly silty slightly gravelly fine to medium SAND with occasionally sandy clay inclusions. Gravel is fine to coarse subangular of quartzitic sandstone.	
				0.70	UPPER GREENSANDS FORMATION ...Refusal on suspected very dense sand or intact sandstone.	

Boring Progress and Water Observations					Water Strikes					Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Strike Depth	Flow Rate	Post Strike Depth	Elapsed Minutes	Depth Sealed	Depth	Diameter (mm)	Depth	Diameter (mm)
										0.70	101		

General Remarks:

- 1) Exploratory location hand excavated to 0.5 m depth prior to commencement of drilling.
- 2) No groundwater encountered.
- 3) Borehole installed with a monitoring standpipe to 0.8 m depth.



Continuous Percussion Borehole Record

Hole ID

WS6

Sheet 1 of 1 (0.00m-5.00m)

All dimensions in metres

Scale 1:25

Site: Urchfont Garage, Devizes

Client: Gaiger Bros Limited

Job No: P1827

Method/Plant Used: Archway Dart.

Start date: 28/08/25

End Date: 28/08/25

Logged By: MB

Easting:

Northing:

Elevation:

SAMPLES & IN-SITU TESTS

Water

STRATA
Backfill
& Inst

Depth	Type / No	Result / Remark	Legend	Depth (thick.)	Description	Backfill & Inst
0.30	E-1			0.02 0.10 (0.40)	Extremely weak black Asphalt comprising 70-80% fine to coarse subangular limestone aggregate. Light oil staining noted on surface. MADE GROUND Medium dense pinkish grey sandy gravelly irregular limestone Cobbles. Sand is fine to coarse. Gravel is fine to coarse subangular of limestone. MADE GROUND ...Strong hydrocarbon odour noted.	
0.80	E-2			0.50 (0.55)	Dense yellowish brown and greyish green clayey sandy Gravel with occasional angular sandstone cobbles and frequent carbonaceous traces. Sand is fine to coarse. Gravel is fine to coarse angular to subangular of sandstone, flint and rare brick fragments. MADE GROUND ...Strong hydrocarbon odour noted.	
1.00-1.45	C	N=29 (10,7:7,7,7,8)		1.05	Dense dark greenish grey slightly silty fine to medium SAND. UPPER GREENSANDS FORMATION ...Strong hydrocarbon odour noted. Strata are stained between 0.55 and 1.05 m depth.	
1.20	E-3			(0.40)	Dense greyish green silty fine to medium SAND. UPPER GREENSANDS FORMATION ...Strong hydrocarbon odour noted.	
1.30	D-1			1.45		
				1.55	Dense light grey and green sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse subangular of quartzitic sandstone. UPPER GREENSANDS FORMATION	
1.90	D-2			(0.45)	Dense tending to very dense greyish green slightly silty fine to medium SAND. UPPER GREENSANDS FORMATION ...Faint hydrocarbon odour noted between 1.55 and 1.80 m depth.	
2.00-2.37	C	N>50 (12,12:15,17,18/70mm)		2.00	...Orangish brown streaks noted from 1.90 m depth.	
					...Refusal on suspected very dense sand or intact sandstone.	

Boring Progress and Water Observations					Water Strikes					Hole Diameter		Casing Diameter	
Date	Time	Hole Depth	Casing Depth	Water Depth	Strike Depth	Flow Rate	Post Strike Depth	Elapsed Minutes	Depth Sealed	Depth	Diameter (mm)	Depth	Diameter (mm)
										1.00 2.00	101 87		

General Remarks:

- 1) Exploratory location hand excavated to 0.5 m depth prior to commencement of drilling.
- 2) No groundwater encountered.
- 3) Borehole installed with a monitoring standpipe to 2.0 m depth.

APPENDIX B

Results of Field Monitoring



Ground Investigation

Unit 3, Westfield Court, Barns Ground, Kenn, Clevedon, Bristol, BS21 6FQ

Email: mail@ground-investigation.com

Tel: 01275 876903

Field Monitoring Records

Site Name:	Urchfont Garage, Devizes				
Job No:	P1827	Monitoring Date:	05/09/25	Field Personnel:	MB
Weather Conditions:	Sunny.				
Atmospheric Pressure Trend:	Low to moderate and falling.				
Instrument Type:	Gas Data GFM 436 Portable Gas Analyser				
Instrument Serial No:	14192	Calibration Date:	31/10/24		

Well ID	Barometric Pressure (mBar)	Water Depth (m)	Flow Rate (l/hr)	CH ₄ peak (% vol)	CH ₄ steady (% vol)	CO ₂ steady (% vol)	O ₂ steady (% vol)	CO steady (ppm)	H ₂ S steady (ppm)
WS1	1002	Dry	< 0.1	< 0.1	< 0.1	1.0	18.9	< 1	< 1
WS2	1002	Dry	< 0.1	< 0.1	< 0.1	1.8	17.7	< 1	< 1
WS3	1002	Dry	< 0.1	< 0.1	< 0.1	2.7	16.9	< 1	< 1
WS4	1002	Dry	< 0.1	< 0.1	< 0.1	2.2	17.5	< 1	< 1
WS5	1002	Dry	< 0.1	< 0.1	< 0.1	0.8	19.9	< 1	< 1
WS6	1002	Dry	< 0.1	< 0.1	< 0.1	8.5	0.7	< 1	< 1



Ground Investigation

Unit 3, Westfield Court, Barns Ground, Kenn, Clevedon, Bristol, BS21 6FQ

Email: mail@ground-investigation.com

Tel: 01275 876903

Field Monitoring Records

Site Name:	Urchfont Garage, Devizes				
Job No:	P1827	Monitoring Date:	23/09/25	Field Personnel:	MB
Weather Conditions:	Sunny.				
Atmospheric Pressure Trend:	Moderate and falling.				
Instrument Type:	Gas Data GFM 436 Portable Gas Analyser				
Instrument Serial No:	14192	Calibration Date:	31/10/24		

Well ID	Barometric Pressure (mBar)	Water Depth (m)	Flow Rate (l/hr)	CH ₄ peak (% vol)	CH ₄ steady (% vol)	CO ₂ steady (% vol)	O ₂ steady (% vol)	CO steady (ppm)	H ₂ S steady (ppm)
WS1	1011	Dry	< 0.1	< 0.1	< 0.1	1.1	19.1	< 1	< 1
WS2	1011	Dry	< 0.1	< 0.1	< 0.1	2.0	18.1	< 1	< 1
WS3	1011	Dry	< 0.1	< 0.1	< 0.1	2.5	17.3	< 1	< 1
WS4	1011	Dry	< 0.1	< 0.1	< 0.1	2.3	17.3	< 1	< 1
WS5	1011	Dry	< 0.1	< 0.1	< 0.1	0.7	19.7	< 1	< 1
WS6	1011	Dry	< 0.1	< 0.1	< 0.1	13.6	1.8	< 1	< 1

APPENDIX C

Results of Chemical Laboratory Tests

Ground Investigation Ltd
Unit 3, Custom House Court
Clevedon
Somerset
BS21 6EX

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

t: 1275876903

t: 01923 225404

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e: max.bowden@ground-investigation.com

e: info-i2analytical@normecgroup.com

Analytical Report Number : 25-046437

Replaces Analytical Report Number: 25-046437, issue no. 1
Additional analysis undertaken.

VOCs added to samples 665070/073/076 & 077 as per client's request.

Project / Site name:	Urchfont Garage, Devizes	Samples received on:	02/09/2025
Your job number:	P1827	Samples instructed on/ Analysis started on:	02/09/2025
Your order number:	P1827	Analysis completed by:	20/09/2025
Report Issue Number:	2	Report issued on:	22/09/2025
Samples Analysed:	9 soil samples		



Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

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

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

Analytical Report Number: 25-046437
Project / Site name: Urchfont Garage, Devizes
Your Order No: P1827

Lab Sample Number	665070	665071	665072	665073	665074
Sample Reference	WS1	WS2	WS2	WS3	WS3
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	0.60	2.50	0.50	1.70
Date Sampled	28/08/2025	28/08/2025	28/08/2025	28/08/2025	28/08/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	43.9	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	16	18	10	10	11
Total mass of sample received	kg	0.1	NONE	1.2	2	1.1	1.1	0.1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Detected	Not-detected	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	JWU	JWU	-	JWU	-
Analysis completed	N/A	N/A	N/A	04/09/2025	04/09/2025	-	04/09/2025	-
Actinolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Amosite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Anthophyllite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Chrysotile detected	Type	N/A	ISO 17025	Detected	-	-	-	-
Crocidolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-
Tremolite detected	Type	N/A	ISO 17025	Not-detected	-	-	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	Loose Fibres	-	-	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8.5	8.1	-	8.7	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	900	270	-	210	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	360	21	-	48	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	180	10.7	-	23.9	-
Total Potential Sulphate	mg/kg	30	NONE	3800	600	-	370	-
Total Sulphur	mg/kg	50	MCERTS	1300	200	-	120	-
Total Sulphur	%	0.005	MCERTS	0.127	0.02	-	0.012	-
Organic Matter (automated)	%	0.1	MCERTS	3.6	1.5	-	0.3	-

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	0.11	< 0.05	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	0.08	< 0.05	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	0.12	< 0.05	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	1.9	< 0.05	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	0.53	< 0.05	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	5.6	< 0.05	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	4.6	< 0.05	-	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.6	< 0.05	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	2.7	< 0.05	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	3.8	< 0.05	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	1.7	< 0.05	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.8	< 0.05	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.9	< 0.05	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.49	< 0.05	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.1	< 0.05	-	< 0.05	-

Analytical Report Number: 25-046437
Project / Site name: Urchfont Garage, Devizes
Your Order No: P1827

Lab Sample Number	665070	665071	665072	665073	665074
Sample Reference	WS1	WS2	WS2	WS3	WS3
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	0.50	0.60	2.50	0.50	1.70
Date Sampled	28/08/2025	28/08/2025	28/08/2025	28/08/2025	28/08/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	30.9	< 0.80	-	< 0.80	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	7.2	-	8	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	1.3	-	0.7	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	-	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	-	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	35	-	37	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	50	15	-	4.5	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	160	21	-	6.4	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	< 0.3	-	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	33	11	-	8.1	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	170	47	-	28	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	1.2	< 1.0	13	< 1.0	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	6	< 2.0	38	< 2.0	< 2.0
TPHCWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	16	< 8.0	170	< 8.0	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	54	29	2800	14	< 8.0
TPHCWG - Aliphatic >EC5 - EC35 EH_CU+HS_ID_AL	mg/kg	10	NONE	77	29	3000	14	< 10

TPHCWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	< 2.0	< 2.0	8.5	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	25	< 10	35	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	89	< 10	170	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_ID_AR	mg/kg	10	NONE	110	< 10	210	< 10	< 10

VOCs

Chloromethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Chloroethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Bromomethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	NONE	< 5.0	-	-	< 5.0	-
Chloroform	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-

Analytical Report Number: 25-046437
Project / Site name: Urchfont Garage, Devizes
Your Order No: P1827

Lab Sample Number				665070	665071	665072	665073	665074
Sample Reference				WS1	WS2	WS2	WS3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A	N/A
Depth (m)				0.50	0.60	2.50	0.50	1.70
Date Sampled				28/08/2025	28/08/2025	28/08/2025	28/08/2025	28/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status					
1,1,1-Trichloroethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,2-Dichloroethane	µg/kg	7	MCERTS	< 7.0	-	-	< 7.0	-
1,1-Dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,2-Dichloropropane	µg/kg	6	MCERTS	< 6.0	-	-	< 6.0	-
Trichloroethene	µg/kg	10	MCERTS	< 10	-	-	< 10	-
Dibromomethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Bromodichloromethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	< 10	-	-	< 10	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	< 6.0	-	-	< 6.0	-
1,3-Dichloropropane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Dibromochloromethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Tetrachloroethene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Chlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
Styrene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Bromoform	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	< 5.0	-	-	< 5.0	-
Bromobenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
n-Propylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Butylbenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	< 8.0	-	-	< 8.0	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	< 5.0	-	-	< 5.0	-

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

Analytical Report Number: 25-046437
Project / Site name: Urchfont Garage, Devizes
Your Order No: P1827

Lab Sample Number	665075	665076	665077	665078
Sample Reference	WS4	WS6	WS6	WS6
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	0.50	0.30	0.80	1.20
Date Sampled	28/08/2025	28/08/2025	28/08/2025	28/08/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1	29.7	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	8.8	11	13
Total mass of sample received	kg	0.1	NONE	1.2	1.2	1.2	0.1

Asbestos

Asbestos in Soil Detected/Not Detected	Type	N/A	ISO 17025	Not-detected	Detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	JWU	JWU	JWU	-
Analysis completed	N/A	N/A	N/A	04/09/2025	04/09/2025	04/09/2025	-
Actinolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-
Amosite detected	Type	N/A	ISO 17025	-	Not-detected	-	-
Anthophyllite detected	Type	N/A	ISO 17025	-	Not-detected	-	-
Chrysotile detected	Type	N/A	ISO 17025	-	Detected	-	-
Crocidolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-
Tremolite detected	Type	N/A	ISO 17025	-	Not-detected	-	-

Asbestos Containing Material Types Detected (ACM)	Type	N/A	ISO 17025	-	Loose Fibres	-	-
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General Inorganics

pH (L099)	pH Units	N/A	MCERTS	8	8.2	8.4	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Total Sulphate as SO ₄	mg/kg	50	MCERTS	140	580	330	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	32	58	28	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	16.2	28.9	14.2	-
Total Potential Sulphate	mg/kg	30	NONE	270	940	350	-
Total Sulphur	mg/kg	50	MCERTS	89	310	120	-
Total Sulphur	%	0.005	MCERTS	0.009	0.031	0.012	-
Organic Matter (automated)	%	0.1	MCERTS	0.5	3.2	0.8	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.2	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.58	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.15	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.72	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.92	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.27	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.43	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.6	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.17	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.27	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.5	< 0.05	-

Analytical Report Number: 25-046437
Project / Site name: Urchfont Garage, Devizes
Your Order No: P1827

Lab Sample Number	665075	665076	665077	665078
Sample Reference	WS4	WS6	WS6	WS6
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A
Depth (m)	0.50	0.30	0.80	1.20
Date Sampled	28/08/2025	28/08/2025	28/08/2025	28/08/2025
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	4.81	< 0.80	-
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Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.8	11	7.6	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.8	0.9	0.8	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.5	< 0.2	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	38	29	36	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	3.1	12	3.2	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	4.1	43	3.7	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	8.2	9.2	8.7	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	25	87	19	-

Petroleum Hydrocarbons

TPHCWG - Aliphatic >EC5 - EC6 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC6 - EC8 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC8 - EC10 _{HS_ID_AL}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aliphatic >EC10 - EC12 _{EH_CU_ID_AL}	mg/kg	1	MCERTS	< 1.0	11	1.1	< 1.0
TPHCWG - Aliphatic >EC12 - EC16 _{EH_CU_ID_AL}	mg/kg	2	MCERTS	< 2.0	34	3.6	2.1
TPHCWG - Aliphatic >EC16 - EC21 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	< 8.0	150	21	< 8.0
TPHCWG - Aliphatic >EC21 - EC35 _{EH_CU_ID_AL}	mg/kg	8	MCERTS	18	2800	450	43
TPHCWG - Aliphatic >EC5 - EC35 _{EH_CU+HS_ID_AL}	mg/kg	10	NONE	18	3000	470	45

TPHCWG - Aromatic >EC5 - EC7 _{HS_ID_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC7 - EC8 _{HS_ID_AR}	mg/kg	0.01	MCERTS	< 0.010	< 0.010	< 0.010	< 0.010
TPHCWG - Aromatic >EC8 - EC10 _{HS_ID_AR}	mg/kg	0.02	MCERTS	< 0.020	< 0.020	< 0.020	< 0.020
TPHCWG - Aromatic >EC10 - EC12 _{EH_CU_ID_AR}	mg/kg	1	MCERTS	< 1.0	1.6	< 1.0	< 1.0
TPHCWG - Aromatic >EC12 - EC16 _{EH_CU_ID_AR}	mg/kg	2	MCERTS	< 2.0	9	< 2.0	< 2.0
TPHCWG - Aromatic >EC16 - EC21 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	< 10	40	< 10	< 10
TPHCWG - Aromatic >EC21 - EC35 _{EH_CU_ID_AR}	mg/kg	10	MCERTS	< 10	130	< 10	< 10
TPHCWG - Aromatic >EC5 - EC35 _{EH_CU+HS_ID_AR}	mg/kg	10	NONE	< 10	190	< 10	< 10

VOCs

Chloromethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Chloroethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Bromomethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	< 5.0	-
Trichlorofluoromethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,1-Dichloroethene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
1,1-Dichloroethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
2,2-Dichloropropane	µg/kg	5	NONE	-	< 5.0	< 5.0	-
Chloroform	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-

Analytical Report Number: 25-046437
Project / Site name: Urchfont Garage, Devizes
Your Order No: P1827

Lab Sample Number				665075	665076	665077	665078
Sample Reference				WS4	WS6	WS6	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix				N/A	N/A	N/A	N/A
Depth (m)				0.50	0.30	0.80	1.20
Date Sampled				28/08/2025	28/08/2025	28/08/2025	28/08/2025
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status				
1,1,1-Trichloroethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,2-Dichloroethane	µg/kg	7	MCERTS	-	< 7.0	< 7.0	-
1,1-Dichloropropene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Carbontetrachloride	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,2-Dichloropropane	µg/kg	6	MCERTS	-	< 6.0	< 6.0	-
Trichloroethene	µg/kg	10	MCERTS	-	< 10	< 10	-
Dibromomethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Bromodichloromethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	10	MCERTS	-	< 10	< 10	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
1,1,2-Trichloroethane	µg/kg	6	MCERTS	-	< 6.0	< 6.0	-
1,3-Dichloropropane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Dibromochloromethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Tetrachloroethene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,2-Dibromoethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Chlorobenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0
Styrene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Bromoform	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0
Isopropylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	NONE	-	< 5.0	< 5.0	-
Bromobenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
n-Propylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
2-Chlorotoluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
4-Chlorotoluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	MCERTS	-	12	< 5.0	-
tert-Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
sec-Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
p-Isopropyltoluene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Butylbenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	8	MCERTS	-	< 8.0	< 8.0	-
1,2,4-Trichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
Hexachlorobutadiene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	MCERTS	-	< 5.0	< 5.0	-

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

Analytical Report Number : 25-046437

Project / Site name: Urchfont Garage, Devizes

* 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 *
665070	WS1	None Supplied	0.5	Brown clay and sand with gravel and stones
665071	WS2	None Supplied	0.6	Brown clay and sand with gravel
665072	WS2	None Supplied	2.5	Brown loam and sand with gravel and vegetation
665073	WS3	None Supplied	0.5	Brown sand with gravel
665074	WS3	None Supplied	1.7	Brown sand with gravel
665075	WS4	None Supplied	0.5	Brown sand with gravel
665076	WS6	None Supplied	0.3	Brown loam and sand with vegetation and stones
665077	WS6	None Supplied	0.8	Brown clay and sand with gravel
665078	WS6	None Supplied	1.2	Brown clay and sand with gravel

Analytical Report Number : 25-046437

Project / Site name: Urchfont Garage, Devizes

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	Moisture content, determined gravimetrically (up to 30°C)	In-house method	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L038B	D	MCERTS
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES	In-house method based on Second Site Properties version 3	L038B	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES	In-house method	L038B	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES	In-house method	L038B	D	MCERTS
Total potential sulphate in soil	Determination of total potential sulphate in soil by calculation from total sulphur	By calculation - In-house method based on TRL 447 report.	L038B	D	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
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

Analytical Report Number : 25-046437

Project / Site name: Urchfont Garage, Devizes

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
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	MCERTS
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

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

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

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

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

The result for sum should be interpreted with caution

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e: reception@i2analytical.com

Analytical Report Number : 25-046438

Project / Site name:	Urchfont Garage, Devizes	Samples received on:	02/09/2025
Your job number:	P1827	Samples instructed on/ Analysis started on:	02/09/2025
Your order number:	P1827	Analysis completed by:	09/09/2025
Report Issue Number:	1	Report issued on:	09/09/2025
Samples Analysed:	2 10:1 WAC samples		



Signed:

Rafał Szczepańczyk
Technical Reviewer
For & on behalf of i2 Analytical Ltd.

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

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

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

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

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

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

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

Analytical Report Number: 25-046438
Project / Site name: Urchfont Garage, Devizes
Your Order No: P1827

Lab Sample Number				665079	665080
Sample Reference				WS2	WS6
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.60	0.30
Date Sampled				28/08/2025	28/08/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	29.7
Moisture Content	%	0.01	NONE	18	8.8
Total mass of sample received	kg	0.1	NONE	2	1.2

General Inorganics

pH (L005B)	pH Units	N/A	MCERTS	7.5	7
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.9	1.9
Loss on Ignition @ 450°C	%	0.2	MCERTS	2.2	3.3
Acid Neutralisation Capacity	mmol/kg	-9999	NONE	2.7	0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.2
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.58
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.15
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.72
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.92
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.27
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.43
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.6
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.17
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.27
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.5
Coronene	mg/kg	0.05	NONE	< 0.05	0.23

Total PAH

Total WAC-17 PAHs	mg/kg	0.85	NONE	< 0.85	5.04
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Petroleum Hydrocarbons

Mineral Oil (EC10 - EC40) EH_CU_1D_AL	mg/kg	10	NONE	35	3200
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VOCs

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0
p & m-Xylene	µg/kg	8	MCERTS	< 8.0	< 8.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0

Total BTEX	µg/kg	10	MCERTS	< 10	< 10
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Analytical Report Number: 25-046438
 Project / Site name: Urchfont Garage, Devizes
 Your Order No: P1827

Lab Sample Number				665079	665080
Sample Reference				WS2	WS6
Sample Number				None Supplied	None Supplied
Water Matrix				N/A	N/A
Depth (m)				0.60	0.30
Date Sampled				28/08/2025	28/08/2025
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

PCBs by GC-MS

PCB Congener 28	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 52	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 101	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 118	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 138	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 153	mg/kg	0.001	MCERTS	< 0.001	< 0.001
PCB Congener 180	mg/kg	0.001	MCERTS	< 0.001	< 0.001
Total PCBs	mg/kg	0.007	MCERTS	< 0.007	< 0.007

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



7 Woodshots Meadow
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Watford, WD18 8YS

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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.

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Waste Acceptance Criteria Analytical Results

Report No:	25-046438					
				Client: Ground Investigation Ltd		
Location	Urchfont Garage, Devizes					
Lab Reference (Sample Number)	665080			Landfill Waste Acceptance Criteria		
				Limits		
Sampling Date	28.08.2025			Inert Waste Landfill	Stable Non- reactive HAZARDOUS waste in non- hazardous Landfill	Hazardous Waste Landfill
Sample ID	WS6					
Depth (m)	0.30					
Solid Waste Analysis						
TOC (%)**	1.9			3%	5%	6%
Loss on Ignition (%) **	3.3			--	--	10%
BTEX (µg/kg) **	< 10			6000	--	--
Sum of PCBs (mg/kg) **	< 0.007			1	--	--
Mineral Oil (mg/kg) EH, 1D, CU, AL	3200			500	--	--
Total PAH (WAC-17) (mg/kg)	5.04			100	--	--
pH (units)**	7			--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0			--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1		10:1	Limit values for compliance leaching test		
	mg/l		mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.00100		< 0.0100	0.5	2	25
Barium *	0.0153		0.153	20	100	300
Cadmium *	< 0.000100		< 0.00100	0.04	1	5
Chromium *	0.004		0.04	0.5	10	70
Copper *	0.0033		0.033	2	50	100
Mercury *	< 0.000500		< 0.00500	0.01	0.2	2
Molybdenum *	0.00933		0.0933	0.5	10	30
Nickel *	0.0021		0.021	0.4	10	40
Lead *	0.0014		0.014	0.5	10	50
Antimony *	< 0.0017		< 0.017	0.06	0.7	5
Selenium *	< 0.0040		< 0.040	0.1	0.5	7
Zinc *	0.013		0.13	4	50	200
Chloride *	2.1		21	800	15000	25000
Fluoride*	0.36		3.6	10	150	500
Sulphate *	3		30	1000	20000	50000
TDS*	51		510	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010		< 0.10	1	-	-
DOC	10.7		107	500	800	1000
Leach Test Information						
Stone Content (%)	29.7					
Sample Mass (kg)	1.2					
Dry Matter (%)	91					
Moisture (%)	8.8					
Results are expressed on a dry weight basis, after correction for moisture content where applicable.				* = UKAS accredited (liquid eluate analysis only)		
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited		

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

Analytical Report Number : 25-046438

Project / Site name: Urchfont Garage, Devizes

* 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 *
665079	WS2	None Supplied	0.6	Brown clay and sand with gravel
665080	WS6	None Supplied	0.3	Brown loam and sand with vegetation and stones

Analytical Report Number : 25-046438

Project / Site name: Urchfont Garage, Devizes

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
pH at 20°C in soil	Determination of pH in soil by addition of water followed by electrometric measurement	In-house method	L005B	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method)	In-house method	L009B	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically (up to 30°C)	In-house method	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
PCB's By GC-MS in soil	Determination of PCB by extraction with hexane followed by GC-MS	In-house method based on USEPA 8082	L027B	D	MCERTS
Total dissolved solids 10:1 WAC	Determination of total dissolved solids in water by electrometric measurement	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031B	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1 ratio with a buffer solution followed by Ion Selective Electrode	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination	L033B	W	ISO 17025
Dissolved organic carbon 10:1 WAC	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR Analyser	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037B	W	NONE
Metals in leachate by ICP-OES	Determination of metals in leachate by acidification followed by ICP-OES	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil	L039B	W	ISO 17025
One stage WAC 10:1 leachate preparation	One stage batch test at a liquid to solid ratio of 10 L/kg	BS EN 12457-2-2002	L043B	W	ISO 17025
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046B	W	NONE
Loss on ignition of soil @ 450°C	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	In-house method	L047-PL	D	MCERTS
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 by GC-FID in soil	Determination of total petroleum hydrocarbons in soil by GC-FID	In-house method	L076B	D	NONE
Monohydric phenols 10:1 WAC	Determination of phenols in leachate by distillation followed by colorimetry	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L080-PL	W	ISO 17025

Analytical Report Number : 25-046438

Project / Site name: Urchfont Garage, Devizes

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser	In-house based on MEWAM Method ISBN 0117516260	L082B	W	ISO 17025
Soil Descriptions	Textural classification	In-house method	L019B	W	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

APPENDIX D

Results of Geotechnical Laboratory Tests



Laboratory Report



Contract Number: 80631

Client Ref: **P1827**

Client PO: **P1827**

Date Received: **03-09-2025**

Date Completed: **24-09-2025**

Report Date: **24-09-2025**

Client: **Ground Investigation Limited**

This report has been checked and approved by:

Contract Title: **Urchfront Garage, Devizes**

For the attention of: **Max Bowden**

Shaun Jones

Laboratory manager

Description	Qty
Particle Size Distribution BS EN ISO 17892-4 : 5.1 - * UKAS	8
BRE Reduced Suite includes pH, water & acid soluble sulphate and total sulphur Sub-contracted Test#	6

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

- denotes test carried out by approved contractor

@ - denotes non accredited tests

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

Approved Signatories:

Brendan Evans (Business Support Co-ordinator) - Brendan Evans (Business Support Co-ordinator) - Darren Bourne (Quality Senior Technician)

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

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

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

80631

Borehole/Pit No.

WS1

Project Name

Urchfront Garage, Devizes

Sample No.

Sample Description

Brown/ grey silty/ clayey fine to coarse SAND

Depth Top

1.85

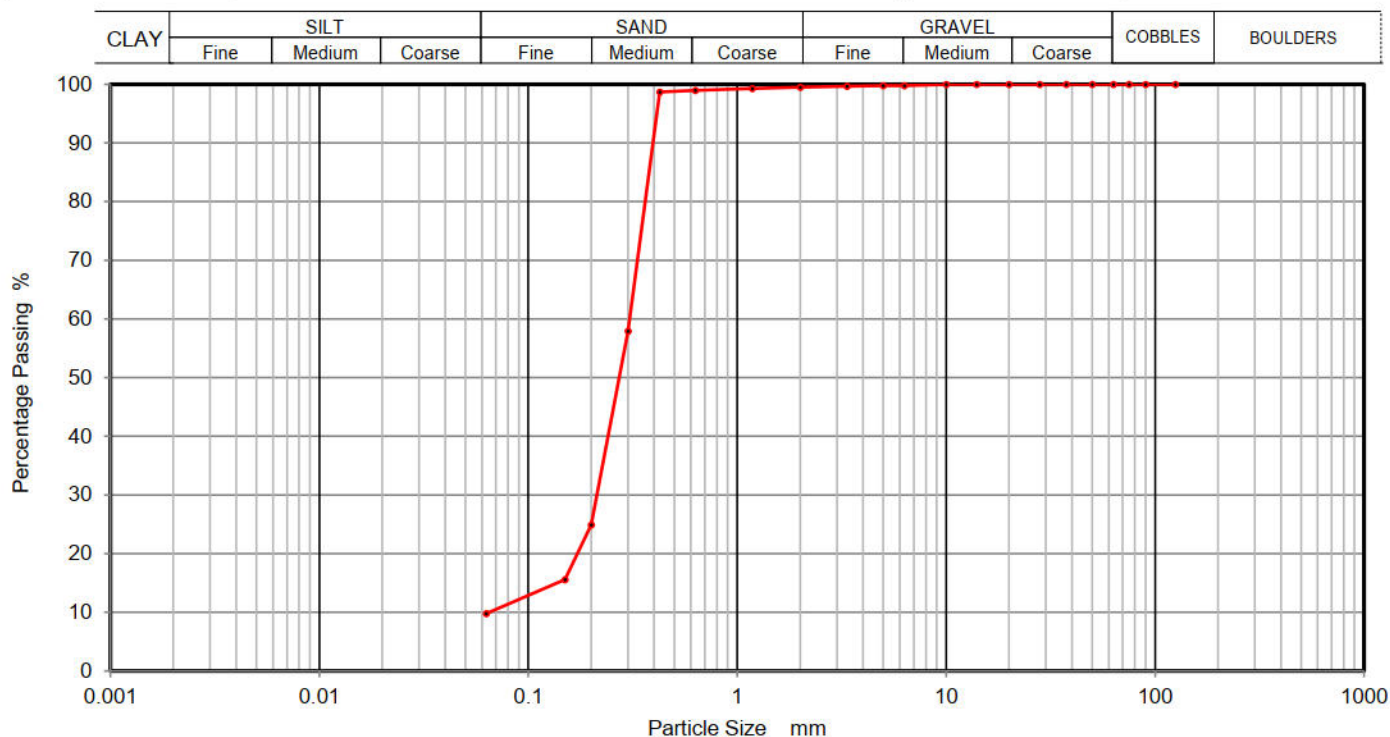
Depth Base

Date Tested

16/09/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.63	99		
0.425	99		
0.30	58		
0.20	25		
0.15	16		
0.063	10		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	90
Silt and Clay	10

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Corey. J

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

80631

Borehole/Pit No.

WS2

Project Name

Urchfront Garage, Devizes

Sample No.

Sample Description

Grey slightly gravelly silty/ clayey fine to coarse SAND

Depth Top

3.50

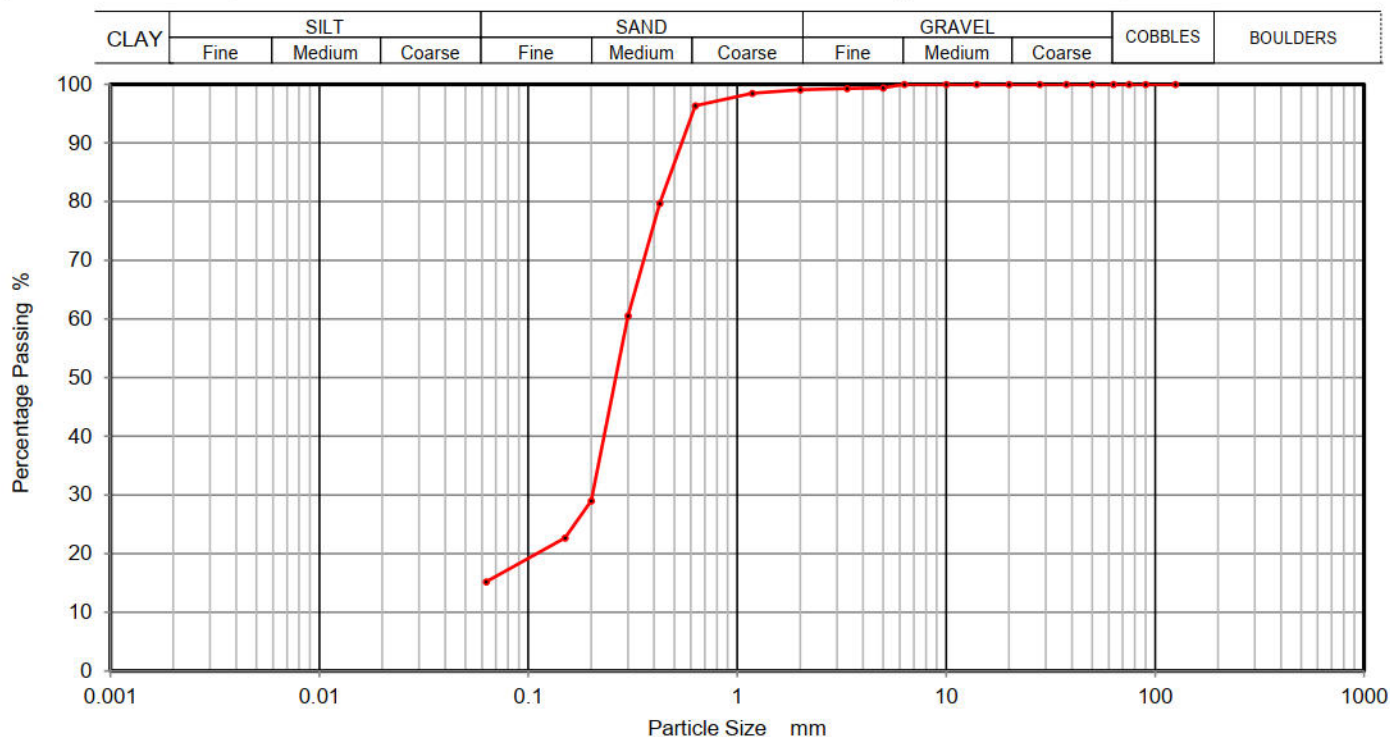
Depth Base

Date Tested

16/09/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	99		
2	99		
1.18	98		
0.63	96		
0.425	80		
0.30	61		
0.20	29		
0.15	23		
0.063	15		

Sample Proportions	% dry mass
Cobbles	0
Gravel	1
Sand	84
Silt and Clay	15

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Corey. J

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

80631

Borehole/Pit No.

WS3

Project Name

Urchfront Garage, Devizes

Sample No.

Sample Description

Grey slightly gravelly silty/ clayey fine to coarse SAND

Depth Top

1.80

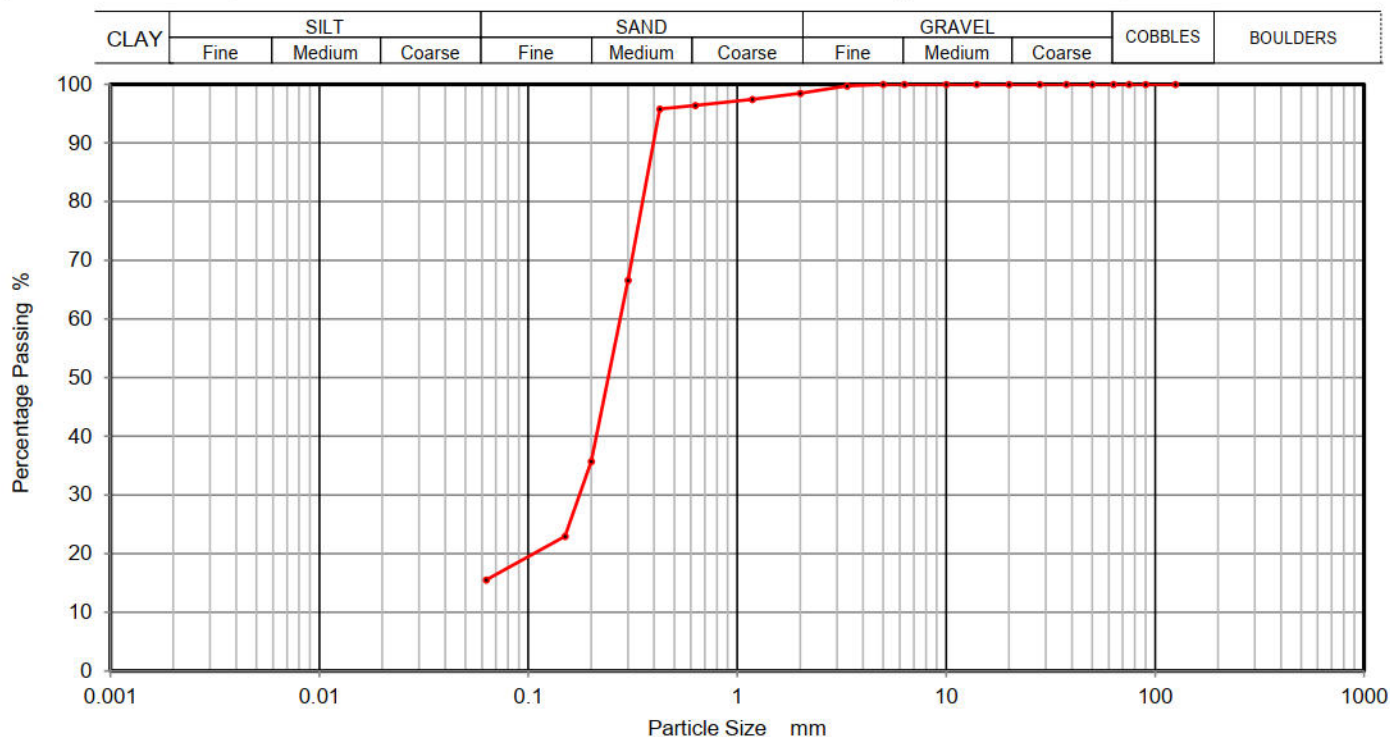
Depth Base

Date Tested

16/09/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	98		
1.18	97		
0.63	96		
0.425	96		
0.30	67		
0.20	36		
0.15	23		
0.063	16		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	82
Silt and Clay	16

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Corey. J

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

80631

Borehole/Pit No.

WS4

Project Name

Urchfront Garage, Devizes

Sample No.

Sample Description

Grey slightly gravelly silty/ clayey fine to coarse SAND

Depth Top

1.00

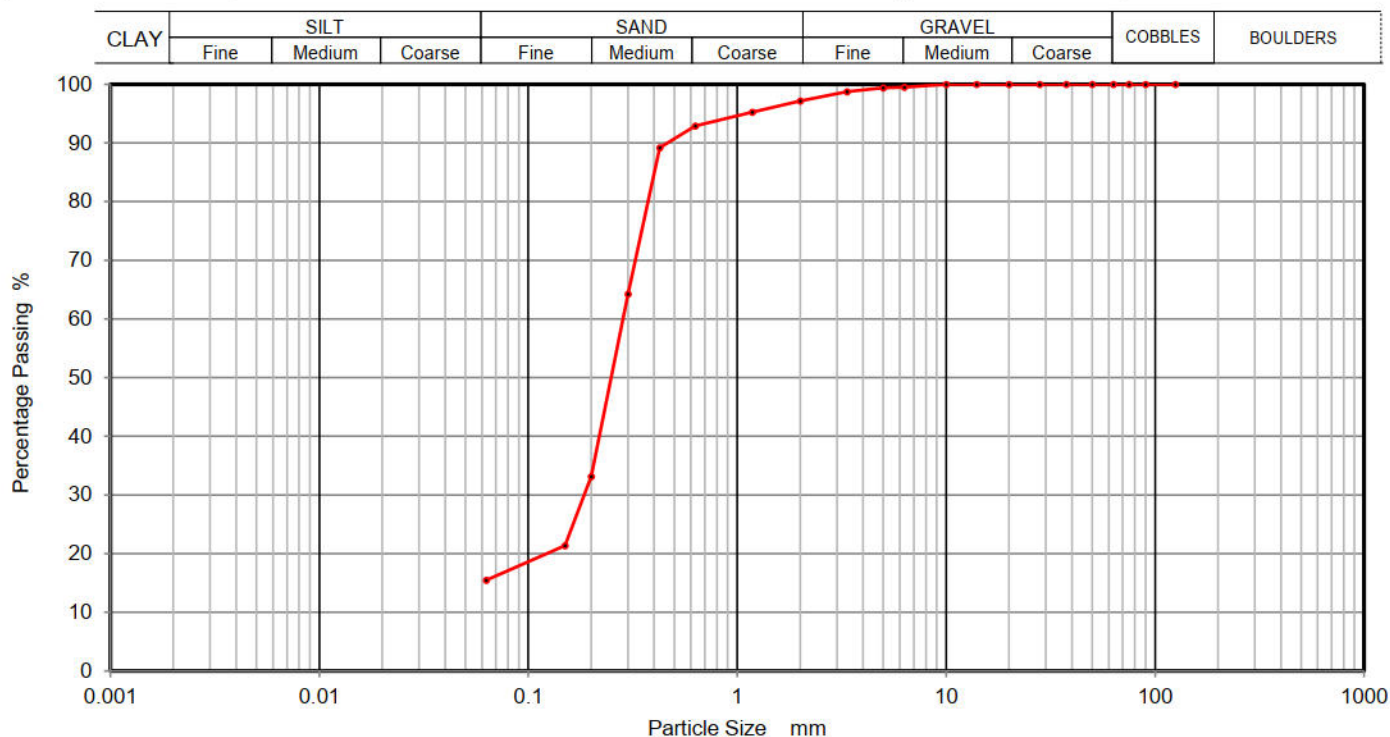
Depth Base

Date Tested

16/09/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	99		
2	97		
1.18	95		
0.63	93		
0.425	89		
0.30	64		
0.20	33		
0.15	21		
0.063	15		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	82
Silt and Clay	15

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

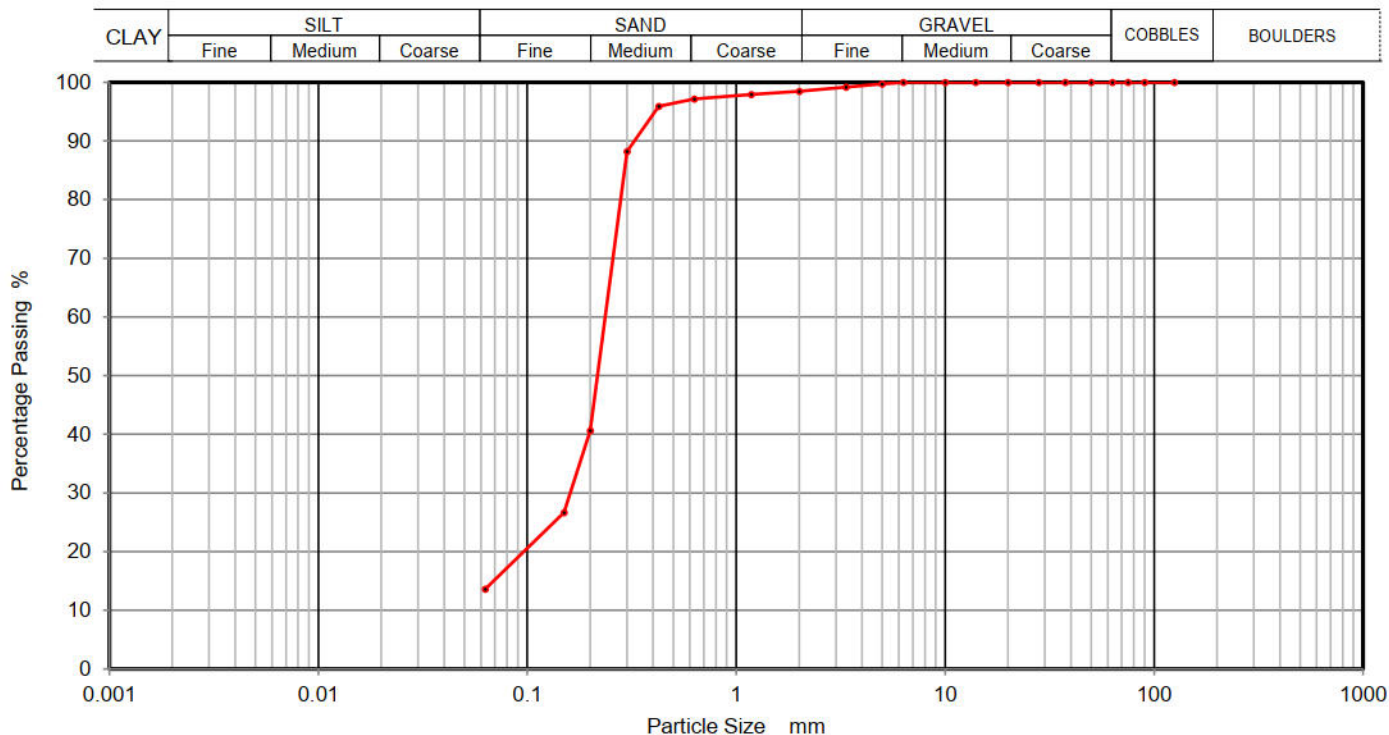
Operator

Corey. J

**PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2**

Contract Number	80631
Borehole/Pit No.	WS4

Project Name	Urchfront Garage, Devizes	Sample No.	
Sample Description	Grey slightly gravelly silty/ clayey fine to coarse SAND	Depth Top	2.80
		Depth Base	
Date Tested	16/09/2025	Sample Type	D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	98		
1.18	98		
0.63	97		
0.425	96		
0.30	88		
0.20	41		
0.15	27		
0.063	14		

Sample Proportions	% dry mass
Cobbles	0
Gravel	2
Sand	84
Silt and Clay	14

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator
Corey. J

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

80631

Borehole/Pit No.

WS5

Project Name

Urchfront Garage, Devizes

Sample No.

Sample Description

Grey silty/ clayey fine to coarse gravelly fine to coarse SAND
(rootlets)

Depth Top

0.65

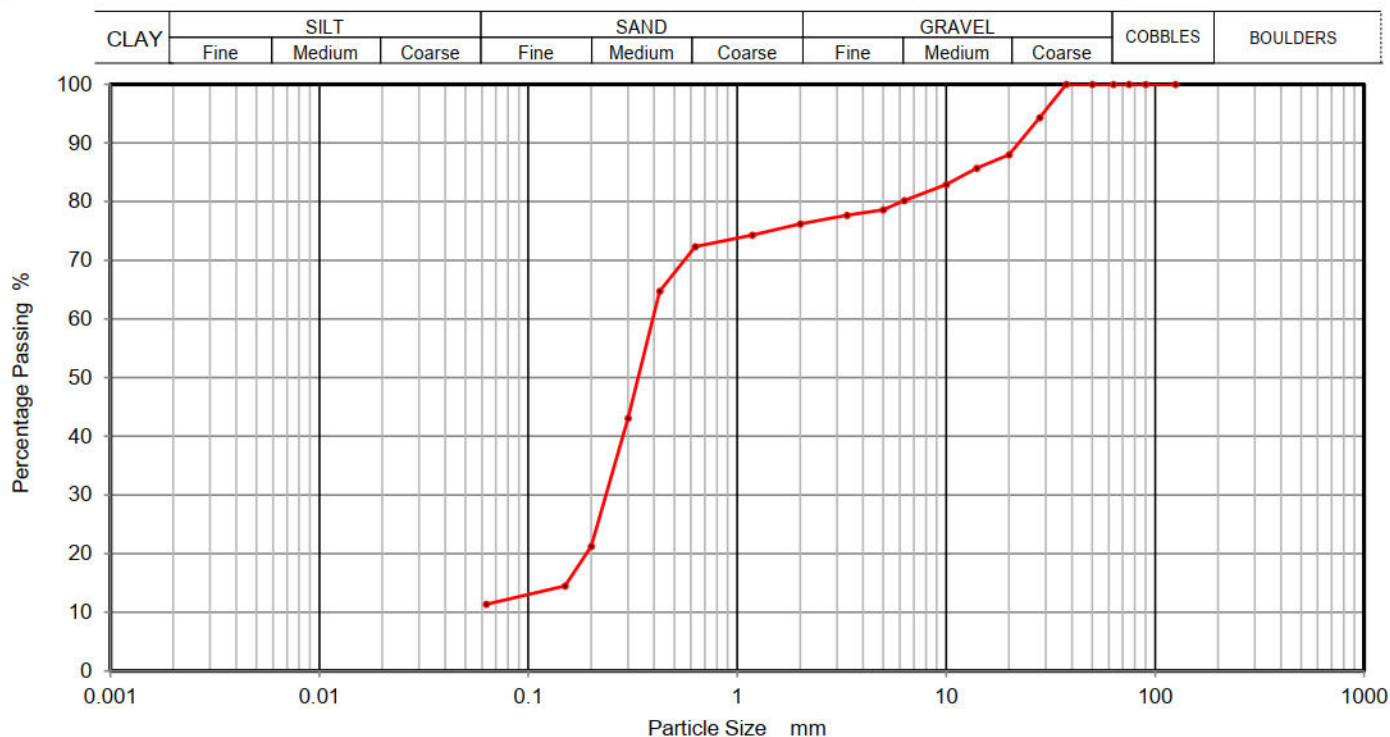
Depth Base

Date Tested

16/09/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	94		
20	88		
14	86		
10	83		
6.3	80		
5	79		
3.35	78		
2	76		
1.18	74		
0.63	72		
0.425	65		
0.30	43		
0.20	21		
0.15	15		
0.063	11		

Sample Proportions	% dry mass
Cobbles	0
Gravel	24
Sand	65
Silt and Clay	11

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Corey. J

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

80631

Borehole/Pit No.

WS6

Project Name

Urchfront Garage, Devizes

Sample No.

Sample Description

Grey slightly gravelly silty/ clayey fine to coarse SAND

Depth Top

1.30

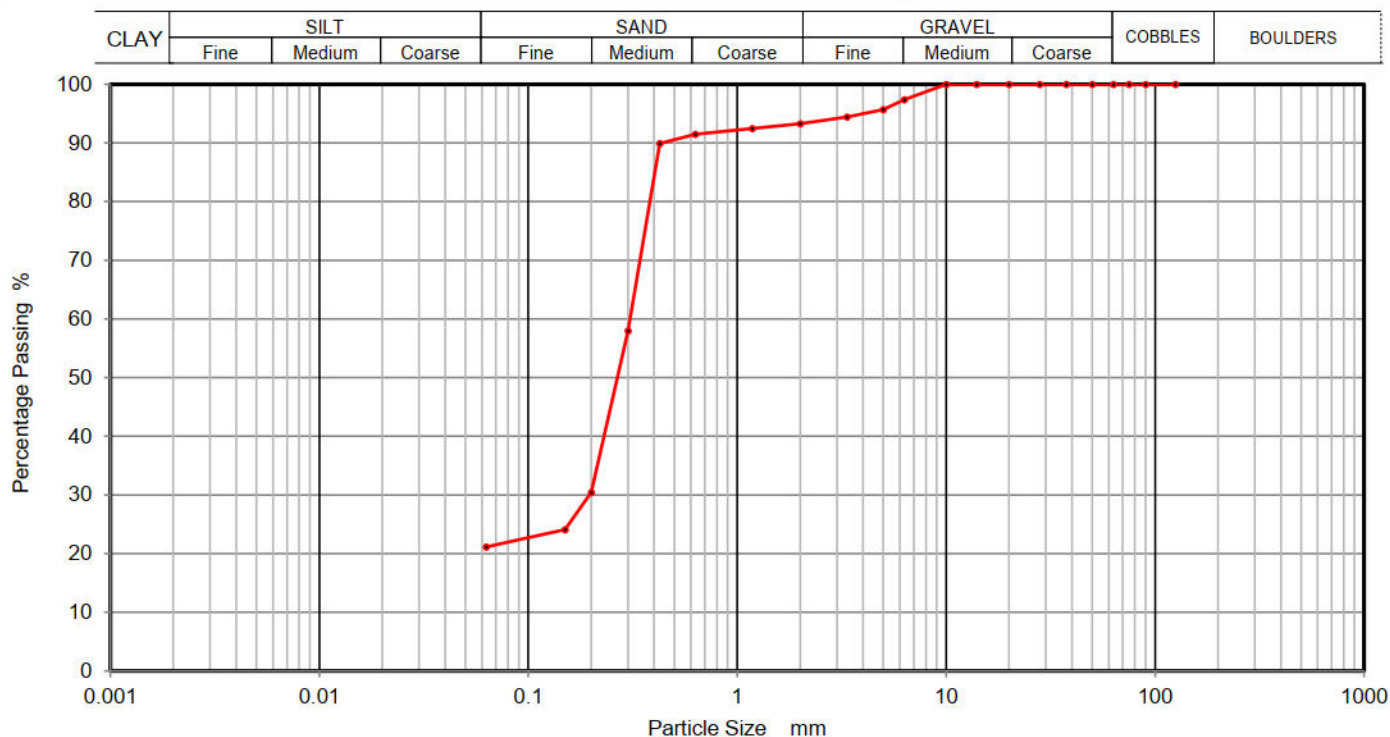
Depth Base

Date Tested

16/09/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	97		
5	96		
3.35	94		
2	93		
1.18	92		
0.63	91		
0.425	90		
0.30	58		
0.20	30		
0.15	24		
0.063	21		

Sample Proportions	% dry mass
Cobbles	0
Gravel	7
Sand	72
Silt and Clay	21

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Corey. J

PARTICLE SIZE DISTRIBUTION
BS EN ISO 17892-4:2016
Wet Sieve, Clause 5.2

Contract Number

80631

Borehole/Pit No.

WS6

Project Name

Urchfront Garage, Devizes

Sample No.

Sample Description

Grey silty/ clayey fine to coarse SAND

Depth Top

1.90

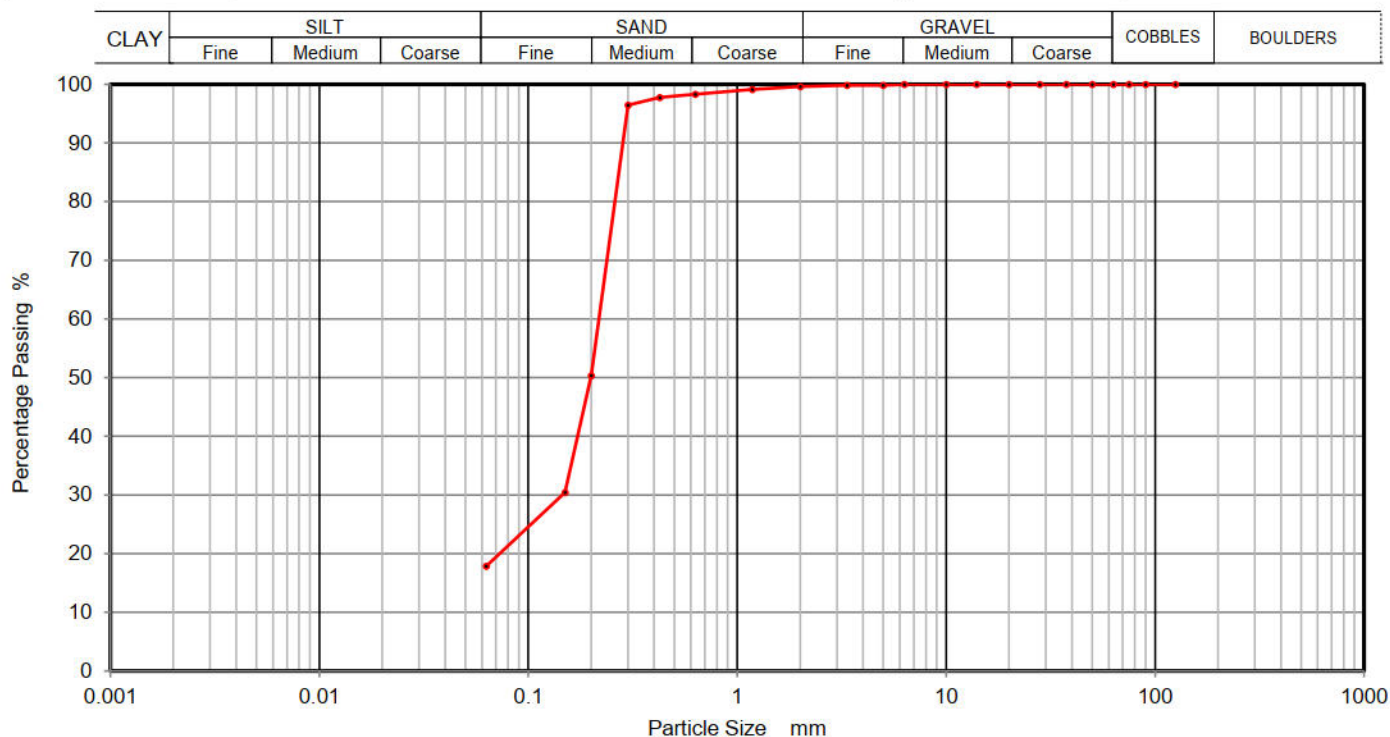
Depth Base

Date Tested

16/09/2025

Sample Type

D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	99		
0.63	98		
0.425	98		
0.30	96		
0.20	50		
0.15	30		
0.063	18		

Sample Proportions	% dry mass
Cobbles	0
Gravel	0
Sand	82
Silt and Clay	18

Grading Analysis	
Uniformity Coefficient	N/A

Remarks

Preparation and testing in accordance with BS17892 unless noted below

Operator

Corey. J

Analytical Test Report	L25/09533/GSL/25-81709	Tested on Behalf of
Clients Project Reference	Urchfont Garage, Devizes (P1827)	GSTL
Clients Order Number	80631	Unit 3-4 Heol Aur
Sample(s) Analysed	6	Dafen Ind Estate
Sample(s) received / instructed	12/09/2025 / 12/09/2025	Dafen
Sample(s) Tested	12/09/2025 to 23/09/2025	
Report issued	23/09/2025	SA14 8QN
Report issue number	1	

Signed



James Gane
Analytical Services Manager

Notes:

General

This report shall not be reproduce except in full

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples were supplied by customer, results apply to the samples as received.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

U = UKAS Accreditation, M = MCERTS Accreditation, N = Unaccredited, SC = Subcontracted

L25/09533/GSL/25-81709

Urchfont Garage, Devizes (P1827)

Analytical Test Results - ENV Analysis Soils

Lab Reference	591227	591228	591229	591230
Client Sample ID	-	-	-	-
Client Sample Location	WS01	WS02	WS03	WS04
Client Sample Type	-	-	-	-
Client Sample Number	-	-	-	-
Depth - Top (m)	1.85	3.5	1.8	1
Depth - Bottom (m)	1.85	3.5	1.8	1
Date of Sampling	-	-	-	-
Time of Sampling	-	-	-	-
Sample Matrix	Sand	Clay	Sand	Sand
Determinant	Units	LOD	Accreditation	
pH	pH units	1	M	8.3 8.3 8.3 8.2
Water Soluble Sulphate (as SO ₄)	mg/L	10	N	75 < 10 < 10 < 10
Total Sulphur Content (as S)	%	0.01	U	0.03 < 0.01 < 0.01 < 0.01
Acid Soluble Sulphate	%	0.01	N	0.02 0.01 < 0.01 < 0.01

L25/09533/GSL/25-81709

Urchfont Garage, Devizes (P1827)

Analytical Test Results - ENV Analysis Soils

Lab Reference				591231	591232
Client Sample ID				-	-
Client Sample Location				WS05	WS06
Client Sample Type				-	-
Client Sample Number				-	-
Depth - Top (m)				0.65	1.9
Depth - Bottom (m)				0.65	1.9
Date of Sampling				-	-
Time of Sampling				-	-
Sample Matrix				Sand	Sand
Determinant	Units	LOD	Accreditation		
pH	pH units	1	M	8.0	8.1
Water Soluble Sulphate (as SO ₄)	mg/L	10	N	14	< 10
Total Sulphur Content (as S)	%	0.01	U	< 0.01	< 0.01
Acid Soluble Sulphate	%	0.01	N	< 0.01	< 0.01

L25/09533/GSL/25-81709

Urchfont Garage, Devizes (P1827)

Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
591227	-	WS01	SOIL	-	Light brown slightly clayey silty sand	-	-	100
591228	-	WS02	SOIL	-	Greyish brown gravelly silty clay	-	-	95
591229	-	WS03	SOIL	-	Light greyish brown slightly clayey silty sand	-	-	100
591230	-	WS04	SOIL	-	Light brown slightly clayey silty sand	-	-	100
591231	-	WS05	SOIL	-	Brownish grey slightly gravelly slightly clayey silty sand	-	-	84
591232	-	WS06	SOIL	-	Light greyish brown slightly clayey silty sand	-	-	100

L25/09533/GSL/25-81709

Urchfont Garage, Devizes (P1827)

Analysis Methodologies - Please refer to sample comments page (if present) for any changes to methods Methods

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
1377PREP	BS1377 Prep			Sample preparation of Soil for testing in accordance with BS1377:Part 3
1377TS-ELT	BS1377 Total Sulphur Content by HTC	Oven dried	BS1377 : Part 1 : 2016	Total Sulphur Content testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 7.10 (using Eltra CS-800 Analyser)
ANIONSEXS	MS - CL - Anions by Aquakem (E)		Passing 2mm test sieve	Extraction of soils for Anions analysis in accordance with MS - CL - Anions by Aquakem
ANIONSS	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
ASSO4EXS	MS - CL - Acid Soluble Sulphate (E)			Extraction of soil for total sulphate in accordance with MS - CL - Acid Soluble Sulphate
ASSO4S	MS - CL - Acid Soluble Sulphate	Oven Dried	Passing 2mm test sieve	Determination of total sulphate in soils by acid extraction followed by ICP analysis
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis

L25/09533/GSL/25-81709

Urchfont Garage, Devizes (P1827)

Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided

W - No time of sampling provided

C - Received in inappropriate container

H - Contains headspace

T - Temperature on receipt exceeds storage temperature

R - Sample(s) received with less than 2 hours for testing to commence/complete, any result formally classed as deviating will be marked with an X against the applicable test (i.e. RX)

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
591227		WS01	SOIL			A
591228		WS02	SOIL			A
591229		WS03	SOIL			A
591230		WS04	SOIL			A
591231		WS05	SOIL			A
591232		WS06	SOIL			A

APPENDIX E

References

REFERENCES

1. **Ground Investigation Limited**, *Wildmans of Urchfont, Wiltshire, Phase 1 Assessment of Land Quality*, October 2023.
2. **Environment Agency**, Land Contamination Risk Management (LCRM), 2020.
3. **DEFRA**. *SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination*. December 2013
4. **Environment Agency**, *Soil Guideline Values for 'various substances' in soil*, 2009.
5. **LQM/CIEH**. *The LQM/CIEH S4ULs for Human Health Risk Assessment*, 2015.
6. **Environment Agency**, *SR3 Updated Technical Background to the CLEA model: Science Report Final SC050021/SR3*, 2009.
7. **CIRIA**. *Assessing Risks posed by hazardous ground gasses to buildings*. C665, 2007.
8. **BRE**. 2005. *Concrete in aggressive ground*. BRE SD1.