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Phase 2 Ground Investigation

South Farm, Wickwar

B05313-CLK-XX-XX-RP-GT-0002

Bloor Homes South West

clarkebond

MULTIDISCIPLINARY ENGINEERING CONSULTANTS

Phase 2 Ground Investigation

Report No.	Date.
B05313-CLK-XX-XX-RP-GT-0002	08/02/22

Project
South Farm, Wickwar

Client Name
Bloor Homes South West

Issue Date	Issue	Status	Comments
10th May 2021	P01	S2	For information
08th February 2022	P02	S2	Minor amendment to number of proposed units

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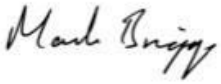
Mark Briggs BSc MSc CGeol FGS **Director Ground Engineering**	

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Executive Summary

Client	Bloor Homes South West
Site	South Farm, Wickwar
Location	Sodbury Road, Wickwar, GL12 8LW. NGR E372353, N187633.
Approximate area	38Ha
Current land use	Agricultural Farmland.
Proposed development	It is understood that the Phase 1 area is anticipated to accommodate 180 residential units as well as land for a potential new community shop.
Geology	No Superficial deposits mapped. The solid geology comprises 3 geological Formations; the Avon Group, the Westbury Formation and Cotham Member and the Langport Member and Wilmcote Limestone Member. These strata comprise a sequence of mudstones and interbedded limestones.
Radon	Basic radon protective measures are required.
Previous site investigations	Clarkebond have not been made aware of any previous investigations undertaken at this site. Phase 1 Desk Study Report by Clarkebond (ref B05313-CLK-00-XX-RP-GE-0001 April 2020). Note the Desk Study considered a larger land area than the current Phase 1 development area that forms the subject of this report.
This site Investigation	Twenty-six machine excavated trial pits Four infiltration tests within trial pits TP01, 03,04 and 05. Six TRL DCP tests
Ground conditions	No Superficial deposits were recorded during the investigation. A limited area of made ground (3 TPs) to 1.3m, comprising reworked locally derived soils was recorded. The underlying geology comprised firm gravelly clays with occasional beds of more competent limestone.
Foundations	Strip footings suitable. Bearing capacity within firm natural soils of 110kPa at 1.0m.
Shrinkable soils	Soils are high volume change potential.
Buried concrete	DS3 & AC3. FND3
Floor slabs	Suspended floors recommended.
Gas protection	No gas protection measures required. Basic radon protection measures required.
Slope stability	Site and adjacent area are generally level and therefore no risks. Gradients are considered generally stable but careful assessment of changes of elevation or construction near existing slopes would still be needed.
Pavement	Design CBR value of 3%.
Soakaways	All infiltration testing failed. The site is considered unsuitable for infiltration drainage.
Contamination Considerations	No risks to human health or groundwater have been found on site. Elevated zinc has been identified on site, although no impact on vegetation was noted. Consultation with a landscape architect is recommend. PE and PVC water supply pipes should be acceptable. No protection is required for ground gas and chemical vapours. Basic radon protection is required.

Waste Categorisation for Off-site Disposal	The Made Ground has been classified as Non-hazardous. The natural soils are classified as Non-hazardous. WAC testing has been undertaken on the natural soils; these are likely to classed as Inert for disposal purposes.
Outline Strategy for Remediation & Risk Reduction	No formal remediation strategy is required based on the findings of the investigation. Discussion with a landscape architect is required to assess the significance of the raised zinc concentrations identified. Radon protection is required within all new dwellings.
Further Data and Investigation	A tree survey is recommended to inform the detailed design of foundations.

1 Introduction

1.1 Brief

Clarkebond (UK) Limited was commissioned by Bloor Homes South West to undertake a Phase 1 & 2 Site Investigation on a site known as South Farm, Wickwar, GL12 8LW. NGR E372353, N187633.

The client's brief was to carry out a Phase 2 Ground Investigation based on the findings of the existing Clarkebond desk study to identify primarily foundation requirements and whether any significant contamination is present.

The objectives of the investigation were to determine the sub-surface conditions in respect of:

- Foundations for proposed structures.
- Design guidance for access road and car park construction.
- Floor slabs.
- Soakaway potential.
- Contamination assessment to consider potential significant pollutant linkages arising from the historic land uses on and off site.
- Assessment of near surface materials for waste classification to allow cost prediction for any off-site disposal.

1.2 Proposed Development

It is understood that the Phase 1 area is anticipated to accommodate 180 residential units as well as land for a potential new community shop.

Clarkebond previously undertook a Phase 1 Environmental Desk Study for the wider site prior to the Phase 2 investigation reference B05313-CLB-00-XX-RP-GE-0001 P01. Note the Desk Study considered a larger land area than the current Phase 1 development area that forms the subject of this report.

During the production of this report the information in that report has been reviewed. A summary of the pertinent findings are given in Section 3.

1.3 Limitations

This report is provided for the benefit only of the party to whom it is addressed and we do not accept responsibility to any third party for the whole or any part of the contents and we exercise no duty of care in relation to this report to any third party.

Where intrusive investigations have been completed, information, comments and opinions given in this report are based on the ground conditions encountered during the site work and on the results of laboratory and field tests performed during the investigation. However, subsoils are inherently variable and hidden from view such that no investigation can be exhaustive to the extent that all soil conditions are revealed. Conditions may therefore be present beneath the site that were not apparent in the data reviewed as part of this assessment. In particular, it should be noted that groundwater levels vary due to seasonal and other effects and may at times differ to those measured during the investigation.

Unless specifically noted to the contrary, it should be assumed that this report has not been submitted to any regulatory authorities for approval. Redevelopment sites in particular may have planning conditions attached in respect of contaminated land assessment. Where we are made aware of such conditions in advance of scoping the works, we can tailor the report to the regulatory authority requirements. Where we are not made aware of any such requirements there can be no certainty that our investigation will meet any or all of the regulatory authority requirements.

2 Site Setting

Site Address:	South Farm, Wickwar, GL12 8LW
National Grid Reference:	E372353, N187633

The site is located approximately 400m south from Wickwar village centre as shown in Figure 2.1 below.

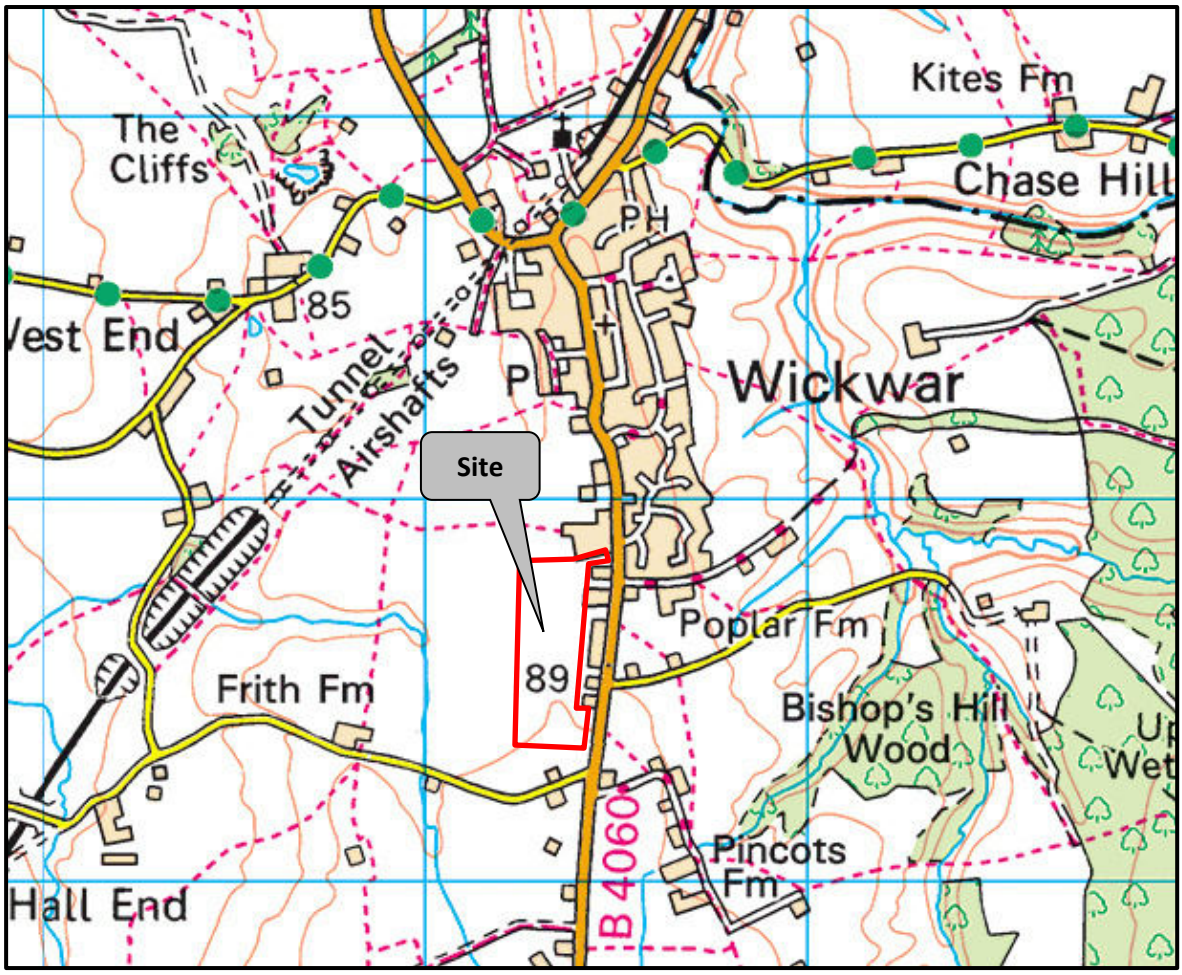


Figure 2.1 Site Location

2.1 Site Description

A site walkover survey was undertaken on the first day of the Phase 2 site works on 1st March 2021 by Clarkebond. Access to the site is gained via the main farmyard.

The site consists of four agricultural fields separated by hedgerows which cover an area of 38Ha. The site slopes gently to the north.

3 Summary of Previous Work

A Preliminary Land Contamination and Geotechnical Risk Assessment for the wider site has been undertaken by Clarkebond (UK) Limited in 2020 (Ref: B05313-CLK-00-XX-RP-GT-0001, dated April 2020).

A summary of the salient findings of that report relevant to the current Phase 1 development area is presented below.

Information published by the British Geological Survey indicated that the area of the site is expected to be underlain by three lithological units as shown in Table 3.1 below:

Table 3.1 Bedrock Geology

Formation
Avon Group – Interbedded Limestone and Mudstone
Westbury Formation and Cotham Member - Mudstone
Langport Member and Wilmcote Limestone Member – Interbedded limestone and mudstone.

The anticipated ground conditions are considered likely to be suitable for conventional strip foundations for the proposed development. No significant geotechnical risks were identified.

The Environment Agency classifies the lithological units at the site to be Secondary A and B aquifers. There are no licenced groundwater abstractions within 1km of the site. The site is not located within or near a Source Protection Zone. Despite the expected shallow depth to groundwater, the likely low permeability of the superficial deposits would suggest that groundwater would be of low sensitivity to any potential on site sources of contamination.

Surface water features in the vicinity of the site comprise two unnamed inland rivers which are believed to contain water year-round: one flows north along a length of the western boundary of the whole site before altering course and flowing west, while the other flows northwards along the western boundary of the Phase 1 area. There is also a pond present in the north east of the site. The potential sensitivity of these receptors is deemed to be high.

The site has remained greenfield since earliest available mapping and no previous or current on-site or adjacent land uses that are considered likely to present a risk of soil or groundwater contamination identified.

The Enviro Geo Insight report states that the Phase 1 area of the site is in an area where the estimated probability of homes being above the action level of 200Bqm^{-3} is between 5 and 10%. Therefore, basic radon protective measures are required in the construction of new buildings or extensions.

4 Site Investigation

The intrusive investigation was proposed by Clarkebond. No significant contamination or geotechnical risks that required specific investigation were identified from the desk study and site walkover. Consequently, the positions of the exploratory holes were intended to provide a reasonable coverage of the site for an assessment of general ground conditions.

The investigation was undertaken between 1st and 3rd of March 2021.

The intrusive works comprised the following:

- Twenty-six machine excavated trial pits.
- Four BRE soakaway tests.
- Six Dynamic Cone Penetrometer CBR Tests

The procedures followed in this site investigation are based on BS 5930:1999 + Annex 2:2010 - Code of Practice for Site Investigations. The soils and rocks encountered have been described in accordance with BS5930:1999 + Annex 2:2010 and BS EN ISO 14688-1:2002 and BS EN ISO 14689-1:2003.

The approximate positions of the exploratory holes are shown on the Exploratory Hole Location Plan in Appendix A and the exploratory hole records are included in Appendix B.

4.1 Trial Pits

Twenty-six trial pits (TP01 to TP26) were excavated to depths varying between 1.30m and 3.10m below ground level (bgl) using a wheeled backhoe excavator.

The profiles of strata or other features were recorded as excavation proceeded and measurements taken from ground level. Representative samples were taken, where appropriate, for laboratory analysis. In situ hand shear vane tests were also carried out in suitable strata. Detailed descriptions of the strata encountered, groundwater observations and excavation stability notes, together with any other pertinent information observed, are included on the trial pit records, which are included in Appendix B.

4.2 Infiltration Testing

In order to determine the permeability of the ground to assess the suitability of soakaways for drainage at the site, infiltration testing was undertaken in four machine excavated trial pits (TP01, TP03, TP04 and TP05).

No infiltration was observed during the initial filling of the test pits. As such the tested were classified as failures and further testing was not undertaken.

The results of the infiltration testing are presented in Appendix C.

4.3 TRL DCP Tests

Six TRL DCP tests (DCP1 to DCP6) were undertaken along the likely route of proposed new highways in order to obtain design parameters and information for road pavement construction. The results of the TRL DCP testing are presented in Appendix D.

5 Laboratory Analysis

Samples obtained during the investigation were subjected to a range of geotechnical and chemical testing at appropriate accredited laboratories.

Samples were submitted for geotechnical laboratory testing to characterise the engineering properties of the soil. The following testing was scheduled:

- 29 x Atterberg Limits
- 1 x Particle Size Distribution
- 29 x Moisture Content
- 8 x BRE SD1 sulphate suite

Testing was carried out in accordance with the procedures outlined in BS EN ISO 14688-1:2018, 14688-2:2018 and 14689:2018 (i.e. Eurocode 7). Geotechnical laboratory test data is presented in Appendix E.

Soil samples were sent for chemical analysis to i2 Analytical laboratories to be analysed for:

- 3 x Full suite comprising arsenic, cadmium, copper, chromium, lead, mercury, nickel, selenium, zinc, Speciated PAH, speciated Total Petroleum Hydrocarbons (TPHCWG), Soil organic matter content (SOM), pH and soluble sulphate.
- 3 x Screen suite comprising arsenic, cadmium, copper, chromium, Chromium VI, lead, mercury, nickel, selenium, zinc, Speciated PAH, TPH banded, Soil organic matter content (SOM), pH and soluble sulphate.
- 2 x Waste Acceptance Criteria (Single Stage)
- 1 x Organophosphorous Pesticides and Herbicides

The chemical laboratory test results are presented in Appendix F.

6 Ground Conditions

6.1 General

The results of this investigation were consistent with the anticipated geology.

A summary of the strata encountered is presented in Table 6.1 and discussed in sections 6.2 to 6.8. For full details of the strata encountered reference should be made to the exploratory hole logs in Appendix B.

Table 6.1 Ground Conditions

Hole	Topsoil	Made Ground	Silty/sandy clay	Clay	Sandy/gravelly clay	Clayey gravel	Limestone/Mudstone (bedrock)	Ground water
TP01	0.10	-	1.10	-	2.10*	-	-	Seepage at base
TP02	0.10	-	1.20	-	2.70*	-	-	Seepage at base
TP03	0.10	-	1.20	2.10	2.80*	-	-	Seepage at base
TP04	0.15	-	0.70	-	1.30	2.80*	-	Seepage at base
TP05	0.20	-	1.40	-	3.10*	-	-	Seepage at base
TP06	0.10	-	0.90	-	2.50*	-	-	Seepage at base
TP07	0.10	-	1.00	-	2.70*	-	-	Seepage at base
TP08	0.10	-	1.00	-	1.40	-	1.45*	Seepage at base
TP09	0.10	-	-	0.60	2.90*	-	-	Seepage at base
TP10	0.15	-	0.70	-	2.50*	-	-	Seepage at base
TP11	0.15	-	2.50*	-	-	-	-	Seepage at base
TP12	0.15	-	2.00	-	2.80*	-	-	Seepage at base
TP13	0.15	-	1.50	-	2.50*	-	-	Seepage at base
TP14	0.15	-	0.50	-	2.50*	-	-	Seepage at base
TP15	0.15	1.30	2.10	-	2.70*	-	-	Seepage at base
TP16	-	1.10	-	-	2.80*	-	-	Seepage at base
TP17	-	0.60	-	-	2.90*	-	-	Seepage at base
TP18	0.20	-	1.25	-	-	-	1.30*	Seepage at base
TP19	0.20	-	2.30*	-	-	-	-	Seepage at base
TP20	0.15	-	-	-	2.80*	-	-	Seepage at base
TP21	0.15	-	1.40	-	-	-	1.80*	Seepage at base
TP22	0.20	-	-	-	0.80	1.30*	-	Seepage at base
TP23	0.15	-	1.60	-	2.70*	-	-	Seepage at base
TP24	0.15	-	1.90	-	2.60*	-	-	Seepage at base
TP25	0.15	-	1.60	-	2.70*	-	-	Seepage at base
TP26	0.15	-	-	-	2.60*	-	-	Seepage at base

* Base of hole

6.2 Topsoil

Topsoil was encountered in all the exploratory holes to between 0.10 and 0.20m below ground level (bgl). The material generally consisted of dark brown clayey sandy silt with rootlets.

6.3 Made Ground

Made Ground materials was only encountered in TP15, TP16 and TP17 to depths ranging from 0.60m to 1.30m bgl. The materials generally comprised dark brown/orange gravelly sandy silt/clay. Anthropogenic components included brick fragments.

6.4 Weathered Westbury Formation and Cotham Member

The Topsoil/Made Ground in some areas of the site was underlain by the solid geology of the weathered Westbury Formation and Cotham Member. This lithological unit was encountered in TP02, TP03, TP04, TP12, TP13, TP16, TP19, TP20, TP24, TP25 and TP26 and generally comprised a weathered firm, becoming firm to stiff with depth, sandy and gravelly clay extending to depths between >2.3 and >2.8m bgl.

6.5 Weathered Langport Member and Wilmcote Limestone Member

The Topsoil/Made Ground in some areas of the site was underlain by the solid geology of the weathered Langport Member and Wilmcote Limestone Member. This lithological unit was encountered in TP06, TP07, TP09, TP10, TP14, TP15 and TP17 and generally comprised a weathered firm, becoming firm to stiff with depth grey gravelly/cobbly clay with gravel and cobbles of limestone extending to depths between >2.5 and >2.9m bgl.

6.6 Weathered Avon Group

The Topsoil in some areas of the site was underlain by the solid geology of the weathered Avon Group. This lithological unit was encountered in TP01, TP03, TP08, TP18, TP21, TP22, and TP23 and generally comprised a weathered firm brown to orange silty/sandy gravel clay with gravel and cobbles of limestone extending to depths between 1.25 and >2.70m bgl.

6.7 Avon Group

The weathered Avon Group was underlain by the solid bedrock of the Avon Group. This lithological unit was encountered in TP08 and TP18 and comprised a moderately strong off-white to grey limestone.

6.8 Groundwater

No groundwater was encountered during the intrusive works. Slow seepage was encountered in all exploratory holes.

6.9 Field Observations of Contamination

No visual or olfactory evidence of contamination was encountered.

6.10 Soil Strength

The results of hand shear vane tests ranged from 30kPa to 110kPa. The shear strength values are shown in Figure 6.2. The majority of the soils displayed a weathering profile, with the upper soils being firm in consistency. A gradual increase in strength was noted in most areas, but not all; localised softer bands

were occasionally noted at depth. This may be due to variation in moisture content, in turn related to a variation in the granular component of the predominately cohesive strata.

7 Geotechnical Assessment

7.1 Proposed Development

It is understood that the Phase 1 area is anticipated to accommodate 180 residential units as well as land for a potential new community shop together with access roads, infrastructure and open spaces.

7.2 Shrinkable Soils

Cohesive soils (clay and silt) may undergo volume change when subject to changes in moisture content. This can cause ground movement of soils where seasonal changes or tree root action affect the moisture content. Where foundations are constructed in such soils these movements can lead to damage of the superstructure. These movements are greatest where trees are removed or tree root systems are severed as this allows the soils to regain their equilibrium moisture content resulting in expansion.

The NHBC (National House Building Council) has derived minimum foundation depths and other precautions relating to ground movements in shrinkable soils. These standards are set out in NHBC Chapter 4.2 "Building Near Trees" (2017) and are commonly adopted for both residential and non-residential structures.

The Modified Plasticity Index is related to volume change potential and NHBC recommended minimum foundation depths as indicated in Table 7.1.

Table 7.1 Volume Change Potential

Modified Plasticity Index	Volume Change Potential	Minimum Foundation Depth
40% or greater	High	1.00m
20% to <40%	Medium	0.90m
10% to <20%	Low	0.75m

Shrinkable soils are generally considered as clays having a modified plasticity index (I'p) of 10% or greater. The Modified Plasticity Index is defined as the Plasticity Index (Ip) of the soil multiplied by the percentage of particles less than 425µm. Soils containing less than 35% fine particles (< 63µm) are non-shrinkable.

The plasticity indices of twenty-nine soil samples of the natural clay strata ranged from 14% to 64%, with the percentage of the soil <425µm ranging from 73% to 100%. The calculated modified plasticity indices ranged from 13% to 64%.

On the basis of the modified plasticity index the clay soils would therefore be considered to be of **high volume change potential** with respect to NHBC Chapter 4.2 "Building Near Trees" (NHBC, 2017). Consequently, a minimum foundation depth of 1.0m is recommended where foundations are outside the influence zone of trees.

7.3 Foundation Design

Based on the ground conditions encountered, conventional spread foundations would be suitable for the proposed structure. These should be taken down through any Topsoil, Made Ground or soft deposits and constructed within competent natural soils. To avoid seasonal ground movements associated with the shrinkable clay soils a minimum foundation depth of 1.00m should be adopted, although it is acknowledged that depths would need to be greater locally where deeper Made Ground or soft soils are present particularly around TP15, TP16 and TP17, or where foundations need to be deepened in the vicinity of trees.

Assessment of the hand shear vane measurements (Figure 6.2) indicates a characteristic undrained shear strength of 50kPa in the upper parts of the weathered natural soils. Only slight improvement with depth is noted, with minimal increase observed within the upper 2m. This value would provide a bearing capacity within the firm natural soils at 1.0m depth of 110kPa for strip foundations. Where made ground is present foundations will require to be deepened through the fill to found nominally 0.3m into the underlying firm to stiff cohesive soils.

The clay soils are shrinkable (high volume change potential) and therefore foundations will need to be deepened and heave precautions adopted within the influence zone of existing, proposed or felled trees, in accordance with NHBC Chapter 4.2.

A tree survey to determine species and height will be required to calculate foundation depths in shrinkable soils.

Where the design bearing capacity is imposed on clay strata then 15mm to 25mm of settlement may occur. There will be negligible settlements of foundations placed on bedrock. Consequently, where foundations span from clay strata to bedrock reinforcement will be required to resist differential settlements.

All foundations should be inspected by a suitably qualified and competent person to ensure that foundations are placed in competent material capable of supporting the intended loads and below any desiccated clay soils.

7.4 Floor Slabs

The underlying soils near surface soils were either shrinkable (high volume change potential) or consisted of Made Ground, therefore a suspended floor slab is recommended with an appropriate underfloor void.

Basic radon protection measures are required.

7.5 Earthworks / Cut and Fill

The site's current topography is such that a degree of re-profiling will be undertaken. The cut will predominantly be within the weathered Westbury Formation and Cotham Member and Langport Member and Wilmcote Limestone Member, which typically consist of a firm sandy/gravelly clay. It is likely these materials would meet Class 2C for earthworks materials and would be suitable for use as General Fill.

It should be noted that cohesive fills and slopes are sensitive to moisture changes, and it is important that cohesive fills are sealed using a smooth roller or covered prior to inclement weather conditions. It

may also be necessary to remove the surface of previously compacted fills that have been exposed to inclement weather conditions prior to continuing with earthworks operations. Additional testing will be required to be carried out for the classification of the near surface materials to be re-used as engineered fill on Site. Any proposed earthworks should be carried out in accordance with an engineering specification.

7.6 Concrete Protection

Buried concrete classification is based on guidelines provided in BRE Special Digest 1 (BRE, 2005).

Chemical Analysis was undertaken on seven soil samples recovered from the natural clay strata. These soils are associated with being potentially pyritic; therefore an assessment for pyritic material was made in accordance with BRE Special Digest 1 (2005).

Three of the seven samples analysed were potentially pyritic (oxidisable sulphides of 0.79 to 1.42%). Total potential sulphate ranged from 0.04 to 1.94%. This corresponds to a design sulphate class of DS4, however, the maximum water-soluble sulphates correspond to a design class of DS2. Therefore, the total potential sulphate design class can be relaxed one class to DS3.

For low rise residential on mass concrete foundations, this corresponds to a concrete type of FND3. It is recommended that the concrete supplier confirm the necessary concrete type based on its intended use and the chemical test results in Appendix F. Specific mixes for reinforced concrete will be required.

7.7 Pavement Design

Equilibrium CBR values for various materials are given in Interim Advice Note 73/06 "Design Guidance for Road Pavement Foundations (Draft HD25)" produced by the Highways Agency. Given the variable nature of the cohesive soils they may be considered to behave as silty clays, with an equilibrium CBR of 3%. It is noted that the TRL DCP values are in excess of this, potentially reflecting desiccated near surface soils. The equilibrium CBR represent the potential long term performance of the soil and as such should be used for initial design.

7.8 Excavations

Conventional mechanical backhoe excavators should prove suitable for excavation within the weathered natural soils.

When dry the cohesive soils should remain stable in the short term to allow placement of concrete and services. However, during wet weather instability may occur and temporary support may be required. Entry into shallow excavations by personnel should be minimised, and excavation stability should be assessed by suitably qualified and experienced staff and shoring used when required. Entry into deeper excavations should not be permitted unless full support is provided.

No groundwater inflow into the trial excavations was encountered during the investigation undertaken in March 2021. It should be noted however that seepage was observed during the short duration for which the pits remained open.

The low permeability of the natural clay strata is likely to result in very low inflow rates and it is likely that groundwater control can be achieved by sump pumping.

7.9 Soakaway Drainage

Infiltration testing was undertaken in accordance with BRE 365 (2016) in four locations (TP01, TP03, TP04 and TP05). The stratum tested was the weathered horizons of the Westbury Formation and Cotham Member. The BRE test procedure is to fill the pit 3 times and monitor the infiltration over a 24 hour period. However, upon filing the pits no significant infiltration was observed during the initial filling. The ground was therefore considered to be unsuitable for infiltration and repeat testing was not undertaken.

8 Contamination Assessment

8.1 Tier 1 Generic Quantitative Risk Assessment - Soil Risks to Humans

8.1.1 General

The Phase 1 development area is to accommodate 180 residential units as well as land for a potential new community shop; therefore the analytical data has initially been compared against the relevant available guidelines residential with plant uptake end-use to identify chemicals of potential concern.

The results have been used for subsequent comparison with:

- Cl:AIRE/EIC/AGS Soil Generic Assessment Criteria for Human Health Risk assessment, January 2010 and
- The LQM/CIEH S4ULs for Human Health Risk Assessment. Ref: S4UL3269, released January 2015, Land Quality Press, Nottingham and
- EA Science Report SC050021.

8.1.2 Metals

The exceeding results of the chemical analysis for heavy metal concentrations within the soil samples are summarised in Table 8.1:

Table 8.1 Values for Metals in Soils

Determinant	GAC	Concentration Range		UCL	No. samples tested	No. samples exceed GAC
		Min	Max			
Arsenic	37	12	47	33	8	1

One sample taken from TP21 at 0.10m depth exceeded the GAC for Arsenic. However, the 95% UCL provides a mean value 34mg/kg which falls below the current GAC value. Arsenic concentrations are not considered a constraint to the development.

8.1.3 Organics – Soil Organic Matter

SOM tests were undertaken on three samples. A conservative figure of 1% SOM has been adopted when selecting the Generic Assessment Criteria (GAC) screening values for organics in the following sections.

8.1.4 Organics – TPH

None of the results exceeded the GAC values for residential with plant uptake end-use.

8.1.5 Organics – PAHs

None of the results exceed the GAC values for residential with plant uptake end-use.

8.1.6 Pesticides and Herbicides

A sample was screened for the presence of common pesticides and herbicides. No results above laboratory detection limit were reported, indicating an absence of significant residues associated with former agricultural use.

8.2 Soil Risks to Plants (Phytotoxicity)

Copper, nickel and zinc can inhibit plant growth. The GAC for this pollutant linkage (see Table 8.2) have been taken from Department of the Environment Publication, Code of Practice for Agricultural Use of Sewage Sludge, 1996.

Table 8.2 GAC for Phytotoxic Risks

Compound	Max value recorded	Generic Assessment Criteria (mg/kg)			
	mg/kg	pH 5.0 - <5.5	pH 5.5 - <6.0	pH 6.0 - <7.0	pH >7.0
Copper	42	80	100	135	200
Nickel	60	50	60	75	110
Zinc	2500	200	200	200	300

The pH results varied from 7.7 to 8.2. Concentrations of zinc were found to exceed the screening values in seven out of eight samples tested.

8.3 Soil Risks to Water Supply Pipes

To assess possible risks to proposed water supply pipes, the laboratory test results have been subject, to initial assessment against the GAC presented in UKWIR. Full testing has not been undertaken to determine the suitability of metallic pipe materials.

It is assumed that water pipes will be placed no deeper than 1m below existing ground level and results that relate to strata below 1m are not considered in the following table. Assessment of the results versus the GAC is summarised in Table 8.3 as follows:

Table 8.3 GAC for Water Supply Pipes

Parameter	GAC (mg/kg)		Results exceeding the GAC (mg/kg)	
	PE pipes	PVC pipes	PE pipes	PVC pipes
BTEX (<C11)	0.1	0.03	None	None
Mineral Oil C11-C20	10	Suitable	None	None
Mineral Oil C21-C40	500	Suitable	None	None

Other parameters within UKWIR have not been assessed since they are not potential contaminants of concern for this site. The investigation and assessment has indicated no elevated concentrations of contaminants with the potential to attack plastics and as such standard pipework may be suitable for the site. It is recommended that this assessment be given to the relevant water supply company at an early stage to confirm its requirements, which may not necessarily be the same as those recommended by UKWIR.

8.4 Tier 1 Generic Quantitative Risk Assessment – Risks to Water Resources

No sensory evidence of significant soil contamination was noted during the investigation. The site history indicated no previous industrial land use, with the ground investigations recording typically natural soils. As such, the soils and associated geochemistry is anticipated to be in keeping with local geology. The results of the chemical analysis confirm this visual assessment and consequently the ground conditions present at the site are unlikely to pose a significant risk to controlled waters.

9 Ground Gas Assessment

9.1 Radon

The Groundsure report states that the site is in an area where the estimated probability of homes being above the action level of 200Bqm^{-3} is between 5 and 10%. Therefore, basic radon protective measures are required in the construction of new buildings or extensions.

9.2 Landfill Gas

No current or historical landfills are known to exist within 250m of the site. No organic soils, evidence of buried biodegradable materials or other potential sources of ground gas were identified.

Consequently, the risks to end users from permeant ground gases at the site is considered to be very low and no further assessment is considered necessary. No remedial measures, other than those to address Radon, are considered necessary.

10 Conceptual Model and Risk Assessment

The site characterisation attempts to identify potential sources of contamination, both historic and existing, and both on and off site. A conceptual model is formed, that identifies sources likely to cause harm, due to pathways existing by which contaminants can reach critical receptors. The conceptual model is therefore based on a number of identified source-pathway-receptor scenarios. For land to potentially pose risks, or be at risk, significant pollutant linkages will need to be identified which will include each source/pathway/receptor component of the conceptual model. The absence or removal of a source, or interception of a pathway, will 'break' the pollutant linkage.

The conceptual model is characterised by identification of the following:

- On-site sources, which may impact on-site receptors via plausible pathways.
- On-site sources, which may impact off-site receptors via plausible pathways.
- Off-site sources, which may impact on-site receptors via plausible pathways.

In the event of a change of land use, the planning regime and the National Planning Policy Framework (NPPF) require assessment of the new site development layout within the context of the sources of risk and the potential introduction of new exposure pathways. The assessment is also used to determine if the site contains such significant risks that it would class as "contaminated land" under the definition provided by the Part 2A of the Environment Act 1990 as defined in the Environment Protection Act 1995, i.e. significant possibility of significant harm (SPOSH). Once developed, land should not be capable of being classed as "contaminated land" under Part 2A.

The method used for risk evaluation is qualitative based on interpretation of the available Geoenvironmental data in order to provide an overall impression of the potential risks present at the site. This is described in terms of two variables as follows:

- "Probability" – being the likelihood that a hazard is present on site or in the surroundings.
- "Consequence" – being the potential outcome of the hazard.

The combination of these is used to define the risk. Clearly if a hazard is not present there can be no consequence. Similarly hazards that are potentially present will have different degrees of potential consequence. The combination of the presence of a hazard, and the potential severity of outcome of such a hazard within any event, can be used to manage the approach to management of the risk.

The probability (likelihood) of an event can be classified on a four point system using the following terms and definitions based on CIRIA C552:

- Highly likely: The event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;
- Likely: It is probable that an event will occur, or circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;
- Low likelihood: Circumstances are possible under which an event could occur, but it is not certain even in the long term that an event would occur and it is less likely in the short term;
- Unlikely: Circumstances are such that it is improbably the event would occur even in the long term.

A fifth category has been added to the CIRIA guidance, representing conditions where no contaminant, or linkage is present, thereby negating any risk.

The consequence (severity) can be classified using a similar system, also based on CIRIA C552. The terms and definitions relating to consequence are:

- **Severe**: Short term (acute) risk to human health likely to result in 'significant harm'. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. Short term risk to an ecosystem or organism forming part of that ecosystem;
- **Medium**: Chronic damage to human health ('significant harm'), pollution of sensitive water resources, significant change in an ecosystem or organism forming part of that ecosystem;
- **Mild**: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings, structures or the environment; and
- **Minor**: Harm, not necessarily significant, but that could result in financial loss or expenditure to resolve. Non-permanent human health effects easily prevented by use of personal protective clothing. Easily repairable damage to buildings, structures and services.

The term 'significant harm' is as defined in Defra Circular on "Contaminated Land', EPA 1990 Part 2a", 01/2006, September 2006.

Once the probability of an event occurring and its consequence have been classified, a risk category can be assigned as Table 10.1.

Table 10.1 Risk Classification System (after CIRIA 552)

Risk probability x consequence		**Consequence**			
		Severe	**Medium**	**Mild**	**Minor**
Probability	**High Likelihood**	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

Table 10.2 provides a Preliminary Conceptual Model showing the hazard (source), pathway and receptor, then probability and consequence and corresponding degree of risk.

Table 10.2 Source – Pathway – Receptor Model

Source(s)	Possible Pathway(s)	Receptor(s)	Probability	Consequence	Risk Level
Unrecorded Made Ground on-site containing hazardous materials derived from former land use, fly tipping or backfilled ponds.	Ingestion, inhalation or direct dermal contact	End users Site preparation workers	Low likelihood	Medium	Low
Naturally occurring contaminants within shallow weathered soils e.g lead or arsenic	Ingestion, inhalation or direct dermal contact	End users Site preparation workers	Low likelihood	Medium	Low
Elevated zinc within natural soils	Direct contact	Plant life	likely	Mild	Low: Current site is in agricultural use with no indication of harm to plant life observed.
Radon	Inhalation of outdoor air/migration into structures	End users	Low likelihood	Severe	Moderate

11 Outline Strategy for Risk Reduction & Remediation

Measures to overcome unacceptable risks identified in the previous section are as follows (risk references that follow refer to those in last column of tables).

11.1 Soil Risks to Humans

No significant soil risks to humans was encountered on site, therefore no remedial measures are considered necessary.

11.2 Soil Risks to Plants

Phytotoxic risk to plants was encountered in seven samples relating to high levels of zinc. The current and historic land use is not considered the source and is likely thought to be naturally occurring in the host geology. Photos of the site shown in Appendix B show the local fauna is unaffected by the elevated levels of zinc in the natural soils.

A landscape architect should be consulted to determine suitable plants for the encountered soil conditions.

11.3 Radon Risk

Basic radon protection measures are required for new buildings or extensions in the Phase 1 area.

11.4 Imported Soils Risks

All imported fill, topsoil and sub-soils shall be tested for a general suite of contaminants. If imported fill comprises demolition crush, then it shall also be screened for asbestos. The results shall be assessed for any exceedances of guidelines.

11.5 General Risks

The site investigation samples a very small portion of the overall site soils. Given the existence of Made Ground on the site, vigilance should be maintained during site clearance and construction, in case any further areas of suspected contamination are encountered. If areas are found then a suitably qualified person should undertake appropriate sampling, testing and further risk assessment.

12 Material Handling

12.1 Material Reuse

Clean and natural soils may be re-used on site as part of planned engineering works and in accordance with granted panning permissions without any materials management plan (MMP).

The Made Ground soils encountered TP15-TP17 are essentially excavated and replaced natural soils and may fall into the natural category.

Based on the GQRA carried out the soils sampled do not pose a potential risk to human or environmental receptors and would be considered to be clean and suitable for re-use.

It is recommended that confirmation is sought from the Environment Agency that any Made Ground soils are classed as 'Clean and Natural' and their re-use on site would not require an MMP. Alternatively to avoid risks of contravening waste management legislation an MMP can be undertaken.

Should the Made Ground be classed as non-natural then their re-use may be undertaken either under the Environmental Permitting Regulations 2007 (EPR), or under the CL:AIRE Voluntary Code of Practice (CoP) which is now widely accepted as an alternative regime to the EPR.

Under the CL:AIRE Voluntary Code of Practice (CoP) materials excavated on-site are not deemed contaminated if suitable for re-use at specified locations or generally within the site. The CoP regime requires that a 'Qualified Person' as defined under the CoP reviews the development of the Materials Management Plan, including review of Risk Assessments and Remediation Strategy/Design Statement together with documentation relating to Planning and Regulatory issues, and signs a Declaration which is forwarded to the Environment Agency and which confirms compliance with the CoP.

12.2 Waste Assessment

Assessment (including WAC) testing has been undertaken on soils broadly representative of the majority of site soils that might require off-site disposal. The classification was undertake using the online HazWaste screening tool; the site soils were all classified as non-hazardous waste.

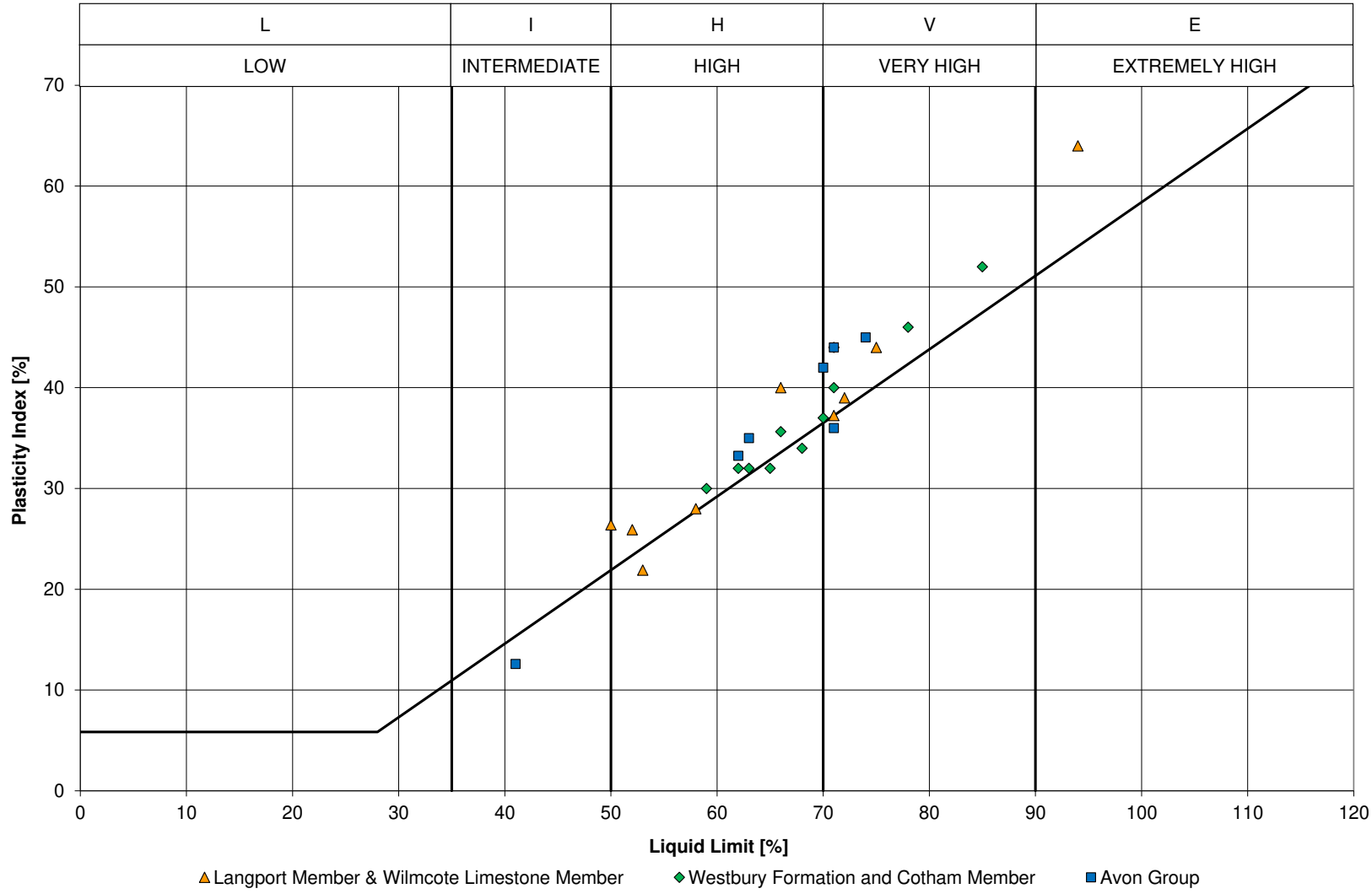
To assess what category of landfill may eb able to recover the soils, should they be disposed of to landfill, Waste Acceptance Testing was undertaken. This indicated the soils to be classed as inert. It is therefore likely that a landfill licenced to receive inert waste will be permitted to accept the soils.

It is recommended that prior to offsite disposal or recovery of any waste soils; the receiving licensed treatment/landfill facility should be sent copies of all relevant chemical analysis, plus exploratory hole logs showing the engineering descriptions of the soils to which the sample depths relate. This will allow the facility to access the waste independently: as receiver of the waste they have a duty to ensure compliance with their site-specific licence conditions and must satisfy themselves that they can legally accept the waste. Demonstrating the provenance of the waste, in this case a greenfield site, will aid that determination.

Figures

Appendices

Figures



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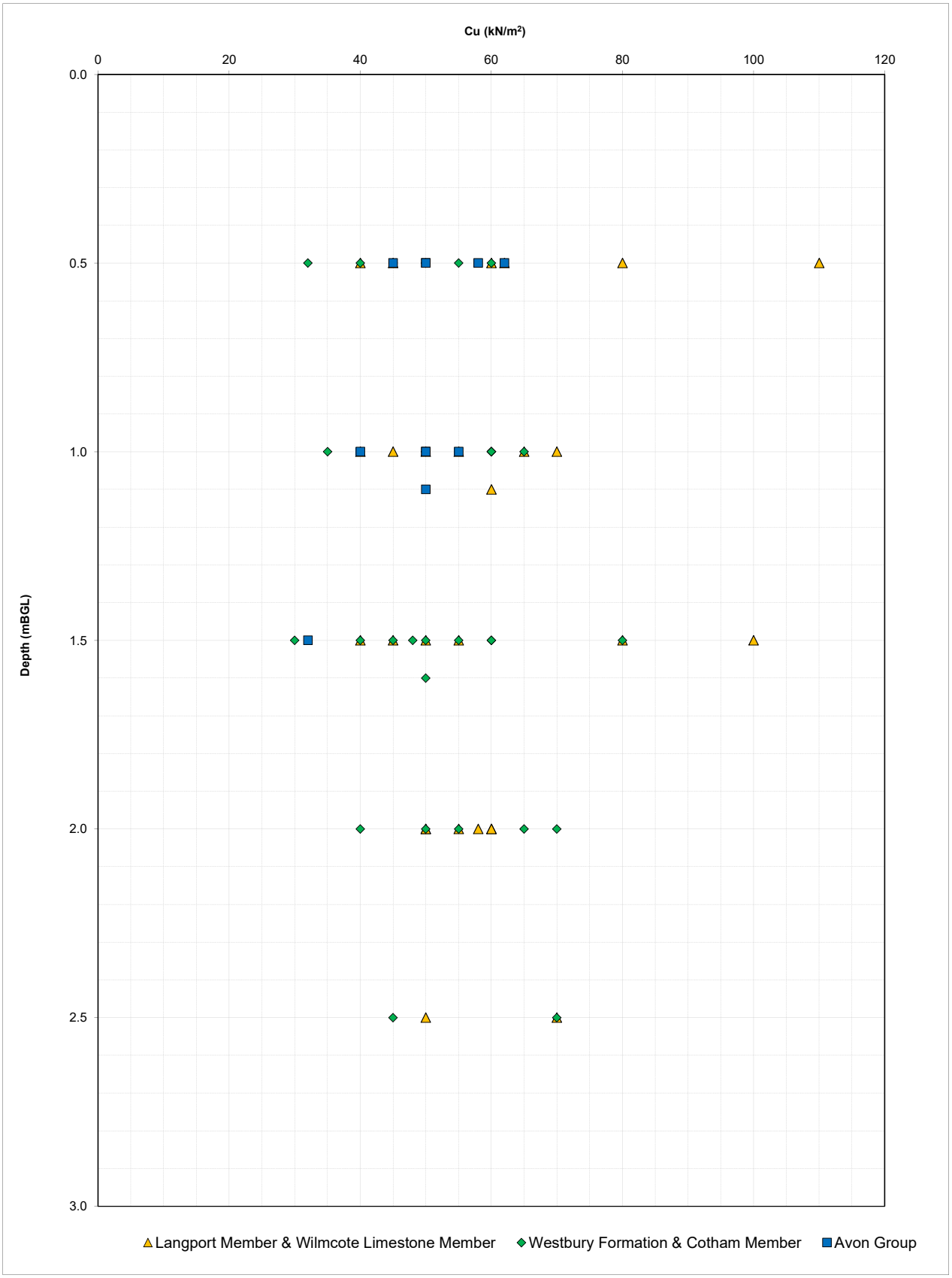
Project: South Farm, Wickwar Phase 2 Ground Investigation		Drawn: JY	Scale: NTS
		Checked: MB	Date: Apr-21
Title: Plasticity Chart		Status: Final Issue	
		Job No.: B05313	Figure No.: 6.1



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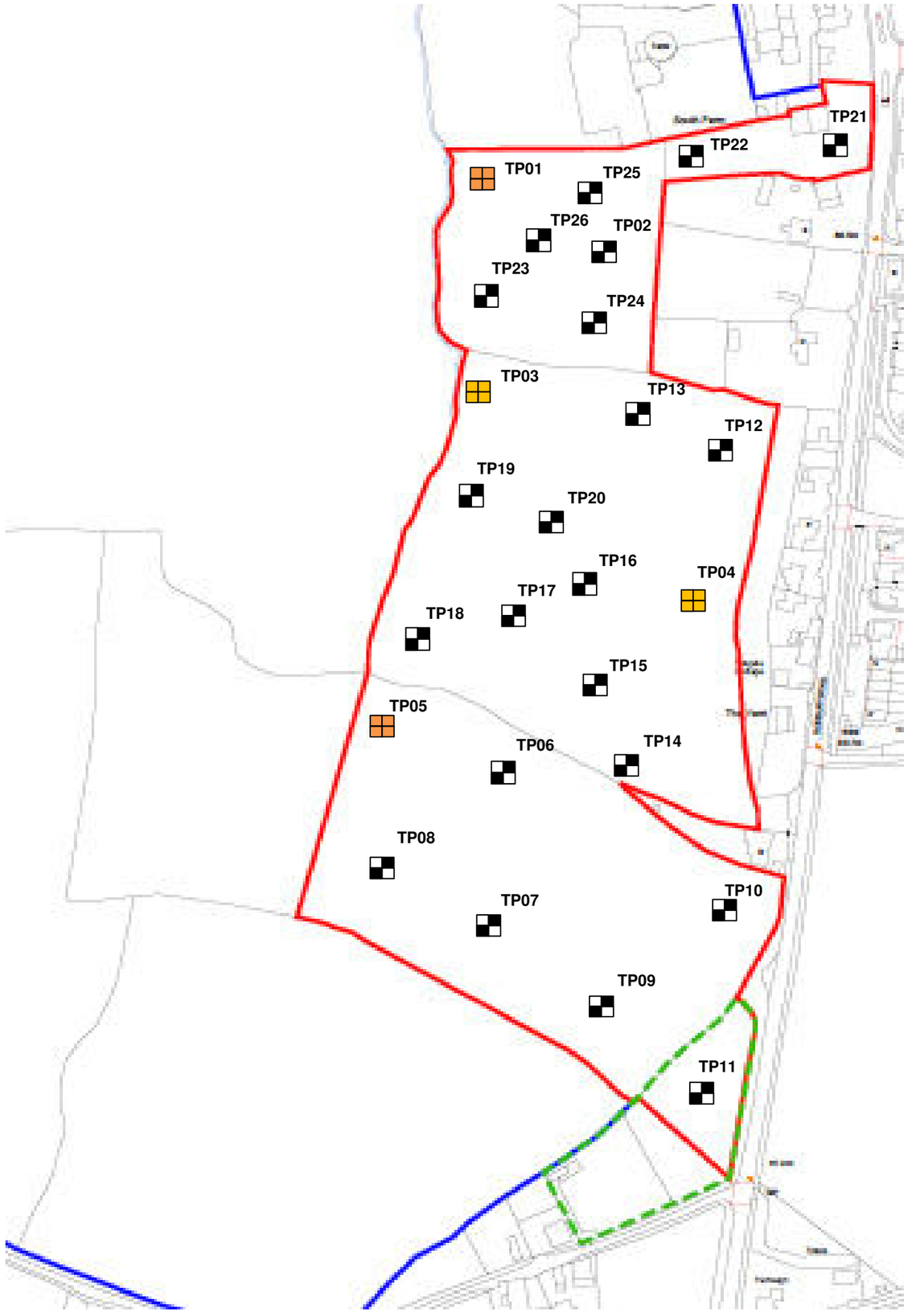
Project: South Farm, Wickwar Phase 2 Ground Investigation		Drawn: JY	Scale: NTS
		Checked: MB	Date: Apr-21
Title: Undrained Shear Strength vs. Depth		Status: Final Issue	
		Job No.: B05313	Figure No.: 6.2

Appendices

Appendix A Exploratory Hole Plan



DO NOT SCALE THIS DRAWING FOR CONSTRUCTION PURPOSES.

CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ENGINEER.

Key

Machine Excavated Trial Pit

Soakaway Test

Hole Locations Approximate. Sizes exaggerated for clarity.

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Bristol Exeter London

Client
Bloor Homes South West

Project
South Farm, Wickwar

Drawing Title
Proposed Trial Pit Location Plan

Purpose of Issue
Information

Clarkebond Project No.	*Status*
B05313	S2

Project	*Originator*	*Volume*	*Level*	*Type*	*Role*	*Dwg No.*
B05313	CLB	XX	XX	DR	GE	0001

Scale	*Date*	*Revision*
N/A	12/04/21	P1

Drawn	*Checked*	*Sheet Size*
NE	MB	A3

Appendix B Exploratory Hole Logs and Photos

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Trial Pit Log

Trial Pit No.: **TP01**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372302 E 187830 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 83.04	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.10	82.94		Dark brown silty CLAY with occasional rootlets observed. (TOPSOIL)		
						Firm medium strength brown to orange slightly sandy CLAY. (WEATHERED AVON GROUP)		
0.50 0.50	D	HVR=58					0.5	
1.00 1.00	D	HVR=62	1.10	81.94		Firm mottled brown to orange/grey sandy gravelly friable CLAY. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED AVON GROUP)	1.0	
							1.5	
			2.10	80.94		End of Pit at 2.10m	2.0	
							2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

1.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP02**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372375 E 187776 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 85.62	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.10	85.52		Dark brown silty CLAY with occasional rootlets observed. (TOPSOIL)		
0.50		HVR=32				Soft low strength becoming firm medium strength light brown to orange slightly silty CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00		HVR=50					1.0	
			1.20	84.42		Firm grey to brown gravelly CLAY. Gravel of fine to coarse fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
			1.40	84.22				
1.50		HVR=48				Firm medium strength dark grey very gravelly CLAY. Gravel of fine to coarse fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	1.5	
							2.0	
							2.5	
			2.70	82.92		End of Pit at 2.70m		
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.70

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP03**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372312 E 187715 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 84.42	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.10	84.32		Dark brown silty CLAY with occasional rootlets observed. (TOPSOIL)		
						Firm medium strength brown to grey slightly silty CLAY. (WEATHERED AVON GROUP)		
1.00		HVR=50						
			1.20	83.22		Firm medium strength grey to blue CLAY. (WEATHERED AVON GROUP)		
1.50		HVR=50						
			2.10	82.32		Soft brown to orange sandy gravelly CLAY. Gravel of fine to coarse angular to sub-rounded limestone and mudstone. (WEATHERED AVON GROUP)		
			2.80	81.62		End of Pit at 2.80m		

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

2.70

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP04**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372420 E 187612 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 88.28	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	88.13		Dark brown silty slightly sandy CLAY. (TOPSOIL)		
						Firm light grey to brown silty CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
			0.70	87.58		Light grey to off white silty gravelly friable CLAY. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
			1.30	86.98		Dark grey clayey GRAVEL of fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
			2.80	85.48		End of Pit at 2.80m		

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP05**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372292 E 187542 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 88.05	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.20	87.85		Brown silty CLAY with occasional rootlets observed. (TOPSOIL)		
0.50		HVR=48				Firm medium strength brown to grey slightly silty CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00		HVR=50					1.0	
			1.40	86.65				
1.50		HVR=55				Firm medium strength brown to orange sandy CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	1.5	
			1.80	86.25		Firm medium strength dark grey very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
2.00		HVR=50					2.0	
							2.5	
							3.0	
			3.10	84.95		End of Pit at 3.10m		
							3.5	
							4.0	
							4.5	
							5.0	

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP06**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372332 E 187513 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 88.92	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
0.05	E		0.10	88.82		Dark brown clayey sandy SILT. (TOPSOIL)		
0.50 0.50	D	HVR=40				Firm medium strength light grey to brown silty CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	0.5	
1.00 1.00	D	HVR=70	0.90	88.02		Firm medium strength grey to cream sandy slightly gravelly CLAY. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.0	
			1.40	87.52		Stiff dark grey very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.5	
							2.0	
			2.50	86.42		End of Pit at 2.50m	2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

3.10

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP07**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372313 E 187421 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 89.48	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.10	89.38		Dark brown silty sandy CLAY. (TOPSOIL)		
0.50		HVR=60				Firm medium strength brown to grey silty CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	0.5	
1.00	D		1.00	88.48			1.0	
1.10		HVR=58				Firm medium strength mottled brown to orange/grey sandy gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.5	
2.00	D	HVR=62					2.0	
2.00	E		2.10	87.38		Stiff dark grey very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	2.5	
2.00			2.70	86.78		End of Pit at 2.70m	3.0	
							3.5	
							4.0	
							4.5	
							5.0	

3.00

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP08**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372253 E 187460 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 88.38	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
0.05	E		0.10	88.28		Dark brown silty sandy CLAY. (TOPSOIL)		
						Soft low strength brown to grey silty CLAY. (WEATHERED AVON GROUP)		
0.50	D	HVR=32					0.5	
0.50								
1.00	D	HVR=50	1.00	87.38			1.0	
1.00	E					Firm medium strength brown to orange sandy CLAY. (WEATHERED AVON GROUP)		
1.00								
			1.40	86.98		Moderately strong off white to grey LIMESTONE. (AVON GROUP)	1.5	
			1.45	86.93		End of Pit at 1.45m		
							2.0	
							2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.70

0.60

General Remarks:
Slow seepage at the base of pit. Refusal on bedrock.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP09**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372380 E 187380 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 90.48	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.10	90.38		Dark brown silty sandy CLAY. (TOPSOIL)		
0.50		HVR=55	0.60	89.88		Firm medium strength light brown to light grey CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	0.5	
1.00 1.00	D	HVR=80				Stiff high strength grey to off white very silty gravelly friable CLAY. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.0	
1.50 1.50	D	HVR=80					1.5	
2.00	E		2.00	88.48		Stiff dark grey very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	2.0	
2.50	D						2.5	
			2.90	87.58		End of Pit at 2.90m	3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

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Trial Pit Log

Trial Pit No.: **TP10**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372430 E 187443 N	Start: 01/03/2021
Project Number:	B05313	Ground Level (m OD): 89.78	End: 01/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	89.63		Dark brown silty sandy CLAY. (TOPSOIL)		
0.50 0.50	D	HVR=45				Firm medium strength light brown to orange silty CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	0.5	
			0.70	89.08				
1.00		HVR=50				Firm medium strength light grey to orange sandy slightly gravelly CLAY. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.0	
1.50 1.50	D	HVR=60					1.5	
2.00		HVR=45					2.0	
			2.30	87.48				
2.50	D		2.50	87.28		Stiff dark grey very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	2.5	
						End of Pit at 2.50m	3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.60

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP11**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372414 E 187341 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 90.18	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	90.03		Dark brown sandy slightly clayey SILT with occasional rootlets observed. (TOPSOIL)		
0.50 0.50	D	HVR=40				Firm medium strength brown to orange silty CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	0.5	
			0.80	89.38				
1.00 1.00	D	HVR=40				Firm medium strength light brown to grey slightly sandy CLAY with occasional brown to orange sandy pockets. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.0	
1.50 1.50	D	HVR=50					1.5	
			1.80	88.38		Firm medium strength becoming stiff high strength grey slightly sandy CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)		
2.00 2.00 2.00	D E	HVR=50					2.0	
2.50 2.50	D	HVR=110	2.50	87.68		End of Pit at 2.50m	2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

3.10

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP12**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372448 E 187684 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 87.95	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	87.80		Brown sandy slightly sandy CLAY with occasional rootlets observed. (TOPSOIL)		
0.50		HVR=50				Firm medium strength light brown to grey silty CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00 1.00	D	HVR=60	1.00	86.95			1.0	
1.50		HVR=30				Firm medium strength becoming soft low strength mottled brown/grey to orange sandy CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	1.5	
2.00		HVR=70	2.00	85.95			2.0	
2.50 2.50	D	HVR=70				Firm medium strength dark grey very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	2.5	
			2.80	85.15		End of Pit at 2.80m	3.0	
							3.5	
							4.0	
							4.5	
							5.0	

3.00

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP13**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372392 E 187699 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 86.79	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	86.64		Brown sandy slightly sandy CLAY with occasional rootlets observed. (TOPSOIL)		
						Firm medium strength grey to brown slightly silty CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
0.50		HVR=55					0.5	
1.00	D	HVR=60					1.0	
1.00	E							
1.00								
1.50		HVR=40	1.50	85.29			1.5	
						Firm medium strength mottled grey/brown to orange sandy gravelly CLAY. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
			1.80	84.99				
2.00	D	HVR=50				Firm medium strength blue to grey sandy CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
2.00								
			2.50	84.29		End of Pit at 2.50m	2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.90

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP14**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372383 E 187512 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 88.50	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	88.35		Brown sandy slightly sandy CLAY with occasional rootlets observed. (TOPSOIL)		
0.50 0.50	D	HVR=50				Firm medium strength brown to grey slightly sandy CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	0.5	
			0.90	87.60				
1.00		HVR=45				Firm medium strength mottled light brown/grey to orange gravelly sandy CLAY with occasional brown to orange sandy pockets. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.0	
1.50 1.50	D	HVR=60					1.5	
			1.60	86.90		Stiff high strength light grey gravelly friable CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)		
2.00		HVR=100					2.0	
			2.40	86.10				
2.50	D		2.50	86.00		Stiff dark grey gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	2.5	
						End of Pit at 2.50m	3.0	
							3.5	
							4.0	
							4.5	
							5.0	

3.10

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP15**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372368 E 187548 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 87.90	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	87.75		Brown sandy slightly sandy clay with occasional rootlets observed. (TOPSOIL - MADE GROUND)		
			0.50	87.40		Reworked brown to grey slightly sandy clay. (MADE GROUND)		
0.60	E					Reworked brown to orange sandy gravelly clay. Gravel of limestone. (MADE GROUND)		
			1.30	86.60				
1.50 1.50	D	HVR=55				Firm medium strength light grey to brown silty CLAY. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)		
2.00 2.00	D	HVR=70						
			2.10	85.80		Firm medium strength dark grey gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)		
2.50		HVR=65						
			2.70	85.20		End of Pit at 2.70m		

0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0

3.10

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP16**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372370 E 187611 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 86.90	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.20	86.70		Reworked dark brown sandy gravelly silt. Gravel of limestone. (MADE GROUND)		
0.50	E					Dark brown silty slightly gravelly clay. Gravel of limestone and brick fragments. (MADE GROUND)	0.5	
			1.10	85.80			1.0	
1.50 1.50	D	HVR=60				Firm medium strength dark grey to blue gravelly friable CLAY with medium cobble content. Gravel of fine to coarse sub-angular to sub-rounded limestone. Cobbles of limestone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	1.5	
2.00		HVR=50					2.0	
2.50 2.50	D	HVR=45					2.5	
			2.80	84.10		End of Pit at 2.80m	3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.90

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP17**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372326 E 187613 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 87.36	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
0.40	E		0.60	86.76		Dark brown gravelly sandy silty. Gravel of limestone and brick fragments. (MADE GROUND)	0.5	
1.00 1.00	D	HVR=55				Firm medium strength grey to blue gravelly CLAY with medium cobble content. Gravel of fine to coarse sub-angular to sub-rounded limestone. Cobbles of limestone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	1.0	
1.50		HVR=50					1.5	
2.00 2.00	D	HVR=60					2.0	
			2.60	84.76			2.5	
			2.90	84.46		Stiff dark grey gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED LANGPORT MEMBER & WILMCOTE LIMESTONE MEMBER)	3.0	
						End of Pit at 2.90m	3.5	
							4.0	
							4.5	
							5.0	

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP18**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372276 E 187579 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 87.23	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.20	87.03		Brown clayey SILT with occasional rootlets observed. (TOPSOIL)		
						Firm medium strength brown to grey sandy CLAY. (WEATHERED AVON GROUP)		
0.50 0.50	D	HVR=40					0.5	
1.00 1.00 1.00	D E	HVR=50					1.0	
			1.25 1.30	85.98 85.93		Moderately strong off white to grey LIMESTONE. (AVON GROUP) End of Pit at 1.30m	1.5	
							2.0	
							2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.60

0.60

General Remarks:
Slow seepage at the base of pit. Refusal on bedrock.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP19**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372312 E 187664 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 85.41	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.20	85.21		Brown clayey SILT with occasional rootlets observed. (TOPSOIL)		
0.50		HVR=50				Firm medium strength brown to grey sandy CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00	D	HVR=50					1.0	
1.00								
			1.40	84.01				
1.50		HVR=60				Firm medium strength dark grey to brown slightly silty CLAY. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	1.5	
2.00	D	HVR=65					2.0	
2.00	E							
2.00								
			2.30	83.11		End of Pit at 2.30m		
							2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP20**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372347 E 187645 N	Start: 02/03/2021
Project Number:	B05313	Ground Level (m OD): 86.61	End: 02/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	86.46		Brown clayey SILT with occasional rootlets observed. (TOPSOIL)		
0.50 0.50	D	HVR=40				Firm medium strength brown to grey gravelly sandy CLAY. Gravel of angular to sub-rounded limestone and mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00 1.00	E	HVR=65					1.0	
1.50 1.50	D	HVR=55					1.5	
2.00		HVR=55					2.0	
			2.20	84.41		Stiff dark grey to blue gravelly CLAY. Gravel of angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
2.50	D						2.5	
			2.80	83.81		End of Pit at 2.80m		
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP21**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372477 E 187834 N	Start: 03/03/2021
Project Number:	B05313	Ground Level (m OD): 85.59	End: 03/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
0.10	E		0.15	85.44		Brown to grey sandy gravelly slightly clayey SILT. Gravel of limestone and brick fragments. (MADE GROUND)		
0.50 0.50	D	HVR=55				Firm medium strength brown to orange sandy CLAY. (WEATHERED AVON GROUP)	0.5	
1.10 1.10	D	HVR=45	1.00	84.59		Firm medium strength dark grey to brown slightly silty CLAY. (WEATHERED AVON GROUP)	1.0	
1.50	E		1.40	84.19		Moderately strong grey to off-white LIMESTONE recovered as a sandy GRAVEL. (WEATHERED AVON GROUP)	1.5	
			1.80	83.79		End of Pit at 1.80m	2.0 2.5 3.0 3.5 4.0 4.5 5.0	

3.00

0.60

General Remarks:
Slow seepage at the base of pit. Refusal on bedrock.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP22**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372413 E 187830 N	Start: 03/03/2021
Project Number:	B05313	Ground Level (m OD): 85.73	End: 03/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.20	85.53		Dark brown sandy slightly clayey SILT with occasional rootlets observed. (TOPSOIL)		
0.50 0.50	D	HVR=50				Firm medium strength brown to orange gravelly CLAY. Gravel of fine to coarse sub-angular to sub-rounded limestone. (WEATHERED AVON GROUP)		
			0.80	84.93				
1.00 1.00	B E					Brown/grey to orange clayey sandy GRAVEL with medium cobble content. Gravel of fine to coarse sub-angular to sub-rounded limestone. Cobbles of limestone. (WEATHERED AVON GROUP)		
			1.30	84.43		End of Pit at 1.30m		

2.50

0.60

Stability: Stable

Shoring: N/A

General Remarks:
Slow seepage at the base of pit. Refusal on bedrock.

Method/Plant Used: JCB 3CX

Logged By: JY

Approved By: MB

Scale: 1:25

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Trial Pit Log

Trial Pit No.: **TP23**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372312 E 187762 N	Start: 03/03/2021
Project Number:	B05313	Ground Level (m OD): 83.94	End: 03/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
0.10	E		0.15	83.79		Dark brown clayey slightly sandy SILT with occasional rootlets. (TOPSOIL)		
0.50		HVR=50				Firm medium strength mottled brown/grey to orange sandy CLAY with occasional brown to orange sandy pockets. (WEATHERED AVON GROUP)	0.5	
1.00	D	HVR=60					1.0	
1.00								
1.50		HVR=45					1.5	
			1.60	82.34		Firm brown to grey gravelly sandy CLAY with medium cobble content. Gravel of fine to coarse sub-angular to sub-rounded limestone. Cobbles of limestone. (WEATHERED AVON GROUP)		
2.00	D						2.0	
							2.5	
			2.70	81.24		End of Pit at 2.70m		
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.50

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP24**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372371 E 187740 N	Start: 03/03/2021
Project Number:	B05313	Ground Level (m OD): 85.89	End: 03/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	85.74		Dark brown clayey slightly sandy SILT with occasional rootlets. (TOPSOIL)		
0.50		HVR=45				Firm medium strength mottled brown/grey to orange sandy CLAY with occasional brown to orange sandy pockets. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00		HVR=60					1.0	
1.50	D	HVR=80					1.5	
1.50								
			1.90	83.99		Firm blue to grey sandy gravelly CLAY with occasional yellow sandy bands. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
2.00	D						2.0	
2.00	E							
			2.40	83.49		Stiff dark grey gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
2.50	D						2.5	
			2.60	83.29		End of Pit at 2.60m		
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP25**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372360 E 187829 N	Start: 03/03/2021
Project Number:	B05313	Ground Level (m OD): 85.21	End: 03/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	85.06		Dark brown clayey slightly sandy SILT with occasional rootlets. (TOPSOIL)		
0.50		HVR=50				Firm medium strength mottled brown/grey to orange sandy CLAY with occasional brown to orange sandy pockets. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00 1.00	D	HVR=40					1.0	
1.50 1.50	D	HVR=45	1.60	83.61		Stiff dark grey to blue very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	1.5	
2.50	D						2.0	
			2.70	82.51		End of Pit at 2.70m	2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.90

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

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Trial Pit Log

Trial Pit No.: **TP26**

Project Name:	South Farm, Wickwar	Co-Ordinates: 372340 E 187792 N	Start: 03/03/2021
Project Number:	B05313	Ground Level (m OD): 84.37	End: 03/03/2021

Samples and In Situ Testing			Depth (m)	Level (m OD)	Legend	Stratum Description	Water Strike	Well
Depth (m)	Type	Results						
			0.15	84.22		Dark brown clayey slightly sandy SILT with occasional rootlets. (TOPSOIL)		
0.50 0.50	D	HVR=60				Firm medium strength blue to grey gravelly CLAY. Gravel of fine to coarse sub-angular to sub-rounded mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)	0.5	
1.00 1.00 1.00	D E	HVR=60					1.0	
			1.50	82.87			1.5	
1.60		HVR=50				Firm medium strength dark grey to blue very gravelly CLAY. Gravel of fine to coarse angular to sub-angular mudstone. (WEATHERED WESTBURY FORMATION & COTHAM MEMBER)		
2.00 2.00	D E						2.0	
			2.60	81.77		End of Pit at 2.60m	2.5	
							3.0	
							3.5	
							4.0	
							4.5	
							5.0	

2.80

0.60

General Remarks:
Slow seepage at the base of pit.

Logged By: JY

Approved By: MB

Scale: 1:25

Stability: Stable

Shoring: N/A

Method/Plant Used: JCB 3CX

Sheet 1 of 1

	
Plate 1 (TP01)	***Plate 2 (TP01 Arisings)***

	
Plate 3 (TP02)	***Plate 4 (TP02 Arisings)***

	
Plate 5 (TP03)	***Plate 6 (TP03 Arisings)***

	
Plate 7 (TP04)	***Plate 8 (TP04 Arisings)***

	
Plate 9 (TP05)	***Plate 10 (TP05 Arisings)***

	
Plate 11 (TP06)	***Plate 12 (TP06 Arisings)***

	
Plate 13 (TP07)	***Plate 14 (TP07 Arisings)***

	
Plate 15 (TP08)	***Plate 16 (TP08 Arisings)***

	
Plate 17 (TP09)	***Plate 18 (TP09 Arisings)***

	
Plate 19 (TP10)	***Plate 20 (TP10 Arisings)***

	
Plate 21 (TP11)	***Plate 22 (TP11 Arisings)***

	
Plate 17 (TP12)	***Plate 18 (TP21)***

	
Plate 17 (TP21 Arsings)	***Plate 18 (TP22)***

	
Plate 17 (TP22 Arisings)	***Plate 18 (TP23)***

	
Plate 17 (TP23 Arisings)	***Plate 18 (TP24)***

	
Plate 17 (TP24 Arisings)	***Plate 18 (TP25)***

	
Plate 17 (TP25 Arisings)	***Plate 18 (TP26)***
	
Plate 17 (TP26 Arisings)	***Plate 18 (First field from Farmyard facing south)***

	
Plate 17 (First field from Farmyard facing south)	***Plate 18 (First field from Farmyard facing south)***
	
Plate 17 (Second field facing east)	***Plate 18 (Second field facing east)***
	
Plate 17 (Second field facing south)	***Plate 18 (Third field facing west)***

	
Plate 17 (Third field facing east)	***Plate 18 (Third field facing west)***
	
Plate 17 (Third field facing north west)	***Plate 18 (Third field facing north)***

Appendix C Infiltration Test Results

IN SITU TESTING - Soakaway Test

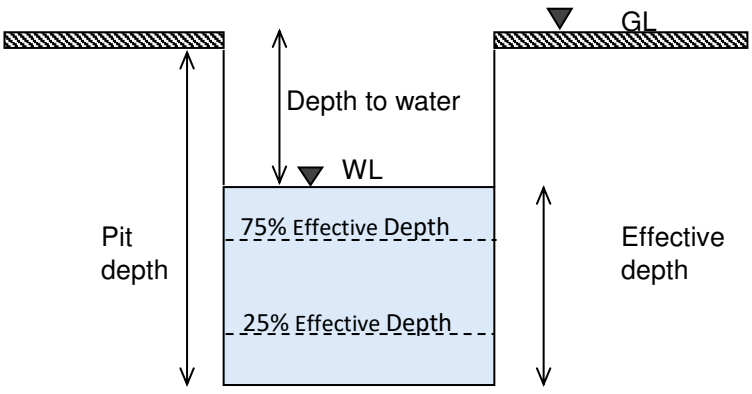
clarkebond

Project: **South Farm, Wickwar**
Project No: **B05313**
Client: **Bloor Homes South West**

Test Location : **TP01**
Test No : **1**
Date : **01/03/21**

ELAPSED TIME (minutes)	DEPTH to water below ground level (m)	HEAD (m)	HEAD (% effective depth)
0	1.20	0.90	100
1	1.20	0.90	100
2	1.20	0.90	100
5	1.20	0.90	100
10	1.20	0.90	100
30	1.20	0.90	100
60	1.20	0.90	100
120	1.20	0.90	100
150	1.20	0.90	100
185	1.20	0.90	100
221	1.20	0.90	100

TRIAL PIT SOAKAWAY



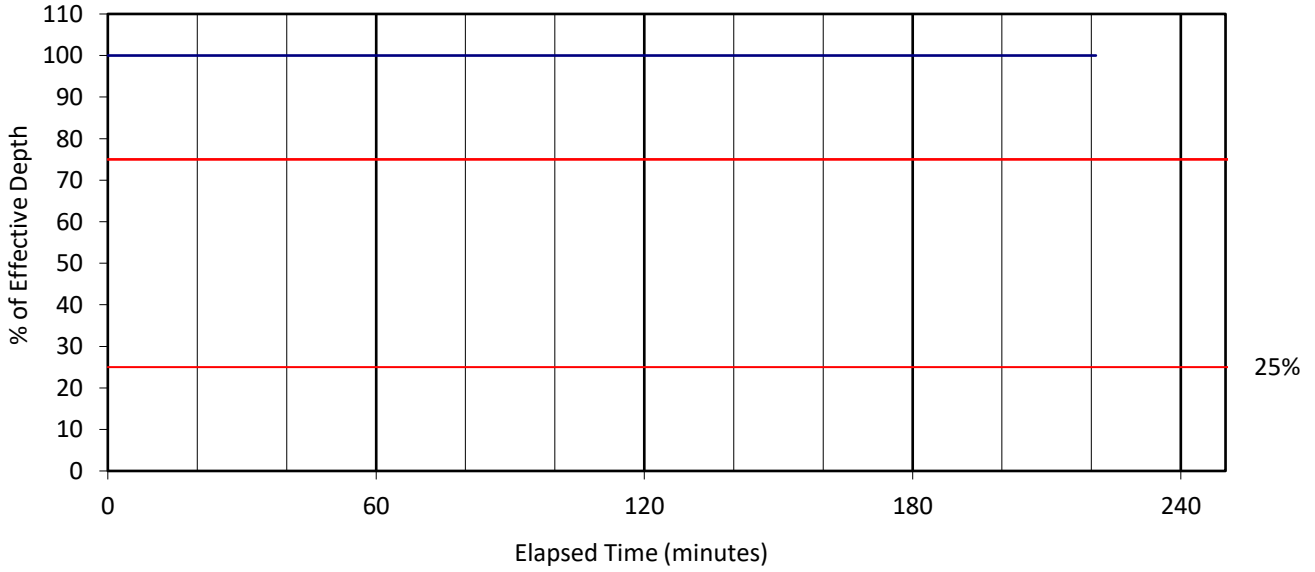
Trial Pit Length	=	1.80 m
Trial Pit Width	=	0.60 m
Trial Pit Depth	=	2.10 m
Effective depth (Head of Water)	=	0.90 m

	% of effective depth 75%	25%	
Depth	1.43	1.88	m bgl
Head	0.68	0.23	m
Time	-	-	minutes

V_{p75-25}	=	0.49	m^3
a_{p50}	=	3.24	m^2
t_{p75-25}	=	-	min

t_{p75}	=	-	minutes
t_{p25}	=	-	minutes

Soil Infiltration rate, *f* **=** **-** **m/sec**
- **mm/hr**



Remarks: Test failed after 221mins at 1.20m depth.

IN SITU TESTING - Soakaway Test

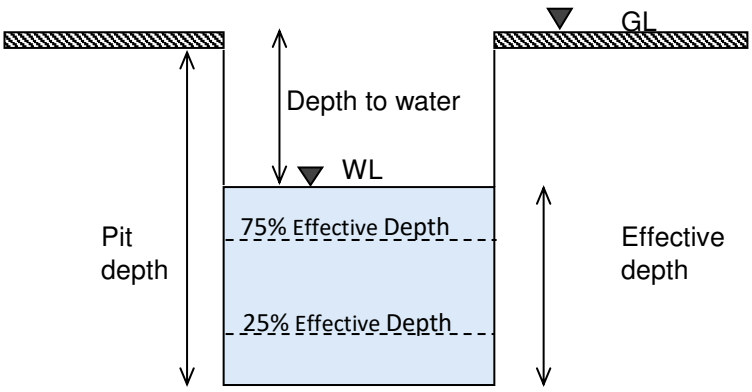
clarkebond

Project: **South Farm, Wickwar**
Project No: **B05313**
Client: **Bloor Homes South West**

Test Location : **TP03**
Test No : **1**
Date : **01/03/21**

ELAPSED TIME (minutes)	DEPTH to water below ground level (m)	HEAD (m)	HEAD (% effective depth)
0	1.50	1.30	100
1	1.50	1.30	100
2	1.50	1.30	100
5	1.50	1.30	100
10	1.50	1.30	100
30	1.50	1.30	100
40	1.50	1.30	100
50	1.50	1.30	100
125	1.50	1.30	100
136	1.50	1.30	100
179	1.50	1.30	100
216	1.50	1.30	100

TRIAL PIT SOAKAWAY



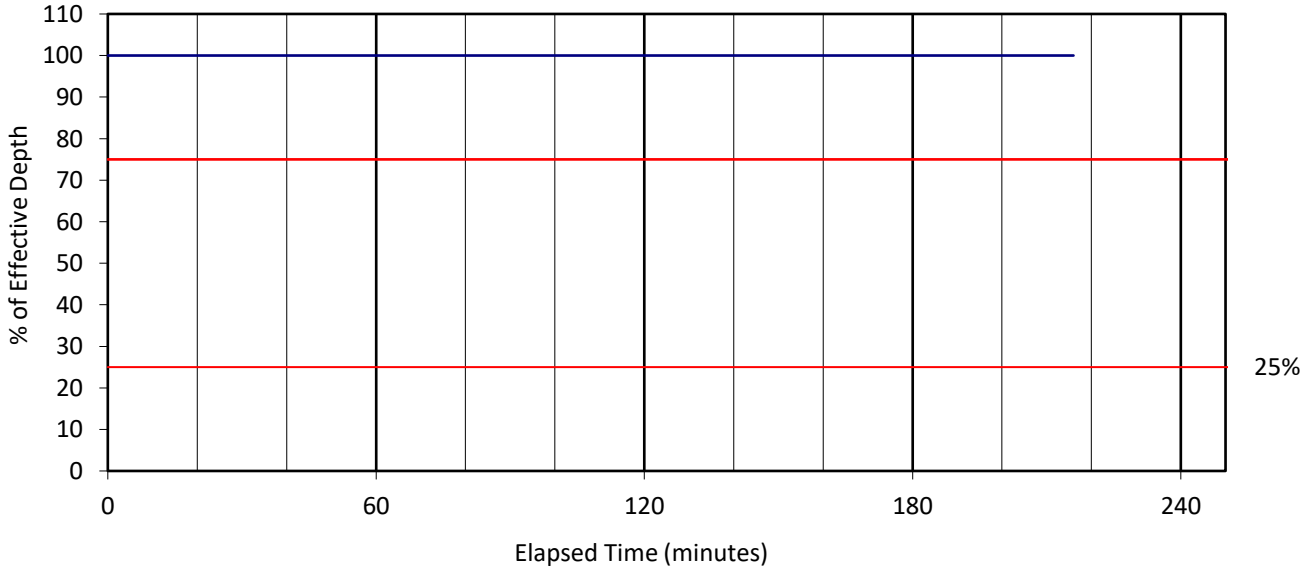
Trial Pit Length	=	2.70 m
Trial Pit Width	=	0.60 m
Trial Pit Depth	=	2.80 m
Effective depth (Head of Water)	=	1.30 m

	% of effective depth 75%	25%	
Depth	1.83	2.48	m bgl
Head	0.98	0.33	m
Time	-	-	minutes

V_{p75-25}	=	1.05	m^3
a_{p50}	=	5.91	m^2
t_{p75-25}	=	-	min

t_{p75}	=	-	minutes
t_{p25}	=	-	minutes

Soil Infiltration rate, *f* **=** **-** **m/sec**
- **mm/hr**



Remarks: Test failed after 216mins at 1.50m depth.

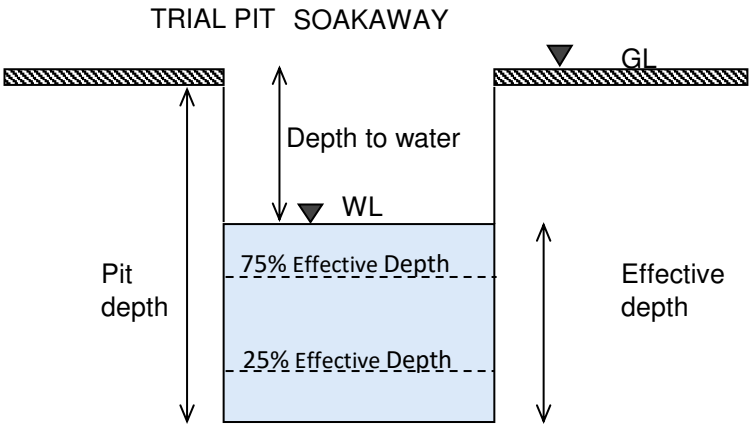
IN SITU TESTING - Soakaway Test

clarkebond

Project: **South Farm, Wickwar**
Project No: **B05313**
Client: **Bloor Homes South West**

Test Location : **TP04**
Test No : **1**
Date : **01/03/21**

ELAPSED TIME (minutes)	DEPTH to water below ground level (m)	HEAD (m)	HEAD (% effective depth)
0	1.40	1.40	100
1	1.40	1.40	100
2	1.40	1.40	100
5	1.40	1.40	100
10	1.40	1.40	100
30	1.39	1.41	101
53	1.39	1.41	101
85	1.39	1.41	101
126	1.39	1.41	101
149	1.39	1.41	101
172	1.39	1.41	101
211	1.39	1.41	101



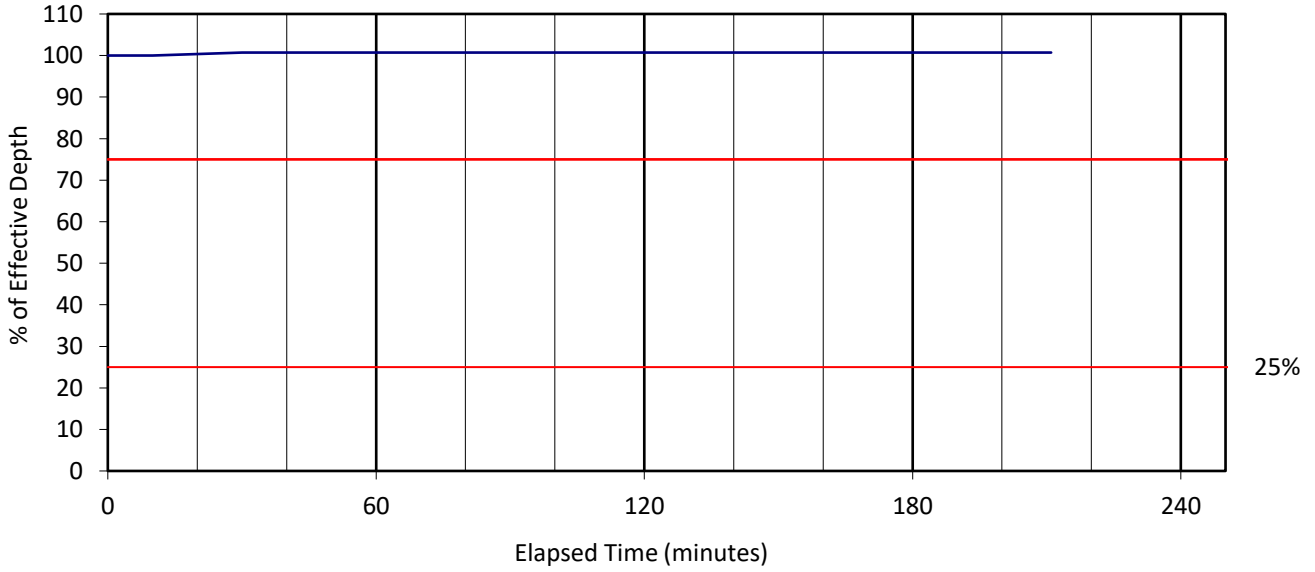
Trial Pit Length	=	2.80 m
Trial Pit Width	=	0.60 m
Trial Pit Depth	=	2.80 m
Effective depth (Head of Water)	=	1.40 m

	% of effective depth 75%	25%	
Depth	1.75	2.45	m bgl
Head	1.05	0.35	m
Time	-	-	minutes

V_{p75-25}	=	1.18	m^3
a_{p50}	=	6.44	m^2
t_{p75-25}	=	-	min

t_{p75}	=	-	minutes
t_{p25}	=	-	minutes

Soil Infiltration rate, *f* = **-** **m/sec**
- **mm/hr**



Remarks: Test failed after 211mins at 1.39m depth.

IN SITU TESTING - Soakaway Test

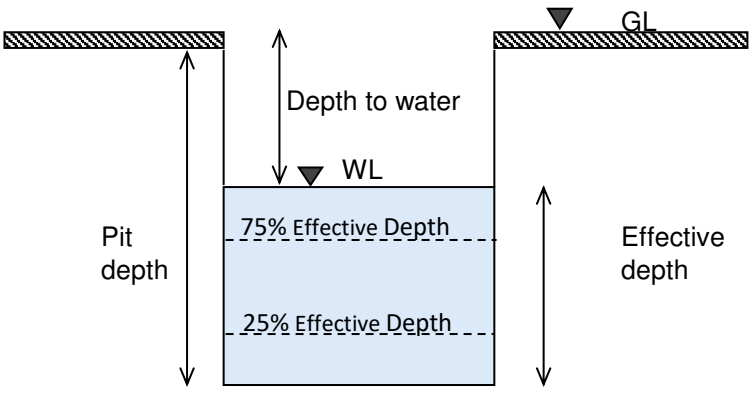
clarkebond

Project: **South Farm, Wickwar**
Project No: **B05313**
Client: **Bloor Homes South West**

Test Location : **TP05**
Test No : **1**
Date : **01/03/21**

ELAPSED TIME (minutes)	DEPTH to water below ground level (m)	HEAD (m)	HEAD (% effective depth)
0	1.70	1.30	100
1	1.70	1.30	100
2	1.70	1.30	100
5	1.70	1.30	100
10	1.70	1.30	100
30	1.70	1.30	100
56	1.70	1.30	100
92	1.70	1.30	100
164	1.70	1.30	100
195	1.70	1.30	100
210	1.70	1.30	100

TRIAL PIT SOAKAWAY



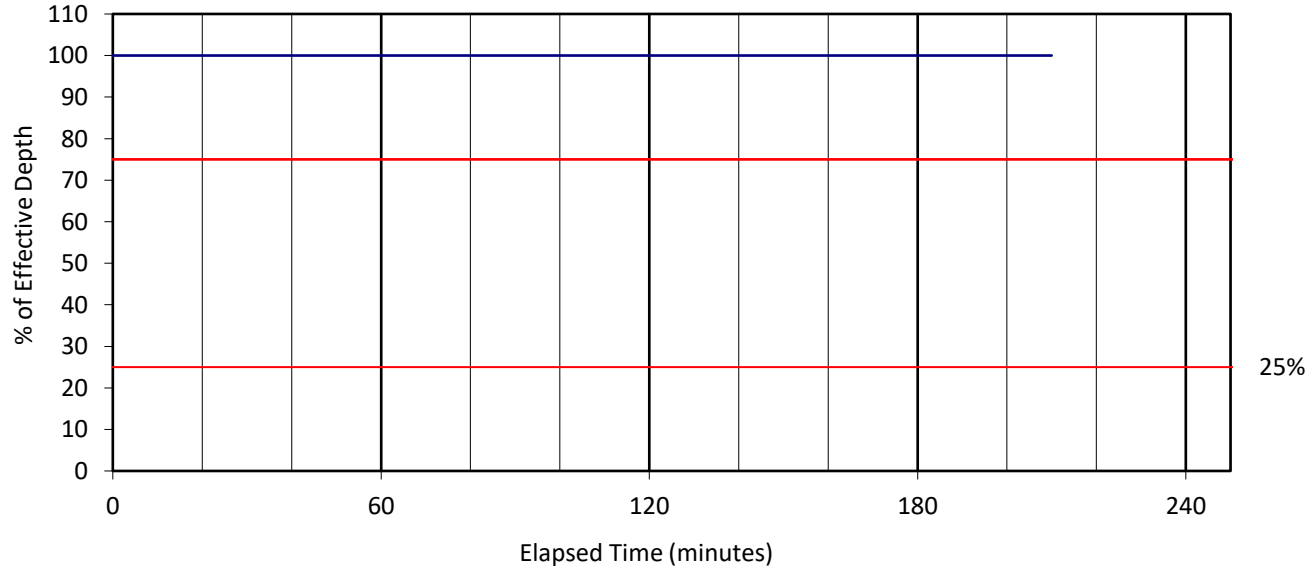
Trial Pit Length	=	2.80 m
Trial Pit Width	=	0.60 m
Trial Pit Depth	=	3.00 m
Effective depth (Head of Water)	=	1.30 m

	% of effective depth 75%	25%	
Depth	2.03	2.68	m bgl
Head	0.98	0.33	m
Time	-	-	minutes

V_{p75-25}	=	1.09	m^3
a_{p50}	=	6.10	m^2
t_{p75-25}	=	-	min

Soil Infiltration rate, *f* **=** **-** **m/sec**
- **mm/hr**

t_{p75}	=	-	minutes
t_{p25}	=	-	minutes

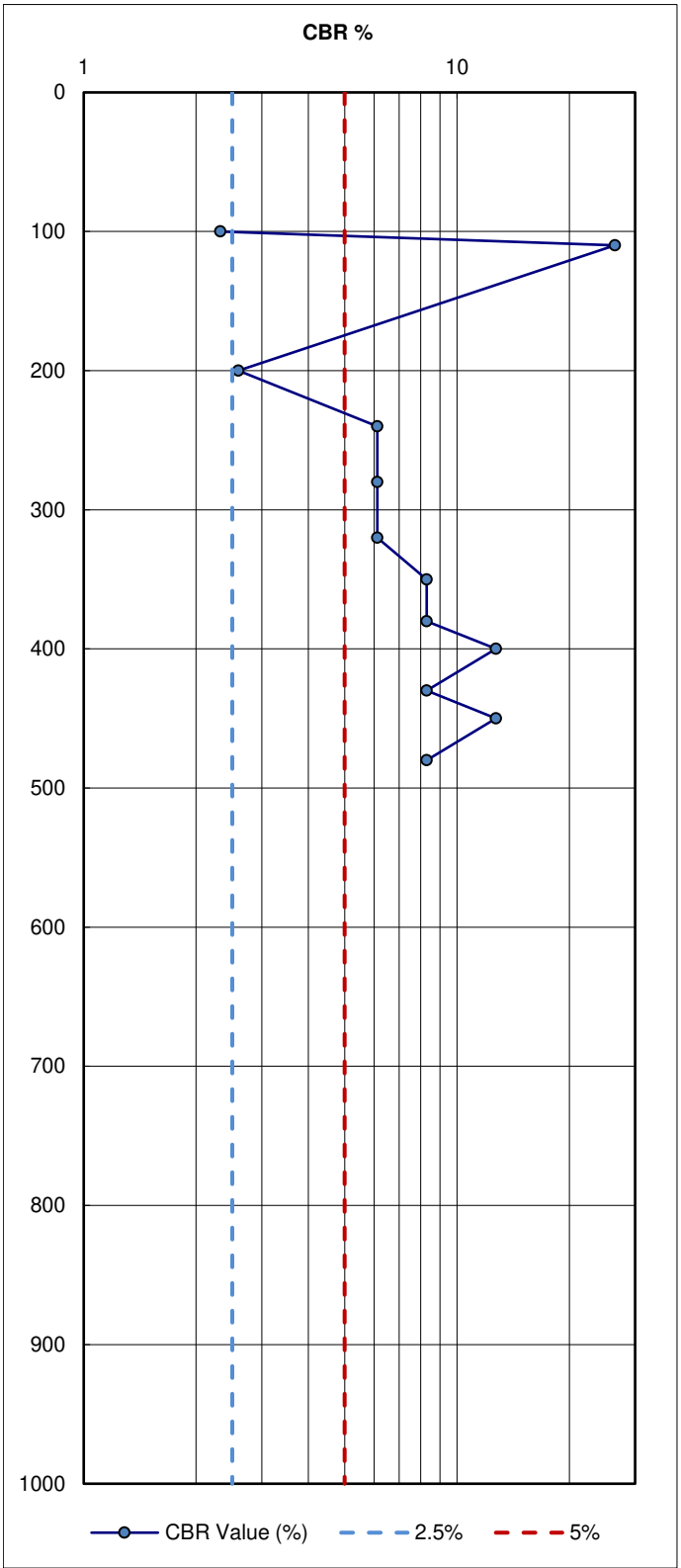


Remarks: Test failed after 210mins at 1.70m depth.

Appendix D TRL DCP Test Results

IN SITU TESTING - DCP TRL

Project :	**South Farm, Wickwar**	Date :	**08 Mar 2021**
Project No :	**B05313**	Operator :	**JY**
Client :	**Bloor Homes South**	Test Location :	**DCP1**

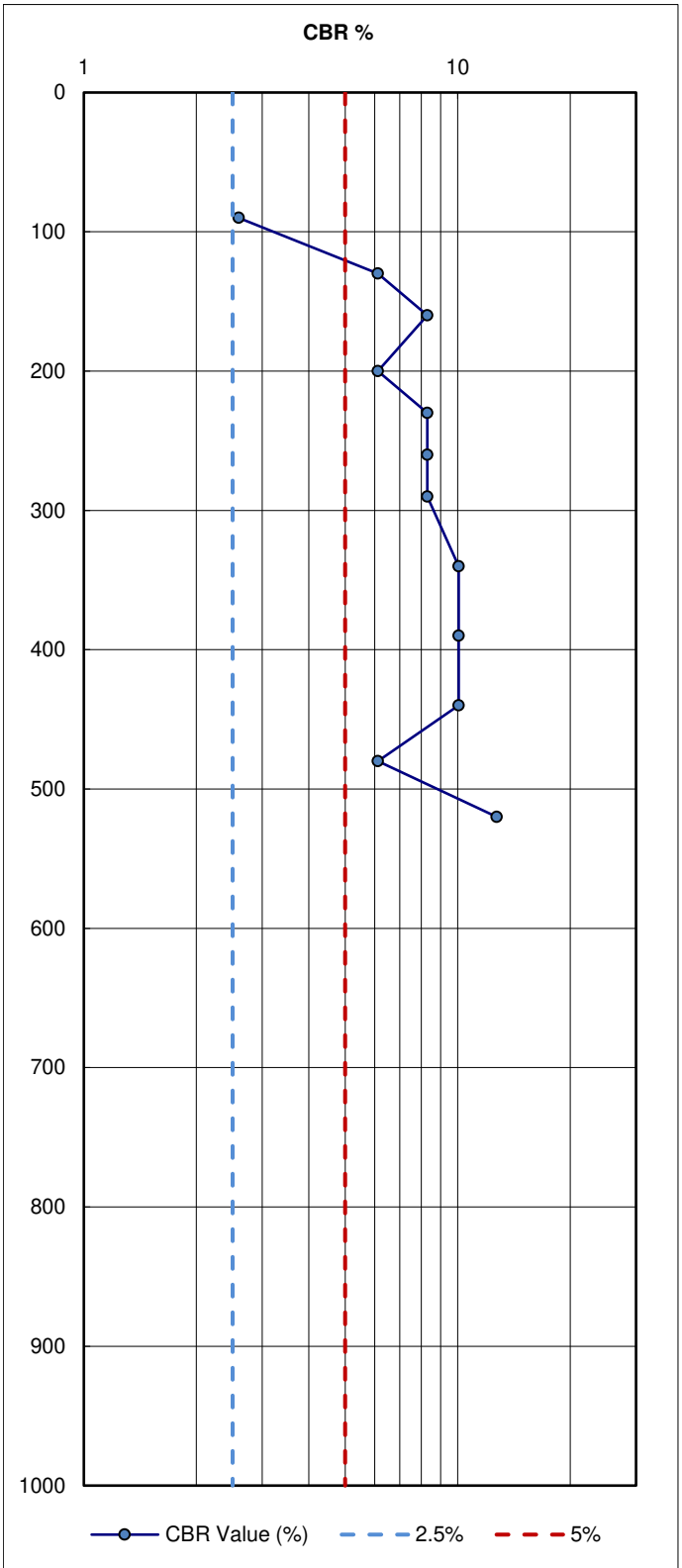


Blows No.	Blows Total	Reading (mm)	Corr. depth	mm / blow	CBR % (TRRL)
0	0	130	0	**-**	-
1	1	230	100	**100**	2
1	2	240	110	**10**	26
1	3	330	200	**90**	3
1	4	370	240	**40**	6
1	5	410	280	**40**	6
1	6	450	320	**40**	6
1	7	480	350	**30**	8
1	8	510	380	**30**	8
1	9	530	400	**20**	13
1	10	560	430	**30**	8
1	11	580	450	**20**	13
1	12	610	480	**30**	8
1	13	630	500	**20**	13
2	15	650	520	**10**	26
2	17	700	570	**25**	10
2	19	720	590	**10**	26
2	21	760	630	**20**	13
2	23	800	670	**20**	13
2	25	830	700	**15**	17
2	27	860	730	**15**	17
2	29	900	770	**20**	13
2	31	920	790	**10**	26
2	33	960	830	**20**	13
2	35	970	840	**5**	55

Remarks : Log10(CBR) = 2.48 – 1.057 x Log10(mm/blow) as defined in Interim Advice Note 73/06 "Design Guidance for Road Pavement Foundations" published by the Highways Agency.

IN SITU TESTING - DCP TRL

Project :	**South Farm, Wickwar**	Date :	**08 Mar 2021**
Project No :	**B05313**	Operator :	**JY**
Client :	**Bloor Homes South**	Test Location :	**DCP2**

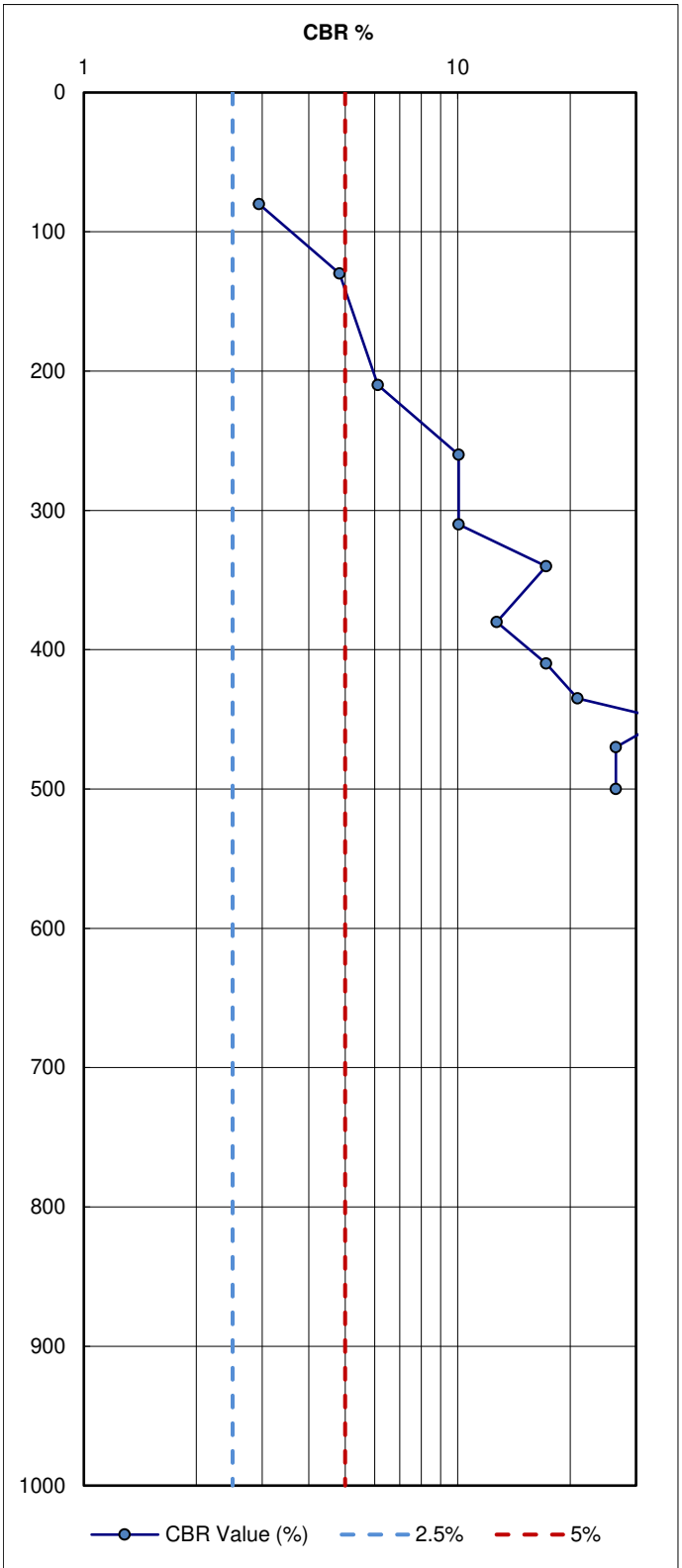


Blows No.	Blows Total	Reading (mm)	Corr. depth	mm / blow	CBR % (TRRL)
0	0	160	0	**-**	-
1	1	250	90	**90**	3
1	2	290	130	**40**	6
1	3	320	160	**30**	8
1	4	360	200	**40**	6
1	5	390	230	**30**	8
1	6	420	260	**30**	8
1	7	450	290	**30**	8
2	9	500	340	**25**	10
2	11	550	390	**25**	10
2	13	600	440	**25**	10
1	14	640	480	**40**	6
2	16	680	520	**20**	13
2	18	720	560	**20**	13
2	20	750	590	**15**	17
2	22	790	630	**20**	13
2	24	820	660	**15**	17
2	26	860	700	**20**	13
2	28	900	740	**20**	13
2	30	920	760	**10**	26
2	32	940	780	**10**	26
2	34	980	820	**20**	13

Remarks : Log10(CBR) = 2.48 – 1.057 x Log10(mm/blow) as defined in Interim Advice Note 73/06 "Design Guidance for Road Pavement Foundations" published by the Highways Agency.

IN SITU TESTING - DCP TRL

Project :	**South Farm, Wickwar**	Date :	**08 Mar 2021**
Project No :	**B05313**	Operator :	**JY**
Client :	**Bloor Homes South**	Test Location :	**DCP3**

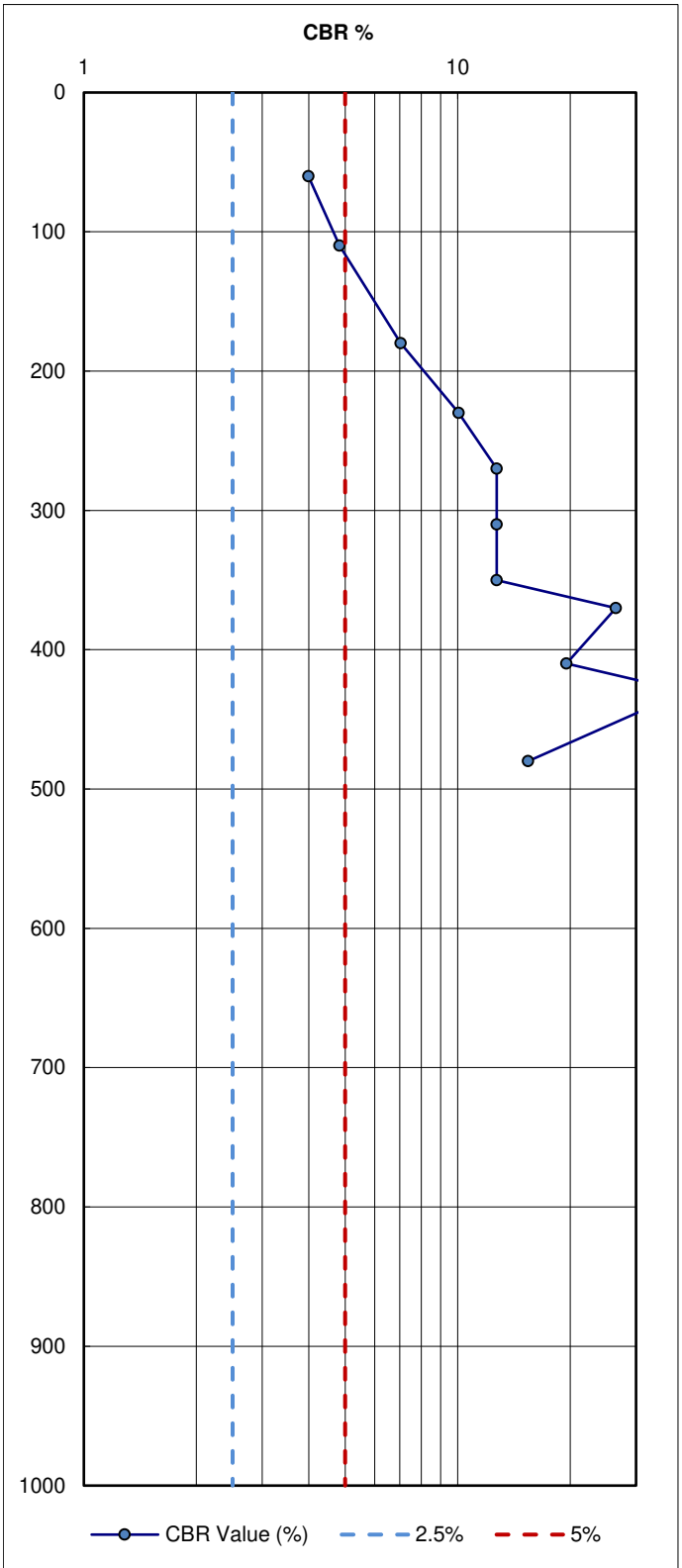


Blows No.	Blows Total	Reading (mm)	Corr. depth	mm / blow	CBR % (TRRL)
0	0	90	0	**-**	-
1	1	170	80	**80**	3
1	2	220	130	**50**	5
2	4	300	210	**40**	6
2	6	350	260	**25**	10
2	8	400	310	**25**	10
2	10	430	340	**15**	17
2	12	470	380	**20**	13
2	14	500	410	**15**	17
2	16	525	435	**13**	21
2	18	540	450	**8**	36
2	20	560	470	**10**	26
3	23	590	500	**10**	26
3	26	610	520	**7**	41
10	36	630	540	**2**	145

Remarks : Log10(CBR) = 2.48 – 1.057 x Log10(mm/blow) as defined in Interim Advice Note 73/06 "Design Guidance for Road Pavement Foundations" published by the Highways Agency.

IN SITU TESTING - DCP TRL

Project :	**South Farm, Wickwar**	Date :	**08 Mar 2021**
Project No :	**B05313**	Operator :	**JY**
Client :	**Bloor Homes South**	Test Location :	**DCP1**

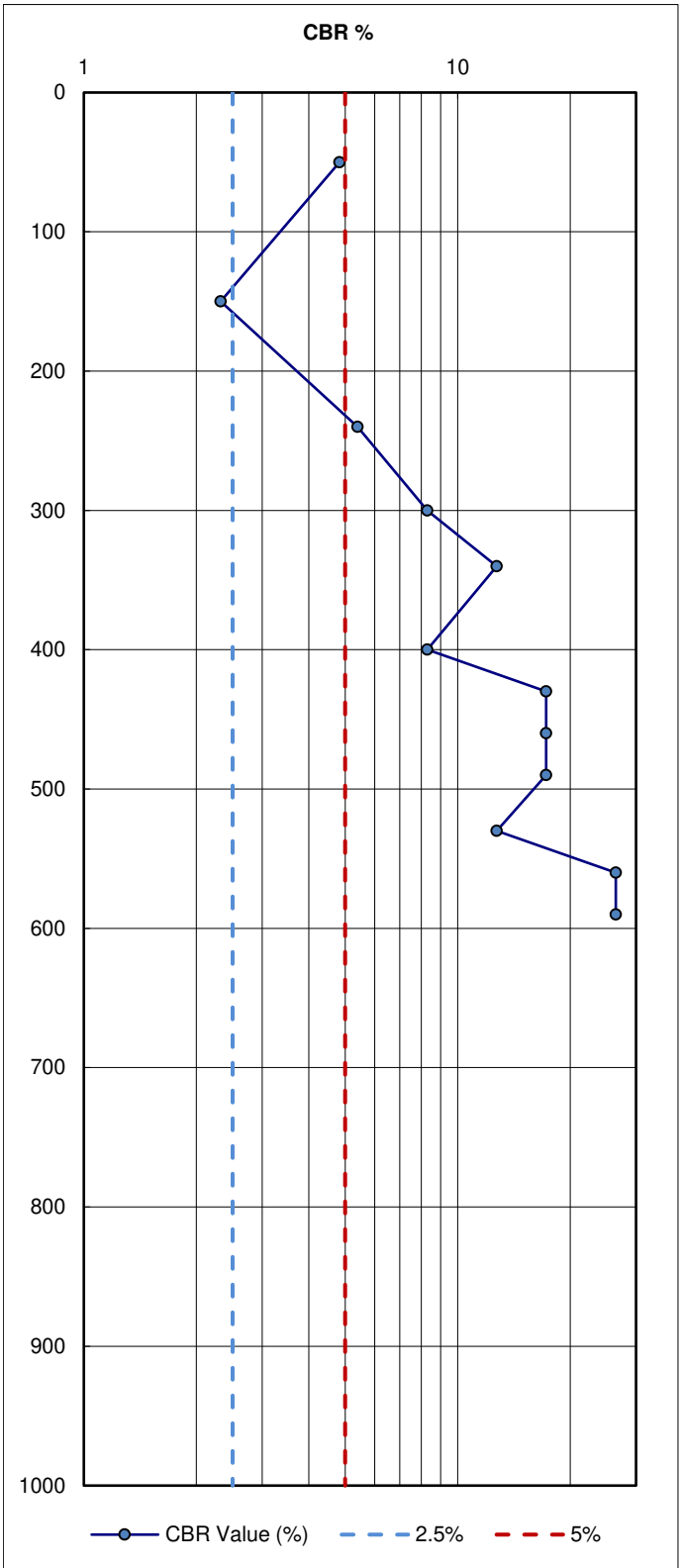


Blows No.	Blows Total	Reading (mm)	Corr. depth	mm / blow	CBR % (TRRL)
0	0	100	0	**-**	-
1	1	160	60	**60**	4
1	2	210	110	**50**	5
2	4	280	180	**35**	7
2	6	330	230	**25**	10
2	8	370	270	**20**	13
2	10	410	310	**20**	13
2	12	450	350	**20**	13
2	14	470	370	**10**	26
3	17	510	410	**13**	20
3	20	530	430	**7**	41
3	23	580	480	**17**	15
3	26	510	410	**-23**	#NUM!
3	29	640	540	**43**	6
3	32	680	580	**13**	20
5	37	730	630	**10**	26
10	47	750	650	**2**	145

Remarks : Log10(CBR) = 2.48 – 1.057 x Log10(mm/blow) as defined in Interim Advice Note 73/06 "Design Guidance for Road Pavement Foundations" published by the Highways Agency.

IN SITU TESTING - DCP TRL

Project :	**South Farm, Wickwar**	Date :	**08 Mar 2021**
Project No :	**B05313**	Operator :	**JY**
Client :	**Bloor Homes South**	Test Location :	**DCP5**

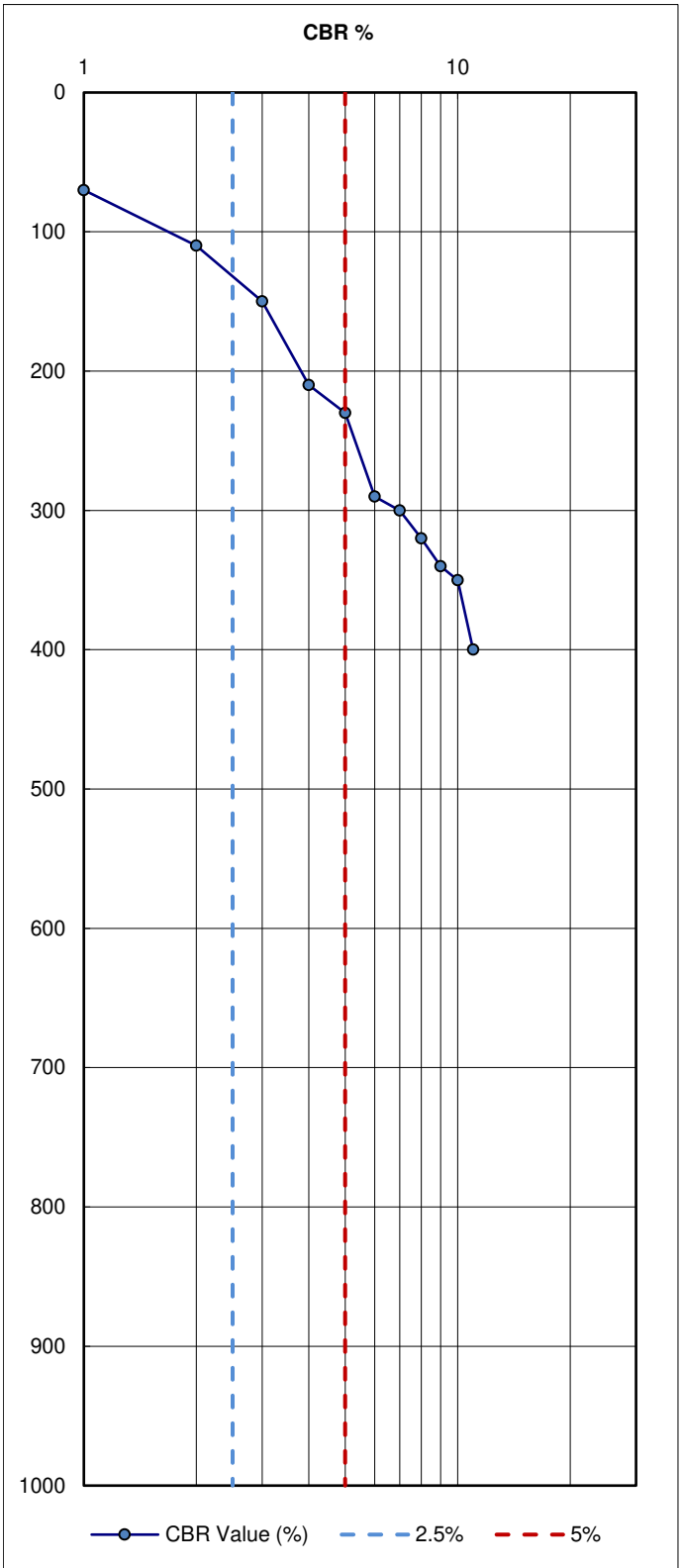


Blows No.	Blows Total	Reading (mm)	Corr. depth	mm / blow	CBR % (TRRL)
0	0	210	0	**-**	-
1	1	260	50	**50**	5
1	2	360	150	**100**	2
2	4	450	240	**45**	5
2	6	510	300	**30**	8
2	8	550	340	**20**	13
2	10	610	400	**30**	8
2	12	640	430	**15**	17
2	14	670	460	**15**	17
2	16	700	490	**15**	17
2	18	740	530	**20**	13
3	21	770	560	**10**	26
3	24	800	590	**10**	26
3	27	840	630	**13**	20
3	30	860	650	**7**	41
3	33	890	680	**10**	26
3	36	920	710	**10**	26

Remarks : Log10(CBR) = 2.48 – 1.057 x Log10(mm/blow) as defined in Interim Advice Note 73/06 "Design Guidance for Road Pavement Foundations" published by the Highways Agency.

IN SITU TESTING - DCP TRL

Project :	**South Farm, Wickwar**	Date :	**08 Mar 2021**
Project No :	**B05313**	Operator :	**JY**
Client :	**Bloor Homes South**	Test Location :	**DCP6**



Blows No.	Blows Total	Reading (mm)	Corr. depth	mm / blow	CBR % (TRRL)
0	0	190	0	**-**	-
1	1	260	70	**70**	3
1	2	300	110	**40**	6
1	3	340	150	**40**	6
1	4	400	210	**60**	4
1	5	420	230	**20**	13
3	8	480	290	**20**	13
3	11	490	300	**3**	85
5	16	510	320	**4**	70
5	21	530	340	**4**	70
5	26	540	350	**2**	145
10	36	590	400	**5**	55

Remarks : Log10(CBR) = 2.48 – 1.057 x Log10(mm/blow) as defined in Interim Advice Note 73/06 "Design Guidance for Road Pavement Foundations" published by the Highways Agency.

Appendix E Geotechnical Test Certificates

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	01/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

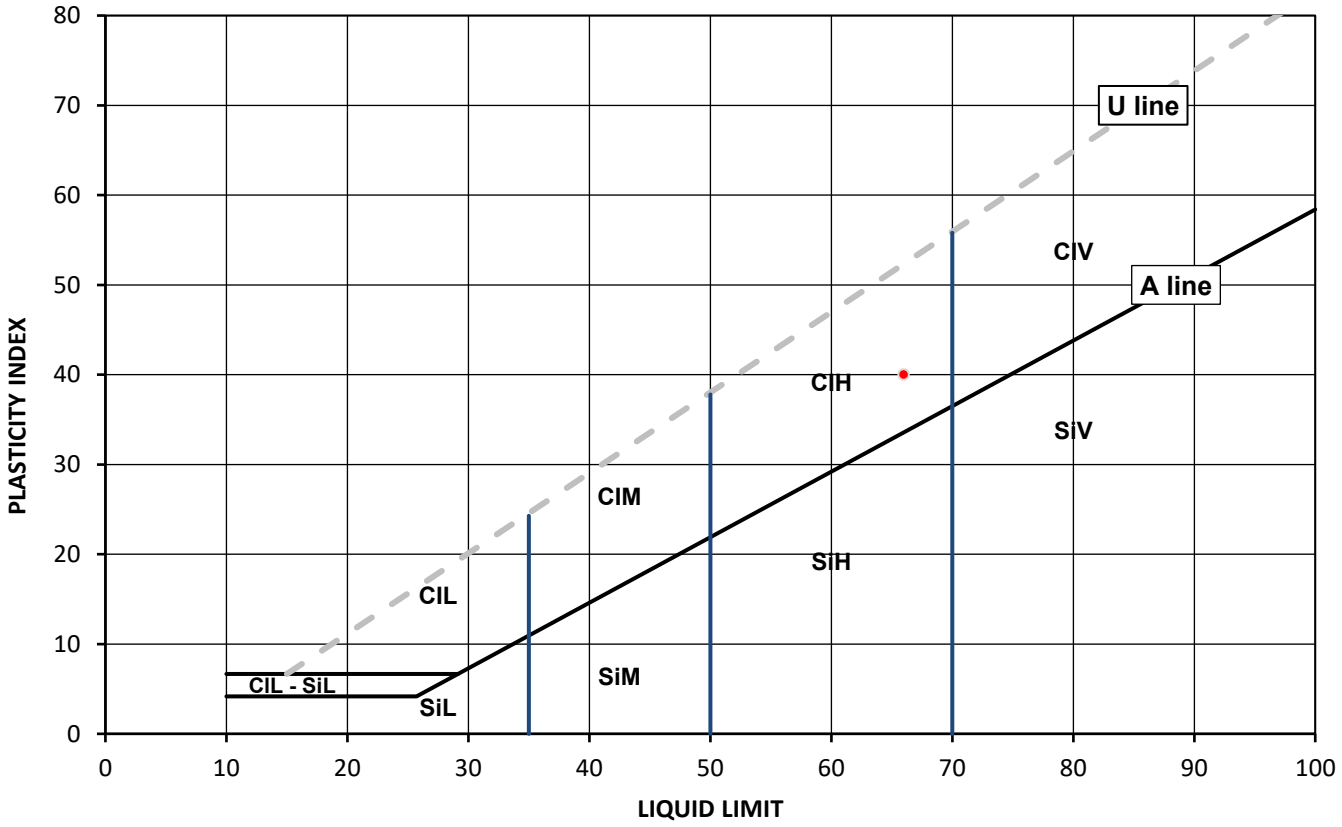
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799575	Depth Top [m]:	0.50
Hole No.:	TP06	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Light brown to brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	66	26	40	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	01/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

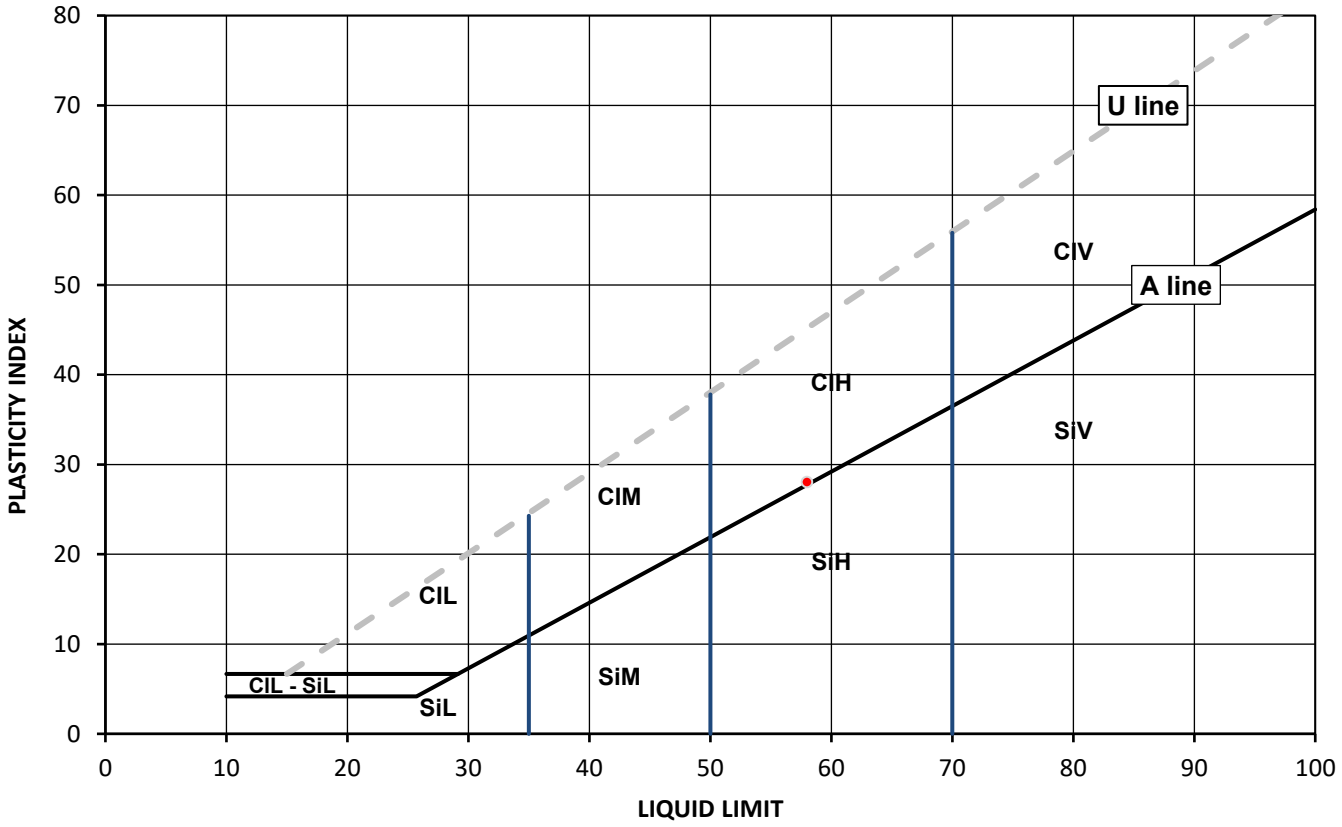
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799576	Depth Top [m]:	2.00
Hole No.:	TP07	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey slightly sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	58	30	28	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	01/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

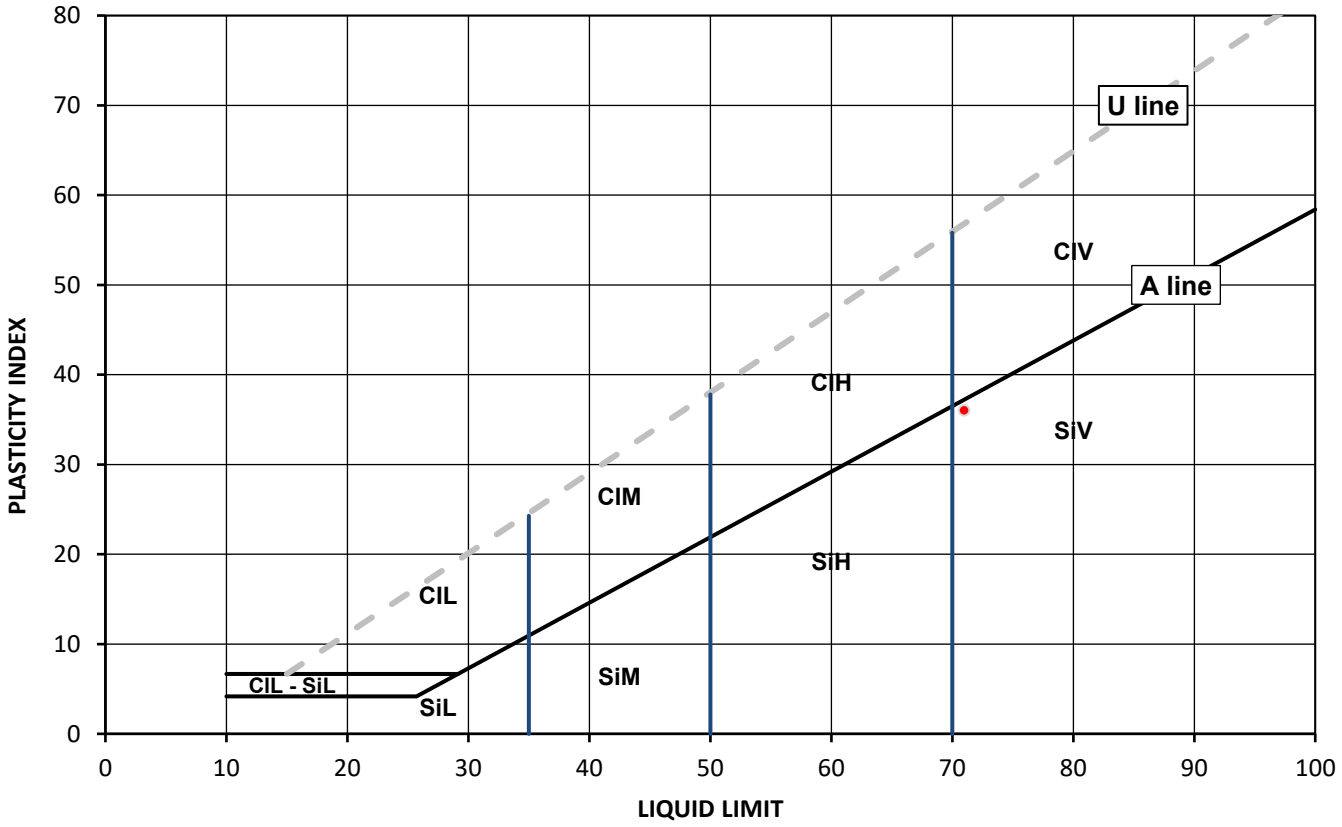
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799577	Depth Top [m]:	1.00
Hole No.:	TP08	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
31	71	35	36	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	01/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

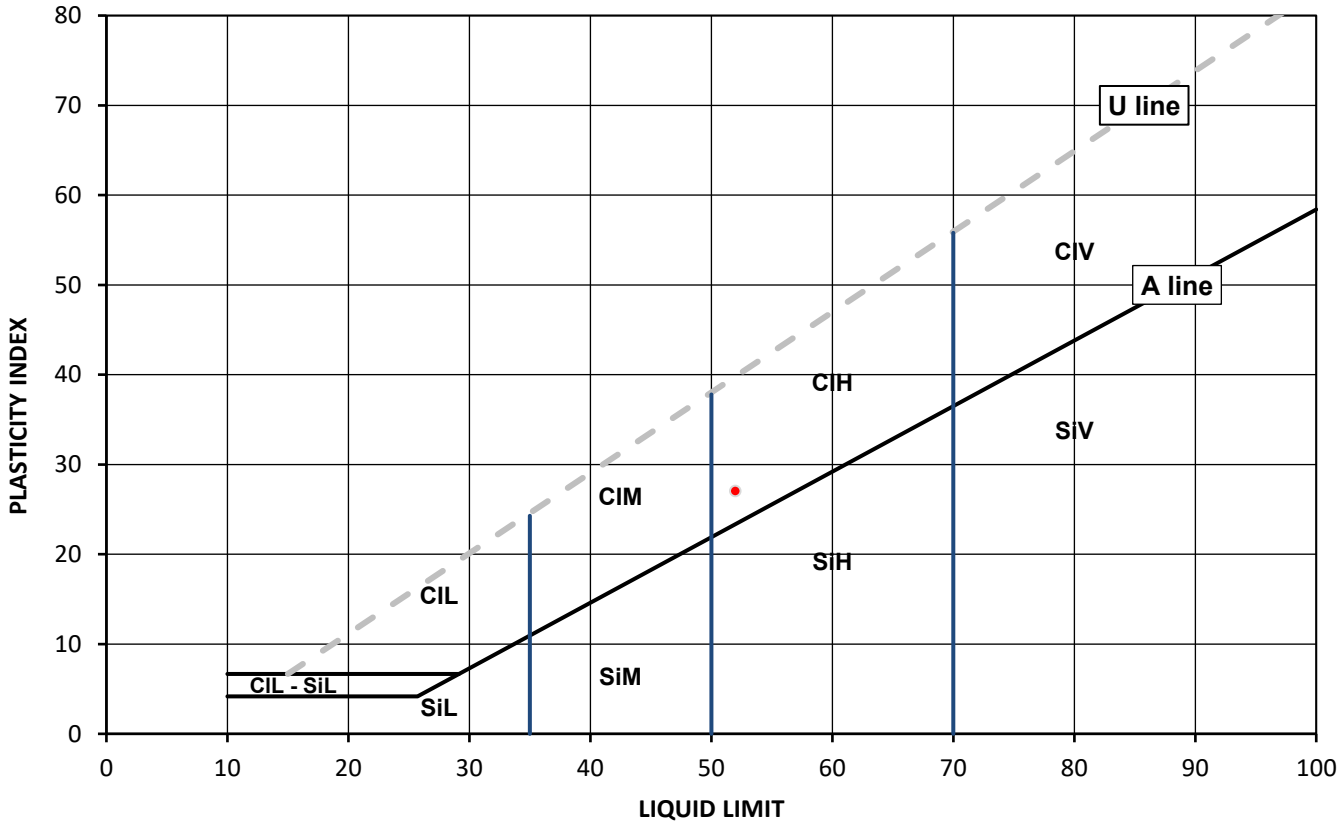
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799578	Depth Top [m]:	1.50
Hole No.:	TP09	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Light grey slightly gravelly slightly sandy CLAY		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
22	52	25	27	96



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

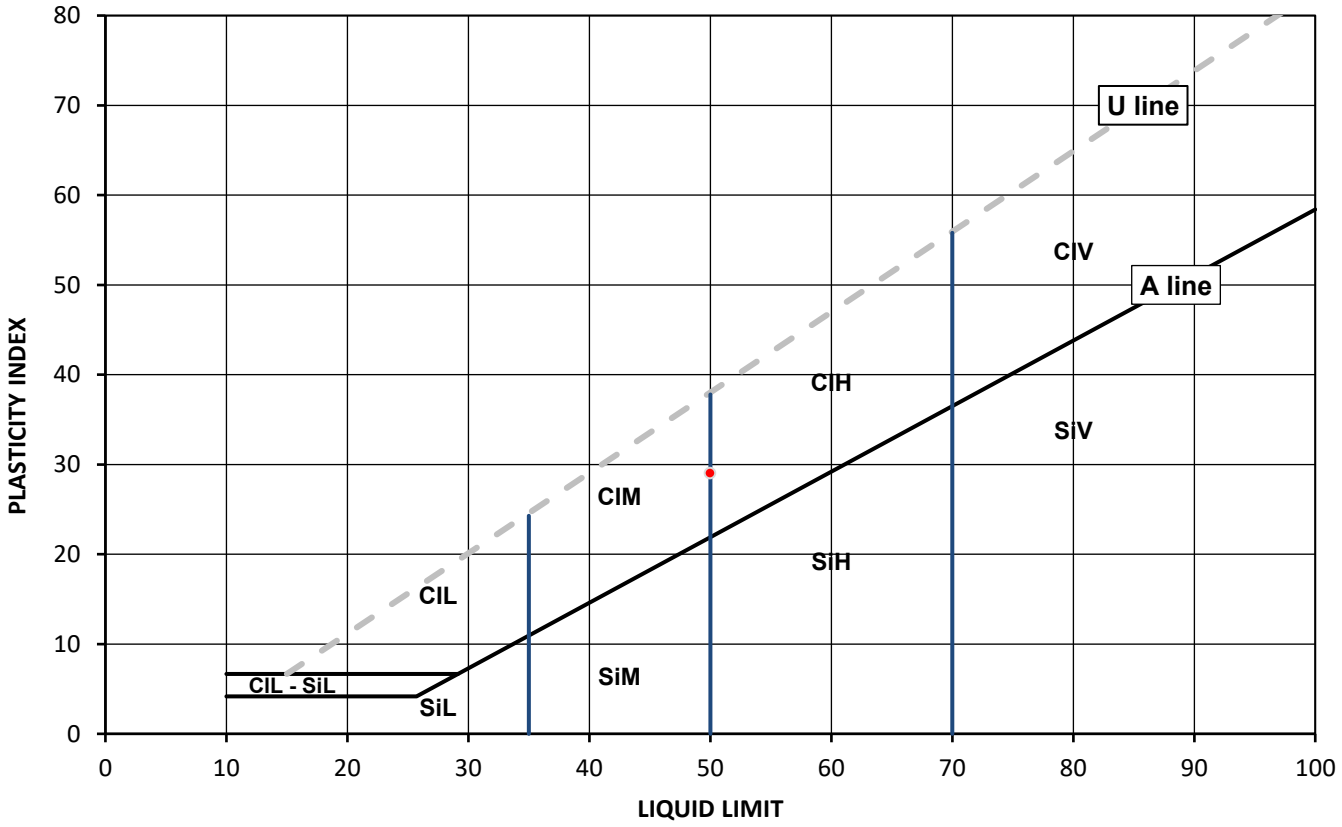
Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799579	Depth Top [m]:	1.00
Hole No.:	TP11	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
20	50	21	29	91



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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i2 Analytical Ltd
Unit 8 Harrowden Road
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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

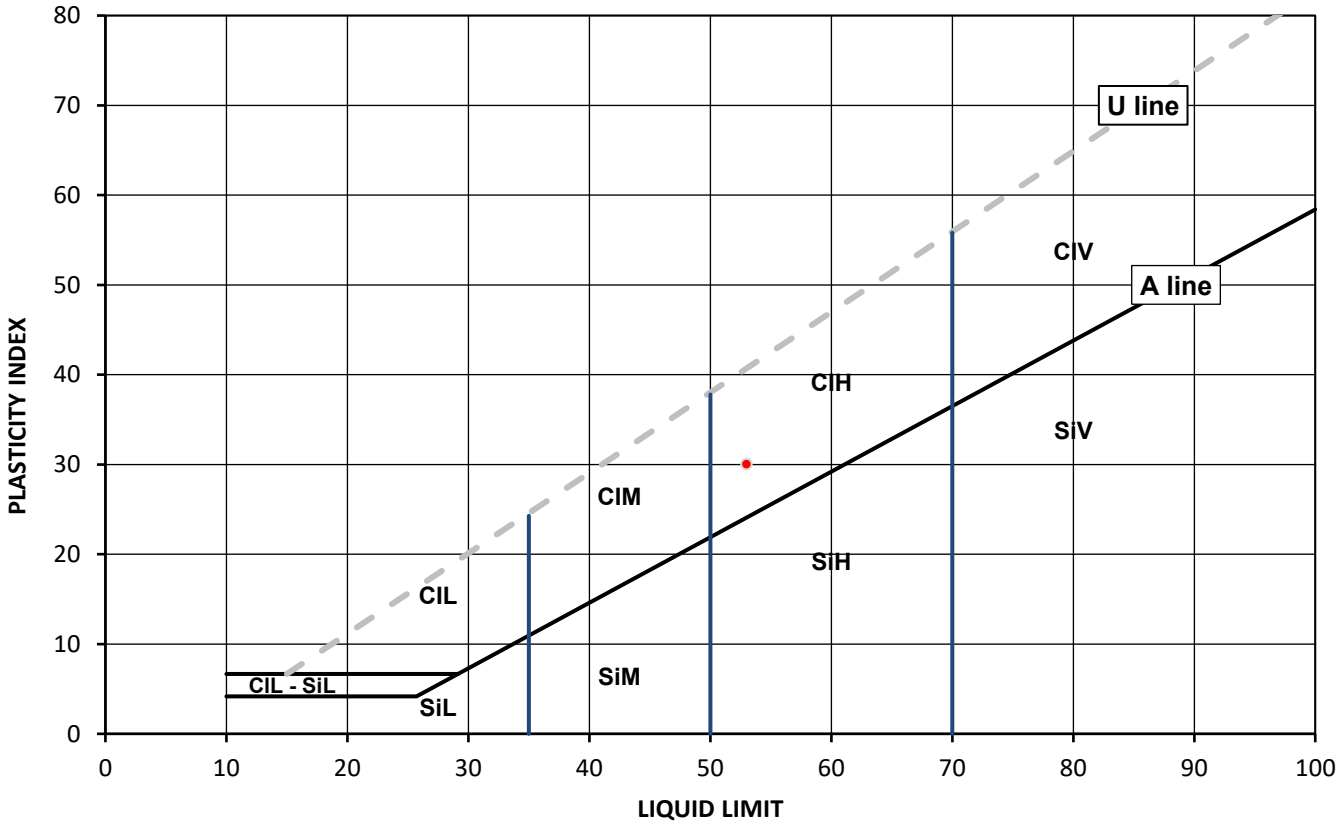
Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799580	Depth Top [m]:	2.00
Hole No.:	TP11	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
24	53	23	30	73



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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Unit 8 Harrowden Road
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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

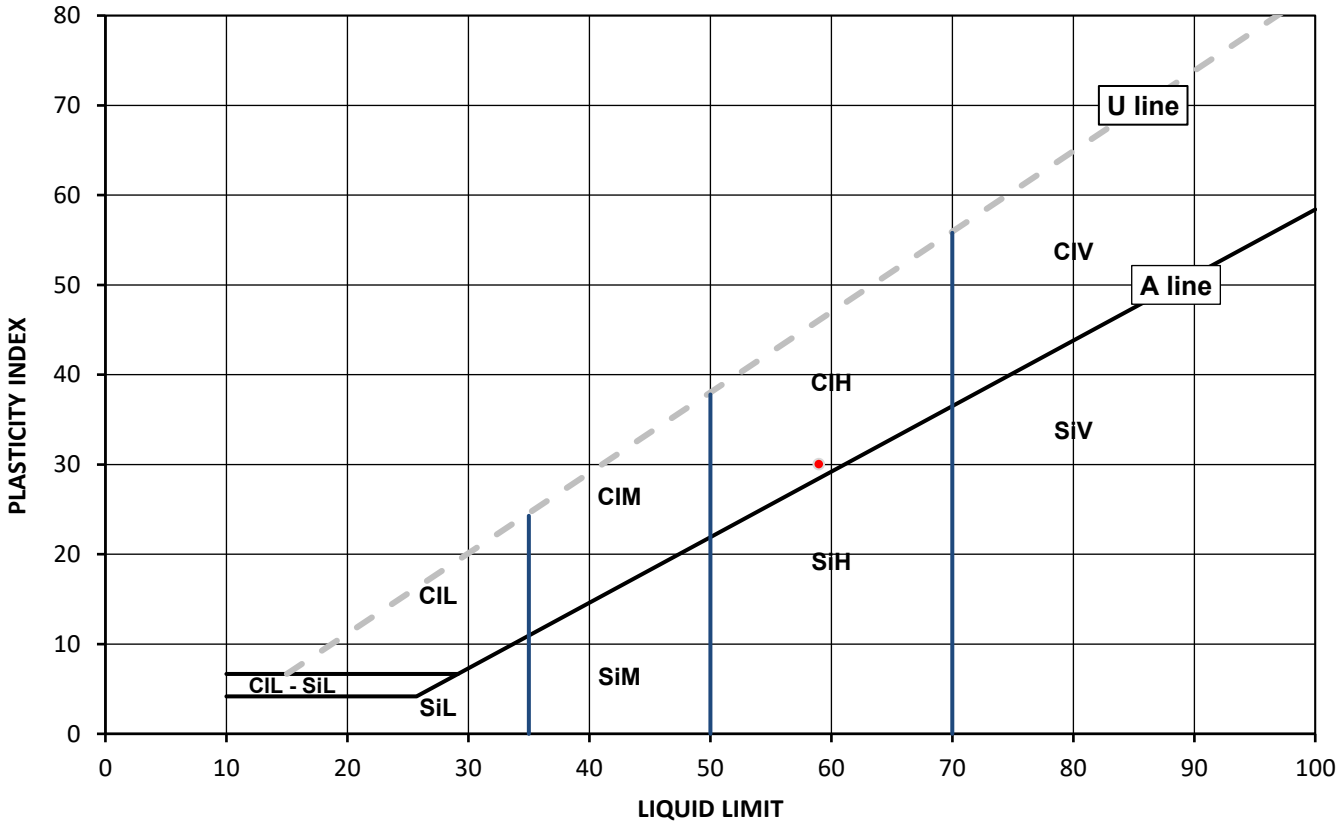
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799581	Depth Top [m]:	1.00
Hole No.:	TP12	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey slightly sandy CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	59	29	30	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

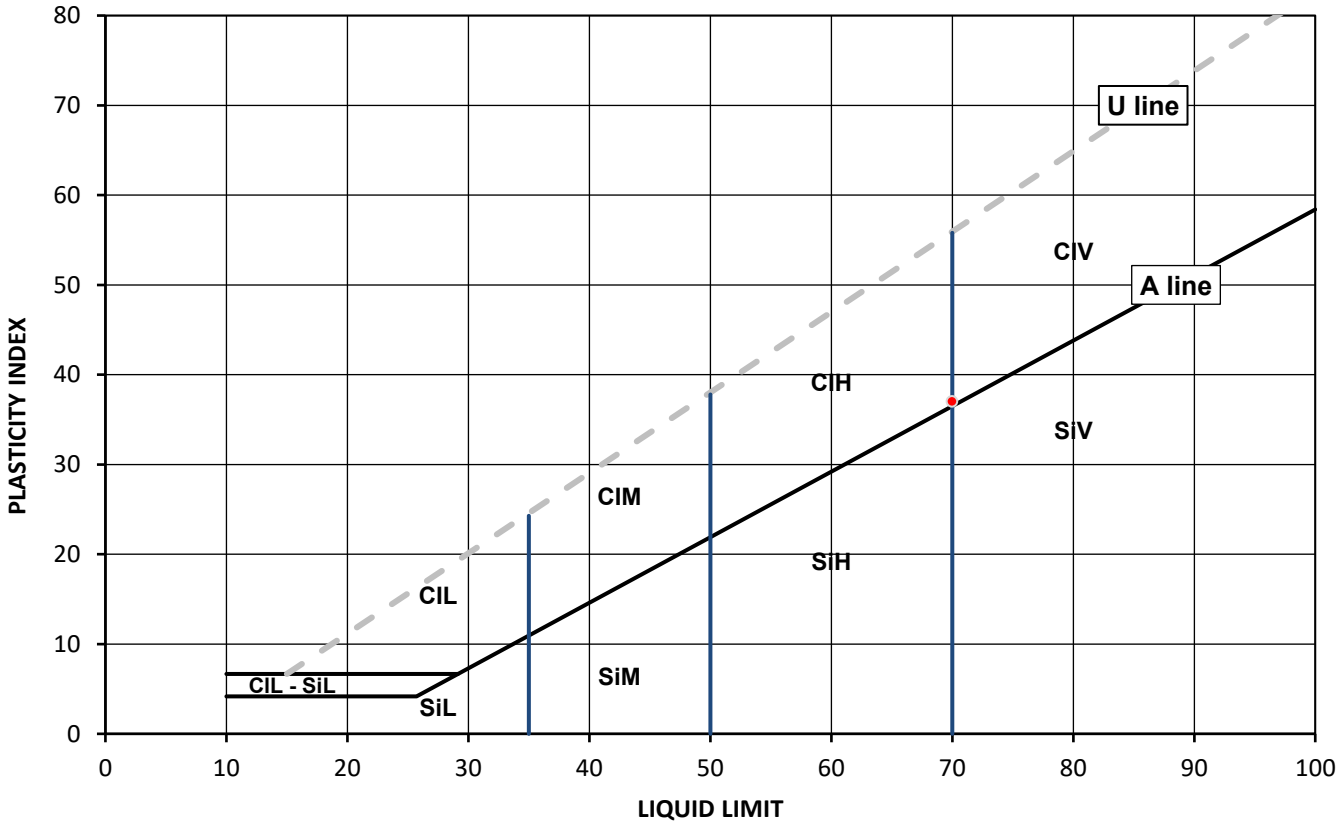
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799582	Depth Top [m]:	2.50
Hole No.:	TP12	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brownish grey to dark grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	70	33	37	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

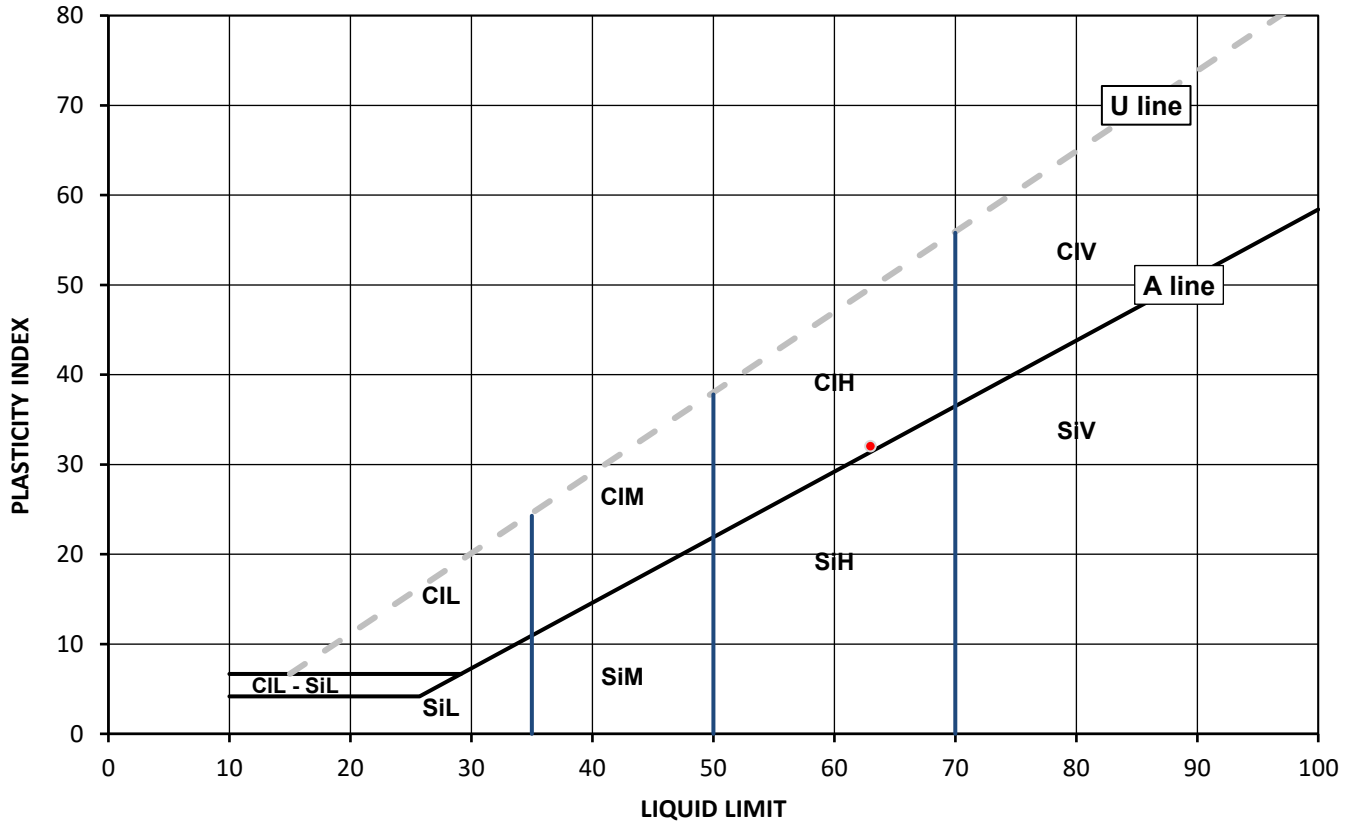
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799583	Depth Top [m]:	2.00
Hole No.:	TP13	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	63	31	32	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

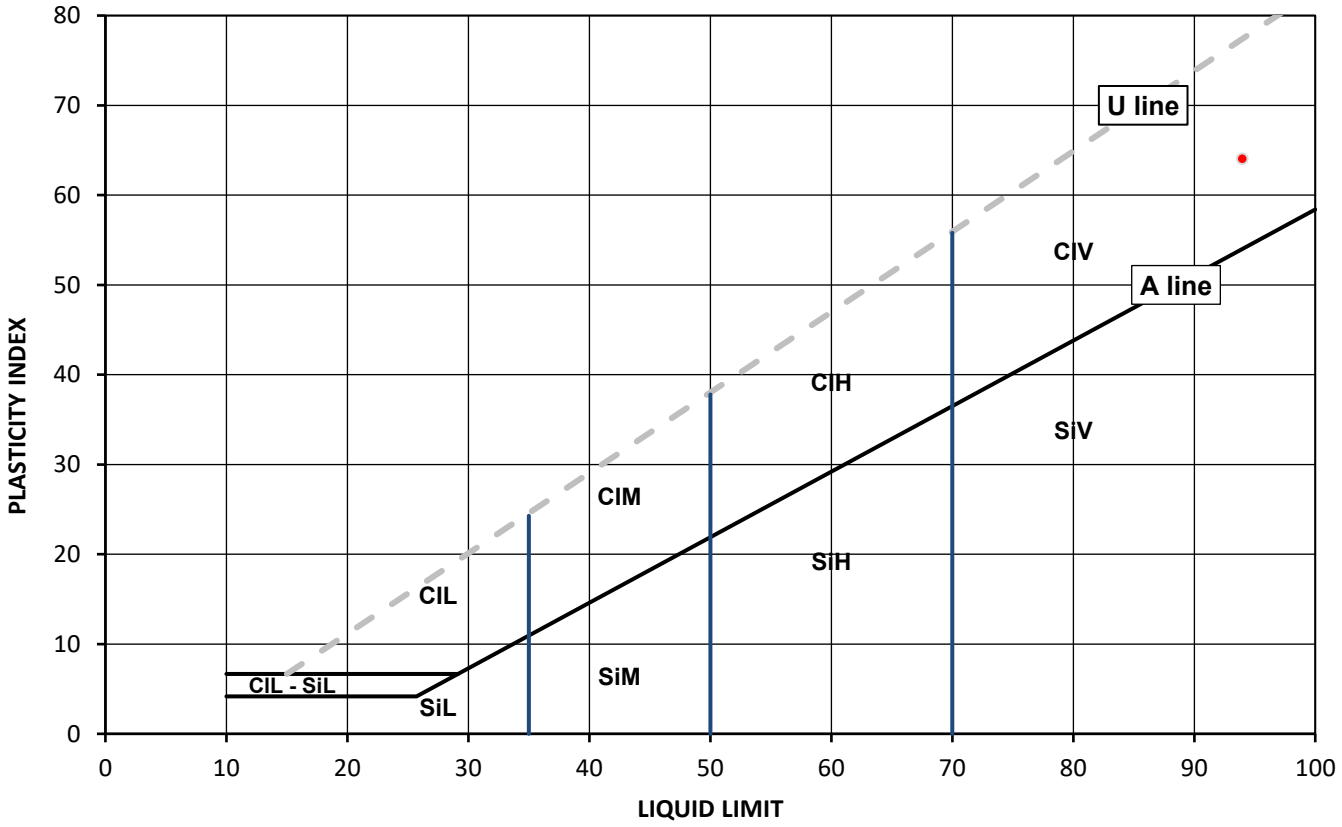
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799584	Depth Top [m]:	0.50
Hole No.:	TP14	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brownish grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
48	94	30	64	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

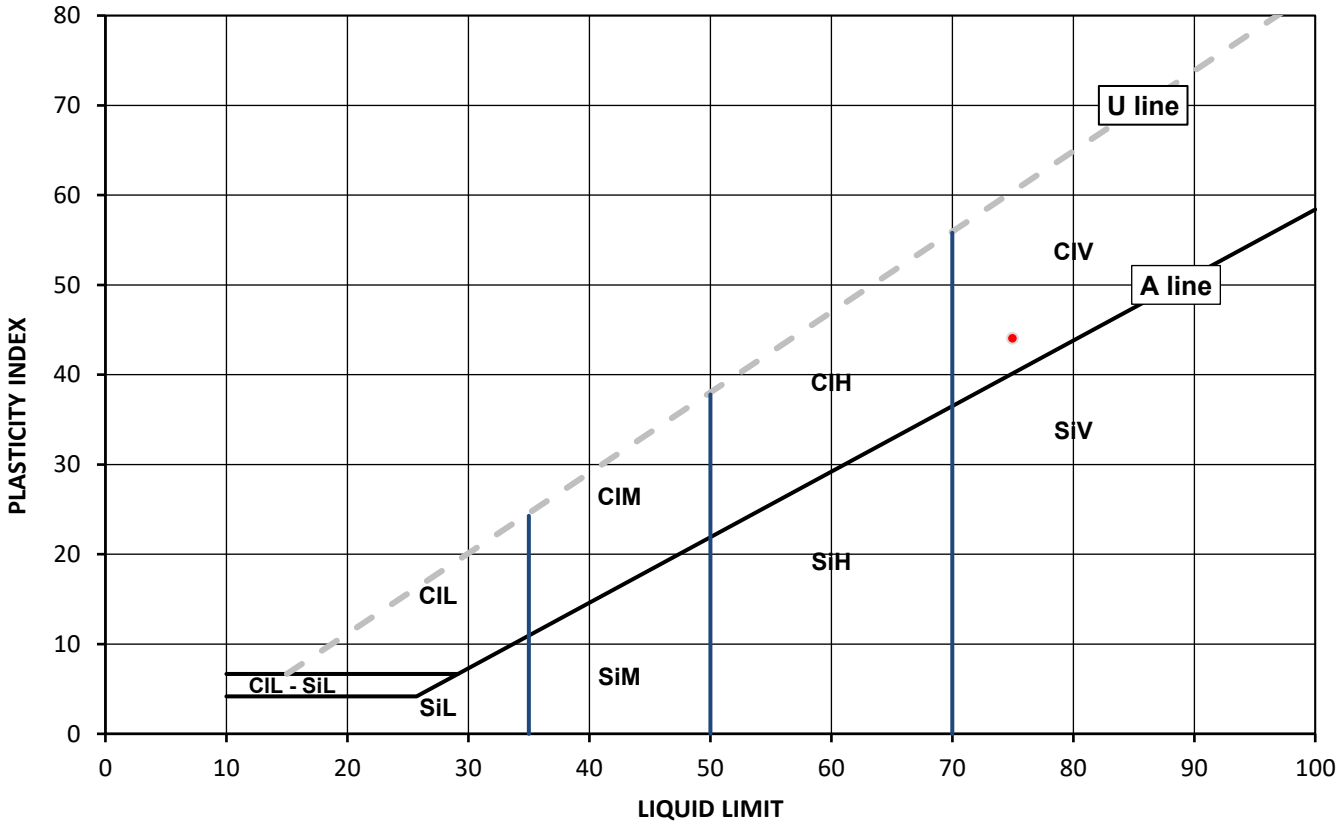
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799585	Depth Top [m]:	1.50
Hole No.:	TP14	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brownish grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
43	75	31	44	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

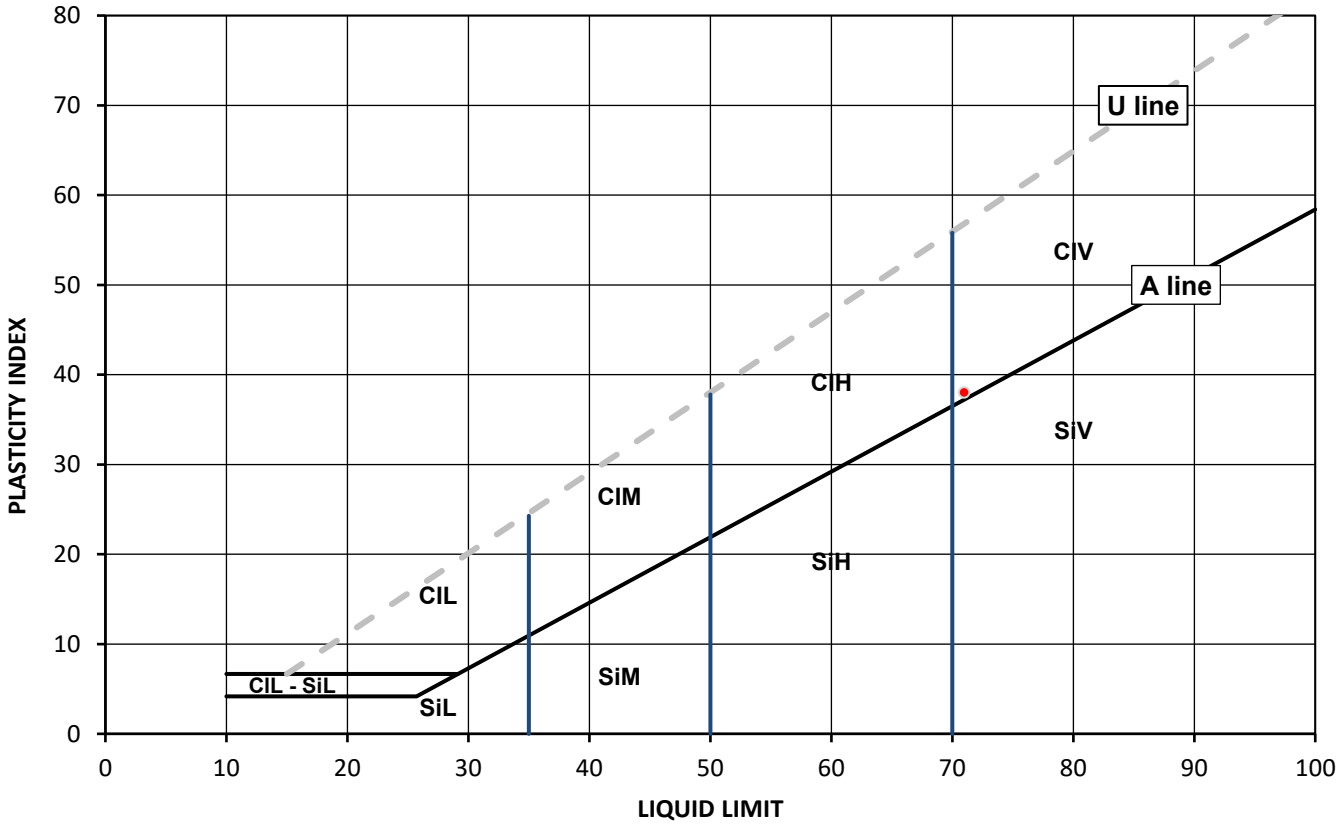
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799586	Depth Top [m]:	2.00
Hole No.:	TP15	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Grey to brown slightly gravelly CLAY		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	71	33	38	98



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

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Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

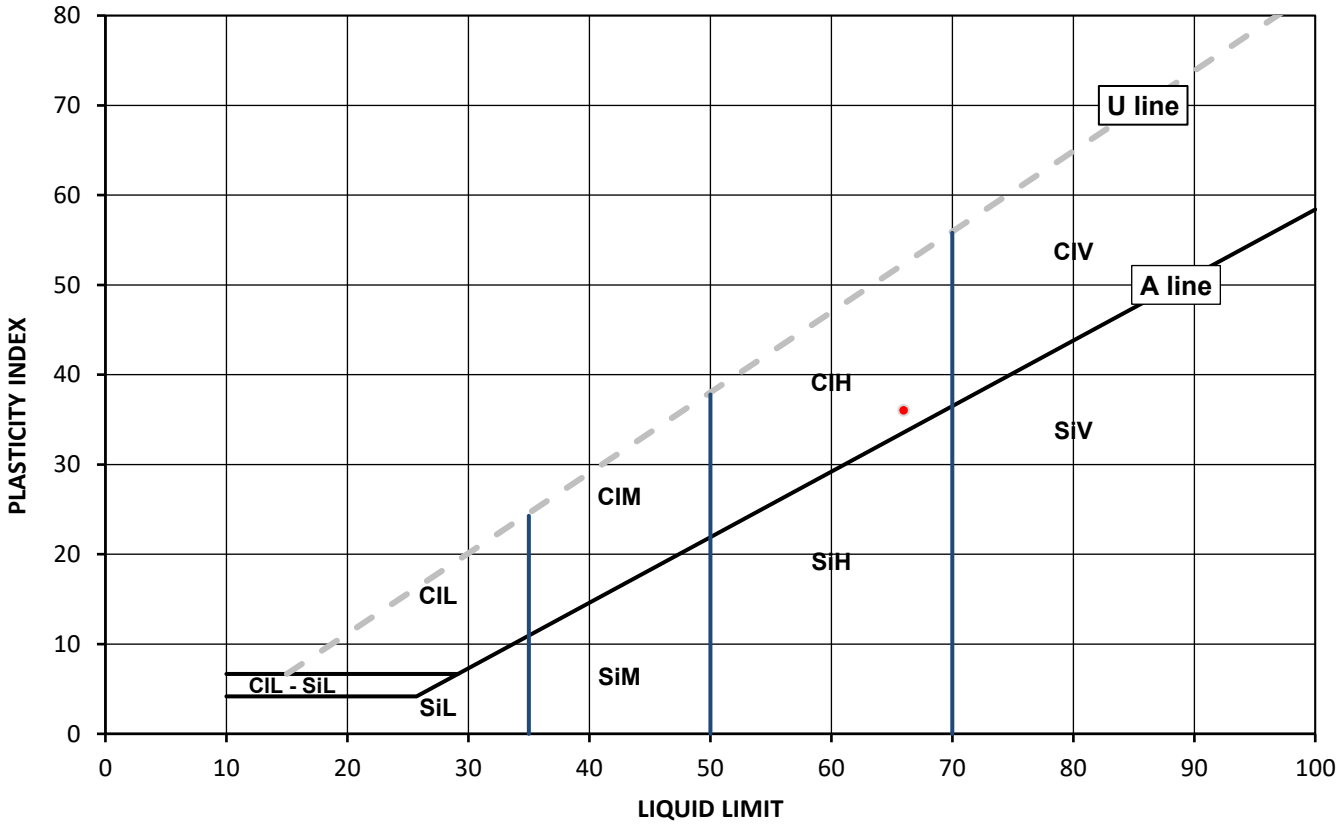
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799587	Depth Top [m]:	1.50
Hole No.:	TP16	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey slightly gravelly CLAY		

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	66	30	36	99



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

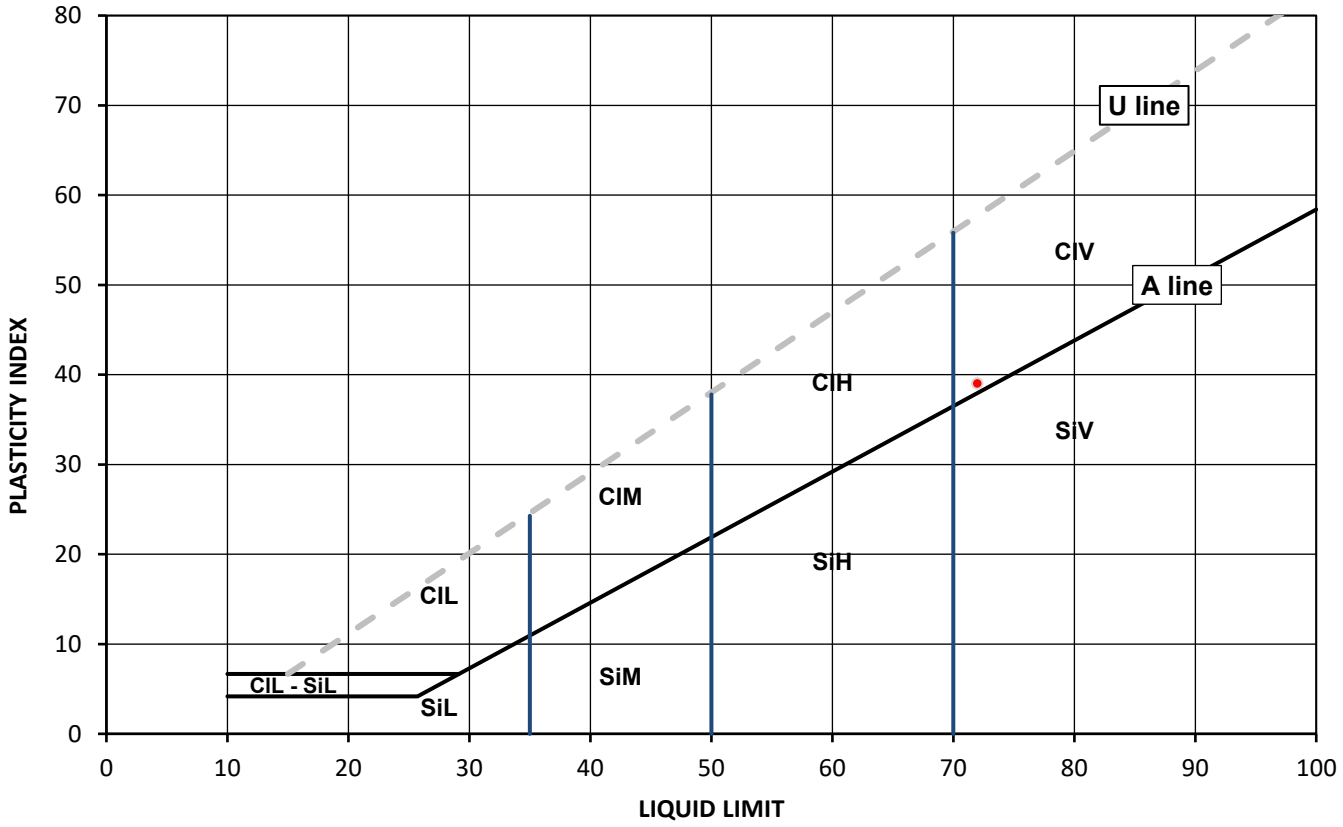
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799588	Depth Top [m]:	1.00
Hole No.:	TP17	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	72	33	39	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

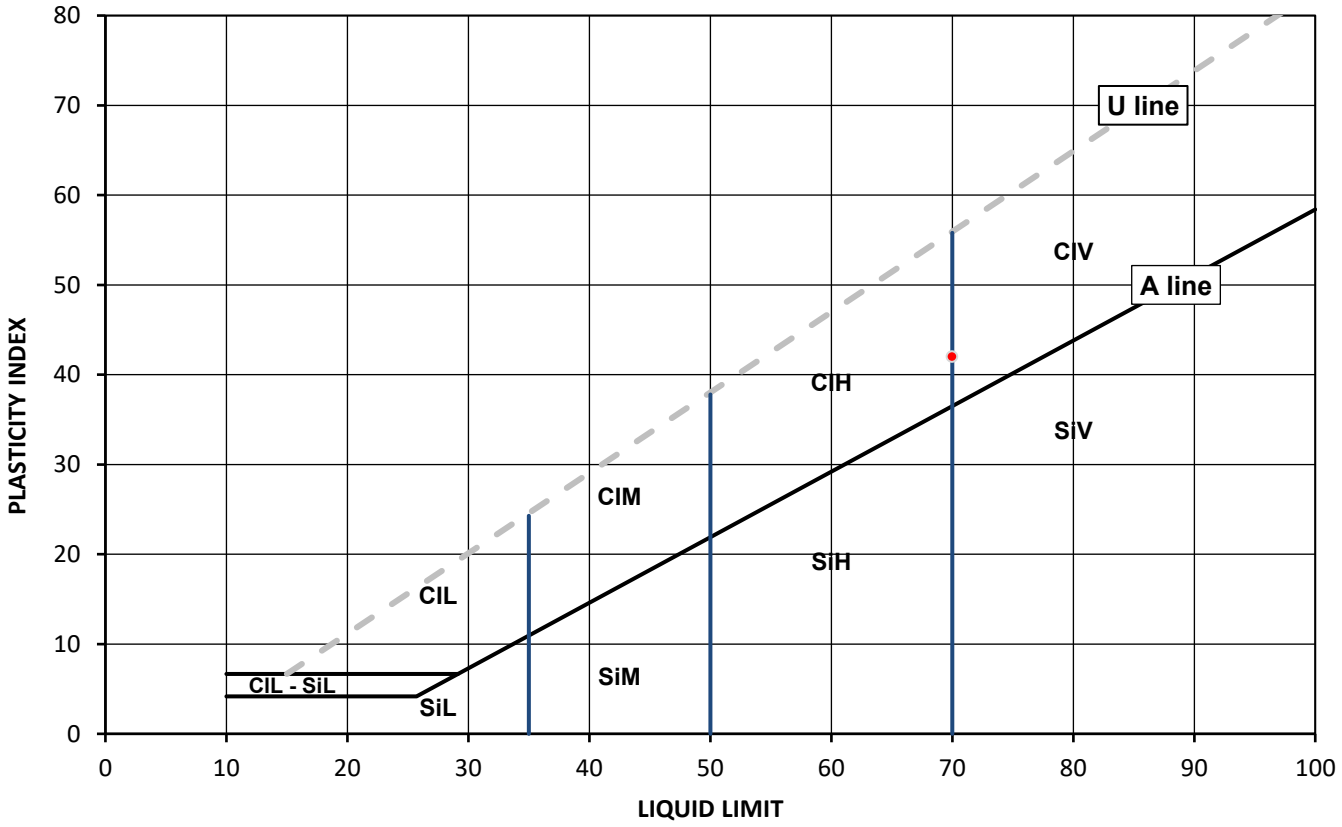
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799589	Depth Top [m]:	0.50
Hole No.:	TP18	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
31	70	28	42	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

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Date Reported: 23/03/2021

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

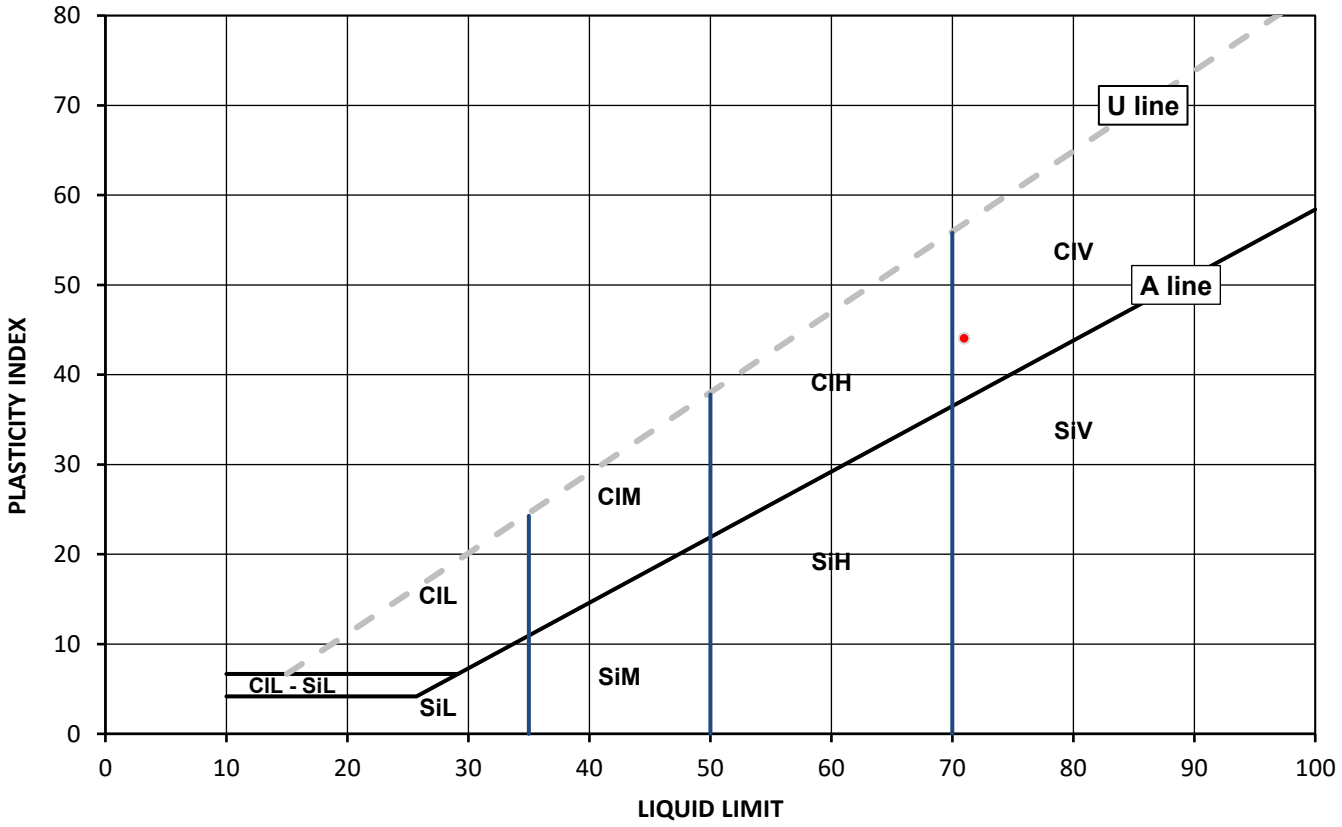
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799590	Depth Top [m]:	1.00
Hole No.:	TP18	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
30	71	27	44	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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PL Deputy Head of Geotechnical Section

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Date Reported: 23/03/2021

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Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

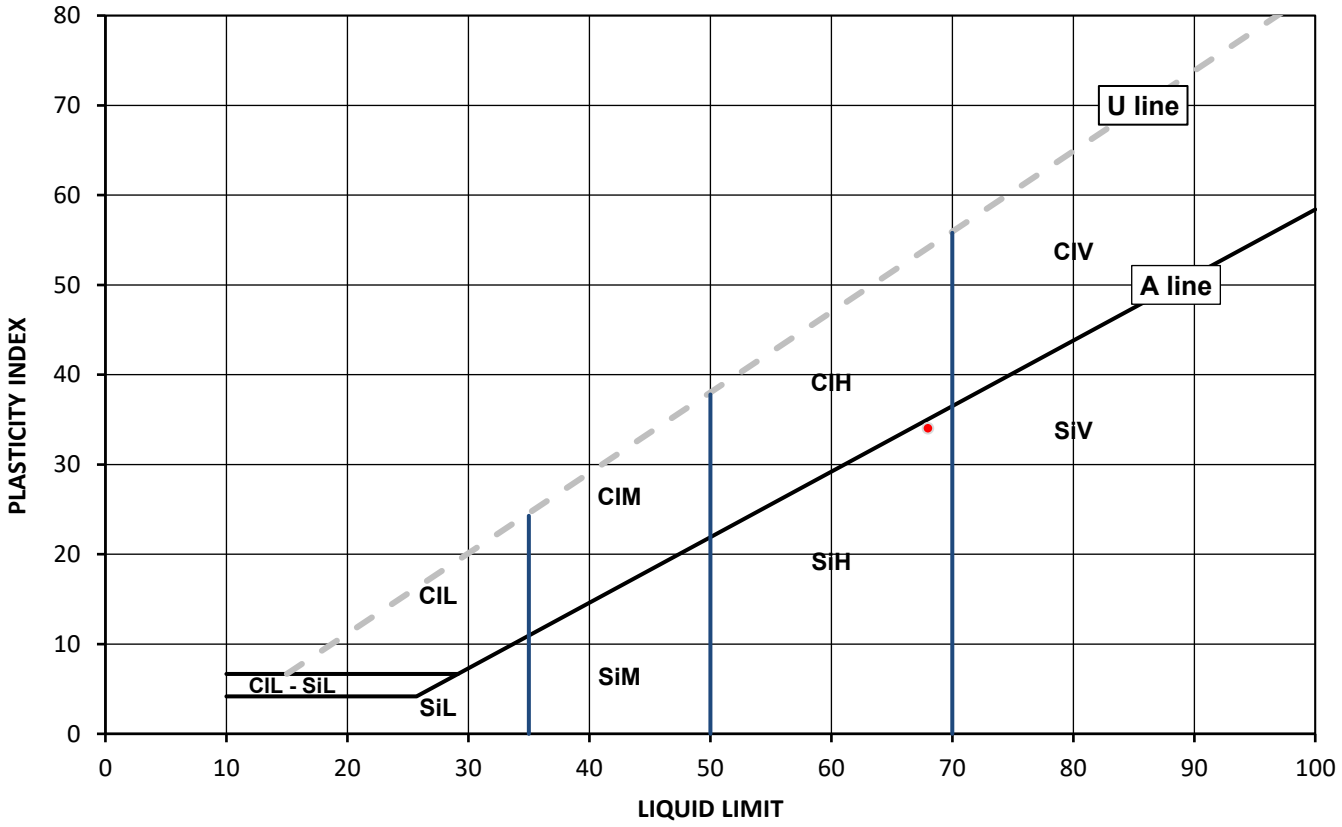
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799591	Depth Top [m]:	2.00
Hole No.:	TP19	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Black to brownish grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
32	68	34	34	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed:

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for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	02/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

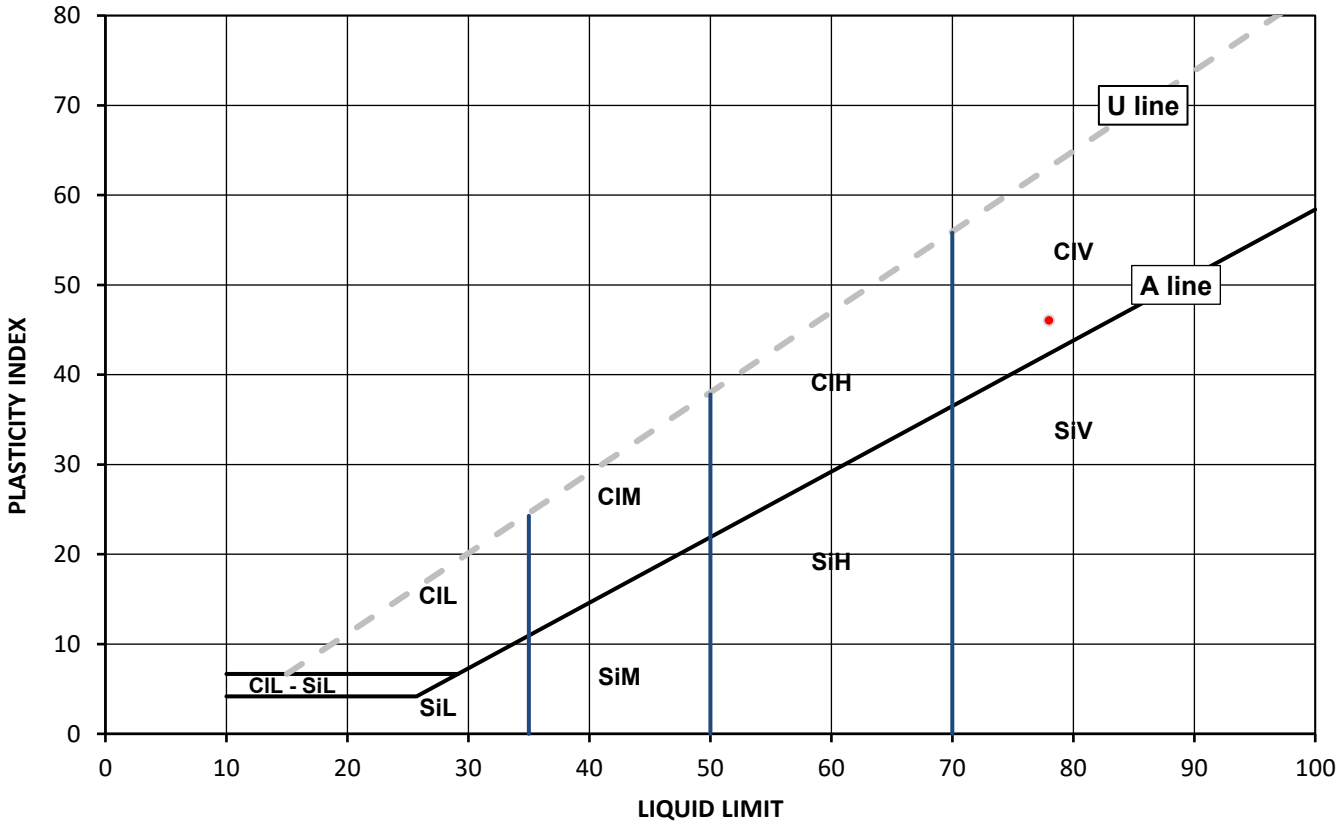
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799592	Depth Top [m]:	2.50
Hole No.:	TP20	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Black to brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
42	78	32	46	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

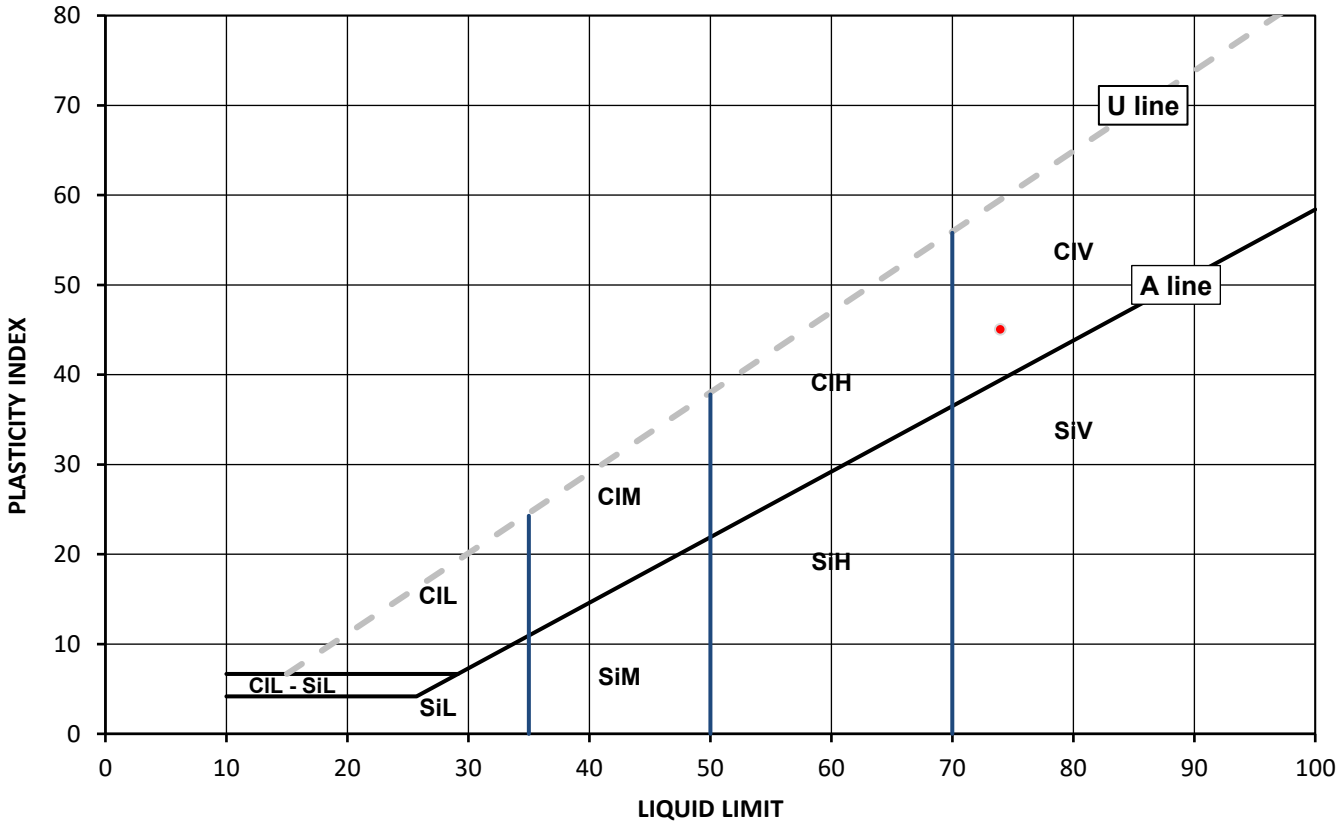
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799593	Depth Top [m]:	1.10
Hole No.:	TP21	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
34	74	29	45	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

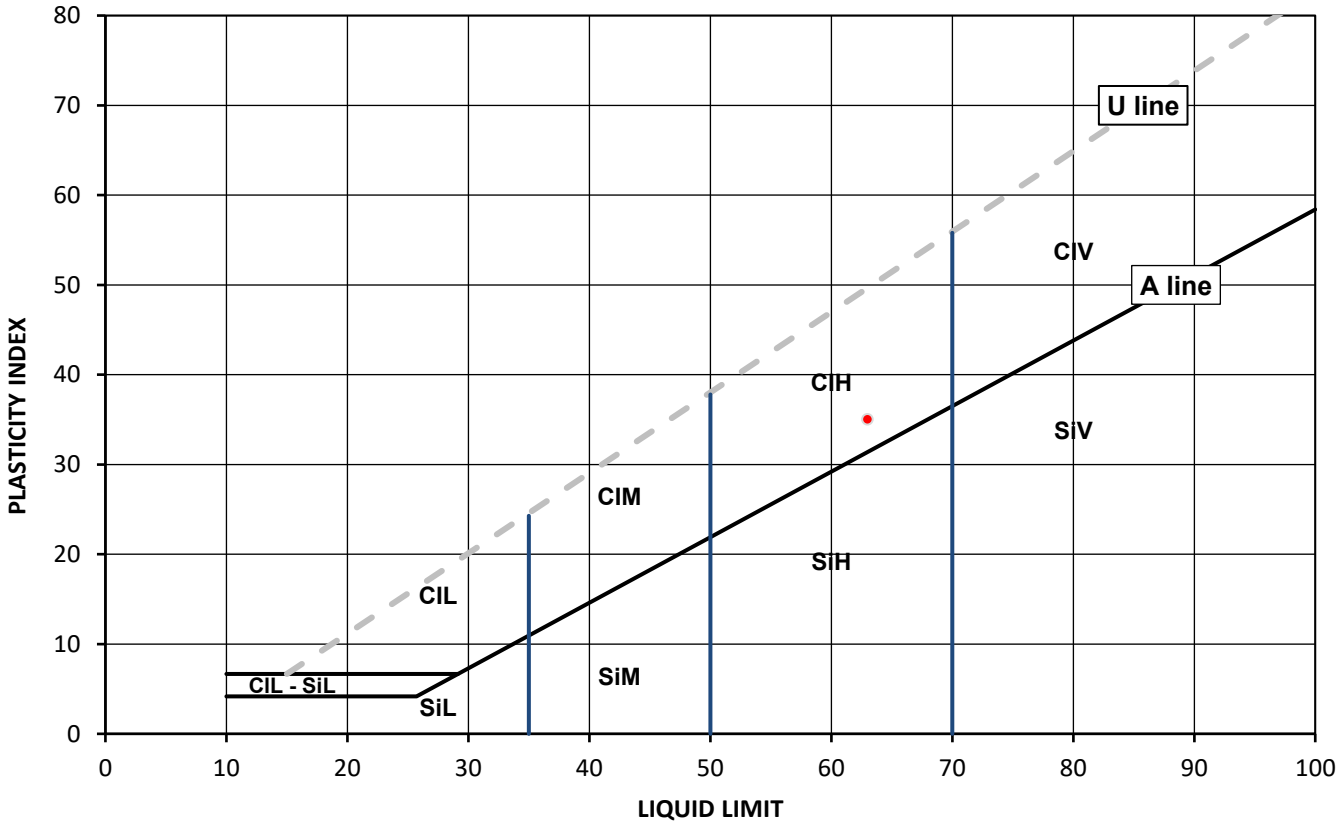
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799594	Depth Top [m]:	0.50
Hole No.:	TP22	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	63	28	35	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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PL Deputy Head of Geotechnical Section

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Date Reported: 23/03/2021

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Northampton NN4 7EB

UKAS TESTING 4041

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Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

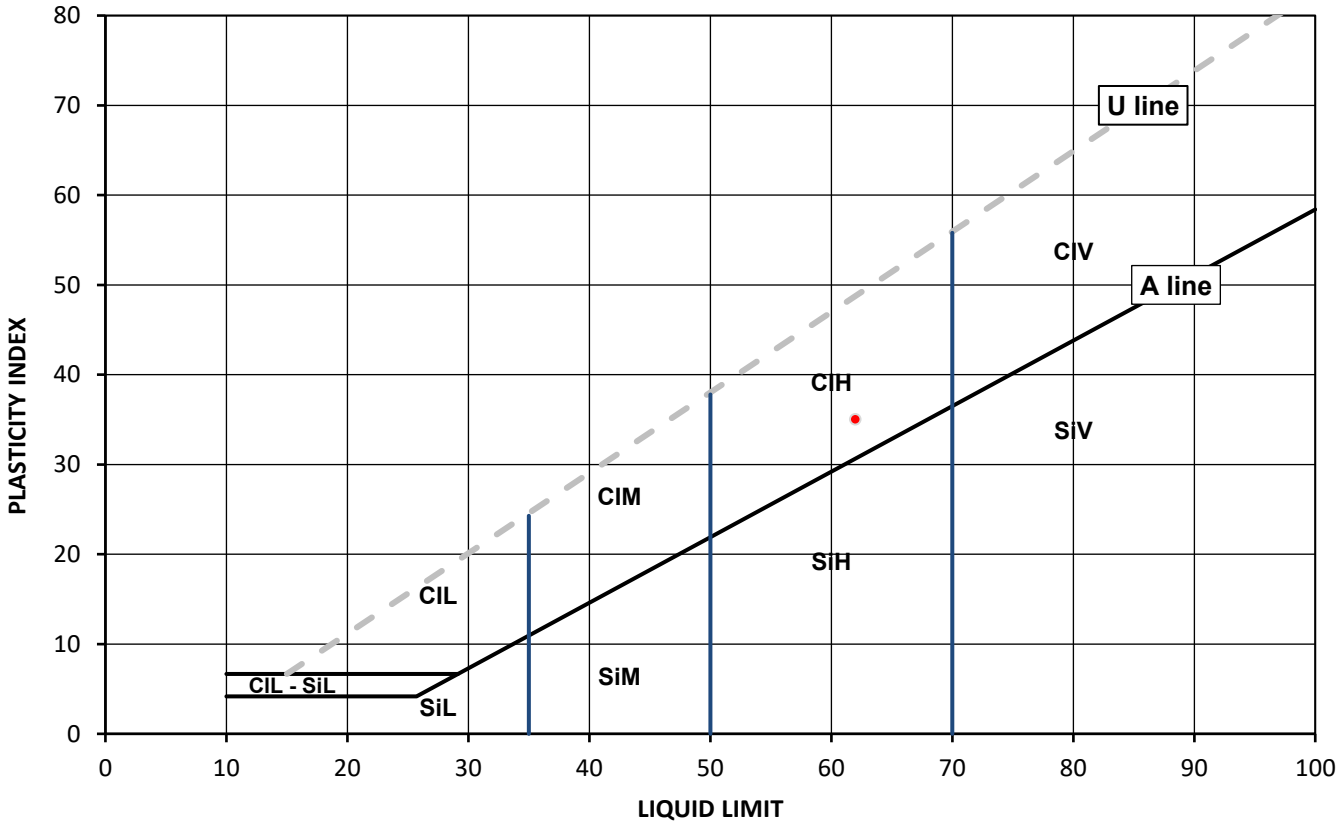
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799596	Depth Top [m]:	1.00
Hole No.:	TP23	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey slightly gravelly CLAY		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
35	62	27	35	95



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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UKAS TESTING 4041

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Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

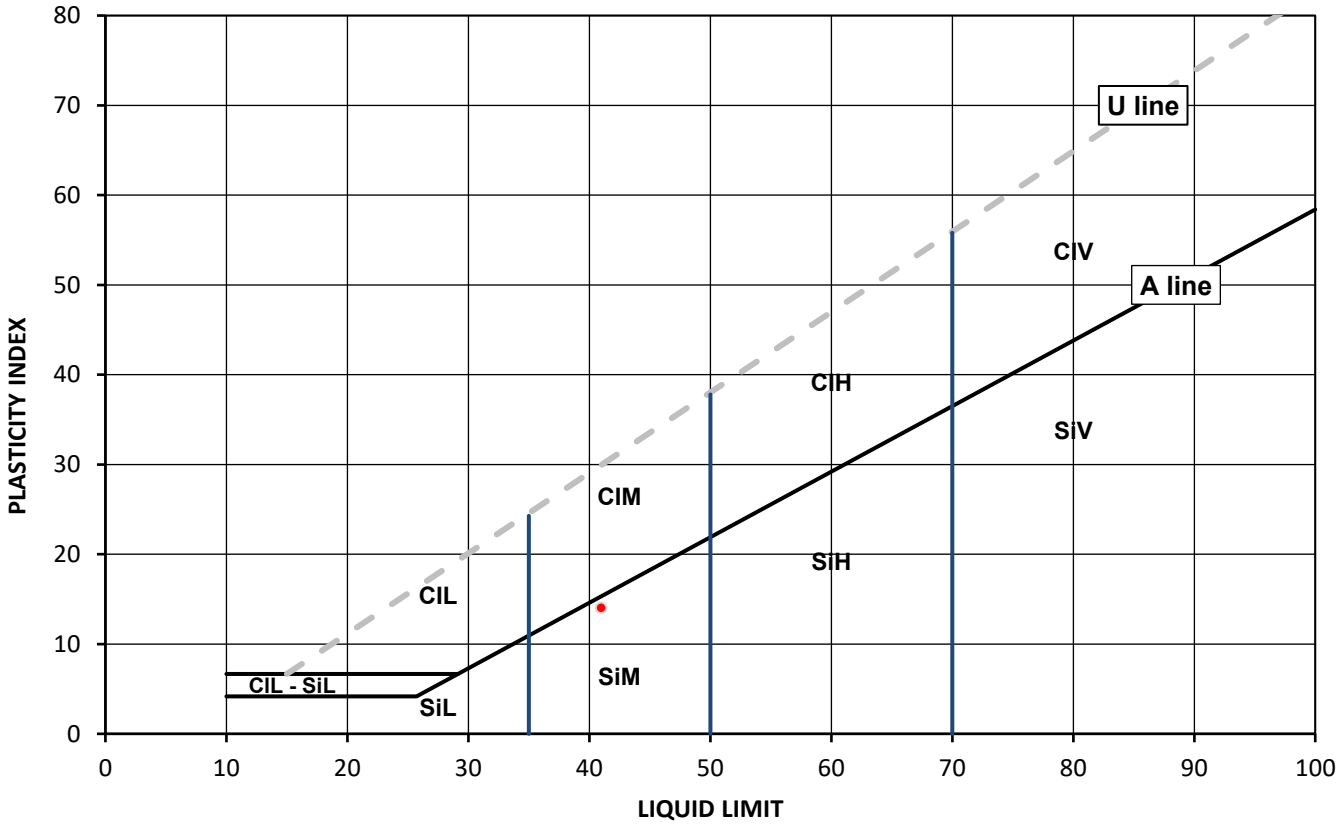
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799597	Depth Top [m]:	2.00
Hole No.:	TP23	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brownish grey slightly gravelly sandy CLAY		

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
21	41	27	14	90



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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UKAS TESTING 4041

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Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

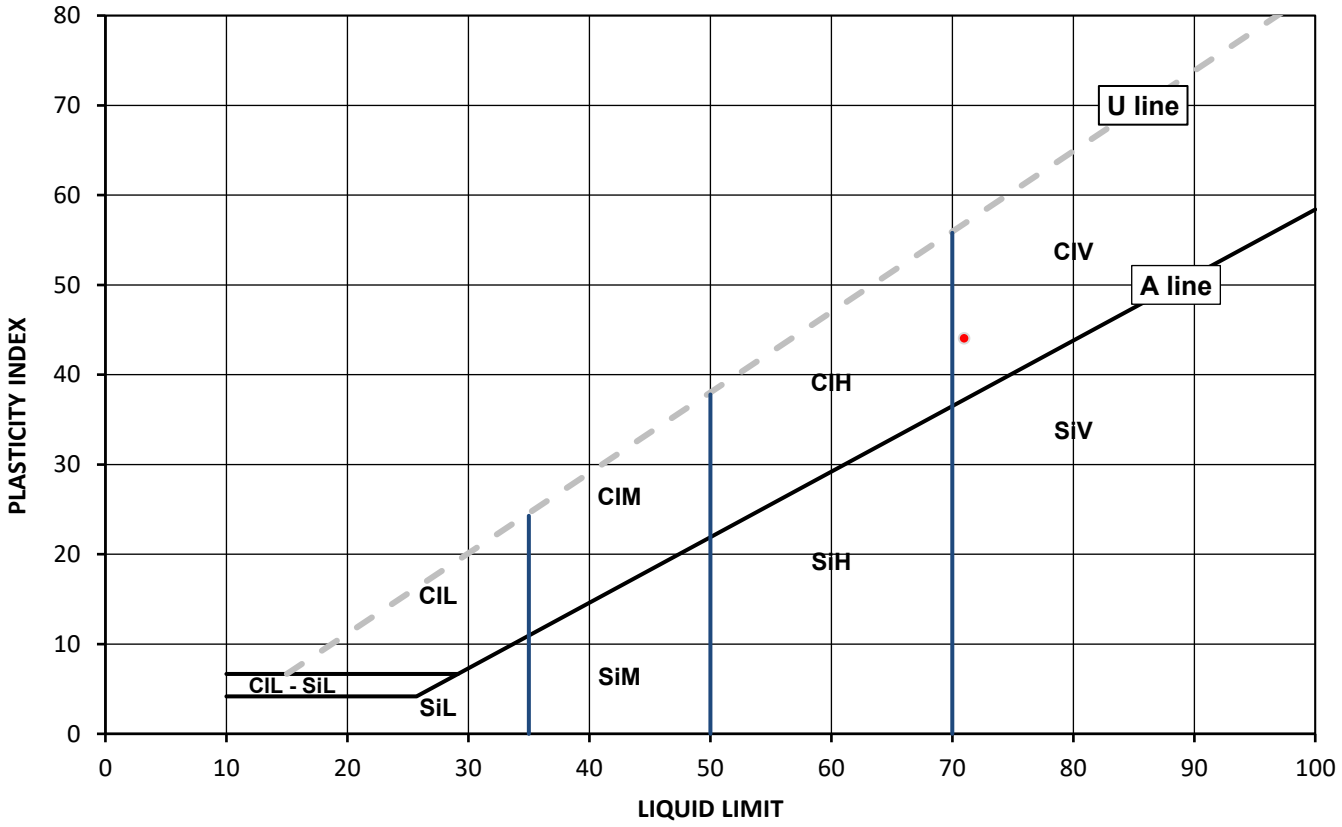
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799598	Depth Top [m]:	1.50
Hole No.:	TP24	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
35	71	27	44	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Date Reported: 23/03/2021

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UKAS TESTING 4041

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Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

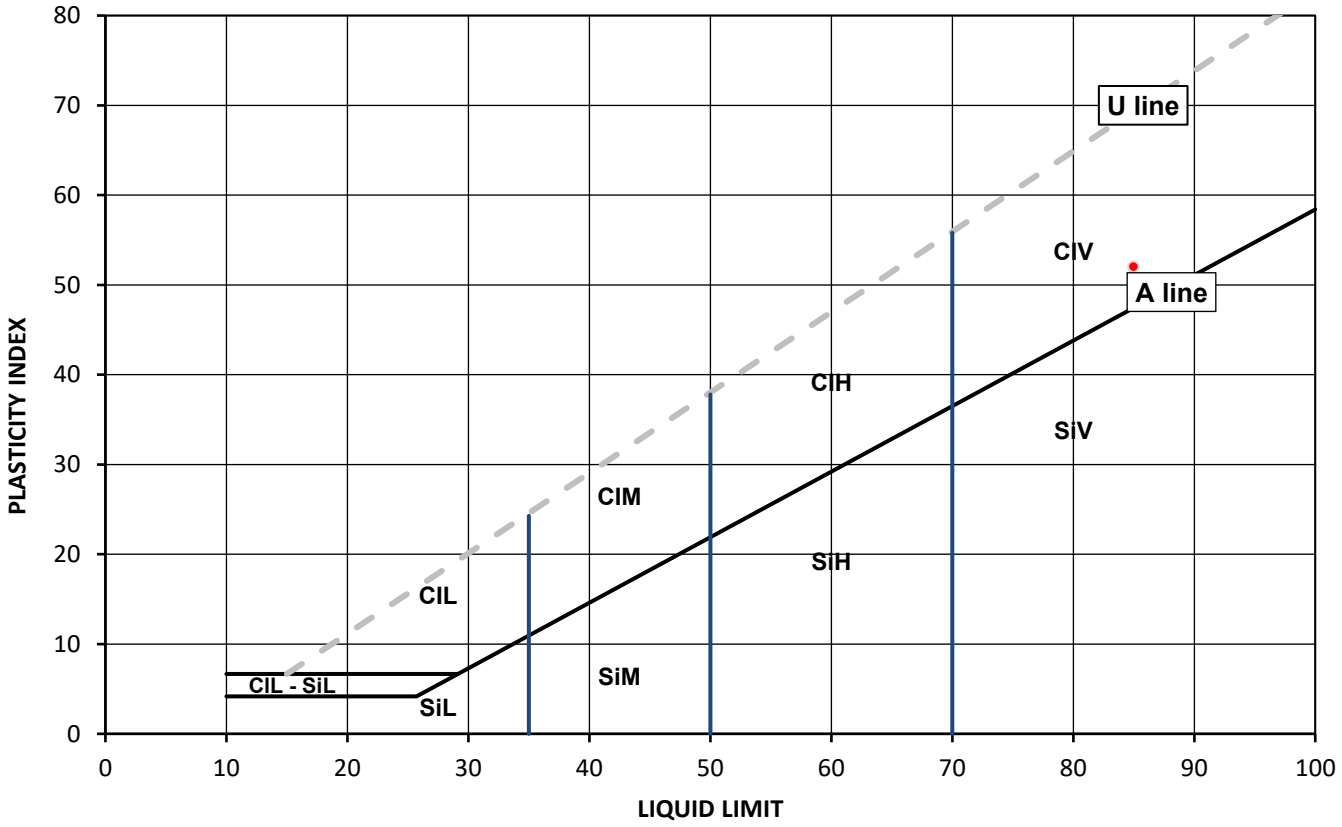
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799599	Depth Top [m]:	1.00
Hole No.:	TP25	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
38	85	33	52	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

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TEST CERTIFICATE

Liquid and Plastic Limits

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Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

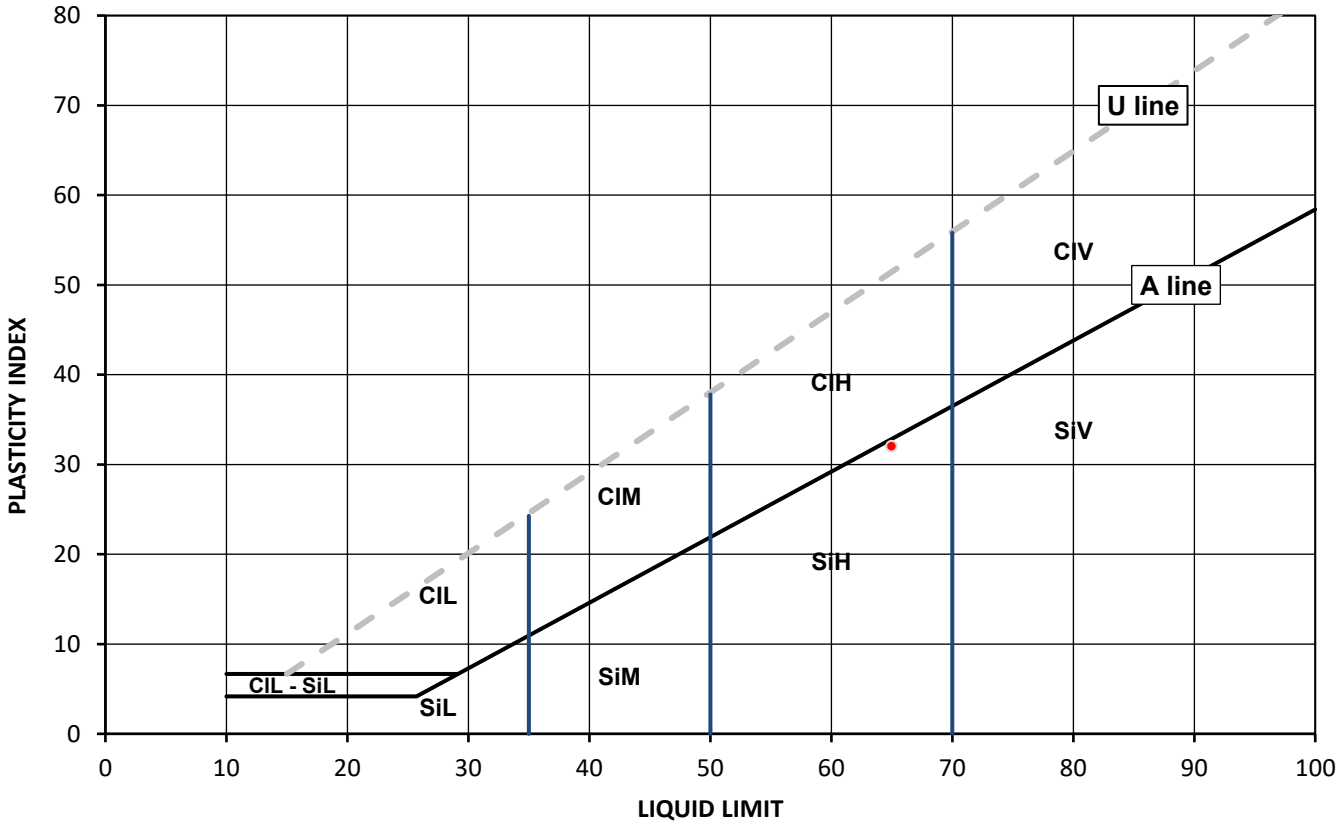
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799600	Depth Top [m]:	2.50
Hole No.:	TP25	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Black to brown CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
29	65	33	32	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

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TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

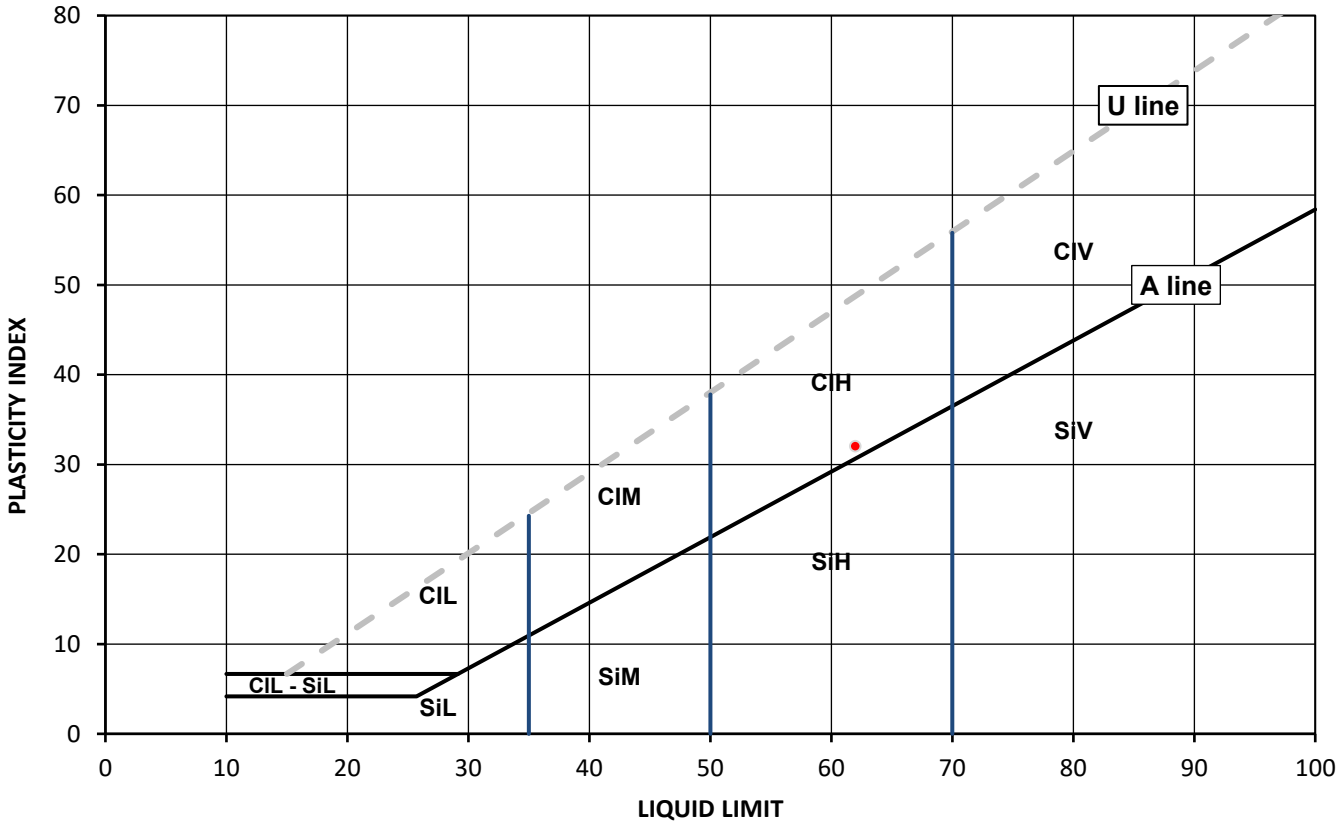
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799601	Depth Top [m]:	0.50
Hole No.:	TP26	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown to grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
36	62	30	32	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

TEST CERTIFICATE

Liquid and Plastic Limits

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Tested in Accordance with: BS 1377-2: 1990: Clause 4.4 and 5

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

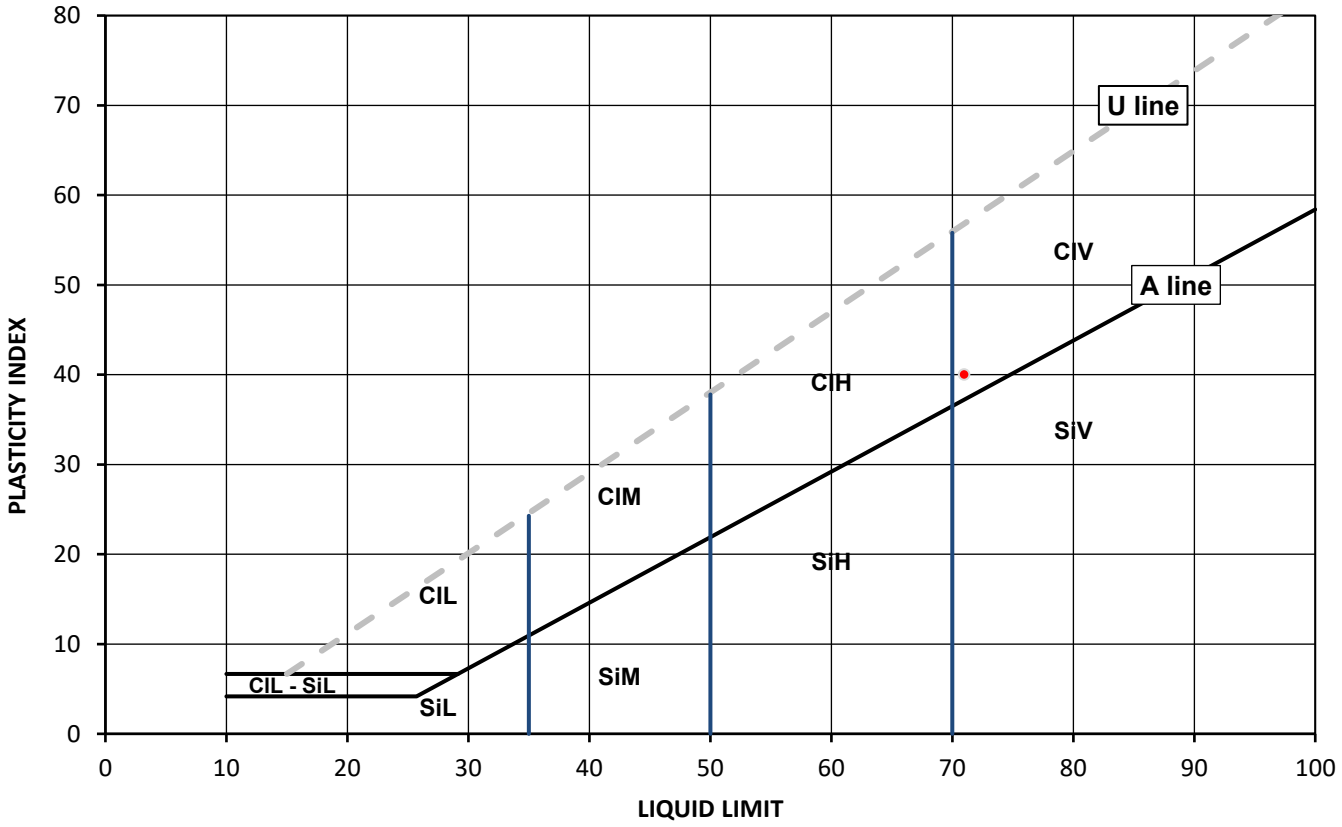
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799602	Depth Top [m]:	2.00
Hole No.:	TP26	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brownish grey to dark grey CLAY		

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
31	71	31	40	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Moisture Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Signed: Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 232.10

SUMMARY REPORT

Summary of Classification Test Results

UKAS TESTING 4041

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Tested in Accordance with:

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client: Clarkebond
Client Address: 129 Cumberland Road, Bristol, BS1 6UY
Contact: Josh Young
Site Address: South Farm, Wickwar

Client Reference: B05313
Job Number: 21-61985
Date Sampled: 01/03 - 02/03/2021
Date Received: 04/03/2021
Date Tested: 17/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1799575	TP06	Not Given	0.50	Not Given	D	Light brown to brown CLAY	Atterberg 1 Point	30		100	66	26	40						
1799576	TP07	Not Given	2.00	Not Given	D	Brown to grey slightly sandy CLAY	Atterberg 1 Point	33		100	58	30	28						
1799577	TP08	Not Given	1.00	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	31		100	71	35	36						
1799578	TP09	Not Given	1.50	Not Given	D	Light grey slightly gravelly slightly sandy CLAY	Atterberg 1 Point	22		96	52	25	27						
1799579	TP11	Not Given	1.00	Not Given	D	Brown to grey slightly gravelly slightly sandy CLAY	Atterberg 1 Point	20		91	50	21	29						
1799580	TP11	Not Given	2.00	Not Given	D	Brown to grey slightly gravelly slightly sandy CLAY	Atterberg 1 Point	24		73	53	23	30						
1799581	TP12	Not Given	1.00	Not Given	D	Brown to grey slightly sandy CLAY	Atterberg 1 Point	30		100	59	29	30						
1799582	TP12	Not Given	2.50	Not Given	D	Brownish grey to dark grey CLAY	Atterberg 1 Point	33		100	70	33	37						
1799583	TP13	Not Given	2.00	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	33		100	63	31	32						
1799584	TP14	Not Given	0.50	Not Given	D	Brownish grey CLAY	Atterberg 1 Point	48		100	94	30	64						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 234.12

UKAS TESTING
4041

SUMMARY REPORT

Summary of Classification Test Results

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client: Clarkebond
Client Address: 129 Cumberland Road, Bristol, BS1 6UY

Contact: Josh Young
Site Address: South Farm, Wickwar

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Reference: B05313
Job Number: 21-61985
Date Sampled: 02/03 - 03/03/2021
Date Received: 04/03/2021
Date Tested: 17/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
1799585	TP14	Not Given	1.50	Not Given	D	Brownish grey CLAY	Atterberg 1 Point	43		100	75	31	44						
1799586	TP15	Not Given	2.00	Not Given	D	Grey to brown slightly gravelly CLAY	Atterberg 1 Point	30		98	71	33	38						
1799587	TP16	Not Given	1.50	Not Given	D	Brown to grey slightly gravelly CLAY	Atterberg 1 Point	30		99	66	30	36						
1799588	TP17	Not Given	1.00	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	33		100	72	33	39						
1799589	TP18	Not Given	0.50	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	31		100	70	28	42						
1799590	TP18	Not Given	1.00	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	30		100	71	27	44						
1799591	TP19	Not Given	2.00	Not Given	D	Black to brownish grey CLAY	Atterberg 1 Point	32		100	68	34	34						
1799592	TP20	Not Given	2.50	Not Given	D	Black to brown CLAY	Atterberg 1 Point	42		100	78	32	46						
1799593	TP21	Not Given	1.10	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	34		100	74	29	45						
1799594	TP22	Not Given	0.50	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	33		100	63	28	35						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 234.12

SUMMARY REPORT

Summary of Classification Test Results

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

Environmental Science

Client: Clarkebond
Client Address: 129 Cumberland Road, Bristol, BS1 6UY

Contact: Josh Young
Site Address: South Farm, Wickwar

Moisture Content by BS 1377-2: 1990: Clause 3.2; Water Content by BS EN 17892-1: 2014; Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5; PD by BS 1377-2: 1990: Clause 8.2

Client Reference: B05313
Job Number: 21-61985
Date Sampled: 03/03/2021
Date Received: 04/03/2021
Date Tested: 17/03/2021
Sampled By: Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top m	Depth Base m	Type			%	%	% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3	%		
1799596	TP23	Not Given	1.00	Not Given	D	Brown to grey slightly gravelly CLAY	Atterberg 1 Point	35		95	62	27	35						
1799597	TP23	Not Given	2.00	Not Given	D	Brownish grey slightly gravelly sandy CLAY	Atterberg 1 Point	21		90	41	27	14						
1799598	TP24	Not Given	1.50	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	35		100	71	27	44						
1799599	TP25	Not Given	1.00	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	38		100	85	33	52						
1799600	TP25	Not Given	2.50	Not Given	D	Black to brown CLAY	Atterberg 1 Point	29		100	65	33	32						
1799601	TP26	Not Given	0.50	Not Given	D	Brown to grey CLAY	Atterberg 1 Point	36		100	62	30	32						
1799602	TP26	Not Given	2.00	Not Given	D	Brownish grey to dark grey CLAY	Atterberg 1 Point	31		100	71	31	40						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 234.12

TEST CERTIFICATE

Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

UKAS TESTING 4041

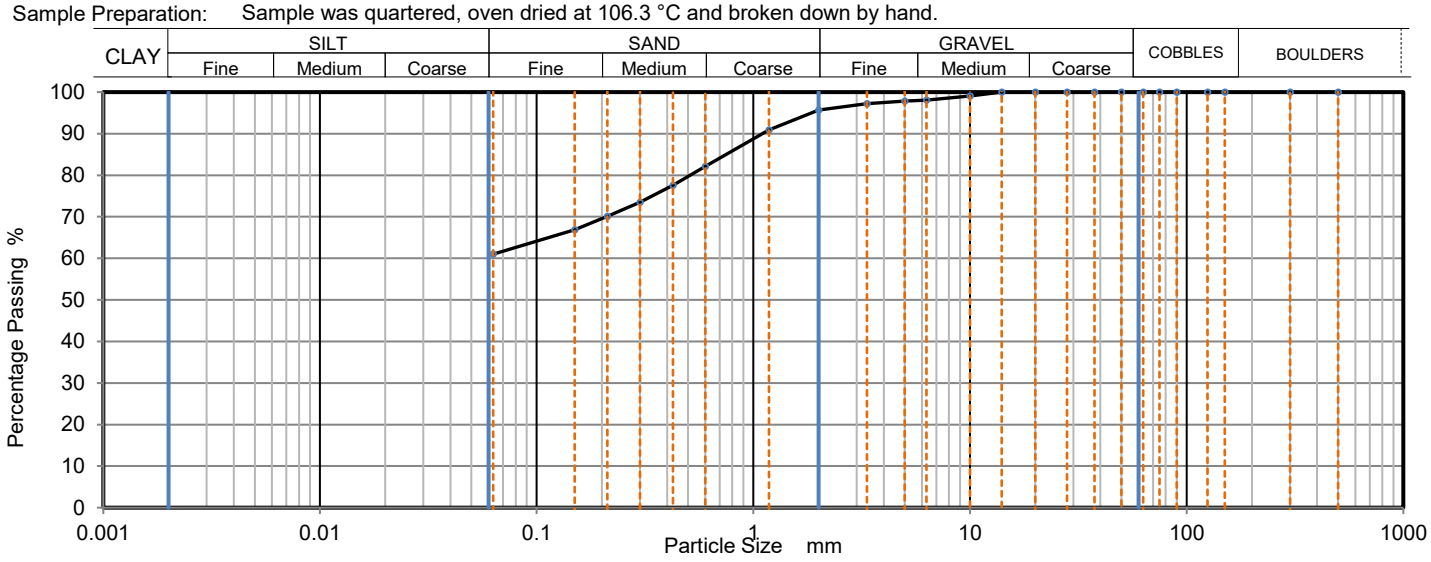
Environmental Science

Client:	Clarkebond	Client Reference:	B05313
Client Address:	129 Cumberland Road, Bristol, BS1 6UY	Job Number:	21-61985
		Date Sampled:	03/03/2021
		Date Received:	04/03/2021
Contact:	Josh Young	Date Tested:	17/03/2021
Site Address:	South Farm, Wickwar	Sampled By:	Client

Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	1799595	Depth Top [m]:	1.00
Hole No.:	TP22	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Brown mottled grey sandy CLAY		
Sample Preparation:	Sample was quartered, oven dried at 106.3 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	98		
5	98		
3.35	97		
2	96		
1.18	91		
0.6	82		
0.425	78		
0.3	74		
0.212	70		
0.15	67		
0.063	62		

Sample Proportions	% dry mass
Very coarse	0
Gravel	4
Sand	34
Fines <0.063mm	62

Grading Analysis		
D100	mm	14
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		N/A
Curvature Coefficient		

Uniformity Coefficient and Coefficient of Curvature calculated in accordance with BS EN ISO 14688-2: 2004 + A1: 2013

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Szczepan Bielatowicz
PL Deputy Head of Geotechnical Section

for and on behalf of i2 Analytical Ltd

Date Reported: 23/03/2021

GF 100.20

Appendix F Chemical Test Certificates

Josh Young
Clarkebond
129 Cumberland Road
Bristol
BS1 6UY

e: joshyoung@clarkebond.com

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

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 21-60996

Project / Site name:	South Farm	**Samples received on:**	04/03/2021
Your job number:	B05313	**Samples instructed on/ Analysis started on:**	08/03/2021
Your order number:	PO9735	**Analysis completed by:**	18/03/2021
Report Issue Number:	1	**Report issued on:**	18/03/2021
Samples Analysed:	15 soil samples		

Signed:

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794100	1794101	1794102	1794103	1794104
Sample Reference				TP06	TP07	TP08	TP13	TP15
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.05	2.00	1.00	1.00	0.60
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	27	21	19	19	24
Total mass of sample received	kg	0.001	NONE	0.30	0.40	0.40	0.40	0.30
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.6	7.2	7.6	7.4	7.4
Total Sulphate as SO4	%	0.005	MCERTS	-	1.08	0.025	0.038	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.041	0.18	0.042	0.089	0.016
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	176	42.3	89.2	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	2.2	< 0.5	4.2	-
Total Sulphur	%	0.005	MCERTS	-	0.436	0.012	0.020	-
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	-	1.5	1.6	< 0.5	-
Ammonium as NH4 (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	0.15	0.16	< 0.05	-
Organic Matter	%	0.1	MCERTS	8.7	-	-	-	3.8
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	< 2.0	< 2.0	-
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	-	-	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
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	-	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-	-	-	< 0.80

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794100	1794101	1794102	1794103	1794104
Sample Reference				TP06	TP07	TP08	TP13	TP15
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.05	2.00	1.00	1.00	0.60
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	-	-	-	20
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	-	-	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	-	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	31	-	-	-	35
Copper (aqua regia extractable)	mg/kg	1	MCERTS	28	-	-	-	28
Lead (aqua regia extractable)	mg/kg	1	MCERTS	73	-	-	-	57
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	-	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19	-	-	-	42
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	-	-	-	300
Magnesium (water soluble)	mg/kg	5	NONE	-	21	30	22	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	10	15	11	-
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	< 1.0
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH C6 - C40	mg/kg	10	NONE	< 10	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-	< 8.4
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	< 10

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794100	1794101	1794102	1794103	1794104
Sample Reference				TP06	TP07	TP08	TP13	TP15
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.05	2.00	1.00	1.00	0.60
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	< 10	-	-	-	-
Aldrin	µg/kg	10	NONE	< 10	-	-	-	-
Azinphos-ethyl	µg/kg	10	NONE	< 10	-	-	-	-
Azinphos-methyl	µg/kg	10	NONE	< 10	-	-	-	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	< 10	-	-	-	-
BHC-beta	µg/kg	10	NONE	< 10	-	-	-	-
BHC-delta	µg/kg	10	NONE	< 10	-	-	-	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	< 10	-	-	-	-
Bifenthrin	µg/kg	10	NONE	< 10	-	-	-	-
Carbophenothion	µg/kg	10	NONE	< 10	-	-	-	-
Chlordane-cis	µg/kg	10	NONE	< 10	-	-	-	-
Chlordane-trans	µg/kg	10	NONE	< 10	-	-	-	-
Chlorfenvinphos	µg/kg	10	NONE	< 10	-	-	-	-
Chlorothalonil	µg/kg	20	NONE	< 20	-	-	-	-
Chlorpyrifos	µg/kg	10	NONE	< 10	-	-	-	-
Cyfluthrin (Sum)	µg/kg	10	NONE	< 10	-	-	-	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	< 10	-	-	-	-
Cypermethrin (Sum)	µg/kg	10	NONE	< 10	-	-	-	-
DDD-o,p'	µg/kg	10	NONE	< 10	-	-	-	-
DDD-p,p'	µg/kg	10	NONE	< 10	-	-	-	-
DDE-o,p'	µg/kg	10	NONE	< 10	-	-	-	-
DDE-p,p'	µg/kg	10	NONE	< 10	-	-	-	-
DDT-o,p'	µg/kg	10	NONE	< 10	-	-	-	-
DDT-p,p'	µg/kg	10	NONE	< 10	-	-	-	-
Deltamethrin	µg/kg	10	NONE	< 10	-	-	-	-
Demeton-O	µg/kg	10	NONE	< 10	-	-	-	-
Demeton-S	µg/kg	10	NONE	< 10	-	-	-	-
Diazinon	µg/kg	10	NONE	< 10	-	-	-	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	< 10	-	-	-	-
Dichlorvos	µg/kg	10	NONE	< 10	-	-	-	-
Dieldrin	µg/kg	10	NONE	< 10	-	-	-	-
Dimethoate	µg/kg	10	NONE	< 10	-	-	-	-
Dimethylvinphos	µg/kg	10	NONE	< 10	-	-	-	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	< 10	-	-	-	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	< 10	-	-	-	-
Endosulfan sulfate	µg/kg	10	NONE	< 10	-	-	-	-
Endrin	µg/kg	20	NONE	< 20	-	-	-	-
Endrin aldehyde	µg/kg	10	NONE	< 10	-	-	-	-
Endrin ketone	µg/kg	10	NONE	< 10	-	-	-	-
Ethion	µg/kg	10	NONE	< 10	-	-	-	-
Etrimfos	µg/kg	10	NONE	< 10	-	-	-	-
Fenitrothion	µg/kg	10	NONE	< 10	-	-	-	-
Fenthion	µg/kg	10	NONE	< 10	-	-	-	-
Fenvalerate (Sum)	µg/kg	10	NONE	< 10	-	-	-	-
Heptachlor	µg/kg	10	NONE	< 10	-	-	-	-
Heptachlor exo-epoxide	µg/kg	10	NONE	< 10	-	-	-	-
Hexachlorobenzene	µg/kg	10	NONE	< 10	-	-	-	-
Hexachlorobutadiene	µg/kg	10	NONE	< 10	-	-	-	-
Isodrin	µg/kg	20	NONE	< 20	-	-	-	-
Malathion	µg/kg	10	NONE	< 10	-	-	-	-
Methacrifos	µg/kg	10	NONE	< 10	-	-	-	-
Methoxychlor, p,p'-	µg/kg	20	NONE	< 20	-	-	-	-

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794100	1794101	1794102	1794103	1794104
Sample Reference				TP06	TP07	TP08	TP13	TP15
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.05	2.00	1.00	1.00	0.60
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	< 10	-	-	-	-
Omethoate	µg/kg	20	NONE	< 20	-	-	-	-
Parathion	µg/kg	10	NONE	< 10	-	-	-	-
Parathion-methyl	µg/kg	10	NONE	< 10	-	-	-	-
Pendimethalin	µg/kg	10	NONE	< 10	-	-	-	-
Pentachlorobenzene	µg/kg	10	NONE	< 10	-	-	-	-
Permethrin, Cis-	µg/kg	10	NONE	< 10	-	-	-	-
Permethrin, Trans-	µg/kg	10	NONE	< 10	-	-	-	-
Phorate	µg/kg	10	NONE	< 10	-	-	-	-
Phosalone	µg/kg	10	NONE	< 10	-	-	-	-
Phosphamidon (Sum)	µg/kg	10	NONE	< 10	-	-	-	-
Pirimiphos-ethyl	µg/kg	10	NONE	< 10	-	-	-	-
Pirimiphos-methyl	µg/kg	10	NONE	< 10	-	-	-	-
Propetamphos	µg/kg	10	NONE	< 10	-	-	-	-
Propyzamide	µg/kg	10	NONE	< 10	-	-	-	-
Tecnazene	µg/kg	10	NONE	< 10	-	-	-	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	< 10	-	-	-	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10	-	-	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10	-	-	-	-
Trifluralin	µg/kg	10	NONE	< 10	-	-	-	-

Herbicides

Aldicarb	µg/kg	10	NONE	< 10	-	-	-	-
Aldicarb Sulfone	µg/kg	10	NONE	< 10	-	-	-	-
Aldicarb Sulfoxide	µg/kg	50	NONE	< 50	-	-	-	-
Atrazine	µg/kg	10	NONE	< 10	-	-	-	-
Carbaryl	µg/kg	10	NONE	< 10	-	-	-	-
Carbofuran	µg/kg	10	NONE	< 10	-	-	-	-
Carbofuran, 3-OH	µg/kg	20	NONE	< 20	-	-	-	-
Chlortoluron	µg/kg	10	NONE	< 10	-	-	-	-
Cyanazine	µg/kg	10	NONE	< 10	-	-	-	-
Diflubenzuron	µg/kg	50	NONE	< 50	-	-	-	-
Diuron	µg/kg	10	NONE	< 10	-	-	-	-
Fluometuron	µg/kg	10	NONE	< 10	-	-	-	-
Isoproturon	µg/kg	10	NONE	< 10	-	-	-	-
Linuron	µg/kg	20	NONE	< 20	-	-	-	-
Methiocarb	µg/kg	10	NONE	< 10	-	-	-	-
Methomyl	µg/kg	10	NONE	< 10	-	-	-	-
Oxamyl	µg/kg	10	NONE	< 10	-	-	-	-
Prometryn	µg/kg	10	NONE	< 10	-	-	-	-
Propazine	µg/kg	10	NONE	< 10	-	-	-	-
Propoxur	µg/kg	10	NONE	< 10	-	-	-	-
Siduron	µg/kg	10	NONE	< 10	-	-	-	-
Simazine	µg/kg	10	NONE	< 10	-	-	-	-
Tebuthiuron	µg/kg	10	NONE	< 10	-	-	-	-
Terbuthylazine	µg/kg	10	NONE	< 10	-	-	-	-
Terbutryn	µg/kg	10	NONE	< 10	-	-	-	-
Thiadiazuron	µg/kg	10	NONE	< 10	-	-	-	-
Trietazine	µg/kg	10	NONE	< 10	-	-	-	-

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

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794105	1794106	1794107	1794108	1794109
Sample Reference				TP16	TP17	TP18	TP20	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40	1.00	1.00	0.10
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	22	17	20	21	21
Total mass of sample received	kg	0.001	NONE	0.70	0.40	0.30	0.30	0.30

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.4	7.5	7.6	-	6.6
Total Sulphate as SO4	%	0.005	MCERTS	-	-	0.051	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.033	0.028	0.16	-	0.018
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	158	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	1.8	-	-
Total Sulphur	%	0.005	MCERTS	-	-	0.027	-	-
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	-	-	< 0.5	-	-
Ammonium as NH4 (10:1 leachate equivalent)	mg/l	0.05	MCERTS	-	-	< 0.05	-	-
Organic Matter	%	0.1	MCERTS	5.1	6.4	-	-	7.5
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	< 2.0	-	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	-	-	< 0.80

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794105	1794106	1794107	1794108	1794109
Sample Reference				TP16	TP17	TP18	TP20	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40	1.00	1.00	0.10
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	22	17	-	33	47
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	0.6	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	1.3	-	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	-	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	39	30	-	41	27
Copper (aqua regia extractable)	mg/kg	1	MCERTS	29	40	-	42	31
Lead (aqua regia extractable)	mg/kg	1	MCERTS	140	97	-	56	350
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	28	24	-	60	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	450	430	-	2500	300
Magnesium (water soluble)	mg/kg	5	NONE	-	-	64	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	32	-	-
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	-	-	-	-	49
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH C6 - C40	mg/kg	10	NONE	-	-	-	-	49
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	-	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	< 8.4	< 8.4	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	-	-	-

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794105	1794106	1794107	1794108	1794109
Sample Reference				TP16	TP17	TP18	TP20	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40	1.00	1.00	0.10
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	-	-	-	-	-
Aldrin	µg/kg	10	NONE	-	-	-	-	-
Azinphos-ethyl	µg/kg	10	NONE	-	-	-	-	-
Azinphos-methyl	µg/kg	10	NONE	-	-	-	-	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-	-	-	-	-
BHC-beta	µg/kg	10	NONE	-	-	-	-	-
BHC-delta	µg/kg	10	NONE	-	-	-	-	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-	-	-	-	-
Bifenthrin	µg/kg	10	NONE	-	-	-	-	-
Carbophenothion	µg/kg	10	NONE	-	-	-	-	-
Chlordane-cis	µg/kg	10	NONE	-	-	-	-	-
Chlordane-trans	µg/kg	10	NONE	-	-	-	-	-
Chlorfenvinphos	µg/kg	10	NONE	-	-	-	-	-
Chlorothalonil	µg/kg	20	NONE	-	-	-	-	-
Chlorpyrifos	µg/kg	10	NONE	-	-	-	-	-
Cyfluthrin (Sum)	µg/kg	10	NONE	-	-	-	-	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	-	-	-	-	-
Cypermethrin (Sum)	µg/kg	10	NONE	-	-	-	-	-
DDD-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDD-p,p'	µg/kg	10	NONE	-	-	-	-	-
DDE-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDE-p,p'	µg/kg	10	NONE	-	-	-	-	-
DDT-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDT-p,p'	µg/kg	10	NONE	-	-	-	-	-
Deltamethrin	µg/kg	10	NONE	-	-	-	-	-
Demeton-O	µg/kg	10	NONE	-	-	-	-	-
Demeton-S	µg/kg	10	NONE	-	-	-	-	-
Diazinon	µg/kg	10	NONE	-	-	-	-	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-	-	-	-	-
Dichlorvos	µg/kg	10	NONE	-	-	-	-	-
Dieldrin	µg/kg	10	NONE	-	-	-	-	-
Dimethoate	µg/kg	10	NONE	-	-	-	-	-
Dimethylvinphos	µg/kg	10	NONE	-	-	-	-	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-	-	-	-	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	-	-	-	-	-
Endosulfan sulfate	µg/kg	10	NONE	-	-	-	-	-
Endrin	µg/kg	20	NONE	-	-	-	-	-
Endrin aldehyde	µg/kg	10	NONE	-	-	-	-	-
Endrin ketone	µg/kg	10	NONE	-	-	-	-	-
Ethion	µg/kg	10	NONE	-	-	-	-	-
Etrimfos	µg/kg	10	NONE	-	-	-	-	-
Fenitrothion	µg/kg	10	NONE	-	-	-	-	-
Fenthion	µg/kg	10	NONE	-	-	-	-	-
Fenvalerate (Sum)	µg/kg	10	NONE	-	-	-	-	-
Heptachlor	µg/kg	10	NONE	-	-	-	-	-
Heptachlor exo-epoxide	µg/kg	10	NONE	-	-	-	-	-
Hexachlorobenzene	µg/kg	10	NONE	-	-	-	-	-
Hexachlorobutadiene	µg/kg	10	NONE	-	-	-	-	-
Isodrin	µg/kg	20	NONE	-	-	-	-	-
Malathion	µg/kg	10	NONE	-	-	-	-	-
Methacrifos	µg/kg	10	NONE	-	-	-	-	-
Methoxychlor, p,p'-	µg/kg	20	NONE	-	-	-	-	-

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794105	1794106	1794107	1794108	1794109
Sample Reference				TP16	TP17	TP18	TP20	TP21
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.40	1.00	1.00	0.10
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	-	-	-	-	-
Omethoate	µg/kg	20	NONE	-	-	-	-	-
Parathion	µg/kg	10	NONE	-	-	-	-	-
Parathion-methyl	µg/kg	10	NONE	-	-	-	-	-
Pendimethalin	µg/kg	10	NONE	-	-	-	-	-
Pentachlorobenzene	µg/kg	10	NONE	-	-	-	-	-
Permethrin, Cis-	µg/kg	10	NONE	-	-	-	-	-
Permethrin, Trans-	µg/kg	10	NONE	-	-	-	-	-
Phorate	µg/kg	10	NONE	-	-	-	-	-
Phosalone	µg/kg	10	NONE	-	-	-	-	-
Phosphamidon (Sum)	µg/kg	10	NONE	-	-	-	-	-
Pirimiphos-ethyl	µg/kg	10	NONE	-	-	-	-	-
Pirimiphos-methyl	µg/kg	10	NONE	-	-	-	-	-
Propetamphos	µg/kg	10	NONE	-	-	-	-	-
Propyzamide	µg/kg	10	NONE	-	-	-	-	-
Tecnazene	µg/kg	10	NONE	-	-	-	-	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	-	-	-	-
Trifluralin	µg/kg	10	NONE	-	-	-	-	-

Herbicides

Aldicarb	µg/kg	10	NONE	-	-	-	-	-
Aldicarb Sulfone	µg/kg	10	NONE	-	-	-	-	-
Aldicarb Sulfoxide	µg/kg	50	NONE	-	-	-	-	-
Atrazine	µg/kg	10	NONE	-	-	-	-	-
Carbaryl	µg/kg	10	NONE	-	-	-	-	-
Carbofuran	µg/kg	10	NONE	-	-	-	-	-
Carbofuran, 3-OH	µg/kg	20	NONE	-	-	-	-	-
Chlortoluron	µg/kg	10	NONE	-	-	-	-	-
Cyanazine	µg/kg	10	NONE	-	-	-	-	-
Diflubenzuron	µg/kg	50	NONE	-	-	-	-	-
Diuron	µg/kg	10	NONE	-	-	-	-	-
Fluometuron	µg/kg	10	NONE	-	-	-	-	-
Isoproturon	µg/kg	10	NONE	-	-	-	-	-
Linuron	µg/kg	20	NONE	-	-	-	-	-
Methiocarb	µg/kg	10	NONE	-	-	-	-	-
Methomyl	µg/kg	10	NONE	-	-	-	-	-
Oxamyl	µg/kg	10	NONE	-	-	-	-	-
Prometryn	µg/kg	10	NONE	-	-	-	-	-
Propazine	µg/kg	10	NONE	-	-	-	-	-
Propoxur	µg/kg	10	NONE	-	-	-	-	-
Siduron	µg/kg	10	NONE	-	-	-	-	-
Simazine	µg/kg	10	NONE	-	-	-	-	-
Tebuthiuron	µg/kg	10	NONE	-	-	-	-	-
Terbuthylazine	µg/kg	10	NONE	-	-	-	-	-
Terbutryn	µg/kg	10	NONE	-	-	-	-	-
Thiadiazuron	µg/kg	10	NONE	-	-	-	-	-
Trietazine	µg/kg	10	NONE	-	-	-	-	-

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

Analytical Report Number: 21-60996
Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794110	1794111	1794112	1794113	1794114
Sample Reference				TP21	TP23	TP24	TP26	TP26
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.10	2.00	1.00	2.00
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	24	16	17	21	18
Total mass of sample received	kg	0.001	NONE	0.30	0.30	0.40	0.30	0.30
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.3	6.7	6.4	-	6.8
Total Sulphate as SO4	%	0.005	MCERTS	0.263	-	1.41	-	1.52
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.055	0.42	2.1	-	2.1
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	54.9	-	2120	-	2090
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.3	-	4.4	-	4.5
Total Sulphur	%	0.005	MCERTS	0.104	-	0.399	-	0.645
Ammoniacal Nitrogen as NH4	mg/kg	0.5	MCERTS	1.0	-	4.5	-	1.5
Ammonium as NH4 (10:1 leachate equivalent)	mg/l	0.05	MCERTS	0.10	-	0.45	-	0.15
Organic Matter	%	0.1	MCERTS	-	7.0	-	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	-	< 2.0	-	< 2.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	< 0.80	-	-	-

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Lab Sample Number				1794110	1794111	1794112	1794113	1794114
Sample Reference				TP21	TP23	TP24	TP26	TP26
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.10	2.00	1.00	2.00
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-	20	-	36	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	0.7	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	35	-	30	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	34	-	40	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	160	-	64	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	-	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	20	-	59	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	350	-	2400	-
Magnesium (water soluble)	mg/kg	5	NONE	15	-	79	-	120
Magnesium (leachate equivalent)	mg/l	2.5	NONE	7.4	-	39	-	59
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	-	< 10	-	-	-
TPH2 (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
TPH C6 - C40	mg/kg	10	NONE	-	< 10	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-

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Project / Site name: South Farm
Your Order No: PO9735

Lab Sample Number				1794110	1794111	1794112	1794113	1794114
Sample Reference				TP21	TP23	TP24	TP26	TP26
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.10	2.00	1.00	2.00
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Pesticides								
Alachlor	µg/kg	10	NONE	-	-	-	-	-
Aldrin	µg/kg	10	NONE	-	-	-	-	-
Azinphos-ethyl	µg/kg	10	NONE	-	-	-	-	-
Azinphos-methyl	µg/kg	10	NONE	-	-	-	-	-
BHC-alpha (benzene hexachloride)	µg/kg	10	NONE	-	-	-	-	-
BHC-beta	µg/kg	10	NONE	-	-	-	-	-
BHC-delta	µg/kg	10	NONE	-	-	-	-	-
BHC-gamma (Lindane, gamma HCH)	µg/kg	10	NONE	-	-	-	-	-
Bifenthrin	µg/kg	10	NONE	-	-	-	-	-
Carbophenothion	µg/kg	10	NONE	-	-	-	-	-
Chlordane-cis	µg/kg	10	NONE	-	-	-	-	-
Chlordane-trans	µg/kg	10	NONE	-	-	-	-	-
Chlorfenvinphos	µg/kg	10	NONE	-	-	-	-	-
Chlorothalonil	µg/kg	20	NONE	-	-	-	-	-
Chlorpyrifos	µg/kg	10	NONE	-	-	-	-	-
Cyfluthrin (Sum)	µg/kg	10	NONE	-	-	-	-	-
Cyhalothrin (Lambda)	µg/kg	10	NONE	-	-	-	-	-
Cypermethrin (Sum)	µg/kg	10	NONE	-	-	-	-	-
DDD-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDD-p,p'	µg/kg	10	NONE	-	-	-	-	-
DDE-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDE-p,p'	µg/kg	10	NONE	-	-	-	-	-
DDT-o,p'	µg/kg	10	NONE	-	-	-	-	-
DDT-p,p'	µg/kg	10	NONE	-	-	-	-	-
Deltamethrin	µg/kg	10	NONE	-	-	-	-	-
Demeton-O	µg/kg	10	NONE	-	-	-	-	-
Demeton-S	µg/kg	10	NONE	-	-	-	-	-
Diazinon	µg/kg	10	NONE	-	-	-	-	-
Dichlorobenzonitrile, 2,6-	µg/kg	10	NONE	-	-	-	-	-
Dichlorvos	µg/kg	10	NONE	-	-	-	-	-
Dieldrin	µg/kg	10	NONE	-	-	-	-	-
Dimethoate	µg/kg	10	NONE	-	-	-	-	-
Dimethylvinphos	µg/kg	10	NONE	-	-	-	-	-
Endosulfan I (alpha isomer)	µg/kg	10	NONE	-	-	-	-	-
Endosulfan II (beta isomer)	µg/kg	10	NONE	-	-	-	-	-
Endosulfan sulfate	µg/kg	10	NONE	-	-	-	-	-
Endrin	µg/kg	20	NONE	-	-	-	-	-
Endrin aldehyde	µg/kg	10	NONE	-	-	-	-	-
Endrin ketone	µg/kg	10	NONE	-	-	-	-	-
Ethion	µg/kg	10	NONE	-	-	-	-	-
Etrimfos	µg/kg	10	NONE	-	-	-	-	-
Fenitrothion	µg/kg	10	NONE	-	-	-	-	-
Fenthion	µg/kg	10	NONE	-	-	-	-	-
Fenvalerate (Sum)	µg/kg	10	NONE	-	-	-	-	-
Heptachlor	µg/kg	10	NONE	-	-	-	-	-
Heptachlor exo-epoxide	µg/kg	10	NONE	-	-	-	-	-
Hexachlorobenzene	µg/kg	10	NONE	-	-	-	-	-
Hexachlorobutadiene	µg/kg	10	NONE	-	-	-	-	-
Isodrin	µg/kg	20	NONE	-	-	-	-	-
Malathion	µg/kg	10	NONE	-	-	-	-	-
Methacrifos	µg/kg	10	NONE	-	-	-	-	-
Methoxychlor, p,p'-	µg/kg	20	NONE	-	-	-	-	-

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Lab Sample Number				1794110	1794111	1794112	1794113	1794114
Sample Reference				TP21	TP23	TP24	TP26	TP26
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.50	0.10	2.00	1.00	2.00
Date Sampled				02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Mevinphos, E+Z	µg/kg	10	NONE	-	-	-	-	-
Omethoate	µg/kg	20	NONE	-	-	-	-	-
Parathion	µg/kg	10	NONE	-	-	-	-	-
Parathion-methyl	µg/kg	10	NONE	-	-	-	-	-
Pendimethalin	µg/kg	10	NONE	-	-	-	-	-
Pentachlorobenzene	µg/kg	10	NONE	-	-	-	-	-
Permethrin, Cis-	µg/kg	10	NONE	-	-	-	-	-
Permethrin, Trans-	µg/kg	10	NONE	-	-	-	-	-
Phorate	µg/kg	10	NONE	-	-	-	-	-
Phosalone	µg/kg	10	NONE	-	-	-	-	-
Phosphamidon (Sum)	µg/kg	10	NONE	-	-	-	-	-
Pirimiphos-ethyl	µg/kg	10	NONE	-	-	-	-	-
Pirimiphos-methyl	µg/kg	10	NONE	-	-	-	-	-
Propetamphos	µg/kg	10	NONE	-	-	-	-	-
Propyzamide	µg/kg	10	NONE	-	-	-	-	-
Tecnazene	µg/kg	10	NONE	-	-	-	-	-
Tetrachlorobenzene, 1,2,4,5-	µg/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	-	-	-	-
Trifluralin	µg/kg	10	NONE	-	-	-	-	-

Herbicides

Aldicarb	µg/kg	10	NONE	-	-	-	-	-
Aldicarb Sulfone	µg/kg	10	NONE	-	-	-	-	-
Aldicarb Sulfoxide	µg/kg	50	NONE	-	-	-	-	-
Atrazine	µg/kg	10	NONE	-	-	-	-	-
Carbaryl	µg/kg	10	NONE	-	-	-	-	-
Carbofuran	µg/kg	10	NONE	-	-	-	-	-
Carbofuran, 3-OH	µg/kg	20	NONE	-	-	-	-	-
Chlortoluron	µg/kg	10	NONE	-	-	-	-	-
Cyanazine	µg/kg	10	NONE	-	-	-	-	-
Diflubenzuron	µg/kg	50	NONE	-	-	-	-	-
Diuron	µg/kg	10	NONE	-	-	-	-	-
Fluometuron	µg/kg	10	NONE	-	-	-	-	-
Isoproturon	µg/kg	10	NONE	-	-	-	-	-
Linuron	µg/kg	20	NONE	-	-	-	-	-
Methiocarb	µg/kg	10	NONE	-	-	-	-	-
Methomyl	µg/kg	10	NONE	-	-	-	-	-
Oxamyl	µg/kg	10	NONE	-	-	-	-	-
Prometryn	µg/kg	10	NONE	-	-	-	-	-
Propazine	µg/kg	10	NONE	-	-	-	-	-
Propoxur	µg/kg	10	NONE	-	-	-	-	-
Siduron	µg/kg	10	NONE	-	-	-	-	-
Simazine	µg/kg	10	NONE	-	-	-	-	-
Tebuthiuron	µg/kg	10	NONE	-	-	-	-	-
Terbuthylazine	µg/kg	10	NONE	-	-	-	-	-
Terbutryn	µg/kg	10	NONE	-	-	-	-	-
Thiadiazuron	µg/kg	10	NONE	-	-	-	-	-
Trietazine	µg/kg	10	NONE	-	-	-	-	-

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

Analytical Report Number : 21-60996
Project / Site name: South Farm

* 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 *
1794100	TP06	None Supplied	0.05	Brown loam and clay with gravel and vegetation.
1794101	TP07	None Supplied	2	Grey clay with gravel.
1794102	TP08	None Supplied	1	Grey clay with gravel.
1794103	TP13	None Supplied	1	Grey clay with gravel.
1794104	TP15	None Supplied	0.6	Brown clay and sand with gravel.
1794105	TP16	None Supplied	0.5	Brown loam and clay with gravel and vegetation.
1794106	TP17	None Supplied	0.4	Brown loam and clay with gravel and vegetation.
1794107	TP18	None Supplied	1	Grey clay.
1794108	TP20	None Supplied	1	Brown loam and clay with gravel and vegetation.
1794109	TP21	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
1794110	TP21	None Supplied	1.5	Grey clay.
1794111	TP23	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
1794112	TP24	None Supplied	2	Grey clay with gravel.
1794113	TP26	None Supplied	1	Light brown clay.
1794114	TP26	None Supplied	2	Grey clay with gravel.

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Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
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	L038-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
Pesticides by GC-MS/MS	Detemination of Pesticides in soil by GC MS/MS	In-house method	L055B-PL	W	NONE
Herbicides by LC-MS	Detemination of Herbicides in soil by LC MS	In-house method	L056B-PL	W	NONE

Analytical Report Number : 21-60996
Project / Site name: South Farm

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
TPH C6 - C40 (soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method.	L076-PL	W	NONE
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

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Analytical Report Number : 21-61000

Project / Site name:	South Farm, Wickwar	**Samples received on:**	04/03/2021
Your job number:	B05313	**Samples instructed on/ Analysis started on:**	08/03/2021
Your order number:	PO9735	**Analysis completed by:**	15/03/2021
Report Issue Number:	1	**Report issued on:**	15/03/2021
Samples Analysed:	2 10:1 WAC samples		

Signed: Karolina Marek

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

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

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Waste Acceptance Criteria Analytical Results

Report No:	**21-61000**						
					Client:	**CLARKEBOND**	
Location	**South Farm, Wickwar**						
Lab Reference (Sample Number)	1794134 / 1794135				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	02/03/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP20						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	0.8				3%	5%	6%
Loss on Ignition (%) **	4.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	1.53				100	--	--
pH (units)**	8.2				--	>6	--
Acid Neutralisation Capacity (mol / kg)	3.0				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.0010			< 0.0100	0.5	2	25
Barium *	0.0251			0.199	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	< 0.0004			< 0.0040	0.5	10	70
Copper *	0.0060			0.048	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0052			0.0413	0.5	10	30
Nickel *	0.0024			0.019	0.4	10	40
Lead *	< 0.0010			< 0.010	0.5	10	50
Antimony *	< 0.0017			< 0.017	0.06	0.7	5
Selenium *	< 0.0040			< 0.040	0.1	0.5	7
Zinc *	0.0067			0.053	4	50	200
Chloride *	1.6			13	800	15000	25000
Fluoride	0.58			4.6	10	150	500
Sulphate *	49			390	1000	20000	50000
TDS*	110			860	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	8.66			68.9	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.30						
Dry Matter (%)	79						
Moisture (%)	21						

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.

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Waste Acceptance Criteria Analytical Results

Report No:	**21-61000**						
					Client:	**CLARKEBOND**	
Location	**South Farm, Wickwar**						
Lab Reference (Sample Number)	1794136 / 1794137				**Landfill Waste Acceptance Criteria Limits**		
Sampling Date	03/03/2021				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP26						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	0.4				3%	5%	6%
Loss on Ignition (%) **	4.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.007				1	--	--
Mineral Oil (mg/kg)	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.7				--	>6	--
Acid Neutralisation Capacity (mol / kg)	1.1				--	To be evaluated	To be evaluated
Eluate Analysis (BS EN 12457 - 2 preparation utilising end over end leaching procedure)	10:1 mg/l			10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0014			0.0103	0.5	2	25
Barium *	0.0140			0.105	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0011			0.0086	0.5	10	70
Copper *	0.0073			0.055	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	0.0053			0.0396	0.5	10	30
Nickel *	0.0035			0.026	0.4	10	40
Lead *	0.0054			0.040	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 *	0.016			0.12	4	50	200
Chloride *	1.2			9.3	800	15000	25000
Fluoride	0.25			1.9	10	150	500
Sulphate *	24			180	1000	20000	50000
TDS*	51			380	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	15.3			114	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	0.30						
Dry Matter (%)	79						
Moisture (%)	21						

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 discrepencies 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 : 21-61000
Project / Site name: South Farm, Wickwar

* 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 *
1794134	TP20	None Supplied	1	Brown loam and clay with gravel and vegetation.
1794136	TP26	None Supplied	1	Light brown clay.

Analytical Report Number : 21-61000
Project / Site name: South Farm, Wickwar

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance""	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	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
Mineral Oil (Soil) C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270. MCERTS accredited except Coronene.	L064-PL	D	NONE
PCB's By GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
pH at 20oC in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073-PL	W	MCERTS
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""	L039-PL	W	ISO 17025
Chloride 10:1 WAC	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride 10:1 WAC	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Sulphate 10:1 WAC	Determination of sulphate in leachate by ICP-OES	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
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	L004-PL	W	ISO 17025

Analytical Report Number : 21-61000
Project / Site name: South Farm, Wickwar

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Dissolved organic carbon 10:1 WAC	Determination of dissolved inorganic carbon in leachate by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' 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.

Appendix G Waste Classification Report

clarkebond
ENGINEERING AND MANAGEMENT CONSULTANTS

HazWasteOnline™

Waste Classification Report

JSQ4D-PRBF2-MH3J4

Job name

South Farm, Wickwar

Description/Comments

Project

B05313

Site

South Farm, Wickwar

Related Documents

#	Name	Description
None		

Waste Stream Template

CB 2019

Classified by

Name:
Nick Edwards
Date:
12 Apr 2021 08:42 GMT
Telephone:
07714 524 021

Company:
Clarkebond (UK) Ltd
129 Cumberland Road
Bristol
BS1 6UY

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	-
Advanced Hazardous Waste Classification	-

Report

Created by: Nick Edwards
Created date: 12 Apr 2021 08:42 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP06	0.05	Non Hazardous		2
2	TP15	0.6	Non Hazardous		4
3	TP16	0.5	Non Hazardous		6
4	TP17	0.4	Non Hazardous		8
5	TP21	0.1	Non Hazardous		10
6	TP23	0.1	Non Hazardous		12

Classification of sample: TP06

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP06
Sample Depth:
0.05 m
Moisture content:
27%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 27% No Moisture Correction applied (MC)

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
1		arsenic { arsenic trioxide }		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
		033-003-00-0 / 215-481-4 / 1327-53-3							
2		cadmium { cadmium sulfide }	1	0.7 mg/kg	1.285	0.9 mg/kg	0.00007 %		
		048-010-00-4 / 215-147-8 / 1306-23-6							
3		chromium { chromium(VI) oxide }		<4 mg/kg	1.923	<7.692 mg/kg	<0.000769 %		<LOD
		024-001-00-0 / 215-607-8 / 1333-82-0							
4		copper { dicopper oxide; copper (I) oxide }		28 mg/kg	1.126	31.525 mg/kg	0.00315 %		
		029-002-00-X / 215-270-7 / 1317-39-1							
5		lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	73 mg/kg		73 mg/kg	0.0073 %		
		082-001-00-6							
6		mercury { mercury dichloride }		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
		080-010-00-X / 231-299-8 / 7487-94-7							
7		nickel { nickel dihydroxide }		19 mg/kg	1.579	30.01 mg/kg	0.003 %		
		028-008-00-X / 235-008-5 [1] 234-348-1 [2] / 12054-48-7 [1] 11113-74-9 [2]							
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
		034-002-00-8							
9		zinc { zinc oxide }		180 mg/kg	1.245	224.049 mg/kg	0.0224 %		
		030-013-00-7 / 215-222-5 / 1314-13-2							
10		naphthalene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
11		acenaphthylene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1 / 208-96-8							
12		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
13		fluorene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5 / 86-73-7							
14		phenanthrene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5 / 85-01-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-371-1	120-12-7									
16		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
17		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
22		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
25		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
26		pH				6.6	pH		6.6	pH	6.6 pH		
				PH									
										Total:	0.0385 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP15

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP15
Sample Depth:
0.6 m
Moisture content:
24%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 24% No Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	cadmium { cadmium sulfide }	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4 / 215-147-8 / 1306-23-6							
3	chromium { chromium(VI) oxide }		<4 mg/kg	1.923	<7.692 mg/kg	<0.000769 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
4	copper { dicopper oxide; copper (I) oxide }		28 mg/kg	1.126	31.525 mg/kg	0.00315 %		
	029-002-00-X / 215-270-7 / 1317-39-1							
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	57 mg/kg		57 mg/kg	0.0057 %		
	082-001-00-6							
6	mercury { mercury dichloride }		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X / 231-299-8 / 7487-94-7							
7	nickel { nickel dihydroxide }		42 mg/kg	1.579	66.339 mg/kg	0.00663 %		
	028-008-00-X / 235-008-5 [1] 234-348-1 [2] / 12054-48-7 [1] 11113-74-9 [2]							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8							
9	zinc { zinc oxide }		300 mg/kg	1.245	373.414 mg/kg	0.0373 %		
	030-013-00-7 / 215-222-5 / 1314-13-2							
10	naphthalene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2 / 202-049-5 / 91-20-3							
11	acenaphthylene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	205-917-1 / 208-96-8							
12	acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	201-469-6 / 83-32-9							
13	fluorene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	201-695-5 / 86-73-7							
14	phenanthrene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	201-581-5 / 85-01-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-371-1	120-12-7									
16		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
17		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
22		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
25		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
26		pH				7.4	pH		7.4	pH	7.4 pH		
				PH									
										Total:	0.0565 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP16

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP16
Sample Depth:
0.5 m
Moisture content:
22%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 22% No Moisture Correction applied (MC)

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		22	mg/kg	1.32	29.047	mg/kg	0.0029 %		
2		cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
3		chromium { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<4	mg/kg	1.923	<7.692	mg/kg	<0.000769 %		<LOD
4		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		29	mg/kg	1.126	32.651	mg/kg	0.00327 %		
5		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	140	mg/kg		140	mg/kg	0.014 %		
6		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
7		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		28	mg/kg	1.579	44.226	mg/kg	0.00442 %		
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
9		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		450	mg/kg	1.245	560.121	mg/kg	0.056 %		
10		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
11		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
12		acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
13		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
14		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-371-1	120-12-7									
16		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
17		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
22		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
25		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
26		pH				7.4	pH		7.4	pH	7.4 pH		
				PH									
										Total:	0.0817 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP17

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP17
Sample Depth:
0.4 m
Moisture content:
17%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	22.446 mg/kg	0.00224 %		
2	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.3 mg/kg	1.285	1.671 mg/kg	0.00013 %		
3	chromium { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<4 mg/kg	1.923	<7.692 mg/kg	<0.000769 %		<LOD
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		40 mg/kg	1.126	45.036 mg/kg	0.0045 %		
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	97 mg/kg		97 mg/kg	0.0097 %		
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
7	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		24 mg/kg	1.579	37.908 mg/kg	0.00379 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		430 mg/kg	1.245	535.227 mg/kg	0.0535 %		
10	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
11	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
12	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
13	fluorene		201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
14	phenanthrene		201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-371-1	120-12-7									
16		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
17		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
22		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
25		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
26		pH				7.5	pH		7.5	pH	7.5 pH		
				PH									
										Total:	0.0749 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP21

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP21
Sample Depth:
0.1 m
Moisture content:
21%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 21% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		47 mg/kg	1.32	62.055 mg/kg	0.00621 %		
2	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
3	chromium { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<4 mg/kg	1.923	<7.692 mg/kg	<0.000769 %		<LOD
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		31 mg/kg	1.126	34.903 mg/kg	0.00349 %		
5	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	350 mg/kg		350 mg/kg	0.035 %		
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
7	nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		13 mg/kg	1.579	20.533 mg/kg	0.00205 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		300 mg/kg	1.245	373.414 mg/kg	0.0373 %		
10	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
11	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
12	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
13	fluorene		201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
14	phenanthrene		201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-371-1	120-12-7									
16		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
17		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
22		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
25		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
26		pH				6.6	pH		6.6	pH	6.6 pH		
				PH									
										Total:	0.0851 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP23

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP23
Sample Depth:
0.1 m
Moisture content:
16%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% No Moisture Correction applied (MC)

#		Determinand	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number									
1		arsenic { arsenic trioxide }		20	mg/kg	1.32	26.407	mg/kg	0.00264 %		
		033-003-00-0 / 215-481-4 / 1327-53-3									
2		cadmium { cadmium sulfide }	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
		048-010-00-4 / 215-147-8 / 1306-23-6									
3		chromium { chromium(VI) oxide }		<4	mg/kg	1.923	<7.692	mg/kg	<0.000769 %		<LOD
		024-001-00-0 / 215-607-8 / 1333-82-0									
4		copper { dicopper oxide; copper (I) oxide }		34	mg/kg	1.126	38.28	mg/kg	0.00383 %		
		029-002-00-X / 215-270-7 / 1317-39-1									
5		lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	160	mg/kg		160	mg/kg	0.016 %		
		082-001-00-6									
6		mercury { mercury dichloride }		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X / 231-299-8 / 7487-94-7									
7		nickel { nickel dihydroxide }		20	mg/kg	1.579	31.59	mg/kg	0.00316 %		
		028-008-00-X / 235-008-5 [1] 234-348-1 [2] / 12054-48-7 [1] 11113-74-9 [2]									
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
		034-002-00-8									
9		zinc { zinc oxide }		350	mg/kg	1.245	435.65	mg/kg	0.0436 %		
		030-013-00-7 / 215-222-5 / 1314-13-2									
10		naphthalene		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3									
11		acenaphthylene		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1 / 208-96-8									
12		acenaphthene		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9									
13		fluorene		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5 / 86-73-7									
14		phenanthrene		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5 / 85-01-8									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-371-1	120-12-7									
16		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
17		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
18		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
19		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
20		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
21		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
22		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
24		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
25		benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
26		pH				6.7	pH		6.7	pH	6.7 pH		
				PH									
										Total:	0.0702 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers many simple lead compounds to be Carcinogenic category 2
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4 H302 , Acute Tox. 1 H330 , Acute Tox. 1 H310 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Aquatic Chronic 2 H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Carc. 2 H351 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Skin Irrit. 2 H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on risk phrases

cadmium {cadmium sulfide}

Worst case species based on risk phrases

chromium {chromium(VI) oxide}

Worst case species based on risk phrases

copper {dicopper oxide; copper (I) oxide}

Most likely common species

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Hexavalent Chromium <4, therefore lead chromate will not be present.

mercury {mercury dichloride}

Worst case species based on risk phrases

nickel {nickel dihydroxide}

Worst case species based on risk phrases

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on risk phrases

zinc {zinc oxide}

Hexavalent chromium is not present.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2021.77.4714.9046 (18 Mar 2021)
HazWasteOnline Database: 2021.77.4714.9046 (18 Mar 2021)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2019 - UK: 2019 No. 720 of 27th March 2019
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

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