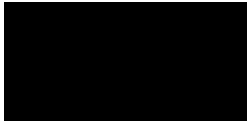
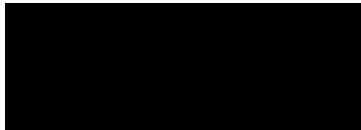
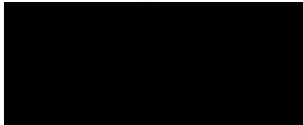


GROUND INVESTIGATION REPORT
for the land at
STOKE PARK FARM - SANG,
STOKE COMMON ROAD,
BISHOPSTOKE, SO50 6DW
on behalf of
EASTLEIGH BOROUGH COUNCIL

Report:	GROUND INVESTIGATION REPORT
Site:	STOKE PARK FARM - SANG, STOKE COMMON ROAD, BISHOPSTOKE, SO50 6DW
Client:	EASTLEIGH BOROUGH COUNCIL
Date:	24/07/2023
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APPENDIX A	Exploratory Hole Logs and In-situ Test Results
APPENDIX B	Geotechnical Laboratory Testing Results
APPENDIX C	Geochemical Laboratory Testing Results
APPENDIX D	HazWasteOnline Assessment
APPENDIX E	Soakage Test Results

EXECUTIVE SUMMARY		
Site Details	Site Address	Stoke Park Farm – SANG, Stoke Common Road, Bishopstoke, SO50 6DW
	National Grid Reference	447904, 119924
	Site Area	22.08Ha (approx.)
	Form of Development	It is understood that the site is proposed to address nitrate mitigation and explore additional environmental benefits such as biodiversity net gain, phosphates, tree planting and woodland creation, solar energy and the creation of a SANG to provide recreational spaces closer to the residents of Eastleigh Borough.
	Scope of works	The investigation included undertaking intrusive investigation and laboratory testing to inform a geotechnical and geo-environmental assessment. Intrusive investigation works were undertaken on 28 th and 29 th June 2023.
Encountered Conditions	Ground Conditions	The ground conditions encountered comprised a thickness Topsoil overlying London Clay Formation in the northern portion of the site and a thickness of Topsoil overlying Whitecliff Sand Member in the southern portion of the site.
	Groundwater	During the intrusive investigation works groundwater was encountered as slight seepages in the base of the following exploratory holes TP02, TP06, WS04 and WS05. A groundwater monitoring well was installed within WS01. To date one return groundwater monitoring round has been completed on 5th July 2023, and groundwater was encountered at a depth of 2.30m bgl. Further groundwater monitoring visits are proposed and the groundwater assessment will be updated upon their completion.
Geotechnical Considerations	Car Park	Laboratory soaked CBR testing was undertaken on soil samples recovered from 4No. locations within the proposed car parking area of the site. The results of the testing were generally in the range of 1.5% to 4.9%. With reference to Table C1 of TRRL LR1132, a CBR value of between 3% and 5% would be recommended depending on construction conditions. Based on the results, a preliminary CBR of 2% is recommended for the shallow soils across the site or further testing may be required. This also accords with Table A, Appendix A of HCC's Companion Document to Manual for Streets. Based on lower bound Plasticity Index results at 0.50m bgl, the shallow soils should be assumed to be frost susceptible thus requiring a minimum pavement construction thickness of 450mm. Any hard or soft spots in the formation level may induce reflective cracking in the pavement and allowance should be made for removing hard or soft spots that may be present.
	Drainage	Soakage testing was undertaken within 2No. trial pits, at 1.00m bgl in TP01 and at 1.70m bgl in TP06. There was an insufficient fall in head to calculate an infiltration rate for the tests undertaken within location TP01 and TP06 over the testing period and, as such, the tests are deemed to have failed, i.e. indicate that conventional soakaways would not function satisfactorily and therefore an alternative drainage solution will need to be considered.
	Slope Stability	Where slopes are proposed as part of drainage features, e.g. basins, ponds and swales, a slope of no steeper than 1v:3h is recommended. If the basins could suffer rapid draw down, then stability modelling will be required and slacker side slopes may be necessary. If a slope of greater than 1v:2.5h is necessary then slope stability modelling will be required.
Environmental Considerations	Human Health	No soil-based contamination has been identified from the testing undertaken and as such it is considered that remedial action would not be warranted to protect end users of the proposed residential development.
	Groundwater	It is considered that no risk mitigation measures are required with respect to groundwater in the context of contamination or environmental considerations.
	Radon Gas	No radon protection measures are required.

EXECUTIVE SUMMARY		
	Waste Disposal	The soil analyses from the site were assessed using HazWasteOnline software. None of the samples assessed were indicated to represent potentially hazardous waste. Natural soils on site are likely to be classified as inert waste if they are to be disposed of. Once any soils for disposal have been identified on the site it may be prudent to undertake further waste testing to enable categorisation of the materials for disposal.
	Topsoil Assessment	The laboratory results demonstrate that Topsoil is in general accordance with BS3882:2015 Low Fertility Topsoil due to the slight shortfall in nitrogen and phosphate and one result falling below the Multipurpose threshold for Loss on Ignition. One sample was found to fall below the mass loss on ignition threshold for both Multipurpose and Low Fertility Topsoil and one sample was found to exceed the >2mm coarse fragment threshold for both Multipurpose and Low Fertility Topsoil. The tested Topsoil is still considered representative of the naturally occurring Topsoil in this area and suitable for landscaping purposes.
Further Action: • Maintain a Discovery Strategy throughout the course of development such that if abnormal conditions are encountered, an appropriate course of action can be followed and required remedial action determined. • If abnormal conditions are encountered, Geotechnical/Geo-Environmental advice must be sought as soon as reasonably practicable to determine a suitable source of action.		
<i>This Executive Summary is intended to provide a brief summary of the main findings and conclusions of the investigation. For detailed information, the reader is referred to the main report ref. GE21681/GIR/JUL23.</i>		

1.0 INTRODUCTION

1.1 General

Geo-Environmental Services Limited was instructed by Eastleigh Borough Council, to undertake an investigation of the geotechnical and geo-environmental factors pertaining to Stoke Park Farm – SANG, Stoke Common Road, Bishopstoke, SO50 6DW herein referred to as ‘the site’ (National Grid Reference at centre: 447904, 119924). The site’s location is presented in Figure 1.

A Desk Study Report (ref: GE21681/DSR/JUN23) was prepared by Geo-Environmental. Subsequent to the findings of the desk study, an intrusive Phase II investigation was undertaken into the geo-environmental and geotechnical conditions pertaining to the site and its redevelopment.

The information from the intrusive investigation was to form the basis of an interpretation with respect to the construction of the proposed car park and soil infiltration and to clarify the site’s status with regards to soil contamination and any requirement for remedial action.

1.2 Form of Development

It is understood that the site is proposed to address nitrate mitigation and explore additional environmental benefits such as biodiversity net gain, phosphates, tree planting and woodland creation, solar energy and the creation of a SANG to provide recreational spaces closer to the residents of Eastleigh Borough.

1.3 Standards and References

Where practicable, the ground investigation and subsequent geotechnical and environmental assessments were undertaken in accordance with the following documents and guidance.

- National Planning Policy Framework – July 2021;
- Land Contamination Risk Management (LCRM), Environment Agency, updated July 2023;
- Environment Agency Guidance on Requirements for Land Contamination Reports, Version 1 dated July 2005;
- BS10175:2011+A2:2017 - Investigation of Potentially Contaminated Sites - Code of Practice, BSI 2017;
- BS5930: 2015+A1:2020 - Code of Practice for Site Investigations, BSI 2020;
- EN ISO 14688 Geotechnical Investigation and Testing Part 1-2002 and Part 2-2004;
- BS1377: 1990 - Soils for Civil Engineering Purposes, BSI1990;
- NHBC Standards Chapter 4.1 Land Quality - Managing Ground Conditions;
- NHBC Standards Chapter 4.2 Building Near Trees;
- CIRIA C665 – Assessing risks posed by hazardous ground gases to buildings (2007);
- NHBC 10627-R01(04) - Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present (2007);
- BS8485:2015+A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings;
- Department of Environment - Industry Profiles (1995 - 1996);
- BS3882:2015 Specification for Topsoil, BSI 2015.

1.4 Conditions

This report does not purport to be a “Geotechnical Design Report” as defined in Clause 2.8 of Eurocode 7 (Geotechnical Design BS EN 1997-1:2004) and some of the data used to support this preliminary geotechnical assessment may not be fully compliant with that design code. It is considered possible that further detailed ground investigations could be required to facilitate the detailed geotechnical design process and should be carried out on a structure specific basis if necessary.

The desk study data obtained for the site is assumed to be factually correct and up to date at the point of purchase. No liability is taken for any omissions or inaccuracies in the data purchased. It should also be noted that changes to the desk study data may occur following the production of this report, Geo-Environmental accept no liability where this subsequently affects the assessment presented herein.

The data collected from the investigations have been used to provide an interpretation of the geotechnical and/or environmental conditions pertaining to the site. The recommendations and opinions expressed in this report are based on the data obtained. Geo-Environmental takes no responsibility for conditions that either have not been revealed in the available records, or that occur between or under points of physical investigation. Whilst every effort has been made to interpret the conditions, such information is only indicative and liability cannot be accepted for its accuracy.

It should be noted that in particular the concentrations and levels of mobile liquid and gaseous materials are likely to vary with time. The results obtained may therefore only be representative of the conditions at the time of sampling.

The absence of asbestos noted during the site walkover or within any soil samples analysed does not guarantee the absence of asbestos within buildings, within or bonded to concrete, as discrete burials, or within the soil mass elsewhere within a site. This report must not be taken as, or assumed to imply any guarantee that a site is free of hazardous or potentially contaminative materials.

Information contained in this report is intended for the use of the Client and Geo-Environmental can take no responsibility for the use of this information by any party for uses other than that described in this report. Geo-Environmental makes no warranty or representation whatsoever express or implied with respect to the use of this information by any third party. Geo-Environmental does not indemnify the Client or any third parties against any dispute or claim arising from any finding or other result of this investigation report or any consequential losses.

Assessment criteria or other parameters developed for the evaluation of contamination on this site are based on a number of assumptions regarding exposure and toxicology. Exposure to contaminants and levels of adverse effects may therefore vary. Whilst reasonable care and expertise has been employed in the development of such criteria, no liability is accepted in this respect. Other criteria or guidance on the development of assessment criteria may be published in the future and no liability is accepted in this respect.

This report remains the property of Geo-Environmental and the Client has no rights to, or reliance upon this document or supporting documents until such time as payment has been received in full for all invoices for works undertaken in connection with this report.

2.0 SITE DESCRIPTION

At the time of the site walkover the site comprised an irregularly shaped parcel of land centred on NGR 447904, 119924 and extended to c.22.08 hectares. The site is understood to form part of 243.23 hectares of agricultural land recently acquired by Eastleigh Borough Council.

A detailed site walkover survey was undertaken by Geo-Environmental on 8th June 2023. The site was accessed via a single-track road located off Sewall Drive to the northwest. This single-track access is part of the site and will form the access once the site is developed. The track was bordered by trees and vegetation on both sides with a significant height difference from the track to the land to the north, the track being higher by c.1-2m. A ditch was noted to be present to the south of the track, along the section opposite the fisheries to the north.

The majority of the site comprised open land laid to uncut grass. A tree belt was present in the centre of the site running roughly northwest-southeast from the northern site boundary to roughly the centre of the site. A former farm track comprising some loose sporadic gravel and hardcore and existing soils, ran from the north-eastern site boundary, where Stoke Park Farm was located, in a southerly direction towards the southern site boundary. Two branches came off this track one running to the east and one to the west. It is understood that these tracks were utilised by cattle when the farm was operational to move cattle from the fields to the barns within the farm complex.

Site topography was such that the site rose from the northwest to the centre of the site and fell away from the centre to the south, with the central and eastern portions of the site being at the highest elevation.

The majority of the site boundaries were formed of trees, hedgerows and vegetation the exception being the eastern boundary in the north which was formed of Heras fencing to separate the former farm building from the site, at the time of the site walkover.

Surrounding land uses were noted to comprise a fisheries and open fields to the north, Stoke Park Farm to the northeast, open fields and woodland to the east, woodland to the south and woodland with residential development beyond to the west.

3.0 PRELIMINARY RISK ASSESSMENT

The Preliminary Risk Assessment (PRA) and Conceptual Site Model (CSM) developed from the information gathered as part of the desk study (GE21681/DSR/JUN23) process identified plausible potential pollutant linkages that exist in relation to the proposed redevelopment of the site. However, the preliminary risk rating for each potential linkage was classified as low or very low.

The potential pollutant linkages established within the desk study were not considered to prevent development on the subject site, but could require investigation and assessment to support further characterisation, calibration of the CSM and where/if necessary determine a remedial strategy to reduce, remove or otherwise control any risk within the site to key receptors.

In order to progress the assessment in line with best practice guidance and to provide further characterisation of the site and refinement of the PRA and CSM, it was recommended that an intrusive investigation and associated testing was to be undertaken to confirm the findings of the desk study report and to provide a robust risk assessment for the site and proposed redevelopment. As such, it was recommended that a geochemical and geotechnical investigation be carried out on the site to include analysis of soil and groundwater (if encountered) samples for the range of potential contaminants identified within the desk study.

3.1 Scope of Works

In summary, the following scope of works for the intrusive investigation was agreed with the Client.

- Attendance of a specialist surveyor to undertake a pre-dig buried utilities survey of the proposed exploratory hole locations using radio-detection and ground penetrating radar techniques. The survey included capture of co-ordinates and levels of exploratory holes using GPS surveying where possible.
- Attendance of Geo-Environmental Engineer to set out and supervise the intrusive investigation, undertake sampling, in-situ testing and logging of recovered soils from exploratory holes.
- The construction of 6No. machine dug trial pits (TP01-TP06) to depths between 1.00m and 2.00m bgl located within the proposed car parking area to allow for the collection of bulk soil samples for laboratory CBR analysis.
- Undertake trial pit soakage tests in general accordance with BRE Digest 365, within 2No. trial pits, TP01 and TP06.
- Excavation using hand tools of 4No. shallow trial pits to enable the sampling of Topsoil.
- Construction of 5No. dynamic sampler boreholes (WS01-WS05) to depths of up to 3.00m bgl.
- Installation of 1No. groundwater monitoring well to a depth of 3m bgl to facilitate return monitoring on six occasions.
- Geotechnical laboratory testing to support the geotechnical assessment for construction of the proposed car parking area, including soaked CBR testing.
- Geochemical laboratory testing for a suite of commonly occurring brownfield contaminants.
- Geochemical laboratory testing for a BS3882 Topsoil nutrient suite on 4No. Topsoil samples.
- Waste Acceptance Criteria (WAC) testing on a selected sample representative of soils to be removed from site for disposal as waste.
- Provision of a Ground Investigation Report.

3.2 Investigation Strategy

The positioning of exploratory holes was determined on site to provide general coverage and to target specific areas. Table 3.1 sets out the investigation strategy adopted.

Area of Concern	Investigation	Positions
General ground conditions	Exploratory holes located across the site, coupled with sampling and laboratory analysis.	All
Potential contamination of near surface soils	Exploratory holes located to provide coverage of the site, coupled with sampling and laboratory analysis.	All
CBR testing of shallow soils	CBR testing comprising laboratory testing (soaked CBRs).	TP01, TP02, TP04 and TP06
Permeability of underlying soils	Trial pit soakage tests in general accordance with BRE Digest 365.	TP01 and TP06
Groundwater levels underlying the site	Spot monitoring within wells located across the site.	WS01

Table 3.1 Summary of the Investigation Strategy

Soil samples were collected and placed into amber jars and cool boxes on site for transit to the office, where they were stored under chilled conditions (<4°C) prior to final transportation in cool boxes to the laboratory by their in-house courier. Both the geotechnical and contamination testing were undertaken by UKAS and MCERTS (where relevant) accredited laboratories. Samples were stored in temperature controlled conditions from sampling until receipt at the laboratory from which time sample preparation and storage was determined by testing requirements and in line with laboratory's protocols.

4.0 ENCOUNTERED CONDITIONS

A factual record of the conditions encountered during the physical investigation of the site is presented in the following sections.

For further details of the ground conditions, reference should be made to the exploratory hole logs and in situ testing presented in Appendix A, the geotechnical testing results in Appendix B, geochemical testing results in Appendix C, the HazWasteOnline results in Appendix D, and the soakage testing results in Appendix E.

The physical ground investigation works were undertaken on 28th and 29th June 2023.

Unless stated otherwise, all depths are reported as metres below ground level (m bgl).

4.1 Soils

With reference to British Geological Survey (BGS) mapping, the geology of the site was anticipated to comprise a thickness of Topsoil over sand of the Whitecliff Sand Member and sandy clay of the London Clay Formation. The London Clay Formation was anticipated across the whole site with an outcrop the Whitecliff Sand Member overlying the London Clay approximately across the central and south eastern portion of the site.

The ground conditions encountered within the exploratory holes were noted to be broadly consistent within the anticipated ground conditions, i.e. a thickness Topsoil overlying London Clay Formation in the northern portion of the site and a thickness of Topsoil overlying Whitecliff Sand Member in the southern portion of the site. A generalised summary of the encountered shallow ground conditions is presented in Table 4.1.

Top (m bgl)	Base (m bgl)	Geology	Positions
0.00	0.15 – 0.35	TOPSOIL: Grass over dark brown slightly silty CLAY with frequent roots and rootlets.	All
0.15 – 0.20	0.40 – >3m (base of exploratory holes)	WHITECLIFF SAND MEMBER: Light brown fine SAND with varying proportions of clay. Roots and rootlets noted to be present between 0.15m and 1.10m bgl. Orange brown fine SAND with varying proportions of silt. Orange and grey fine SAND with varying proportions of clay.	HP03, WS03, WS05
0.15 – 0.35	>3m (base of exploratory holes)	LONDON CLAY FORMATION: Firm to stiff orange brown CLAY with varying proportions of sand. Roots and rootlets were noted to be present between 0.15m and 1.00m bgl. Visual indicators of desiccated clays were noted within TP02, TP03, TP04, TP06, and WS02, between 0.15m and 1.00m bgl.	HP01-HP04, TP01-TP06, WS01-WS04

Table 4.1 Ground condition summary

For more detailed descriptions at specific locations, reference should be made to the exploratory hole logs presented in Appendix A and the exploratory hole location plans are presented in Figure 3a and 3b.

4.2 Groundwater

During the intrusive investigation works groundwater was encountered as slight seepages in the base of the exploratory holes TP02, TP06, WS04 and WS05.

A groundwater monitoring well was installed within WS01. One groundwater monitoring round has been completed to date with the result summarised in Table 4.2 below:

Location	Groundwater depth (m bgl)
	05/07/23
WS01	2.30

Table 4.2 Summary of groundwater depth monitoring results

It is possible that groundwater could be present at differing depths over time, e.g. during or following prolonged wet periods. The presence of groundwater in excavations could influence suitability and buildability of foundations, services and the like.

It should also be noted that changes in groundwater levels do occur for a number of reasons including seasonal effects and variations in drainage. Such fluctuations may only be recorded by the measurement of the groundwater level within a series of standpipes or piezometers installed within appropriate response zones.

Groundwater monitoring is still ongoing and the groundwater assessment will be updated following completion of this planned monitoring.

4.3 Obstructions

A mains water supply pipe, supplying Stoke Park Farm and associated commercial buildings and farmhouse was encountered within TP03 at 0.86m bgl. The water supply pipe was a plastic 63mm diameter pipe which ran in an east-west direction within TP03 (NGR 447687 120216). The pipe appeared to have been laid by moling, or other 'trenchless' technique, as no discernible granular trench fill was encountered and there were no marker tapes or other protection measures encountered over the pipe. The pipe could not be detected or traced due to its composition and lack of granular trench fill which might have provided a contrast for the radiodetection and GPR equipment deployed for the pre-dig services survey.

It must be noted that this water supply pipe is located within the area of the site where it is proposed to locate the car park for the SANG. Therefore, if any drainage or construction is proposed to be completed/undertaken with this area of the site at the depth of, or close to, the encountered pipe (c.0.8m bgl), consideration for protection of this water supply pipe must be given at design stage. Alternatively, redirection/relocation of this water supply pipe might need to be considered. Figure 4 shows the location of the water supply pipe.

4.4 Geotechnical Testing

The results of geotechnical testing undertaken as part of the ground investigation are summarised in Table 4.3, with test results presented in Appendix B.

Parameter	London Clay Formation
Natural Moisture Content (%)	18 – 26
Liquid Limit (%)	35 – 52
Plastic Limit (%)	18 – 23
Plasticity Index Ip (%)	17 – 30
Modified Plasticity Index Ip' (%)	14 – 30
Soaked CBR (%)	1.5 – 4.9

Table 4.3 Summary of Geotechnical Laboratory Test Results

The Modified Plasticity Indices showed the cohesive soils of the London Clay Formation to be of Low to Medium

Volume Change Potential as defined in NHBC guidance.

4.5 Chemical Analysis

In order to assess the general chemical quality of the strata encountered, samples of soils recovered from the exploratory holes were submitted for analysis for a range of potential contaminants selected on the basis of the findings of the desk study and supported by CLR publication CLR8 and Environment Agency R&D66 publication.

The testing rationale included sampling and analysis to provide a general coverage of the subject site. Testing was undertaken for a broad range of commonly occurring contaminants including metals, metalloids, inorganic compounds, speciated TPH, PAH, asbestos and pesticides.

5.0 ENGINEERING CONSIDERATIONS

Subsequent to intrusive investigation of the site and receipt of the laboratory test results, the following geotechnical assessments have been made.

5.1 Car Park

Laboratory soaked CBR testing was undertaken at 4No. locations within the proposed car parking area of the site. The results of the testing were generally in the range of 1.5% to 4.9%.

With reference to Table C1 of TRRL LR1132, a CBR value of between 3% and 5% would be recommended depending on construction conditions. Based on the results, a preliminary CBR of 2% is recommended for the shallow soils across the site or further testing may be required. This also accords with Table A, Appendix A of HCC's Companion Document to Manual for Streets.

Based on lower bound Plasticity Index results at 0.50m bgl, the shallow soils should be assumed to be frost susceptible thus requiring a minimum pavement thickness of 450mm. Any hard or soft spots in the formation level may induce reflective cracking in the pavement and allowance should be made for removing hard or soft spots that may be present.

5.2 Soakaways

Soakage testing was undertaken within 2No. trial pits, at 1.00m bgl in TP01 and at 1.70m bgl in TP06. The soakage testing was undertaken in general accordance with BRE Digest 365.

There was an insufficient fall in head to calculate an infiltration rate for the tests undertaken within location TP01 and TP06 over the testing period and, as such, the tests are deemed to have failed.

The results of the soakage testing indicate that the use of soakaways within the cohesive London Clay Formation would not be suitable and therefore an alternative drainage solution will need to be considered. The results from the soakage testing are presented within Appendix E.

In addition, changes in groundwater levels, such as shallower groundwater during winter months, could reduce storage capacity and performance of soakaways or other storage and infiltration systems. This might also adversely impact the ability of any ponds to drain via infiltration to the ground and thus attenuated discharge to ditches and surface water may be more appropriate under extension of existing riparian rights.

It is understood that habitat features such as scrapes are proposed to be created with the proposed SANG. This would comprise the removal of the Topsoil in small areas to expose the underlying soils to form invertebrate and/or bird habitats. Where these features are proposed within the cohesive sandy clays of the London Clay Formation permeability is likely to be low such that surface/rainwater may collect. Where these features are proposed within the granular clayey sands and sands of the Whitecliff Sand Member these soils are likely to be more permeable and not collect surface/rainwater.

5.3 Slope Stability

Where slopes are proposed as part of drainage features, e.g. basins, ponds and swales, a slope of no steeper than 1v:3h is recommended. This is provided as initial guidance and slope stability modelling may be necessary to support detailed design. If the basins could be prone to rapid draw down, then stability modelling will be necessary and this might determine that a slacker slope profile is required. If a slope steeper than 1v:2.5h is necessary then slope stability modelling will be required.

6.0 ENVIRONMENTAL CONSIDERATIONS

A Generic Quantitative Risk Assessment (GQRA) incorporating the results of the desk study and ground investigation was undertaken, the findings of which are presented in the following sections.

As stated in Section 3, site workers involved in the preparation and construction of the development have not been considered further in this assessment as the Principal Contractor is duty bound under the current CDM Regulations to undertake their own risk assessments with respect to their employees.

6.1 Outline Risk Assessment

A number of plausible pollutant linkages were identified as part of the desk study. The investigation did not encounter conditions that warranted a revision of the preliminary Conceptual Site Model.

6.2 Soil Contamination vs. End Users

The presence of a possible contaminant does not necessarily imply that a site or area is contaminated or that there is any unacceptable risk to human health. A Preliminary Quantitative Risk Assessment has been undertaken in order to evaluate any unacceptable risks posed to human health with respect to the proposed redevelopment. It should be noted that this assessment is protective of the chronic long-term effects of contaminants, which is also likely to be protective of any possible immediate acute effects.

A quantitative risk assessment has been undertaken by comparing the results of the laboratory chemical testing of shallow soils against Tier 1 screening criteria in the first instance. These criteria comprise the Atkins ATRISK soil screening values (SSVs), the Suitable for Use Levels (S4ULs) published by LQM (Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3453. All rights reserved) and the Category 4 Screening Levels (C4SLs) published by DEFRA. Although the C4SLs were released for Part 2A use, the associated policy companion document for the C4SLs indicated that they may also be used for planning. Although the C4SLs represent a marginally higher risk level than the SSACs (low risk rather than minimal risk) it is considered that the risk levels remain very low. Therefore, the final C4SLs are considered to be suitable to assess soils under the planning regime.

The exploratory holes were located to provide general coverage of the site in line with the proposed development use and soil conditions encountered within exploratory hole positions. Samples were selected to target shallow soils and underlying natural ground and to provide coverage of the site. Analysis was undertaken on soil samples collected from these exploratory holes.

In the first instance the results of the sample analysis were compared to the Tier 1 screening criteria, for public open space, where available. All of the results were noted to be below the respective assessment criteria, therefore further assessment was not considered necessary.

Two samples were submitted for a pesticide screen, the analysis did not identify the presence of any pesticides above the limit of laboratory detection.

In addition, samples submitted for laboratory testing were also screened for asbestos. Geochemical testing of the shallow soils across the site has not returned any positive identification for asbestos. Nonetheless, the absence of asbestos in samples analysed does not mean that asbestos might not be present at locations remote from exploratory holes. If/where any such materials are encountered, or suspected, further assessment will be required in accordance with the Discovery Strategy presented in Section 7 of this report.

As such, it is considered that remedial action would not be warranted to protect end users of the proposed SANG.

6.3 Soil Contamination vs. Soft Landscaping

British Standard BS3882:2015 *Specification for topsoil and requirements for use* provides assessment criteria for a number of potentially phytotoxic contaminants in terms of new planting.

The results of the chemical analysis for determinands known to pose a potential phytotoxic risk to plant growth are summarised in Table 6.1, together with the respective adopted Generic Assessment Criteria (GAC) for plant growth. The compliance criteria set out in BS3882:2015 are pH dependent and thus the GAC used relate to the pH range measured on samples recovered from the site.

Determinand	Phytotoxicity GAC (mg/kg)			GAC Exceedances
	pH <6.0	pH 6.0-7.0	pH >7.0	
Zinc	200	200	300	No
Copper	100	135	200	No
Nickel	60	75	110	No

Table 6.1 Summary of Plant Phytotoxicity Assessment

The phytotoxicity assessment did not identify any exceedance against the relevant phytotoxicity criteria. As such it is considered that no specific measures are required in this respect.

6.4 Soil Contamination vs. Adjacent Land Users

Accounting for the recommendations set out in Section 6.2 with respect to end users, it is considered that no long-term exposure scenarios exist and thus no specific remedial action is warranted in relation to adjacent land users.

However, short term risks to adjacent land users may arise in relation to the generation of soil derived dust and particles as fugitive emissions from the site during the construction phase. Therefore, it is recommended that dust suppression techniques, e.g. damping down exposed soils, are employed during the ground works and construction phases on site in order to minimise and manage potential nuisance issues for adjacent land users.

6.5 Soil Contamination vs. Groundwater

The investigation did not identify any mobile contamination and thus in the absence of a pollutant linkage, no further action is warranted.

6.6 Groundwater Contamination vs. Human Health

The desk study did not identify any potential sources of highly mobile contamination on the site and the intrusive investigation works have not identified any mobile contamination within the soils analysed on the site.

Due diligence should be undertaken as a part of the site clearance and development works and if any currently unidentified potential sources of mobile contamination are identified these should then be further assessed in line with the discovery strategy for the site.

End users would not come in to contact with groundwater and thus in the absence of a plausible pollutant linkage between groundwater and end-users, no specific protection measures are considered likely to be required in this respect.

6.7 Groundwater Contamination vs. Soft Landscaping

Shallow continuous groundwater has not been identified beneath the site to date. As such, it is considered that no specific action is warranted with respect to soft landscaping.

6.8 Groundwater Contamination vs. Controlled Waters

In the absence of any evidence of mobile contamination and the absence of shallow groundwater beneath the site, no remedial action is considered to be warranted in this respect.

However, should dewatering be required as part of the proposed development then water pumped out will need to be disposed of under the appropriate duty of care and should not be discharge to any watercourses or ditches without an appropriate permission.

6.9 Waste Disposal

The soil analyses from the site were assessed using HazWasteOnline software. None of the samples assessed were indicated to comprise properties attributable to hazardous waste. The HazWasteOnline results are included within Appendix E.

Natural soils at the site are considered likely be classified as Inert Waste (under the respective EWC codes), suitable for disposal at an inert landfill facility, where they are free for asbestos or mobile contaminants. Any soils identified as containing asbestos or mobile contaminants e.g. hydrocarbon may be classified as Hazardous waste.

It must be noted that any waste classification assessment is indicative only and actual classification would depend on permit status of the final disposal facility. Once soils for disposal have been identified it is recommended that further testing of these specific soils be undertaken in order to confirm the above assessment.

In accordance with the CL:AIRE Definition of Waste Code of Practice (2011) materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded by the holder'.

The Code of Practice therefore allows soils to be reused on site where the following criteria are met:

- The re-use of the soils will not present an unacceptable or increased risk to controlled waters, the environment and human health;
- The soils are suitable both in terms of chemical and geotechnical properties for the intended use without prior treatment;
- Only the required volume is used and no more;
- There is a required use and a certainty of use not just a possibility.

In order to comply with the Code of Practice, a Materials Management Plan (MMP) that confirms the above criteria are met must be prepared. The MMP must be reviewed by a 'Qualified Person' who then issues a declaration to the Environment Agency. The MMP and declaration must be in place before soils are excavated and it cannot be applied retrospectively. Geo-Environmental can provide this service should it be required.

Where materials do not meet the required criteria, it may be possible to treat them under an environmental permit so that they may be re-used on site. In addition, where material is discarded as waste, it may still be possible to reuse the waste on site under a standard rules environmental permit or a U1 waste exemption. However, strict limits on the volumes that can be reused apply in these cases.

Under current legislation, where wastes are to be disposed of to landfill, they may, depending on their classification, require pre-treatment. Pre-treatment shall comprise a chemical, physical (including sorting), thermal or biological process. The pre-treatment is required to change the characteristics of the waste, reduce its volume, reduce its hazardous nature, and facilitate its handling and enhance its recovery.

Other materials disposed of from site as part of the development of the site may require disposal separately. All materials containing dangerous substances e.g. tar or bitumen, asbestos, mercury, hydrocarbons, PCBs and asbestos are likely to be classified as Hazardous Waste and therefore susceptible to the relevant legislative controls.

6.10 Topsoil Assessment

Four samples of Topsoil were submitted for a physical and nutrient testing suite as set out in BS3882:2015 Specification for Topsoil. The samples were referenced HP01 at 0.10m, HP03 at 0.20m, HP04 at 0.10m, and WS03 at 0.15m. The results of the soils tested were compared to the Table 1 from BS3882:2015. The results are summarised in Table 6.2 below.

Parameters	Limits for Multipurpose Topsoil	Limits for Low Fertility Topsoil	Sample Range	Within acceptable Limits?
<u>Maximum Coarse Fragment Content (%)</u> Stones >2mm Stones > 20mm Stones >50mm	30 10 0	30 10 0	0 - 42 0 0	No, one sample exceeds >2mm threshold, all other samples compliant for both Multipurpose and Low Fertility
<u>Mass loss on ignition %</u> Clay 5% to 20% Clay 20% to 35%	3 to 20 5 to 20	2 to 20 2 to 20	1.80 - 4.30	One result below thresholds, all other samples compliant with Low Fertility
Soil pH	5.5 to 8.5	3.5 to 9.0	6.40 - 7.30	Yes, compliant for both Multipurpose and Low Fertility
<u>Plant nutrient content</u> Total nitrogen % Extractable phosphate mg/l Extractable potassium mg/l Extractable magnesium mg/l	>0.15 16 to 140 121 to 1500 51 to 600	Not critical <20 - -	0.10 - 0.21 11 – 60 87.5 – 153 77 – 160	Compliant with Low Fertility, results below lower thresholds for nitrogen and phosphate for Multipurpose
Carbon:nitrogen ratio	<20:1	<35:1	8.7:1 - 16:1	Yes, compliant for both Multipurpose and Low Fertility
Electrical conductivity µS/cm	<3300	-	1700 - 1900	Yes, compliant for both Multipurpose and Low Fertility
<u>Potentially Phytotoxic Elements</u> Zn mg/kg	<200	<200	19 – 45	Yes, compliant for both Multipurpose

Parameters	Limits for Multipurpose Topsoil	Limits for Low Fertility Topsoil	Sample Range	Within acceptable Limits?
Cu mg/kg	<135	<135	17 – 50	and Low Fertility
Ni mg/kg	<110	<110	3 – 12	
<u>Visible contaminants</u>				Yes, compliant for both Multipurpose and Low Fertility
% m/m	<0.5	<0.5	0	
...of which plastics %	<0.25	<0.25	0	
Sharps n/kg	0	0	0	

Table 6.2 Summary of BS8332 Topsoil Analysis

Soil texture analysis demonstrated the Topsoil to be classified as Sandy Loam and Loamy Sand, both of which are compliant with Multipurpose and Low Fertility Topsoil.

The results demonstrate that the soils analysed are in general accordance with BS3882:2015 Low Fertility Topsoil due to the slight shortfall in nitrogen and phosphate and one result (HP04 at 0.1m bgl) falling below the Multipurpose threshold for Loss on Ignition.

One sample (HP03 at 0.2m bgl) was found to fall below the mass loss on ignition threshold for both Multipurpose and Low Fertility Topsoil and one sample was found to exceed the >2mm coarse fragment threshold for both Multipurpose and Low Fertility Topsoil.

The tested Topsoil is still considered suitable for landscaping purposes.

7.0 DISCOVERY STRATEGY

Whilst an intrusive investigation has been undertaken on the site, it remains possible that unexpected ground and/or groundwater conditions may be encountered during the process of construction.

Should previously undiscovered contamination or unforeseen ground conditions be encountered during construction by the ground workers, this must be reported to the Site Manager immediately in order that the Consultant is notified.

Where deemed necessary, the Consultant shall attend the site to inspect the discovery and provide recommendations on the further actions required, if any. Where necessary the regulatory authority shall be informed. Post any additional investigation or laboratory testing the results and any proposed remedial measures shall be reported to the regulatory authority or other appropriate organisation for consent, before proceeding or implementing the remedial measures.

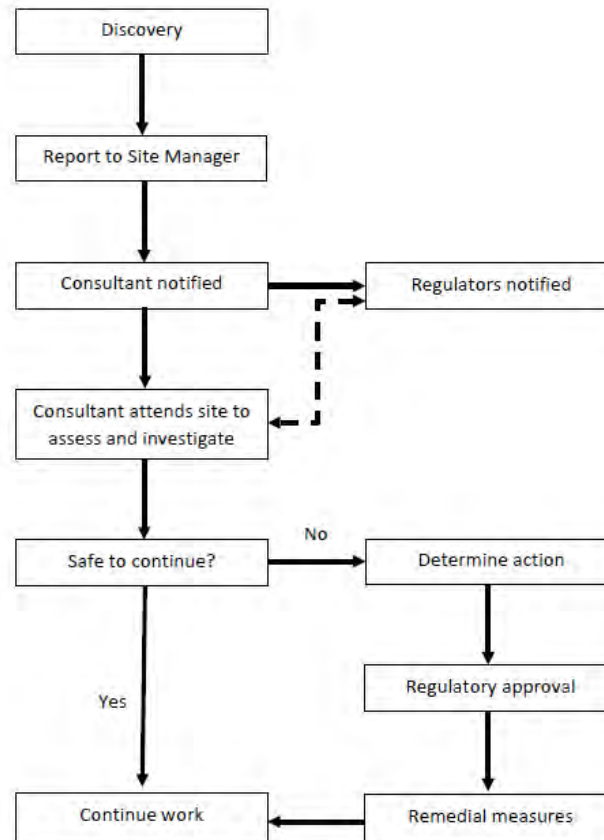
A copy of the discovery strategy must be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious, abnormal, unforeseen or contaminated ground and/or groundwater conditions they may encounter.

Depending on the type, nature and extent of any such 'discovery', it may be necessary to halt works in that location until such time as the assessment has been completed. This shall be reviewed on a 'discovery' specific basis and in conjunction with consultation with the client, other technical personnel and/or regulatory/approval organisations.

As a general guide, where such unexpected conditions are encountered the following approach is required as a minimum:

- All discoveries are to be reported to the Site Manager immediately and works at that location are to halt until further notice;
- The Site Manager is to report any such discoveries to the Client and the Consultant;
- Following notification from the Site Manager, the Consultant shall discuss the discovery with the Local Authority and/or other relevant parties and if considered necessary, arrange to meet on site to view the discovery;
- The Consultant shall attend the site to record the location, extent and nature of the discovery and implement an appropriate sampling and analysis regime, taking due account of the type and nature of the discovery, known and probable land uses in that area of the site;
- Where remedial action is required, regulatory consultation and approval will be sought;
- A record will be produced by the Consultant and held on site (with copies held by the Consultant, Client and Local Authority/other relevant organisation), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

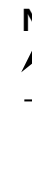
The process is summarised overleaf:



Discovery Strategy Process

FIGURES





Project:	Stoke Park Farm SANG			Title	Site Location Plan	
Client:	Eastleigh Borough Council			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	 Geo-Environmental	
Ref No:	GE21681	Revision:	0			
Drawn:	FG	Date:	09/06/2023			
Figure:	1	Scale:	Not To Scale			

LEGEND:

SYM.	DESCRIPTION
	SITE BOUNDARY
	EXISTING PATH WITH MOWN VERGE- MAINTAIN SURFACE PERIODICALLY WITH MATCHING MATERIALS.
	PROPOSED PATHS WITH 2M MOWN VERGE- 2.25M WIDTH SELF-BOUND GRAVEL, COLOUR TO COMPLEMENT EXISTING.
	PROPOSED MAIN WALKING ROUTE- 2.45KM LENGTH.
	PARKING AREA WITH SPACES SEPARATED BY HALF-ROUND TIMBER LOG DIVIDERS- SEE TARGET NOTES BELOW.
	EXISTING CONTOURS- SURVEYED AT 1M INTERVALS.
	EXISTING OVERHEAD CABLE AND 6M BUFFER TO PROPOSED TREE PLANTING.
	POTENTIAL ARTWORK LOCATION.
	TIMBER SEATING- ADDITIONAL TO PHASE 1.
	INTERPRETATION FEATURE EXPLORING THE HISTORIC OR ECOLOGICAL INTEREST OF THE SITE.
	DOG EXERCISE EQUIPMENT ALONGSIDE PATH.
	EXISTING FENCING- RETAIN WITHOUT MODIFICATION.
	PROPOSED PERMANENT METAL FENCING- (IMPLEMENTED IN PHASE 1).
	PROPOSED PERMANENT FENCING- 1.2M HEIGHT METAL POST AND WIRE WITH STOCK PROOF MESH.
	PROPOSED PERMANENT TIMBER FENCING- (IMPLEMENTED IN PHASE 1).
	EXISTING / ADJACENT WOODLAND.
	EXISTING / ADJACENT HEDGEROWS.
	PROPOSED MEADOW GRASSLAND- NEUTRAL GRASSLAND CREATED THROUGH SWARD REMOVAL, SOWING AND NUTRIENT MANAGEMENT.
	PROPOSED RUN-OFF ATTENUATION- (IMPLEMENTED IN PHASE 1)
	PROPOSED ROUGH GRASSLAND AREAS- LIGHT MANAGEMENT ONLY TO CONTROL BRACKEN AND OTHER INVASIVES.
	PROPOSED SCRUBLAND- INCLUDING GORSE, BROOM, BIRCH, HAWTHORN AND BRAMBLE.
	HEDGEROW IMPLEMENTED IN PHASE 1
	PROPOSED HEDGEROW- BASED ON HAWTHORN AND BLACKTHORN.
	PROPOSED WOODLAND- BASED ON NATIVE OAK WOODLAND.
	TREES PLANTED IN PHASE 1.
	PROPOSED TREES- OAK, SWEET CHESTNUT, BIRCH AND SYCAMORE.

TARGET NOTES:

REFER TO MAIN PHASE 2 SITE PLAN.



LEGEND:

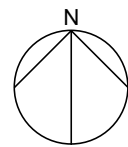
SYM.	DESCRIPTION
	SITE BOUNDARY
	EXISTING PATH WITH MOWN VERGE. MAINTAIN SURFACE PERIODICALLY WITH MATCHING MATERIALS.
	PROPOSED PATHS WITH 2M MOWN VERGE- 2.25M WIDTH SELF-BOUND GRAVEL. COLOUR TO COMPLEMENT EXISTING.
	PROPOSED MAIN WALKING ROUTE- 2.45KM LENGTH.
	PARKING AREA WITH SPACES SEPARATED BY HALF-ROUND TIMBER LOG DIVIDERS- SEE TARGET NOTES BELOW.
	EXISTING CONTOURS- SURVEYED AT 1M INTERVALS.
	POTENTIAL ARTWORK LOCATION.
	TIMBER SEATING- ADDITIONAL TO PHASE 1.
	INTERPRETATION FEATURE EXPLORING THE HISTORIC OR ECOLOGICAL INTEREST OF THE SITE.
	EXISTING FENCING- RETAIN WITHOUT MODIFICATION.
	PROPOSED PERMANENT METAL FENCING- (IMPLEMENTED IN PHASE 1).
	PROPOSED PERMANENT FENCING- 1.2M HEIGHT METAL POST AND WIRE WITH STOCK PROOF MESH.
	PROPOSED PERMANENT FENCING- 1.2M HEIGHT TIMBER POST AND RAIL WITH STOCK PROOF MESH.
	EXISTING / ADJACENT WOODLAND.
	EXISTING / ADJACENT HEDGEROWS.
	PROPOSED MEADOW GRASSLAND- NEUTRAL GRASSLAND CREATED THROUGH SWARD REMOVAL. SOWING AND NUTRIENT MANAGEMENT.
	PROPOSED RUN-OFF ATTENUATION- (IMPLEMENTED IN PHASE 1)
	PROPOSED ROUGH GRASSLAND AREAS- LIGHT MANAGEMENT ONLY TO CONTROL BRACKEN AND OTHER INVASIVES.
	PROPOSED SCRUBLAND- INCLUDING GORSE, BROOM, BIRCH, HAWTHORN AND BRAMBLE.
	HEDGEROW IMPLEMENTED IN PHASE 1
	PROPOSED HEDGEROW- BASED ON HAWTHORN AND BLACKTHORN.
	PROPOSED WOODLAND- BASED ON NATIVE OAK WOODLAND.
	TREES PLANTED IN PHASE 1.
	PROPOSED TREES- OAK, SWEET CHESTNUT, BIRCH AND SYCAMORE.

TARGET NOTES:

REFER TO MAIN PHASE 2 SITE PLAN.



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Project:	Stoke Park Farm SANG			Title	Exploratory Hole Location Plan (Trial Pits)	
Client:	Eastleigh Borough Council			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net		 Geo-Environmental
Ref No:	GE21681	Revision:	0			
Drawn:	FG	Date:	16/06/2023			
Figure:	3a	Scale:	Not To Scale			



Project:	Stoke Park Farm SANG			Title	Exploratory Hole Location Plan (Boreholes and Hand Pits)		
Client:	Eastleigh Borough Council			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net		 Geo-Environmental	
Ref No:	GE21681	Revision:	0				
Drawn:	FG	Date:	16/06/2023				
Figure:	3b	Scale:	Not To Scale				

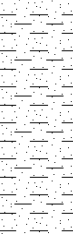


Project:	Stoke Park Farm SANG			Title	Location of Water Supple Pipe	
Client:	Eastleigh Borough Council			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net		 Geo-Environmental
Ref No:	GE21681	Revision:	0			
Drawn:	FG	Date:	24/07/2023			
Figure:	4	Scale:	Not To Scale			

APPENDIX A

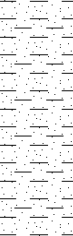
Exploratory Hole Logs



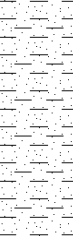
 Geo-Environmental	Contract Name: Stoke Park Farm			Client: Eastleigh Borough Council			Trial Pit ID: HP01		
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1			
	Easting: 447797.7	Northing: 120216.3	Ground Level: 29.06mOD	Plant Used:	Date Printed: 24/07/2023	Scale: 1:25			
Trial Pit Log									
Weather: Overcast, warm, slight breeze			Hole Termination:			Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1		28.92	0.15		Grass over dark brown slightly silty CLAY with frequent roots and rootlets TOPSOIL			
0.30	ES2			(0.85)		Firm to stiff orange brown slightly sandy CLAY with occasional roots and rootlets LONDON CLAY	0.5		
			28.06	1.00		End of Trial Pit at 1.00m	1.0		
							1.5		
							2.0		
							2.5		
							3.0		
							3.5		
Dimensions:						Photo:			
Final Depth:	1.00m					 			
Final Width:									
Final Length:									
Remarks									
Water Strikes (mbgl)									
Depth Strike	Rose to		Time Elapsed (mins)						

PhotoofPit

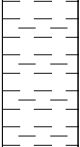
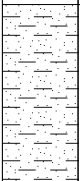
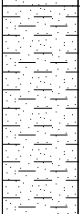
PhotoofSpoil

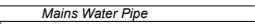
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	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1					
	Easting: 447879.8	Northing: 120207.7	Ground Level: 32.64mOD	Plant Used:	Date Printed: 24/07/2023	Scale: 1:25					
Trial Pit Log			Weather: Overcast, warm, slight breeze			Hole Termination:			Stability: Sides stable		
Samples & In Situ Testing			Strata Details						Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.15	ES1		32.44	0.20		Grass over dark brown slightly silty CLAY with frequent roots and rootlets TOPSOIL					
				(0.80)		Firm orange brown and grey mottled slightly sandy CLAY with occasional roots and rootlets LONDON CLAY			0.5		
			31.64	1.00		End of Trial Pit at 1.00m			1.0		
									1.5		
									2.0		
									2.5		
									3.0		
									3.5		
Dimensions:						Photo:					
Final Depth:	1.00m					 					
Final Width:											
Final Length:											
Remarks											
Water Strikes (mbgl)											
Depth Strike	Rose to		Time Elapsed (mins)								

 Geo-Environmental	Contract Name: Stoke Park Farm		Client: Eastleigh Borough Council			Trial Pit ID: HP03			
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1			
	Easting: 447747.1	Northing: 119905.9	Ground Level: 42.61mOD	Plant Used:	Date Printed: 24/07/2023	Scale: 1:25			
Trial Pit Log		Weather: Overcast, warm, slight breeze			Hole Termination:		Stability: Sides stable		
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.20	ES1		42.46	0.15		Grass over dark brown clayey fine SAND with frequent roots and rootlets			
						TOPSOIL Light brown slightly clayey fine SAND with occasional roots and rootlets			
						WHITE CLIFF SAND MEMBER Firm orange brown sandy CLAY. Sand is fine LONDON CLAY			
						(0.60)			
			41.61	1.00		End of Trial Pit at 1.00m			
Dimensions:					Photo:				
Final Depth:	1.00m				 				
Final Width:									
Final Length:									
Remarks									
Water Strikes (mbgl)									
Depth Strike		Rose to		Time Elapsed (mins)					
					PhotoofPit				
					PhotoofSpoil				

 Geo-Environmental	Contract Name: Stoke Park Farm			Client: Eastleigh Borough Council			Trial Pit ID: HP04		
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1			
	Easting: 447988.1	Northing: 119649.4	Ground Level: 48.05mOD	Plant Used:	Date Printed: 24/07/2023	Scale: 1:25			
Trial Pit Log		Weather: Overcast, warm, slight			Hole Termination:		Stability: Sides stable		
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1		47.85	0.20		Grass over dark brown slightly silty CLAY with frequent roots and rootlets TOPSOIL			
				(0.80)		Firm to stiff orange brown slightly sandy CLAY with occasional roots and rootlets LONDON CLAY		0.5	
			47.05	1.00		End of Trial Pit at 1.00m		1.0	
								1.5	
								2.0	
								2.5	
								3.0	
								3.5	
Dimensions:					Photo:				
Final Depth:	1.00m				 				
Final Width:									
Final Length:									
Remarks									
Water Strikes (mbgl)									
Depth Strike	Rose to		Time Elapsed (mins)						

 Geo-Environmental	Contract Name: Stoke Park Farm		Client: Eastleigh Borough Council			Trial Pit ID: TP01		
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1		
Trial Pit Log	Easting: 447670.1	Northing: 120213.7	Ground Level: 25.42mOD	Plant Used: JCB	Date Printed: 24/07/2023	Scale: 1:25		
Weather: Overcast, warm, slight breeze		Hole Termination:			Stability: Sides stable			
Samples & In Situ Testing			Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description		
0.50 0.50	B1 D1	PP=4.5kg/cm2	25.27	0.15 (0.40)	  	Grass over dark brown silty CLAY with frequent roots and rootlets TOPSOIL Stiff orange brown CLAY with occasional roots and rootlets and rare flint gravel LONDON CLAY	0.5	
1.00 1.00	B2 D2	PP=1.5kg/cm2	24.87 24.42	0.55 1.00		Firm orange brown slightly sandy CLAY with rare roots and rootlets LONDON CLAY End of Trial Pit at 1.00m	1.0 1.5 2.0 2.5 3.0 3.5	
Dimensions:			Photo:					
Final Depth:	1.00m		 PhotoofPit					
Final Width:	0.60m							
Final Length:	1.70m							
Remarks			 PhotoofSpoil					
Soakage								
Water Strikes (mbgl)								
Depth Strike		Rose to	Time Elapsed (mins)					

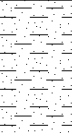
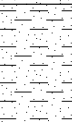
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	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1			
	Easting: 447676.8	Northing: 120201.1	Ground Level: 26.36mOD	Plant Used: JCB	Date Printed: 24/07/2023	Scale: 1:25			
Trial Pit Log		Weather: Overcast, warm, slight breeze		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1	PP=3.2kg/cm2	26.16	0.20		Grass over dark brown slightly silty CLAY with frequent roots and rootlets TOPSOIL		0.5	
0.50	B1			(0.50)		Stiff orange brown CLAY with frequent roots and rootlets (possibly desiccated) LONDON CLAY			
				0.70		Firm orange brown slightly sandy CLAY with rare rootlets LONDON CLAY		1.0	
1.00	B2	PP=1.5kg/cm2		(0.60)					
				1.30		Firm becoming stiff orange brown slightly sandy CLAY. Sand is fine LONDON CLAY		1.5	
1.50	D1	PP=1.5kg/cm2		(0.70)					
2.00	D2	PP=1kg/cm2	24.36	2.00		End of Trial Pit at 2.00m		2.0	
								2.5	
								3.0	
								3.5	
Dimensions:						Photo:			
Final Depth:	2.00m					 PhotoofPit			
Final Width:	0.60m								
Final Length:	1.80m								
Remarks						 PhotoofSpoil			
Water Strikes (mbgl)									
Depth Strike		Rose to		Time Elapsed (mins)					

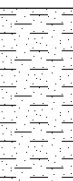
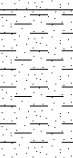
 Geo-Environmental	Contract Name: Stoke Park Farm			Client: Eastleigh Borough Council			Trial Pit ID: TP03				
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1					
	Easting: 447688.6	Northing: 120216.4	Ground Level: 25.70mOD	Plant Used: JCB	Date Printed: 24/07/2023	Scale: 1:25					
Trial Pit Log			Weather: Overcast, warm, slight breeze			Hole Termination:			Stability: Sides stable		
Samples & In Situ Testing			Strata Details						Water	Backfill	
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.30	ES1		25.55	0.15		Grass over dark brown slightly silty CLAY with frequent roots and rootlets			0.5		
0.50	B1			(0.85)		TOPSOIL					
						Stiff orange brown CLAY with occasional roots and rootlets possibly desiccated					
1.00	B2		24.70	1.00		LONDON CLAY			1.0		
						Mains Water Pipe					
						End of Trial Pit at 1.00m					
									1.5		
									2.0		
									2.5		
									3.0		
									3.5		
Dimensions:						Photo:					
Final Depth:	1.00m					 PhotoofPit					
Final Width:	0.60m										
Final Length:	1.60m										
Remarks						 PhotoofSpoil					
Mains water pipe at 0.86m bgl											
Water Strikes (mbgl)											
Depth Strike	Rose to		Time Elapsed (mins)								

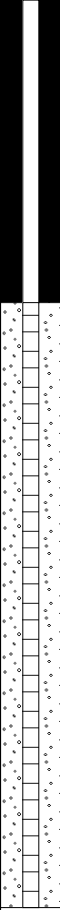
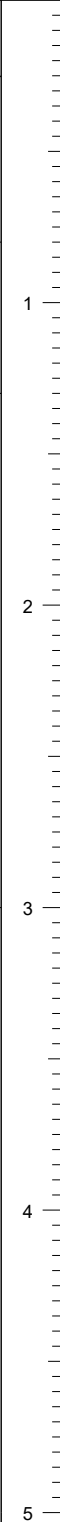
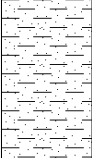
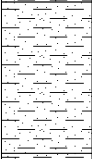
 Geo-Environmental	Contract Name: Stoke Park Farm			Client: Eastleigh Borough Council			Trial Pit ID: TP04						
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1							
	Easting: 447693.5	Northing: 120206.1	Ground Level: 26.30mOD	Plant Used: JCB	Date Printed: 24/07/2023	Scale: 1:25							
Trial Pit Log			Weather: Overcast, warm, slight breeze			Hole Termination:			Stability: Sides stable				
Samples & In Situ Testing						Strata Details						Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description							
0.40	ES1	PP=3kg/cm2	26.10	0.20		Grass over dark brown slightly silty CLAY with frequent roots and rootlets TOPSOIL							
0.50	B1		(0.60)			Stiff orange brown possibly desiccated CLAY with occasional roots and rootlets and rare flint gravel LONDON CLAY					0.5		
1.00	B2	PP=1.6kg/cm2	25.50	0.80		Firm orange brown CLAY with rare rootlets LONDON CLAY					1.0		
			25.30	1.00		End of Trial Pit at 1.00m					1.5		
											2.0		
											2.5		
											3.0		
											3.5		
Dimensions:						Photo:							
Final Depth:	1.00m					 							
Final Width:	0.60m												
Final Length:	1.60m												
Remarks													
Water Strikes (mbgl)													
Depth Strike		Rose to		Time Elapsed (mins)									

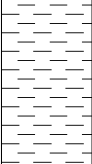
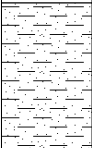
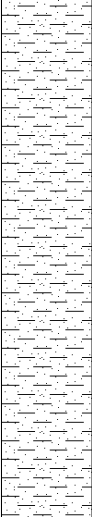
PhotoofPit

PhotoofSpoil

 Geo-Environmental	Contract Name: Stoke Park Farm		Client: Eastleigh Borough Council			Trial Pit ID: TP05		
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1		
Trial Pit Log	Easting: 447726.9	Northing: 120216.6	Ground Level: 25.29mOD	Plant Used: JCB	Date Printed: 24/07/2023	Scale: 1:25		
Weather: Overcast, warm, slight breeze		Hole Termination:			Stability: Sides stable			
Samples & In Situ Testing			Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description		
0.15	ES1	PP=2kg/cm2	25.14	0.15		Grass over dark brown slightly silty CLAY with frequent roots and rootlets TOPSOIL	0.5	
0.50	B1		(0.45)	24.69	0.60			
1.00	B2	PP=1.2kg/cm2	24.29	1.00		Firm orange brown slightly sandy CLAY with rare rootlets LONDON CLAY	1.0	
						End of Trial Pit at 1.00m	1.5	
							2.0	
							2.5	
							3.0	
							3.5	
Dimensions:						Photo:		
Final Depth:	1.00m					 PhotoofPit		
Final Width:	0.60m							
Final Length:	1.80m							
Remarks						 PhotoofSpoil		
Clay land drain in base of pit								
Water Strikes (mbgl)								
Depth Strike		Rose to	Time Elapsed (mins)					

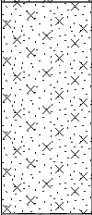
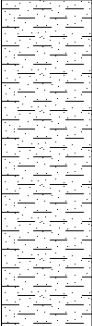
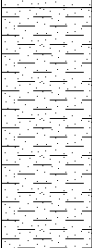
 Geo-Environmental	Contract Name: Stoke Park Farm			Client: Eastleigh Borough Council			Trial Pit ID: TP06			
	Contract Number: GE21681	Date Started: 28/06/2023	Logged By: FG	Checked By: FG	Status: FINAL	Sheet 1 of 1				
	Easting: 447731.5	Northing: 120203.4	Ground Level: 26.06mOD	Plant Used: JCB	Date Printed: 24/07/2023	Scale: 1:25				
Trial Pit Log				Weather: Overcast, warm, slight breeze		Hole Termination:		Stability: Sides stable		
Samples & In Situ Testing			Strata Details						Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description				
0.15	ES1		25.86	0.20		Grass over dark brown slightly silty CLAY with frequent roots and rootlets and rare flint gravel TOPSOIL				
0.50	B1	PP=3.5kg/cm2	25.46	(0.40)		Very stiff possibly desiccated CLAY with occasional roots and rootlets LONDON CLAY			0.5	
1.00	B2	PP=1.5kg/cm2	24.86	(0.60)		Firm orange brown slightly sandy CLAY with occasional rootlets. Sand is fine LONDON CLAY			1.0	
		PP=1.5kg/cm2		(0.50)		Firm becoming stiff orange brown slightly sandy CLAY. Sand is fine LONDON CLAY			1.5	
1.70	D1	PP=1.7kg/cm2	24.36	1.70		End of Trial Pit at 1.70m			2.0	
									2.5	
									3.0	
									3.5	
Dimensions:						Photo:				
Final Depth:	1.70m					 PhotoofPit				
Final Width:	0.60m									
Final Length:	1.70m									
Remarks						 PhotoofSpoil				
Soakage										
Water Strikes (mbgl)										
Depth Strike		Rose to		Time Elapsed (mins)						

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS01 Sheet 1 of 1	
Project Name: Stoke Park Farm				Project No. GE21681		Co-ords: 447664E - 120210N		Hole Type WLS	
Location: Bishopstoke				Level: 25.35		Scale 1:25			
Client: Eastleigh Borough Council				Dates: 29/06/2023		Logged By FG			
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES	1.0kg/cm2	0.25	25.10	 Grass over dark brown slightly silty slightly sandy CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL		
	0.40	ES							
	0.50	PP							
				0.80	24.55	 Firm orange brown slightly sandy CLAY with occasional roots and rootlets LONDON CLAY			
	1.00	PP	1.5kg/cm2						
	1.50	PP	2.2kg/cm2						
				1.30	24.05	 Stiff orange brown and grey mottled slightly sandy CLAY. Sand is fine LONDON CLAY			
	2.00	PP	2.5kg/cm2						
2.50	PP	2.5kg/cm2							
						End of Borehole at 3.00m			
3.00	PP	2.0kg/cm2	3.00	22.35					
		Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks			
Depth Top	Depth Base	Diameter	Depth Strike	Rose To					
						 Status FINAL			

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS02 Sheet 1 of 1		
Project Name: Stoke Park Farm				Project No. GE21681		Co-ords: 447677E - 120080N		Hole Type WLS		
Location: Bishopstoke				Level: 33.96		Scale 1:25				
Client: Eastleigh Borough Council				Dates: 29/06/2023		Logged By FG				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.20	ES		0.15	33.81		Grass over dark brown slightly silty slightly sandy CLAY with frequent roots and rootlets	1	
		0.50	PP	2.5kg/cm2				TOPSOIL Stiff brown CLAY with occasional roots and rootlets possibly desiccated LONDON CLAY		
					0.75	33.21		Firm brown slightly sandy CLAY with occasional rootlets LONDON CLAY	2	
		1.00	PP	1.6kg/cm2						
		1.50	PP	2.2kg/cm2	1.25	32.71		Stiff brown slightly sandy CLAY. Sand is fine LONDON CLAY		
		2.00	PP	2.1kg/cm2					3	
		2.50	PP	3.1kg/cm2						
		3.00	PP	1.7kg/cm2	3.00	30.96		End of Borehole at 3.00m		
									4	
									5	
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks						
Depth Top	Depth Base	Diameter	Depth Strike							Rose To



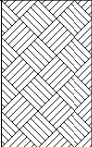
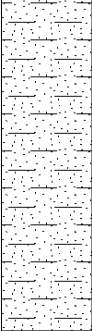
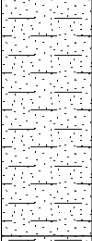
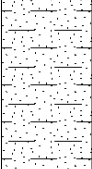
Status
FINAL

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS03 Sheet 1 of 1		
Project Name: Stoke Park Farm				Project No. GE21681		Co-ords: 447980E - 119976N		Hole Type WLS		
Location: Bishopstoke				Level: 45.10		Scale 1:25				
Client: Eastleigh Borough Council				Dates: 29/06/2023		Logged By FG				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.15	ES		0.20	44.90		Grass over dark brown sandy gravelly CLAY with occasional roots and rootlets TOPSOIL	1 2 3 4 5	
		0.35	ES		0.40	44.70		Brown silty fine SAND with occasional rootlets WHITE CLIFF SAND MEMBER		
								Orange brown silty fine SAND with occasional flint gravel and rare rootlets WHITE CLIFF SAND MEMBER		
					1.10	44.00		Firm to stiff orange and grey mottled slightly sandy CLAY with rare flint gravel LONDON CLAY		
		1.50	PP	1.6kg/cm2						
		2.00	PP	1.9kg/cm2	2.20	42.90		Firm orange and grey mottled slightly sandy CLAY. Sand is fine LONDON CLAY		
		2.50	PP	1.1kg/cm2						
		3.00	PP	1.0kg/cm2	3.00	42.10	End of Borehole at 3.00m			
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks						
Depth Top	Depth Base	Diameter	Depth Strike							Rose To
						 Status FINAL				

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net				Borehole Log				Borehole No. WS04 Sheet 1 of 1		
Project Name: Stoke Park Farm				Project No. GE21681		Co-ords: 447794E - 1199734N		Hole Type WLS		
Location: Bishopstoke				Level: 43.78		Scale 1:25				
Client: Eastleigh Borough Council				Dates: 29/06/2023		Logged By FG				
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
		Depth (m)	Type	Results						
		0.10	ES					Grass over slightly silty slightly sandy CLAY with frequent roots and rootlets (possibly desiccated) TOPSOIL		
		0.35			0.35	43.43		Stiff brown slightly sandy CLAY with occasional roots and rootlets LONDON CLAY		
		0.50	PP	2.6kg/cm2						
		0.75			0.75	43.03		Firm brown slightly sandy CLAY. Sand is fine LONDON CLAY	1	
		1.00	PP	1.4kg/cm2						
		1.20			1.20	42.58		Firm orange and grey mottled slightly sandy CLAY. Sand is fine LONDON CLAY		
		1.50	PP	0.8kg/cm2						
		2.00	PP	0.9kg/cm2					2	
		2.10			2.10	41.68		Firm orange and grey mottled sandy CLAY. Sand is fine LONDON CLAY		
		2.50	PP	1.1kg/cm2						
		3.00	PP	0.6kg/cm2	3.00	40.78		End of Borehole at 3.00m	3	
									4	
									5	
Dynamic Sampling Run Details		Water Strike Details (mbgl)		Remarks						
Depth Top	Depth Base	Diameter	Depth Strike							Rose To


Status
FINAL

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS05 Sheet 1 of 1	
Project Name: Stoke Park Farm		Project No. GE21681		Co-ords: 448108E - 119776N		Hole Type WLS	
Location: Bishopstoke				Level: 51.03		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 29/06/2023		Logged By FG	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15	ES				Grass over dark brown slightly silty CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL		
				0.50	50.53		Brick		
				1.60	49.43		Orange and grey mottled very clayey becoming clayey fine SAND WHITE CLIFF SAND MEMBER	1	
				2.40	48.63		Orange and grey clayey fine SAND with bands of orange and grey mottled sandy CLAY WHITE CLIFF SAND MEMBER	2	
				3.00	48.03		Yellowish brown slightly clayey fine SAND WHITE CLIFF SAND MEMBER	3	
							End of Borehole at 3.00m	4	
								5	

Dynamic Sampling Run Details			Water Strike Details (mbgl)		Remarks
Depth Top	Depth Base	Diameter	Depth Strike	Rose To	


 Status
 FINAL

APPENDIX B

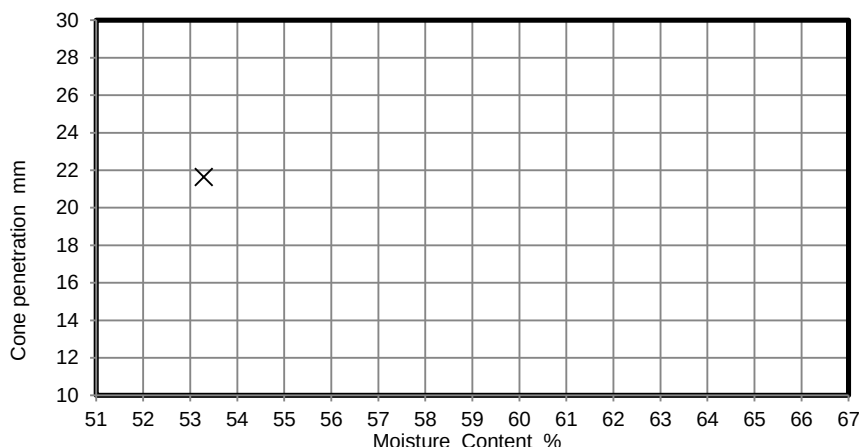
Geotechnical Laboratory Results





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX			Job No.	33714
				Borehole/Pit No.	TP01
Site Name	Stoke Park Farm			Sample No.	1
Project No.	GE21681	Client	GESL	Depth Top m	0.50
Soil Description	Orangish brown slightly mottled grey slightly sandy silty CLAY			Depth Base m	-
				Sample Type	D
				Samples received	04/07/2023
				Schedules received	04/07/2023
				Project Started	04/07/2023
				Date Tested	13/07/2023

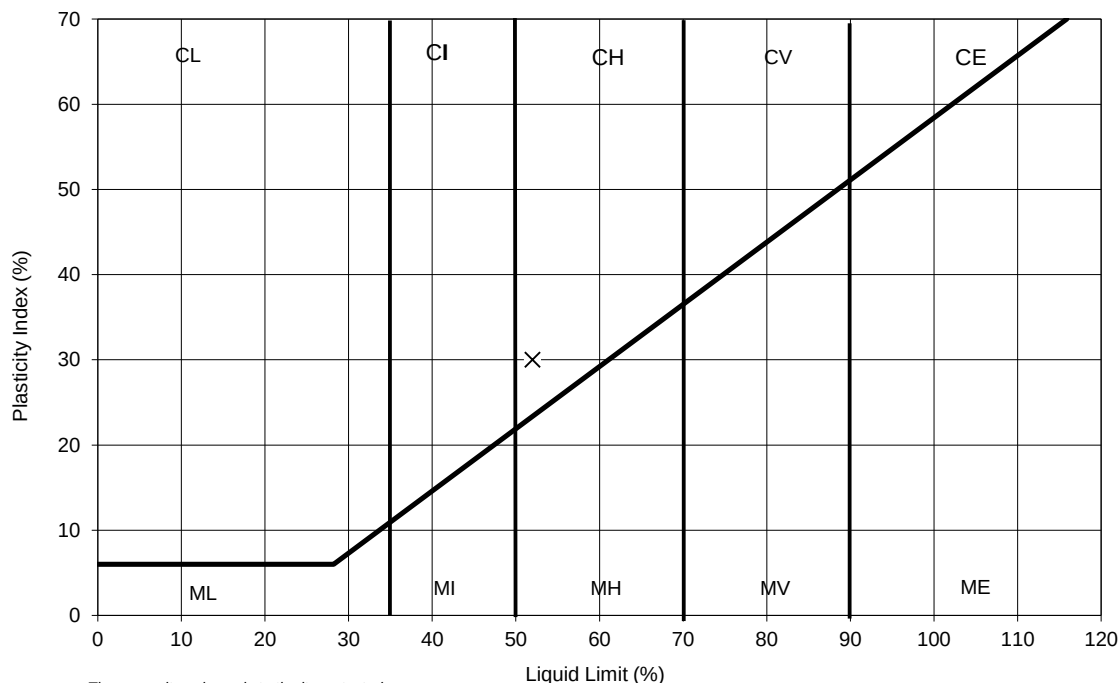


NATURAL MOISTURE CONTENT	22	%
% PASSING 425µm SIEVE	100	%
LIQUID LIMIT	52	%
PLASTIC LIMIT	22	%
PLASTICITY INDEX	30	%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



These results only apply to the items tested

NOTE: The report shall not be reproduced except in full without authority of the laboratory



TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/07/2023

2519

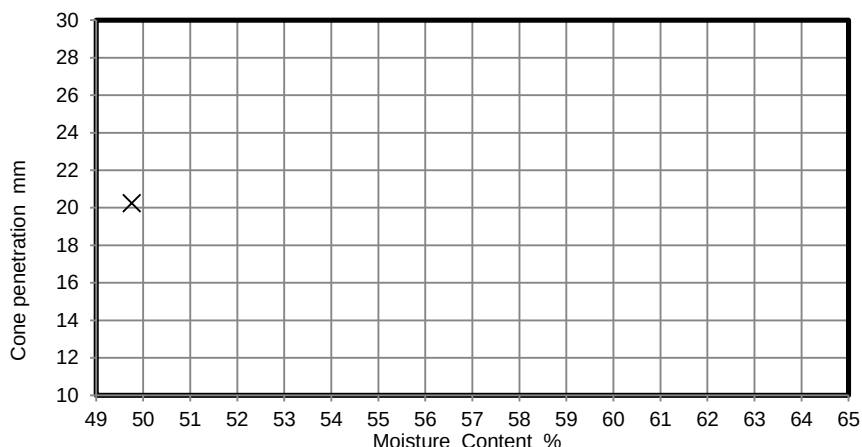
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX			Job No.	33714
				Borehole/Pit No.	TP01
Site Name	Stoke Park Farm			Sample No.	2
Project No.	GE21681	Client	GESL	Depth Top m	1.00
Soil Description	Orangish brown slightly mottled grey slightly sandy silty CLAY with traces of fine rootlets			Depth Base m	-
				Sample Type	D
				Samples received	04/07/2023
				Schedules received	04/07/2023
				Project Started	04/07/2023
				Date Tested	13/07/2023

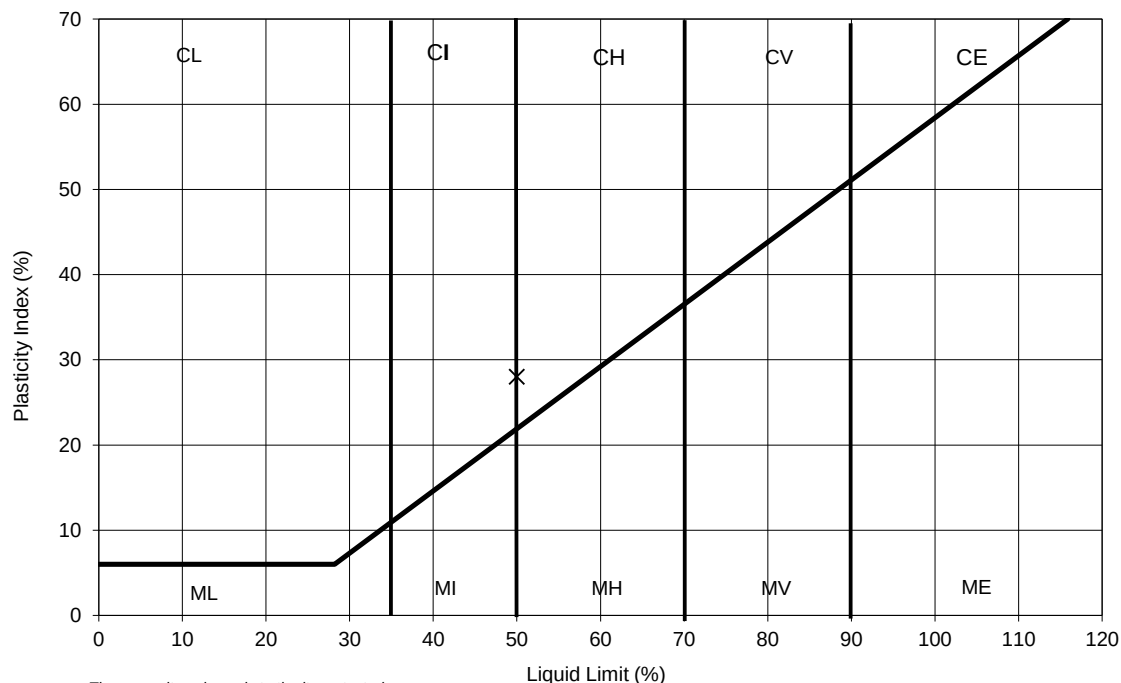


NATURAL MOISTURE CONTENT	24	%
% PASSING 425µm SIEVE	100	%
LIQUID LIMIT	50	%
PLASTIC LIMIT	22	%
PLASTICITY INDEX	28	%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/07/2023



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33714

Borehole/Pit No. TP02

Site Name Stoke Park Farm

Sample No. 1

Project No. GE21681

Client

GESL

Depth Top m 0.50

Soil Description

Orangish brown slightly mottled grey sandy silty CLAY with traces of fine rootlets

Depth Base m -

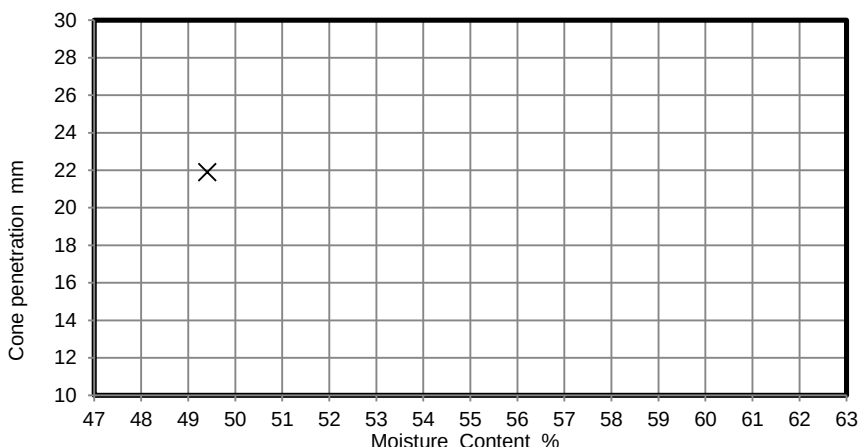
Sample Type B

Samples received 04/07/2023

Schedules received 04/07/2023

Project Started 04/07/2023

Date Tested 13/07/2023


NATURAL MOISTURE CONTENT

19

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

48

%

PLASTIC LIMIT

21

%

PLASTICITY INDEX

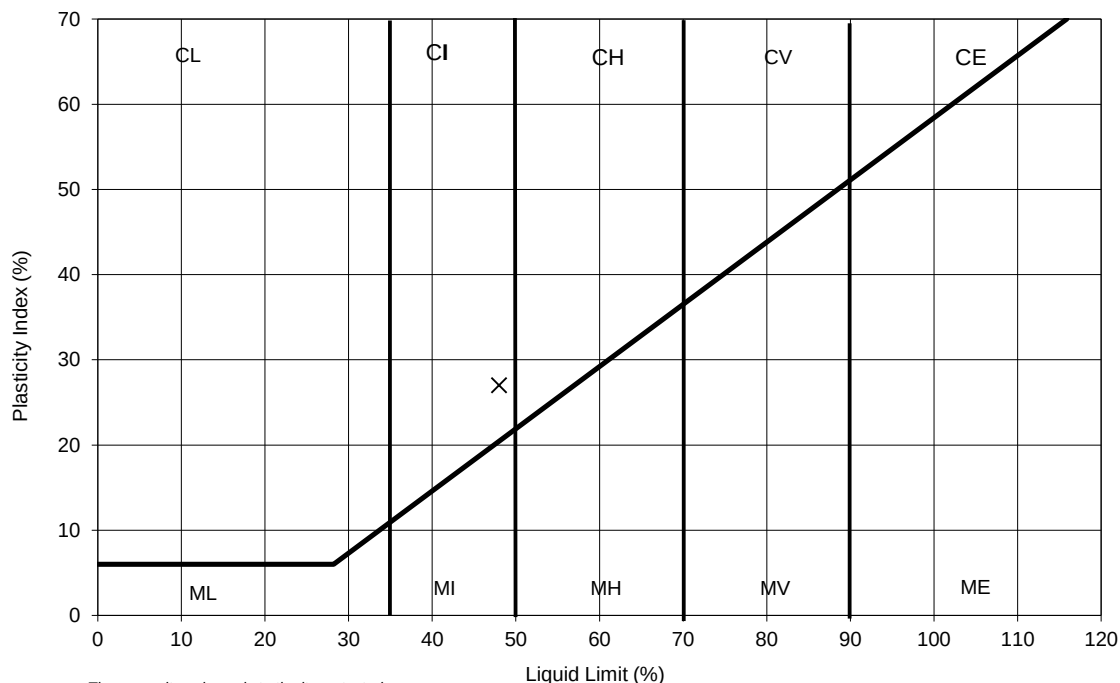
27

%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



These results only apply to the items tested

NOTE: The report shall not be reproduced except in full without authority of the laboratory

TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/07/2023

MSF-5 R2



2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33714

Borehole/Pit No. TP03

Site Name Stoke Park Farm

Sample No. 1

Project No. GE21681

Client

GESL

Depth Top m 0.50

Soil Description

Orangish brown slightly mottled grey slightly gravelly sandy silty CLAY
(gravel is fm and sub-angular to rounded)

Depth Base m -

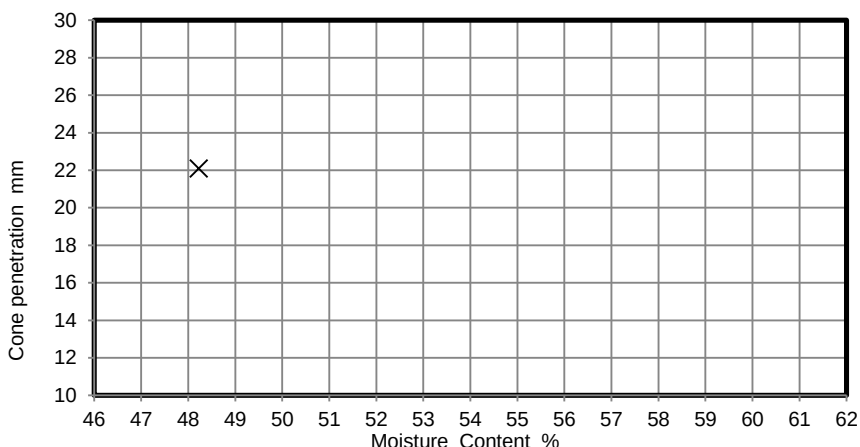
Sample Type B

Samples received 04/07/2023

Schedules received 04/07/2023

Project Started 04/07/2023

Date Tested 13/07/2023



NATURAL MOISTURE CONTENT

26

%

% PASSING 425µm SIEVE

94

%

LIQUID LIMIT

47

%

PLASTIC LIMIT

23

%

PLASTICITY INDEX

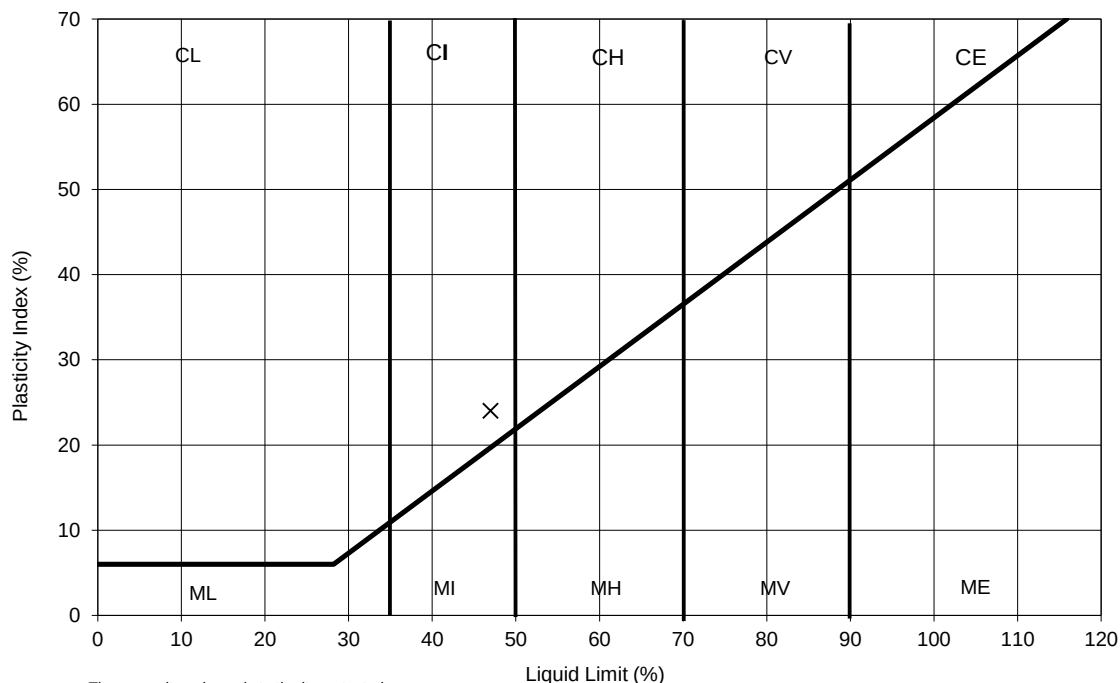
24

%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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NOTE: The report shall not be reproduced except in full without authority of the laboratory

TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

Tel: 01923 711 288 Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/07/2023

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

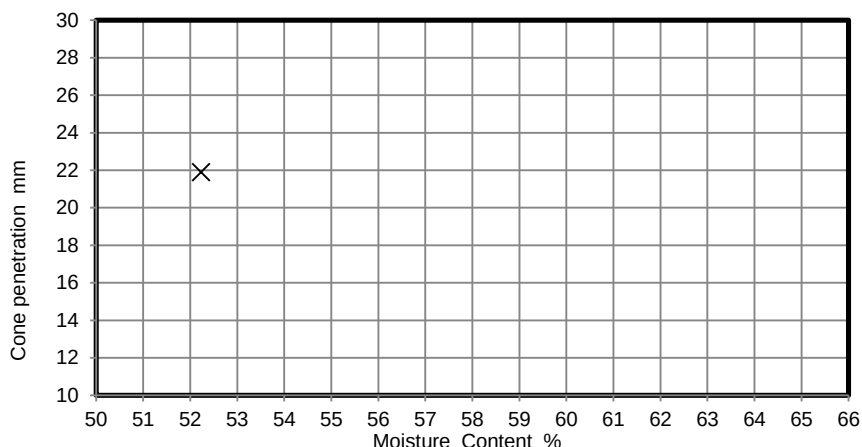
MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX			Job No.	33714
				Borehole/Pit No.	TP04
Site Name	Stoke Park Farm			Sample No.	2
Project No.	GE21681	Client	GESL	Depth Top m	1.00
Soil Description	Orangish brown slightly mottled grey sandy silty CLAY with rare fine gravel			Depth Base m	-
				Sample Type	B
				Samples received	04/07/2023
				Schedules received	04/07/2023
				Project Started	04/07/2023
				Date Tested	13/07/2023

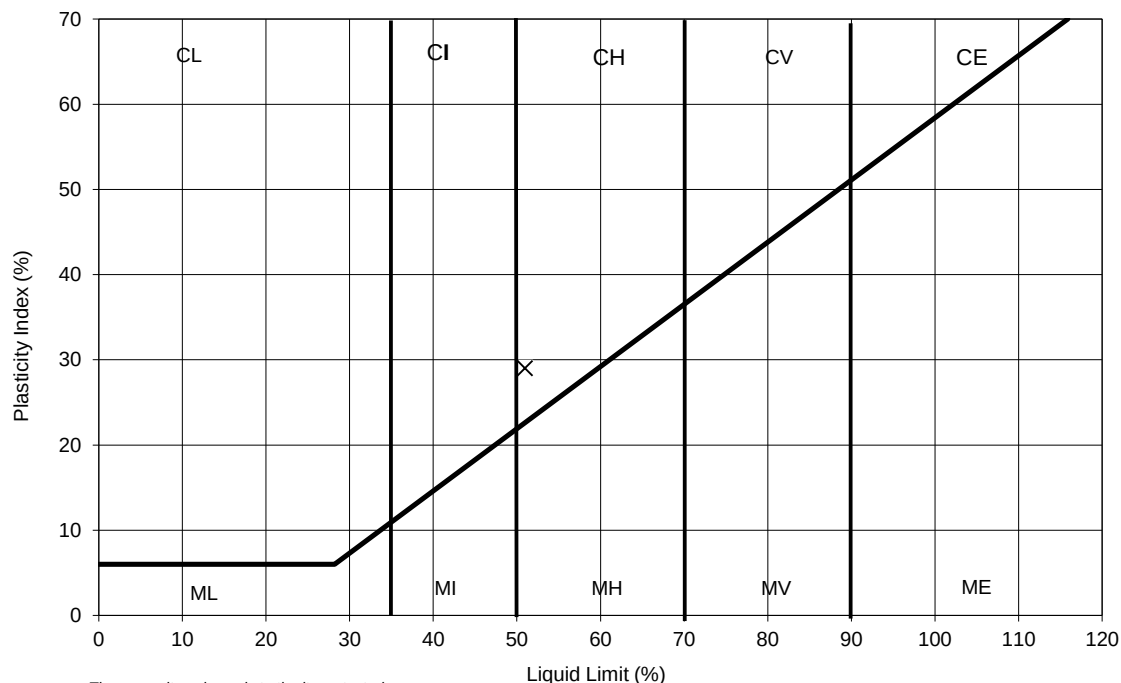


NATURAL MOISTURE CONTENT	22	%
% PASSING 425µm SIEVE	99	%
LIQUID LIMIT	51	%
PLASTIC LIMIT	22	%
PLASTICITY INDEX	29	%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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TEST METHOD

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BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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Checked and Approved

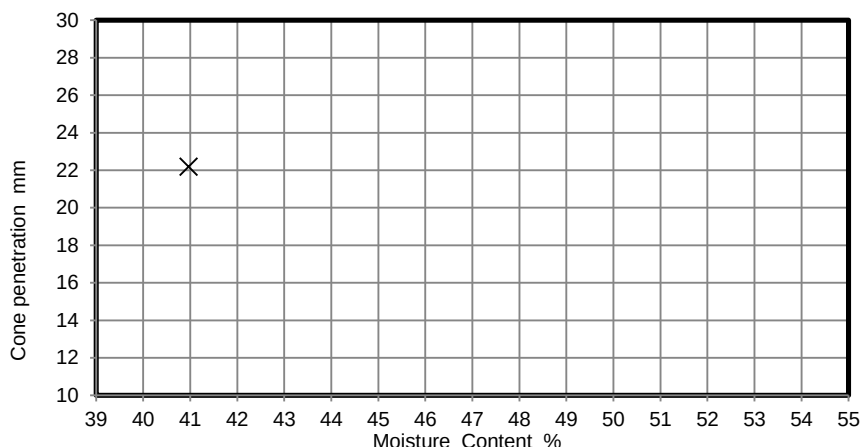
Initials: J.P

Date: 19/07/2023



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX			Job No.	33714
				Borehole/Pit No.	TP05
Site Name	Stoke Park Farm			Sample No.	1
Project No.	GE21681	Client	GESL	Depth Top m	0.50
Soil Description	Brown slightly mottled grey slightly gravelly sandy silty CLAY (gravel is fm and sub-angular to rounded)			Depth Base m	-
				Sample Type	B
				Samples received	04/07/2023
				Schedules received	04/07/2023
				Project Started	04/07/2023
				Date Tested	13/07/2023

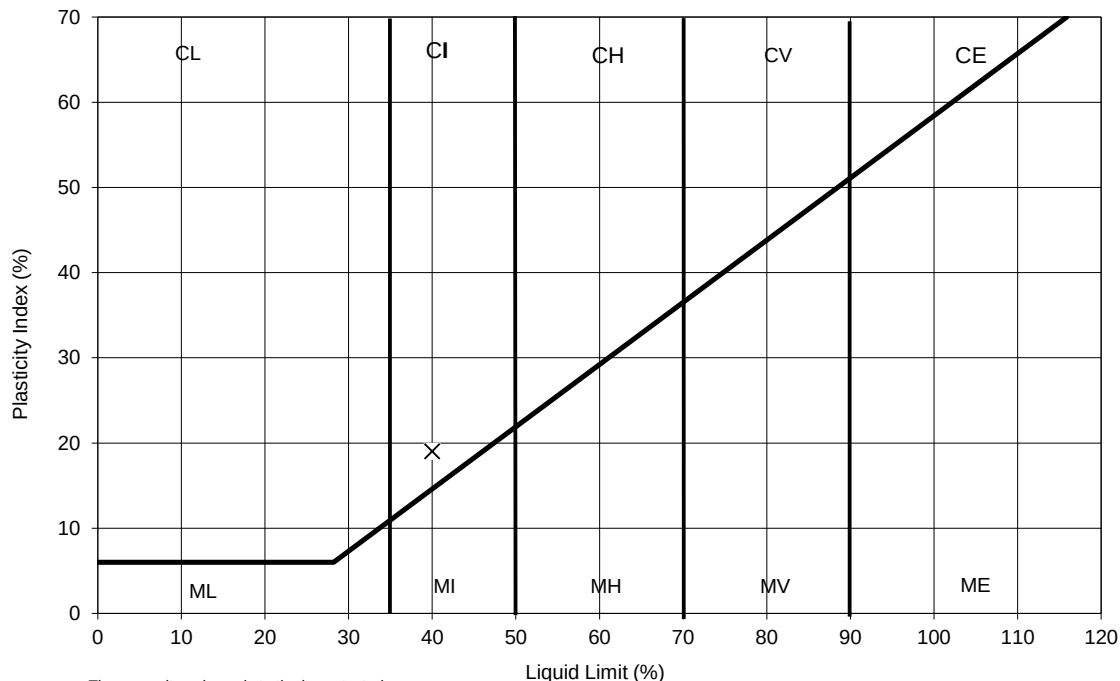


NATURAL MOISTURE CONTENT	22	%
% PASSING 425µm SIEVE	90	%
LIQUID LIMIT	40	%
PLASTIC LIMIT	21	%
PLASTICITY INDEX	19	%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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Checked and Approved

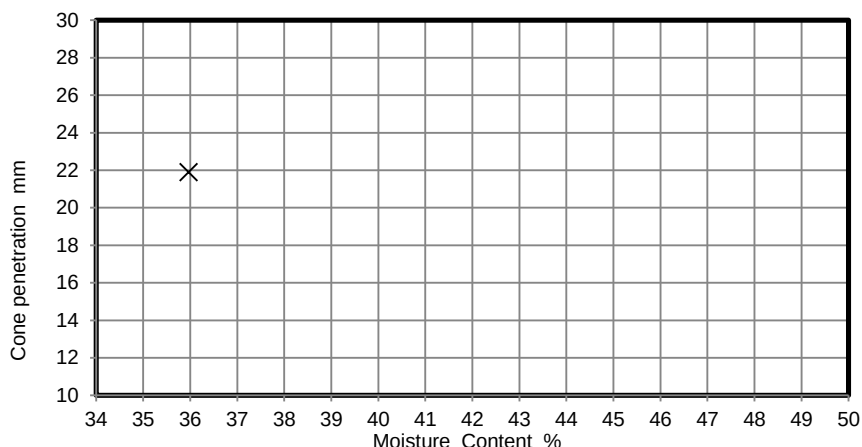
Initials: J.P

Date: 19/07/2023



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX			Job No.	33714
				Borehole/Pit No.	TP05
Site Name	Stoke Park Farm			Sample No.	2
Project No.	GE21681	Client	GESL	Depth Top m	1.00
Soil Description	Orangish brown mottled grey slightly gravelly sandy silty CLAY (gravel is fm and sub-angular to rounded)			Depth Base m	-
				Sample Type	B
				Samples received	04/07/2023
				Schedules received	04/07/2023
				Project Started	04/07/2023
				Date Tested	13/07/2023

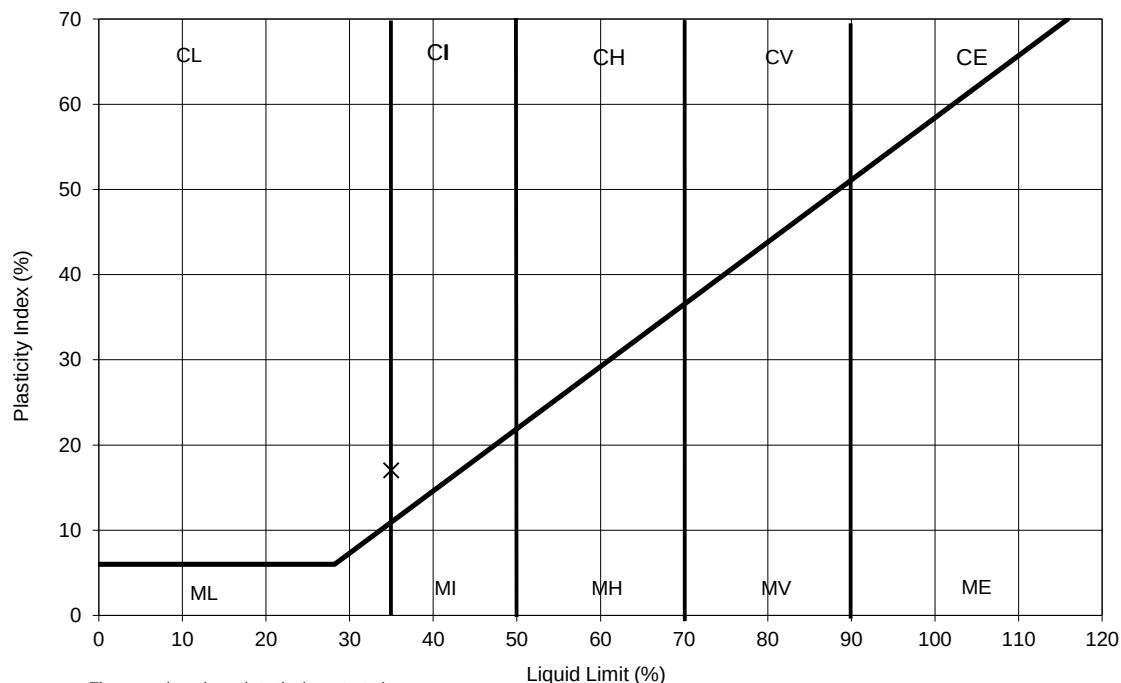


NATURAL MOISTURE CONTENT	24	%
% PASSING 425µm SIEVE	84	%
LIQUID LIMIT	35	%
PLASTIC LIMIT	18	%
PLASTICITY INDEX	17	%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 33714

Borehole/Pit No. TP06

Site Name Stoke Park Farm

Sample No. 1

Project No. GE21681

Client

GESL

Depth Top m 0.50

Soil Description

Orangish brown slightly mottled grey sandy silty CLAY

Depth Base m -

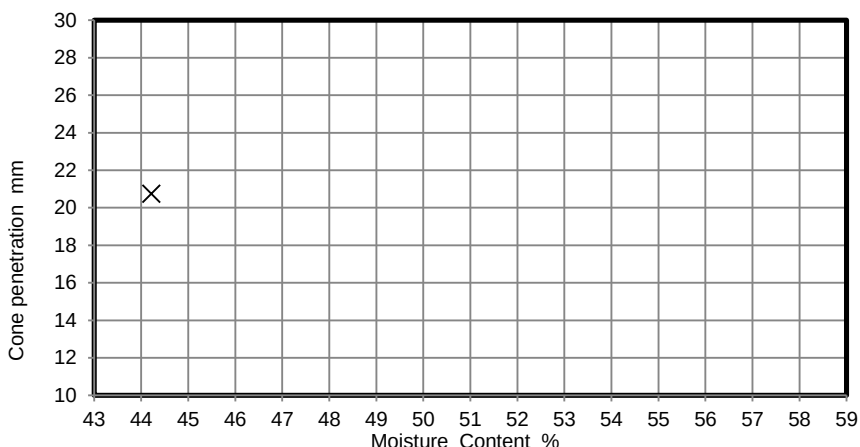
Sample Type B

Samples received 04/07/2023

Schedules received 04/07/2023

Project Started 04/07/2023

Date Tested 13/07/2023



NATURAL MOISTURE CONTENT

18

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

44

%

PLASTIC LIMIT

19

%

PLASTICITY INDEX

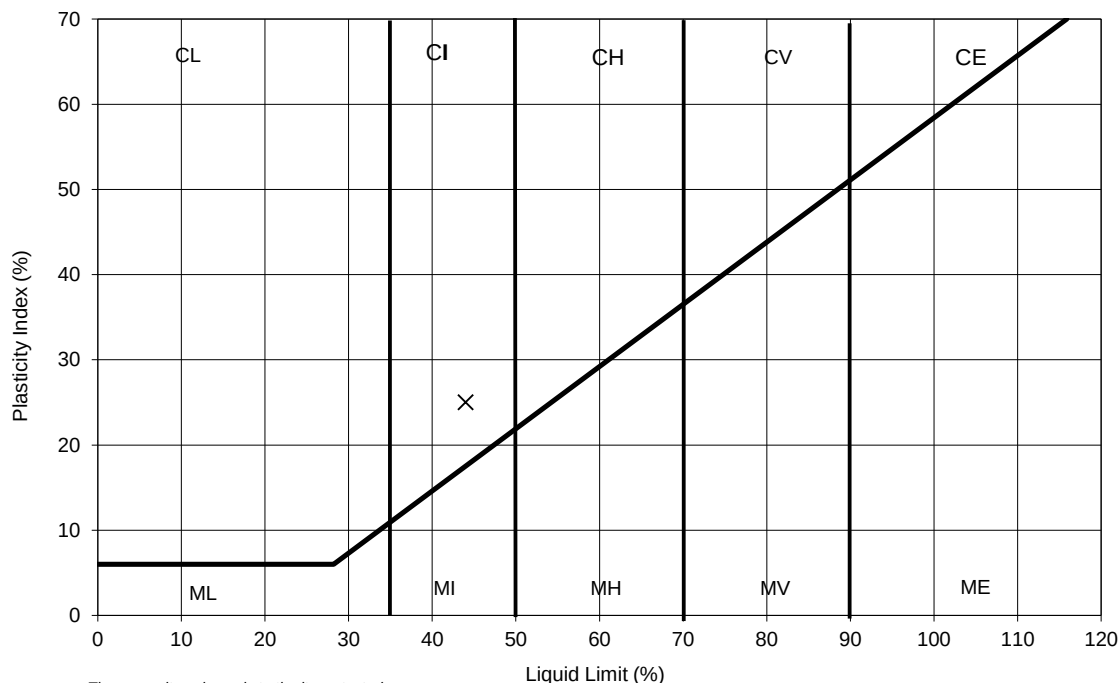
25

%

Remarks

Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)

PLASTICITY INDEX



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TEST METHOD

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method

BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index

BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

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MSF-5 R2



		Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results									
Job No. 33714		Project Name Stoke Park Farm						Programme			
								Samples received		04/07/2023	
								Schedule received		04/07/2023	
Project No. GE21681		Client GESL						Project started		04/07/2023	
								Testing Started		13/07/2023	
Hole No.	Sample				Soil Description	NMC %	Passing 425µm %	LL %	PL %	PI %	Remarks
	Ref	Top m	Base m	Type							
TP01	1	0.50	-	D	Orangish brown slightly mottled grey slightly sandy silty CLAY	22	100	52	22	30	
TP01	2	1.00	-	D	Orangish brown slightly mottled grey slightly sandy silty CLAY with traces of fine rootlets	24	100	50	22	28	
TP02	1	0.50	-	B	Orangish brown slightly mottled grey sandy silty CLAY with traces of fine rootlets	19	100	48	21	27	
TP03	1	0.50	-	B	Orangish brown slightly mottled grey slightly gravelly sandy silty CLAY (gravel is fm and sub-angular to rounded)	26	94	47	23	24	
TP04	2	1.00	-	B	Orangish brown slightly mottled grey sandy silty CLAY with rare fine gravel	22	99	51	22	29	
TP05	1	0.50	-	B	Brown slightly mottled grey slightly gravelly sandy silty CLAY (gravel is fm and sub-angular to rounded)	22	90	40	21	19	
TP05	2	1.00	-	B	Orangish brown mottled grey slightly gravelly sandy silty CLAY (gravel is fm and sub-angular to rounded)	24	84	35	18	17	
TP06	1	0.50	-	B	Orangish brown slightly mottled grey sandy silty CLAY	18	100	44	19	25	
		Test Methods: BS1377: Part 2: 1990: Natural Moisture Content : clause 3.2 Atterberg Limits: clause 4.3 and 5.0 <i>These results only apply to the items tested</i> NOTE: The report shall not be reproduced except in full without authority of the laboratory				Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com				Checked and Approved Initials J.P Date: 19/07/2023	
2519		Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)						MSF-5-R1(b)			



California Bearing Ratio (CBR)

Job Ref	33714		
	Borehole/Pit No.		
Site Name	Stoke Park Farm		
Project No.	GE21681	Client	GESL
Soil Description	Brown silty CLAY		
Test Method	BS1377 : Part 4 : 1990, clause 7		

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 5 days

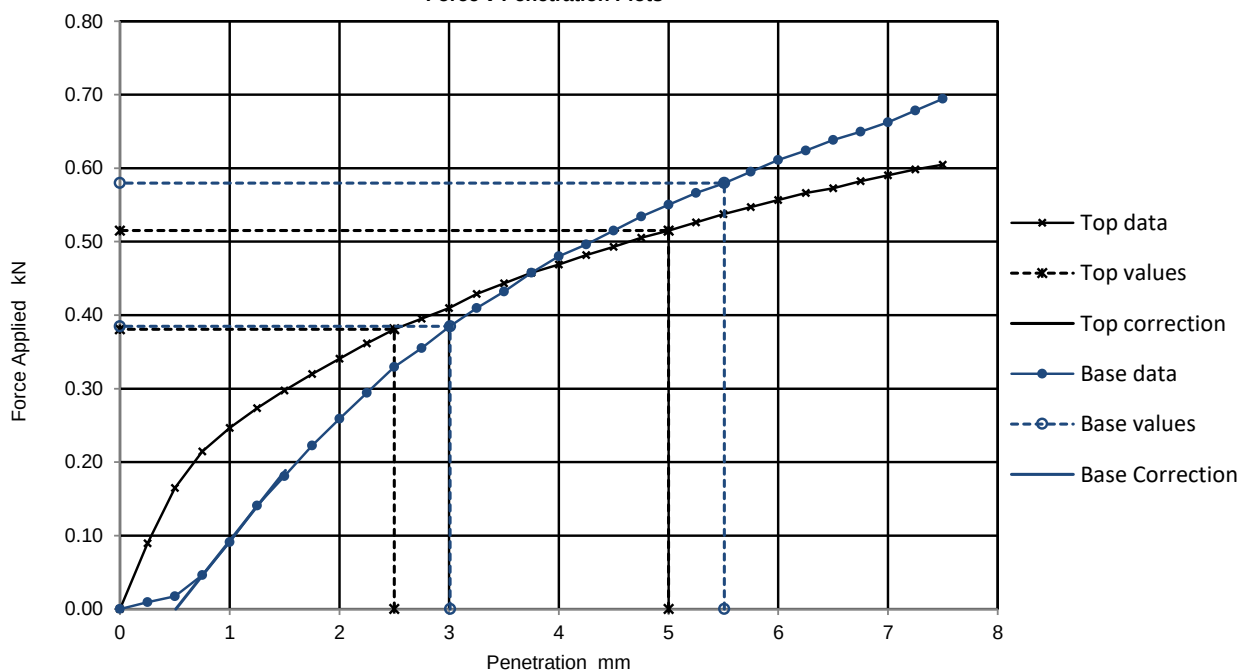
Time to surface 5 days

Amount of swell recorded 2.51 mm

Material retained on 20mm sieve removed 0 %

Initial Specimen details Bulk density 1.86 Mg/m³ Surcharge applied 4 kg
 Dry density 1.54 Mg/m³ 2 kPa
 Moisture content 20 %

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	2.9	2.6	2.9	2.9
Yes	2.9	2.9	2.9	

Moisture Content %
31
32

Remarks

1



Test Report by K4 SOILS LABORATORY
 Unit 8 Olds Close Olds Approach
 Watford Herts WD18 9RU

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 Email: James@k4soils.com

Checked and Approved

Initials: J.P
 Date: 19/07/2023

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MSF-5-R16



California Bearing Ratio (CBR)

	California Bearing Ratio (CBR)			Job Ref	33714
				Borehole/Pit No.	TP02
Site Name	Stoke Park Farm			Sample No.	2
Project No.	GE21681	Client	GESL	Depth Top	1.00 m
Soil Description	Brown slightly sandy silty CLAY			Depth Base	- m
				Sample Type	B
				Samples received	04/07/2023
				Schedules received	04/07/2023
Test Method	BS1377 : Part 4 : 1990, clause 7			Project Started	04/07/2023
				Date Tested	07/07/2023

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 5 days

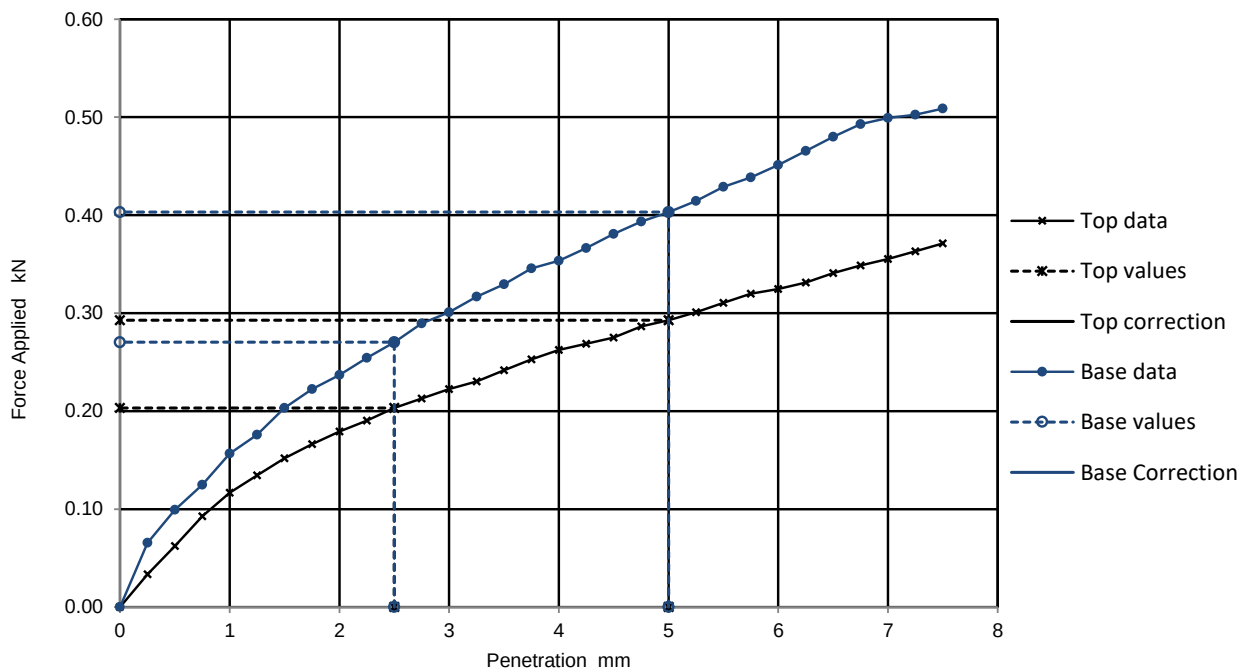
Time to surface 5 days

Amount of swell recorded 0.04 mm

Material retained on 20mm sieve removed 0 %

Initial Specimen details	Bulk density	1.96	Mg/m3	Surcharge applied	4	kg
	Dry density	1.58	Mg/m3		2	kPa
	Moisture content	24	%			

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.5	1.5	1.5	N/A
No	2.0	2.0	2.0	

Moisture Content
%
26
26

Remarks

1



Test Report by K4 SOILS LABORATORY
Unit 8 Olds Close Olds Approach
Watford Herts WD18 9RU

Tel: 01923 711 288
Email: James@k4soils.com

Checked and Approved

Initials: J.P

Date: 19/07/2023

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R16



California Bearing Ratio (CBR)

Job Ref	33714		
	Borehole/Pit No.		
Site Name	Stoke Park Farm		
Project No.	GE21681	Client	GESL
Soil Description	Brown slightly sandy silty CLAY		
Test Method	BS1377 : Part 4 : 1990, clause 7		

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 5 days

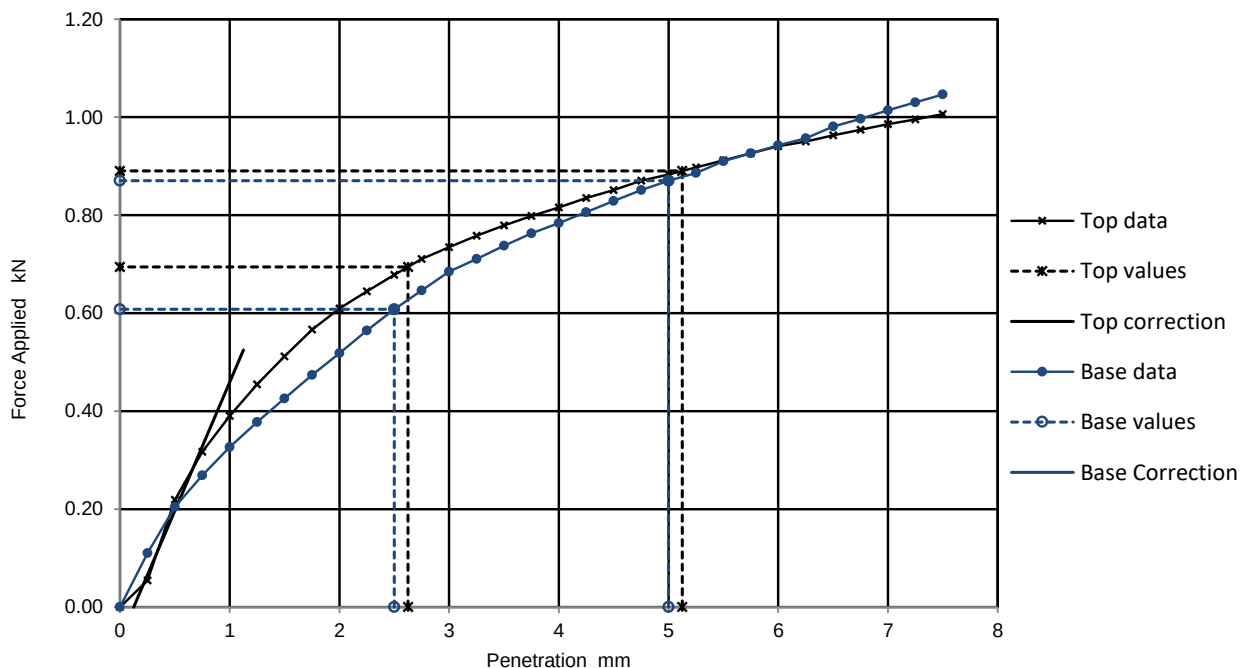
Time to surface 5 days

Amount of swell recorded 1.47 mm

Material retained on 20mm sieve removed 0 %

Initial Specimen details Bulk density 1.89 Mg/m³ Surcharge applied 4 kg
 Dry density 1.61 Mg/m³ 2 kPa
 Moisture content 17 %

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
Yes	5.3	4.5	5.3	4.9
No	4.6	4.4	4.6	

Moisture Content
%
26
29

Remarks

1



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MSF-5-R16



California Bearing Ratio (CBR)

	California Bearing Ratio (CBR)			Job Ref	33714
				Borehole/Pit No.	TP06
Site Name	Stoke Park Farm			Sample No.	2
Project No.	GE21681	Client	GESL	Depth Top	1.00 m
Soil Description	Brown slightly sandy silty CLAY			Depth Base	- m
				Sample Type	B
				Samples received	04/07/2023
				Schedules received	04/07/2023
Test Method	BS1377 : Part 4 : 1990, clause 7			Project Started	04/07/2023
				Date Tested	07/07/2023

Specimen Preparation

Condition REMOULDED

Details Recompacted with specified standard effort using 2.5kg rammer

Soaking details

Period of soaking 5 days

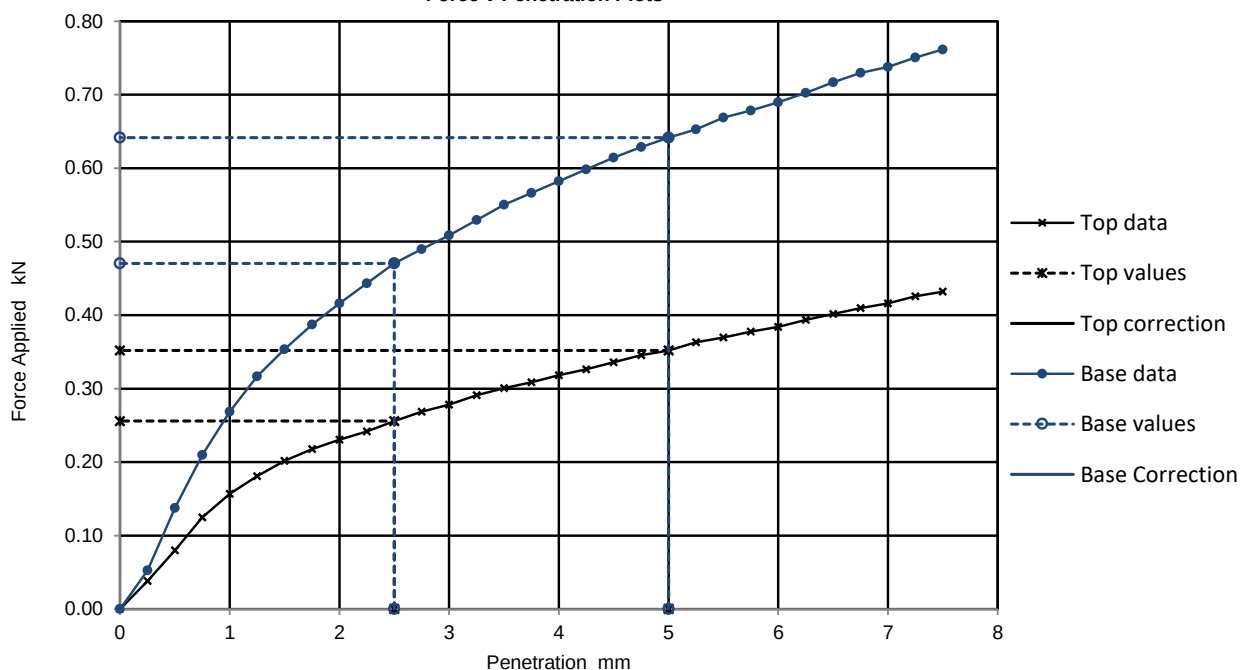
Time to surface 5 days

Amount of swell recorded 0.25 mm

Material retained on 20mm sieve removed 0 %

Initial Specimen details	Bulk density	1.96	Mg/m3	Surcharge applied	4	kg
	Dry density	1.58	Mg/m3		2	kPa
	Moisture content	24	%			

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.9	1.8	1.9	N/A
No	3.6	3.2	3.6	

Moisture Content
%
28
28

Remarks

1



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Watford Herts WD18 9RU

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Date: 19/07/2023

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5-R16

APPENDIX C

Geochemical Laboratory Results





Fiona Goode
Geo-Environmental Services Ltd
Unit 7, Danworth Farm
Cuckfield Road
Hurstpierpoint
West Sussex
BN6 9GL

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e: fiona.goode@gesl.net

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 : 23-42694

Project / Site name:	Stoke Park Farm	Samples received on:	30/06/2023
Your job number:	GE21681	Samples instructed on/ Analysis started on:	03/07/2023
Your order number:	PO-6569	Analysis completed by:	10/07/2023
Report Issue Number:	1	Report issued on:	10/07/2023
Samples Analysed:	6 soil samples		

Signed: _____

Izabela Wójcik

Izabela Wójcik
Reporting Specialist
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

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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: 23-42694
Project / Site name: Stoke Park Farm
Your Order No: PO-6569

Lab Sample Number	2734289				2734290	2734291	2734292	2734293
Sample Reference	HP02				WS01	WS02	WS03	WS04
Sample Number	None Supplied				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.15				0.10	0.20	0.35	0.10
Date Sampled	28/06/2023				29/06/2023	29/06/2023	29/06/2023	29/06/2023
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	6.9	9	15	6.6	7.3
Total mass of sample received	kg	0.001	NONE	1.3	1.3	1.3	1.3	1.3

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	KSZ	KSZ	N/A	KSZ	KSZ

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7	6.6	-	6.8	6
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9.3	7.6	-	10	13
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0047	0.0038	-	0.005	0.0065
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.7	3.8	-	5	6.5
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	4.4	2.4	-	1.6	4.5
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	-	< 5.0	< 5.0
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.4	1.1	-	1	1.6

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.09
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.08
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.07
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.09
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-	< 0.05	0.06
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	-	< 0.80	< 0.80
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Analytical Report Number: 23-42694
Project / Site name: Stoke Park Farm
Your Order No: PO-6569

Lab Sample Number				2734289	2734290	2734291	2734292	2734293
Sample Reference				HP02	WS01	WS02	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.10	0.20	0.35	0.10
Date Sampled				28/06/2023	29/06/2023	29/06/2023	29/06/2023	29/06/2023
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	8.4	-	5.7	7.2
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.7	0.42	-	0.22	0.36
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.3	-	< 0.2	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	-	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	37	23	-	9.1	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	26	15	-	9.3	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	21	17	-	15	18
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	18	9.3	-	3.3	7.6
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	60	37	-	18	28
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	54	38	-	22	37

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	-	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS 1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS 1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS 1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	-	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	-	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	-	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	-	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS 1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS 1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS 1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	-	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	-	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	-	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	-	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	-	< 10	< 10

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	-	-

Analytical Report Number: 23-42694
 Project / Site name: Stoke Park Farm
 Your Order No: PO-6569

Lab Sample Number				2734289	2734290	2734291	2734292	2734293
Sample Reference				HP02	WS01	WS02	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.10	0.20	0.35	0.10
Date Sampled				28/06/2023	29/06/2023	29/06/2023	29/06/2023	29/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
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	-	-
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	-	-



Analytical Report Number: 23-42694
Project / Site name: Stoke Park Farm
Your Order No: PO-6569

Lab Sample Number				2734289	2734290	2734291	2734292	2734293
Sample Reference				HP02	WS01	WS02	WS03	WS04
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.10	0.20	0.35	0.10
Date Sampled				28/06/2023	29/06/2023	29/06/2023	29/06/2023	29/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	-	-	< 10	-	-
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	-	-	< 10	-	-
Trifluralin	µg/kg	10	NONE	-	-	< 10	-	-

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



Analytical Report Number: 23-42694
Project / Site name: Stoke Park Farm
Your Order No: PO-6569

Lab Sample Number				2734294
Sample Reference				WS05
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				29/06/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	5.6
Total mass of sample received	kg	0.001	NONE	1.3

Asbestos in Soil	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-
Total Cyanide	mg/kg	1	MCERTS	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-
Sulphide	mg/kg	1	MCERTS	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-
Elemental Sulphur	mg/kg	5	MCERTS	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-

Total Phenols

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

Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-
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Analytical Report Number: 23-42694
Project / Site name: Stoke Park Farm
Your Order No: PO-6569

Lab Sample Number				2734294
Sample Reference				WS05
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				29/06/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	-
Toluene	µg/kg	5	MCERTS	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-xylene	µg/kg	5	MCERTS	-
o-xylene	µg/kg	5	MCERTS	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS 1D_AL}	mg/kg	0.001	NONE	-
TPH-CWG - Aliphatic >EC6 - EC8 _{HS 1D_AL}	mg/kg	0.001	NONE	-
TPH-CWG - Aliphatic >EC8 - EC10 _{HS 1D_AL}	mg/kg	0.001	NONE	-
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	-
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	-
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	-
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	-

TPH-CWG - Aromatic >EC5 - EC7 _{HS 1D_AR}	mg/kg	0.001	NONE	-
TPH-CWG - Aromatic >EC7 - EC8 _{HS 1D_AR}	mg/kg	0.001	NONE	-
TPH-CWG - Aromatic >EC8 - EC10 _{HS 1D_AR}	mg/kg	0.001	NONE	-
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	-
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	-
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	-
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	-

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

Analytical Report Number: 23-42694
 Project / Site name: Stoke Park Farm
 Your Order No: PO-6569

Lab Sample Number				2734294
Sample Reference				WS05
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				29/06/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
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
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



Analytical Report Number: 23-42694
Project / Site name: Stoke Park Farm
Your Order No: PO-6569

Lab Sample Number				2734294
Sample Reference				WS05
Sample Number				None Supplied
Depth (m)				0.15
Date Sampled				29/06/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Trichlorobenzene, 1,2,3-	µg/kg	10	NONE	< 10
Trichlorobenzene, 1,3,5-	µg/kg	10	NONE	< 10
Trifluralin	µg/kg	10	NONE	< 10

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



Analytical Report Number : 23-42694
Project / Site name: Stoke Park 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 *
2734289	HP02	None Supplied	0.15	Brown loam and sand with gravel and vegetation.
2734290	WS01	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2734291	WS02	None Supplied	0.2	Brown clay and loam with vegetation.
2734292	WS03	None Supplied	0.35	Brown loam and sand with gravel and vegetation.
2734293	WS04	None Supplied	0.1	Brown loam and sand with gravel and vegetation.
2734294	WS05	None Supplied	0.15	Brown loam and sand with gravel and vegetation.

Analytical Report Number : 23-42694
Project / Site name: Stoke Park Farm

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

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
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
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
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
Elemental sulphur in soil	Determination of elemental sulphur in soil by extraction in acetonitrile followed by HPLC.	In-house method based on Secondsite Property Holdings Guidance for Assessing and Managing Potential	L021-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	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
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-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
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-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
Pesticides by GC-MS/MS	Detemination of Pesticides in soil by GC MS/MS	In-house method	L055B-PL	W	NONE



Analytical Report Number : 23-42694
Project / Site name: Stoke Park Farm

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
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 or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

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

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

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined aravimetricallv 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.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

TEST CERTIFICATE

SPECIFICATION FOR TOPSOIL
Tested in Accordance with: BS 3882: 2015

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL

Contact: Fiona Goode
Site Address: Stoke Park Farm

Client Reference: GE21681
Job Number: 23-42700-1
Date Sampled: 28/06/2023
Date Received: 30/06/2023
Date Tested: 06/07/2023
Sampled By: Not Given

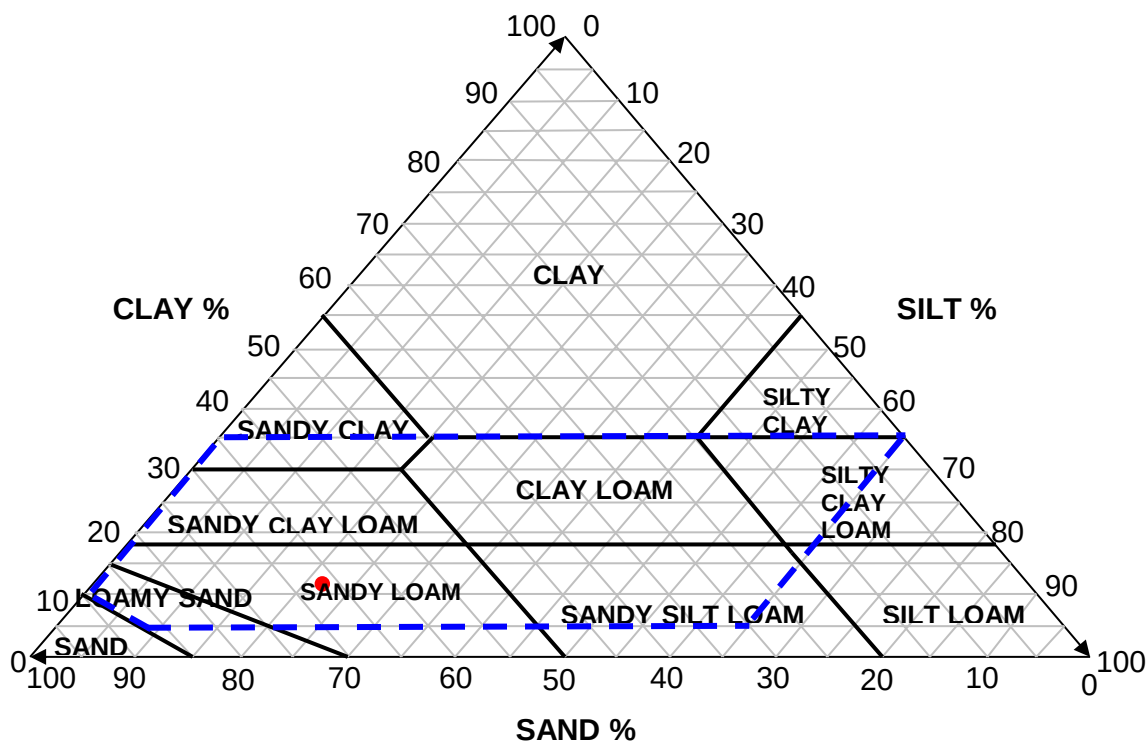
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2734304
Hole No.: HP01
Sample Reference: Not Given
Sample Description: SANDY LOAM

Depth Top [m]: 0.10
Depth Base [m]: Not Given
Sample Type: B

Soil Texture Triangle



Sample Proportion	% dry mass
Sand	67.1
Silt	20.1
Clay	12.8

Texture within acceptable area (Y/N)

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

TEST CERTIFICATE

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Sampled By: Not Given

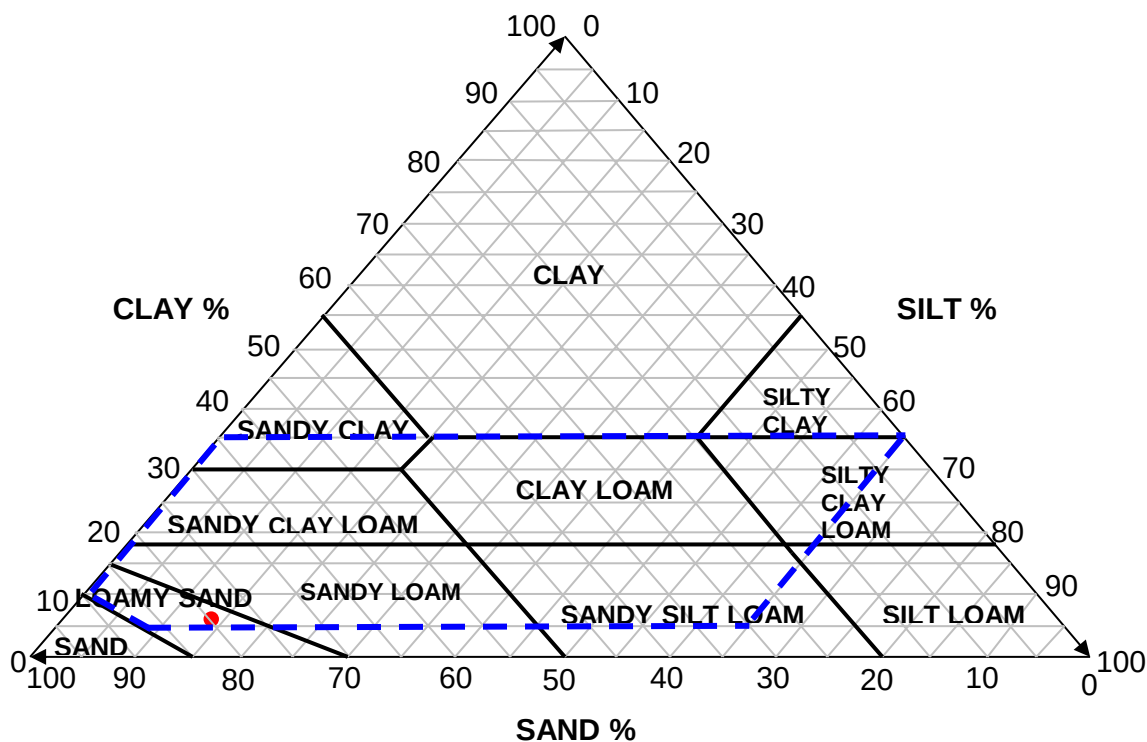
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2734305
Hole No.: HP03
Sample Reference: Not Given
Sample Description: LOAMY SAND

Depth Top [m]: 0.20
Depth Base [m]: Not Given
Sample Type: B

Soil Texture Triangle



Sample Proportion	% dry mass
Sand	80.4
Silt	12.5
Clay	7.1

Texture within acceptable area (Y/N) ☒ Y

Remarks:

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Monika Siewior

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Watford Herts WD18 8YS



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BN6 9GL
Contact: Fiona Goode
Site Address: Stoke Park Farm

Client Reference: GE21681
Job Number: 23-42700-1
Date Sampled: 28/06/2023
Date Received: 30/06/2023
Date Tested: 06/07/2023
Sampled By: Not Given

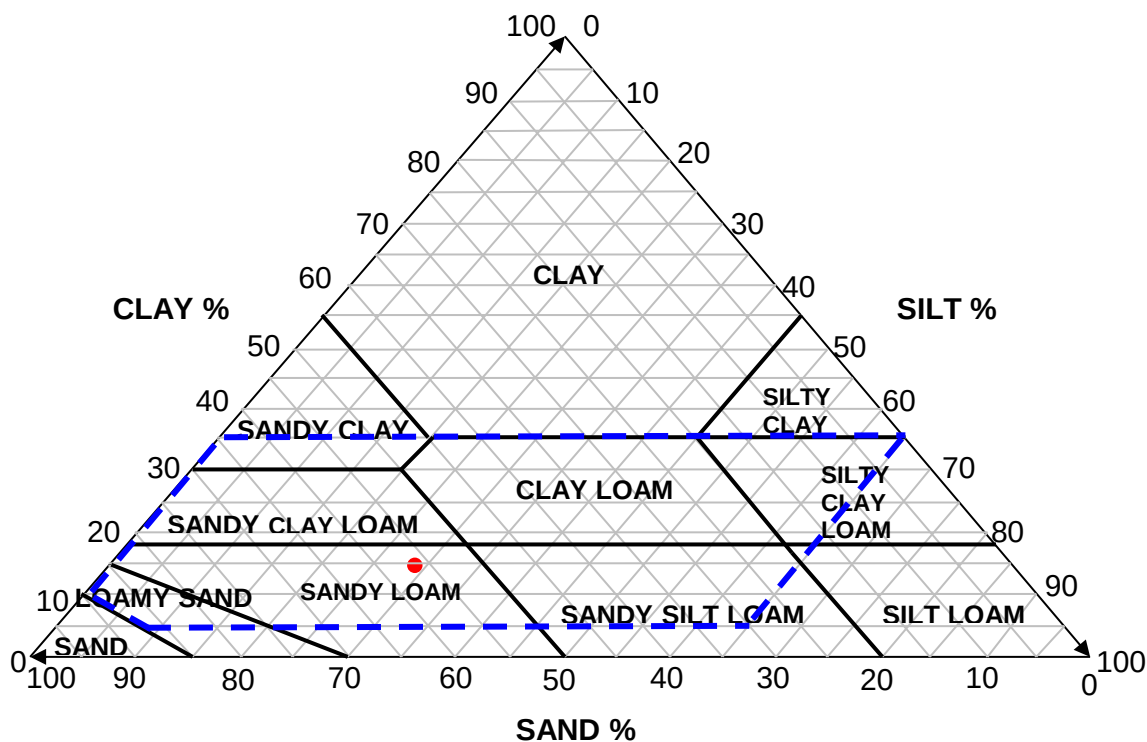
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2734306
Hole No.: HP04
Sample Reference: Not Given
Sample Description: SANDY LOAM

Depth Top [m]: 0.10
Depth Base [m]: Not Given
Sample Type: B

Soil Texture Triangle



Sample Proportion	% dry mass
Sand	56.9
Silt	27.3
Clay	15.8

Texture within acceptable area (Y/N) ☒ Y

Remarks:

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Monika Siewior

Monika Siewior
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TEST CERTIFICATE

SPECIFICATION FOR TOPSOIL
Tested in Accordance with: BS 3882: 2015

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Croxley Green Business Park
Watford Herts WD18 8YS



Client: Geo-Environmental Services Ltd
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BN6 9GL

Contact: Fiona Goode
Site Address: Stoke Park Farm

Client Reference: GE21681
Job Number: 23-42700-1
Date Sampled: 29/06/2023
Date Received: 30/06/2023
Date Tested: 06/07/2023
Sampled By: Not Given

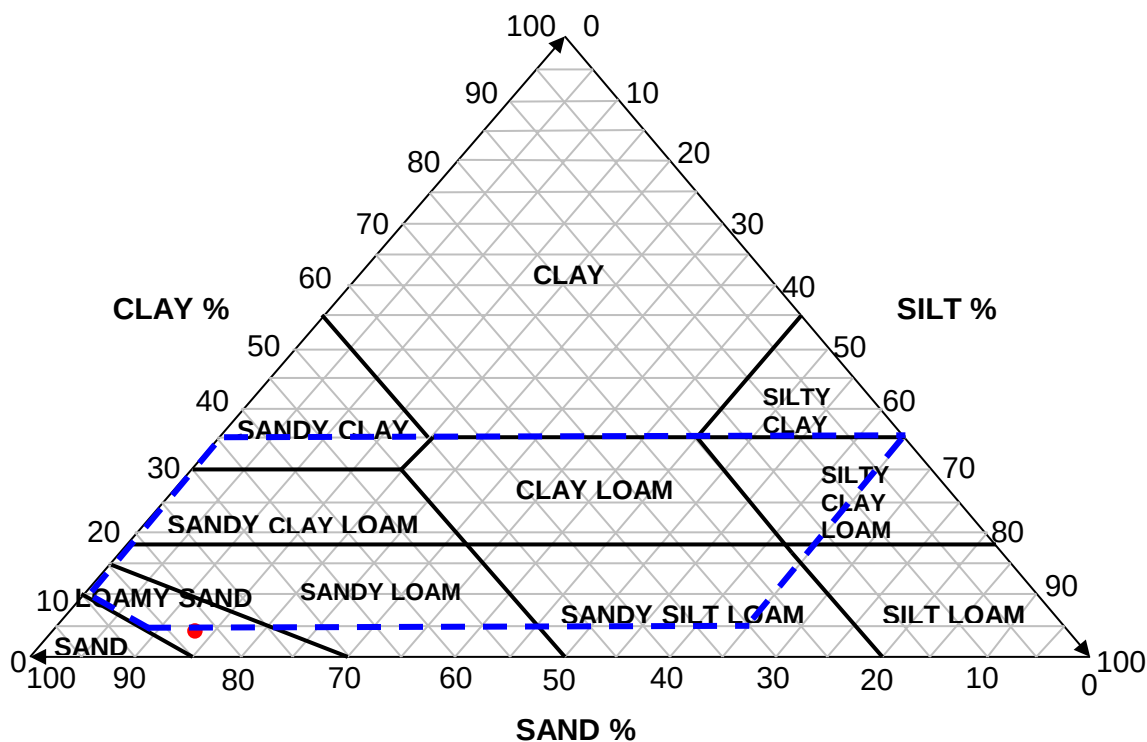
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2734307
Hole No.: WS03
Sample Reference: Not Given
Sample Description: LOAMY SAND

Depth Top [m]: 0.15
Depth Base [m]: Not Given
Sample Type: B

Soil Texture Triangle



Sample Proportion	% dry mass
Sand	82.9
Silt	11.9
Clay	5.2

Texture within acceptable area (Y/N) ☒ Y

Remarks:

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Signed:

Monika Siewior

Monika Siewior
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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t: 01273 832972

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Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 23-42700

Project / Site name:	Stoke Park Farm	Samples received on:	30/06/2023
Your job number:	GE21681	Samples instructed on/ Analysis started on:	03/07/2023
Your order number:	PO-6569	Analysis completed by:	12/07/2023
Report Issue Number:	1	Report issued on:	12/07/2023
Samples Analysed:	4 soil samples		



Signed: _____

Elżbieta Suchy
Junior Reporting Specialist
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

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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.

i2 Analytical

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Certificate of Analysis									
BS 3882:2015 Specification For Topsoil									
	Pass BS 3882 for Multipurpose Topsoil; Low fertility;						client		
Report No:	23-42700					Geo-Environmental Services Ltd 01273 832972			
Location	Stoke Park Farm								
Lab Reference (Sample Number)	2734304								
Sampling Date	28/06/2023								
Sample ID	HP01								
Depth (m)	0.10			Compliant with range (Y/N)					
		unit	Result	Multi-P	Acid	Calc	Low-F	Low-F(a)	Low-F(c)
Soil texture	<2mm fraction	%m/m	SANDY LOAM	Y	Y	Y	Y	Y	Y
Maximum coarse fragment content:	>2mm	%m/m	0.80	Y	Y	Y	Y	Y	Y
	>20mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	>50mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
Mass loss on ignition		%	4.30						
	Clay 5-20%		Y	Y	Y	Y	Y	Y	Y
	Clay 20-35%		-	-	-	-	-	-	-
Soil pH:		pH	6.40	Y	N	N	Y	N	N
Carbonate:		%m/m	3.50	-	-	Y	-	-	Y
Available plant nutrients	Nitrogen	%m/m	0.21	Y	Y	Y	-	-	-
	Extractable Phosphate (as P)	mg/l	20.00	Y	Y	Y	Y	Y	Y
	Extractable Potassium	mg/l	124.00	Y	Y	Y	-	-	-
	Extractable Magnesium	mg/l	160.00	Y	Y	Y	-	-	-
Carbon: Nitrogen Ratio:		:1	12.00	Y	Y	Y	Y	Y	Y
Conductivity		us/cm	1800.00	Y	-	-	-	-	-
Phytotoxic contaminants:	** Total Zinc	mg/kg	45.00	Y	Y	Y	Y	Y	Y
	** Total Copper	mg/kg	17.00	Y	Y	Y	Y	Y	Y
	** Total Nickel	mg/kg	12.00	Y	Y	Y	Y	Y	Y
Visible contaminants:	>2mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Plastics	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Sharps	no. in 1 kg	0.00	Y	Y	Y	Y	Y	Y
Compliance:				Pass	Fail	Fail	Pass	Fail	Fail
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation									

** = MCERTS accredited

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email:reception@i2analytical.com

Certificate of Analysis									
BS 3882:2015 Specification For Topsoil									
	Fail BS 3882							client	
Report No:	23-42700						Geo-Environmental Services Ltd 01273 832972		
Location	Stoke Park Farm								
Lab Reference (Sample Number)	2734305								
Sampling Date	28/06/2023								
Sample ID	HP03								
Depth (m)	0.20			Compliant with range (Y/N)					
		unit	Result	Multi-P	Acid	Calc	Low-F	Low-F(a)	Low-F(c)
Soil texture	<2mm fraction	%m/m	LOAMY SAND	Y	Y	Y	Y	Y	Y
Maximum coarse fragment content:	>2mm	%m/m	2.10	Y	Y	Y	Y	Y	Y
	>20mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	>50mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
Mass loss on ignition		%	1.80						
	Clay 5-20%		Y	N	-	N	N	N	N
	Clay 20-35%		-	-	-	-	-	-	-
Soil pH:		pH	6.60	Y	N	N	Y	N	N
Carbonate:		%m/m	2.00	-	-	Y	-	-	Y
Available plant nutrients	Nitrogen	%m/m	0.13	N	N	N	-	-	-
	Extractable Phosphate (as P)	mg/l	25.00	Y	Y	Y	N	N	N
	Extractable Potassium	mg/l	87.50	N	N	N	-	-	-
	Extractable Magnesium	mg/l	120.00	Y	Y	Y	-	-	-
Carbon: Nitrogen Ratio:		:1	8.70	Y	Y	Y	Y	Y	Y
Conductivity		us/cm	1800.00	Y	-	-	-	-	-
Phytotoxic contaminants:	** Total Zinc	mg/kg	19.00	Y	Y	Y	Y	Y	Y
	** Total Copper	mg/kg	50.00	Y	Y	Y	Y	Y	Y
	** Total Nickel	mg/kg	3.00	Y	Y	Y	Y	Y	Y
Visible contaminants:	>2mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Plastics	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Sharps	no. in 1 kg	0.00	Y	Y	Y	Y	Y	Y
Compliance:				Fail	Fail	Fail	Fail	Fail	Fail
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation									

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Certificate of Analysis									
BS 3882:2015 Specification For Topsoil									
	Pass BS 3882 for Low fertility;							client	
Report No:	23-42700						Geo-Environmental Services Ltd 01273 832972		
Location	Stoke Park Farm								
Lab Reference (Sample Number)	2734306								
Sampling Date	28/06/2023								
Sample ID	HP04								
Depth (m)	0.10			Compliant with range (Y/N)					
		unit	Result	Multi-P	Acid	Calc	Low-F	Low-F(a)	Low-F(c)
Soil texture	<2mm fraction	%m/m	SANDY LOAM	Y	Y	Y	Y	Y	Y
Maximum coarse fragment content:	>2mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	>20mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	>50mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
Mass loss on ignition		%	2.70						
	Clay 5-20%		Y	N	N	N	Y	Y	Y
	Clay 20-35%		-	-	-	-	-	-	-
Soil pH:		pH	6.70	Y	N	N	Y	N	N
Carbonate:		%m/m	2.70	-	-	Y	-	-	Y
Available plant nutrients	Nitrogen	%m/m	0.10	N	N	N	-	-	-
	Extractable Phosphate (as P)	mg/l	11.00	N	N	N	Y	Y	Y
	Extractable Potassium	mg/l	153.00	Y	Y	Y	-	-	-
	Extractable Magnesium	mg/l	120.00	Y	Y	Y	-	-	-
Carbon: Nitrogen Ratio:		:1	16.00	Y	Y	Y	Y	Y	Y
Conductivity		us/cm	1700.00	Y	-	-	-	-	-
Phytotoxic contaminants:	** Total Zinc	mg/kg	40.00	Y	Y	Y	Y	Y	Y
	** Total Copper	mg/kg	26.00	Y	Y	Y	Y	Y	Y
	** Total Nickel	mg/kg	10.00	Y	Y	Y	Y	Y	Y
Visible contaminants:	>2mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Plastics	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Sharps	no. in 1 kg	0.00	Y	Y	Y	Y	Y	Y
Compliance:				Fail	Fail	Fail	Pass	Fail	Fail
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation									

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email:reception@i2analytical.com

Certificate of Analysis									
BS 3882:2015 Specification For Topsoil									
	Fail BS 3882							client	
Report No:	23-42700						Geo-Environmental Services Ltd 01273 832972		
Location	Stoke Park Farm								
Lab Reference (Sample Number)	2734307								
Sampling Date	29/06/2023								
Sample ID	WS03								
Depth (m)	0.15			Compliant with range (Y/N)					
		unit	Result	Multi-P	Acid	Calc	Low-F	Low-F(a)	Low-F(c)
Soil texture	<2mm fraction	%m/m	LOAMY SAND	Y	Y	Y	Y	Y	Y
Maximum coarse fragment content:	>2mm	%m/m	42.00	N	N	N	N	N	N
	>20mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	>50mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
Mass loss on ignition		%	3.20						
	Clay 5-20%		Y	Y	Y	Y	Y	Y	Y
	Clay 20-35%		-	-	-	-	-	-	-
Soil pH:		pH	7.30	Y	N	N	Y	N	N
Carbonate:		%m/m	11.00	-	-	Y	-	-	Y
Available plant nutrients	Nitrogen	%m/m	0.12	N	N	N	-	-	-
	Extractable Phosphate (as P)	mg/l	60.00	Y	Y	Y	N	N	N
	Extractable Potassium	mg/l	107.00	N	N	N	-	-	-
	Extractable Magnesium	mg/l	77.00	Y	Y	Y	-	-	-
Carbon: Nitrogen Ratio:		:1	16.00	Y	Y	Y	Y	Y	Y
Conductivity		us/cm	1900.00	Y	-	-	-	-	-
Phytotoxic contaminants:	** Total Zinc	mg/kg	28.00	Y	Y	Y	Y	Y	Y
	** Total Copper	mg/kg	22.00	Y	Y	Y	Y	Y	Y
	** Total Nickel	mg/kg	4.90	Y	Y	Y	Y	Y	Y
Visible contaminants:	>2mm	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Plastics	%m/m	0.00	Y	Y	Y	Y	Y	Y
	Sharps	no. in 1 kg	0.00	Y	Y	Y	Y	Y	Y
Compliance:				Fail	Fail	Fail	Fail	Fail	Fail
Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation									

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Analytical Report Number : 23-42700
Project / Site name: Stoke Park 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 *
2734304	HP01	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
2734305	HP03	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2734306	HP04	None Supplied	0.1	Brown clay and loam with vegetation.
2734307	WS03	None Supplied	0.15	Brown sandy loam with gravel and vegetation.

Analytical Report Number : 23-42700
Project / Site name: Stoke Park Farm

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Geotechnical Testing in Soil	See attached geotechnical report	See attached geotechnical report		W	NONE
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Textural Classification Diagram	Textural classification Diagram	BS3882:2015		D	NONE
Carbon to Nitrogen Ratio (Topsoil - BS3882:2015)	Carbon to Nitrogen ratio (:1) calculated using Loss on Ignition.	BS3882:2015	L01TS2015	W	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Kjeldahl nitrogen in soil	Determination of total nitrogen using the Kjeldahl-digestion method and colorimetric determination.	In house method based on BS 7755-3.7:1995 &	L087-PL	D	NONE
Topsoil		BS 3882: 2015	PL		NONE
Mass loss on ignition (Topsoil - BS3882)	Determination of Loss on Ignition as per BS 3882:2015.	BS3882:2015	L047-PL	D	NONE
Carbonate (Topsoil - BS3882)	Determination of Carbonate as per BS 3882:2015.	BS3882:2015	L034-PL	D	NONE
Phosphorus as PO ₄ (BS3882/BS8601)	Determination of the extractable phosphorus in soil, in accordance with BS3882:2007 methodology.	BS3882:2015 & BS8601:2013	L048-PL	D	NONE
Coarse Fragment and Contaminant Analysis	Determination of >2mm contaminants	BS3882:2007 & BS8601:2013 & PAS 100:2005	L01TS	D	NONE
Nitrogen (TKN)	Determination of total nitrogen by Kjeldahl method.	BS3882:2007	L087-PL	D	NONE
Conductivity (BS3882/BS8601)	Determination of the conductivity of soil in accordance with BS 3882:2007 methodology	BS3882:2007 & BS8601:2013	L099-PL	D	NONE
pH (BS3882/BS8601)	Determination of the pH of soil in accordance with BS 3882:2007 methodology	BS3882:2007 & BS8601:2013	L099-PL	D	NONE
Extractable/Available Metals (BS3882/BS8601)	Determination of the extractable metals in soil, in accordance with BS3882:2007 methodology.	BS3882:2007 & BS8601:2013	L038-PL	D	NONE
Sodium (exchangeable %)	Determination of exchangeable sodium (%) by calculation, in accordance with BS3882:2007 methodology.	BS3882:2007	L038-PL	D	NONE



Analytical Report Number : 23-42700
Project / Site name: Stoke Park Farm

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Textural Classification	Determination of the textural classification of soil following BS3882:2007 methodology.	BS3882:2015 & BS8601:2013	L01TS	D	NONE

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



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Analytical Report Number : 23-42698

Project / Site name:	Stoke Park Farm	Samples received on:	30/06/2023
Your job number:	GE21681	Samples instructed on/ Analysis started on:	03/07/2023
Your order number:	PO-6569	Analysis completed by:	10/07/2023
Report Issue Number:	1	Report issued on:	10/07/2023
Samples Analysed:	1 10:1 WAC sample		

Signed: _____

Dominika Warjan
Reporting Specialist
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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Watford, WD18 8YS

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email:reception@i2analytical.com

Waste Acceptance Criteria Analytical Results							
Report No:	23-42698						
					Client: GESL		
Location	Stoke Park Farm						
Lab Reference (Sample Number)	2734298 / 2734299				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	28/06/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP02						
Depth (m)	0.10						
Solid Waste Analysis							
TOC (%)**	1.3				3%	5%	6%
Loss on Ignition (%) **	3.8				--	--	10%
BTEX (µg/kg)**	< 5.0				6000	--	--
Sum of PCBs (mg/kg)**	< 0.007				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	6.8				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	-0.94				--	To be evaluated	To be evaluated
Eluate Analysis	10:1			10:1	Limit values for compliance leaching test		
(BS EN 12457 - 2 preparation utilising end over end leaching procedure)	mg/l			mg/kg	using BS EN 12457-2 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.0017			0.0155	0.5	2	25
Barium *	0.0092			0.0844	20	100	300
Cadmium *	< 0.0001			< 0.0008	0.04	1	5
Chromium *	0.0025			0.023	0.5	10	70
Copper *	0.028			0.25	2	50	100
Mercury *	< 0.0005			< 0.0050	0.01	0.2	2
Molybdenum *	< 0.0004			< 0.0040	0.5	10	30
Nickel *	0.0022			0.020	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 *	0.012			0.11	4	50	200
Chloride *	0.46			4.2	800	15000	25000
Fluoride*	0.31			2.9	10	150	500
Sulphate *	0.95			8.7	1000	20000	50000
TDS*	20			180	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.010			< 0.10	1	-	-
DOC	15.8			144	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.3						
Dry Matter (%)	92						
Moisture (%)	7.7						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited			

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



Analytical Report Number : 23-42698
Project / Site name: Stoke Park Farm

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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 *
2734298	TP02	None Supplied	0.1	Brown loam and sand with gravel and vegetation.

Analytical Report Number : 23-42698
Project / Site name: Stoke Park Farm

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

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.	L064-PL	D	MCERTS
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. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Total BTEX in soil (Poland)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	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 EC probe using a factor of 0.6.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L031	W	ISO 17025



Analytical Report Number : 23-42698
Project / Site name: Stoke Park Farm

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

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

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

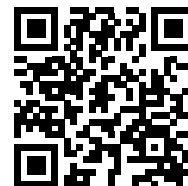
APPENDIX D

HazWasteOnline Assessment

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



P2YKL-LIZA6-5GOBL

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in **pale yellow**.

Job name

GE21681 Waste Soils Assessment

Description/Comments

Based on i2 Analytical Report Numbers: 23-42694-1 & 23-42698-1

Project

GE21681

Site

Stoke Park Farm

Classified by

Name: **Shaun Armitage**
 Date: **20 Jul 2023 15:55 GMT**
 Telephone:
 Company: **Geo-Environmental Services**
Unit 7, Danworth Farm, Cuckfield Rd
Hurstpierpoint
BN6 9GL

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course
 Hazardous Waste Classification

Date
 09 Jun 2022

Next 3 year Refresher due by Jun 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Stoke Park Farm – SANG, Stoke Common Road, Bishopstoke

Post Code SO50 6DW

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Creation of a SANG to provide recreational space

Description of the specific process, sub-process and/or activity that created the waste

Potential waste soils generated from construction of car park associated with creation of SANG for visitors to the site

Description of the waste

Topsoil - Grass over dark brown slightly silty CLAY with frequent roots and rootlets.
 Whitecliff Sand - Light brown fine SAND with varying proportions of clay.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	HP02--28062023-0.15	0.15	Non Hazardous		3
2	WS01--29062023-0.10	0.10	Non Hazardous		6
3	WS03--29062023-0.35	0.35	Non Hazardous		9
4	WS04--29062023-0.10	0.10	Non Hazardous		12

Related documents

#	Name	Description
1	23-42694_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	GESL Soils Waste Stream Template	waste stream template used to create this Job

Report

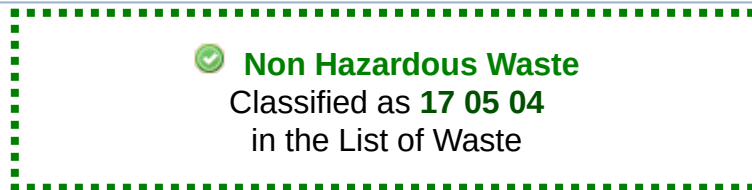
Created by: Shaun Armitage

Created date: 20 Jul 2023 15:55 GMT

Appendices

	Page
Appendix A: Classifier defined and non GB MCL determinands	15
Appendix B: Rationale for selection of metal species	16
Appendix C: Version	17

Classification of sample: HP02--28062023-0.15


Sample details

Sample name:	LoW Code:
HP02--28062023-0.15	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.15 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.9% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				12 mg/kg	1.32	14.751 mg/kg	0.00148 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		beryllium { beryllium oxide }				0.7 mg/kg	2.775	1.809 mg/kg	0.000181 %	✓		
		004-003-00-8	215-133-1	1304-56-9								
3		boron { diboron trioxide; boric oxide }				0.3 mg/kg	3.22	0.899 mg/kg	0.0000899 %	✓		
		005-008-00-8	215-125-8	1303-86-2								
4		cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD	
		048-002-00-0	215-146-2	1306-19-0								
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				37 mg/kg	1.462	50.346 mg/kg	0.00503 %	✓		
			215-160-9	1308-38-9								
6		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD	
		024-017-00-8										
7		copper { dicopper oxide; copper (I) oxide }				26 mg/kg	1.126	27.253 mg/kg	0.00273 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
8		lead { lead chromate }			1	21 mg/kg	1.56	30.496 mg/kg	0.00196 %	✓		
		082-004-00-2	231-846-0	7758-97-6								
9		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								
10		nickel { nickel chromate }				18 mg/kg	2.976	49.876 mg/kg	0.00499 %	✓		
		028-035-00-7	238-766-5	14721-18-7								
11		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD	
		028-031-00-5	239-125-2	15060-62-5								
12		vanadium { divanadium pentaoxide; vanadium pentoxide }				60 mg/kg	1.785	99.72 mg/kg	0.00997 %	✓		
		023-001-00-8	215-239-8	1314-62-1								
13		zinc { zinc chromate }				54 mg/kg	2.774	139.467 mg/kg	0.0139 %	✓		
		024-007-00-3	236-878-9	13530-65-9								
14		TPH (C6 to C40) petroleum group				<20 mg/kg		<20 mg/kg	<0.002 %		<LOD	
				TPH								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
17	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
21	pH				7 pH		7 pH	7pH			
			PH								
22	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	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								
35	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-893-2	193-39-5								
36	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								
37	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
38	sulfur { sulphur dichloride }				<5 mg/kg	3.211	<16.057 mg/kg	<0.00161 %			<LOD
	016-013-00-X	234-129-0	10545-99-0								
39	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
Total:									0.0451 %		

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 Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS01--29062023-0.10

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

Sample details

Sample name:	LoW Code:
WS01--29062023-0.10	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.10 m	
Moisture content:	
9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9% Wet Weight Moisture Correction applied (MC)

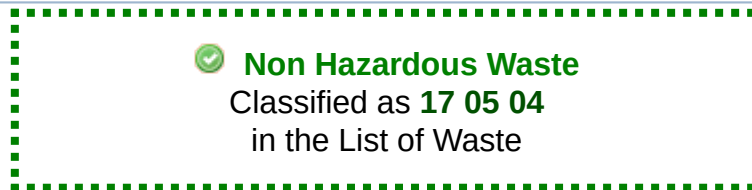
#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				8.4	mg/kg	1.32	10.093	mg/kg	0.00101 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		beryllium { beryllium oxide }				0.42	mg/kg	2.775	1.061	mg/kg	0.000106 %	✓	
		004-003-00-8	215-133-1	1304-56-9									
3		boron { diboron trioxide; boric oxide }				0.3	mg/kg	3.22	0.879	mg/kg	0.0000879 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
4		cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
		048-002-00-0	215-146-2	1306-19-0									
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23	mg/kg	1.462	30.59	mg/kg	0.00306 %	✓	
			215-160-9	1308-38-9									
6		chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
		024-017-00-8											
7		copper { dicopper oxide; copper (I) oxide }				15	mg/kg	1.126	15.368	mg/kg	0.00154 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
8		lead { lead chromate }			1	17	mg/kg	1.56	24.13	mg/kg	0.00155 %	✓	
		082-004-00-2	231-846-0	7758-97-6									
9		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									
10		nickel { nickel chromate }				9.3	mg/kg	2.976	25.188	mg/kg	0.00252 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
11		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
12		vanadium { divanadium pentaoxide; vanadium pentoxide }				37	mg/kg	1.785	60.107	mg/kg	0.00601 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
13		zinc { zinc chromate }				38	mg/kg	2.774	95.93	mg/kg	0.00959 %	✓	
		024-007-00-3	236-878-9	13530-65-9									
14		TPH (C6 to C40) petroleum group				<20	mg/kg		<20	mg/kg	<0.002 %		<LOD
				TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
17	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
21	pH				6.6 pH		6.6 pH	6.6 pH			
			P1186								
22	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	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								
35	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-893-2	193-39-5								
36	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								
37	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
38	sulfur { sulphur dichloride }				<5 mg/kg	3.211	<16.057 mg/kg	<0.00161 %			<LOD
	016-013-00-X	234-129-0	10545-99-0								
39	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
Total:									0.0302 %		

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 Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS03--29062023-0.35


Sample details

Sample name:	LoW Code:
WS03--29062023-0.35	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.35 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.6%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.6% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				5.7 mg/kg	1.32	7.029 mg/kg	0.000703 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	beryllium { beryllium oxide }				0.22 mg/kg	2.775	0.57 mg/kg	0.000057 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
3	boron { diboron trioxide; boric oxide }				<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.1 mg/kg	1.462	12.422 mg/kg	0.00124 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				9.3 mg/kg	1.126	9.78 mg/kg	0.000978 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	15 mg/kg	1.56	21.853 mg/kg	0.0014 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	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							
10	nickel { nickel chromate }				3.3 mg/kg	2.976	9.173 mg/kg	0.000917 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				18 mg/kg	1.785	30.013 mg/kg	0.003 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
13	zinc { zinc chromate }				22 mg/kg	2.774	57.003 mg/kg	0.0057 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
17	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
21	pH				6.8 pH		6.8 pH	6.8 pH			
			PH								
22	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	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								
35	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-893-2	193-39-5								
36	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								
37	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
38	sulfur { sulphur dichloride }				<5 mg/kg	3.211	<16.057 mg/kg	<0.00161 %			<LOD
	016-013-00-X	234-129-0	10545-99-0								
39	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
Total:									0.0188 %		

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 Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS04--29062023-0.10

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

Sample details

Sample name:	LoW Code:
WS04--29062023-0.10	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.10 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				7.2 mg/kg	1.32	8.812 mg/kg	0.000881 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	beryllium { beryllium oxide }				0.36 mg/kg	2.775	0.926 mg/kg	0.0000926 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
3	boron { diboron trioxide; boric oxide }				0.5 mg/kg	3.22	1.492 mg/kg	0.000149 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	21.678 mg/kg	0.00217 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
		024-017-00-8								
7	copper { dicopper oxide; copper (I) oxide }				11 mg/kg	1.126	11.481 mg/kg	0.00115 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	18 mg/kg	1.56	26.027 mg/kg	0.00167 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	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							
10	nickel { nickel chromate }				7.6 mg/kg	2.976	20.968 mg/kg	0.0021 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				28 mg/kg	1.785	46.336 mg/kg	0.00463 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
13	zinc { zinc chromate }				37 mg/kg	2.774	95.15 mg/kg	0.00952 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<20 mg/kg		<20 mg/kg	<0.002 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
17	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
18	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
19	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
21	pH				6 pH		6 pH	6pH		
			PH							
22	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
23	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
24	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
25	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
26	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
27	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
28	fluoranthene				0.09 mg/kg		0.0834 mg/kg	0.00000834 %	✓	
		205-912-4	206-44-0							
29	pyrene				0.08 mg/kg		0.0742 mg/kg	0.00000742 %	✓	
		204-927-3	129-00-0							
30	benzo[a]anthracene				0.07 mg/kg		0.0649 mg/kg	0.00000649 %	✓	
	601-033-00-9	200-280-6	56-55-3							
31	chrysene				0.09 mg/kg		0.0834 mg/kg	0.00000834 %	✓	
	601-048-00-0	205-923-4	218-01-9							
32	benzo[b]fluoranthene				0.06 mg/kg		0.0556 mg/kg	0.00000556 %	✓	
	601-034-00-4	205-911-9	205-99-2							
33	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
34	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.0464 mg/kg	0.00000464 %	✓	
	601-032-00-3	200-028-5	50-32-8							
35	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
36	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							
37	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
38	sulfur { sulphur dichloride }				<5 mg/kg	3.211	<16.057 mg/kg	<0.00161 %		<LOD
	016-013-00-X	234-129-0	10545-99-0							
39	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
			P1186							
Total:								0.0271 %		

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 Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

■ **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **divanadium pentaoxide; vanadium pentoxide** (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8

Description/Comments: Hazard statements H301, H330, H350 added by HazWasteOnline due to ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

Additional Hazard Statement(s): Carc. 1B; H350, Acute Tox. 3; H301, Acute Tox. 2; H330

Reason for additional Hazards Statement(s):

20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

■ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, STOT RE 2; H373, Muta. 1B; H340, Carc. 1B; H350, Repr. 2; H361d, Aquatic Chronic 2; H411

■ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

■ **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **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

■ **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
 Data source: CLP combined data
 Data source date: 26 Mar 2019
 Hazard Statements: Muta. 2; H341 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 2; H373 , Skin Corr. 1B; H314 , Skin Corr. 1B; H314 >= 3 % , Skin Irrit. 2; H315 1 £ conc. < 3 % , Eye Irrit. 2; H319 1 £ conc. < 3 % , Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case

compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst case species selected

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide]

sulfur {sulphur dichloride}

Worst case species selected

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021

HazWasteOnline Classification Engine Version: 2023.199.5686.10472 (18 Jul 2023)

HazWasteOnline Database: 2023.199.5686.10472 (18 Jul 2023)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

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 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

GB MCL List - version 1.1 of 09 June 2021

APPENDIX E

Soakage Test Results



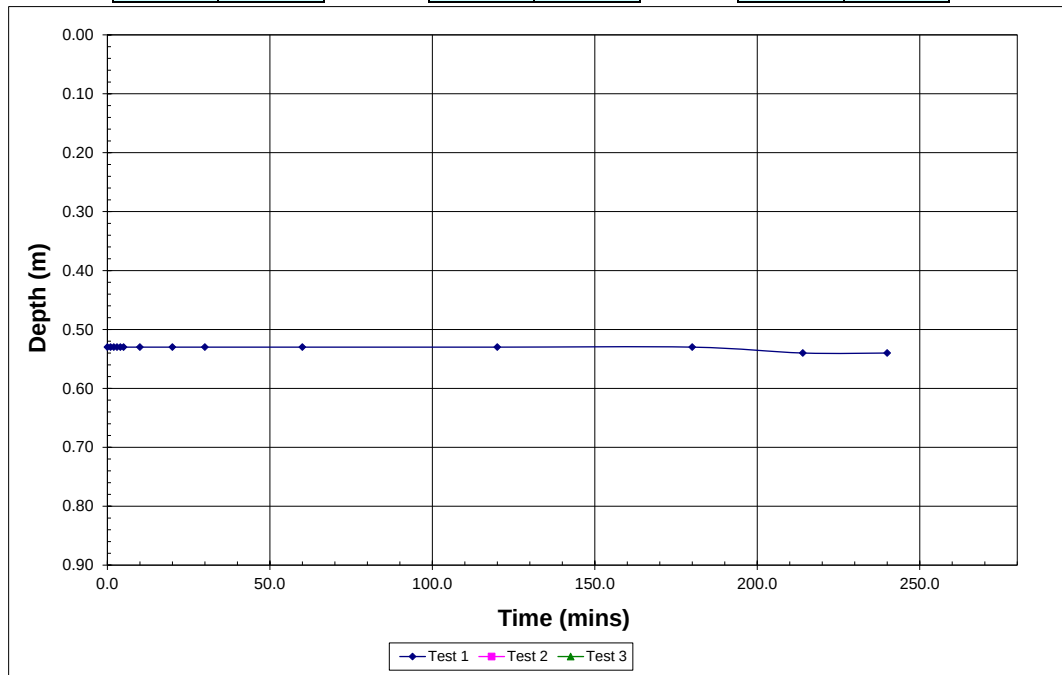
	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	
		Project Name : Stoke Park Farm - SANG	
Client : Eastleigh Borough Council		Job No. : GE21681	Date : 28/06/2023

Pit reference	TP06		
Test reference	Test1		
Pit depth (m)	1.70		
Pit width (m)	0.60		
Pit length (m)	1.70		
Depth to standing water (m)			

Test 1	
Time (min)	Depth (m)
0.0	0.53
1.0	0.53
2.0	0.53
3.0	0.53
4.0	0.53
5.0	0.53
10.0	0.53
20.0	0.53
30.0	0.53
60.0	0.53
120.0	0.53
180.0	0.53
214.0	0.54
240.0	0.54

Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	1.70	0.00	0.00
Effective depth (m)	1.17	0.00	0.00
75% effective depth (m)	0.82	0.00	0.00
50% effective depth (m)	1.12	0.00	0.00
25% effective depth (m)	1.41	0.00	0.00
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.60	0.00	0.00
ap 50	3.711	0	0
tp 75-25	0.00	0.00	0.00

Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

Notes:

- Blue cells require input data
- Infiltration calculated to method in 'BRE Digest 365 (1991) - Soakaway Design'
- First line of table must be depth at time = 0