



Geo-Environmental

GROUND INVESTIGATION REPORT

for the site at

ONE HORTON HEATH – FIRST RESIDENTIAL PARCEL,

LAND WEST OF HORTON HEATH,

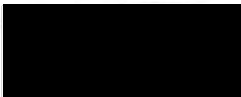
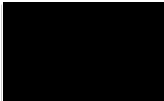
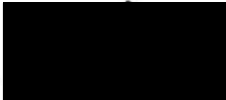
HORTON HEATH,

HAMPSHIRE, SO30 2HH

on behalf of

EASTLEIGH BOROUGH COUNCIL



Report:	GROUND INVESTIGATION REPORT
Site:	ONE HORTON HEATH – FIRST RESIDENTIAL PARCEL, LAND WEST OF HORTON HEATH, HORTON HEATH, HAMPSHIRE, SO30 2HH
Client:	EASTLEIGH BOROUGH COUNCIL
Date:	26/07/2022
Reference:	GE18771-GIRv4.0-JUL22
Version:	4.0
Prepared by:	 FIONA GOODE BSc (Hons), MSc, FGS, MEnvSc, RSoBRA SENIOR CONSULTANT ENGINEER
Reviewed by:	 LAURA LEGATE CGeol, CSci, BSc (Hons), MSc, FGS REGIONAL MANAGER - WEST
Authorised by:	 SHAUN ARMITAGE BSc (Hons), FGS SENIOR CONSULTING ENGINEER
Geo-Environmental Services Limited Unit 7, Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex, BN6 9GL +44(0)1273 832972 www.gesl.net	

**AMENDMENT RECORD**

Revision ref.	Date	Reasons for amendment	Author's initials	Reviewed by	Approved by
1.0	21/08/2020	First issue	FG	LL	SA
2.0	07/10/2020	Update to incorporate gas and groundwater monitoring results	FG	LL	SA
3.0	11/12/2020	Update to incorporate site layout changes and inclusion of 6-storey buildings	FG	LL	SA
4.0	26/07/2022	Update to incorporate winter groundwater monitoring results	FG	FG	FG

**CONTENTS**

EXECUTIVE SUMMARY	vi
1.0 INTRODUCTION	1
1.1 General	1
1.2 Form of Development	1
1.4 Standards and References	1
1.5 Conditions	2
2.0 DESK STUDY	3
2.1 Site Description	3
2.2 Geology	3
2.3 Hydrogeology	4
2.4 Hydrology	4
2.5 Radon	4
2.6 Historical Mapping	4
2.7 Generic Contamination	4
2.8 Ground Gas Summary	5
3.0 PRELIMINARY RISK ASSESSMENT	6
3.1 Preliminary Risk Assessment Summary	6
3.2 Geotechnical Constraints	6
3.3 Investigation Strategy	6
3.4 Investigation Strategy	7
4.0 GROUND CONDITIONS	9
4.1 Soils	9
4.2 Groundwater	9
4.3 Obstructions	13
4.4 Geotechnical Testing	13
5.0 ENGINEERING CONSIDERATIONS	16
5.1 Desiccation Assessment	16
5.2 Conventional Foundations	17
5.3 Piled Foundations	19
5.4 Floor Slabs	20
5.5 Excavations	20
5.6 Pavements	21
5.7 Sulphates	21
5.8 Soakaways	21
6.0 ENVIRONMENTAL CONSIDERATIONS	23
6.1 Outline Risk Assessment	23
6.2 Ground Gases vs. End Users	23
6.3 Soil Contamination vs. End Users	25
6.4 Soil Contamination vs. Adjacent land Users	26
6.5 Soil Contamination vs. Soft Landscaping	26
6.6 Soil Contamination vs. Built Environment	27
6.7 Soil Contamination vs. Groundwater	27
6.8 Groundwater vs Human Health	27
6.9 Groundwater vs Soft Landscaping	27
6.10 Groundwater vs Built Environment	27
6.11 Groundwater vs Controlled Waters	27
6.12 Waste Disposal	28
7.0 DISCOVERY STRATEGY	29

FIGURES

FIGURE 1	Site Location Plan
FIGURE 2	Proposed Site Layout Plan
FIGURE 3	Exploratory Hole Location Plan
FIGURE 4	Gas and Groundwater Monitoring Well Location Plan
FIGURE 5	SPT 'N' Value vs Depth Plot
FIGURE 6	Moisture Content vs Depth Plot
FIGURE 7	Hand Pen vs Depth Plot
FIGURE 8	Conceptual Site Model (Proposed Land Use)

APPENDICES

APPENDIX A	Site Photographs
APPENDIX B	Exploratory Hole Logs
APPENDIX C	Geotechnical Laboratory Results
APPENDIX D	Geochemical Laboratory Results
APPENDIX E	Soakage Testing Results
APPENDIX F	Gas and Groundwater Monitoring Results
APPENDIX G	Winter Groundwater Monitoring Letter Report – GE19462/FG02/210414



EXECUTIVE SUMMARY		
Site Details	Site Address	One Horton Heath – First Residential Parcel, Land West of Horton Heath, Horton Heath, Hampshire, SO30 2HH
	National Grid Reference	448901, 116372
	Site Area	12.24Ha
	Form of Development	The site is understood to form the first parcel of residential development of c.393 dwellings with private garden areas, access roads, areas of soft landscaping and other associated development infrastructure.
Encountered Conditions	Scope of works	An intrusive investigation was required to confirm the ground and groundwater conditions and to support the development of geotechnical and geo-environmental assessments pertaining to the site in relation to the proposed development.
	Ground Conditions	The ground conditions encountered comprised a mantle of Topsoil overlying soils inferred to be clay and sand strata of the Wittering Formation. Within the larger eastern field, more sandy layers were encountered, and clay soils were noted to be predominantly sandy clay. Although sand and sandy clay was encountered within the central and western fields, these were encountered to a lesser extent than the eastern field. Made Ground was not encountered within any of the exploratory holes. Soils within the top 1.5m were consistently noted to show signs of desiccation
	Groundwater	Groundwater was encountered within the majority of investigation locations during the intrusive investigation works between depths of 1.1m and 4.4m bgl (23.06m and 19.76m AOD). Groundwater monitoring wells were installed within WS02, WS05, WS07, WS08, WS10 and WS15 to provide coverage across the site. To date six groundwater monitoring rounds have been completed in July through to the end of September with groundwater encountered between depths of 0.20m and 3.30m bgl (22.670m and 19.238m AOD). A period of winter groundwater was undertaken across the site between October 2020 and March 2021. Two additional new wells were monitored during this monitoring period and three of the original wells were redrilled (WS07A, WS10A and WS15A) close to the original position due to damage occurring to the initial wells. Groundwater was encountered between depths of 'at surface' to 2.60m bgl. In addition, on a number of visits some of the wells were recorded as being fully submerged.



EXECUTIVE SUMMARY		
Geotechnical Considerations	Foundations	Given the groundwater conditions recorded at the site, it is considered that conventional foundation construction would not be feasible unless the groundwater could be removed, lowered or otherwise controlled, e.g. by pumping or dewatering, and would also be likely to require trench support. The absence of groundwater cannot be guaranteed and thus any solution which relies upon, or requires groundwater being lower than the construction depth zone is unlikely to be the option with the lowest construction risk. If groundwater is present within the foundation construction depth zone and cannot adequately be controlled, then conventional foundations are unlikely to be constructable and an alternative foundation solution could be required. On the basis of the results of the Atterberg Limit tests in conjunction with the field observations it is considered that the cohesive soils of the Wittering Formation should be classified '<i>en-masse</i>' as high volume change potential, as defined by NHBC Standards, Chapter 4.2, for which a minimum founding depth of 1.0m bgl is required. However, it is also likely that localised deepening of foundations would be required where potential signs of desiccation have been identified and for foundations constructed within the zone of influence of trees (existing, recently felled or proposed). Based on the ground conditions encountered, a net allowable bearing capacity of 90kPa is recommended for the firm to stiff clay of the Wittering Formation. this being limited to reflect the presence of firm clay. Total settlements should remain within tolerable limits for this bearing capacity. Foundations terminating in, on or loading soft clay will not be suitable. Given the variability in ground conditions, it is recommended that reinforcement is included in foundations. Given the current proposals are to include 6-storey buildings located in close proximity to the new roundabout and access road in the south of the site, in the vicinity of BH01, based on both the ground conditions encountered and the proposed development a piled solution or alternative solution is recommended for these proposed buildings.
	Floor Slabs	Given the presence of shrinkable soils suspended floor slabs are recommended. The minimum void height should be determined in accordance with NHBC Standards and account for the volume change potential of the underlying soils. Preliminary assessment indicates a minimum void of 300mm but this should be verified during detailed design.



EXECUTIVE SUMMARY		
	Excavations	If groundwater conditions as indicated from monitoring prevail then groundwater control will be required for excavations on this site. The capacity and specification of any such groundwater control measures should be determined by the groundworks contractor prior to commencement of major excavations on the site, e.g. requiring a dewatering/pumping trial. Any water pumped from excavations will require disposal in accordance with current statutory regulations and best practice, e.g. sediment control, discharge licence and the like. Due to the presence of running sands and shallow groundwater encountered during the intrusive investigation works mainly within trial pits located on the eastern field of the site, excavations are likely to be unstable and will therefore need to be adequately shored with appropriate retention systems and dewatering. Dewatering on a large scale could be considered but could cause consolidation settlement of the ground during dewatering and potentially loss of fines from the soil mass causing additional and potentially unpredictable settlement. Ground works should be designed in such a manner to avoid personnel entry into unsupported excavations. Where this cannot be avoided, such entry should only be into supported excavations in accordance with a safe system of work and relevant legislation, e.g. Confined Spaces Regulations.
	Pavements	Based on the in-situ and laboratory results and the soils encountered on site a preliminary equilibrium CBR of 1% is recommended for the soils present at the anticipated formation depth. 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.
	Buried Concrete	Buried concrete located within the Wittering Formation should be designed in accordance with class DS-1 as defined within the BRE Special Digest 1. The pH analysis indicates that the ACEC Class corresponds to AC-2z.
	Soakaways	The results from the shallow soakage testing undertaken to date indicate that it is likely to be possible to utilise permeable paving as part of the wider site drainage strategy. The results of the deeper soakage testing indicated that the use of soakaways would not be suitable and that on-site storage and attenuation, or alternative storm water disposal options will need to be considered. In addition, changes in groundwater levels, such as shallower groundwater during winter months, could reduce storage capacity and performance of soakaways. 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.
Environmental Considerations	Human Health	In the first instance the results of the sample analysis were compared to the Tier 1 screening criteria where available. All of the results were noted to be below the respective assessment criteria for a proposed end use with residential uptake, therefore further assessment was not considered necessary. In addition, samples were submitted for laboratory testing were also screened for asbestos. No asbestos was identified within any of the samples submitted for testing.



EXECUTIVE SUMMARY		
		As such it is considered that remedial action would not be warranted to protect end users of the proposed residential development.
	Groundwater	No pollutant linkages for groundwater have been identified in relation to the existing site condition, it is therefore considered that no risk mitigation measures are required.
	Radon Gas	No radon protection measures are required.
	Ground Gases	Spot monitoring undertaken in July through to the end of September 2020 has identified very low concentrations of ground gases on the site. In the absence of any specific potential source of ground gas it is considered that no gas or vapour protection measures are necessary for the proposed development.
	Built Environment	On the basis of the analytical results and subject to confirmation from the relevant water utility provider it is considered that specific protection measures are unlikely to be required for potable water supply on this site.
	Waste Disposal	Based on the initial waste categorisation testing undertaken from representative shallow soils samples across the site it is considered that the shallow soils from across the site would be considered as inert waste for the purpose of disposal.
Further Action: • Provision of a Materials Management Plan and a Qualified Person Declaration under the Definition of Waste Code of Practice should it be proposed to re-use materials on the site or origin or to import other material to site from other development sites; • A discovery strategy should be maintained during development such that any abnormal conditions (geotechnical or potential contamination) are identified and their potential impact on the proposed development assessed prior to determining any potential mitigation measures.		
<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. GE18771-GIRv4.0-JUL22.</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 the proposed development at One Horton Heath – First Residential Parcel, Land West of Horton Heath, Horton Heath, Hampshire, SO30 2HH (herein referred to as ‘the site’). The site’s location is presented in Figure 1.

1.2 Form of Development

The proposed development is understood to form the first parcel of residential development of c.393 residential units with public open space, hard and soft landscape works, internal roads, footway/cycleways, associated parking spaces, substation, SuDS and associated infrastructure (This application is subject to Environmental Impact Assessment).

1.3 Objectives

The data from the intrusive investigation was to form the basis of an interpretation with respect to foundation design, concrete specification, pavements construction, and excavation stability and other pertinent construction issues and in order to clarify the site’s status with regards to soil contamination and any requirement for remedial action in relation to the current land use, proposed redevelopment, adjacent land uses and the wider environment, in the context of likely planning requirements, immediate liabilities under the Environmental Protection Act 1990 and risks posed to Controlled Waters under the Water Resources Act from the current status of the site and in line with the proposed redevelopment.

1.4 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 April 2021;
- Model Procedures for the Management of Contaminated Land, CLR11, DEFRA and Environment Agency 2004 (withdrawn);
- 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;
- 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;
- BS8002:2015 Code of practice for earth retaining structures;
- BRE BR240 Low-rise buildings on shrinkable clay soils: Part 1, 1993.



1.5 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 where obtained/reviewed 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 presented. It must also be noted that changes to the desk study data may occur following the production of this report, Geo-Environmental accepts 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 soils mass elsewhere within a site. This report should not be taken as 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 DESK STUDY

The site forms part of a larger development scheme for which the whole site has been the subject to a Desk Study Report undertaken by a third party, Hydrock, ref. HHD-HYD-XX-XX-RP-GE-0001 dated February 2019.

A brief summary of the findings deemed relevant to this phase of investigation are presented below. It should be noted that this desk study was undertaken for the Land West of Horton Heath development site as a whole, not just for the area of the site comprising the first residential parcel which Geo-Environmental were instructed to investigate. It is assumed that the third party information is factually correct, and Eastleigh Borough Council has reliance on the data included within this report.

Geo-Environmental accepts no liability for errors or omissions within the third party report. For further information reference should be made to the completed Hydrock Desk Study Report, February 2019.

Comments made in the following sections regarding possible ground conditions on the site are based purely on the review of the desk study assessment undertaken by Hydrock, February 2019 and the site walkover undertaken by Geo-Environmental.

2.1 Site Description

A site walkover was undertaken on the 6th July 2020 at which time the First Residential Parcel area comprised three open fields used for the grazing of animals (cattle). The three fields were separated by a combination of hedgerow boundaries and barbed wire fencing. The fields were accessed via metal five-bar gates from an access road to the north of the fields located off Burnetts Lane. The eastern field was the largest of the three fields and rose towards the centre of the field, then fell away to the south. Road construction works were on going in the far south of this field, as part of a separate phase of development. The central of the three fields fell away to the south, however only the northern half of this field formed part of the investigation area, the southern portion comprising future commercial development land. An area of woodland was located immediately adjacent to the south of the western field and west of the central field. Overhead power lines ran east to west across all three fields, with additional lines running north south across the eastern field.

Adjacent land uses were noted to comprise farmland and a solar farm to the north, Chalcroft industrial estate to the south and west, and residential uses to the south and east. Figure 1 presents the site's location and Figure 2 presents the site plan.

Photographs obtained as part of the site walkover of the site area presented in Appendix A.

2.2 Geology

British Geological Survey (BGS) mapping indicated the site to be located on Wittering Formation, with the most westerly edge (outside of the First Residential Parcel) being underlain by River Terrace Deposits and Alluvium associated with a tributary of the River Itchen over Wittering Formation. A small parcel in the south east of the site was shown to be located on Earnley Sand Formation overlying Wittering Formation.

Alluvium is generally dominated by clays and silts, often organic-rich, with varying amounts of sand and gravel.

River Terrace Deposits are drifts typically dominated by sands and gravels with interbeds of clay. Locally may contain peat or organic-rich layers.

Wittering Formation is a greyish brown laminated clay; wavy- to lenticular-bedded sand interbedded with clay in equal proportions; and fine- to medium-grained sparsely glauconitic sand.

The only superficial deposits shown on the site from the geological mapping are three relatively narrow ribbons of



Alluvium in the northern, central and southwestern parts of the site and along most the western part of the site, together with River Terrace deposits along the extreme western edge of the site, superficial deposits. Elsewhere, no superficial deposits are shown.

The Earnley Sand Formation and Wittering formation are part of the Bracklesham Group, which overlie the London Clay and subsequently the Chalk at greater depth.

2.3 Hydrogeology

The soils underling the site are classified as a Secondary 'A' Aquifer.

Secondary A Aquifer – Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Groundwater is anticipated to be present at shallow depth within the Alluvium and River Terrace Deposits either side of the various streams identified within the wider development site. Groundwater within the Wittering Formation is anticipated to be a similar elevation to the streams or at a higher elevation and forming a hydraulic gradient down to the groundwater levels within the superficial deposits. Groundwater within the Superficial deposits and underlying solid geology are expected to be in hydraulic continuity

2.4 Hydrology

A number of unnamed streams and ponds were identified on the wider development site, however no surface water features were noted on the First Residential Parcel being considered herein.

2.5 Radon

The environmental data report obtained as part of the desk study undertaken by Hydrock, February 2019 indicated that the site was not located in a Radon Affected Area and radon protection measures are not required for new buildings at the site.

2.6 Historical Mapping

Historical mapping from 1868, presented within the desk study report for the wider development site shows that the entire development site area was shown to have been agricultural farmland throughout the mapping period, with farm buildings and barns being located at Firtree Farm and Chalcroft Farm (farm hubs) as shown on the earliest map, 1868, with Firtree Farm being extended in around 2002. However the farm hub areas were located within the wider development area and not with the first residential parcel under consideration herein. Chalcroft Farm is located c.100m north west of the First Residential Parcel area with Firtree Farm in excess of 1km north of the First Residential Parcel area.

Surrounding land uses were shown to comprise farms with farm buildings/ barns to the east of the site, Chalcroft business park and railway line was located to the south of the site with residential development to the north of the site.

2.7 Generic Contamination

The historical use of the subject site for agricultural activities could have resulted in contaminated soils and/or groundwater beneath the site. The First Residential Parcel is not located on or in close proximity to any of the identified 'farm hubs' (the nearest 'farm hub' is c.100 from the boundary of the First Residential Parcel), therefore the risks from current and historical agricultural activities is considered to be low and to primarily be associated with the use of pesticides, herbicides and the use of agrochemicals within the field network.



Off-site sources of potential contamination include Chalcroft Business Park and the railway line, possible organic and inorganic contaminants, hydrocarbon fuels, lubricants and solvents. However, due to the distance at which these off-site sources are located (c.250m) and that underlying ground conditions are expected to comprise clays of low permeability the risks from the migration of these potential contaminants are considered to be low. In addition the First Residential Parcel is located upgradient of Chalcroft Business Park and it is considered that shallow groundwater would flow in line with local topography, therefore shallow groundwater is presumed to flow in a south westerly direction, so migration via groundwater is considered to be unlikely.

In addition, it also remains possible that the land uses with the wider surrounding area may have resulted in the deposition of airborne contaminants on the surface and shallow soils on site including heavy metals, organic pollutants such as polyaromatic hydrocarbons (PAH), petroleum hydrocarbons/oils, inorganic compounds within the shallow soils across the site.

2.8 Ground Gas Summary

Made Ground has been identified as possibly being present on the wider site. Most likely associated with the 'farm hub' areas across located within the wider development site area and outside the area being considered herein. If any identified Made Ground has an appreciable organic material content, then this may be a source of ground gas. In addition, ground conditions in the west of the site have been identified as possibly comprising Alluvium, which can be an organic rich material and a natural source of ground gas, although this area of the site does not form part of the first residential parcel.

Due to the limited potential for ground gas on the First Residential Parcel the risks from ground gas are considered to be low for this portion of the wider development scheme.



3.0 PRELIMINARY RISK ASSESSMENT

Based on the findings of the third party Hydrock February 2019 desk study, the following sections summarise the anticipated geotechnical and environmental factors likely to impact the site.

3.1 Preliminary Risk Assessment Summary

The Preliminary Risk Assessment (PRA) and Conceptual Site Model (CSM) developed from the information gathered as part of the third party Hydrock desk study (HHD-HYD-XX-XX-RP-GE-0001), February 2019, process identified plausible potential pollutant linkages that existed in relation to the proposed redevelopment of the wider site as a whole.

The potential pollutant linkages established within the third party Hydrock 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 to allow for a determination of 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, an intrusive investigation and associated testing was commissioned and included analysis of soil and groundwater (if encountered) samples for the range of potential contaminants identified within the desk study.

3.2 Geotechnical Constraints

The following factors that might impact the geotechnical condition of the site were identified as part of the third party desk study and site walkover:

- The presence of Made Ground and filled ground on site which may impact upon foundation design and construction.
- The presence of shallow groundwater and/or perched water beneath the site.
- The suitability of the shallow soils for the use of soakaways on the site as part of the proposed development.
- The presence of laterally and vertically variable strata and the impact these could have on further construction.
- Consideration of the volume change potential of cohesive soils underlying the site and the affect this could have on foundations.
- The suitability of shallow soils as bearing stratum for conventional foundations.
- The possible presence of aggressive ground conditions (sulphates) which may affect the foundation design and construction.
- The presence of trees and/or vegetation on site or adjacent land, which may have an impact on foundation design and construction if/where shrinkable soils are present.
- The presence of Tree Protection Orders (TPOs) which may affect the type of foundations permitted within certain areas of the site.

3.3 Investigation Strategy

The investigation strategy comprised locations across the First Development Parcel area to assess ground and groundwater conditions and to support the geotechnical and geo-environmental assessment. The investigation positions were agreed with the client and included:

- Construction of 1No. cable percussion boreholes to be advanced to a depth of up to 25.45m bgl (BH01), together with in-situ testing, and disturbed sampling.



- The excavation of 45No. trial pits, 5No. shallow pits to depths of up to 0.7m bgl for soakage testing and 40No. pits to depths of between 3m bgl and 3.5m bgl for general site coverage, six of which were also utilised for soakage testing.
- Attendance of a technician and 4x4 water bowser to supply water for trial pit soakage tests.
- Undertake trial pit soakage tests in general accordance with BRE Digest 365 within TP2-TP10.
- Construction of up to 16No. dynamic sampler boreholes (WS01-WS16) to depths 5m bgl.
- Dynamic probes at 2No. locations adjacent to boreholes DP4, DP5, DP13 and DP16 to 5.00m bgl.
- Installation of 6No. groundwater monitoring wells to a depth of 5m (WS02, WS05, WS07, WS08, WS10 and WS15) to facilitate return monitoring on six occasions. The wells were completed with a lockable upstanding cover set such that they stand above adjacent ground.
- Ground gas monitoring (spot monitoring) of well installations on 6 occasions at 2 week intervals. Wherever possible, the monitoring will target periods of low or rapidly falling atmospheric pressure.
- Geotechnical laboratory testing to inform assessment for foundations, roads (including soaked lab CBR tests) and buried concrete design.
- Geochemical laboratory testing for a suite of commonly occurring brownfield contaminants augmented with potential contaminants as identified in the contamination strategy (developed from previous assessment phases).
- Waste categorisation testing in soil samples to aid the assessment of likely waste classification of surplus soils.

A subsequent period of winter groundwater monitoring was agreed following the completion of the above intrusive investigation works. This comprised:

- Construction of 3No. dynamic sampler boreholes to depths of up to 5m bgl, depending on drilling conditions, using a self-propelled track mounted rig. (wells to be installed immediately adjacent to the original wells installed as part of the original intrusive investigation works, but identified as being damaged)
- Construction of 2No. additional dynamic sampler boreholes to depths of up to 5m bgl, depending on drilling conditions, using a self-propelled track mounted rig. Positions as requested by the Drainage Engineer to target a proposed basin area.
- Installation of 5No. groundwater monitoring wells to a depth of 5m to facilitate winter groundwater monitoring. The wells were to be completed with a lockable cover fitted flush with adjacent ground.
- Return visits to undertake groundwater depth monitoring within all the installed monitoring wells (those installed as part of the original investigation and all new wells).

3.4 Investigation Strategy

The positioning of exploratory holes was determined on site to provide general coverage and to target specific areas whilst working within access restrictions associated with site field boundaries. 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).	TP15, TP17, TP21, TP24, TP25, TP26, TP34
Strength testing of underlying soils	SPTs at regular intervals within the cable percussion boreholes and window sampler boreholes, and dynamic probing adjacent to a number of exploratory hole positions.	BH01, WS01-WS16, DP13 and DP16



Area of Concern	Investigation	Positions
General gassing regime and groundwater levels across site	Spot monitoring within wells located across the site.	WS02, WS05, WS07, WS07A, WS08, WS10, WS10A, WS15, WS15A, WS17 and WS18
Permeability of underlying soils.	Soakage tests in general accordance with BRE Digest 365.	TP2-TP10

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 accredited laboratories. Contamination testing of soil samples was also undertaken in accordance with accredited MCERTS protocols. 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 GROUND 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 B, the geotechnical testing results in Appendix C, geochemical testing results in Appendix D, soakage testing results in Appendix E and ground gas monitoring results in Appendix F.

The physical ground investigation works were undertaken from the 6th July to 10th July 2020.

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

4.1 Soils

The ground conditions encountered during the investigation were broadly consistent with the anticipated published sequence of strata. In summary, ground conditions typically comprised a variable thickness of Topsoil overlying soils inferred to be clay and sand strata of the Wittering Formation. Within the larger eastern field, more sandy layers were encountered, and clay soils were noted to be predominantly sandy clay. Although sand and sandy clay was encountered within the central and western fields these were encountered to a lesser extent than the eastern field.

A summary of the encountered soil conditions is presented in Table 4.1.

Top (m bgl)	Base (m bgl)	Geology
0	0.15 – 0.30	TOPSOIL: Grass over dark brown silty slightly gravelly CLAY with frequent rootlets; grass over light brown slightly sandy CLAY possibly desiccated with frequent rootlets; grass over dark brown silty CLAY with frequent roots and rootlets.
0.15 - 0.30	25.49+	WITTERING FORMATION (COHESIVE): Stiff to very stiff light brown and orangish brown silty desiccated CLAY with varying proportions of sand and/or gravel; Firm to stiff light brown/orangish brown and grey mottled CLAY with varying proportions of sand; Firm to stiff dark grey/ blueish grey sandy CLAY; Firm to very stiff dark grey sandy CLAY; Firm to very stiff purplish grey CLAY.
0.50 – 3.90	5.00+	WITTERING FORMATION (GRANULAR): Blueish grey clayey fine SAND with bands of firm blueish grey CLAY; Purplish brown/ orangish brown/ blueish grey/ dark greyish brown mottled fine SAND with varying proportions of clay; Dark blueish grey clayey fine SAND very closely interbedded with black fine SAND; Light brown, orangish brown and blueish grey mottled clayey silty fine SAND.

Table 4.1 Summary of Ground Conditions

Made Ground was not encountered within any of the exploratory holes, but brick and concrete rubble was observed to have been deposited at ground surface in heavily trafficked access points into the fields, presumably due to very wet and soft conditions during wetter periods and winter months.

Soils within the top 1.5m were consistently noted to show signs of desiccation. Desiccation and signs of desiccation are discussed and assessed further within Section 5.1

For more detailed descriptions of the ground conditions at specific locations, reference should be made to the exploratory hole logs presented in Appendix B.

4.2 Groundwater

Groundwater was encountered within a number of exploratory holes during the intrusive investigation works as summarised in Tables 4.2 and 4.3 below.



Location	Depth (m bgl)	Comment
TP02	2.5	Seepage
TP03	3.0	Seepage
TP05	2.0	Water level in pit rose to 1.5m bgl
TP06	1.1	Seepage through side wall
TP08	2.8	Seepages at 2.8m and 3m bgl
TP09	3.0	Very slow water seepage
TP10	1.7	Seepages at 1.7m, 2.0m and 2.4m bgl
TP16	2.5	Seepage
TP18	2.8	Slow seepage
TP19	2.9	Seepage
TP20	2.3	Seepages at 2.3m and 3.2m bgl
TP21	2.9	Slow seepage at 2.9m bgl
TP23	3.2	Seepage
TP24	3.1	Seepage
TP26	3.3	Water seepage in base of pit
TP27	3.0	Water seepage in base of pit
TP28	3.1	Water seepage in base of pit
TP30	1.5	Seepage through side wall
TP31	3.1	Water seepage in base of pit
TP32	3.0	Water seepage in base of pit
TP33	3.1	Water seepage in base of pit
TP34	2.8	Seepage
TP35	2.3	Seepage
TP36	1.6	Running sand
TP37	2.1	Running sand
TP38	2.9	Water seepage in base of pit
TP39	2.2	Seepage
TP40	1.5	Running sand

Table 4.2 Summary of groundwater encountered within trial pits during investigation works

Location	Depth of Groundwater (m bgl)	Depth of Groundwater after 20mins (m bgl)	Comments
BH1	2.8	2.20	
WS02	1.5	-	Seepages at 1.5m and 4.2m bgl
WS03	3.0	-	Seepages at 3m and 5m bgl
WS04	4.0	-	Seepage between 4m and 4.5m bgl
WS05	3.0	-	Seepage at 3m bgl
WS06	2.0	1.2	
WS07	3.0	-	Seepage at 3m bgl
WS08	3.0	-	Seepage between 3m and 3.5m bgl
WS09	4.4	-	Water within sandy lenses between 4.4m and 4.6m bgl
WS10	4.0	-	Seepage at 4m bgl
WS11	2.2	1.8	
WS12	4.0	-	Seepage between 4m and 4.6m bgl
WS13	4.0	-	Seepage at 4m bgl inhibited sample recovery
WS15	2.2	-	Seepage at 2.2m, 3.5m and 4m bgl
WS16	1.0	-	Seepage at 1m bgl

Table 4.3 Summary of groundwater encountered within boreholes during investigation works



Groundwater was also encountered within a number of exploratory holes during the intrusive investigation works undertaken in October 2020 to install and reinstall groundwater monitoring wells, as summarised in Table 4.4 below.

Location	Depth of Groundwater (m bgl)	Depth of Groundwater after 20mins (m bgl)
WS07A	2.0	0.6
WS10A	2.0	0.1
WS15A	1.8	0.5
WS17	2.3	2.0
WS18	3.5	2.0

Table 4.4 Summary of groundwater encountered within boreholes during investigation works in October 2020

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 constructability of foundations, services and the like. This may mean that conventional foundations are not constructible under some conditions where shallow groundwater is encountered during winter months and following heavy rainfall. This will require careful consideration throughout the design and construction process.

Groundwater monitoring wells were installed within WS02, WS05, WS07, WS08, WS10 and WS15 during the original investigation works, and six groundwater monitoring rounds have been completed on between 21st July and 30th September 2020, with the encountered groundwater depths (m bgl) detailed in Table 4.5, and the encountered groundwater levels (m AOD) detailed in Table 4.6.

Location	Depth of Groundwater (m bgl)					
	21/07/2020	04/08/2020	18/08/2020	01/09/2020	15/09/2020	30/09/2020
WS02	1.50	1.64	1.55	1.60	1.85	1.80
WS05	1.20	0.65	1.60	1.56	1.50	1.50
WS07	1.40	1.50	1.50	1.30	1.50	1.60
WS08	2.30	2.80	2.60	3.30	3.30	2.70
WS10	1.40	1.75	1.35	1.25	1.50	1.50
WS15	0.80	1.00	1.10	0.54	0.55	0.20

Table 4.5 Summary of monitored groundwater depths (m bgl)

Location	Level (m AOD)	Groundwater Level (m AOD)					
		21/07/20	04/08/20	18/08/20	01/09/20	15/09/20	30/09/20
WS02	19.542	18.042	17.902	17.992	17.942	17.692	17.742
WS05	21.042	19.842	20.392	19.442	19.482	19.542	19.542
WS07	24.875	23.475	23.375	23.375	23.575	23.375	23.275
WS08	22.538	20.238	19.738	19.938	19.238	19.238	19.838
WS10	23.503	22.103	21.753	22.153	22.253	22.003	22.003
WS15	22.870	22.070	21.870	21.770	22.330	22.320	22.670

Table 4.6 Summary of monitored groundwater depths (m AOD)

Further groundwater monitoring was undertaken on an additional 11No. separate occasions between October 2020 and March 2021 in order to monitor groundwater levels over the winter period. Two additional new wells were monitored during this monitoring period and three of the original wells were redrilled (WS07A, WS10A and WS15A) close to the original position due to damage occurring to the initial wells. The depths at which groundwater was encountered at each location during these additional monitoring rounds are presented in Table 4.7 below, and enclosed within Appendix F, and a graph displaying the fluctuations in groundwater depths over the monitoring period is presented in Chart 1.



Location	Depth of Groundwater (m bgl)										
	30/10/20	13/11/20	27/11/20	11/12/20	21/12/20	08/01/21	05/02/21	08/02/21	19/02/21	05/03/21	19/03/21
WS02	1.65	0.25	0.20	0.20	At Surface	0.10	At Surface	0.01	At surface	0.27	0.05
WS05	1.45	0.25	0.30	0.10	0.50	1.20	0.01	0.05	0.10	1.33	0.25
WS07A	0.60	0.60	0.35	0.20	0.05	0.10	0.01	0.10	0.19	0.16	0.18
WS08	2.60	1.25	1.20	1.10	0.85	Obstructed	0.88	1.00	1.05	2.30	1.23
WS10A	0.10	0.10	0.05	At Surface	Underwater	At Surface	Underwater	Underwater	0.02	0.25	0.25
WS15A	0.50	At Surface	0.10	At Surface	Underwater	At Surface	Underwater	Underwater	At Surface	At Surface	At Surface
WS17	2.00	0.95	0.70	0.50	0.50	0.65	0.39	0.45	0.38	0.55	0.69
WS18	2.00	Obstructed	0.60	Obstructed	Underwater	At Surface	Obstructed	Obstructed	Obstructed	Obstructed	Obstructed

NOTES: At Surface – water level was at the top of the monitoring well when the cover was removed; Underwater – the monitoring well was fully submerged; Obstructed – the monitoring well was obstructed by on-going farming activity of the placement of material on top of it

Table 4.7 Summary of Groundwater Depths – Additional Monitoring Rounds

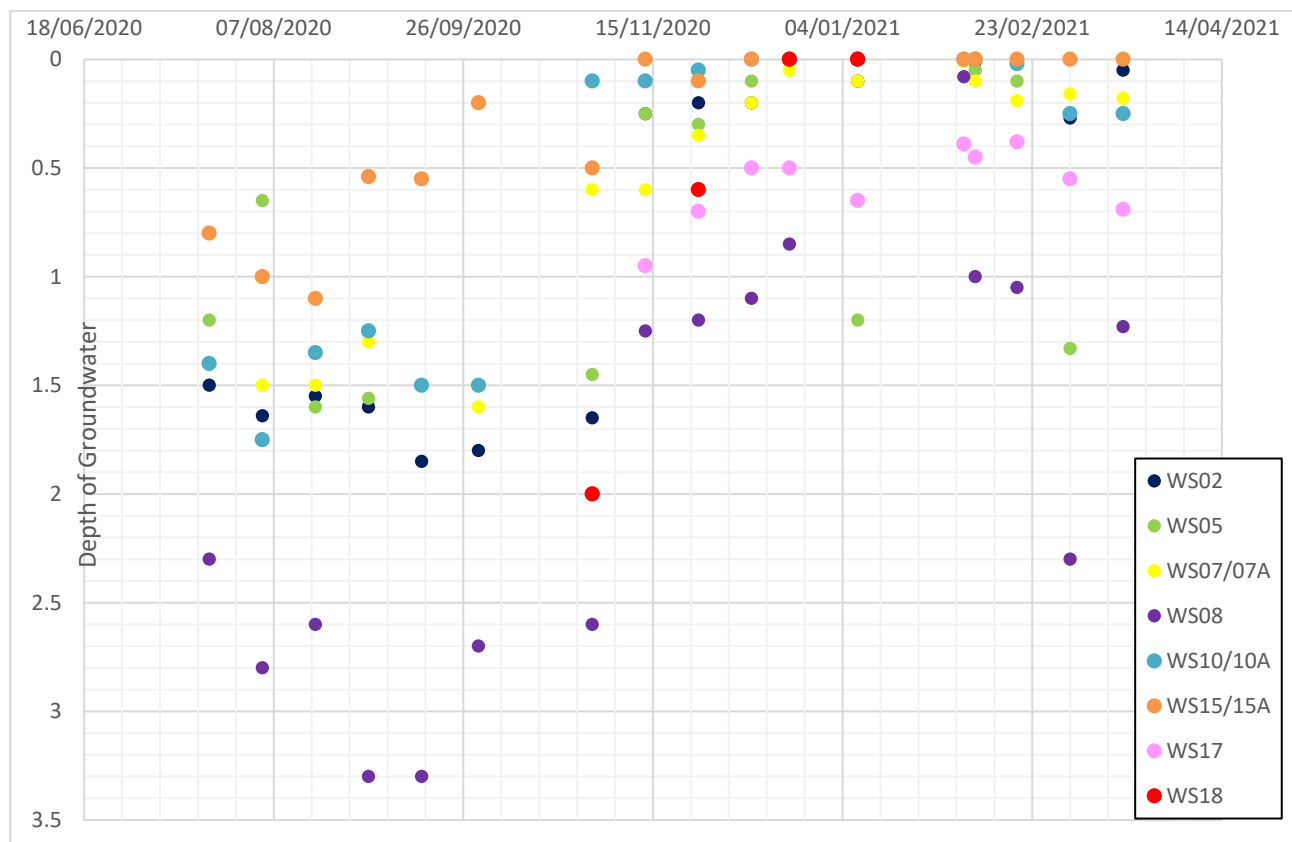


Chart 1 – Fluctuations in groundwater depths over monitoring period (m bgl)

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.

4.3 Obstructions

Several clay land drains were encountered within the investigation locations, most notably in TP01 at 0.6m bgl and TP27 at 1.0m bgl.

Therefore, it is assumed that other clay land drains may be present across the site, and the presence of other obstructions although not identified as part of the site investigation works on site cannot be completely discounted elsewhere on site. The presence of land drains is indicative of potentially poor drainage conditions for the natural soils.

4.4 Geotechnical Testing

In-situ Standard Penetration Tests (SPTs) were undertaken within the cable percussive borehole and the window sampler boreholes. Generally, these results ranged within the cable percussion borehole between uncorrected SPT 'N' values of N=8 to N=31, and within the window sampler boreholes between uncorrected SPT 'N' values of N=0 to N=40. Generally, 'N' values were noted to increase with depth. Typically the lower 'N' values were encountered at depths where groundwater was found to be present. SPT results are presented on the exploratory hole logs in Appendix B with the SPT results vs depth plotted in Figure 4.

A total of two Super Heavy Dynamic Probes (DPSH) were undertaken adjacent to the windowless sampler boreholes WS13 and WS16 to a depth of up to 5m bgl. Dynamic probing was planned and undertaken to aid in the description of the soil 'strength' where more granular soils were encountered.



The equivalent SPT 'N' blow counts were correlated from the dynamic probe tests. Generally, these results ranged between equivalent SPT 'N' values of N=0 to N=16 within the sands and sandy clays of the Wittering Formation encountered within the eastern field corresponding with a very loose to medium dense relative density. Typically the lower 'N' values were encountered at depths where groundwater was found to be present.

The results of geotechnical testing undertaken as part of the ground investigation are summarised in Table 4.8, with test results presented in Appendix C.

Parameter	Wittering Formation	
	Range	Mean
Moisture Content (%)	15-38	30
Liquid Limit (%)	33-85	60
Plastic Limit (%)	19-35	27
Plasticity Index (%)	14-50	33
Modified Plasticity Index (%)	13-50	32
Soil grading	Brown clay/very clayey SAND, reddish brown very clayey SAND	
Particle size distribution	Soil Fraction	%
	Gravel	0 - 2
	Sand	59.60 - 83
	Fines (<0.063mm)	17 - 38.4
Bulk Density (Mg/m ³)	1.76 - 1.98	
Dry Density (Mg/m ³)	1.27 - 1.70	
pH	4.1 - 7.5 (mean = 6.03)	
Water soluble sulphate (g/l)	0.0098 - 0.11 (mean = 0.020)	
SPT (N)	0 - 40	
Soaked CBR (%)	0.8 - 5.4	

NOTE: Modified plasticity index is defined in NHBC Standards Chapter 4.2

Table 4.8 Summary of Geotechnical Laboratory Test Results

The Modified Plasticity Indices showed the cohesive soils of the Wittering Formation to be of Low to High Volume Change Potential as defined in NHBC guidance and BRE 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 third party Hydrock February 2019 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 and asbestos, and for targeted analysis including pesticides (VOCs and SVOCs)

4.6 Ground Gases and Vapours

Return 'spot' ground gas monitoring to date has been undertaken on six occasions on 21st July, 4th August, 18th August, 1st September, 15th September and 30th September 2020 as part of the investigation, within standpipes installed within window sampler boreholes WS02, WS05, WS07, WS08, WS10 and WS15. These locations were selected to provide general coverage of the site.

The spot monitoring undertaken to date has not detected the presence of methane. Carbon dioxide has been



detected at concentrations in the range of 0.0% to 6.0% and oxygen in the range 16.3% to 21.1%. Positive borehole flows were not identified, VOCs were recorded up to 1.0ppm during the monitoring and atmospheric pressure was recorded in the range of 1004mb to 1023mb during the visits undertaken to date.

The implications of the gas monitoring data are considered in Section 6.2 of this report.



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 Desiccation Assessment

Desiccation is a transient soil condition commonly related to seasonal fluctuation in soil moisture content in response to climatic conditions and moisture uptake from vegetation. Desiccation is often a cyclical condition which relates to soil moisture deficit which can be caused by prolonged dry weather as well as by moisture uptake by plant roots. Whilst desiccation events may be cyclical, their impact, e.g. in terms of structural deformation, can be both progressive and cumulative.

The investigation was undertaken so as to provide general site coverage in line with current site development proposals, but so as to also target areas near to existing hedgerows and trees. Particular investigation locations noted to be present in close proximity to existing trees and hedgerows were, TP02, TP03, TP09, TP11, TP19 TP34, WS02, WS03, WS05, WS07, WS12 and WS13, all other investigation locations were noted to be less proximal to trees. Geotechnical testing comprised moisture content testing and Atterberg testing on samples of clay soil recovered to depths of up to 5m bgl supplemented with strength indicator testing using a hand penetrometer testing on site on the recovered soils.

Visual evidence of desiccation was observed in the soils recovered from the exploratory holes on site from ground level to depths of up to 1.50m bgl. The intrusive investigation was undertaken during the summer (July 2020), following a period of prolonged dry weather. A number of mature trees were also still present adjacent to the site to the south and south west and the hedgerows dividing the existing fields were still present at the time of the intrusive investigation works.

Soil moisture content test results versus depth are plotted on Figure 5. In general, the results show a trend of moisture content increasing with depth, with the lowest recorded moisture contents at a depth of 0.50m and 0.60m bgl. Although no clear indication of a zone of lower moisture content was identified, shallower soils were shown to have, in general a lower moisture content to soils at a depth of greater than 1m bgl. Moisture content values were generally clustered around the 20%-40% within all locations generally throughout the depth range tested.

Hand penetrometer test results versus depth are plotted on Figure 6 and whilst there were variations in the measured strength both with depth and between locations, the general trend was of strength increasing with depth. The exception to this were a number of tests undertaken within shallow soils (<1.00m bgl) where soils were shown to be of high strength, these soils were noted to show signs of desiccation within the soil description logs. Granular soils and soils with a high sand component were encountered within a number of locations and these materials were therefore not suitable for hand penetrometer testing these mainly included locations within the eastern field.

A further assessment and summary of desiccation indicators is presented in Table 5.1. Geotechnical testing was undertaken within 22 locations across the site. It should be noted that these are indicators of potential desiccation and whilst each method can have limitations, the assessment is based on using several lines of evidence to determine potential correlations and estimate the presence and depth of desiccation.



Exploratory Hole	Depth of Desiccation Indicator (m bgl)					
	Live Roots (including rootlets)	w	w = PL	w<PL+2	w <0.4LL	HP
TP11	-	-	-	1.00	-	-
TP12	-	-	-	0.50	-	0.50, 1.00
TP13	0.80*	-	-	-	-	0.50
TP15	-	-	-	0.60	0.60	-
TP16	-	-	-	-	-	-
TP17	-	-	0.60	0.60	-	-
TP19	-	-	-	0.50	0.50	0.40
TP20	-	-	-	1.00	1.00	-
TP21	-	-	-	-	-	0.40
TP23	-	-	-	-	-	-
TP24	-	-	-	0.60	-	-
TP25	0.40*	-	-	-	-	-
TP26	0.50*	-	-	-	-	-
TP28	1.50*	-	-	0.60	0.60	-
TP32	2.00*	-	1.50	1.50	-	-
TP34	0.40*	-	0.50	0.50, 0.60	0.50, 0.60	-
TP37	0.50*	-	-	-	-	0.25
TP39	0.70*	-	0.50	0.50	-	0.40
WS07	0.60*	0.50	-	0.50	-	0.25, 0.50
WS10	1.10*	-	1.00	1.00	-	0.25, 0.50, 0.75
WS12	1.80*	-	-	1.50	1.50	0.25, 0.50, 0.75
WS15	0.80*	-	-	-	-	0.25

NOTE: w – as received soil moisture content; PL – plastic limit; LL – liquid limit; HP – hand penetrometer strength, * - depth of root observation not recorded thus stratum base depth is stated, PL+2 and 0.4LL factors based on research on high plasticity soils and less reliance is placed on these factors in this assessment due to reported modified plasticity index range.

Table 5.1 Soil Desiccation Depth Indicators

The roots observed in soils recovered from the exploratory holes varied in depth and diameter as summarised and described in the individual exploratory hole logs.

It is considered that the various comparison techniques applied and summarised in Table 4.6 have identified potential indication of desiccation, or the onset of such within the shallow soils (between ground level and 1.00m bgl) in the majority of the assessed investigation locations, albeit that the comparators used were based on research into desiccation of high plasticity clay soils and thus composition of the strata encountered also needs to be considered alongside potential indicators of desiccation on this site.

Therefore, where cohesive soils are present foundations should extend through any root zones or potentially desiccated zones.

5.2 Conventional Foundations

Given the groundwater conditions recorded at the site, it is considered that conventional foundation construction would not be feasible unless the groundwater could be removed, lowered or otherwise controlled, e.g. by pumping or dewatering, and would also be likely to require trench support. The absence of groundwater cannot be guaranteed and thus any solution which relies upon, or requires groundwater being lower than the construction depth zone is unlikely to be the option with the lowest construction risk.



If groundwater is present within the foundation construction depth zone and cannot adequately be controlled, then conventional foundations are unlikely to be constructable and an alternative foundation solution could be required.

Given the current proposals are to include 6-storey buildings located in close proximity to the new roundabout and access road in the south of the site, in the vicinity of BH01, based on both the ground conditions encountered and the proposed development a piled solution or alternative solution is also recommended for these proposed buildings.

The following recommendations are based on the assumption that groundwater would not be present (either due to dewatering or favourable groundwater levels) in the construction depth zone during foundation construction.

On the basis of the results of the Atterberg Limit tests in conjunction with the field observations it is considered that the cohesive soils of the Wittering Formation should be classified '*en-masse*' as high volume change potential, as defined by NHBC Standards, Chapter 4.2, for which a minimum founding depth of 1.0m bgl is required. However, it is also likely that localised deepening of foundations would be required where potential signs of desiccation have been identified and for foundations constructed within the zone of influence of trees (up to c. 20m from high water demand trees) and that piled foundations could be required within 5-10m of high water demand trees, or in areas where shallow groundwater has been identified due to the potential for constructability issues.

Minimum recommended foundation depths (below existing ground level) where desiccation indicators show potentially impacted soils below the already recommended 1.0m bgl minimum founding depth are presented in Table 5.2 and take into account observations, in-situ and laboratory testing results. These depths are indicative minimum depths and do not take account of tree influence depths which could require localised deepening, if/once the species of removed trees have been confirmed. If such confirmation is not possible then they should be assumed to comprise high water demand species.

Location	Minimum foundation depth (m bgl)
TP11	1.1
TP12	1.1
TP20	1.1
TP28	1.6
TP32	1.6
WS10	1.6
WS12	1.6*

Note: * assumes roots are not present at 1.6m bgl

Table 5.2 Summary of minimum foundation depths based on the soil desiccation assessment

Foundations which are proposed in proximity to trees (remaining, removed or proposed) should be designed in accordance with NHBC Standards Chapter 4.2, and design approaches 4.2B and 4.2C, which incorporate the water demand of trees and the distance of the tree from the nearest portion of foundation.

Based on the ground conditions encountered, a net allowable bearing capacity of 90kPa is recommended for the firm to stiff clay and sand soils of the Wittering Formation, this being limited to reflect the presence of firm clay. Total settlement should remain within tolerable limits for the recommended allowable bearing capacity. Foundations terminating in, on or loading soft clay will not be suitable.

Heave protection measures in accordance with NHBC Standards will be required where foundation depths exceed 1.50m. Preliminary assessment in line with NHBC Standards indicates a minimum thickness of 75mm for any compressible media to the sides of foundations. Foundations should be a minimum 450mm in width.

It is recommended that foundation excavations be concreted or blinded as soon after excavation as possible. Where concreting could take place the following day it is recommended that excavations are not taken to full depth



overnight and that the final 0.5m of cover is only removed immediately prior to concreting.

SPTs indicated the cohesive soils of the Wittering Formation to generally range from soft to very stiff consistency. The firm to very stiff soils would be a suitable bearing stratum for conventional strip or trench foundations, albeit assuming that groundwater is absent at the proposed founding depth.

The foundation designer should take account of constructability of conventional foundations and additional measures which may be required to support excavations and/or control groundwater ingress into foundation excavations during construction. If groundwater is present within the foundation construction depth zone and cannot adequately be controlled, then conventional foundations are unlikely to be constructable and an alternative foundation solution could be required.

Given the variability in ground conditions, it is recommended that reinforcement is included in foundations.

5.3 Piled Foundations

On the basis of the ground conditions encountered, including instability within the shallow soils and shallow groundwater levels beneath the site, or higher developments (e.g. 6 storey buildings) it is considered that a piled foundation solution may be required.

The construction of a piled foundation is a specialist job and the advice of a reputable contractor familiar with the type of ground and groundwater conditions encountered on this site should be sought prior to finalising the design. The actual working load for proposed piles will depend on the particular type of pile and method of installation adopted.

Preliminary load capacities calculated for various diameter, single vertically loaded CFA piles taken into the Wittering Formation are given in Table 5.3. A SPT 'N' Value vs Depth Plot for BH01 and all the window sampler boreholes is presented within Figure 4. The design should be used for preliminary purposes only as the actual working load is dependent on the type of pile and method of installation. Piles should be taken at least five times the pile diameter into the founding strata.

Pile Diameter (m)	Pile Depth (m)	Working Load (kN)
0.30	8	60
	10	80
	15	150
	20	230
0.45	8	100
	10	140
	15	240
	20	360
0.60	8	150
	10	200
	15	340
	20	500

Table 5.3 Preliminary load capacities for CFA piles

These working loads have been calculated on the basis of the ground and groundwater conditions in the boreholes (BH01) and assume the following parameters:

- The contribution to the working load on the upper 3m has been ignored.
- A factor of safety of 3 was used on sum of the end bearing and skin friction working loads.



- No allowance has been made for additional forces acting on the pile shaft, such as negative skin friction, loading due to desiccation, heave forces or raising of ground levels.

Settlement of single piles is generally assumed to be less than 10mm where pile diameters do not exceed 600mm. For piles of larger diameter, settlement can become a critical factor.

The bearing values given are applicable to single vertically loaded piles. BRE Research indicates that where groups of piles are to be constructed at 2* pile diameter centre to centre spacing or less, the bearing value of each individual pile should be reduced by a factor of 0.8 and a calculation made to check for the factor of safety against block failure.

The piling contractor should be aware that the boreholes were cased to support the borehole during drilling and that water was added to aid the drilling process. The absence of obstructions at pile positions cannot be guaranteed. Any requirement for casing during pile construction will ultimately depend on the method of construction, i.e. casing might be required for a cast in-situ bored pile but not for a driven pile. Continuous Flight Auger (CFA) piles do not generally require casing as the auger supports the pile bore during formation and concreting. The piling contractor should ensure that the piles are constructed satisfactorily and that necking or other damage to the pile shaft does not arise during construction.

Piled foundations, any pile caps or ring beams should be designed to account for the presence of shrinkable soils and this may require the incorporation of additional reinforcement and heave protection measures such as compressible media to pile caps and ring beams or slip coats and reinforcement to the upper portion of pile shafts.

A temporary working platform would be required for the piling rig to operate on. Depending on the fill materials used to raise site levels it is possible that the general fill could also act as the temporary working platform but this would be subject to confirmation of fill type, post placement testing (e.g. Plate Load Tests), confirmation of piling rig loads (to BRE load case scenarios) and temporary working platform design.

5.4 Floor Slabs

Given the presence of shrinkable soils suspended floor slabs are recommended. The minimum void height should be determined in accordance with NHBC Standards and account for the volume change potential of the underlying soils. Preliminary assessment indicates a minimum void of 300mm but this should be verified during detailed design.

5.5 Excavations

If groundwater conditions as indicated from monitoring prevail then groundwater control will be required for excavations on this site. The capacity and specification of any such groundwater control measures should be determined by the groundworks contractor prior to commencement of major excavations on the site, e.g. requiring a dewatering/pumping trial. Any water pumped from excavations will require disposal in accordance with current statutory regulations and best practice, e.g. sediment control, discharge licence and the like.

Due to the presence of running sands and groundwater encountered during the intrusive investigation works mainly within trial pits located on the eastern field of the site, excavations are likely to be unstable and will therefore need to be adequately shored with appropriate retention systems and dewatering. Conventional sump pumping might not be sufficient to control water within excavations. Dewatering on a large scale could be considered but could cause consolidation settlement of the ground during dewatering and potentially loss of fines from the soil mass causing additional and potentially unpredictable settlement.

In the event that excavations become unstable, the sides should either be shuttered or over-excavated to form vertical sides in order to avoid potential adverse heave on foundations at a later date. Long, deep excavations may require some support, particularly if they are to be left open for long periods.



Ground works should be designed in such a manner to avoid personnel entry into unsupported excavations. Where this cannot be avoided, such entry should only be into supported excavations in accordance with a safe system of work and relevant legislation, e.g. Confined Spaces Regulations.

5.6 Pavements

Remoulded soaked laboratory CBR testing in conjunction with Atterberg Limit testing was undertaken within seven samples, from locations (TP15, TP17, TP21, TP24, TP25, TP26, TP34) agreed with the client and where development roads are proposed. The results of the laboratory testing indicated a remoulded soaked CBR of between <1% and 5.4% for these samples.

Therefore, based on the in-situ and laboratory results and the soils encountered on site a preliminary equilibrium CBR of 1% is recommended for the soils present at the anticipated formation depth.

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.

5.7 Sulphates

The results of the water soluble sulphate and pH analyses indicate that buried concrete (shallow foundations) should be designed in accordance with Class DS-1 of BRE Special Digest 1, with an ACEC class of AC-2z. The advice of this publication should be taken for the design and specification of all sub surface concrete.

5.8 Soakaways

Soakage testing was undertaken within 11No. trial pits, both shallow and at depth, the shallow tests were undertaken at depths between 0.60m and 0.70m bgl and the deeper tests in pits excavated to depths of between 3.00m and 3.20m bgl. The soakage testing was undertaken in general accordance with BRE Digest 365 with an infiltration rate calculated, where possible, for each test using the standard methodology contained in BRE Digest 365 'Soakaway Design'.

The testing was undertaken over two consecutive days such that where soakage was successful, three filling-drainage cycles were undertaken within the respective pit. Preliminary infiltration rates have been estimated for each of the test runs undertaken within each trial pit. There was an insufficient fall in head to calculate an infiltration rate for the tests undertaken within locations TP02, TP03, TP04, TP06, TP08 (deep), TP09 (deep) and TP10, which were located within the cohesive Wittering Formation strata, and it is not considered suitable or reliable to estimate a permeability based on the actual measured range as this would be likely to derive an overly optimistic permeability.

Given the length of time taken for some of the pits to drain, it was not possible to complete three fill and drain cycles within all the successfully draining pits. The estimated preliminary permeability values are summarised in Table 5.4 below with the detailed results presented in Appendix E.

Trial Pit	Stratum tested	Permeability rates (m/s)		
		Test 1	Test 2	Test 3
TP05 (shallow)	Wittering Formation	6.0×10^{-6}	-	-
TP07 (shallow)	Wittering Formation	3.3×10^{-5}	4.4×10^{-6}	Insufficient fall
TP08 (shallow)	Wittering Formation	1.5×10^{-6}	-	-
TP09 (shallow)	Wittering Formation	3.1×10^{-4}	2.7×10^{-5}	1.7×10^{-5}

Table 5.4 Estimated permeability values derived from trial pit soakage tests



The results from the shallow soakage testing to date indicate that it is likely to be possible to utilise permeable paving as part of the wider site drainage strategy. The results of the deeper soakage testing indicated that the use of soakaways would not be suitable and that on-site storage and attenuation, or alternative storm water disposal options will need to be considered.

Groundwater levels encountered during the investigation works and return monitoring visits undertaken to date have shown that groundwater is present at shallow depth beneath the site (0.7m bgl recorded at its shallowest point during the works to date). As such, the use of soakaways at the site is likely to be of limited effectiveness on the site due to the limited unsaturated zone encountered at the site. As such on-site storage and attenuation, or alternative storm water disposal options should be considered.

Changes in groundwater levels, such as shallower groundwater during winter months, could reduce storage capacity and performance of soakaways. 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.



6.0 ENVIRONMENTAL CONSIDERATIONS

A Generic Quantitative Risk Assessment (GQRA) has been undertaken incorporating the results of the third party Hydrock February 2019 desk study and subsequent ground investigation undertaken, the findings of which are presented in the following sections.

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 third party desk study. The desk study identified the historical use of the larger development site as a whole as agricultural activities and uses. The First Residential Parcel is not located on or in close proximity to any of the identified 'farm hubs'.

Off-site sources of potential contamination include Chalcroft Business Park and the railway line, located to the south of the First Residential Development Parcel.

Given that a number of plausible pollutant linkages were identified as part of the desk study soil samples were selected to provide a general site coverage. Samples were submitted for analysis for a suite of commonly occurring contaminants including metals, metalloids, inorganic compounds, speciated TPH, PAH and asbestos, and for targeted analysis including pesticides (VOCs and SVOCs).

The desk study identified the potential for Made Ground as possibly being present on site, most likely within the 'farm hub' areas of the wider site. In addition, ground conditions in the west of the wider site have been identified as possibly comprising Alluvium, which can be an organic rich material and a natural source of ground gas, although this area of the site does not form part of the first residential parcel.

Therefore, ground gas monitoring wells were installed across the site to target these potential off-site sources as well as to provide general site coverage to monitor any migrating ground gases. Principal gases of concern are likely to include methane, carbon dioxide, oxygen and VOC together with parameters such as flow rate.

The investigation did not encounter conditions that warranted a revision of the preliminary Conceptual Site Model.

6.2 Ground Gases vs. End Users

The desk study identified the possible presence of Made Ground on site associated with the site's former agricultural use, along with the possible presence of an Alluvium soil type located to the west of this first development parcel, as potential sources of hazardous ground gases. The intrusive investigation works did not identify Made Ground nor was Alluvium identified within any of the investigation locations. As such, no sources of ground gas have been identified as being present on site.

Six ground gas monitoring standpipes (WS02, WS05, WS07, WS08, WS10, and WS15) were installed on site to depths of up to 5m bgl. These locations were selected to provide general coverage of the site. Ground gas monitoring has been undertaken across six visits, on the 21st July, 4th August, 18th August, 1st September, 15th September and 30th September 2020.

The spot monitoring undertaken to date has not detected the presence of methane. Carbon dioxide has been detected at concentrations in the range of 0.0% to 6.0% and oxygen in the range 16.3% to 21.1%. Positive borehole flows were not identified, VOCs were recorded up to 1.0ppm during the monitoring and atmospheric pressure was recorded in the range of 1004mb to 1023mb during the visits undertaken to date.



A Tier 1 Ground Gas Risk Assessment (GGRA) incorporating the results of the desk study and ground investigation was undertaken.

Recommendations on acceptable gas concentrations recorded in the ground beneath or adjacent to buildings are given in a variety of publications. For the purpose of this assessment, the results have been evaluated in terms of British Standard BS8485, '*Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings*' (2019); CIRIA C665, '*Assessing risks posed by hazardous ground gases to buildings*' (2007) and NHBC report 10627-R01(04) '*Guidance on evaluation of development proposals where methane and carbon dioxide are present*' (2007).

It can be seen that marginal volumes of carbon dioxide was recorded in all standpipes, with monitoring location WS15 marginally exceeding the 5% limiting concentration for Characteristic Situation 1, on one of the monitoring occasions. No plausible significant on-site source of carbon dioxide has been established, therefore it is considered that carbon dioxide is being produced mainly via biological respiration within the soils beneath the site and as such is from low risk sources.

In addition, no borehole flow rates were recorded within any of the monitoring wells during the entire monitoring period. This lack of notable flow indicates that the source of the identified carbon dioxide is migrating by diffusive flow only.

Gas primarily migrates via either pressure driven (advective) flow or via diffusive flow. No borehole flow rates were recorded across the site during the monitoring period. As such, gas present beneath the site will diffuse through the soils forming a continuum between the source and ground level, with only minor concentrations of gas reaching ground level, and no perceivable flow. The majority of gas will remain trapped in the soil pores or sorbed to soil particles. As no flow rates have been recorded during the monitoring period this suggests that any carbon dioxide is residual gas trapped within the soil pores, which is only being recorded and monitored due to the actual drilling and construction of the monitoring wells within these soil pores, and as such is not representative of the risks posed to proposed buildings on site.

Groundwater levels did fluctuate over the monitoring period. During the monitoring round undertaken on 30th September 2020, groundwater was shallow and noted to be at a depth of 0.20m bgl within WS15. The response zone of WS15 was from 1m to 4m bgl, and as such during this monitoring visit the response zone of the borehole was below the level of groundwater. The monitoring results from this visit therefore may not be fully representative of the ground gas conditions within the soils beneath the site. If this result is removed from the dataset then there are no exceedances of the 5% threshold for carbon dioxide.

Looking at atmospheric pressure conditions over the monitoring period, atmospheric pressure appears to have been both rising and falling preceding and during the monitoring rounds undertaken. There does not appear to be any correlation between the recorded carbon dioxide concentrations and atmospheric pressure. It is considered that atmospheric pressure has not impacted the recorded concentrations of carbon dioxide, but that representative worst case scenario data has been obtained.

Gas screening values (GSV) have been calculated for carbon dioxide in accordance with the recommendations contained within C665 and NHBC guidance. To calculate a GSV for the site, the worst case, i.e. the highest concentration value, of recorded carbon dioxide has been used. A value of 6.0% v/v has been used for carbon dioxide. No boreholes flow rates were recorded during the monitoring rounds undertaken, CIRIA C665 recommends that when no gas flow rates have been recorded that the gas monitoring instruments limit of detection (0.1l/hr) is used to calculate the GSV so as to be representative of a worst case scenario. Therefore, as no flow rates were recorded a value of 0.1l/hr has been utilised to calculate the GSV.

Using these worst case values a GSV of 0.0060l/hr has been calculated for carbon dioxide for the site. This would classify the site as representative of Characteristic Situation 1 (BS and CIRIA) and Green (NHBC). However, the limiting concentration for carbon dioxide for a Characteristic Situation 1/Green has been exceeded on one occasion



with WS15. Therefore, consideration needs to be given to classification of the site as Characteristic Situation 2/Amber 1 gassing regime.

Assessment of the construction of the wells and the underlying ground conditions has shown that all of the response zones of the installed wells were solely within the natural soils beneath the site. Description of these natural materials has not noted the presence of organic materials or other materials that may give rise to the generation of ground gas. Assessment of likely sources of ground gas has not identified any onsite sources for the significant generation of bulk gases.

As such it is considered that the elevated concentrations of carbon dioxide recorded are being produced via biological respiration within the soils beneath the site and as such are from low risk sources. The limiting methane and carbon dioxide concentration applied above is based on the 'typical maximum concentration' as defined in Table 14:1 of the NHBC guidance, the footnotes to which state that *'The Typical Maximum Concentrations can be exceeded in certain circumstances should the Conceptual Site Model indicate it is safe to do so'*. As described above, carbon dioxide was recorded to exceed 5% within one monitoring location, on one occasion.

It is not mandatory to automatically increase the classification of a site based on elevated gas concentrations. The above assessment of the on-site gas regime has only identified low risk sources of bulk gases on site. It is considered that the source of the monitored carbon dioxide is most likely to be attributable to biological respiration within the soils beneath the site.

It is considered that carbon dioxide is primarily trapped within the soil pore spaces beneath the site. The construction of the monitoring wells could have led to the creation of anaerobic conditions within the monitoring wells leading to an increase in carbon dioxide on a very small scale, within the monitoring well not the soil mass, producing the elevated concentrations recorded. The lack of any recorded flow rates suggests that any migration of gas beneath the site is via diffusive flow. However, the majority of identified gas is likely to remain trapped in the soil pores or sorbed to soil particles, and, is therefore considered a low risk to buildings or occupants on the site. Therefore, it is not considered necessary to increase the classification of the site's gassing regime based on the marginal exceedances of the 5% concentration for carbon dioxide.

As such, it is considered, based on the above assessment, the low risk sources of bulk permanent gases, diffusive flow conditions, the frequency of the exceedances and the marginality of the exceedances of the limiting concentrations for carbon dioxide, that the entire site is classified as NHBC Green.

Therefore, no gas or vapour protection measures are deemed necessary within the proposed development. In addition, soil sampling on site has not identified the presence of any specific potential gas or vapour sources on site.

6.3 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 the ATRISKOIL Soil Screening Values (SSVs) derived by Atkins, or against the Suitable For Use Levels (S4ULs) published by LQM (Copyright Land Quality Management Limited reproduced with permission, Publication Number S4UL3453. All rights Reserved) and Category 4 Screening Levels (C4SLs) published by DEFRA for the proposed end use. 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. Samples were selected to provide a good coverage of the site and to specifically target shallow soils that are likely to come into contact with identified receptors. 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 where available. All of the results were noted to be below the respective assessment criteria, therefore further assessment was not considered necessary.

In addition, samples were submitted for laboratory testing were also screened for asbestos. No asbestos was identified within any of the samples submitted for testing.

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

Should further Topsoil need to be imported onto site, for use within private gardens and soft landscaped areas of the site, prior to importation, the chemical, physical and nutritional suitability should be verified. Importation of Topsoil or subsoil from unverified or unsuitable sources would require their removal from site and replacement with suitable materials. As a matter of good practice, it is recommended that the location, approximate extent and thickness of any imported Topsoil are recorded and presented in the Validation/Verification Report to be prepared by the Environmental Consultant.

6.4 Soil Contamination vs. Adjacent land Users

Surrounding land uses were identified to comprise limited residential properties, in line with the proposed development proposals. On the basis of the testing undertaken to date, it is considered that no significant risks to adjacent land users exist.

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. 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 determinants 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.



6.6 Soil Contamination vs. Built Environment

Recommendations with respect to pH and sulphate in relation to buried concrete are made in Section 5.7

The current guidance on the selection of materials for water supply pipes to be laid in contaminated land is contained in UK Water Industry Research's (UKWIR) report reference 10/WM/03/21 (re-issued 2010). However, the guidance is not mandatory and there has been concerns raised by various industry technical associations regarding the document and the methodologies proposed.

As such, the utility company should be consulted in order to confirm their specific requirements in this respect, at this time subject to further confirmation it is considered that specific protection measures are unlikely to be required for potable water supply. As a matter of good practice and to maximise the protection to maintenance workers, it is recommended that clean, granular backfill is used in service runs and that marker tapes are used for all buried services.

6.7 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.

6.8 Groundwater 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 are unlikely to 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.

6.9 Groundwater vs Soft Landscaping

Groundwater was identified at depths as shallow as 'at surface' during the return groundwater monitoring, which is considered potentially within the root zone of influence for the soft landscaping on the site. However, soil analysis has not identified elevated contaminants, such that could have resulted in contaminants being mobilised to the groundwater and the vegetation on and around the site showed no evidence of stress. As such, it is considered that no specific action is warranted with respect to soft landscaping.

6.10 Groundwater vs Built Environment

Protection measures for the Built Environment as discussed in Section 6.6 are considered appropriate.

6.11 Groundwater vs Controlled Waters

In the absence of any evidence of mobile contamination and elevated contaminants within soils on site it is considered that no action is required in terms of risks to Control Waters.



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.

6.12 Waste Disposal

The following information is provided for preliminary guidance purposes, as different facilities or operators may have differing acceptance criteria and further Waste Acceptance Criteria (WAC) analysis may be required to confirm the exact classification.

Based on the Waste Categorisation testing undertaken from representative samples of the Topsoil and Wittering Formation across the site it is considered that the soils from across the site would be considered as non-hazardous waste for the purpose of disposal.

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 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 soils are required to be used;
- The material are suitable for use terms of chemical and geotechnical properties for the intended use (without any further processing/treatment);
- There is certainty of use; and
- The quantity that is absolutely necessary (and no more) is used.

In order to comply with the Code of Practice, a material management plan that confirms the above criteria are met has to be prepared. The material management plan must be reviewed by a 'Qualified Person' who then issues a declaration to the Environment Agency. Geo-Environmental can provide this service should it be required.

It should be noted there where contaminants have been identified on a site a risk assessment and remediation strategy and verification plan will need to be agreed with the regulators as part of the development of the MMP.

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.



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.

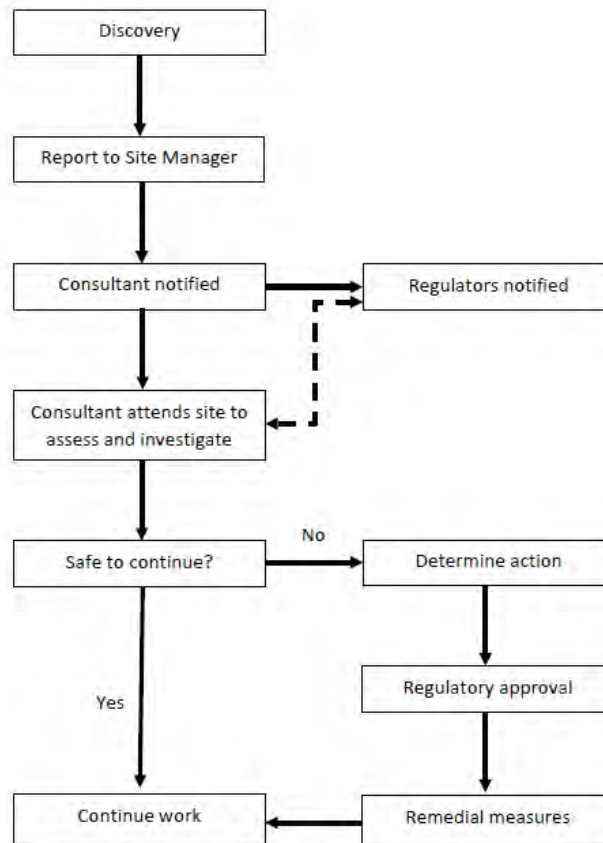
A copy of the discovery strategy must be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious, abnormal, unforeseen or contaminated ground and/or groundwater conditions they may encounter.

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.

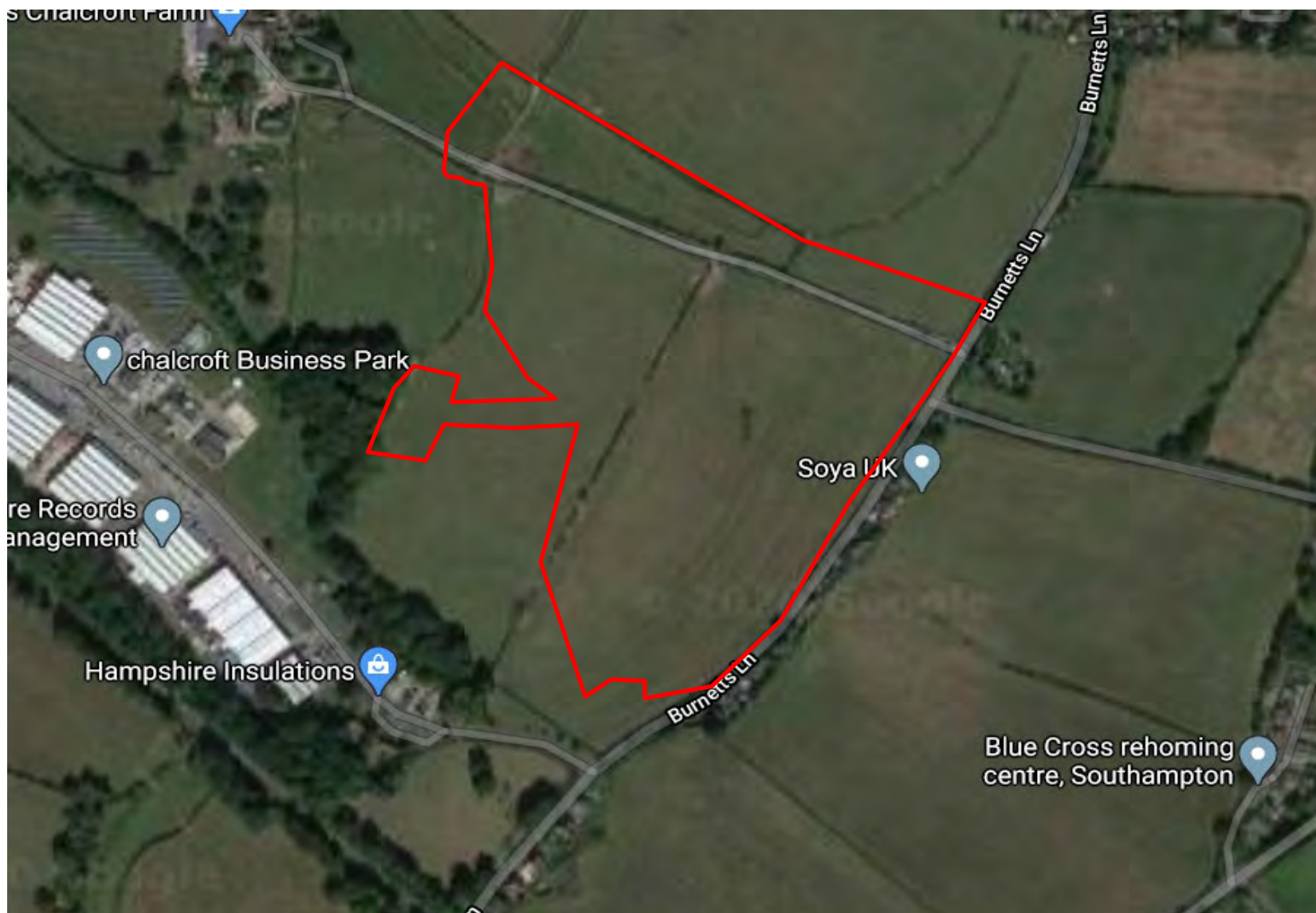
The process is summarised overleaf:

**Discovery Strategy Process**



FIGURES



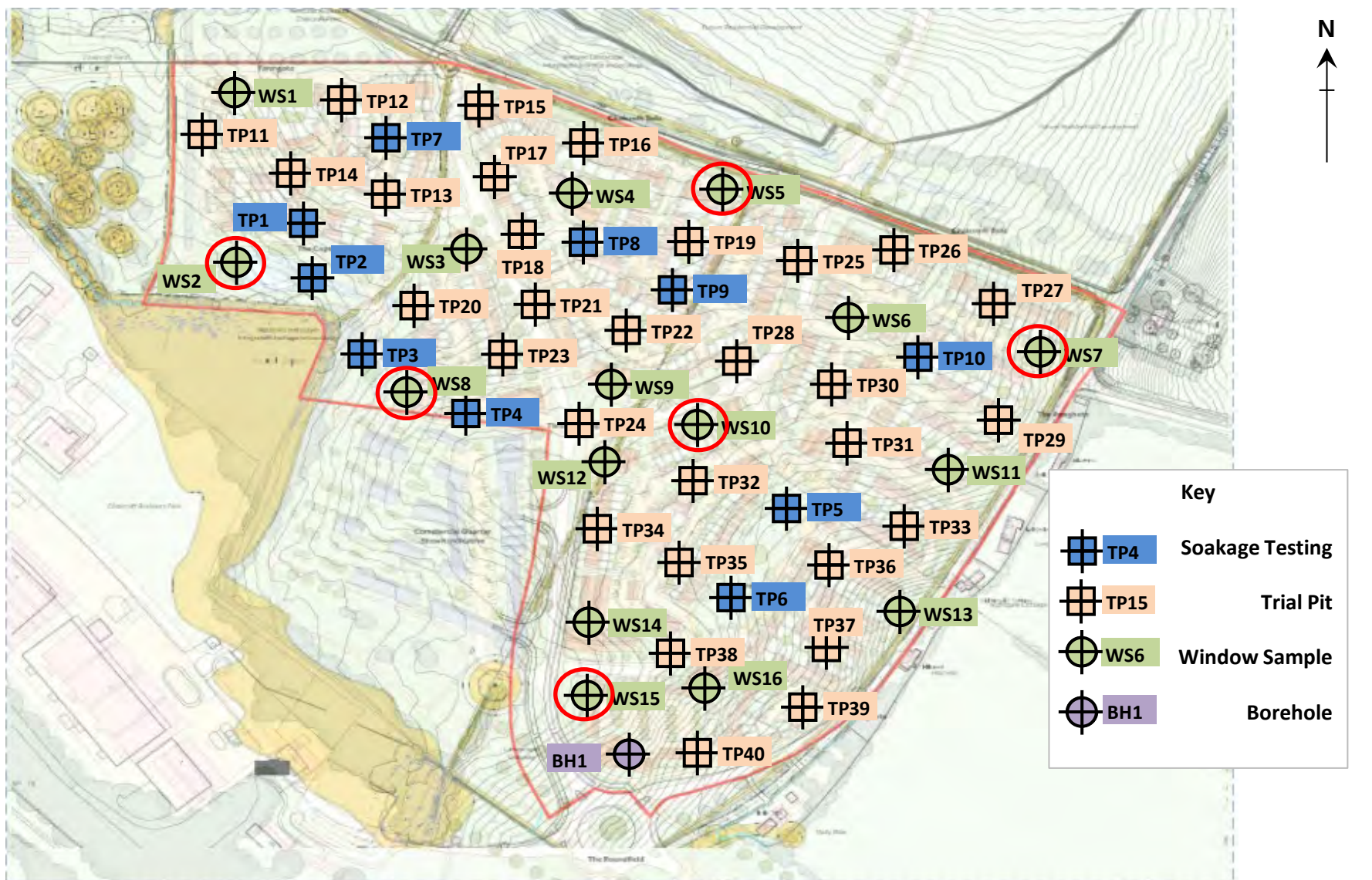


Project:	One Horton Heath - First Residential Parcel			Title	Site Location Plan (aerial)	
Client:	Eastleigh Borough Council			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	 Geo-Environmental	
Ref No:	GE18771	Revision:	0			
Drawn:	FG	Date:	28/05/2020			
Figure:	1	Scale:	Not To Scale			



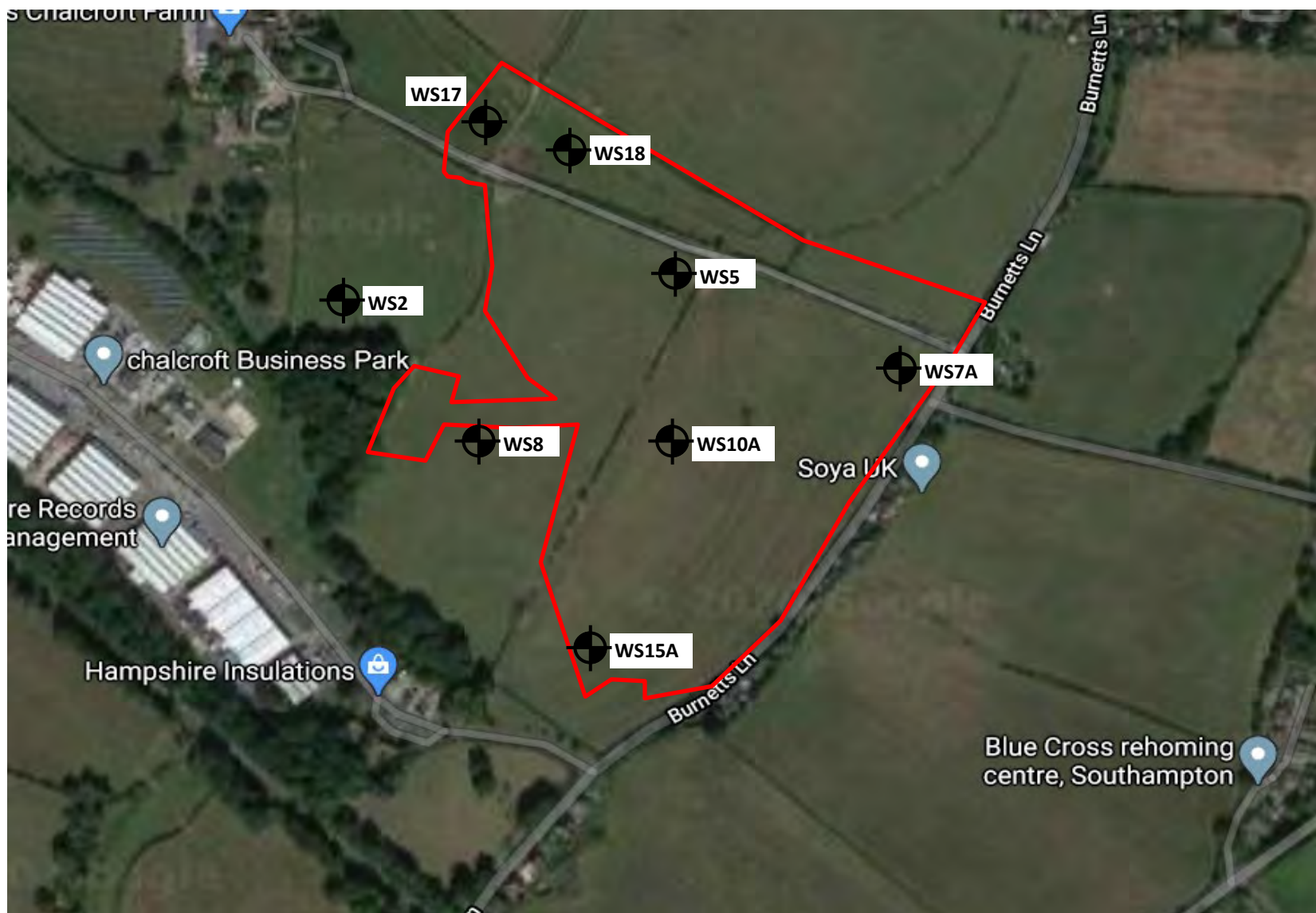
Project:	One Horton Heath - First Residential Parcel			Title	Proposed Site Layout	
Client:	Eastleigh Borough Council			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	 Geo-Environmental	
Ref No:	GE18771	Revision:	0			
Drawn:	FG	Date:	11/12/2020			
Figure:	2	Scale:	Not To Scale			



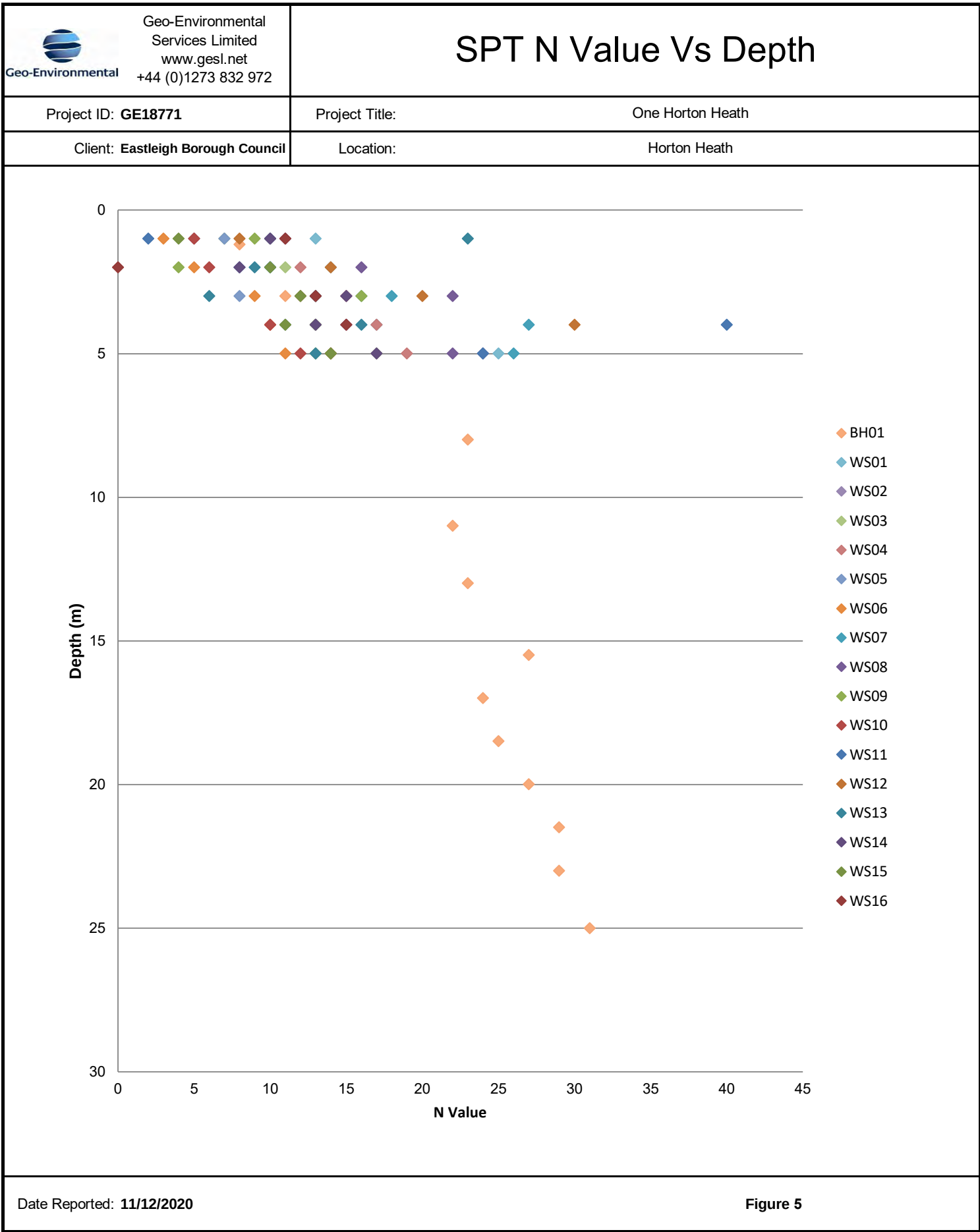


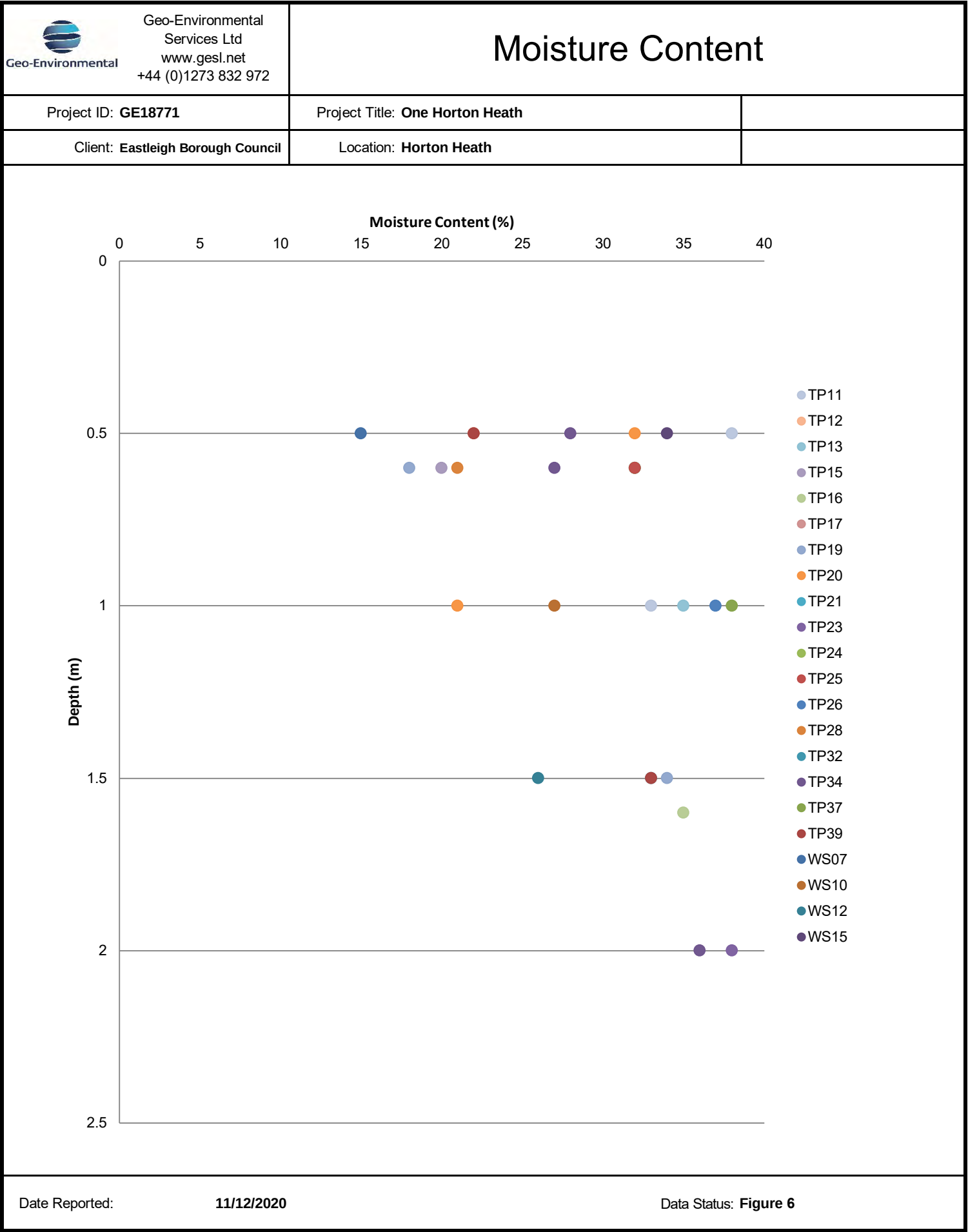
Project:	One Horton Heath - First Residential Parcel			Title	Exploratory Hole Location Plan	
Client:	Eastleigh Borough Council			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	 Geo-Environmental	
Ref No:	GE18771	Revision:	1			
Drawn:	FG	Date:	21/07/2020			
Figure:	3	Scale:	Not To Scale			





Project:	One Horton Heath - First Residential Parcel			Title	Groundwater Monitoring Wells	
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:	GE18771	Revision:	0			
Drawn:	FG	Date:	02/11/2020			
Figure:	4	Scale:	Not To Scale			





HPEN Vs DEPTH

Project ID: **GE18771**

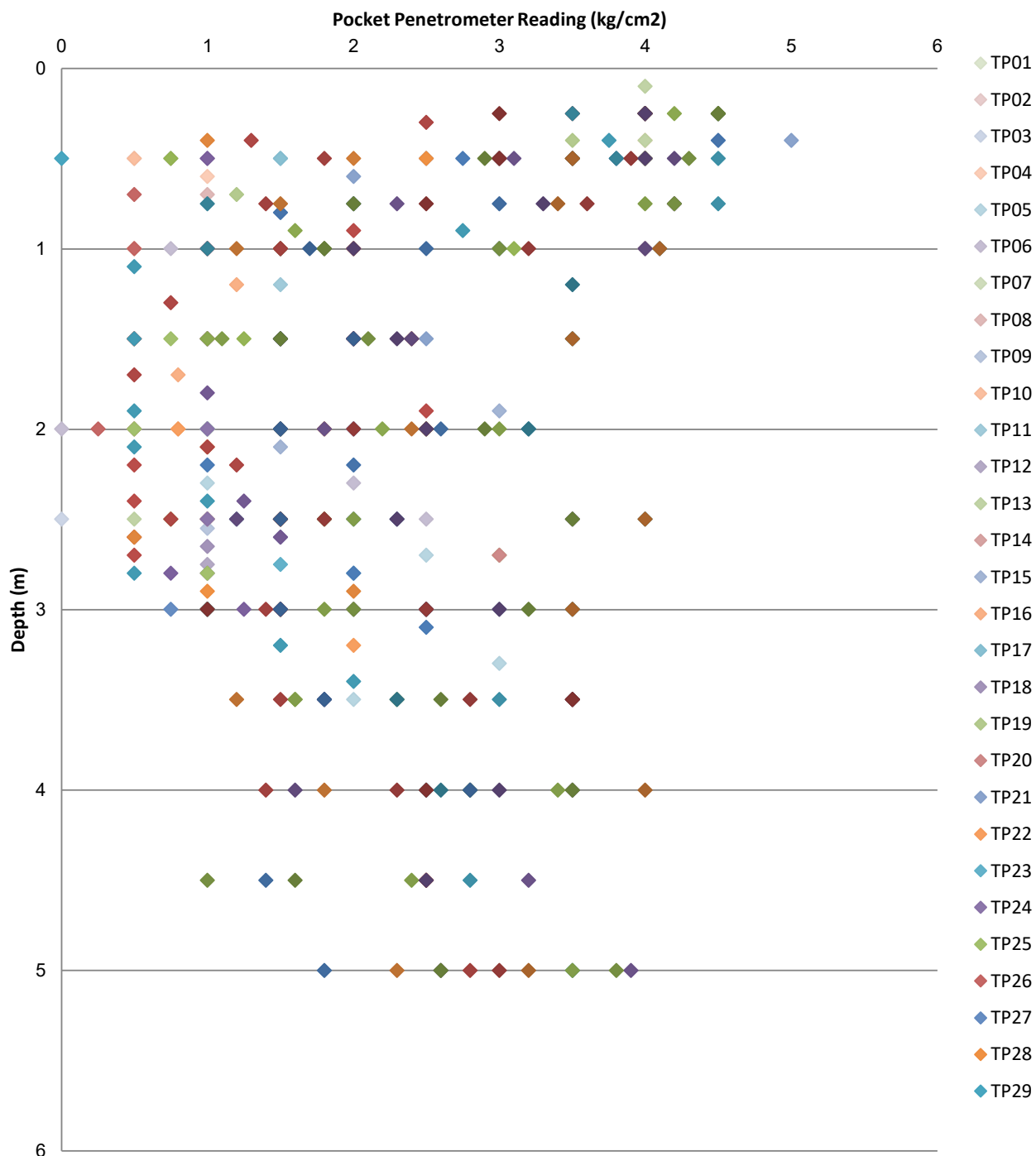
Project Title: **One Horton Heath**

Final Depth: **0**

Client: **Eastleigh Borough Council**

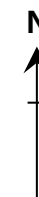
Location: **Horton Heath**

Date Drilled:



Possible Pollutant Linkages:

1. Direct contact with contaminated soils, ingestion of contaminated soils
2. Inhalation of soil dusts indoor and outdoor
3. Vertical and lateral migration through permeable strata and within groundwater
4. Shallow groundwater within made ground- vertical and lateral migration
5. Chemical attack of buried plastics and concrete



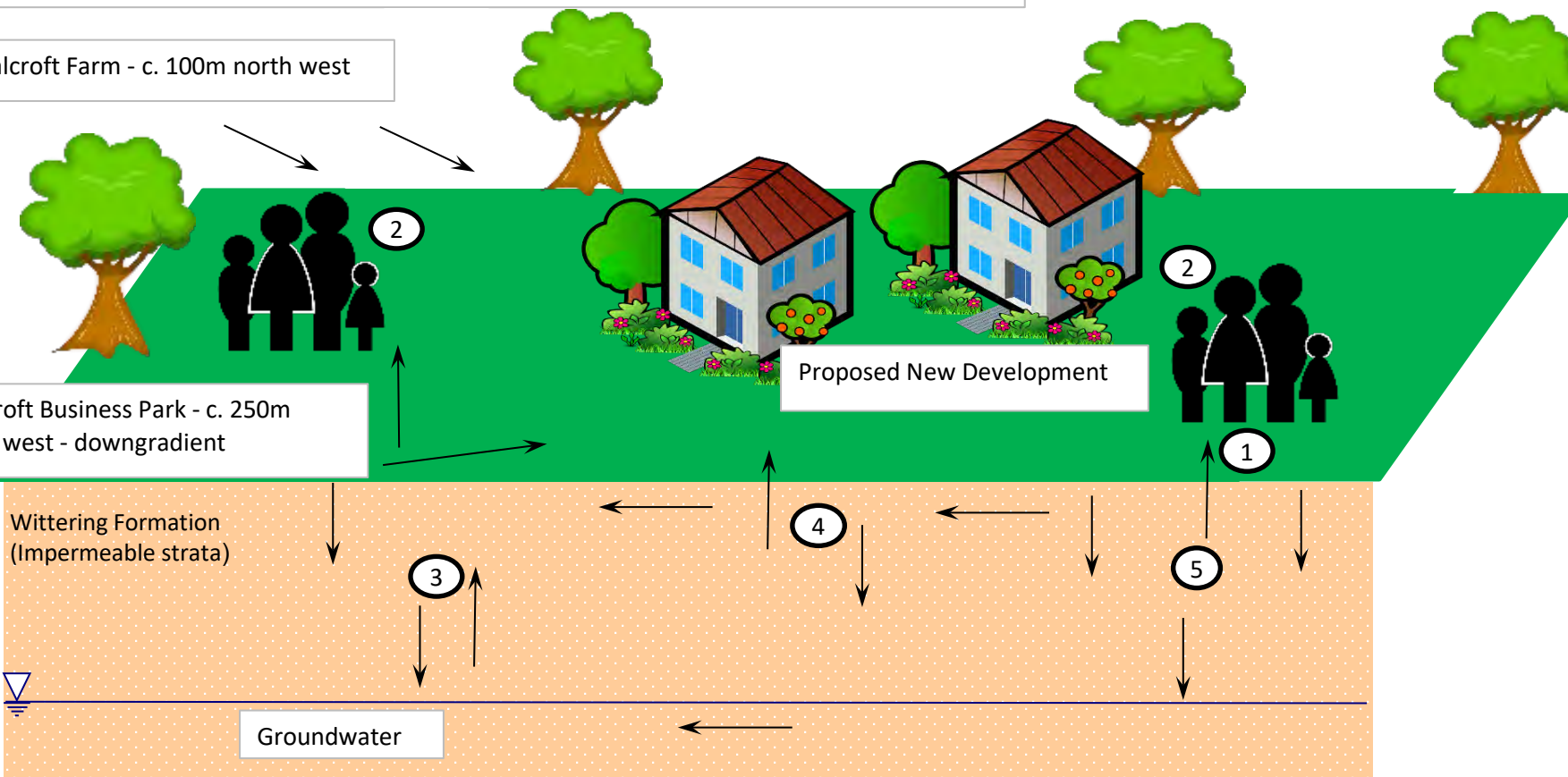
Chalcroft Farm - c. 100m north west

Chalcroft Business Park - c. 250m
south west - downgradient

Wittering Formation
(Impermeable strata)

Groundwater

Proposed New Development



Project: One Horton Heath - First Residential Parcel

Title: Conceptual Site Model

Client: Eastleigh Borough Council

Geo-Environmental Services Ltd

Ref No: GE18771

Revision: 0

Unit 7 Danworth Farm, Cuckfield Road

Drawn: FG

Date: 21/08/2020

Hurstpierpoint, West Sussex BN6 9GL

Figure: 8

Scale: Not To Scale

+44(0)1273 832972 www.gesl.net



Geo-Environmental

APPENDIX A

Site Photographs





Plate 1 View south east across the central field



Plate 2 View south west across the central field



Plate 3 View west across the central field



Plate 4 View east across the central field



Plate 5 View east across the central field towards the eastern field



Plate 6 View south across the western field



Plate 7 View south west across the western field



Plate 8 View west across the western field



Plate 9 View south east across the eastern field



Plate 10 View east across the eastern field



Plate 11 View east across the central portion of the eastern field



Plate 12 View north east across the eastern field



Plate 13 View south across the eastern field



Plate 14 View south across the eastern field



Plate 15 View south east across the eastern field

APPENDIX B

Exploratory Hole Logs



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. BH01 Sheet 1 of 3	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448873E - 116089N		Hole Type CP	
Location: Horton Heath				Level: 24.16		Scale 1:50	
Client: Eastleigh Borough Council				Dates: 08/07/2020		Logged By	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 - 0.60	D	N=8 (1,2/2,2,2,2)	0.20	23.96	 TOPSOIL TOPSOIL Soft orangish brown sandy CLAY WITTERING FORMATION	1	
		0.50 - 1.00	B						
		1.20 - 1.65	D						
		1.20	S						
		1.50 - 2.00	B	Ublow=21				2	
		1.70 - 1.80	D						
		2.00 - 2.45	U						
		2.50 - 2.60	D						
		2.50 - 3.00	B	N=11 (2,2/3,3,2,3)	3.10	21.06	Soft to firm grey sandy CLAY WITTERING FORMATION	3	
		3.00 - 3.45	D						
		3.00	S						
		3.50 - 3.60	D						
		4.00 - 4.45	U	Ublow=28					4
		4.50 - 4.60	D						
		5.00 - 5.45	D						
		5.00	S						
6.00 - 6.10	D	N=14 (2,2/3,3,4,4)	5.00	19.16	Firm to stiff laminated grey slightly sandy CLAY WITTERING FORMATION	5			
6.50 - 6.95	U								
7.50 - 7.60	D								
8.00 - 8.45	D								
8.00	S	N=23 (3,4/4,5,6,8)					6		
9.00 - 9.10	D								
9.50 - 9.95	U								
9.50 - 9.95	U								

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
150	16.50	2.80 14.00	2.20 12.50				



Geo-Environmental
www.gesl.net

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

BH01

Sheet 2 of 3

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448873E - 116089N

Hole Type
CP

Location: Horton Heath

Level: 24.16

Scale
1:50

Client: Eastleigh Borough Council

Dates: 08/07/2020

Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 - 10.60	D						
		11.00 - 11.45 11.00	D S	N=22 (2,4/5,5,6,6)					11
		12.00 - 12.10	D						12
		12.50 - 12.95 12.50 - 13.00	UF B	Ublow=52					
		13.00 - 13.45 13.00	D S	N=23 (3,4/5,5,6,7)					13
		13.50 - 13.60	D						
		14.00 - 14.40	U	Ublow=100					14
		15.00 - 15.10	D						15
		15.50 - 15.95 15.50	D S	N=27 (4,5/5,6,8,8)					16
		16.50 - 16.60	D						
		17.00 - 17.45 17.00	D S	N=24 (3,4/5,5,6,8)					17
		18.00 - 18.10	D						18
		18.50 - 18.95 18.50	D S	N=25 (4,4/5,6,7,7)					19
		19.50 - 19.60	D						
		20.00 - 20.45 20.00	D S	N=27 (3,4/5,7,7,8)					20
Continued on Next Sheet									
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
150	16.50	2.80 14.00	2.20 12.50						





Geo-Environmental
www.gesl.net

Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Borehole Log

Borehole No.

BH01

Sheet 3 of 3

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448873E - 116089N

Hole Type
CP

Location: Horton Heath

Level: 24.16

Scale
1:50

Client: Eastleigh Borough Council

Dates: 08/07/2020

Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		21.00 - 21.10	D	N=29 (4,5/6,7,8,8)	25.45	-1.29			21
		21.50 - 21.95 21.50	D S						22
		22.50 - 22.60	D						23
		23.00 - 23.45 23.00	D S	24					
		24.00 - 24.10	D	25					
		25.00 - 25.45 25.00	D S	N=31 (5,5/6,8,8,9)				26	
End of Borehole at 25.45m									27
									28
									29
									30
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks			
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to				
150	16.50	2.80 14.00	2.20 12.50						





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP01
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448671.34 - 116410.94
Level: 20.33

Date
08/07/2020

Location: Horton Heath

Dimensions (m): 1.50
0.45
Depth 3.00

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.30	20.03		Dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fine angular to rounded flint. TOPSOIL	
	0.40	ES					Very stiff light brown and orangish brown silty slightly sandy desiccated CLAY with rare brick tile from land drain. (REWORKED) WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=4kg/cm2					
	1.00	D		1.20	19.13		Firm light brown, orangish brown and bluish grey mottled sandy CLAY. Sand is fine. WITTERING FORMATION	1
	1.00	PP	PP=4kg/cm2					
	1.50	D					Firm becoming stiff dark bluish grey sandy CLAY. Sand is fine. WITTERING FORMATION	
	1.50	PP	PP=1kg/cm2					
	2.00	D		2.20	18.13		Firm becoming stiff dark bluish grey sandy CLAY. Sand is fine. WITTERING FORMATION	2
	2.00	PP	PP=1kg/cm2					
	2.50	D					Firm becoming stiff dark bluish grey sandy CLAY. Sand is fine. WITTERING FORMATION	
	2.50	PP	PP=1.5kg/cm2					
	3.00	D		3.00	17.33		End of Pit at 3.00m	3
	3.00	PP	PP=1.5kg/cm2					

Remarks Groundwater not encountered. Land Drain at 0.6m bgl

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP02
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448696.35 - 116375.69
Level: 19.97

Date
08/07/2020

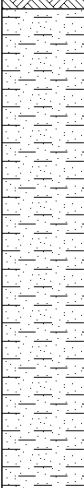
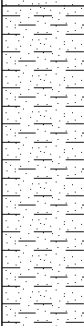
Location: Horton Heath

Dimensions (m): 1.50
0.45
Depth 3.00

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES	PP=0.5kg/cm2	0.30	19.67		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fine angular to rounded flint. TOPSOIL	1
	0.40	ES					Soft becoming firm light brown, orangish brown and bluish grey mottled sandy CLAY. Sand is fine. WITTERING FORMATION	
	0.50	D						
	0.50	PP						
	1.00	D	PP=0.5kg/cm2	1.90	18.07		Firm becoming stiff dark bluish grey sandy CLAY. Sand is fine. WITTERING FORMATION	2
	1.00	PP						
	1.50	D	PP=0.5kg/cm2	3.00	16.97		End of Pit at 3.00m	3
	1.50	PP						
	2.00	D	PP=1.5kg/cm2	3.00	16.97		End of Pit at 3.00m	4
	2.00	PP						
	2.50	D	PP=1.5kg/cm2	3.00	16.97		End of Pit at 3.00m	5
	2.50	PP						
	3.00	D	PP=1.5kg/cm2	3.00	16.97		End of Pit at 3.00m	5
	3.00	PP						

Remarks Seepage at 2.5m bgl

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP03

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448727.57 - 116335.39
Level: 21.24

Date
07/07/2020

Location: Horton Heath

Dimensions (m):

1.50

Depth
3.20

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES		0.30	20.94		Very stiff brown silty slightly gravelly desiccated CLAY with rare rootlets. Gravel is fmc angular to rounded flint. WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=4kg/cm2	0.60	20.64		Firm orangish brown, light brown, brown and greyish brown mottled very sandy CLAY. Sand is fine. WITTERING FORMATION	
	1.00	D						1
	1.00	PP	PP=1kg/cm2					
	1.50	D						
	1.50	PP	PP=0.5kg/cm2					
	2.00	D						2
	2.00	PP	PP=0.5kg/cm2					
	2.40	D		2.40	18.84		Purplish brown and orangish brown mottled very clayey fine SAND. WITTERING FORMATION	
	2.50	D						
	2.50	PP	PP=0kg/cm2	2.60	18.64		Firm dark grey sandy CLAY. Sand is fine. WITTERING FORMATION	
	3.00	D						3
	3.00	PP	PP=1kg/cm2	3.20	18.04			
							End of Pit at 3.20m	

Remarks Seepage at 3.0m.

Stability Localised spalling





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP04

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448787.90 - 116299.32
Level: 22.86

Date
07/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Depth
3.00

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES		0.30	22.56		Very stiff dark brown silty slightly gravelly desiccated CLAY. Gravel is fmc angular to rounded flint. WITTERING FORMATION	
	0.40	PP	PP=4kg/cm2	0.50	22.36		Soft becoming firm light brown, orangish brown, brown and greyish brown mottled very sandy CLAY. Sand is fine. WITTERING FORMATION	
	0.60	D						
	0.60	PP	PP=1kg/cm2					
	1.00	D						1
	1.00	PP	PP=1kg/cm2					
	1.50	D						
	1.50	PP	PP=0.5kg/cm2					
	2.00	D						2
	2.00	PP	PP=1kg/cm2					
	2.50	D						
	2.50	PP	PP=1kg/cm2					
				2.80	20.06			
								
	3.00	D					Firm dark grey sandy CLAY. Sand is fine. WITTERING FORMATION	3
	3.00	PP	PP=1kg/cm2	3.00	19.86		End of Pit at 3.00m	

Water Strikes	
Depth Strike	Rose to (mlog)

Remarks

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP05

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448974.11 - 116236.61
Level: 25.36

Date
08/07/2020

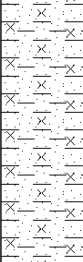
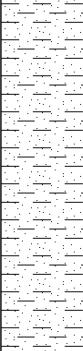
Location: Horton Heath

Dimensions (m): 1.50
0.45
Depth 3.50

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES	PP=4kg/cm2	0.30	25.06		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	1
	0.40	ES					Very stiff light brown and orangish brown mottled silty slightly sandy desiccated CLAY with rare rootlets. WITTERING FORMATION	
	0.50	D						
	0.50	PP						
	1.00	D	PP=3kg/cm2	1.20	24.16		Firm light brown, orangish brown and greyish brown mottled sandy CLAY. Sand is fine. WITTERING FORMATION	2
	1.00	PP						
	1.50	D	PP=1kg/cm2	2.80	22.56		Stiff becoming very stiff light purplish grey CLAY with rare roots. WITTERING FORMATION	3
	1.50	PP						
	2.00	D	PP=1kg/cm2	3.40	21.96		Firm becoming stiff dark purplish grey CLAY. WITTERING FORMATION	4
	2.00	PP						
	2.30	PP	PP=1kg/cm2	3.50	21.86		End of Pit at 3.50m	5
	2.50	D	PP=2kg/cm2					
	2.50	PP						
	2.70	PP	PP=2.5kg/cm2					
	3.00	D	PP=3kg/cm2	3.40	21.96		Firm becoming stiff dark purplish grey CLAY. WITTERING FORMATION	4
3.00	PP							
3.30	PP	PP=3kg/cm2						
3.50	PP	PP=2kg/cm2						

Remarks Spalling from 2.7m bgl to 3.0m bgl Collapsed to 2.0m with water to 1.5m. Backfilled for safety. No test in deep pit. Shallow 0.6m pit excavated and tested.

Stability Localised spalling





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP06

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448932.88 - 116165.18
Level: 24.53

Date
08/07/2020

Location: Horton Heath

Dimensions (m):

1.50

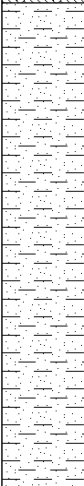
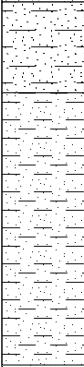
Depth
3.10

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES	PP=0.75kg/cm2	0.30	24.23		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fine angular to rounded flint. TOPSOIL	1
	0.40	ES					Soft becoming firm light brown, orangish brown and bluish grey mottled sandy CLAY. Sand is fine. WITTERING FORMATION	
	0.50	D						
	0.50	PP						
	1.00	D	PP=0.75kg/cm2	1.90	22.63		Bluish grey and dark greyish brown clayey fine SAND. WITTERING FORMATION	2
	1.00	PP						
	1.50	D	PP=1kg/cm2	2.20	22.33		Firm becoming stiff dark bluish grey very sandy CLAY medium interbedded with dark bluish grey fine SAND. WITTERING FORMATION	3
	1.50	PP						
	2.00	D	PP=0kg/cm2	3.10	21.43		End of Pit at 3.10m	4
	2.00	PP						
	2.30	PP	PP=2kg/cm2	5				
	2.50	D						
	2.50	PP	PP=2.5kg/cm2					
	3.00	D						
	3.00	PP						
								5

Remarks Seepage at 1.1m bgl

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP07

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448743.04 - 116469.76
Level: 22.10

Date
07/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Depth
3.00

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES						
	0.40	ES		0.30	21.80			
	0.50	D		0.50	21.60			
	0.50	PP	PP=4kg/cm2					
	1.00	D						1
	1.00	PP	PP=1.5kg/cm2					
	1.50	D						
	1.50	PP	PP=1.5kg/cm2					
	2.00	D						2
	2.00	PP	PP=1.5kg/cm2					
	2.50	D						
	2.50	PP	PP=1kg/cm2	2.60	19.50			
				2.90	19.20			
	3.00	D		3.00	19.10			3
	3.00	PP	PP=1kg/cm2				End of Pit at 3.00m	
								4
								5

Water Strikes	
Depth Strike	Rise to (m)

Remarks

Stability Sides stable



Trial Pit Log

TrialPit No

TP08

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448869.07 - 116400.49
Level: 21.73

Date
07/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Scale
1:25

Client: Eastleigh Borough Council

Depth
3.00

0.45

1.50

Logged RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES					Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded. TOPSOIL
	0.40	ES		0.30	21.43		Very stiff brown silty slightly gravelly desiccated CLAY with rare rootlets. Gravel is fmc angular to rounded flint. WITTERING FORMATION
	0.50	D					
	0.50	PP	PP=4kg/cm2	0.60	21.13		Firm becoming stiff light brown, orangish brown and greyish brown mottled slightly sandy CLAY. Sand is fine. WITTERING FORMATION
	0.70	PP	PP=1kg/cm2				
	1.00	D					
	1.00	PP	PP=2kg/cm2				
	1.50	D					
	1.50	PP	PP=2kg/cm2				
	2.00	D					
	2.00	PP	PP=1.5kg/cm2				
	2.50	D					
	2.50	PP	PP=1kg/cm2	2.55 2.60	19.18 19.13		Purplish brown and orangish brown mottled very clayey fine SAND. WITTERING FORMATION
							Firm dark grey sandy CLAY. Sand is fine. WITTERING FORMATION
	3.00	D		3.00	18.73		
	3.00	PP	PP=1kg/cm2				End of Pit at 3.00m

Water Strikes		Remarks
Depth Strike	Rose to (indeg)	
		Seepage at 2.8m and 3.0m.
		Stability
		Localised spalling



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP09

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448917.22 - 116380.47
Level: 22.10

Date
07/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Depth
3.00

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES		0.30	21.80		Very stiff brown silty slightly gravelly desiccated CLAY with rare rootlets. WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=4kg/cm2	0.60	21.50		Very stiff orangish brown, light brown and greyish brown mottled silty slightly sandy desiccated CLAY. WITTERING FORMATION	
	1.00	D						
	1.00	PP	PP=4kg/cm2	1.20	20.90		Stiff orangish brown, light brown and greyish brown mottled slightly sandy CLAY. WITTERING FORMATION	1
	1.50	D						
	1.50	PP	PP=2kg/cm2					
	2.00	D						
	2.00	PP	PP=2kg/cm2					2
	2.50	D		2.50	19.60			
	2.55	PP	PP=1kg/cm2	2.60	19.50		Firm orangish brown and purplish brown mottled silty sandy very closely fissured CLAY. Sand is fine. WITTERING FORMATION	
							Firm dark grey sandy very closely fissured CLAY. Sand is fine. WITTERING FORMATION	
	3.00	D		3.00	19.10		End of Pit at 3.00m	3
	3.00	PP	PP=1.5kg/cm2					

Remarks Very slow seepage at 3.0m

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP10
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449067.36 - 116333.18
Level: 23.16

Date
08/07/2020

Location: Horton Heath

Dimensions (m): 1.50
0.45
Depth 3.00

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.30	22.86		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded. TOPSOIL	
	0.40	ES					Soft orangish brown, light brown and greyish brown mottled slightly sandy CLAY. Sand is fine. WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=0.5kg/cm2					
	1.00	D		1.40	21.76		Soft light brown, orangish brown, bluish grey and dark grey mottled slightly sandy desiccated CLAY with occasional roots up to 20mm. Sand is fine. WITTERING FORMATION	1
	1.00	PP	PP=0.5kg/cm2					
	1.50	D						
	1.50	PP	PP=0.5kg/cm2					
	2.00	D		1.80	21.36		Dark bluish grey clayey fine SAND very closely interbedded with black fine SAND. WITTERING FORMATION	2
	2.00	PP	PP=1kg/cm2					
	2.50	D						
	2.50	PP	PP=1kg/cm2					
	3.00	D		3.00	20.16		End of Pit at 3.00m	3
	3.00	PP	PP=1kg/cm2					
								4
								5

Water Strikes		Remarks	
Depth Strike	Rise to (m bgl)		
		Seepage at 1.7m bgl, 2.0m bgl and 2.4m bgl Spalling on all sides from 1.7m to 3.0m. Pit fully collapsed to 1.2m before start of soakage testing. No test carried out. Backfilled for safety.	
		Stability	Localised spalling





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP11

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448626.06 - 116492.09
Level: 20.78

Date
08/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Depth
3.10

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.30	20.48		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES					Firm becoming stiff light brown, orangish brown and bluish grey mottled sandy CLAY. Sand is fine. WITTING FORMATION	
	0.50	D						
	0.50	PP	PP=1.5kg/cm2					
	1.00	D		1.80	18.98		Firm light purplish brown and orangish brown mottled slightly sandy CLAY with rare iron staining. WITTING FORMATION	
	1.00	PP	PP=1.5kg/cm2					
	1.20	ES						
	1.20	PP	PP=1.5kg/cm2					
	1.50	D		2.40	18.38		Firm light purplish brown, orangish brown and reddish brown silty slightly gravelly CLAY with frequent iron staining. Sand is fine. Gravel is fmc angular to subangular weak siltstone. WITTING FORMATION	
	2.00	D						
	2.00	PP	PP=1kg/cm2					
	2.50	D						
	2.50	PP	PP=1kg/cm2					
	3.00	D		3.10	17.68		Stiff becoming very stiff dark bluish grey sandy CLAY. Sand is fine. WITTING FORMATION	
	3.00	PP	PP=2.5kg/cm2					
							End of Pit at 3.10m	

Remarks Groundwater not encountered

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP12

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448707.03 - 116498.15
Level: 22.29

Date
08/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Depth
3.00

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.30	21.99		Grass over dark brown silty gravelly CLAY with frequent rootlets. Gravel is fine angular to rounded flint. TOPSOIL	
	0.40	ES					Very stiff light brown and orangish brown silty sandy desiccated CLAY. Sand is fine. WITTERING FORMATION	
	0.50	D						
	0.50 - 0.60	B						
	0.50	PP	PP=4kg/cm2					
	0.70	ES						
	1.00	D		1.20	21.09		Light brown, orangish brown and bluish grey mottled very clayey silty fine SAND. WITTERING FORMATION	1
	1.00	PP	PP=4kg/cm2					
	1.50	D						
	1.50 - 1.60	B						
	2.00	D						2
	2.50	D						
	2.75	D		2.70	19.59		Firm light purplish grey and orangish brown mottled silty sandy CLAY. Sand is fine. WITTERING FORMATION	
	2.75	PP	PP=1kg/cm2	2.80	19.49			
	3.00	D		3.00	19.29		Stiff becoming very stiff dark bluish grey silty sandy CLAY with rare silty silt partings and one siltstone nodule 40mm across. WITTERING FORMATION	3
	3.00	PP	PP=2.5kg/cm2					
							End of Pit at 3.00m	

Remarks Groundwater not encountered

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP13
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448732.95 - 116441.16
Level: 21.79

Date
07/07/2020

Location: Horton Heath

Dimensions (m): 1.50
0.45
Depth 3.10

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10 0.10	ES PP	PP=4kg/cm2	0.30	21.49		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL
	0.40 0.40 0.50 0.50	ES PP D PP	PP=4kg/cm2 PP=4kg/cm2	0.80	20.99		Very stiff light brown silty slightly sandy desiccated CLAY with rare rootlets. Sand is fine. WITTERING FORMATION
	1.00 1.00	D PP	PP=1.5kg/cm2				Firm orangish brown, light brown and greyish brown mottled slightly sandy CLAY. WITTERING FORMATION
	1.50 1.50	D PP	PP=1kg/cm2				Firm orangish brown, light brown and greyish brown mottled slightly sandy CLAY. WITTERING FORMATION
	2.00 2.00	D PP	PP=1kg/cm2	2.10	19.69		
	2.50 2.50	D PP	PP=0.5kg/cm2	2.70	19.09		
	3.00 3.00	D PP	PP=1kg/cm2	3.00 3.10	18.79 18.69		Orangish brown and purplish brown mottled very clayey fine SAND. WITTERING FORMATION
							Firm dark grey sandy CLAY. Sand is fine. WITTERING FORMATION
							End of Pit at 3.10m

Water Strikes	
Depth Strike	Rose to (m)

Remarks

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP14

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448671.16 - 116456.16
Level: 21.15

Date
08/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Depth
3.00

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.30	20.85		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES					Very stiff light brown and orangish brown silty sandy desiccated CLAY. Sand is fine. WITTERING FORMATION	
	0.50	D						
	0.50 - 0.60	B						
	0.50	PP	PP=4kg/cm2					
	0.70	ES						
	1.00	D						
	1.00	PP	PP=4kg/cm2	1.20	19.95		Light brown, orangish brown and light greyish brown mottled clayey silty fine SAND. WITTERING FORMATION	1
	1.50	D						
	1.50 - 1.60	B						
	2.00	D						2
	2.50	D		2.40	18.75		Firm dark bluish grey very sandy CLAY. Sand is fine. WITTERING FORMATION	
	2.50	PP	PP=1kg/cm2					
	3.00	D		3.00	18.15		End of Pit at 3.00m	3
	3.00	PP	PP=1kg/cm2					

Remarks Groundwater not encountered

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP15
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448780.44 - 116496.28
Level: 21.05

Date
06/07/2020

Location: Horton Heath

Dimensions (m): 1.50
0.45
Depth 3.10

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.20	20.84		Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc subangular to rounded flint.	
	0.40	ES					TOPSOIL	
	0.50	D					Very stiff light brown, orangish brown, purplish brown and light greyish brown mottled slightly silty desiccated CLAY.	
	0.50	PP	PP=2.5kg/cm2				WITTERING FORMATION	
	0.60	CBR						
	1.00	D						
	1.00	ES						
	1.00	PP	PP=3kg/cm2					1
	1.50	CBR						
	1.50	D						
	1.90	PP	PP=3kg/cm2	1.90	19.14		Firm light brown, orangish brown, purplish brown and light greyish brown mottled slightly silty desiccated CLAY.	2
	2.00	D					WITTERING FORMATION	
	2.10	PP	PP=1.5kg/cm2					
	2.50	D		2.40	18.64		Firm dark bluish grey sandy CLAY.	
	2.60	PP	PP=1.5kg/cm2				WITTERING FORMATION	
	3.00	D		3.10	17.94			3
							End of Pit at 3.10m	

Remarks Spalling between 2.4 and 3.1m

Stability Localised spalling





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP16
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448871.12 - 116467.91
Level: 20.76

Date
06/07/2020

Location: Horton Heath

Dimensions
(m):



Scale
1:25

Client: Eastleigh Borough Council

Depth
3.00

Logged
RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.30	20.46		Grass over dark brown silty gravelly CLAY with frequent rootlets. Gravel is fine angular to rounded flint. TOPSOIL	
	0.40	ES					Stiff becoming very stiff light brown and orangish brown silty sandy desiccated CLAY. Sand is fine. WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=3kg/cm2					
	0.90	ES		1.00	19.76		Firm orangish brown, light brown, brown and bluish grey mottled silty sandy CLAY. Sand is fine. WITTERING FORMATION	1
	1.10	D						
	1.20	PP	PP=1.2kg/cm2					
	1.60	D					Soft becoming firm light purplish grey and orangish brown mottled silty sandy CLAY. Sand is fine. WITTERING FORMATION	
	1.70	PP	PP=0.8kg/cm2	1.50	19.26			
	2.00	D						
	2.00	PP	PP=0.8kg/cm2					2
	2.50	D					Firm becoming stiff dark bluish grey silty sandy CLAY with rare silvery silt partings and one siltstone nodule 40mm across. WITTERING FORMATION	
	2.50	PP	PP=1.5kg/cm2	2.40	18.36			
	3.00	D						
	3.00	PP	PP=2.5kg/cm2					3
	3.00						End of Pit at 3.00m	
								4
								5

Remarks Spalling 2.5m to 3.0m bgl. Seepage at 2.5m

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP17

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448781.44 - 116448.02
Level: 21.42

Date
06/07/2020

Location: Horton Heath

Dimensions
(m):

Scale
1:25

Client: Eastleigh Borough Council

Depth
3.00

Logged
RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.20	21.22		Grass over dark brown silty gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES					Stiff light brown and orangish brown silty sandy desiccated CLAY. Sand is fine. WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=1.5kg/cm2					
	0.60	B						
	1.00	D						
	1.00	PP	PP=1.5kg/cm2					1
	1.50	B		1.40	20.02		Firm light purplish grey and orangish brown mottled silty sandy CLAY. Sand is fine. WITTERING FORMATION	
	1.50	D						
	2.00	D						
	2.00	PP	PP=1kg/cm2					2
	2.50	D						
	2.50	PP	PP=1.2kg/cm2					
	2.80	PP	PP=2kg/cm2	2.70	18.72		Stiff dark bluish grey silty sandy CLAY with rare silvery silt partings and one siltstone nodule 40mm across. WITTERING FORMATION	
	3.00	D		3.00	18.42		End of Pit at 3.00m	3
								4
								5

Depth Strike	Remarks
	Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP18
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448822.38 - 116407.27
Level: 21.50

Date
07/07/2020

Location: Horton Heath

Dimensions (m): 1.50
0.45
Depth 3.00

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to subrounded flint TOPSOIL	
	0.40	ES		0.30	21.20		Firm dark brown, brown and orangish brown slightly sandy desiccated CLAY. WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=1kg/cm2					
				0.70	20.80		Firm becoming stiff orangish brown, light brown, brown and light greyish brown mottled slightly sandy CLAY. Sand is fine. WITTERING FORMATION	1
	1.00	D						
	1.00	PP	PP=1.5kg/cm2					
	1.20	ES						
	1.50	D						
	1.50	PP	PP=2kg/cm2					
	2.00	D						2
	2.00	PP	PP=2kg/cm2					
	2.50	D						
	2.50	PP	PP=1.5kg/cm2	2.60	18.90			
	2.65	D						
	2.65	PP	PP=1kg/cm2	2.70	18.80		Firm orangish brown, purplish brown and light greyish brown mottled sandy CLAY. WITTERING FORMATION	
							Firm dark grey very sandy CLAY. WITTERING FORMATION	
	3.00	D		3.00	18.50		End of Pit at 3.00m	3
	3.00	PP	PP=1kg/cm2					

Remarks Slow seepage at 2.8m. Seepage at 2.8m Spalling 2.8m to 3.0m.

Stability Localised spalling





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP19

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448925.60 - 116406.51
Level: 21.65

Date
06/07/2020

Location: Horton Heath

Dimensions
(m):

Scale
1:25

Client: Eastleigh Borough Council

Depth
3.00

Logged
RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.20	21.45		Grass over dark brown silty gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES					Stiff becoming very stiff light brown and orangish brown silty sandy desiccated CLAY. Sand is fine. WITTERING FORMATION	
	0.40	PP	PP=3.5kg/cm2	0.50	21.15		Firm orangish brown, light brown, brown and bluish grey mottled silty sandy CLAY. Sand is fine. WITTERING FORMATION	
	0.60	D						
	0.70	PP	PP=1.2kg/cm2					
	0.80	ES						
	1.00	D						1
				1.20	20.45		Soft becoming firm light purplish grey and orangish brown mottled silty sandy CLAY. Sand is fine. WITTERING FORMATION	
	1.50	D						
								
	2.00	D						2
	2.00	PP	PP=0.5kg/cm2					
								
	2.50	D						
	2.70	PP	PP=3kg/cm2	2.60	19.05		Very stiff dark bluish grey silty sandy CLAY with rare silvery silt partings and one siltstone nodule 40mm across. WITTERING FORMATION	
	3.00	D		3.00	18.65			3
	3.00	PP	PP=2kg/cm2				End of Pit at 3.00m	
								4
								5

Remarks Spalling 2.9m to 3.0m bgl. Seepage at 2.9m

Stability



Trial Pit Log

TrialPit No

TP20

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448760.34 - 116376.57
Level: 21.13

Date
06/07/2020

Location: Horton Heath

Dimensions
(m):

Scale
1:25

Client: Eastleigh Borough Council

Depth
3.20

Logged
RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	ES	PP=3kg/cm2	0.30	20.82		Grass over dark brown silty gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	1	
	0.40	ES					Very stiff light brown and orangish brown silty sandy slightly gravelly desiccated CLAY. Sand is fine. Gravel is fmc subangular to rounded flint. WITTERING FORMATION		
	0.50	D							
	0.50	PP	PP=2kg/cm2	0.90	20.23		Firm becoming stiff orangish brown, light brown, brown and bluish grey mottled slightly sandy CLAY. Sand is fine. WITTERING FORMATION		
	1.00	D							
	1.00	PP							
	1.50	D	PP=1.5kg/cm2	1.80	19.32		Soft becoming firm orangish brown and purplish brown very sandy CLAY. Sand is fine. WITTERING FORMATION		2
	1.50	PP							
	2.00	D							
	2.00	PP	PP=0.5kg/cm2	2.10	19.02		Orangish brown and purplish brown clayey fine SAND. WITTERING FORMATION		3
2.50	D								
2.70	PP								
3.00	D	PP=3kg/cm2	2.60	18.52		Stiff becoming very stiff dark grey sandy CLAY. Sand is fine. WITTERING FORMATION	4		
			3.20	17.92		End of Pit at 3.20m		5	

Water Strikes		Remarks
Depth Strike	Rise to (mbsgl)	
		Spalling 2.3m to 3.2m bgl. Seepage at 2.3m and 3.2m bgl
		Stability



Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP21

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448842.51 - 116353.41
Level: 22.24

Date
07/07/2020

Location: Horton Heath

Dimensions (m): 1.50

Depth
3.00

0.45

Scale
1:25

Logged
RG

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over dark brown silty slightly gravelly CLAY with frequent rootlets. Gravel is fmc angular to subrounded flint. TOPSOIL	
	0.40	ES		0.30	21.94		Very stiff dark brown silty slightly gravelly dessicated CLAY. Gravel is fmc angular to rounded flint. WITTERING FORMATION	
	0.40	PP	PP=5kg/cm2					
	0.50	D		0.50	21.74		Stiff orangish brown, light brown, brown and greyish brown mottled slightly sandy CLAY. Sand is fine. WITTERING FORMATION	
	0.60	CBR						
	0.60	PP	PP=2kg/cm2					
	1.00	D						1
	1.00	PP	PP=2kg/cm2					
	1.50	CBR						
	1.50	D						
	1.50	PP	PP=2.5kg/cm2					
	2.00	D						2
	2.00	PP	PP=2kg/cm2					
	2.50	D						
	2.50	PP	PP=2kg/cm2					
				2.70	19.54			
							Firm dark grey sandy CLAY. Sand is fine. WITTERING FORMATION	
	3.00	D						3
	3.00	PP	PP=1kg/cm2	3.00	19.24		End of Pit at 3.00m	

Remarks Slow seepage at 2.9m. Spalling between 2.9m and 3.0m.

Stability Localised spalling





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP22
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448883.79 - 116347.25
Level: 22.50

Date
06/07/2020

Location: Horton Heath

Dimensions
(m):

Scale
1:25

Client: Eastleigh Borough Council

Depth
3.30

Logged
RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES						
	0.40	ES		0.30	22.20			
	0.50	D						
	0.50	PP	PP=3kg/cm2					
	0.70	ES						
	1.00	D		0.80	21.70			
	1.00	PP	PP=3kg/cm2					1
				1.20	21.30			
	1.50	D						
	1.50	PP	PP=1kg/cm2					
	2.00	D						2
	2.00	PP	PP=0.8kg/cm2					
	2.50	D						
	2.50	PP	PP=1.5kg/cm2					
				2.80	19.70			
	3.00	D						3
	3.00	PP	PP=1.5kg/cm2	3.10	19.40			
	3.20	PP	PP=2kg/cm2	3.30	19.20			
							End of Pit at 3.30m	
								4
								5

Depth Strike	Water Strikes	Remarks
	Rosen to (m/gg)	
		Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP23

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448816.28 - 116325.90
Level: 22.59

Date
06/07/2020

Location: Horton Heath

Dimensions
(m):

Scale
1:25

Client: Eastleigh Borough Council

Depth
3.20

Logged
RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.20	22.39		Grass over dark brown silty gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES					Very stiff light brown and orangish brown silty sandy slightly gravelly desiccated CLAY. Sand is fine. Gravel is fmc subangular to rounded flint.	
	0.50	D					WITTERING FORMATION	
	0.50	PP	PP=3kg/cm2					
	1.00	D						
	1.00	ES						
	1.00	PP	PP=3kg/cm2	1.20	21.39		Firm becoming stiff orangish brown, light brown, brown and bluish grey mottled slightly sandy CLAY. Sand is fine. WITTERING FORMATION	1
	1.50	D						
	1.50	PP	PP=1.5kg/cm2					
	2.00	D						
	2.00	PP	PP=1.5kg/cm2					2
	2.50	D						
	2.50	PP	PP=1.5kg/cm2					
	2.75	PP	PP=1.5kg/cm2	2.70	19.89		Firm purplish brown sandy desiccated CLAY. Sand is fine. WITTERING FORMATION	
	3.00	D		2.80	19.79		Firm dark grey sandy CLAY. Sand is fine. WITTERING FORMATION	3
	3.00	PP	PP=1.5kg/cm2					
	3.20			3.20	19.39		End of Pit at 3.20m	

Remarks Spalling 3.1m to 3.2m bgl. Seepage at 3.2m

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP24

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448849.00 - 116285.33
Level: 23.17

Date
06/07/2020

Location: Horton Heath

Dimensions
(m):

Scale
1:25

Client: Eastleigh Borough Council

Depth
3.10

Logged
RG

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Grass over dark brown silty gravelly CLAY with frequent rootlets. Gravel is fmc angular to rounded flint. TOPSOIL	
	0.40	ES		0.30	22.87		Stiff becoming very stiff light brown and orangish brown silty sandy slightly gravelly desiccated CLAY. Sand is fine. Gravel is fmc subangular to rounded flint. WITTERING FORMATION	
	0.50	PP	PP=3kg/cm2					
	0.60	B						
				0.80	22.37		Firm orangish brown, light brown, brown and bluish grey mottled slightly sandy CLAY. Sand is fine. WITTERING FORMATION	1
	1.00	D						
	1.00	PP	PP=1kg/cm2					
	1.50	B						
	1.50	D						
	1.50	PP	PP=1kg/cm2					
	2.00	D						2
	2.00	PP	PP=1kg/cm2					
	2.50	D						
	2.50	PP	PP=1kg/cm2					
				2.70	20.47		Firm purplish brown sandy desiccated CLAY. Sand is fine. WITTERING FORMATION	
	2.80	PP	PP=1kg/cm2	2.90	20.27		Stiff dark grey sandy CLAY. Sand is fine. WITTERING FORMATION	3
	3.00	D						
	3.00	PP	PP=2kg/cm2	3.10	20.07		End of Pit at 3.10m	

Remarks Seepage at 3.1m

Stability





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP25
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448973.60 - 116398.49
Level: 21.86

Date
10/07/2020

Location: Horton Heath

Dimensions (m): 1.90

Depth
3.10

0.50

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15 - 1.15	ES		0.20	21.66		Grass over light brown slightly sandy CLAY possibly desiccated with frequent rootlets. TOPSOIL	
				0.40	21.46		Stiff light brown slightly sandy CLAY possibly desiccated with occasional rootlets. WITTERING FORMATION	
	0.50 0.50 0.60	D PP B	PP=0.75kg/cm2				Firm light grey with orangish staining CLAY possibly desiccated reducing with depth occasional rootlets. WITTERING FORMATION	
	1.00 1.00	D PP	PP=0.5kg/cm2	1.20	20.66		Orangish fine clayey SAND. WITTERING FORMATION	1
	1.50	D					Firm to stiff dark blueish grey sandy CLAY. Sand is fine grained. WITTERING FORMATION	
	2.00	D					Firm light grey sandy CLAY. WITTERING FORMATION	2
	2.50	D		2.60	19.26		Firm light grey sandy CLAY. WITTERING FORMATION	
	2.80	PP	PP=1kg/cm2	2.90	18.96		Firm light grey sandy CLAY. WITTERING FORMATION	
	3.00 3.00	D PP	PP=1kg/cm2	3.10	18.76		Firm light grey sandy CLAY. WITTERING FORMATION	3
							End of Pit at 3.10m	

Remarks Groundwater not encountered

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP26
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449038.24 - 116400.45
Level: 21.67

Date
10/07/2020

Location: Horton Heath

Dimensions (m):
2.00
0.50
Depth 3.30

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.20	21.47		Grass over light brown slightly sandy CLAY possibly desiccated with frequent rootlets. TOPSOIL	
	0.30	ES					Stiff light brown slightly sandy CLAY possibly desiccated with occasional rootlets. WITTERING FORMATION	
	0.50	D		0.50	21.17			
	0.70	PP	PP=0.5kg/cm2				Firm light grey orangish CLAY. WITTERING FORMATION	
	0.90	ES						
	1.00	D						
	1.00	PP	PP=0.5kg/cm2					1
	1.50	D		1.50	20.17			
	1.50	PP	PP=0.5kg/cm2				Firm to stiff dark blueish grey sandy CLAY. Sand is fine. WITTERING FORMATION	
	2.00	D						2
	2.00	PP	PP=0.25kg/cm2					
	2.50	D						
	3.00	D						3
				3.30	18.37		End of Pit at 3.30m	
								4
								5

Remarks Groundwater seepage in base of pit

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP27

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449100.56 - 116360.89
Level: 23.85

Date
10/07/2020

Location: Horton Heath

Dimensions (m): 1.80
Depth 3.00

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.20	23.65		Grass over light brown slightly sandy CLAY possibly desiccated with frequent rootlets. TOPSOIL	
	0.30	ES					Stiff light brown slightly sandy CLAY possibly desiccated with occasional rootlets and chalk fine to medium sub angular to sub rounded of chalk and flint WITTERING FORMATION	
	0.50	D		0.50	23.35		Soft to firm light orangish brown slightly wet CLAY. WITTERING FORMATION	
	1.00	D		1.00	22.85		Soft to firm orangish brown very wet slightly sandy CLAY. Sand is fine to medium WITTERING FORMATION <i>Land drain 60mm dia.</i>	1
	1.20	ES						
	1.50	D		1.50	22.35		Blueish grey clayey fine SAND with bands of firm blueish grey CLAY. WITTERING FORMATION	
	2.00	D		2.20	21.65		Firm blueish grey CLAY. WITTERING FORMATION	2
	2.50	D						
	3.00	D		3.00	20.85		End of Pit at 3.00m	3
	3.00	PP	PP=0.75kg/cm2					

Remarks Groundwater seepage in base of pit. Side wall collapse at 1.5m bgl.

Stability Sides unstable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP28
Sheet 1 of 1

Project Name: One Horton Heath
Project No. GE18771
Co-ords: 448963.18 - 116340.33
Level: 23.05
Date: 10/07/2020

Location: Horton Heath
Dimensions (m): 2.00
Depth 3.10
Scale 1:25
Logged TM

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.15	ES		0.20	22.85		Grass over dark brown silty CLAY with frequent roots and rootlets TOPSOIL
	0.50 0.50 0.60	D PP B	PP=2.5kg/cm2	0.50	22.55		Very stiff possibly desiccated orange and grey mottled CLAY with occasional rootlets WITTERING FORMATION
	0.80	ES					
	1.00 1.00	D PP	PP=2kg/cm2				
	1.50	D		1.50	21.55		Firm blueish grey sandy CLAY. Sand is fine. WITTERING FORMATION
				1.70	21.35		Firm blueish grey CLAY WITTERING FORMATION
	2.00	D					
	2.50	D					
	2.90 3.00 3.00	PP D PP	PP=1kg/cm2 PP=1.5kg/cm2	3.10	19.95		End of Pit at 3.10m

Depth Strike	Remarks	Groundwater seepage in base of pit
Stability	Sides stable	





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP29
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449100.70 - 116298.23
Level: 24.33

Date
10/07/2020

Location: Horton Heath

Dimensions (m):
2.00
0.50
Depth 3.00

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15 - 0.30	ES	PP=0kg/cm2	0.20	24.13		Grass over light brown slightly sandy CLAY probably dedicated with frequent rootlets. Sand is fine. TOPSOIL	
	0.50	D		0.50	23.83		Light brown slightly sandy CLAY possibly desiccated with occasional rootlets. Sand is fine. WITTERING FORMATION	
	0.50	PP					Soft to firm light orangish brown wet sticky CLAY. WITTERING FORMATION	
	1.00	D					Bluish light grey slightly clayey fine SAND. WITTERING FORMATION	1
	1.50	D		1.50	22.83		Dark bluish grey fine to medium very wet SAND. WITTERING FORMATION	
	2.00	D					End of Pit at 3.00m	2
	2.50	D		2.40	21.93			
	3.00	D		3.00	21.33			3
								4
								5

Remarks Groundwater not encountered. Side wall collapse at 1.6m bgl

Stability Sides unstable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP30

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449022.37 - 116331.82
Level: 23.18

Date
10/07/2020

Location: Horton Heath

Dimensions (m): 2.10
0.50
Depth 3.00

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.20	22.98		Grass over light brown slightly sandy CLAY possibly desiccated with frequent rootlets. TOPSOIL	
	0.30	ES					Firm to stiff light brown slightly sandy CLAY possibly desiccated with occasional rootlets with occasional flint and chalk gravel. Gravel is fine to medium and sub angular to sub rounded.	
	0.50	D		0.50	22.68		WITTERING FORMATION	
	0.50	PP	PP=1kg/cm2	0.60	22.58		Firm grey with orangish staining CLAY with occasional rootlets and rare chalk gravel. Chalk gravel is fine.	
							WITTERING FORMATION	
	1.00	D		1.00	22.18		Soft to firm grey with orangish staining slightly wet CLAY with occasional rootlets and rare chalk gravel. Chalk gravel is fine.	1
							WITTERING FORMATION	
	1.50	D					Dark orangish reddish very fine silty SAND.	
							WITTERING FORMATION	
				1.80	21.38		Bluish grey very wet fine clayey SAND.	2
							WITTERING FORMATION	
	2.00	D						
				2.30	20.88		Firm dark greyish CLAY	
							WITTERING FORMATION	
	2.50	D						
	2.80	PP	PP=0.75kg/cm2					
	3.00	D		3.00	20.18			3
	3.00	PP	PP=1.25kg/cm2				End of Pit at 3.00m	
								4
								5

Remarks Water seepage at 1.5 m bgl. Side wall collapse at 1m bgl.

Stability Sides unstable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP31

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449021.79 - 116291.64
Level: 23.93

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 2.00

Depth
3.10

0.50

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.20	23.73		Grass over brown sandy SILT with frequent rootlets. Sand is fine. TOPSOIL	
	0.30	ES					Stiff light brown sandy CLAY with occasional rootlets. Sand is fine. WITTERING FORMATION	
	0.50	D		0.50	23.43		Firm to stiff light grey CLAY with orangish staining. WITTERING FORMATION	
	0.50	PP	PP=0.75kg/cm2					
	0.70	ES						
	1.00	D						1
	1.00	PP	PP=3.1kg/cm2					
	1.50	D						
	1.50	PP	PP=1.25kg/cm2					
	2.00	D						2
	2.00	PP	PP=1.5kg/cm2					
	2.50	D		2.50	21.43		Firm to stiff orangish interbedded CLAY with purplish grey sandy CLAY. Sand is fine. WITTERING FORMATION	
	2.50	PP	PP=0.75kg/cm2	2.70	21.23		Firm dark grey slightly sandy CLAY. Sand is fine. WITTERING FORMATION	
	3.00	D		3.10	20.83		End of Pit at 3.10m	3
								4
								5

Remarks Groundwater seepage in base of pit

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP32

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448921.29 - 116251.31
Level: 24.04

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 2.10

Depth
3.00

0.45

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.10	23.94		Grass over light brown sandy CLAY possibly desiccated with frequent rootlets. Sand is fine.	
				0.30	23.74		TOPSOIL	
	0.40	ES					Stiff light brown sandy gravelly CLAY possibly desiccated with occasional rootlets. Sand is fine. Gravel is coarse.	
	0.50	D					WITTERING FORMATION	
							Stiff light brown sandy CLAY with orangish red staining and occasional rootlets. Sand is fine.	
							WITTERING FORMATION	
	0.90	PP	PP=2kg/cm2					1
	1.00	D						
	1.50	D						
	1.90	PP	PP=2.5kg/cm2	2.00	22.04		Firm light reddish grey CLAY.	2
	2.00	D					WITTERING FORMATION	
	2.20	PP	PP=0.5kg/cm2					
	2.40	PP	PP=0.5kg/cm2					
	2.50	D						
	2.60	PP	PP=0.5kg/cm2	2.60	21.44		Firm orangish dark brown CLAY with occasional charcoal.	
	2.70	PP	PP=0.5kg/cm2				WITTERING FORMATION	
				2.80	21.24		Firm to stiff very dark grey CLAY.	
							WITTERING FORMATION	
	3.00	D		3.00	21.04			3
	3.00	PP	PP=1.5kg/cm2				End of Pit at 3.00m	

Remarks Groundwater seepage in base of pit. Side wall collapse at 2.6m bgl.

Stability Sides unstable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP33

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449043.19 - 116234.00
Level: 25.86

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 1.90

Depth
3.10

0.55

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.20	25.66		Grass over light brown sandy CLAY possibly desiccated with frequent rootlets. Sand is fine. TOPSOIL	
	0.30	ES					Stiff light brown CLAY with occasional rootlets. WITTERING FORMATION	
	0.50	D						
	0.50	PP	PP=2.75kg/cm2					
	1.00	D		1.00	24.86		Firm to stiff light brown orangish CLAY. WITTERING FORMATION	1
	1.00	PP	PP=1.5kg/cm2					
	1.50	D						
	2.00	D						2
	2.20	PP	PP=1kg/cm2					
	2.50	D						
	2.80	PP	PP=2kg/cm2	2.70	23.16		Firm dark brown and black unconsolidated CLAY. WITTERING FORMATION	
	3.00	D		2.80	23.06		Stiff dark grey CLAY. WITTERING FORMATION	3
	3.10	PP	PP=2.5kg/cm2	3.10	22.76		End of Pit at 3.10m	

Remarks Groundwater seepage in base of pit

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP34
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448860.46 - 116225.74
Level: 23.71

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 1.90

Depth
3.00

0.55

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.13	ES		0.20	23.50		Grass over light brown sandy CLAY possibly desiccated with frequent rootlets. Sand is fine. TOPSOIL
	0.30	ES					Stiff light brown sandy CLAY possibly desiccated with occasional rootlets. Sand is fine.
	0.40	PP	PP=1kg/cm2	0.40	23.30		WITTERING FORMATION
	0.50	D					Firm to stiff very light grey CLAY with red staining with occasional flint gravel.
	0.60	B					WITTERING FORMATION
	1.00	D					
	1.00	PP	PP=1.5kg/cm2				
	1.50	D					
	2.00	D					
	2.10	PP	PP=1kg/cm2				
	2.40			2.40	21.30		
	2.50	D					Firm light orangish brown CLAY.
	2.60	PP	PP=0.5kg/cm2				WITTERING FORMATION
	2.80			2.80	20.90		
	2.90	PP	PP=2kg/cm2				Stiff very dark grey CLAY.
	3.00	D		3.00	20.70		WITTERING FORMATION
	3.00	PP	PP=2.5kg/cm2				
							End of Pit at 3.00m

Remarks Water seepage at 2.8m bgl

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP35
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448891.24 - 116187.93
Level: 24.14

Date
09/07/2020

Location: Horton Heath

Dimensions (m):
2.00
0.50
Depth 3.40

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20	23.94		Brown very sandy CLAY possibly desiccated with frequent rootlets. Sand is fine. Topped with turf. TOPSOIL	
	0.40	PP	PP=3.75kg/cm2	0.40	23.74		Stiff brown very sandy CLAY possibly desiccated with occasional rootlets. Sand is fine. WITTERING FORMATION	
	0.50	D					Stiff orangish brown sandy CLAY with occasional rootlets Sand if fine to medium. WITTERING FORMATION	
	0.60	ES					Firm orangish slightly sandy CLAY. Sand is fine. WITTERING FORMATION	1
	0.90	ES		1.00	23.14			
	0.90	PP	PP=2.75kg/cm2					
	1.00	D						
	1.10	PP	PP=0.5kg/cm2					
	1.15	ES						
	1.50	D						
	1.50	PP	PP=0.5kg/cm2					
	1.90	PP	PP=0.5kg/cm2					2
	2.00	D						
	2.10	PP	PP=0.5kg/cm2					
	2.40	PP	PP=1kg/cm2					
	2.50	D						
	2.80	PP	PP=0.5kg/cm2					
	3.00	D		3.00	21.14		Stiff light grey CLAY. WITTERING FORMATION	3
	3.00	PP	PP=1kg/cm2					
	3.20	PP	PP=1.5kg/cm2					
	3.40	PP	PP=2kg/cm2	3.40	20.74		End of Pit at 3.40m	4
								5

Depth Strike Water Strikes
Remarks Water seepage at 2.3m bgl

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP36
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448997.28 - 116200.02
Level: 26.37

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 2.10

Depth
2.90

0.50

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.20	26.17		Grass over light brown sandy CLAY possibly desiccated with frequent rootlets. Sand is fine. TOPSOIL	
	0.40	ES					Light brown sandy CLAY possibly desiccated with occasional rootlets. Sand is fine. WITTERING FORMATION	
	0.50	D		0.50	25.87		Orange medium SAND. WITTERING FORMATION	
				0.80	25.57		Orangish yellowish medium SAND. WITTERING FORMATION	1
	1.00	D						
	1.50	D						
	1.80	PP	PP=1kg/cm2	1.70	24.67		Firm light grey sandy CLAY. Sand is medium. WITTERING FORMATION	2
	2.00	D						
				2.20	24.17		Stiff dark grey CLAY. WITTERING FORMATION	
	2.40	PP	PP=1.25kg/cm2					
	2.50	D						
	2.60	PP	PP=1.5kg/cm2					
	2.90	D		2.90	23.47		End of Pit at 2.90m	3
								4
								5

Remarks Running Sand at 1.6m bgl. Side wall collapse due to the running sand at 1.6m bgl

Stability Sides unstable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP37

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448981.46 - 116131.67
Level: 26.63

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 2.00
Depth 3.30

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES					Grass over dark brown possibly desiccated sandy CLAY with frequent rootlets. Sand is fine to medium.	
	0.25	PP	PP=4.2kg/cm2	0.20	26.43		TOPSOIL	
	0.30	ES					Very stiff light brown possibly desiccated slightly sandy CLAY with occasional rootlets. Sand is fine to medium.	
	0.50	D					WITTERING FORMATION	
	0.50	PP	PP=3.5kg/cm2	0.50	26.13		Stiff orange and grey slightly sandy CLAY. Sand is fine to medium.	
							WITTERING FORMATION	
	0.90	ES					Firm orange and grey very sandy CLAY. Sand is medium.	1
	0.90	PP	PP=1.6kg/cm2	0.90	25.73		WITTERING FORMATION	
	1.00	D						
	1.50	D						
	1.50	PP	PP=1kg/cm2	1.60	25.03		Band of grey medium-grained SAND.	
							WITTERING FORMATION	
	2.00	D					Dark grey medium to fine SAND interbedded with stiff grey bluish CLAY.	2
	2.00	PP	PP=2.2kg/cm2	1.75	24.88		WITTERING FORMATION	
	2.50	D						
				2.80	23.83		Stiff bluish grey sandy CLAY	3
							WITTERING FORMATION	
	3.00	D						
				3.30	23.33		End of Pit at 3.30m	
	3.50	PP	PP=1.6kg/cm2					4
								5

Remarks Running sand @ 2.1m bgl. Collapse at 1.5m bgl

Stability Sides unstable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP38
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448914.02 - 116135.22
Level: 24.39

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 1.90

Depth
2.90

0.45

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	ES		0.20	24.19		Dark brown sandy CLAY possibly desiccated with frequent rootlets. Sand is fine. TOPSOIL	
	0.30	PP	PP=2.5kg/cm2				Stiff dark brown slightly sandy CLAY with occasional rootlets. Sand is Fine.	
	0.40	PP	PP=1.3kg/cm2	0.40	23.99		WITTERING FORMATION	
	0.50	D					Firm yellowish grey sandy CLAY. Sand is fine to medium.	
	0.60	ES					WITTERING FORMATION	
	1.00	D						1
	1.00	PP	PP=1kg/cm2					
	1.20	ES						
	1.30	PP	PP=0.75kg/cm2					
	1.50	D						
	1.70	PP	PP=0.5kg/cm2					
	2.00	D						2
	2.10	PP	PP=1kg/cm2	2.10	22.29		Firm bluish grey slightly sandy CLAY. Sand is Fine.	
	2.20	PP	PP=1.2kg/cm2				WITTERING FORMATION	
	2.50	PP	PP=0.75kg/cm2					
	2.90	D		2.90	21.49		End of Pit at 2.90m	3
								4
								5

Remarks Water seepage in base of pit

Stability Sides stable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No
TP39
Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448977.63 - 116102.70
Level: 27.39

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 1.90
0.50
Depth 2.50

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES					Light greyish brown possibly desiccated sandy CLAY with frequent rootlets. SAND is fine to medium-grained. Topped with turf. TOPSOIL	
	0.40	ES		0.30	27.09		Very stiff light grey with orangish staining possibly desiccated sandy CLAY with occasional rootlets. Sand is fine-grained. WITTERING FORMATION	
	0.40	PP	PP=4.5kg/cm2					
	0.50	D						
	0.80	PP	PP=1.5kg/cm2	0.70	26.69		Stiff orangish greyish slightly sandy CLAY. Sand is fine to medium. WITTERING FORMATION	
	1.00	D		1.10	26.29		Firm to stiff orange and grey sandy CLAY. Sand is medium. WITTERING FORMATION	1
	1.50	D						
				1.80	25.59		Dark grey brownish slightly clayey medium SAND. WITTERING FORMATION	2
	2.00	D						
	2.20	PP	PP=2kg/cm2	2.20	25.19		Stiff grey bluish slightly sandy CLAY. Sand is fine. WITTERING FORMATION	
	2.50	D		2.50	24.89		End of Pit at 2.50m	3
								4
								5

Remarks Ground water seepage @ 2.2m bgl. Side wall collapse at 1.5m bgl/

Stability Sides unstable





Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL

Geo-Environmental www.gesl.net

Trial Pit Log

Trial Pit No

TP40

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448943.06 - 116088.26
Level: 26.84

Date
09/07/2020

Location: Horton Heath

Dimensions (m): 1.70

Depth
2.90

0.50

Scale
1:25

Logged
TM

Client: Eastleigh Borough Council

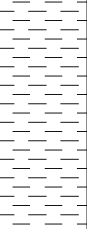
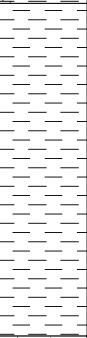
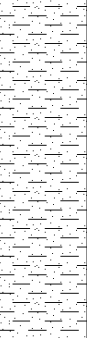
Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.10	ES		0.20	26.64		Grass over topsoil dark brown /reddish sandy CLAY with frequent roots. TOPSOIL	
	0.30	ES					Stiff light orangish and grey sandy CLAY with occasional rootlets. Sand is medium. WITTERING FORMATION	
	0.50 0.50	D PP	PP=2kg/cm2					
	0.80	ES		0.75	26.09		Stiff orange and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	1
	1.00	D						
				1.30	25.54		Firm light grey very sandy CLAY/ clayey SAND. Sand is fine WITTERING FORMATION	
	1.50	D						
	2.00 2.00	D PP	PP=1.8kg/cm2	2.00	24.84		Stiff light grey blueish CLAY. WITTERING FORMATION	2
	2.50 2.50	D PP	PP=1.5kg/cm2	2.90	23.94			
	3.00	D					End of Pit at 2.90m	3
								4
								5

Remarks Groundwater seepage at 1.5m bgl and running sand

Stability Sides unstable below water table



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS01 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448632E - 116529N		Hole Type WLS	
Location: Horton Heath				Level: 21.38		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 08/07/2020		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	4.5kg/cm2	0.20	21.18		Grass over dark brown silty CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL	1 2 3 4 5
		0.25	PP						
		0.40	ES	4.5kg/cm2				Very stiff possibly desiccated orange and grey mottled CLAY with frequent rootlets WITTERING FORMATION	
		0.50	D						
		0.50	PP						
		0.75	PP	4.5kg/cm2	1.20	20.18			
		1.00	D						
		1.00	PP	4.1kg/cm2 N=13 (2,2/3,3,3,4)					
		1.00							
		1.50	D						
		1.50	PP	3.5kg/cm2	2.30	19.08		Stiff to very stiff orange and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	
		2.00	D						
		2.00	PP	3.2kg/cm2 N=14 (2,2/2,4,4,4)					
		2.00							
		2.50	D						
2.50	PP	4.0kg/cm2	3.40	17.98		Very stiff light grey and orange brown mottled CLAY (weakly cemented MUDSTONE) WITTERING FORMATION			
3.00	D								
3.00	PP	3.5kg/cm2 N=16 (2,3/4,4,4,4)							
3.00									
3.50	D								
3.50	PP	3.0kg/cm2				Stiff dark grey and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION			
4.00	D								
4.00	PP	2.5kg/cm2 N=17 (3,2/4,4,4,5)							
4.00									
4.50	D								
4.50	PP	2.8kg/cm2	5.00	16.38					
5.00	D								
5.00	PP	3.5kg/cm2			Continued on Next Sheet				

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Groundwater seepage at 4.5m bgl





www.gesl.net

Borehole Log

Borehole No.

WS01

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448632E - 116529N

Hole Type
WLS

Location: Horton Heath

Level:	21.38
--------	-------

Scale
1:25

Client: Eastleigh Borough Council

Dates: 08/07/2020

Logged By
FG

[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS02 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448653E - 116382N		Hole Type WLS	
Location: Horton Heath				Level: 19.54		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 08/07/2020		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	19.34	 Grass over dark brown silty CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL		
		0.25	PP	4.5kg/cm2					
					0.40	19.14	 Very stiff possibly desiccated orange and grey mottled CLAY with frequent rootlets WITTERING FORMATION		
		0.50	D						
		0.50	PP	3.1kg/cm2			 Stiff orange and grey mottled CLAY WITTERING FORMATION		
		0.60	ES						
		0.75	PP	2.3kg/cm2					
					1.10	18.44	 Firm to stiff orange and grey mottled sandy CLAY. Sand is fine WITTERING FORMATION		
		1.00	D						
		1.00	PP	1.8kg/cm2 N=5 (1,0/1,1,2,1)					
					1.80	17.74	 Firm to stiff orange brown and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION		
		1.50	D						
		1.50	PP	2.0kg/cm2					
					2.10	17.44	 Firm orange brown slightly sandy CLAY WITTERING FORMATION		
		2.00	D						
		2.00	PP	1.8kg/cm2 N=10 (1,2/2,3,3,2)					
					2.30	17.24	 Stiff light grey and dark grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION		
		2.50	D						
		2.50	PP	3.5kg/cm2					
					3.30	16.24	 Stiff grey laminated CLAY WITTERING FORMATION		
	3.00	D							
	3.00	PP	2.5kg/cm2 N=13 (2,3/2,4,4,3)						
				3.50		 Stiff to very stiff dark grey and light grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION			
	3.50	D							
	3.50	PP	3.5kg/cm2						
				4.00		 Stiff to very stiff dark grey and light grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION			
	4.00	D							
	4.00	PP	3.5kg/cm2 N=13 (1,3/2,3,4,4)						
				4.50		 Stiff to very stiff dark grey and light grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION			
	4.50	D							
	4.50	PP	3.2kg/cm2						
				5.00	14.54	 Stiff to very stiff dark grey and light grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION			
	5.00	D							
	5.00	PP	3.9kg/cm2						
Continued on Next Sheet									

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater seepage at 1.5m bgl and 4.2m bgl 3	



www.gesl.net

Borehole Log

Borehole No.

WS02

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448653E - 116382N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Horton Heath

Level:	19.54
--------	-------

Scale
1:25

Client: Eastleigh Borough Council

Dates: 08/07/2020

Logged By
FG

[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS03 Sheet 1 of 1	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448773E - 116405N		Hole Type WLS	
Location: Horton Heath				Level: 21.35		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 07/07/2020		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		0.20	21.15		Grass over dark brown silty CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL	1 2 3 4 5	
		0.25	PP	4.5kg/cm2						Very stiff possibly desiccated orange and grey mottled CLAY with frequent rootlets WITTERING FORMATION
		0.40	ES							
		0.50	D		0.80	20.55				
		0.50	PP	4.0kg/cm2						
		0.70	ES							
		0.75	PP	4.0kg/cm2						
		1.00	D		1.20	20.15		Firm to stiff orange and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION		
		1.00	PP	1.8kg/cm2 N=7 (0,1/1,2,2,2)						
		1.00								
		1.50	D		1.75	19.60		Firm orange and grey mottled sandy CLAY. Sand is fine WITTERING FORMATION		
		1.50	PP	1.1kg/cm2						
		2.00	D		2.20	19.15		Stiff orange and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION		
		2.00	PP	3.0kg/cm2 N=11 (1,2/2,3,2,4)						
		2.00								
		2.50	D		3.60	17.75		Firm to stiff light grey and dark grey mottled sandy CLAY. Sand is fine WITTERING FORMATION		
		2.50	PP	2.0kg/cm2						
3.00	D		3.60	17.75						
3.00	PP	1.8kg/cm2 N=13 (2,2/2,3,5,3)								
3.00										
3.50	D		3.60	17.75		Stiff to very stiff dark grey slightly sandy CLAY. Sand is fine WITTERING FORMATION				
3.50	PP	1.6kg/cm2								
4.00	D		3.60	17.75						
4.00	PP	3.4kg/cm2 N=13 (1,2/3,3,3,4)								
4.00										
4.50	PP	2.4kg/cm2								
5.00	PP	3.5kg/cm2 N=17 (2,3/3,4,5,5)	5.00	16.35			End of Borehole at 5.00m			

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater seepage in sandy layers between 3m and 5m bgl	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS04 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448867E - 116438N		Hole Type WLS	
Location: Horton Heath		Level: 21.22		Scale 1:25		Logged By FG	
Client: Eastleigh Borough Council		Dates: 06/07/2020					

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	ES		0.15	21.07		Grass over dark brown silty CLAY with frequent roots and rootlets TOPSOIL	1 2 3 4 5
		0.25	PP	3.5kg/cm2	0.35	20.87		Very stiff possibly desiccated orange and grey mottled CLAY with frequent rootlets and occasional flint gravel WITTERING FORMATION	
		0.30	ES						
		0.50	D						
		0.50	PP	1.8kg/cm2	0.75	20.12		Firm orange and grey mottled sandy CLAY with occasional flint gravel. Sand is fine WITTERING FORMATION	
		0.75	PP	1.4kg/cm2					
		0.90	ES						
		1.00	D		1.10	19.67		Firm to stiff orange and grey slightly sandy CLAY. Sand is fine WITTERING FORMATION	
		1.00	PP	1.5kg/cm2 N=10 (1,2/2,2,3,3)					
		1.00							
		1.50	D		1.55	19.12		Orange slightly clayey fine to medium SAND WITTERING FORMATION	
		1.50	PP	1.5kg/cm2					
		2.00	D						
		2.00		N=12 (1,2/2,3,3,4)	2.10	17.82		Firm grey and brown mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	
		2.50	D						
2.50	PP	1.5kg/cm2							
3.00	D		3.40	16.72		Firm to stiff light grey and dark grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION			
3.00	PP	1.4kg/cm2 N=12 (2,2/3,3,2,4)							
3.00									
3.50	D		4.50	16.22		Stiff dark grey slightly sandy CLAY. Sand is medium WITTERING FORMATION			
4.00	D								
4.00	PP	1.4kg/cm2 N=17 (2,4/3,4,4,6)							
4.50	D		5.00	16.22					
5.00	D								
		5.00	PP	2.8kg/cm2					

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater seepage between 4m and 4.5m bgl	



www.gesl.net

Borehole Log

WS04

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448867E - 116438N

Hole Type	WLS
-----------	-----

Location: Horton Heath

Level: 21.22

Scale
1:25

Client: Eastleigh Borough Council

Dates: 06/07/2020

Logged By
FG

[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS05 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448938E - 116439N		Hole Type WLS	
Location: Horton Heath				Level: 21.04		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 06/07/2020		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		0.15	20.89		Grass over dark brown silty CLAY with frequent roots and rootlets TOPSOIL	
		0.25	PP	4.0kg/cm2				Very stiff possibly desiccated orange and grey mottled slightly gravelly CLAY with frequent roots and rootlets WITTERING FORMATION	
		0.40	ES						
		0.50	D						
		0.50	PP	3.8kg/cm2	0.60	20.44			
		0.75	PP	3.0kg/cm2					
		1.00	D						
		1.00	ES						
		1.00	PP	2.5kg/cm2 N=7 (0,0/2,1,2,2)	1.20	19.84		Stiff orange and grey mottled possibly desiccated CLAY with occasional rootlets and rare flint gravel WITTERING FORMATION	
		1.50	D						
		1.50	PP	1.5kg/cm2					
		2.00	D		1.90	19.14			
		2.00	PP	2.6kg/cm2 N=10 (1,2/2,3,2,3)					
		2.00			2.30	18.74			
		2.50	D						
		2.50	PP	2.3kg/cm2					
		3.00	D						
		3.00	PP	2.5kg/cm2 N=8 (2,1/2,2,2,2)	3.30	17.74		Stiff dark grey sandy CLAY WITTERING FORMATION	
	3.00								
	3.50	D							
	3.50	PP	1.8kg/cm2						
	4.00	D							
	4.00	PP	2.8kg/cm2 N=11 (1,2/3,2,3,3)						
	4.00								
	4.50	D							
	4.50	PP	1.4kg/cm2						
	5.00	D							
	5.00	PP	1.8kg/cm2	5.00	16.04				
Continued on Next Sheet								5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater seepage at 3m bgl	



www.gesl.net

Borehole Log

WS05

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448938E - 116439N

Hole Type	WLS
-----------	-----

Location: Horton Heath

Level:	21.04
--------	-------

Scale
1:25

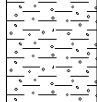
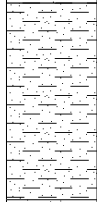
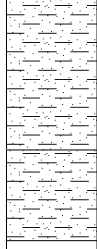
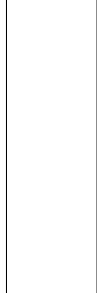
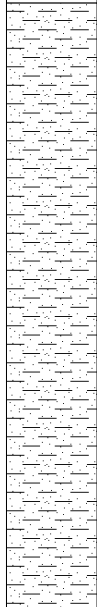
Client: Eastleigh Borough Council

Dates: 06/07/2020

Logged By
FG

[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS06 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 449033E - 116360N		Hole Type WLS	
Location: Horton Heath				Level: 22.52		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 08/07/2020		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		0.20	22.32	 Grass over dark brown silty CLAY with frequent roots and rootlets and rare flint gravel TOPSOIL		
		0.25 0.30	PP ES	4.0kg/cm2					
		0.50 0.50	D PP	3.5kg/cm2	0.55	21.97	 Very stiff possibly desiccated orange and grey mottled slightly gravelly CLAY with frequent rootlets WITTERING FORMATION		
		0.75	PP	1.5kg/cm2					
		1.00 1.00 1.00	D PP	1.2kg/cm2 N=3 (0,0/0,0,1,2)	1.20	21.32	 Firm orange and grey mottled slightly sandy CLAY. Sand is medium WITTERING FORMATION	1	
		1.50 1.50	D PP	2.4kg/cm2					
		2.00 2.00 2.00	D PP	2.4kg/cm2 N=5 (1,2/1,1,2,1)	1.70	20.82	 Stiff orange and grey mottled slightly sandy CLAY. Sand is medium WITTERING FORMATION		
		3.00		N=9 (2,2/2,2,2,3)					
		3.50 3.50	D PP	1.2kg/cm2	3.00	19.52	 Stiff brown and grey mottled sandy CLAY. Sand is fine to medium WITTERING FORMATION	2	
		4.00 4.00 4.00	D PP	1.8kg/cm2 N=10 (2,1/2,3,2,3)					
		4.50 4.50	D PP	2.5kg/cm2					
		5.00 5.00	D PP	2.3kg/cm2	5.00	17.52	 Stiff light grey and dark grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	3	
								No sample recovery	4
									5
	Continued on Next Sheet								

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
		2.00	1.20			Groundwater struck at 2m bgl	



www.gesl.net

Borehole Log

Borehole No.

WS06

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449033E - 116360N

Hole Type	WLS
-----------	-----

Location: Horton Heath

Level:	22.52
--------	-------

Scale
1:25

Client: Eastleigh Borough Council

Dates: 08/07/2020

Logged By
FG

[illegible]

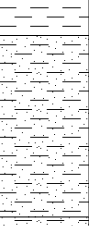
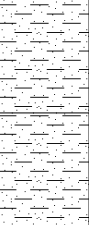
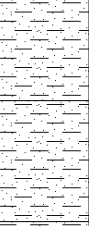
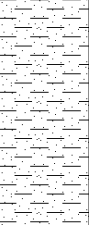
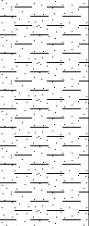
 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS07 Sheet 1 of 1	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 449123E - 116329N		Hole Type WLS	
Location: Horton Heath				Level: 24.88		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 08/07/2020		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	3.5kg/cm2	0.20	24.68	 Grass over dark brown silty CLAY with frequent roots and rootlets and rare flint gravel TOPSOIL	1	
	0.25	PP							
	0.35	ES							
			0.50	D	3.8kg/cm2	0.60	24.28	 Very stiff possibly desiccated orange and grey mottled CLAY with occasional rootlets WITTERING FORMATION	
	0.50	PP							
			0.75	PP	1.0kg/cm2			 Firm orange and grey mottled very sandy CLAY. Sand is fine WITTERING FORMATION	
	0.80	ES							
			1.00	D	1.0kg/cm2 N=10 (1,1/1,2,3,4)				
	1.00	PP							
	1.00								
			1.50	D	N=10 (1,2/2,2,2,4)				2
			2.00	D	N=18 (2,2/2,3,5,8)			 Grey brown and orange mottled slightly clayey fine SAND WITTERING FORMATION	
			2.00						
		2.50	D	N=27 (1,4/7,7,7,6)			 Blueish grey slightly clayey fine SAND with occasional bands of grey CLAY WITTERING FORMATION	3	
		3.00	D						
		3.00							
		3.50	D						
		4.00	D					4	
		4.00							
		5.00	D	N=26 (3,5/6,6,6,8)	5.00	19.88	 End of Borehole at 5.00m	5	
		5.00							

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Groundwater seepage at 3m bgl



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS08 Sheet 1 of 1	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448766E - 116307N		Hole Type WLS	
Location: Horton Heath				Level: 22.54		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 06/07/2020		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		0.15	22.39	 Grass over dark brown silty CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL		
		0.25	PP	4.0kg/cm2					
		0.50	D				 Very stiff possibly desiccated orange and grey mottled CLAY with frequent rootlets WITTERING FORMATION		
		0.50	PP	4.2kg/cm2					
		0.70	ES						
		0.75	PP	4.2kg/cm2					
		1.00	D		1.10	21.44	 Firm to stiff orange and grey mottled sandy CLAY with rare rootlets. Sand is fine WITTERING FORMATION	1	
		1.00	PP	4.0kg/cm2 N=11 (1,2/2,2,3,4)					
		1.50	D		1.70	20.84	 Firm orange brown and grey mottled sandy CLAY. Sand is fine WITTERING FORMATION		
		1.50	PP	2.4kg/cm2					
		2.00	D		2.10	20.44	 Firm orange and grey mottled very sandy CLAY. Sand is fine WITTERING FORMATION	2	
		2.00	PP	1.5kg/cm2 N=16 (1,3/3,4,4,5)					
		2.50	D		2.80	19.74	 Firm to stiff dark grey sandy CLAY. Sand is fine WITTERING FORMATION		
		2.50	PP	1.2kg/cm2					
		3.00	D		3.20	19.34	 Firm dark grey slightly sandy CLAY. Sand is fine WITTERING FORMATION	3	
	3.00	PP	1.5kg/cm2 N=22 (3,4/5,5,5,7)						
	3.50	D							
	3.50	PP	1.8kg/cm2						
	4.00	D							
	4.00	PP	1.6kg/cm2 N=15 (2,3/3,3,5,4)						
	4.50	D							
	5.00	D							
	5.00			5.00	17.54	End of Borehole at 5.00m		5	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater seepage between 3m and 3.5m bgl	

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS09 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448877E - 116306N		Hole Type WLS	
Location: Horton Heath				Level: 23.00		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 06/07/2020		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	4.5kg/cm2	0.20	22.80		Grass over dark brown silty CLAY with frequent roots and rootlets TOPSOIL	1 2 3 4 5
	0.25	PP						Very stiff possibly desiccated orange and grey mottled CLAY with occasional rootlets and flint gravel WITTERING FORMATION	
	0.50	D	4.3kg/cm2	0.70	22.30		Very stiff possibly desiccated orange and grey mottled CLAY with occasional rootlets WITTERING FORMATION		
	0.50	PP							
	0.60	ES							
	0.75	PP	4.2kg/cm2						
	1.00	D	3.0kg/cm2 N=9 (2,1/2,3,2,2)	1.25	21.75		Stiff orange and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION		
	1.00	PP							
	1.00	ES							
	1.20								
	1.50	D	2.1kg/cm2	1.80	21.20		Stiff orange grey and brown mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION		
	1.50	PP							
	2.00	D	2.5kg/cm2 N=4 (1,1/1,1,1,1)	2.10	20.90		Stiff light grey and brown mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION		
	2.00	PP							
2.00									
2.50	D	1.8kg/cm2	2.60	20.40		Stiff orange and brown mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION			
2.50	PP								
3.00	D	2.0kg/cm2 N=16 (1,3/3,4,4,5)	3.05	19.95		Stiff to very stiff dark grey slightly sandy CLAY. Sand is fine WITTERING FORMATION			
3.00	PP								
3.00									
3.50	D	2.3kg/cm2							
3.50	PP								
4.00	D	2.8kg/cm2 N=13 (2,2/3,3,3,4)							
4.00	PP								
4.00									
4.50	D	1.0kg/cm2	4.80	18.20		Very stiff dark grey CLAY WITTERING FORMATION			
4.50	PP								
		5.00	D	3.8kg/cm2	5.00	18.00		Continued on Next Sheet	

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Water within sandy lenses between 4.4m and 4.6m bgl	



www.gesl.net

Borehole Log

Borehole No.

WS09

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448877E - 116306N

Hole Type
WLS

Location: Horton Heath

Level:	23.00
--------	-------

Scale
1:25

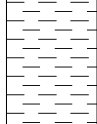
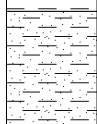
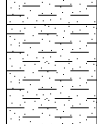
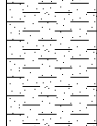
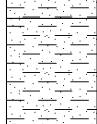
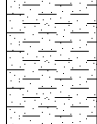
Client: Eastleigh Borough Council

Dates: 06/07/2020

Logged By
FG

[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS10 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448914E - 116284N		Hole Type WLS	
Location: Horton Heath				Level: 23.50		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 07/07/2020		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	23.30		Grass over dark brown silty CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL	
		0.25	PP	4.0kg/cm2					
		0.50	D		0.65	22.85		Very stiff possibly desiccated orange and grey mottled CLAY with occasional rootlets WITTERING FORMATION	
		0.50	PP	3.9kg/cm2					
		0.60	ES						
		0.70	ES						
		0.75	PP	3.6kg/cm2	1.10	22.40		Very stiff possibly desiccated orange grey and red mottled slightly sandy CLAY with occasional rootlets. Sand is fine WITTERING FORMATION	
		1.00	D						
		1.00	PP	3.2kg/cm2					
		1.00		N=5 (1,1/1,2,1,1)					
		1.50	D		1.90	21.60		Stiff orange and grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	
		1.50	PP	2.0kg/cm2					
		2.00	D		3.10	20.40		Firm to stiff orange grey and brown mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	
		2.00	PP	2.0kg/cm2					
		2.00		N=6 (1,1/1,2,1,2)					
		2.50	D		4.40	19.10		Stiff light grey and dark grey mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	
		2.50	PP	1.8kg/cm2					
		3.00	D						
	3.00	PP	2.5kg/cm2	5.00	18.50		Stiff to very stiff dark grey slightly sandy CLAY. Sand is fine WITTERING FORMATION		
	3.00		N=15 (1,2/3,4,4,4)						
	3.50	D							
	3.50	PP	2.8kg/cm2						
	4.00	D							
	4.00	PP	2.3kg/cm2						
	4.00		N=10 (2,2/1,3,3,3)						
	4.50	D							
	4.50	PP	2.5kg/cm2						
	5.00	D							
	5.00	PP	3.0kg/cm2						

Continued on Next Sheet

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Slight groundwater seepage at 4m bgl





www.gesl.net

Borehole Log

Borehole No.

WS10

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448914E - 116284N

Hole Type	WLS
-----------	-----

Location: Horton Heath

Level:	23.50
--------	-------

Scale
1:25

Client: Eastleigh Borough Council

Dates: 07/07/2020

Logged By
FG

[illegible]



www.gesl.net

Borehole Log

Borehole No.

WS11

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449074E - 116265N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Horton Heath

Level: 24.92

Scale
1:25

Client: Eastleigh Borough Council

Dates: 08/07/2020

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	4.0kg/cm2	0.20	24.72		Grass over dark brown silty CLAY with frequent roots and rootlets and rare flint gravel TOPSOIL	1 -	
		0.25	PP					Very stiff possibly desiccated orange and grey mottled CLAY with occasional rootlets WITTERING FORMATION		
		0.45	ES	3.5kg/cm2	0.60	24.32		Stiff orange and grey mottled slightly sandy CLAY WITTERING FORMATION		2 -
		0.50	D							
		0.50	PP							
		0.75	PP	2.0kg/cm2	1.10	23.82		Firm to stiff orange and grey sandy CLAY. Sand is fine WITTERING FORMATION		3 -
		1.00	D							
		1.00	PP							
		1.00	PP							
		1.50	D							
		1.50	PP							
		2.00	D	1.5kg/cm2 N=8 (2,2/1,2,2,3)	2.20	22.72		Firm to stiff orange brown and grey mottled slightly sandy laminated CLAY. Sand is fine WITTERING FORMATION		4 -
		2.00	PP							
		2.00	PP							
		2.50	D	1.5kg/cm2	3.90	21.02		Firm to stiff dark grey and blueish grey mottled very sandy CLAY. Sand is fine WITTERING FORMATION		5 -
		2.50	PP							
		3.00	D							
		3.00	PP	1.5kg/cm2 N=13 (1,2/3,3,3,4)	5.00	19.92		Blueish grey clayey fine SAND WITTERING FORMATION		
		3.00	PP							
		3.50	D							
3.50	PP	1.8kg/cm2	5.00	19.92		End of Borehole at 5.00m				
4.00	D									
4.00	PP									
4.00	PP	2.8kg/cm2 N=40 (2,7/9,9,11,11)	5.00	19.92		End of Borehole at 5.00m				
4.50	D									
5.00	D									
5.00	D	N=24 (2,4/5,4,8,7)	5.00	19.92		End of Borehole at 5.00m				
5.00	D									
Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks				
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	Groundwater seepage at 2.2m bgl and 3m bgl				
		2.20	1.80							

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS12 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448858E - 116257N		Hole Type WLS	
Location: Horton Heath				Level: 23.56		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 06/07/2020		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	4.0kg/cm2	0.20	23.36		Grass over dark brown silty CLAY with frequent roots and rootlets and occasional flint gravel TOPSOIL	1 2 3 4 5
		0.25	PP						
		0.30	ES						
		0.50	D	3.5kg/cm2				Very stiff possibly desiccated grey and occasionally orange CLAY with frequent rootlets WITTERING FORMATION	
		0.50	PP						
		0.75	PP	3.4kg/cm2					
		1.00	D	4.1kg/cm2 N=8 (1,1/1,2,3,2)	1.10	22.46		Stiff to very stiff orange and grey mottled CLAY with occasional rootlets WITTERING FORMATION	
		1.00	PP						
		1.00	PP						
		1.50	D	3.5kg/cm2					
		1.50	PP						
					1.80	21.76		Stiff orange grey and brown mottled slightly sandy CLAY. Sand is fine WITTERING FORMATION	
		2.00	D	2.5kg/cm2 N=14 (1,2/4,3,3,4)	2.10	21.46			
		2.00	PP						
		2.50	D	4.0kg/cm2				Very stiff orange brown and grey mottled CLAY WITTERING FORMATION	
2.50	PP								
3.00	D	3.5kg/cm2 N=20 (3,4/4,4,6,6)	3.20	20.36		Very stiff dark grey slightly sandy CLAY. Sand is fine WITTERING FORMATION			
3.00	PP								
3.00	PP								
3.50	D	3.5kg/cm2							
3.50	PP								
4.00	D	4.0kg/cm2 N=30 (2,4/7,6,7,10)							
4.00	PP								
4.00	PP								
4.50	D								
		5.00	D	3.2kg/cm2	5.00	18.56		Continued on Next Sheet	
		5.00	PP						

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater seepage between 4m and 4.6m bgl	



www.gesl.net

Borehole Log

Borehole No.

WS12

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448858E - 116257N

Hole Type
WLS

Location: Horton Heath

Level: 23.56

Scale
1:25

Client: Eastleigh Borough Council

Dates: 06/07/2020

Logged By
FG

[illegible]



Geo-Environmental

Probe Log

Borehole No.

DP13

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 449034.19 - 116169.04

Hole Type
DP

Location: Horton Heath

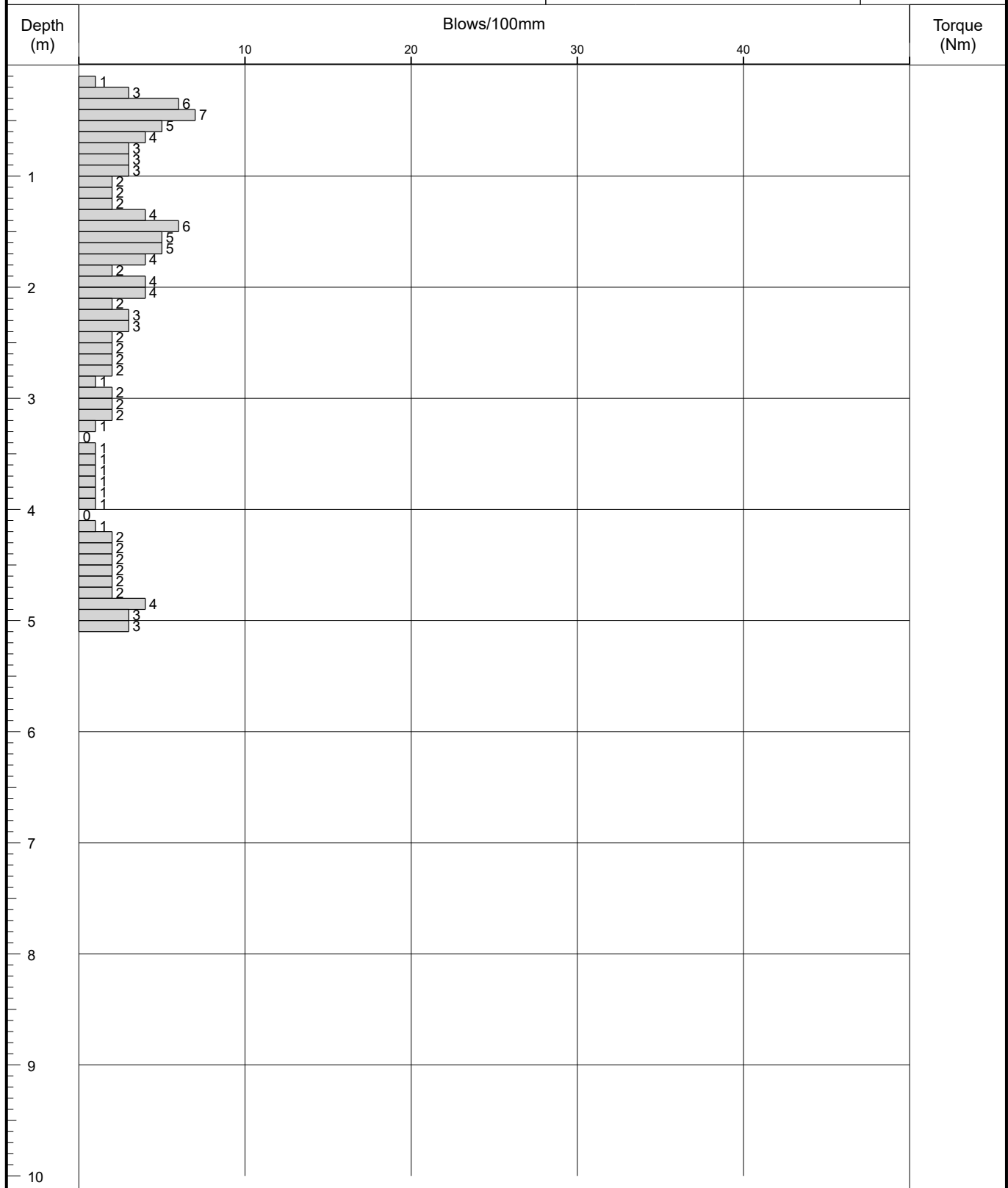
Level: 28.88

Scale
1:50

Client: Eastleigh Borough Council

Dates: 06/07/2020 - 06/07/2020

Logged By



Remarks

Fall Height

Cone Base Diameter

Hammer Wt

Final Depth 5.00

Probe Type DPSH

Log Scale 1:50



 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS14 Sheet 1 of 2	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448860E - 116163N		Hole Type WLS	
Location: Horton Heath				Level: 23.24		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 07/07/2020		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	4.0kg/cm2	0.20	23.04		Grass over dark brown silty CLAY with frequent roots and rootlets and rare flint gravel TOPSOIL	1 2 3 4 5
		0.25	PP						
		0.30	ES						
		0.50	D	4.0kg/cm2	0.80	22.44		Very stiff possibly desiccated orange and grey mottled CLAY with frequent rootlets WITTERING FORMATION	
		0.50	PP						
		0.75	PP	3.3kg/cm2	2.10	21.14		Firm to stiff orange and grey mottled slightly sandy CLAY with rare rootlets. Sand is medium WITTERING FORMATION	
		0.80	ES						
		1.00	D	2.0kg/cm2 N=10 (1,2/2,2,3,3)	2.90	20.34		Stiff brown grey and orange mottled slightly sandy CLAY. Sand is medium WITTERING FORMATION	
		1.00	PP						
		1.00	PP						
		1.50	D	2.3kg/cm2	3.40	19.84		Stiff light grey CLAY WITTERING FORMATION	
		1.50	PP						
		2.00	D	2.5kg/cm2 N=8 (1,2/1,2,2,3)	4.10	19.14		Very stiff dark grey and light grey and occasionally brown CLAY WITTERING FORMATION	
		2.00	PP						
		2.00	PP						
2.50	D	3.0kg/cm2 N=15 (1,2/3,4,4,4)	5.00	18.24		Stiff dark grey slightly sandy CLAY. Sand is fine WITTERING FORMATION			
3.00	D								
3.00	PP								
3.00	PP								
3.50	D	3.5kg/cm2	5.00	18.24		Continued on Next Sheet			
3.50	PP								
4.00	D	3.0kg/cm2 N=13 (2,2/3,3,3,4)	5.00	18.24					
4.00	PP								
4.00	PP								
4.50	D	2.5kg/cm2	5.00	18.24					
4.50	PP								
5.00	D	2.6kg/cm2	5.00	18.24					
5.00	PP								

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater not encountered	



www.gesl.net

Borehole Log

WS14

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448860E - 116163N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Horton Heath

Level: 23.24

Scale
1:25

Client: Eastleigh Borough Council

Dates: 07/07/2020

Logged By
FG

[illegible]



www.gesl.net

Borehole Log

Borehole No.

WS15

Sheet 1 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448859E - 116131N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Horton Heath

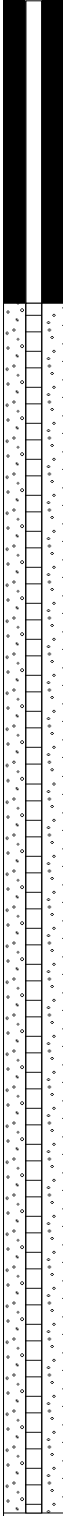
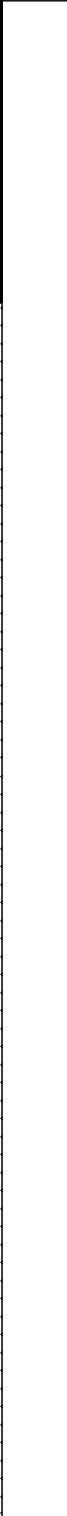
Level: 22.87

Scale
1:25

Client: Eastleigh Borough Council

Dates: 07/07/2020

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	4.5kg/cm2	0.20	22.67		Grass over dark brown silty CLAY with frequent roots and rootlets TOPSOIL	1 2 3 4 5
		0.25	PP				2.9kg/cm2	0.80	
		0.40	ES	2.0kg/cm2	2.30	20.57			
		0.50	D				1.8kg/cm2 N=4 (0,0/0,1,1,2)	2.30	
		0.50	PP	3.2kg/cm2 N=10 (1,2/2,2,3,3)	3.40	19.47			
		0.75	PP				3.5kg/cm2	4.20	
		0.90	ES	2.6kg/cm2	5.00	17.87			
		1.00	D				2.6kg/cm2	5.00	
		1.00	PP	2.6kg/cm2	5.00	17.87			
		1.00	PP				2.6kg/cm2	5.00	
		1.50	D	2.6kg/cm2	5.00	17.87			
		1.50	PP				2.6kg/cm2	5.00	
		2.00	D	2.6kg/cm2	5.00	17.87			
		2.00	PP				2.6kg/cm2	5.00	
		2.00	PP	2.6kg/cm2	5.00	17.87			
		2.50	D				2.6kg/cm2	5.00	
		2.50	PP	2.6kg/cm2	5.00	17.87			
		3.00	D				2.6kg/cm2	5.00	
		3.00	PP	2.6kg/cm2	5.00	17.87			
		3.00	PP				2.6kg/cm2	5.00	
3.50	D	2.6kg/cm2	5.00	17.87		Continued on Next Sheet			
3.50	PP						2.6kg/cm2	5.00	17.87
4.00	D	2.6kg/cm2	5.00	17.87		Continued on Next Sheet			
4.00	PP						2.6kg/cm2	5.00	17.87
4.00	PP	2.6kg/cm2	5.00	17.87		Continued on Next Sheet			
4.50	D						2.6kg/cm2	5.00	17.87
4.50	PP	2.6kg/cm2	5.00	17.87		Continued on Next Sheet			
5.00	D						2.6kg/cm2	5.00	17.87
5.00	PP	2.6kg/cm2	5.00	17.87		Continued on Next Sheet			

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to	
						Groundwater seepage at 2.2m bgl, 3.5m bgl and 4m bgl





www.gesl.net

Borehole Log

Borehole No.

WS15

Sheet 2 of 2

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448859E - 116131N

Hole Type	WLS
1	0.0000
2	0.0000
3	0.0000
4	0.0000
5	0.0000
6	0.0000
7	0.0000
8	0.0000
9	0.0000
10	0.0000
11	0.0000
12	0.0000
13	0.0000
14	0.0000
15	0.0000
16	0.0000
17	0.0000
18	0.0000
19	0.0000
20	0.0000
21	0.0000
22	0.0000
23	0.0000
24	0.0000
25	0.0000
26	0.0000
27	0.0000
28	0.0000
29	0.0000
30	0.0000
31	0.0000
32	0.0000
33	0.0000
34	0.0000
35	0.0000
36	0.0000
37	0.0000
38	0.0000
39	0.0000
40	0.0000
41	0.0000
42	0.0000
43	0.0000
44	0.0000
45	0.0000
46	0.0000
47	0.0000
48	0.0000
49	0.0000
50	0.0000
51	0.0000
52	0.0000
53	0.0000
54	0.0000
55	0.0000
56	0.0000
57	0.0000
58	0.0000
59	0.0000
60	0.0000
61	0.0000
62	0.0000
63	0.0000
64	0.0000
65	0.0000
66	0.0000
67	0.0000
68	0.0000
69	0.0000
70	0.0000
71	0.0000
72	0.0000
73	0.0000
74	0.0000
75	0.0000
76	0.0000
77	0.0000
78	0.0000
79	0.0000
80	0.0000
81	0.0000
82	0.0000
83	0.0000
84	0.0000
85	0.0000
86	0.0000
87	0.0000
88	0.0000
89	0.0000
90	0.0000
91	0.0000
92	0.0000
93	0.0000
94	0.0000
95	0.0000
96	0.0000
97	0.0000
98	0.0000
99	0.0000
100	0.0000

Location: Horton Heath

Level: 22.87

Scale
1:25

Client: Eastleigh Borough Council

Dates: 07/07/2020

Logged By
FG

[illegible]

 Unit 7, Danworth Farm Hurstpierpoint BN6 9GL www.gesl.net		Borehole Log				Borehole No. WS16 Sheet 1 of 1	
Project Name: One Horton Heath		Project No. GE18771		Co-ords: 448941E - 116122N		Hole Type WLS	
Location: Horton Heath				Level: 25.94		Scale 1:25	
Client: Eastleigh Borough Council				Dates: 07/07/2020		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	3.0kg/cm2	0.20	25.74		Grass over dark brown silty CLAY with frequent roots and rootlets TOPSOIL	1 2 3 4 5
		0.25	PP						
		0.30	ES						
		0.50	D	3.0kg/cm2	0.60	25.34		Stiff possibly desiccated orange and grey mottled CLAY with occasional rootlets and flint gravel WITTERING FORMATION	
		0.50	PP						
		0.75	PP						
		1.00	D	N=11 (1,2/1,2,3,5)	1.20	24.74		Firm to stiff orange and grey mottled sandy CLAY. Sand is medium WITTERING FORMATION	
		1.00							
		1.50	D						
		2.00	D	N=0 (1,0/0,0,0,0)	1.40	24.54		Brown grey and orange slightly clayey medium SAND WITTERING FORMATION	
		2.00							
		2.50	D						
2.80		23.14		Firm greyish brown sandy CLAY WITTERING FORMATION					
3.00	D								
3.00	PP								
3.00		N=13 (2,2/3,3,3,4)	3.40	22.54		Stiff to very stiff dark grey slightly sandy CLAY. Sand is fine WITTERING FORMATION			
3.50	PP								
4.00	PP								
4.00		N=15 (2,2/2,5,4,4)	4.00	21.94		End of Borehole at 4.00m			
4.00									

Casing		Water Strikes (mbgl)		Chiselling (mbgl)		Remarks	
Diameter	Depth (m)	Depth Strike	Rose to	Depth from	Depth to		
						Groundwater seepage at 1m bgl. Probe	



Geo-Environmental

Probe Log

Borehole No.

DP16

Sheet 1 of 1

Project Name: One Horton Heath

Project No.
GE18771

Co-ords: 448941.35 - 116121.65

Hole Type
DP

Location: Horton Heath

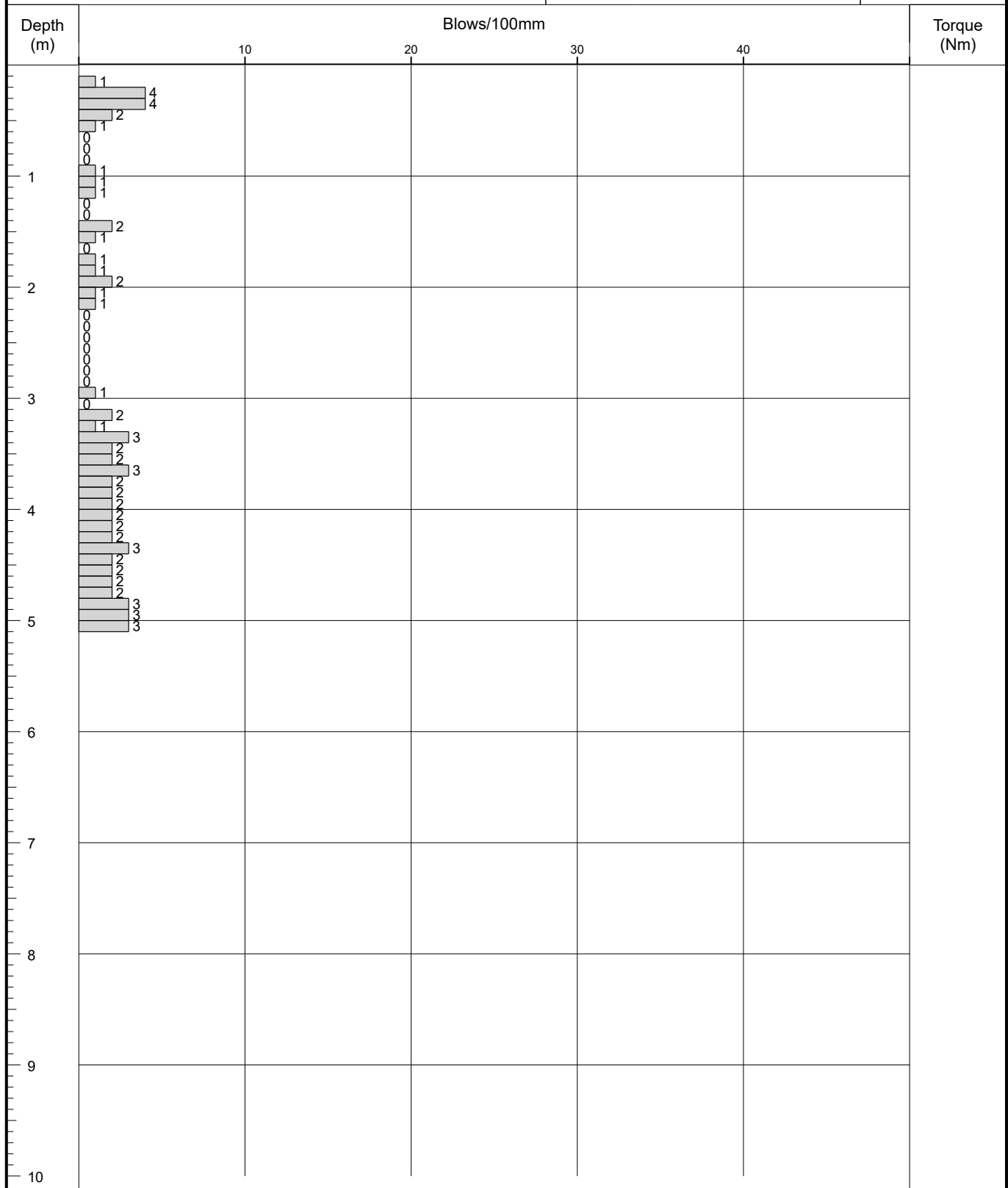
Level: 25.94

Scale
1:50

Client: Eastleigh Borough Council

Dates: 06/07/2020 - 06/07/2020

Logged By



Remarks

Fall Height

Cone Base Diameter

Hammer Wt

Final Depth 5.00

Probe Type DPSH

Log Scale 1:50



APPENDIX C

Geotechnical Laboratory Results





TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 27/07/2020
Sampled By: Not Given

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

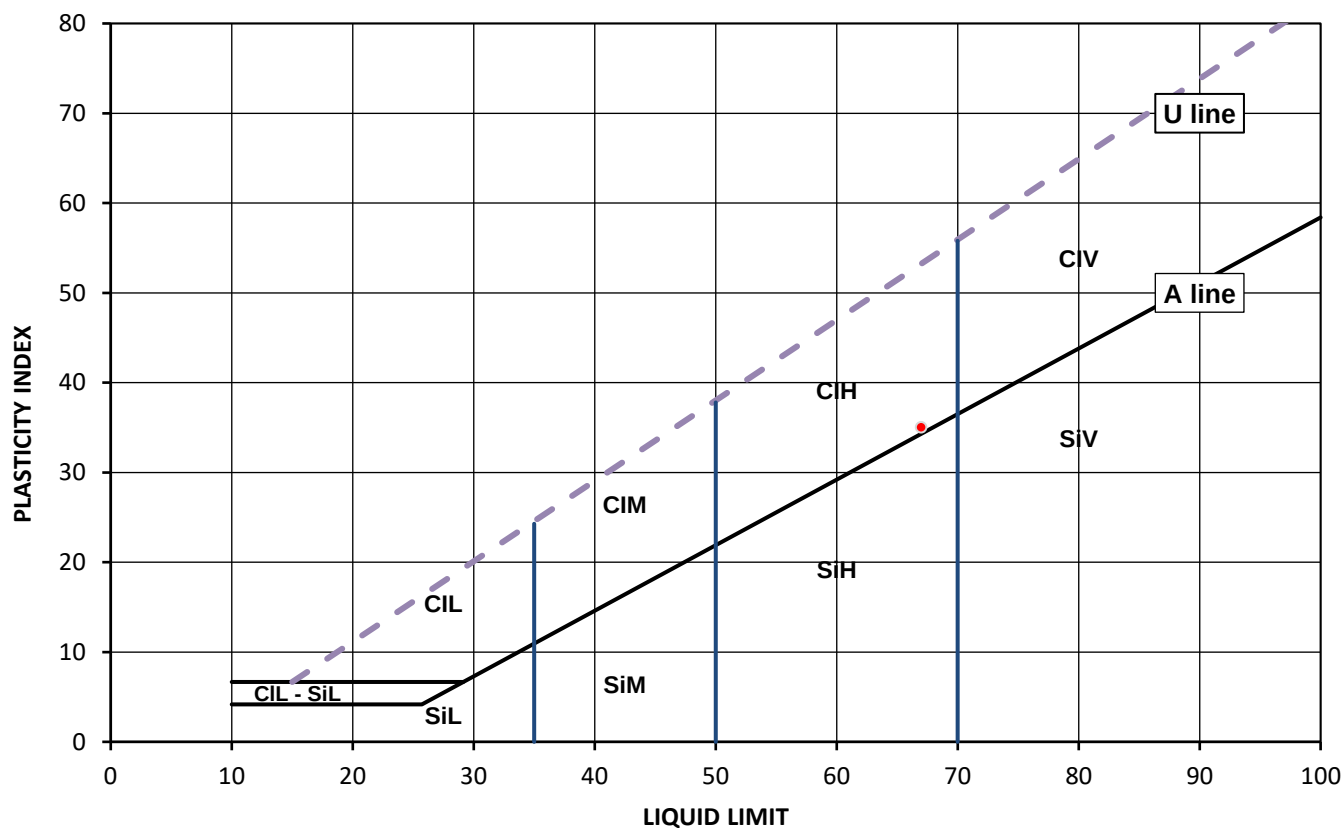
Test Results:

Laboratory Reference: 1566629
Hole No.: TP17
Sample Reference: Not Given
Soil Description: Multicolour silty CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
32	67	32	35	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 27/07/2020
Sampled By: Not Given

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

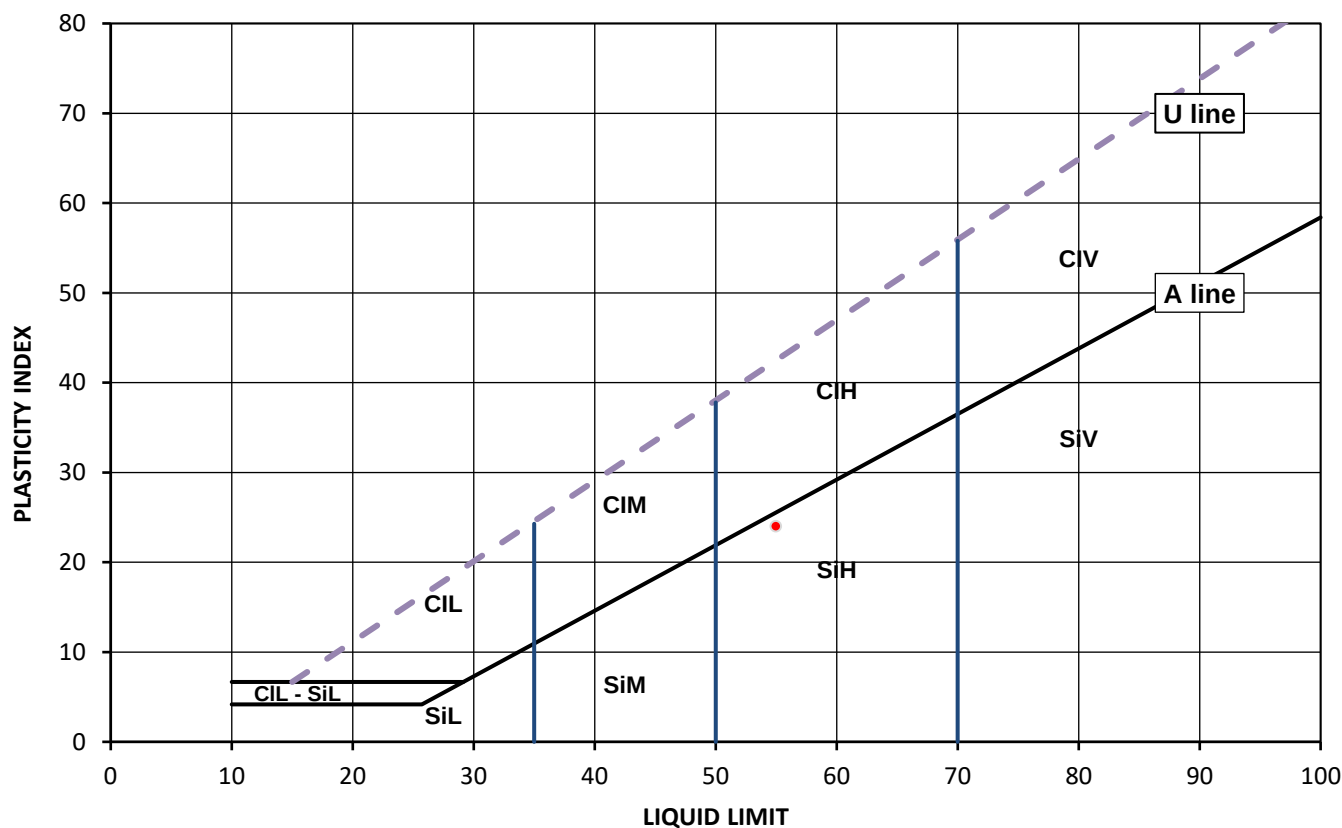
Test Results:

Laboratory Reference: 1566630
Hole No.: TP24
Sample Reference: Not Given
Soil Description: Brownish grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
32	55	31	24	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 27/07/2020
Sampled By: Not Given

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

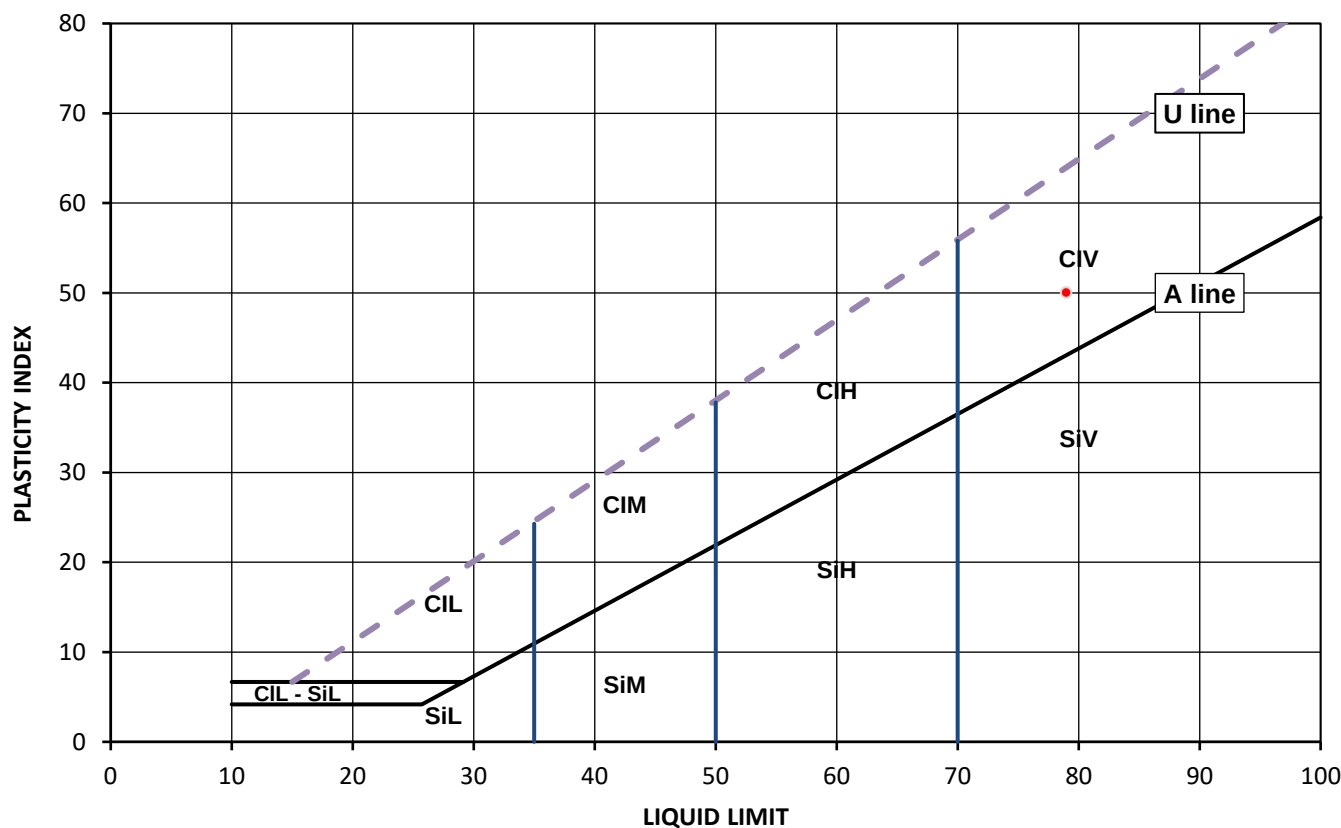
Test Results:

Laboratory Reference: 1566631
Hole No.: TP34
Sample Reference: Not Given
Soil Description: Light grey mottled red CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
27	79	29	50	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 27/07/2020
Sampled By: Not Given

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

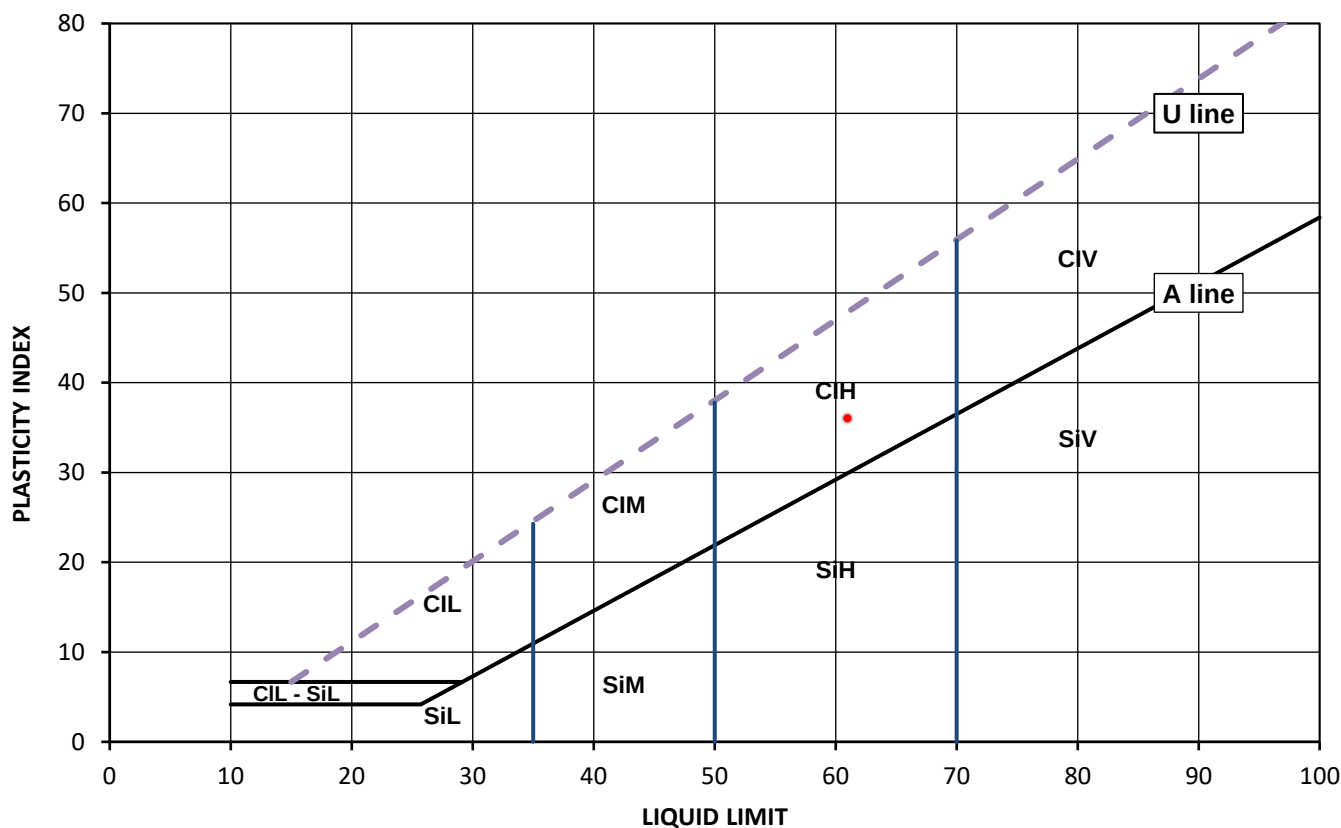
Test Results:

Laboratory Reference: 1566632
Hole No.: TP28
Sample Reference: Not Given
Soil Description: Yellowish brown slightly gravelly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested after washing to remove >425um

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
21	61	25	36	97



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 27/07/2020
Sampled By: Not Given

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

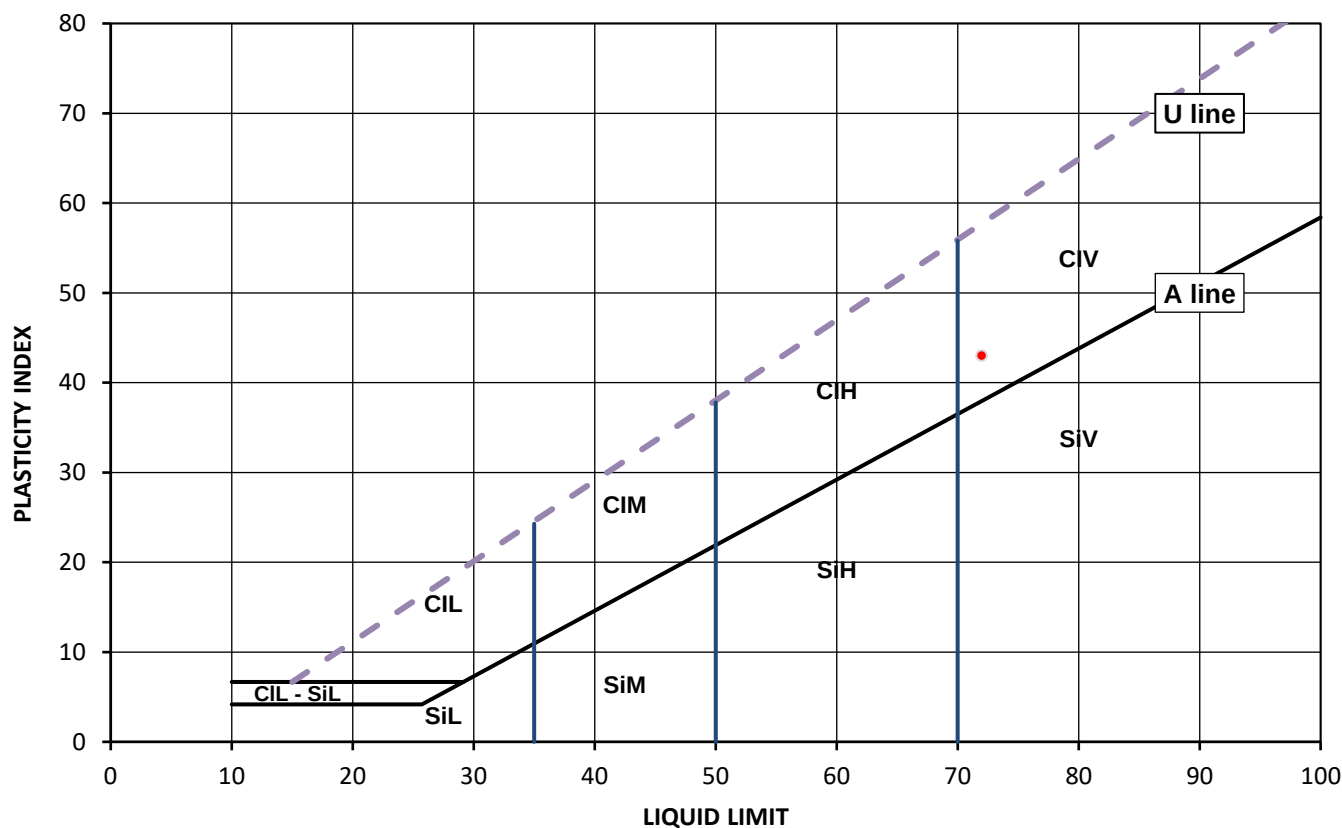
Test Results:

Laboratory Reference: 1566633
Hole No.: TP25
Sample Reference: Not Given
Soil Description: Brownish grey CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
32	72	29	43	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



Environmental Science

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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 27/07/2020
Sampled By: Not Given

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

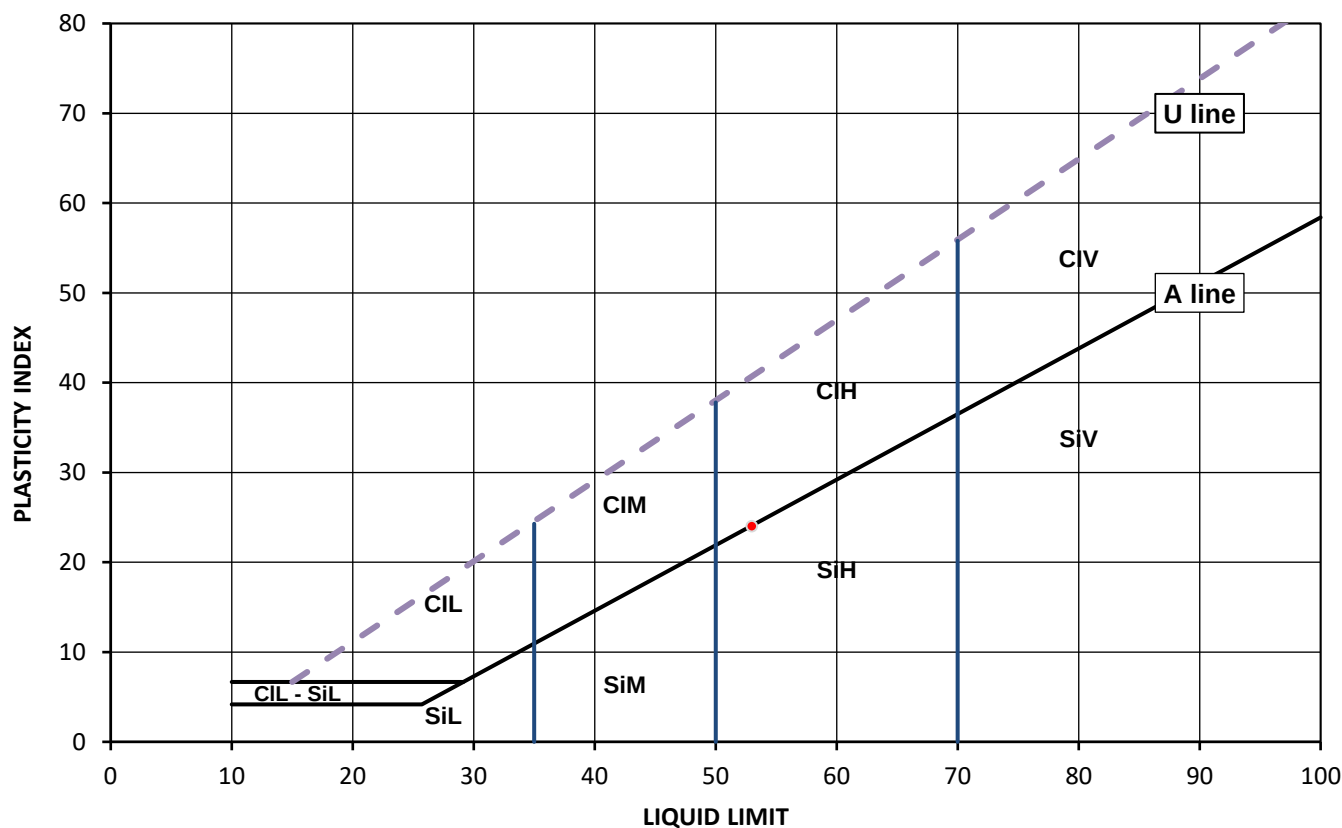
Test Results:

Laboratory Reference: 1566634
Hole No.: TP15
Sample Reference: Not Given
Soil Description: Brownish grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
20	53	29	24	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 27/07/2020
Sampled By: Not Given

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

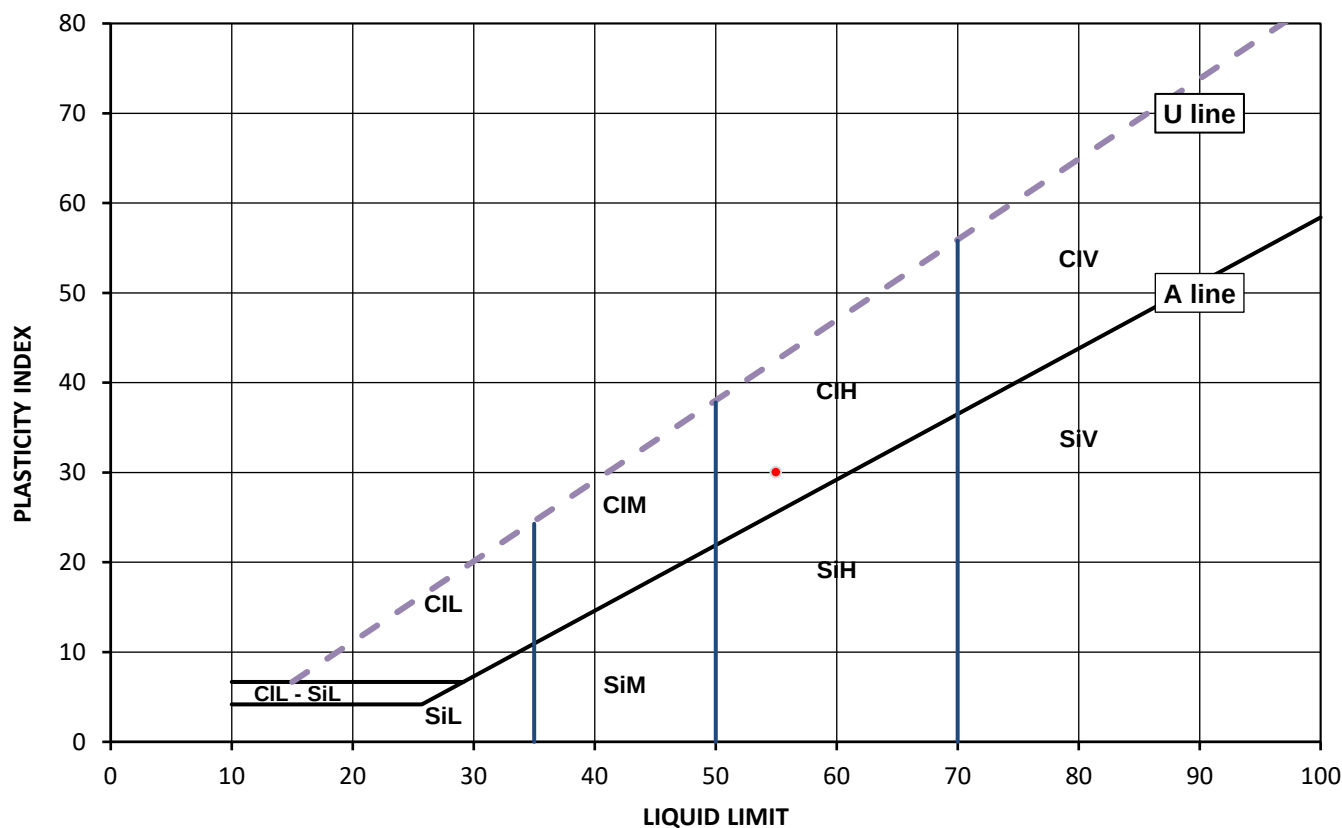
Test Results:

Laboratory Reference: 1566635
Hole No.: TP21
Sample Reference: Not Given
Soil Description: Yellowish brown mottled grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
32	55	25	30	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



Environmental Science

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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

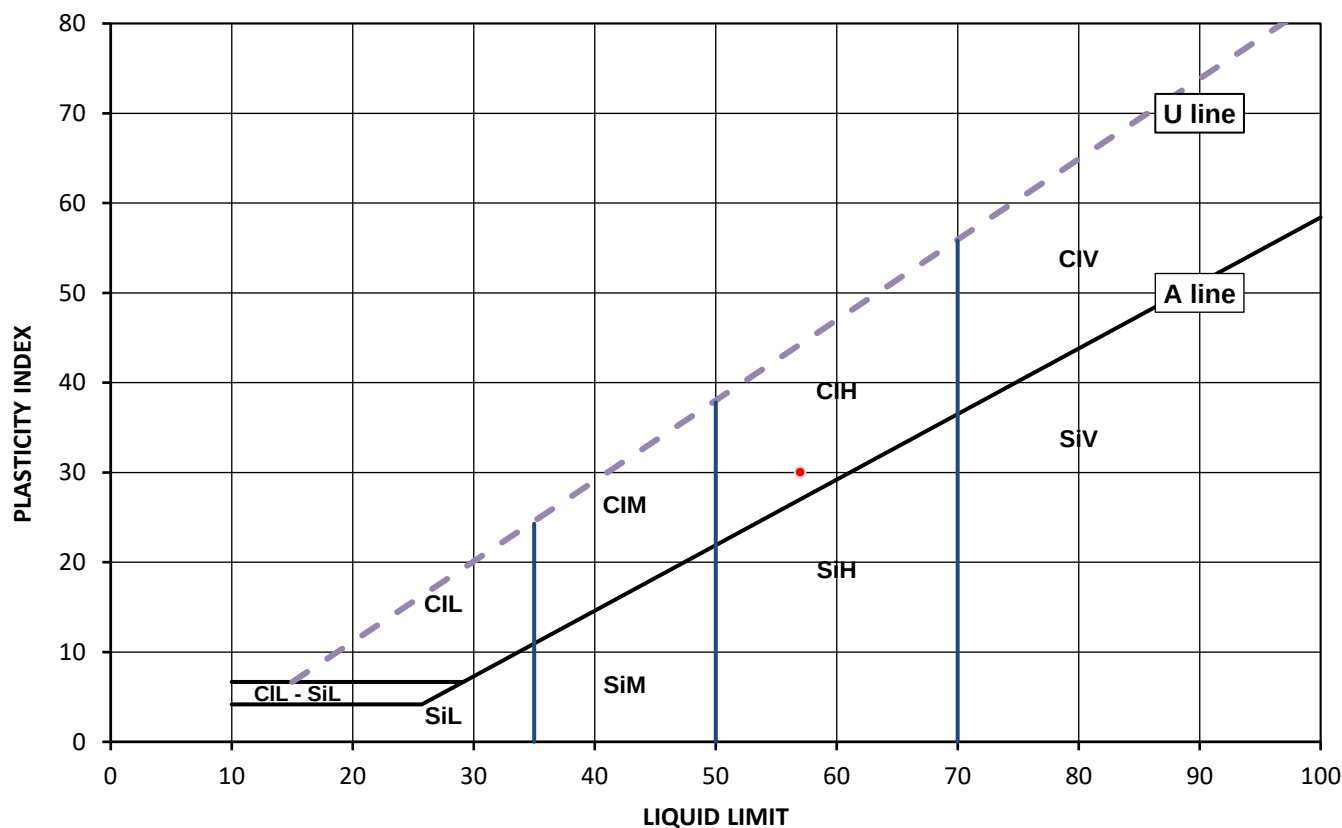
Test Results:

Laboratory Reference: 1566642
Hole No.: WS10
Sample Reference: Not Given
Soil Description: Orangish brown to light grey slightly sandy CLAY

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
27	57	27	30	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

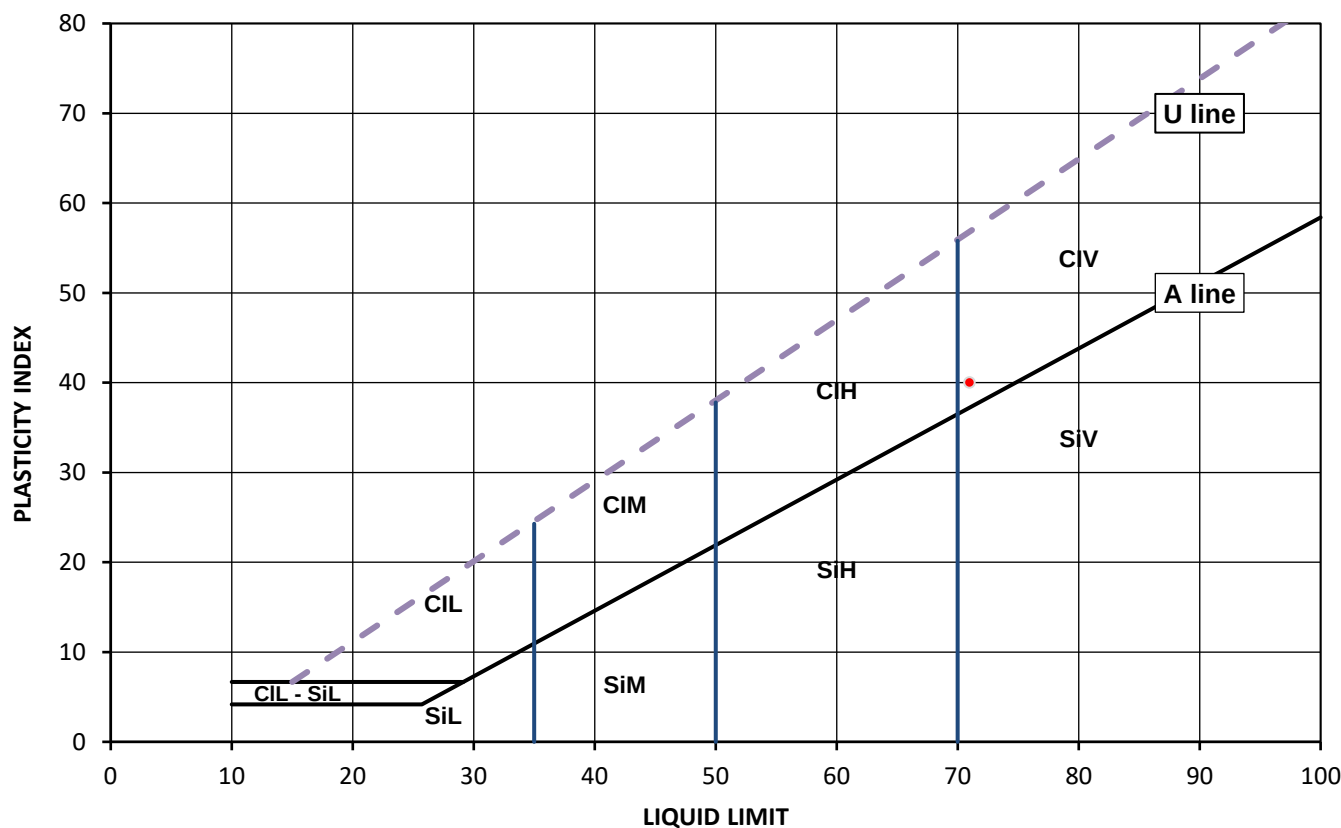
Test Results:

Laboratory Reference: 1566643
Hole No.: WS12
Sample Reference: Not Given
Soil Description: Light grey to orangish brown CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
26	71	31	40	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

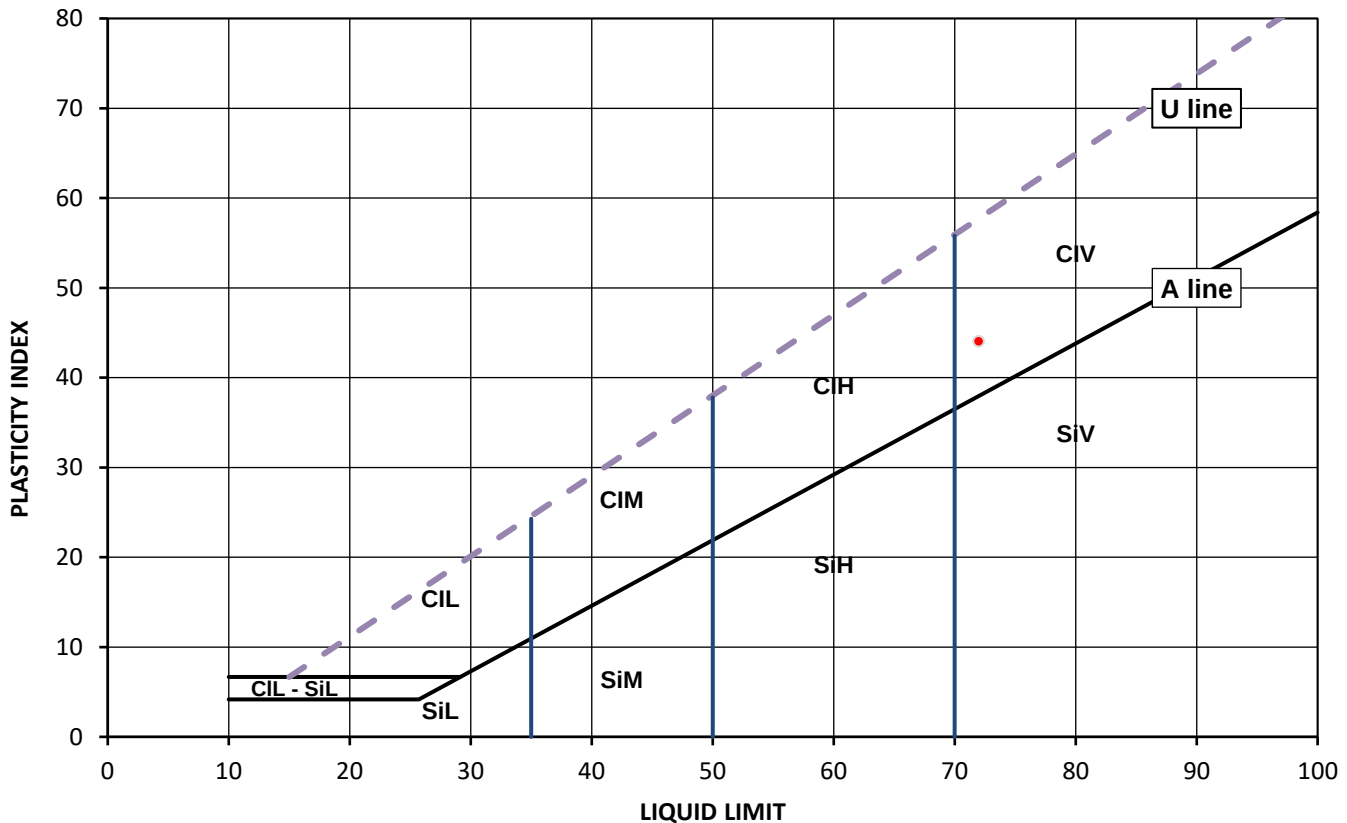
Test Results:

Laboratory Reference: 1566644
Hole No.: WS15
Sample Reference: Not Given
Soil Description: Orangish brown to grey CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
34	72	28	44	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

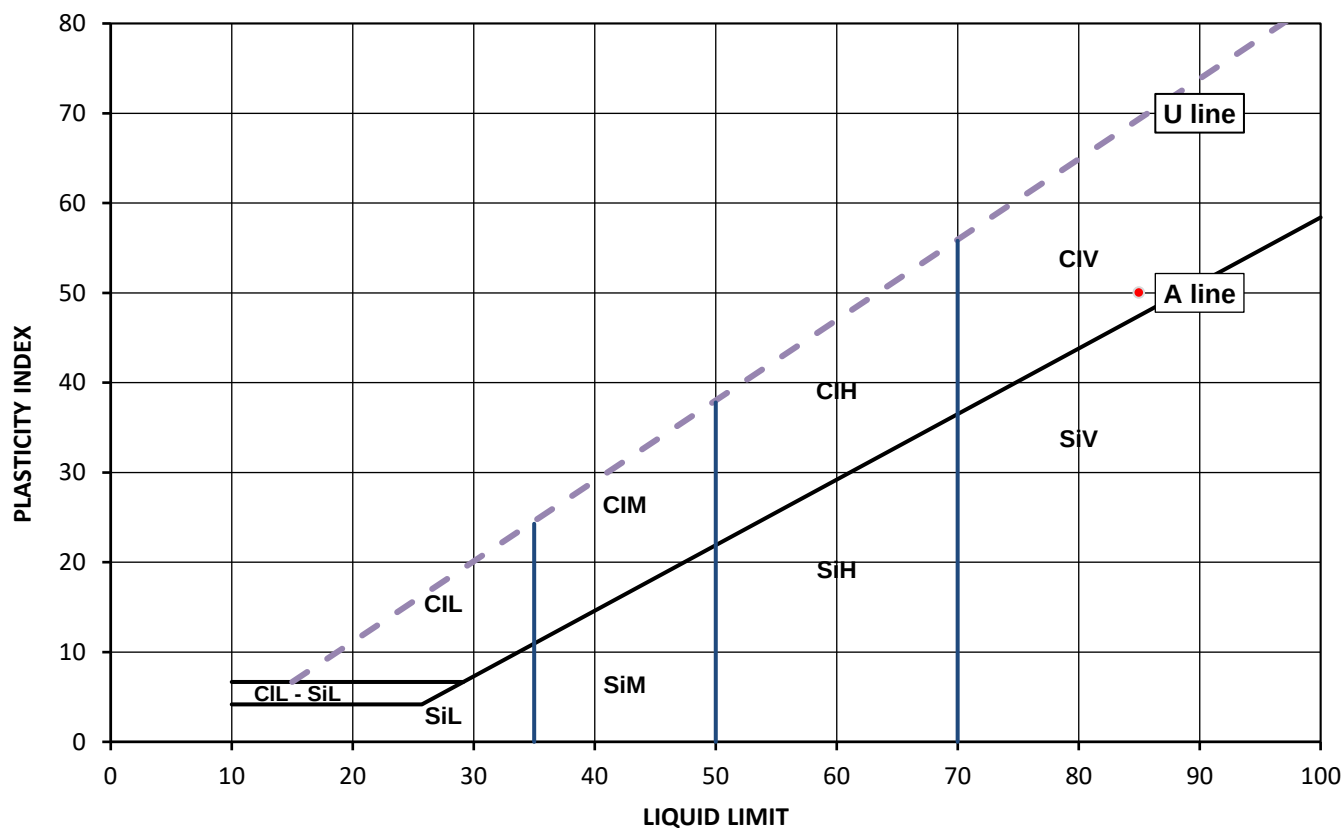
Test Results:

Laboratory Reference: 1566645
Hole No.: TP11
Sample Reference: Not Given
Soil Description: Orangish brown to grey CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
38	85	35	50	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07/2020
Date Received: 08/07/2020
Date Tested: 28/07/2020
Sampled By: Not Given

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

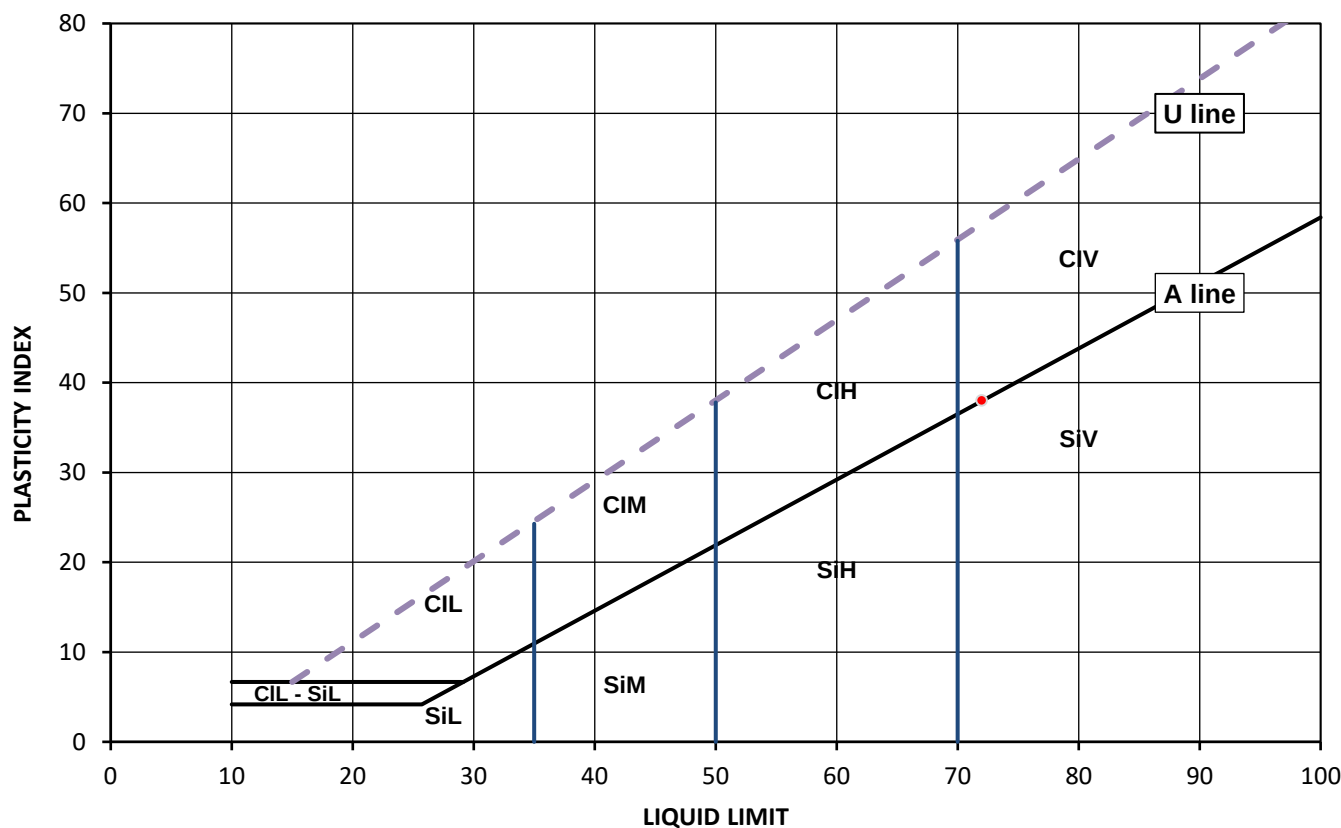
Test Results:

Laboratory Reference: 1566646
Hole No.: TP11
Sample Reference: Not Given
Soil Description: Mottled brown CLAY

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	72	34	38	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07/2020
Date Received: 08/07/2020
Date Tested: 28/07/2020
Sampled By: Not Given

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

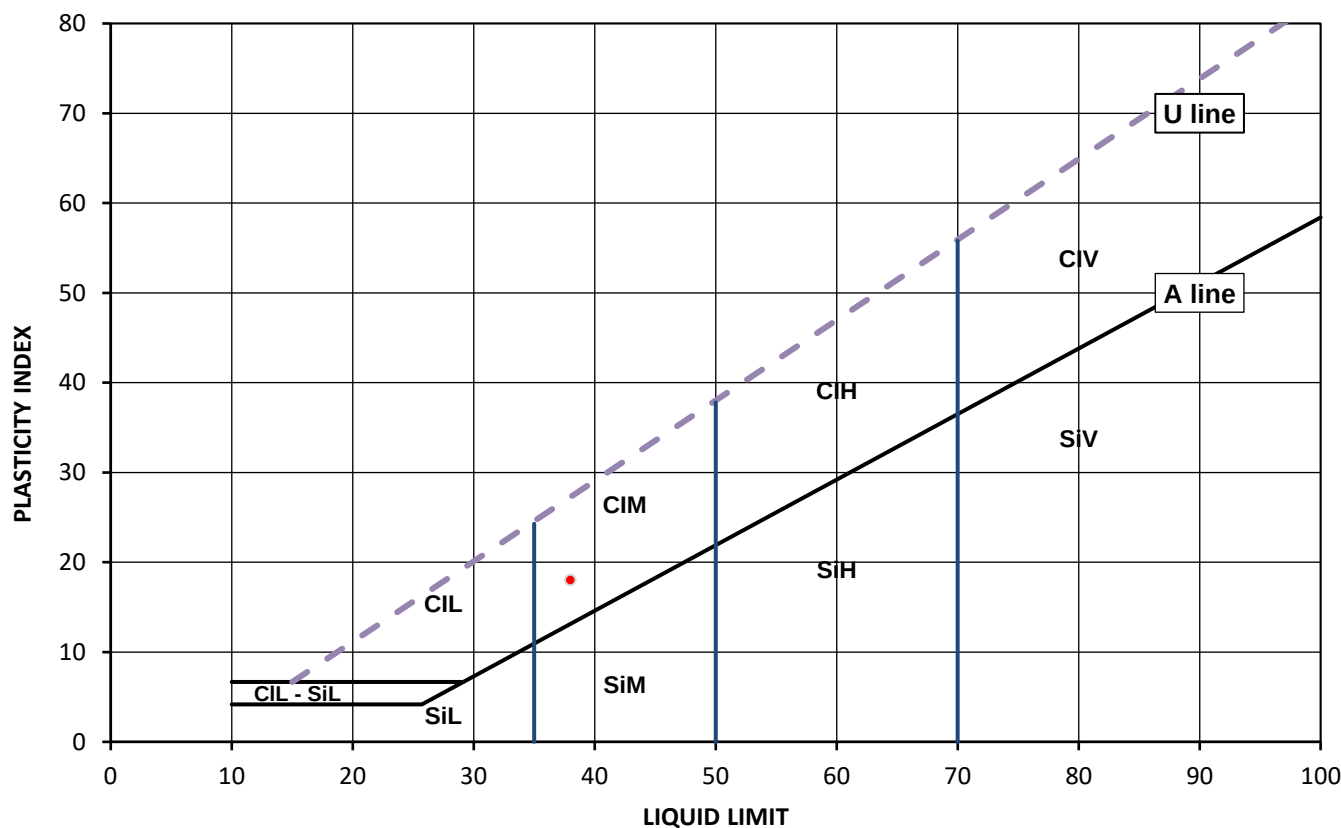
Test Results:

Laboratory Reference: 1566647
Hole No.: TP12
Sample Reference: Not Given
Soil Description: Brown sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
22	38	20	18	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

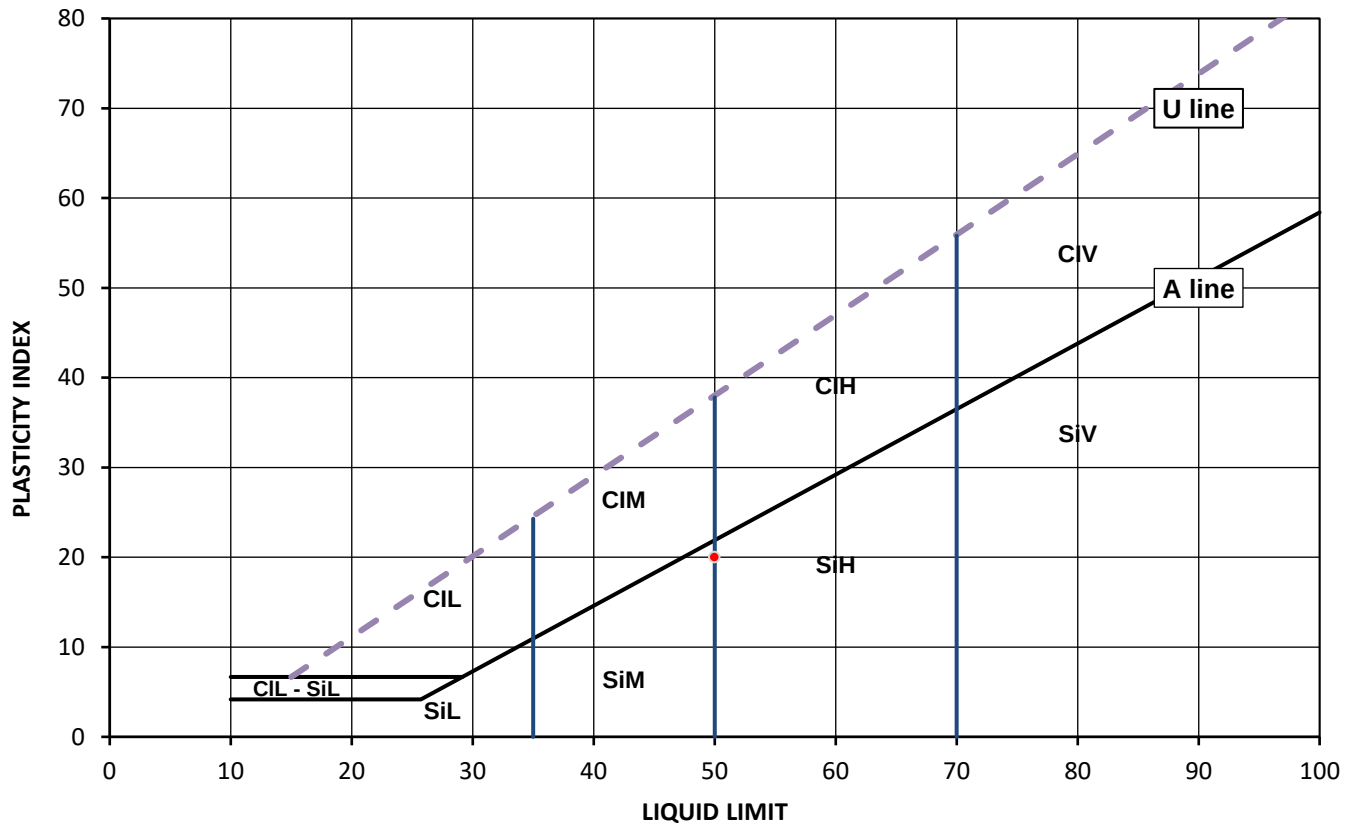
Test Results:

Laboratory Reference: 1566648
Hole No.: TP13
Sample Reference: Not Given
Soil Description: Orangish brown to grey sandy CLAY

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
35	50	30	20	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

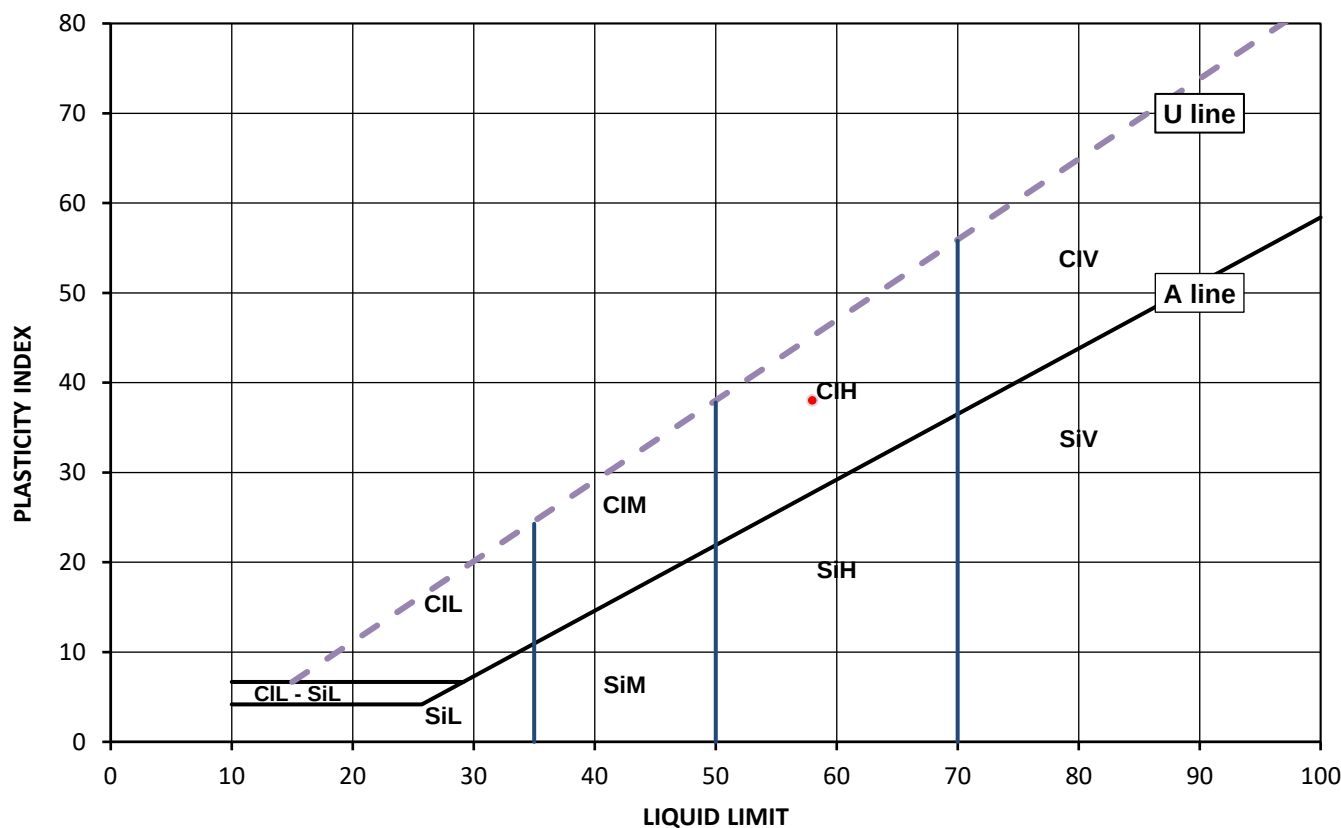
Test Results:

Laboratory Reference: 1566649
Hole No.: TP16
Sample Reference: Not Given
Soil Description: Orangish brown to grey slightly sandy CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
35	58	20	38	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

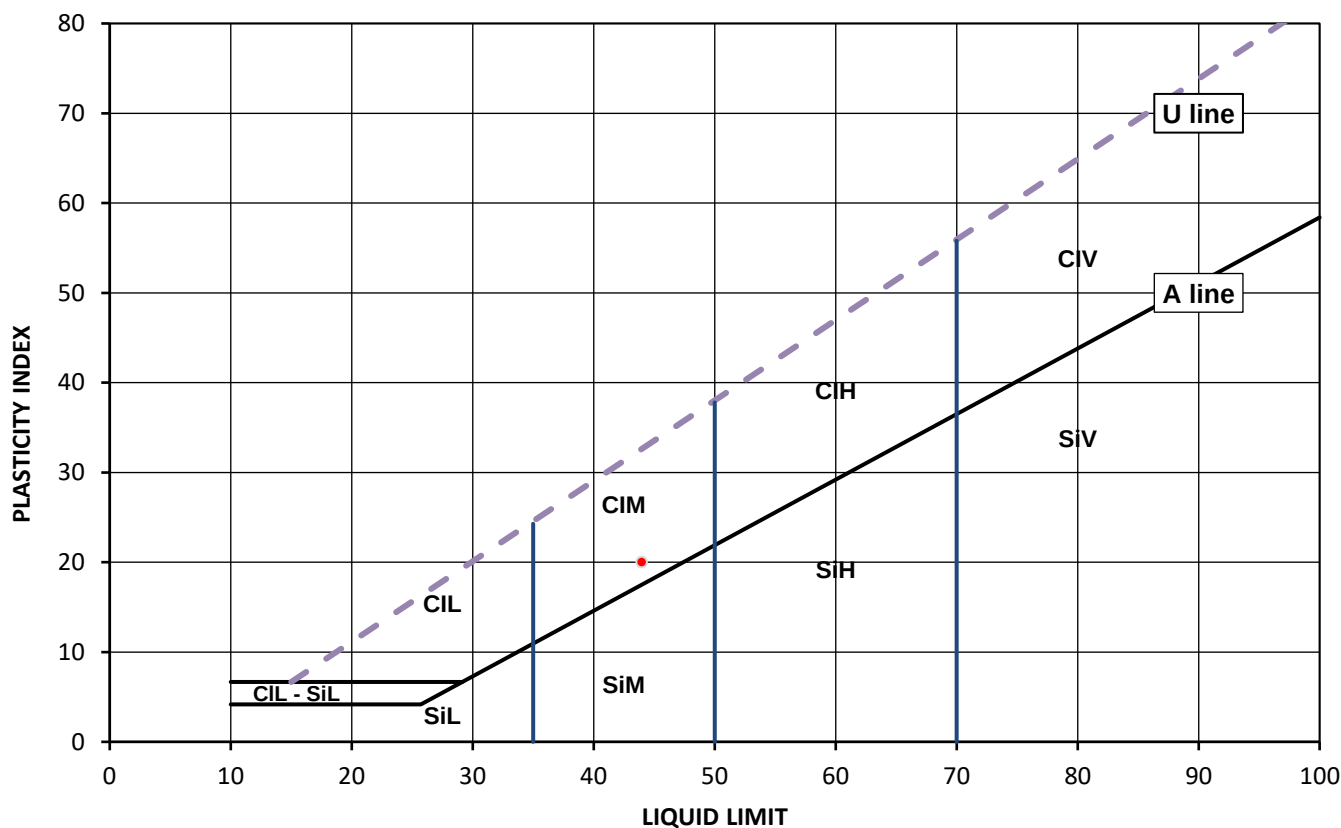
Test Results:

Laboratory Reference: 1566650
Hole No.: TP19
Sample Reference: Not Given
Soil Description: Brown slightly gravelly sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
18	44	24	20	99



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

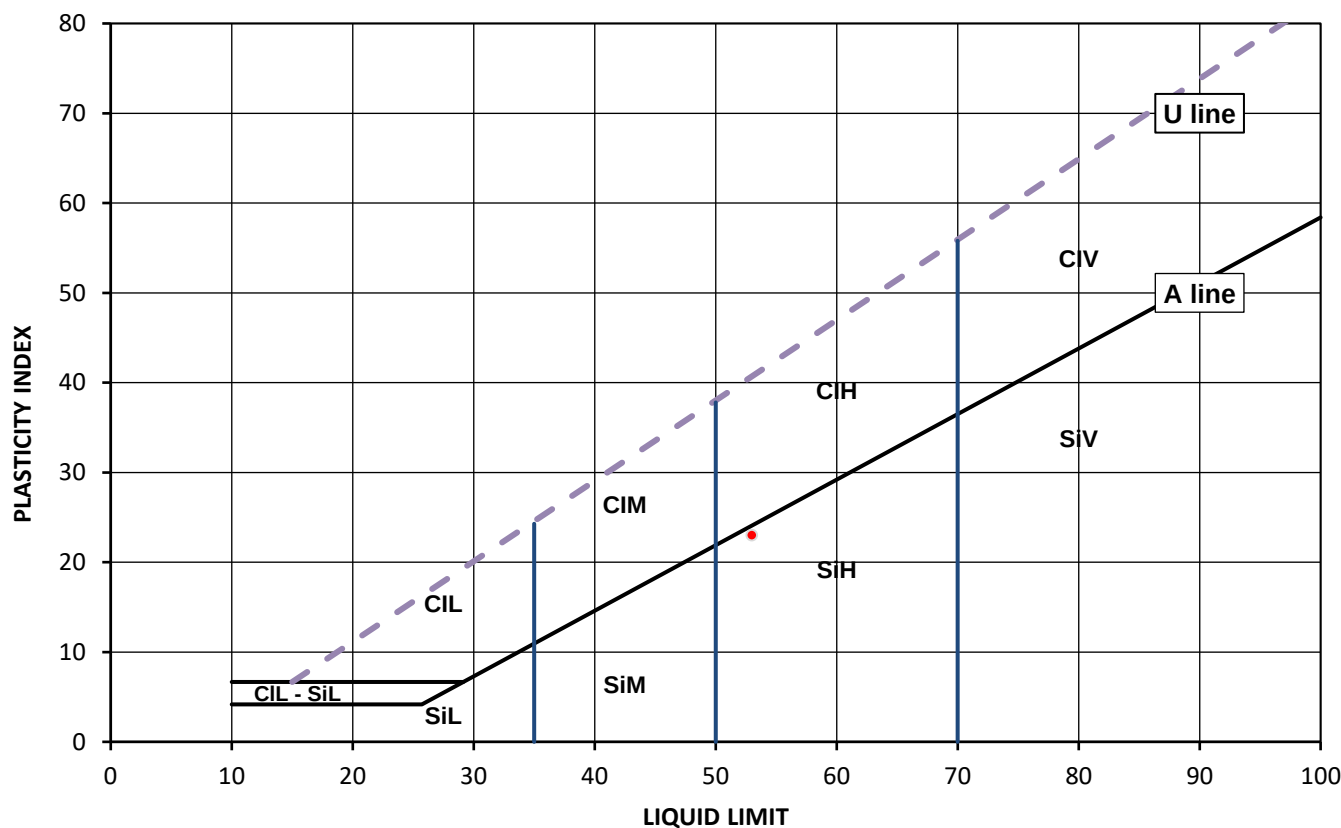
Test Results:

Laboratory Reference: 1566651
Hole No.: TP19
Sample Reference: Not Given
Soil Description: Orangish brown slightly sandy CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
34	53	30	23	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

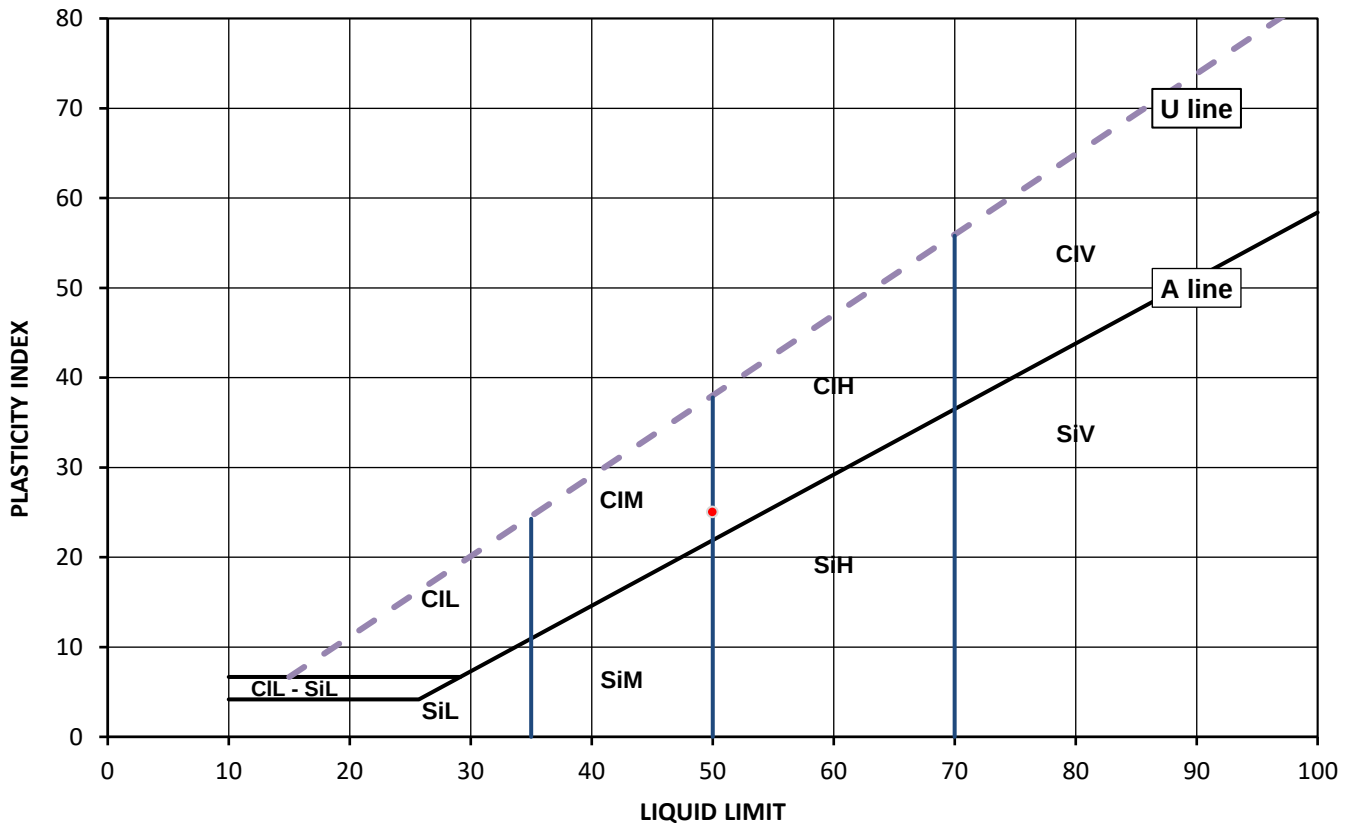
Test Results:

Laboratory Reference: 1566652
Hole No.: TP20
Sample Reference: Not Given
Soil Description: Orangish brown to grey slightly sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
32	50	25	25	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

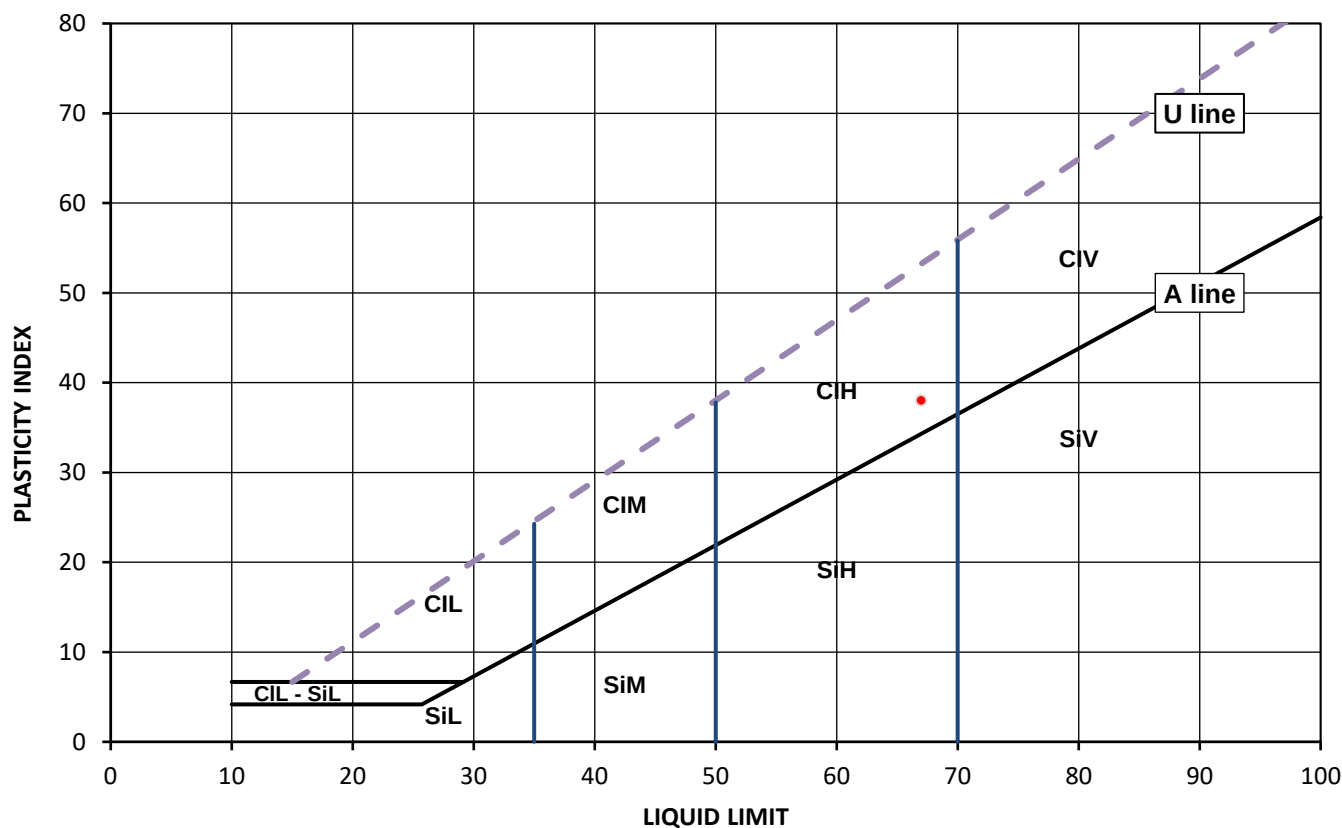
Test Results:

Laboratory Reference: 1566653
Hole No.: TP20
Sample Reference: Not Given
Soil Description: Mottled brown slightly gravelly CLAY

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
21	67	29	38	99



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

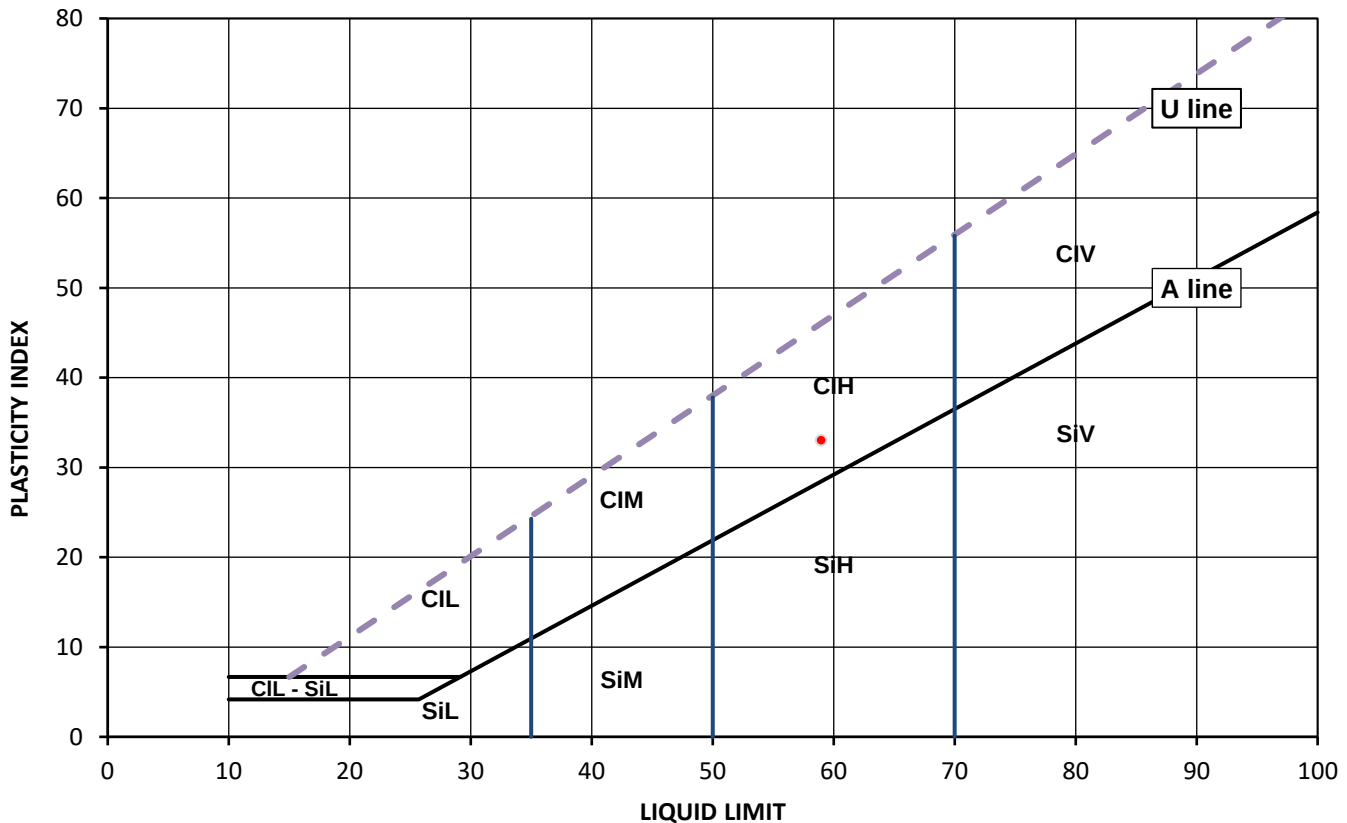
Test Results:

Laboratory Reference: 1566654
Hole No.: TP23
Sample Reference: Not Given
Soil Description: Orangish brown to grey slightly sandy CLAY

Depth Top [m]: 2.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
38	59	26	33	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

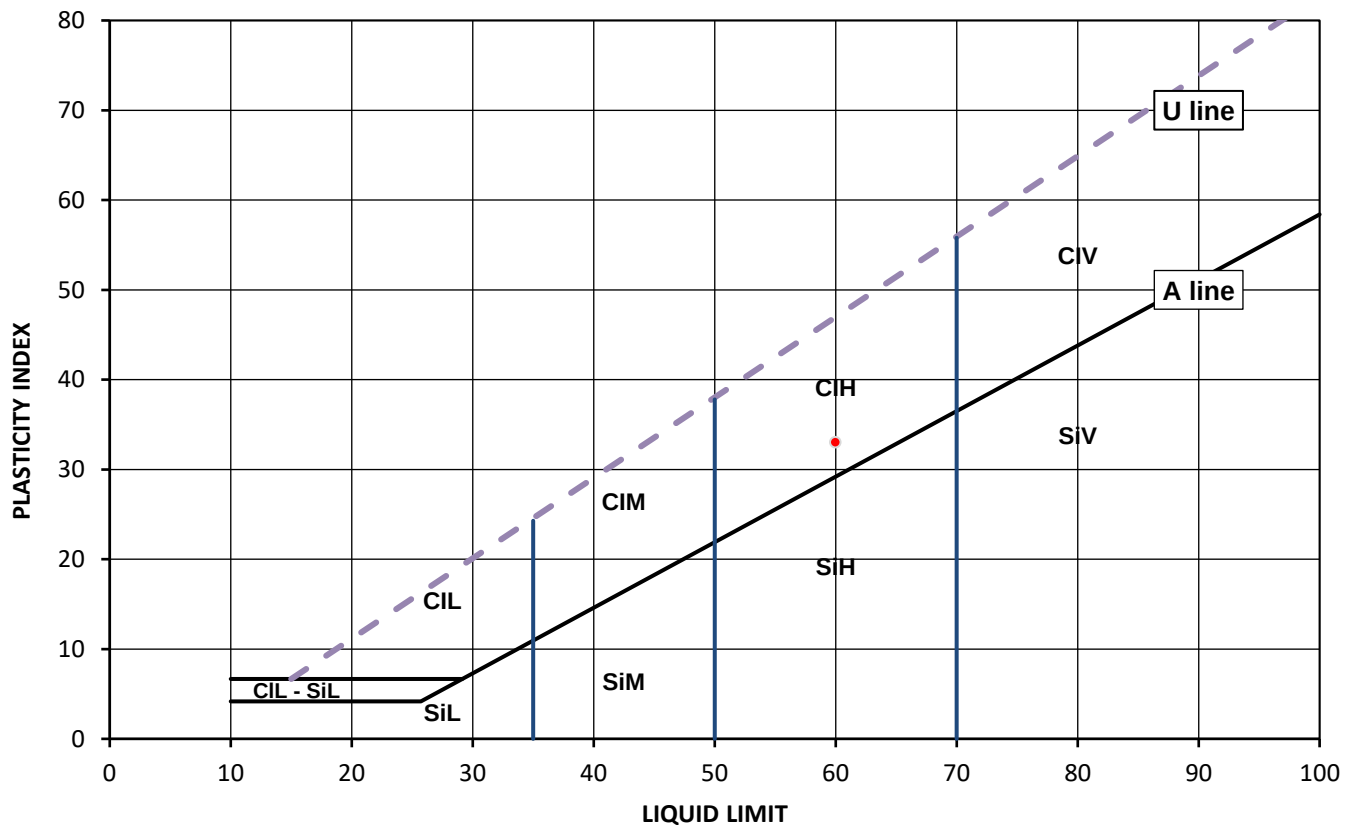
Test Results:

Laboratory Reference: 1566655
Hole No.: TP26
Sample Reference: Not Given
Soil Description: Mottled brown CLAY

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
37	60	27	33	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

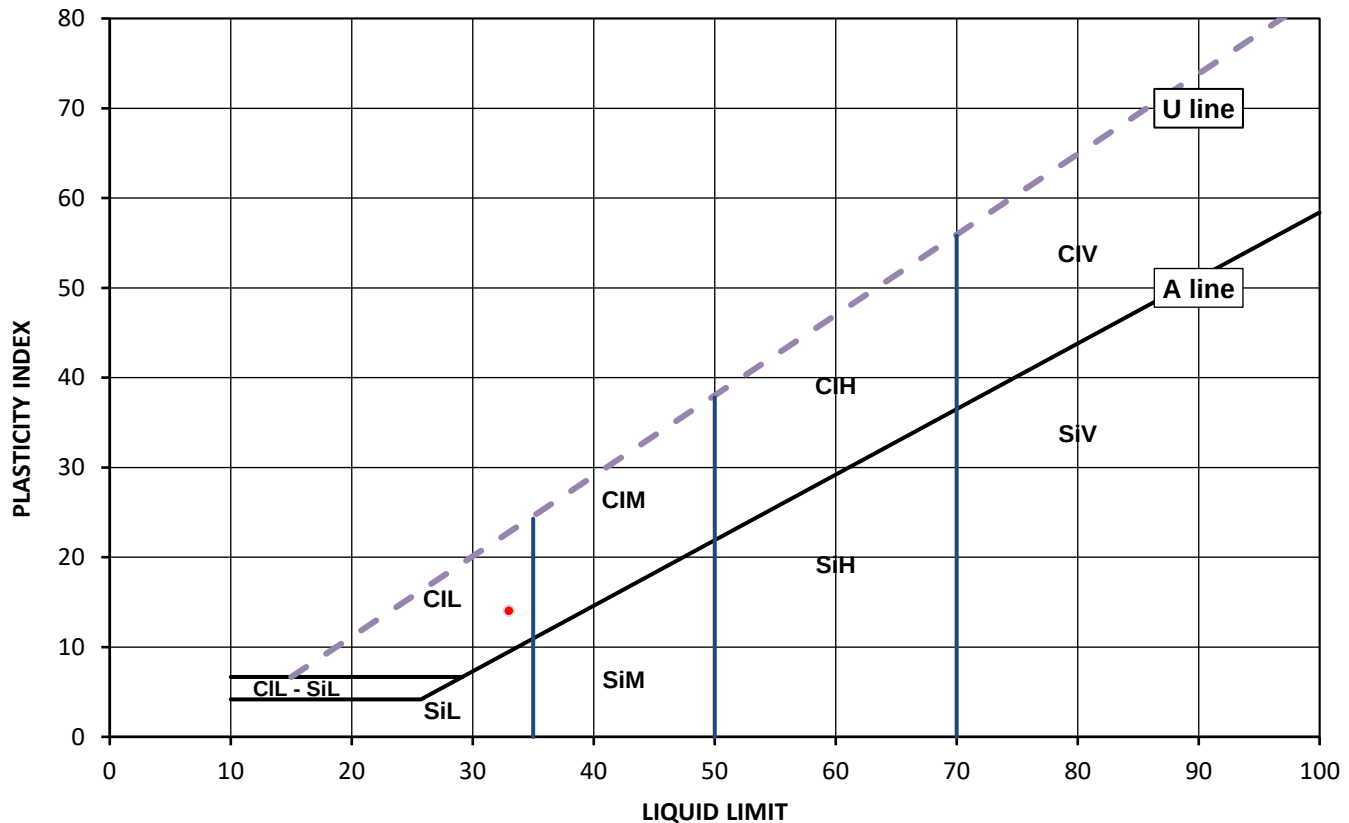
Test Results:

Laboratory Reference: 1566656
Hole No.: WS7
Sample Reference: Not Given
Soil Description: Orangish brown very sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after >425um removed by hand

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	33	19	14	94



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



Environmental Science

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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 09/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

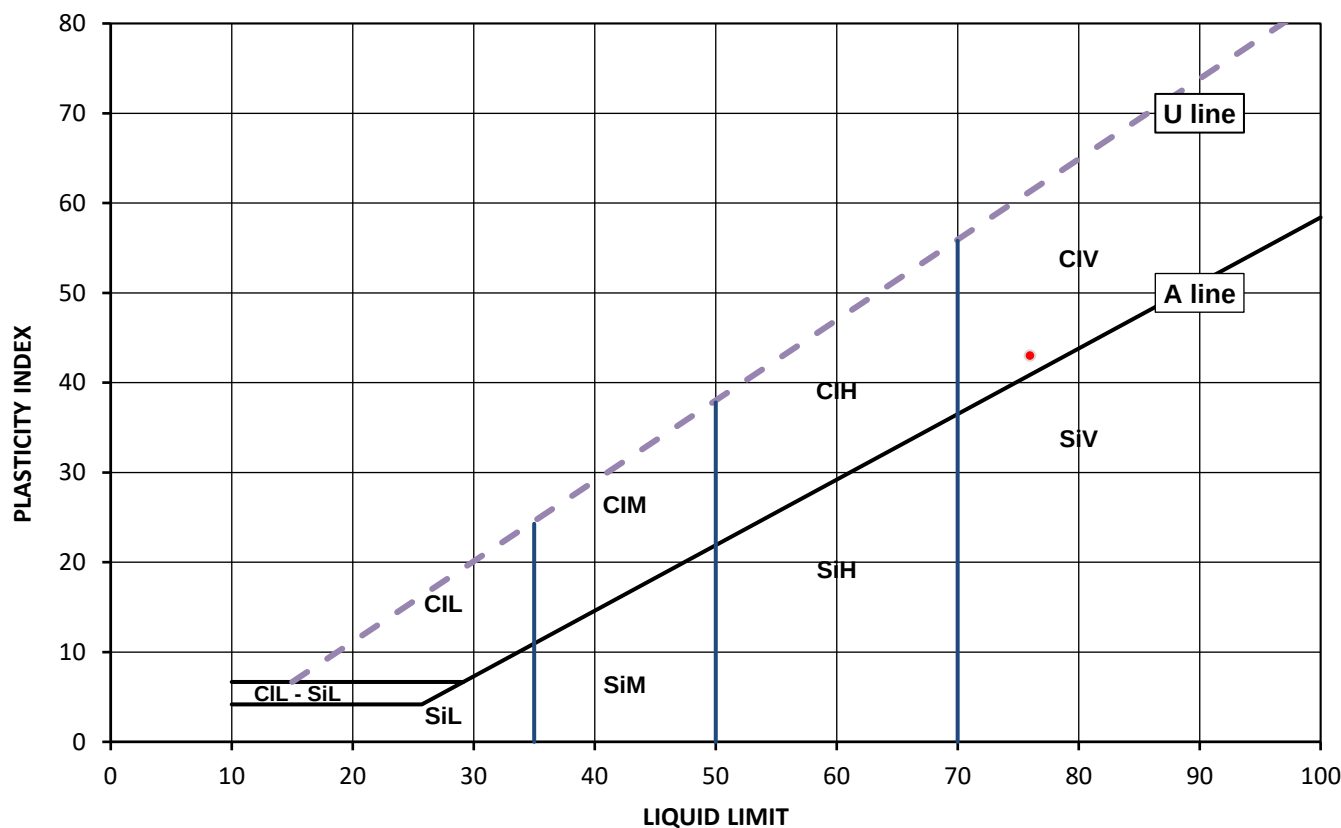
Test Results:

Laboratory Reference: 1566657
Hole No.: TP32
Sample Reference: Not Given
Soil Description: Reddish brown to grey CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	76	33	43	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 09/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

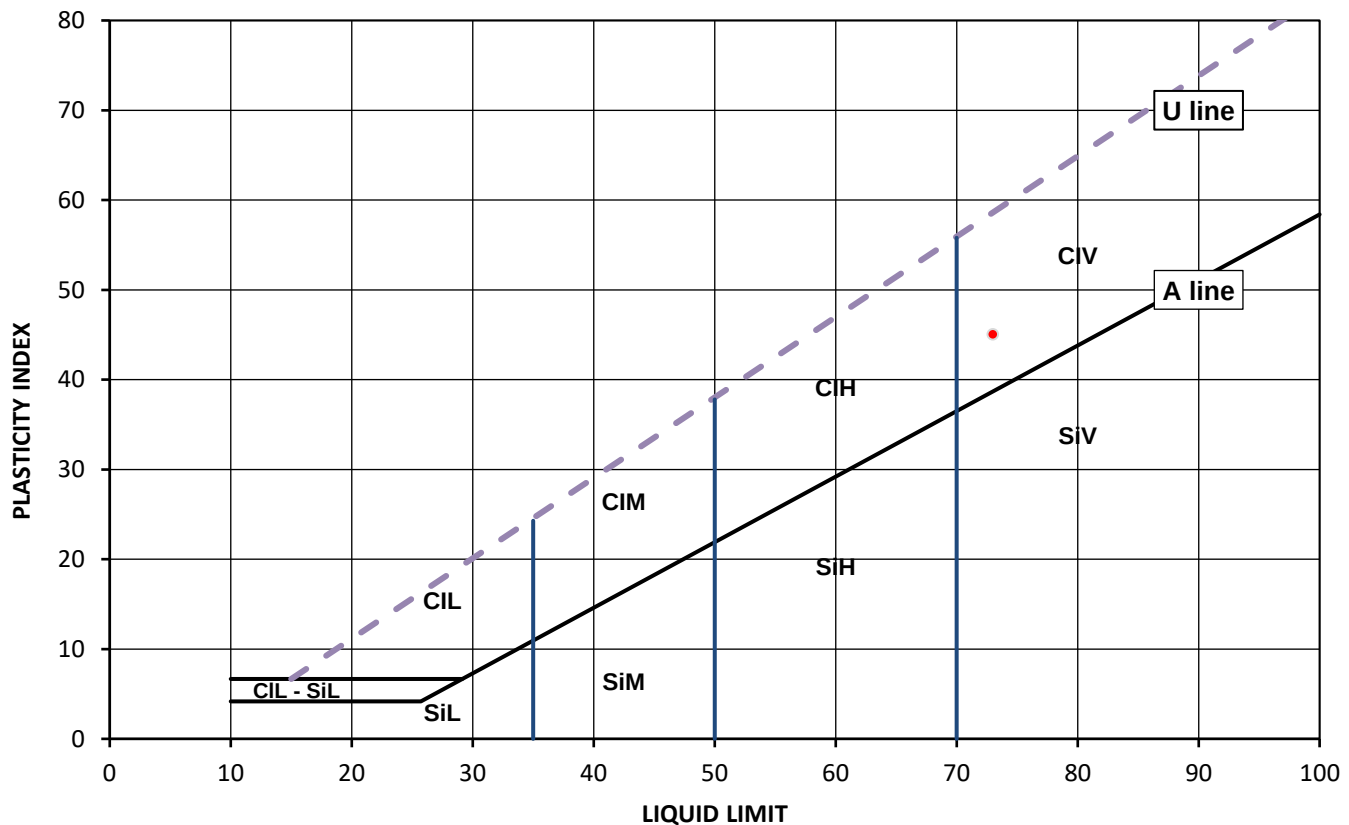
Test Results:

Laboratory Reference: 1566658
Hole No.: TP34
Sample Reference: Not Given
Soil Description: Light brown to reddish brown CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
28	73	28	45	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 09/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

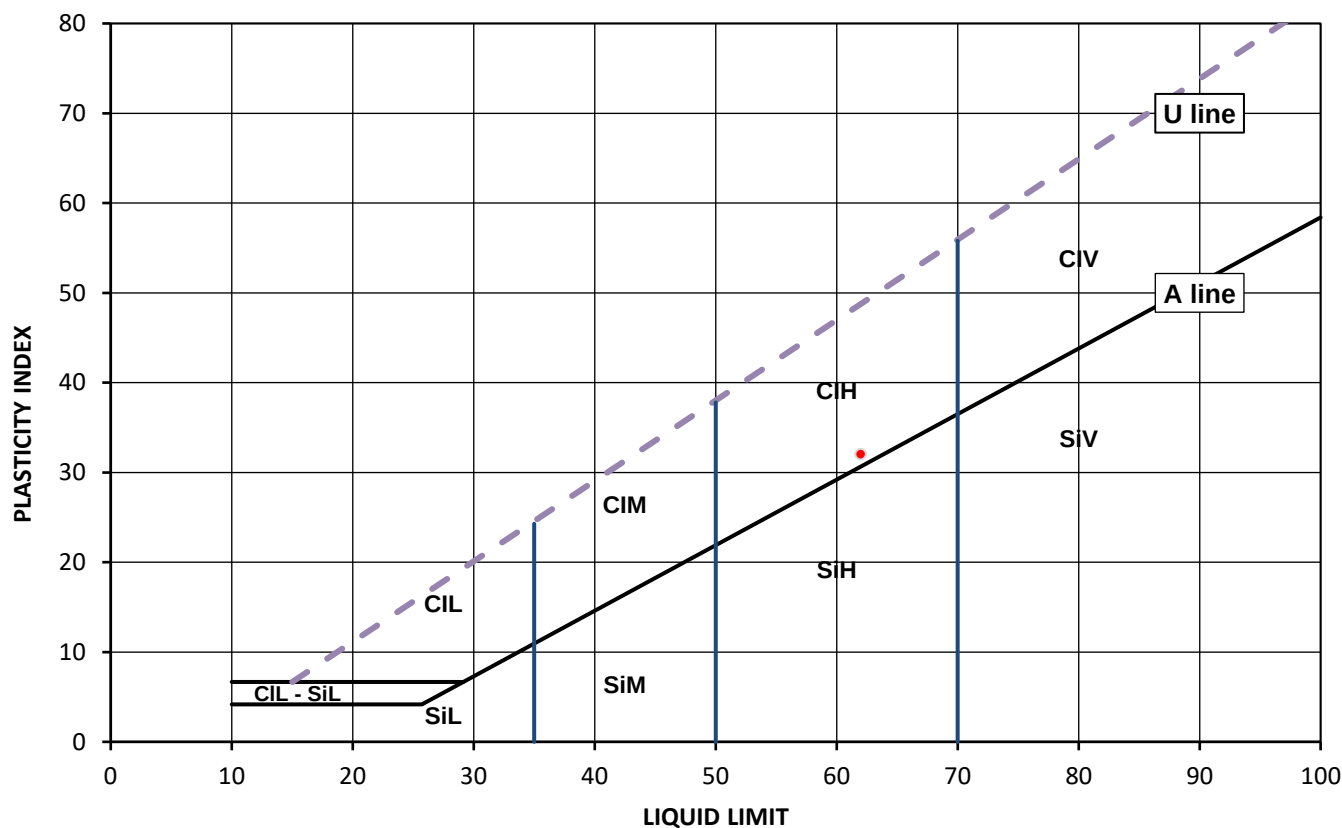
Test Results:

Laboratory Reference: 1566659
Hole No.: TP34
Sample Reference: Not Given
Soil Description: Mottled brown CLAY

Depth Top [m]: 2.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

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



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 09/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

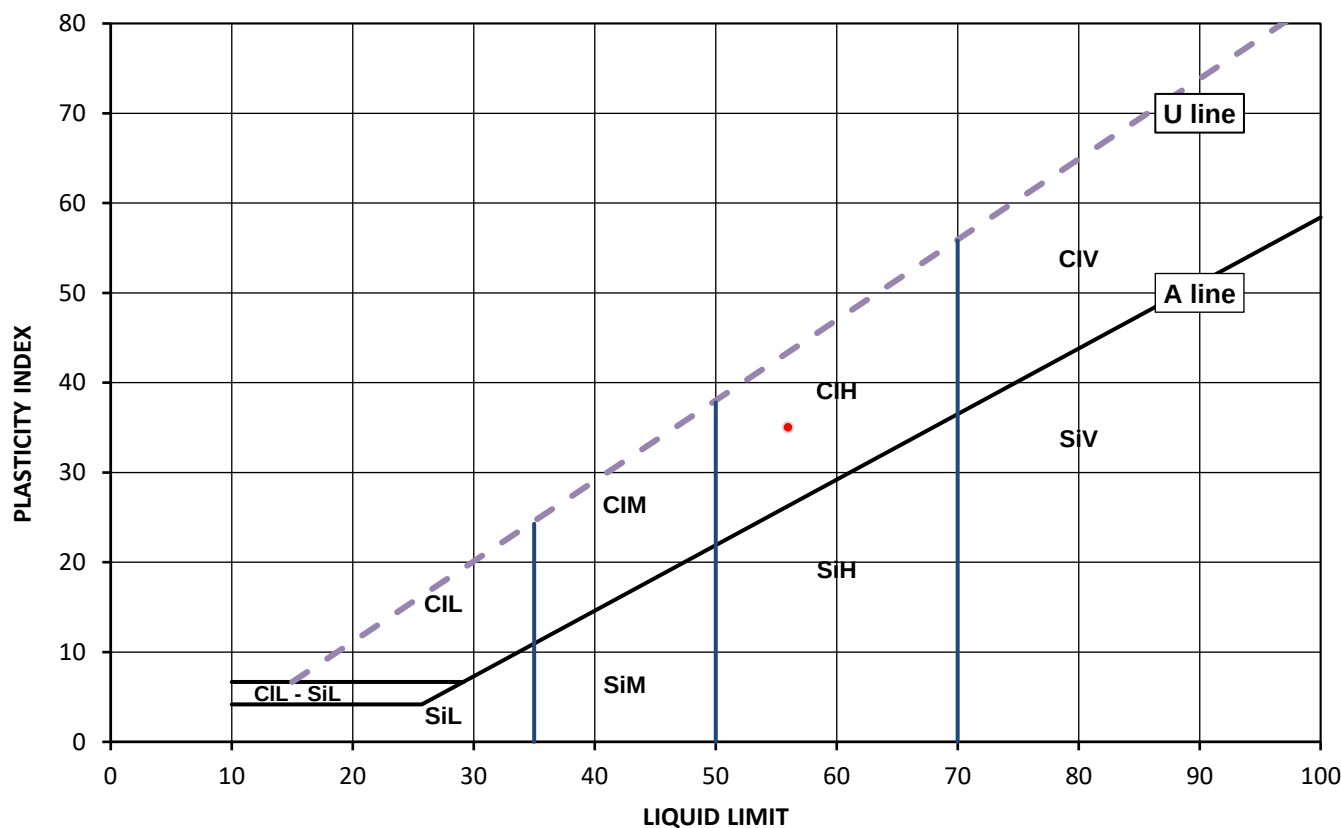
Test Results:

Laboratory Reference: 1566660
Hole No.: TP37
Sample Reference: Not Given
Soil Description: Orangish brown to grey slightly sandy CLAY

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
38	56	21	35	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 09/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

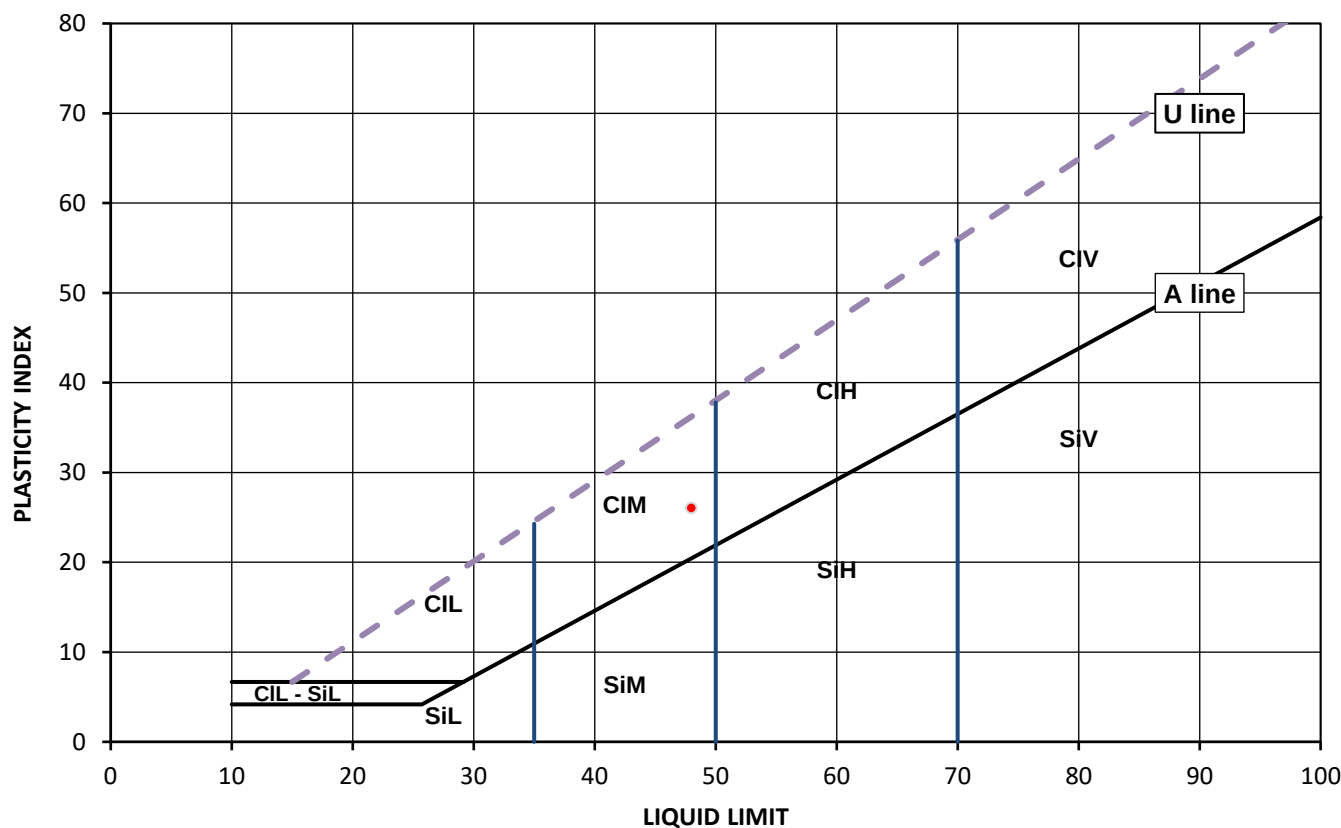
Test Results:

Laboratory Reference: 1566661
Hole No.: TP39
Sample Reference: Not Given
Soil Description: Mottled brown slightly sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
22	48	22	26	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Liquid and Plastic Limits

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



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

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 09/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

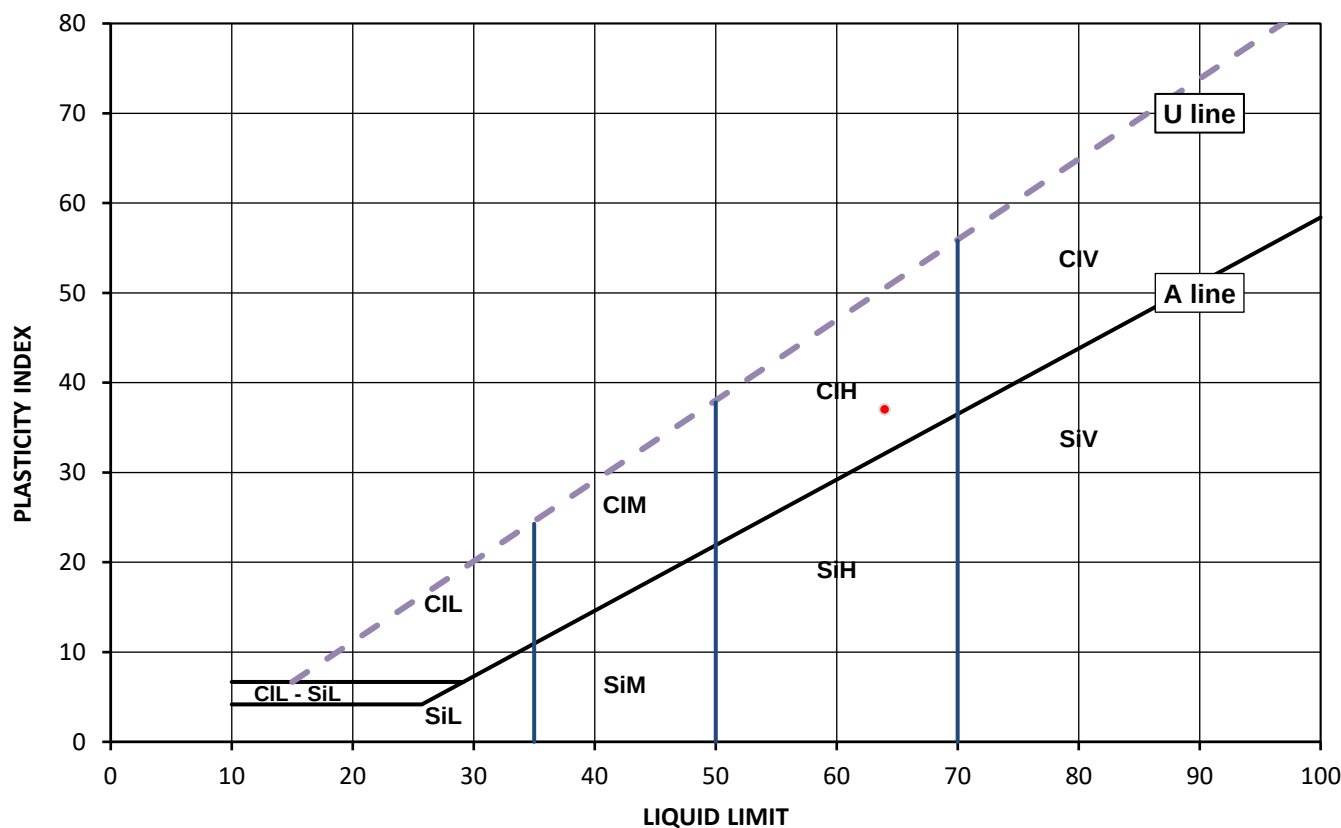
Test Results:

Laboratory Reference: 1566662
Hole No.: TP39
Sample Reference: Not Given
Soil Description: Orangish brown to grey CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Moisture Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
33	64	27	37	100



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

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

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



SUMMARY REPORT

Summary of Classification Test Results

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



Tested in Accordance with:

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

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

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07 - 08/07/2020
Date Received: 08/07/2020
Date Tested: 27/07 - 29/07/2020
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m															
1566645	TP11	Not Given	0.50	Not Given	D	Orangish brown to grey CLAY	Atterberg 1 Point	38		100	85	35	50						
1566646	TP11	Not Given	1.00	Not Given	D	Mottled brown CLAY	Atterberg 1 Point	33		100	72	34	38						
1566647	TP12	Not Given	0.50	Not Given	D	Brown sandy CLAY	Atterberg 1 Point	22		100	38	20	18						
1566648	TP13	Not Given	1.00	Not Given	D	Orangish brown to grey sandy CLAY	Atterberg 1 Point	35		100	50	30	20						
1566634	TP15	Not Given	0.60	Not Given	B	Brownish grey slightly sandy CLAY	Atterberg 1 Point	20		100	53	29	24						
1566649	TP16	Not Given	1.50	Not Given	D	Orangish brown to grey slightly sandy CLAY	Atterberg 1 Point	35		100	58	20	38						
1566629	TP17	Not Given	0.60	Not Given	B	Multicolour silty CLAY	Atterberg 1 Point	32		100	67	32	35						
1566650	TP19	Not Given	0.50	Not Given	D	Brown slightly gravelly sandy CLAY	Atterberg 1 Point	18		99	44	24	20						
1566651	TP19	Not Given	1.50	Not Given	D	Orangish brown slightly sandy CLAY	Atterberg 1 Point	34		100	53	30	23						
1566652	TP20	Not Given	0.50	Not Given	D	Orangish brown to grey slightly sandy CLAY	Atterberg 1 Point	32		100	50	25	25						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



SUMMARY REPORT

Summary of Classification Test Results

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



Tested in Accordance with:

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

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

Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07 - 10/07/2020
Date Received: 08/07/2020
Date Tested: 27/07 - 29/07/2020
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m															
1566653	TP20	Not Given	1.00	Not Given	D	Mottled brown slightly gravelly CLAY	Atterberg 1 Point	21		99	67	29	38						
1566635	TP21	Not Given	0.60	Not Given	B	Yellowish brown mottled grey slightly sandy CLAY	Atterberg 1 Point	32		100	55	25	30						
1566654	TP23	Not Given	2.00	Not Given	D	Orangish brown to grey slightly sandy CLAY	Atterberg 1 Point	38		100	59	26	33						
1566630	TP24	Not Given	0.60	Not Given	B	Brownish grey slightly sandy CLAY	Atterberg 1 Point	32		100	55	31	24						
1566633	TP25	Not Given	0.60	Not Given	B	Brownish grey CLAY	Atterberg 1 Point	32		100	72	29	43						
1566655	TP26	Not Given	1.00	Not Given	D	Mottled brown CLAY	Atterberg 1 Point	37		100	60	27	33						
1566632	TP28	Not Given	0.60	Not Given	B	Yellowish brown slightly gravelly sandy CLAY	Atterberg 1 Point	21		97	61	25	36						
1566657	TP32	Not Given	1.50	Not Given	D	Reddish brown to grey CLAY	Atterberg 1 Point	33		100	76	33	43						
1566658	TP34	Not Given	0.50	Not Given	D	Light brown to reddish brown CLAY	Atterberg 1 Point	28		100	73	28	45						
1566631	TP34	Not Given	0.60	Not Given	B	Light grey mottled red CLAY	Atterberg 1 Point	27		100	79	29	50						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



SUMMARY REPORT

Summary of Classification Test Results

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



Tested in Accordance with:

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

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

Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07 - 10/07/2020
Date Received: 08/07/2020
Date Tested: 29/07/2020
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Moisture Content [W]	Water Content [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m															
1566659	TP34	Not Given	2.00	Not Given	D	Mottled brown CLAY	Atterberg 1 Point	36		100	62	30	32						
1566660	TP37	Not Given	1.00	Not Given	D	Orangish brown to grey slightly sandy CLAY	Atterberg 1 Point	38		100	56	21	35						
1566661	TP39	Not Given	0.50	Not Given	D	Mottled brown slightly sandy CLAY	Atterberg 1 Point	22		100	48	22	26						
1566662	TP39	Not Given	1.50	Not Given	D	Orangish brown to grey CLAY	Atterberg 1 Point	33		100	64	27	37						
1566642	WS10	Not Given	1.00	Not Given	D	Orangish brown to light grey slightly sandy CLAY	Atterberg 1 Point	27		100	57	27	30						
1566643	WS12	Not Given	1.50	Not Given	D	Light grey to orangish brown CLAY	Atterberg 1 Point	26		100	71	31	40						
1566644	WS15	Not Given	0.50	Not Given	D	Orangish brown to grey CLAY	Atterberg 1 Point	34		100	72	28	44						
1566656	WS7	Not Given	0.50	Not Given	D	Orangish brown very sandy CLAY	Atterberg 1 Point	15		94	33	19	14						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Particle Size Distribution

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



Tested in Accordance with: BS 1377-2: 1990

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

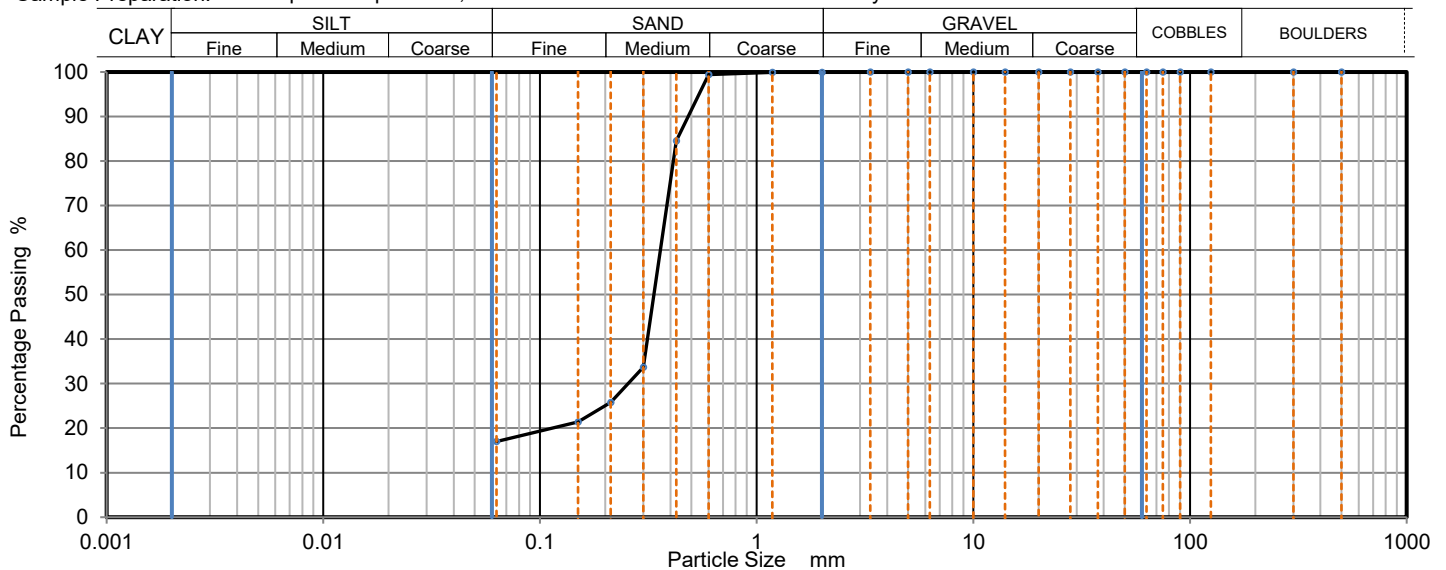
Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 28/07/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566639
Hole No.: WS16
Sample Reference: Not Given
Sample Description: Brown clayey SAND
Sample Preparation: Sample was quartered, oven dried at 106.2 °C and broken down by hand.

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	85		
0.3	34		
0.212	26		
0.15	21		
0.063	17		

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.10
Sand	83.00
Fines <0.063mm	17.00

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Particle Size Distribution

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



Tested in Accordance with: BS 1377-2: 1990

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

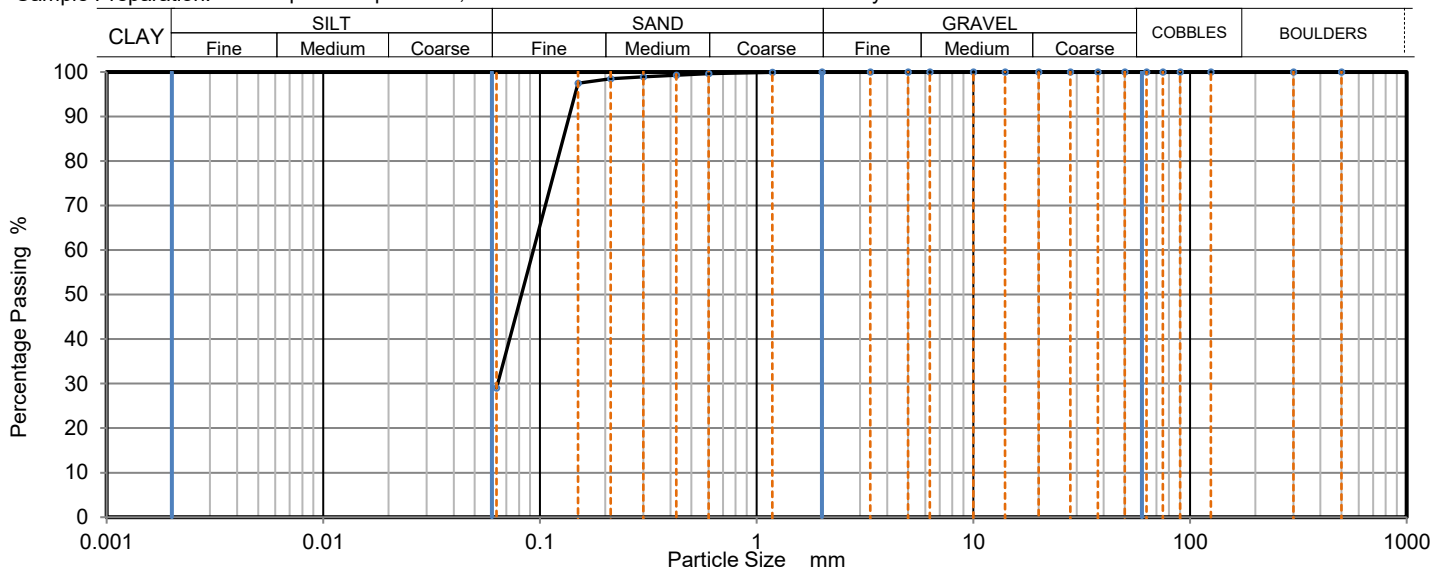
Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 28/07/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566640
Hole No.: WS07
Sample Reference: Not Given
Sample Description: Brown clayey SAND
Sample Preparation: Sample was quartered, oven dried at 106.2 °C and broken down by hand.

Depth Top [m]: 2.00
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	99		
0.3	99		
0.212	99		
0.15	98		
0.063	29		

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	70.80
Fines <0.063mm	29.20

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Particle Size Distribution

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



Tested in Accordance with: BS 1377-2: 1990

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

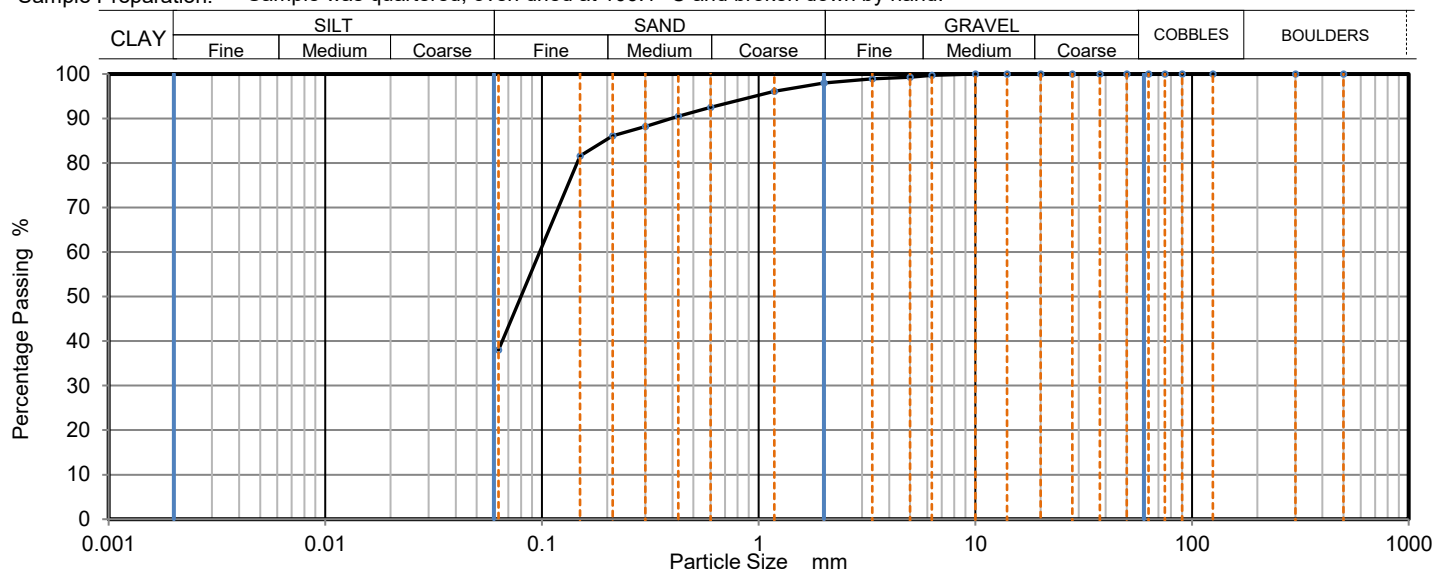
Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 28/07/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566641
Hole No.: TP30
Sample Reference: Not Given
Sample Description: Reddish brown very clayey SAND
Sample Preparation: Sample was quartered, oven dried at 106.1 °C and broken down by hand.

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: D



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	99		
3.35	99		
2	98		
1.18	96		
0.6	93		
0.425	91		
0.3	88		
0.212	86		
0.15	82		
0.063	38		

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	2.00
Sand	59.60
Fines <0.063mm	38.40

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

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

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



SUMMARY REPORT

Summary of Moisture Condition Value Test Results

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



Environmental Science

Tested in Accordance with: BS 1377-4: 1990: Clause 5.4

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07 - 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Retained on 20mm sieve %	Moisture Content <20mm %	Moisture Condition Value	Method of Interpretation						
		Reference	Depth Top m	Depth Base m	Type												
1566638	BH1	Not Given	0.50	Not Given	B	Yellowish brown slightly gravelly sandy CLAY with roots		1	27	9.7	Steepest straight line						
1566636	TP14	Not Given	0.50	Not Given	B	Yellowish brown slightly sandy CLAY		0	27	9.1	Steepest straight line						
1566637	TP21	Not Given	1.50	Not Given	B	Yellowish brown CLAY		0	32	5.4	Steepest straight line						

Comments:

Signed:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE
Dry Density / Moisture Content
Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

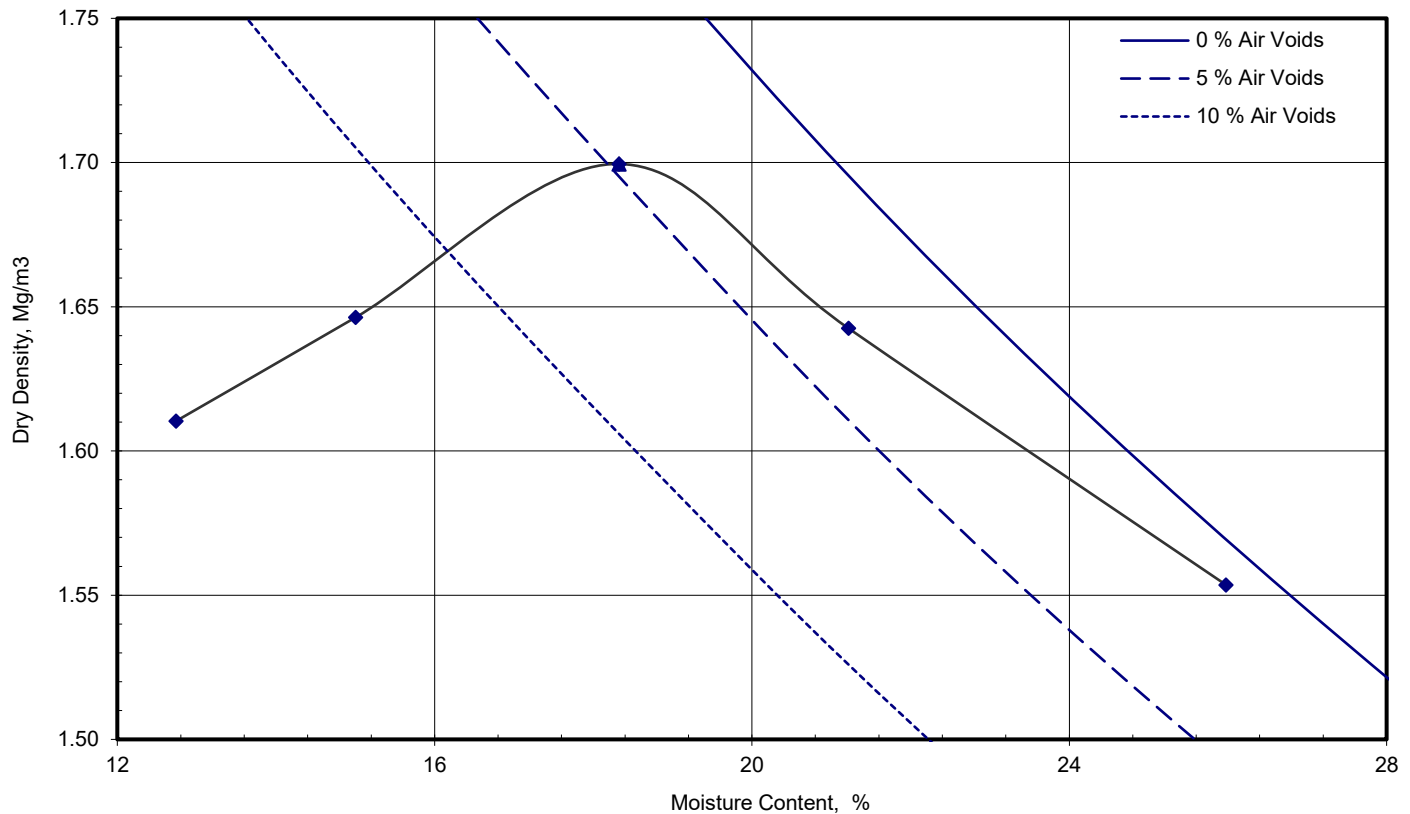
Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566636
Hole No.: TP14
Sample Reference: Not Given
Sample Description: Yellowish brown slightly sandy CLAY

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B



Preparation		Material used was natural
Mould Type		1 Litre
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.65
As received Moisture Content	%	26
Maximum Dry Density	Mg/m³	1.70
Optimum Moisture Content	%	18

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

Remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

Dry Density / Moisture Content

Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

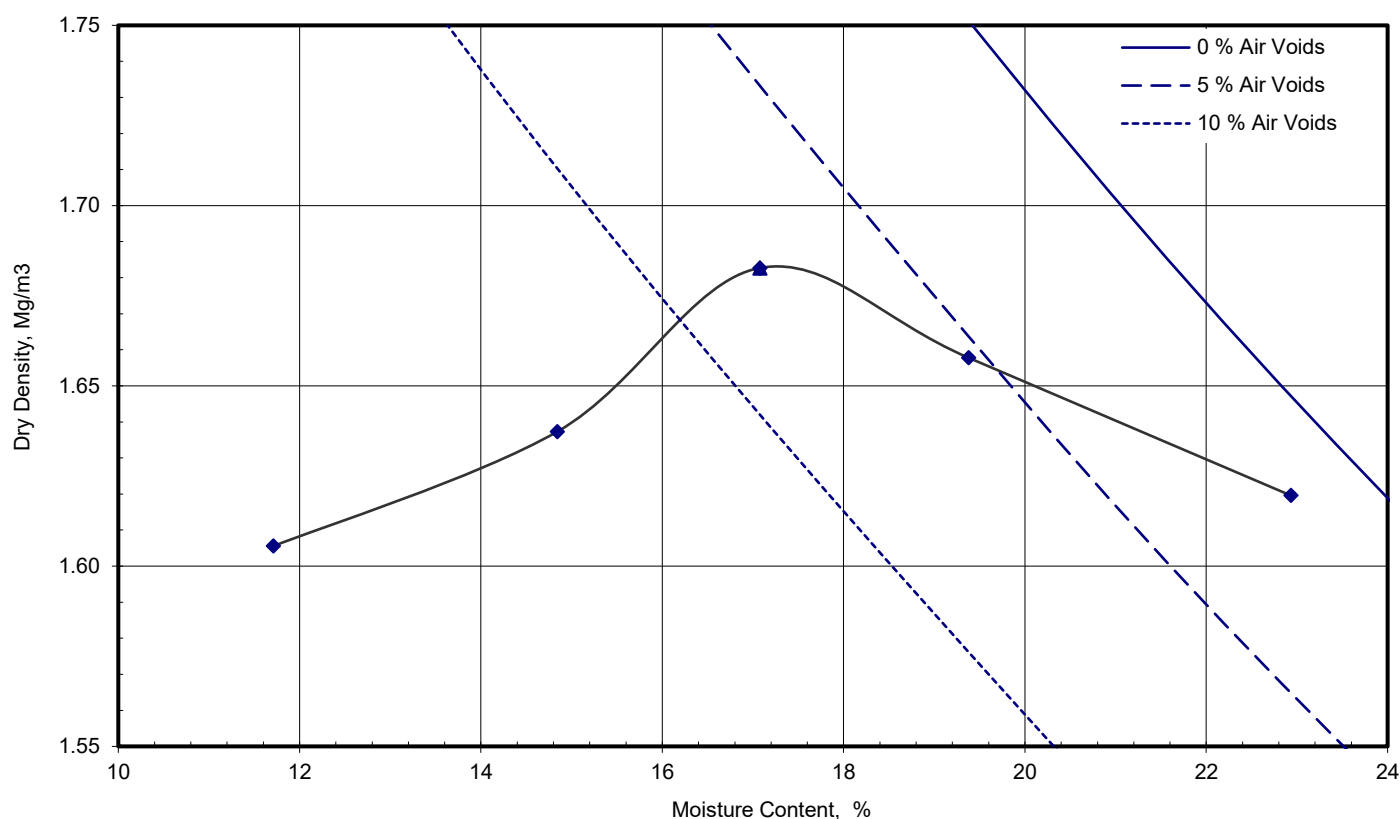
Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 07/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566637
Hole No.: TP21
Sample Reference: Not Given
Sample Description: Yellowish brown CLAY

Depth Top [m]: 1.50
Depth Base [m]: Not Given
Sample Type: B



Preparation		Material used was natural
Mould Type		1 Litre
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	0
Material Retained on 20.0 mm Sieve	%	0
Particle Density - Assumed	Mg/m³	2.65
As received Moisture Content	%	32
Maximum Dry Density	Mg/m³	1.68

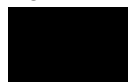
Optimum Moisture Content	%	17
--------------------------	---	----

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.3 using 2.5kg [light] Rammer

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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

Page 1 of 1

Date Reported: 17/08/2020

GF 109.19



TEST CERTIFICATE

Dry Density / Moisture Content

Relationship Light Compaction

Tested in Accordance with:
BS 1377-4: 1990

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

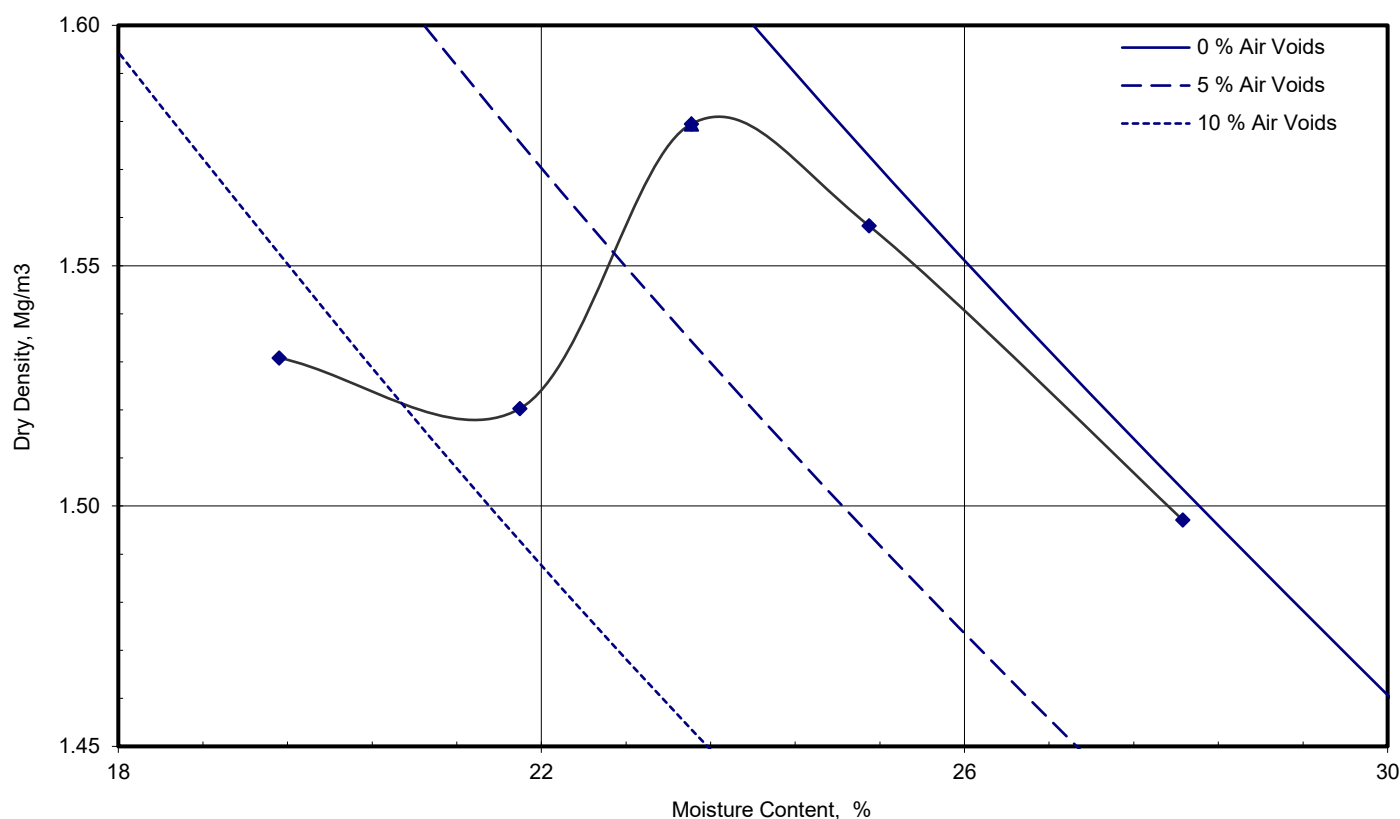
Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566638
Hole No.: BH1
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly sandy CLAY with roots

Depth Top [m]: 0.50
Depth Base [m]: Not Given
Sample Type: B



Preparation		Material used was natural
Mould Type		CBR
Samples Used		Single sample tested
Material Retained on 37.5 mm Sieve	%	1
Material Retained on 20.0 mm Sieve	%	1
Particle Density - Assumed	Mg/m³	2.60
As received Moisture Content	%	28
Maximum Dry Density	Mg/m³	1.58

Optimum Moisture Content	%	23
--------------------------	---	----

Note: Tested in Accordance with BS 1377-4: 1990: Clause 3.4 using 2.5kg [light] Rammer

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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE
Unconsolidated Undrained
Triaxial Compression
Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

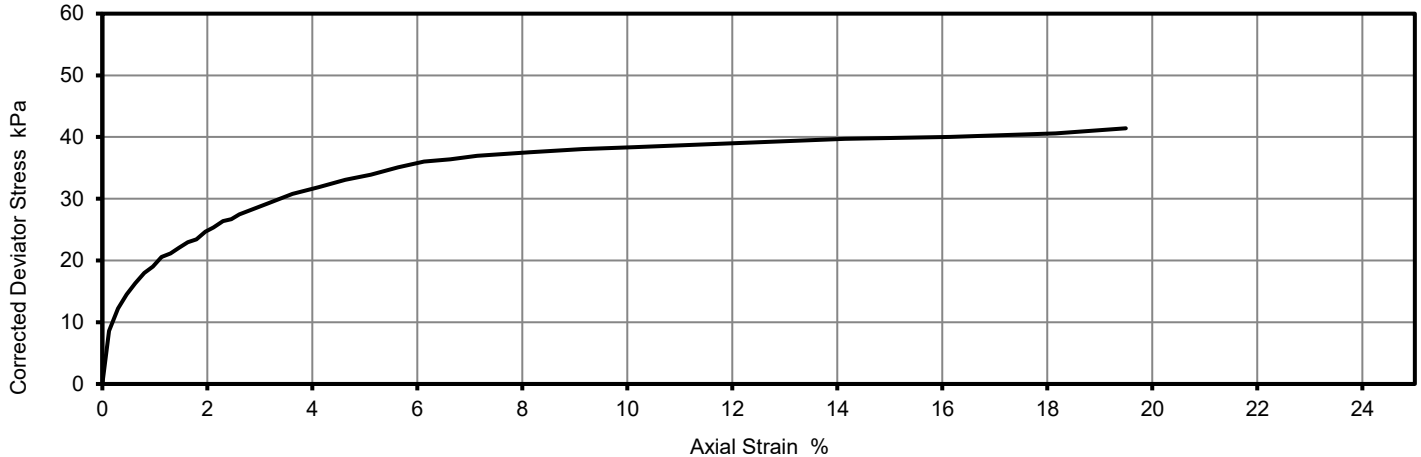
Laboratory Reference: 1566623
Hole No.: BH1
Sample Reference: Not Given
Sample Description: Brown sandy CLAY

Depth Top [m]: 2.00
Depth Base [m]: Not Given
Sample Type: U

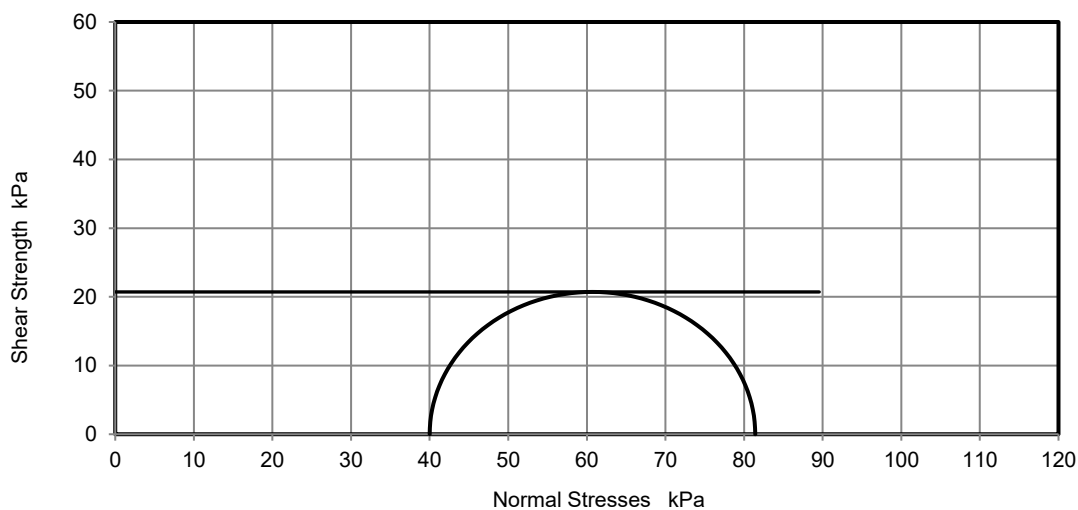
Test Number	1
Length	199.95 mm
Diameter	101.77 mm
Bulk Density	1.98 Mg/m ³
Moisture Content	27 %
Dry Density	1.55 Mg/m ³
Membrane Correction	1.04 kPa

Rate of Strain	2.00 %/min
Cell Pressure	40 kPa
Axial Strain at failure	19.5 %
Deviator Stress, $(\sigma_1 - \sigma_3)_f$	41 kPa
Undrained Shear Strength, c_u	21 kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Mode of Failure	Compound
Membrane thickness	0.28 mm

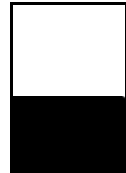
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE
Unconsolidated Undrained
Triaxial Compression
Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566624
Hole No.: BH1
Sample Reference: Not Given
Sample Description: Multicolour CLAY

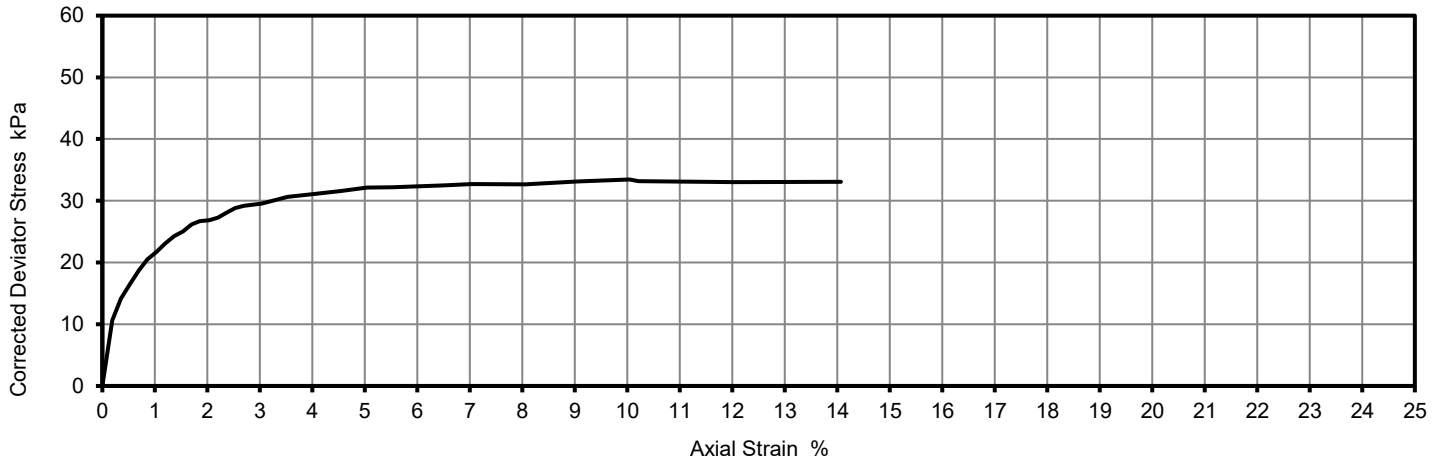
Depth Top [m]: 4.00
Depth Base [m]: Not Given
Sample Type: U

Test Number	1
Length	193.62 mm
Diameter	103.25 mm
Bulk Density	1.76 Mg/m ³
Moisture Content	38 %
Dry Density	1.27 Mg/m ³
Membrane Correction	0.61 kPa

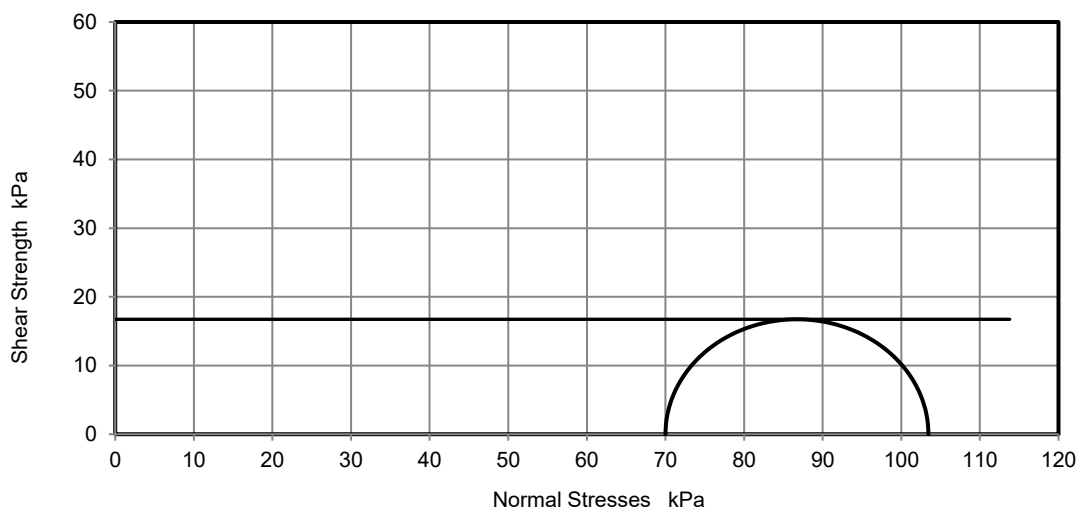
Rate of Strain
Cell Pressure
Axial Strain at failure
Deviator Stress, ($\sigma_1 - \sigma_3$)_f
Undrained Shear Strength, c_u
Mode of Failure
Membrane thickness

2.00	%/min
70	kPa
10.0	%
33	kPa
17	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Compound	
0.28	mm

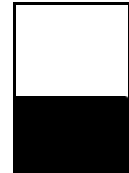
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE
Unconsolidated Undrained
Triaxial Compression
Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566625
Hole No.: BH1
Sample Reference: Not Given
Sample Description: Greyish brown slightly silty CLAY

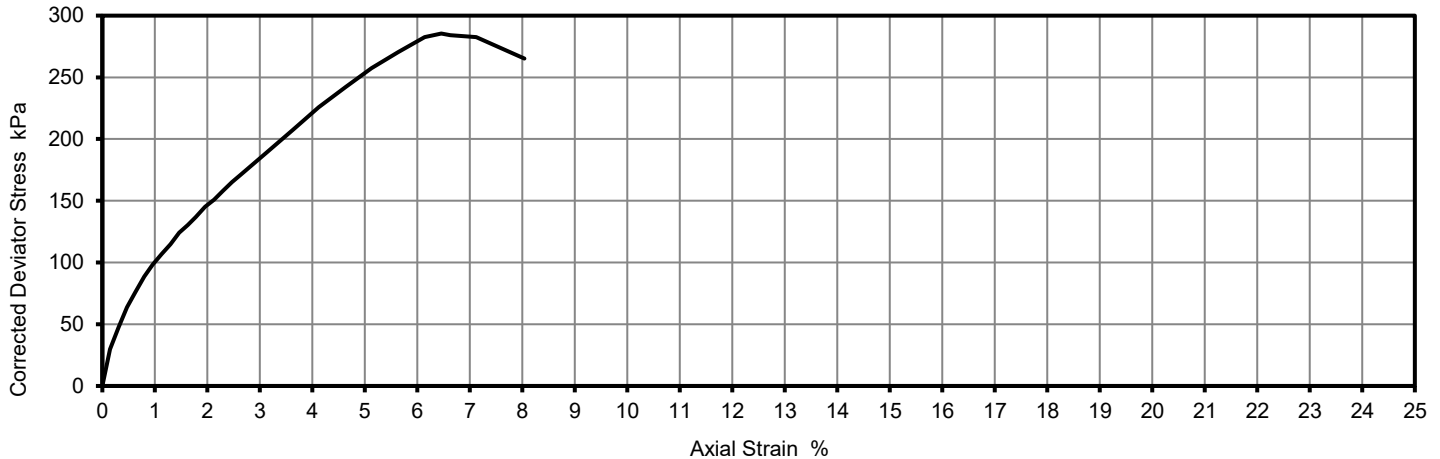
Depth Top [m]: 6.50
Depth Base [m]: Not Given
Sample Type: U

Test Number	1
Length	187.33 mm
Diameter	103.69 mm
Bulk Density	1.97 Mg/m ³
Moisture Content	25 %
Dry Density	1.58 Mg/m ³
Membrane Correction	0.45 kPa

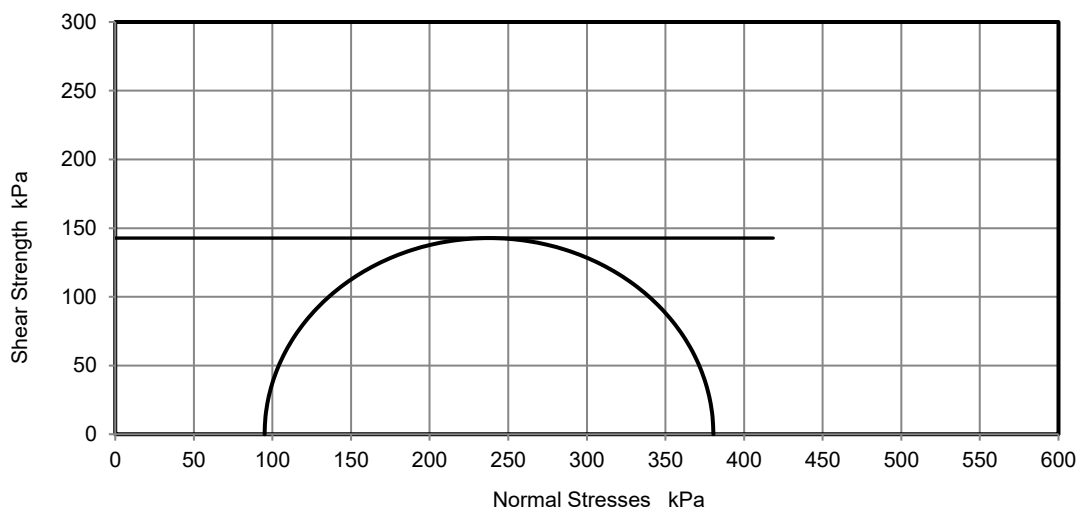
Rate of Strain
Cell Pressure
Axial Strain at failure
Deviator Stress, ($\sigma_1 - \sigma_3$)_f
Undrained Shear Strength, c_u
Mode of Failure
Membrane thickness

2.00	%/min
95	kPa
6.5	%
285	kPa
143	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Compound	
0.28	mm

Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE
Unconsolidated Undrained
Triaxial Compression
Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

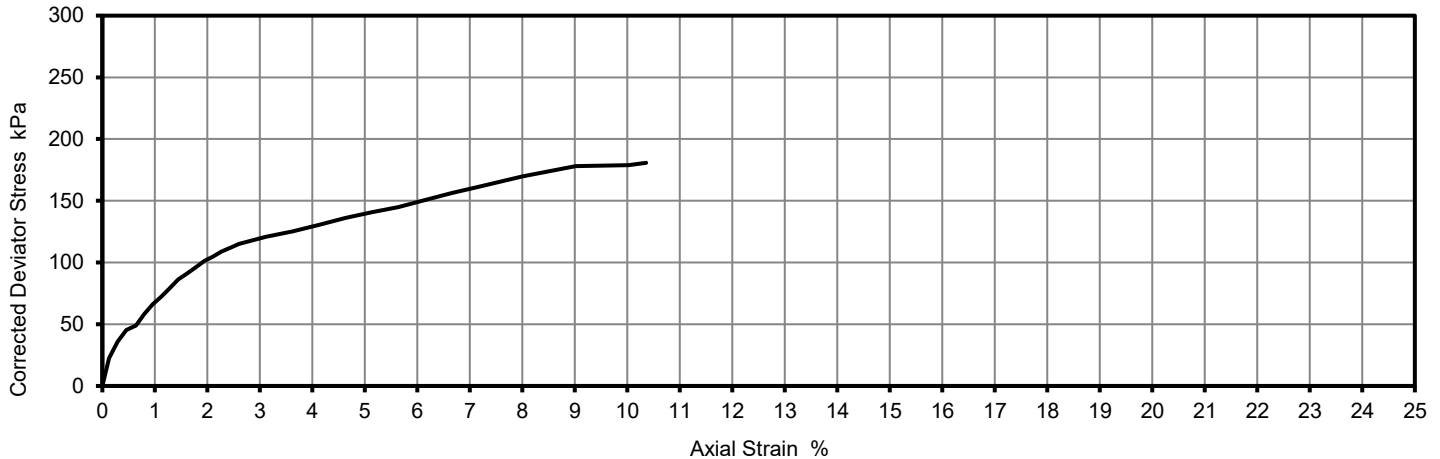
Laboratory Reference: 1566626
Hole No.: BH1
Sample Reference: Not Given
Sample Description: Greyish brown CLAY

Depth Top [m]: 9.50
Depth Base [m]: Not Given
Sample Type: U

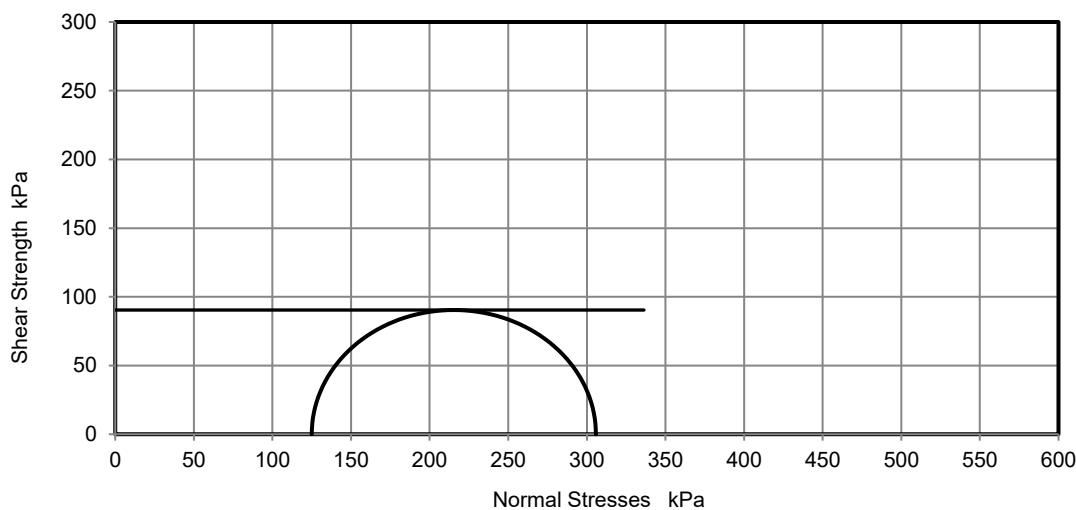
Test Number	1
Length	196.08 mm
Diameter	103.35 mm
Bulk Density	1.95 Mg/m ³
Moisture Content	25 %
Dry Density	1.55 Mg/m ³
Membrane Correction	0.49 kPa

Rate of Strain	1.99 %/min
Cell Pressure	125 kPa
Axial Strain at failure	10.4 %
Deviator Stress, ($\sigma_1 - \sigma_3$) _f	181 kPa
Undrained Shear Strength, c_u	90 kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Mode of Failure	Compound
Membrane thickness	0.22 mm

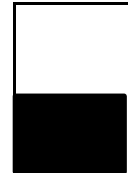
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE
Unconsolidated Undrained
Triaxial Compression
Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 04/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566627
Hole No.: BH1
Sample Reference: Not Given
Sample Description: Greyish brown CLAY

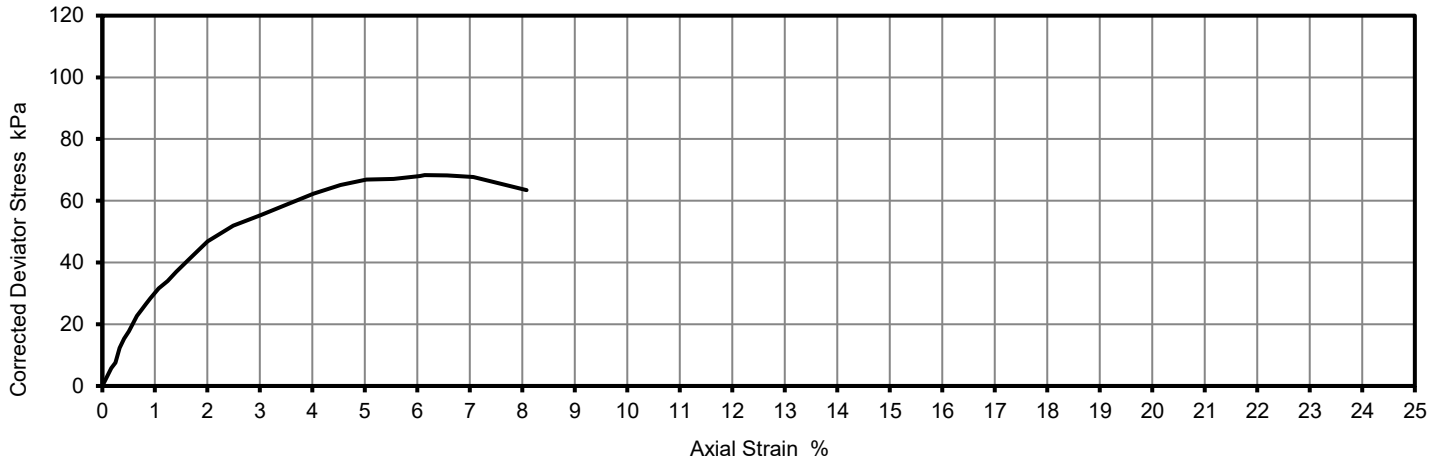
Depth Top [m]: 12.50
Depth Base [m]: Not Given
Sample Type: B

Test Number	1
Length	200.74 mm
Diameter	100.36 mm
Bulk Density	1.81 Mg/m ³
Moisture Content	28 %
Dry Density	1.41 Mg/m ³
Membrane Correction	0.37 kPa

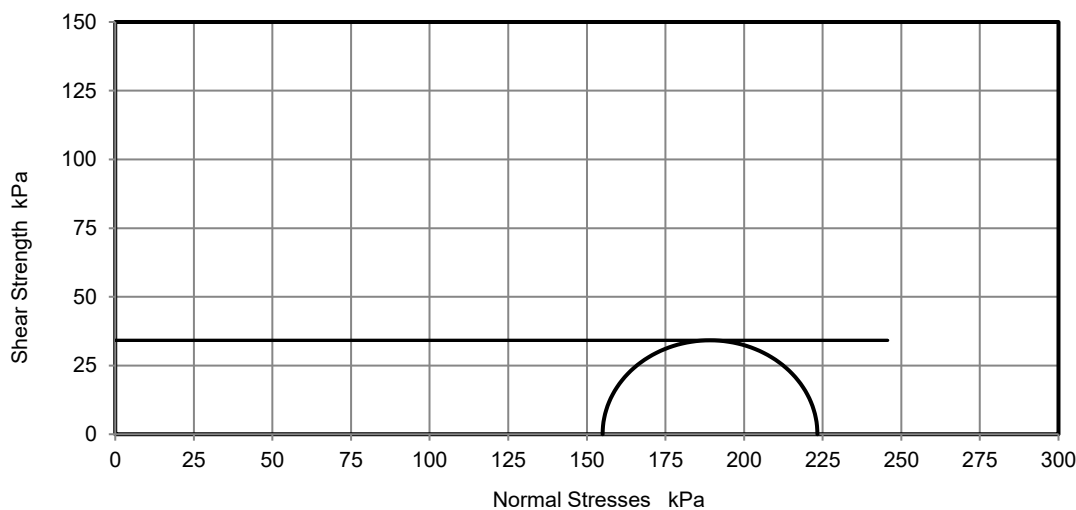
Rate of Strain
Cell Pressure
Axial Strain at failure
Deviator Stress, $(\sigma_1 - \sigma_3)_f$
Undrained Shear Strength, c_u
Mode of Failure
Membrane thickness

1.00	%/min
155	kPa
6.1	%
68	kPa
34	kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Compound	
0.23	mm

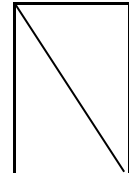
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

Remarks: Recompacted at NMC using 2.5kg (light) rammer

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE
Unconsolidated Undrained
Triaxial Compression
Tested in Accordance with:
BS 1377-7: 1990: Clause 8

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



Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 01/08/2020
Sampled By: Not Given

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

Test Results:

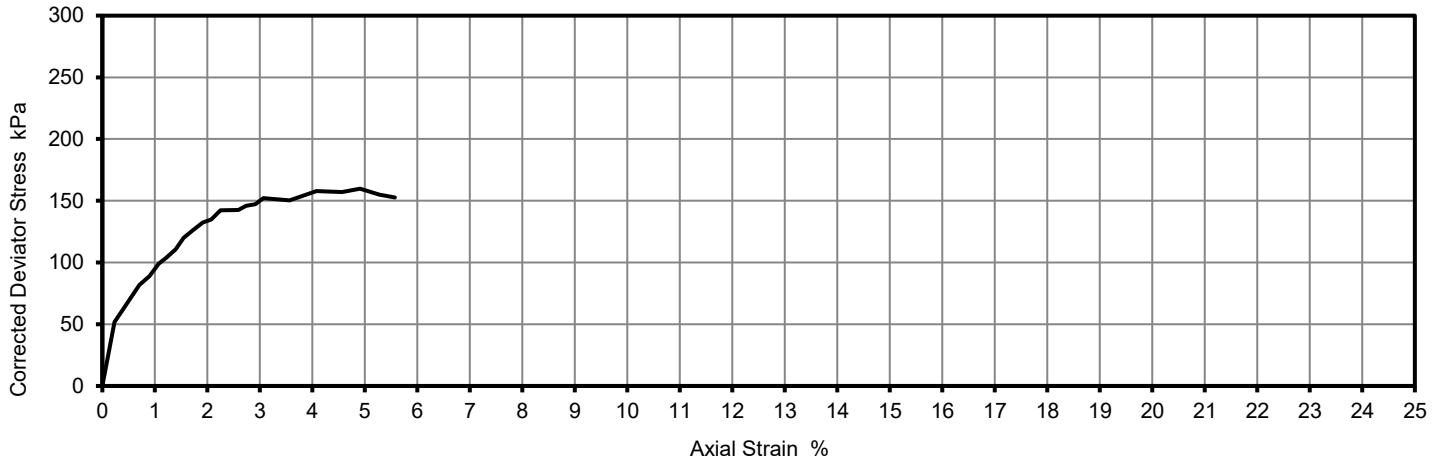
Laboratory Reference: 1566628
Hole No.: BH1
Sample Reference: Not Given
Sample Description: Greyish brown slightly silty CLAY

Depth Top [m]: 14.00
Depth Base [m]: Not Given
Sample Type: U

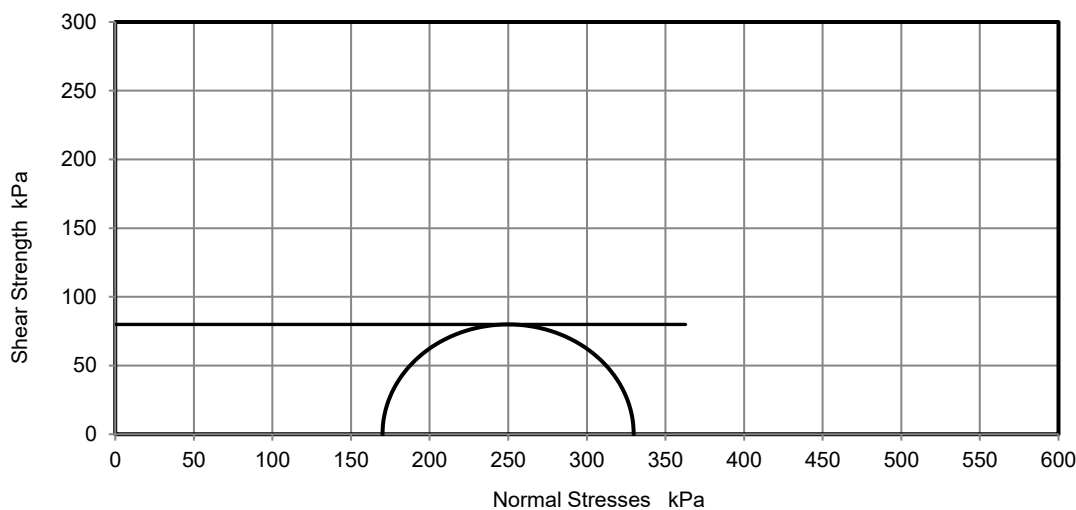
Test Number	1
Length	73.76 mm
Diameter	38.05 mm
Bulk Density	1.91 Mg/m ³
Moisture Content	32 %
Dry Density	1.45 Mg/m ³
Membrane Correction	0.74 kPa

Rate of Strain	2.00 %/min
Cell Pressure	170 kPa
Axial Strain at failure	4.9 %
Deviator Stress, ($\sigma_1 - \sigma_3$) _f	160 kPa
Undrained Shear Strength, c_u	80 kPa $\frac{1}{2}(\sigma_1 - \sigma_3)_f$
Mode of Failure	Brittle
Membrane thickness	0.21 mm

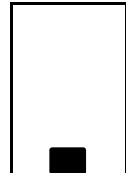
Deviator Stress v Axial Strain



Mohr Circles



Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377.
This is provided for information only.

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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566629
Hole No.: TP17
Sample Reference: Not Given
Sample Description: Multicolour silty CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition: Remoulded
Details: Recompacted with specified standard effort using 2.5kg rammer

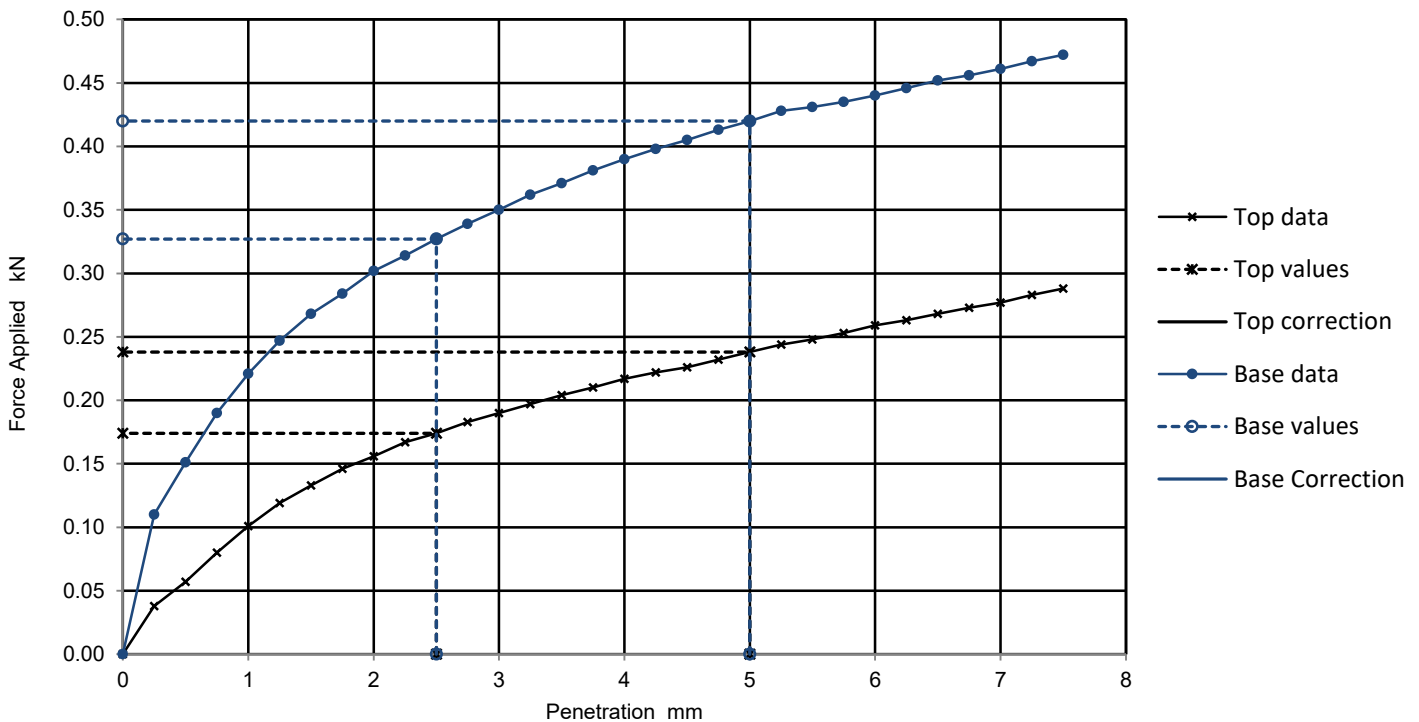
Soaking details
Period of soaking: 12 days
Time to surface: 2 days
Amount of swell recorded: 0.65 mm
Dry density after soaking: 1.36 Mg/m3

Material retained on 20mm sieve removed: 0 %

Initial Specimen details
Bulk density: 1.84 Mg/m3
Dry density: 1.36 Mg/m3
Moisture content: 35 %

Surcharge applied: 8 kg
4.9 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.3	1.2	1.3	
No	2.5	2.1	2.5	

Moisture Content %
39
36

Remarks:

Test/ Specimen
specific remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Environmental Science

Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

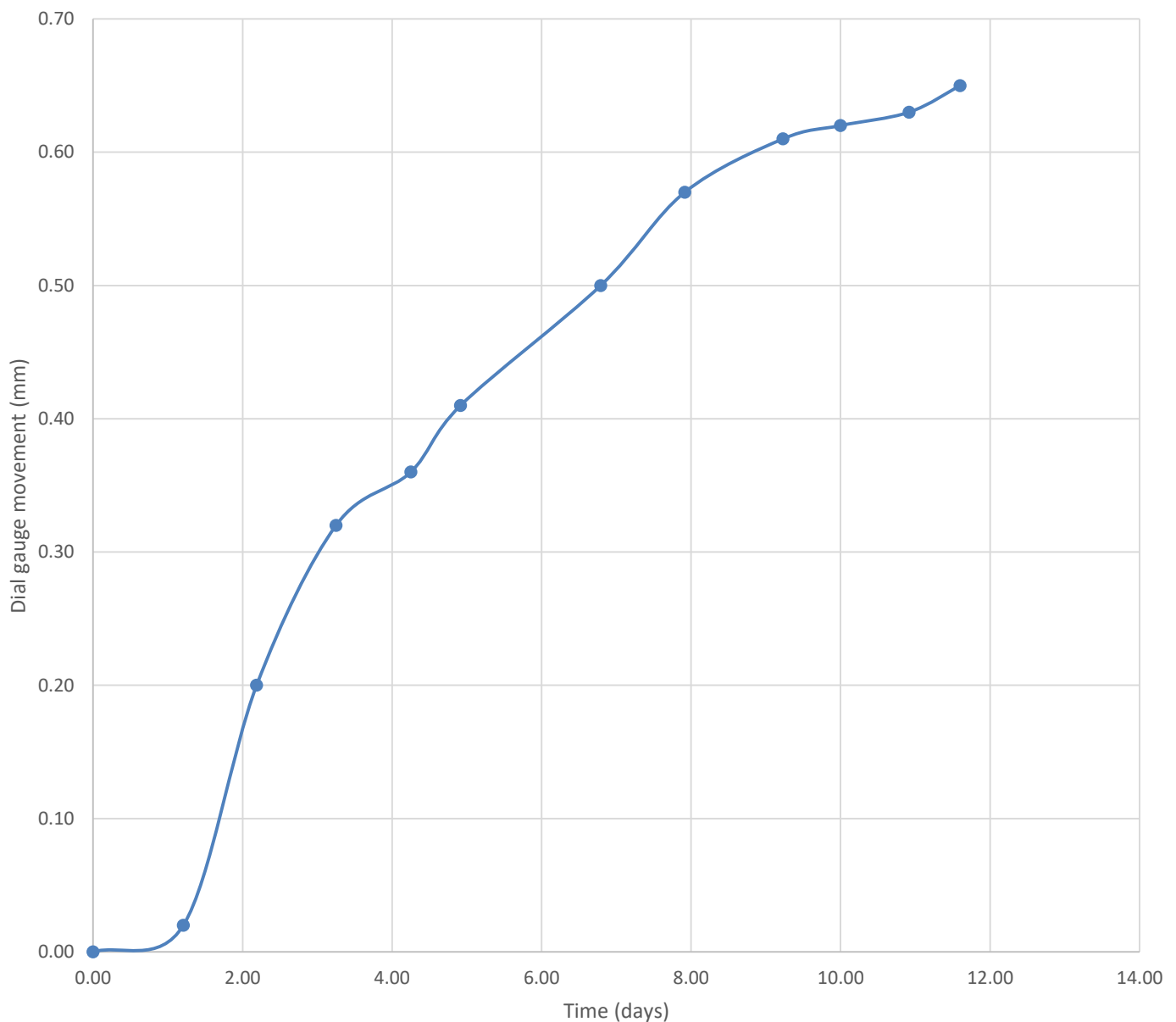
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1566629
Hole No.: TP17
Sample Reference: Not Given
Sample Description: Multicolour silty CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

CBR Soaked Graph



Remarks:

Test/ Specimen
specific 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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566630
Hole No.: TP24
Sample Reference: Not Given
Sample Description: Brownish grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition: Remoulded
Details: Recompacted with specified standard effort using 2.5kg rammer

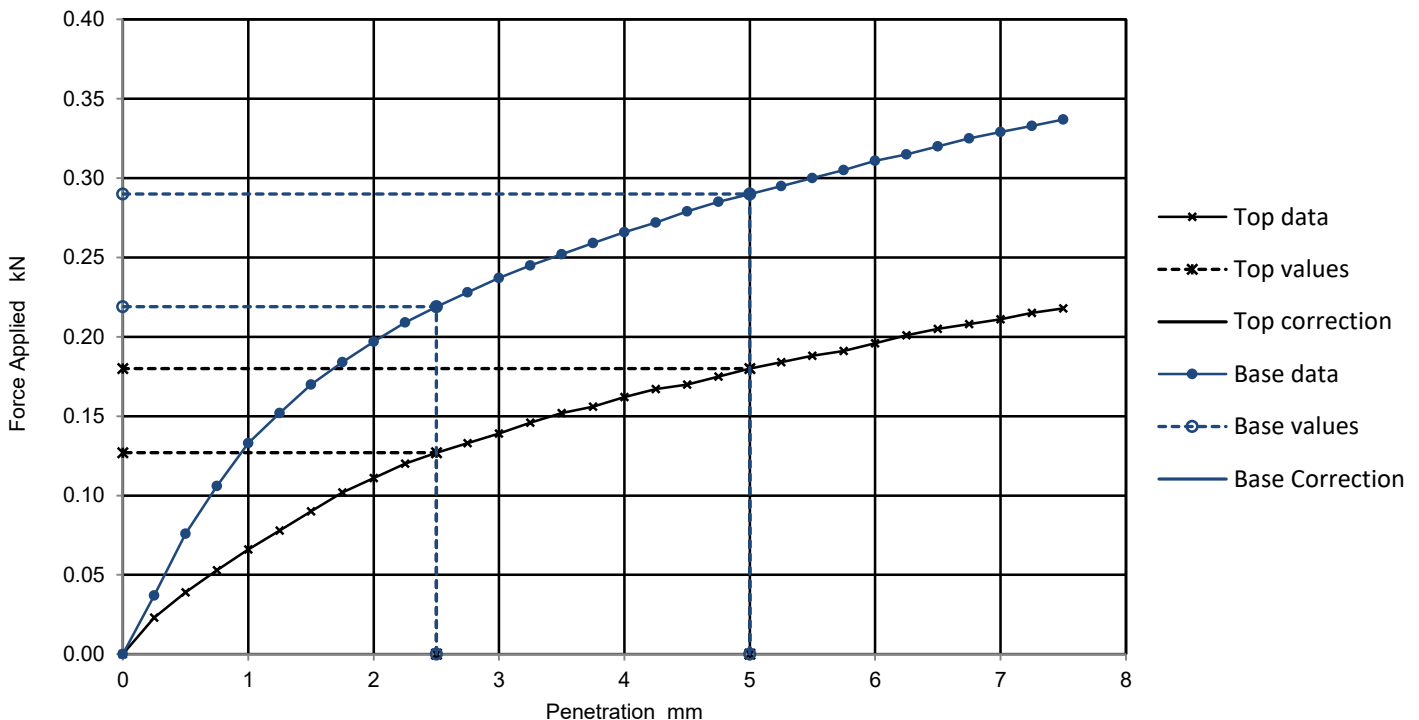
Soaking details
Period of soaking: 12 days
Time to surface: 4 days
Amount of swell recorded: 0.74 mm
Dry density after soaking: 1.39 Mg/m3

Material retained on 20mm sieve removed: 0 %

Initial Specimen details
Bulk density: 1.86 Mg/m3
Dry density: 1.40 Mg/m3
Moisture content: 33 %

Surcharge applied: 8 kg
4.9 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.0	0.9	1.0	
No	1.7	1.5	1.7	

Moisture Content %
36
36

Remarks:

Test/ Specimen
specific remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 06/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

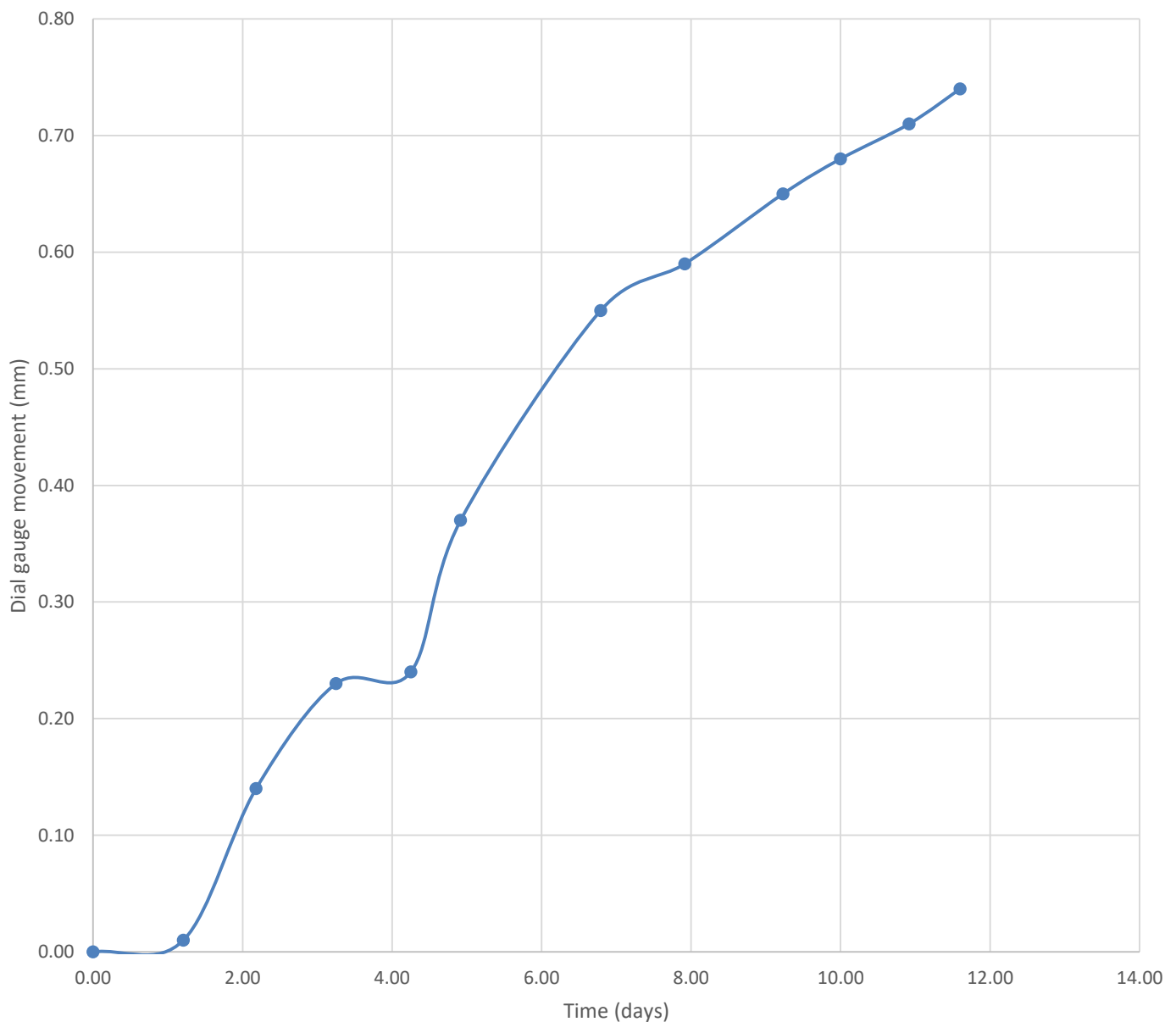
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1566630
Hole No.: TP24
Sample Reference: Not Given
Sample Description: Brownish grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

CBR Soaked Graph



Remarks:

Test/ Specimen
specific 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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

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



California Bearing Ratio Soaked

Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566631
Hole No.: TP34
Sample Reference: Not Given
Sample Description: Light grey mottled red CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition: Remoulded
Details: Recompacted with specified standard effort using 2.5kg rammer

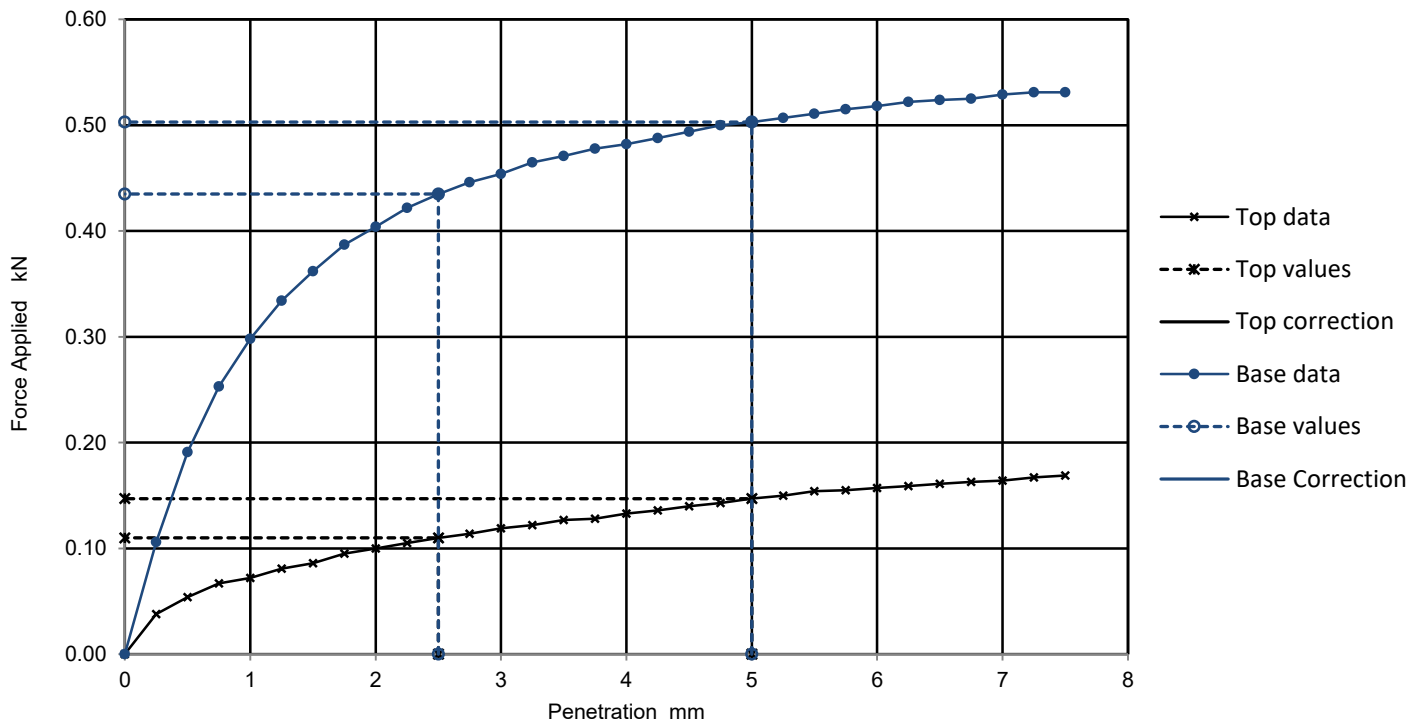
Soaking details
Period of soaking: 12 days
Time to surface: 5 days
Amount of swell recorded: 7.86 mm
Dry density after soaking: 1.40 Mg/m³

Material retained on 20mm sieve removed: 0 %

Initial Specimen details
Bulk density: 1.88 Mg/m³
Dry density: 1.49 Mg/m³
Moisture content: 27 %

Surcharge applied: 8 kg
4.8 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.8	0.7	0.8	
No	3.3	2.5	3.3	

Moisture Content %
38
33

Remarks:

Test/ Specimen
specific remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

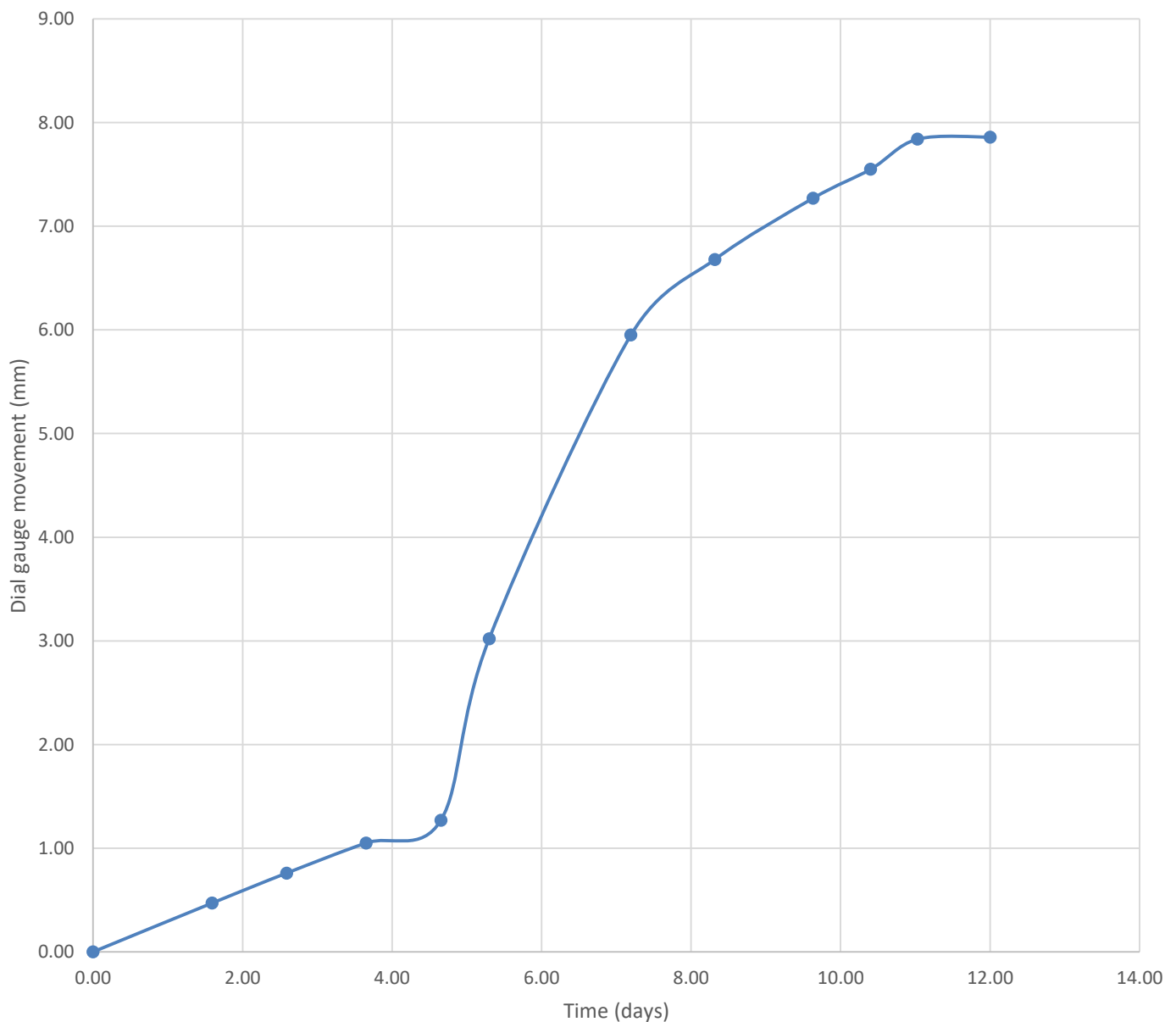
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1566631
Hole No.: TP34
Sample Reference: Not Given
Sample Description: Light grey mottled red CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

CBR Soaked Graph



Remarks:

Test/ Specimen
specific 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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566632
Hole No.: TP28
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition: Remoulded
Details: Recompacted with specified standard effort using 2.5kg rammer

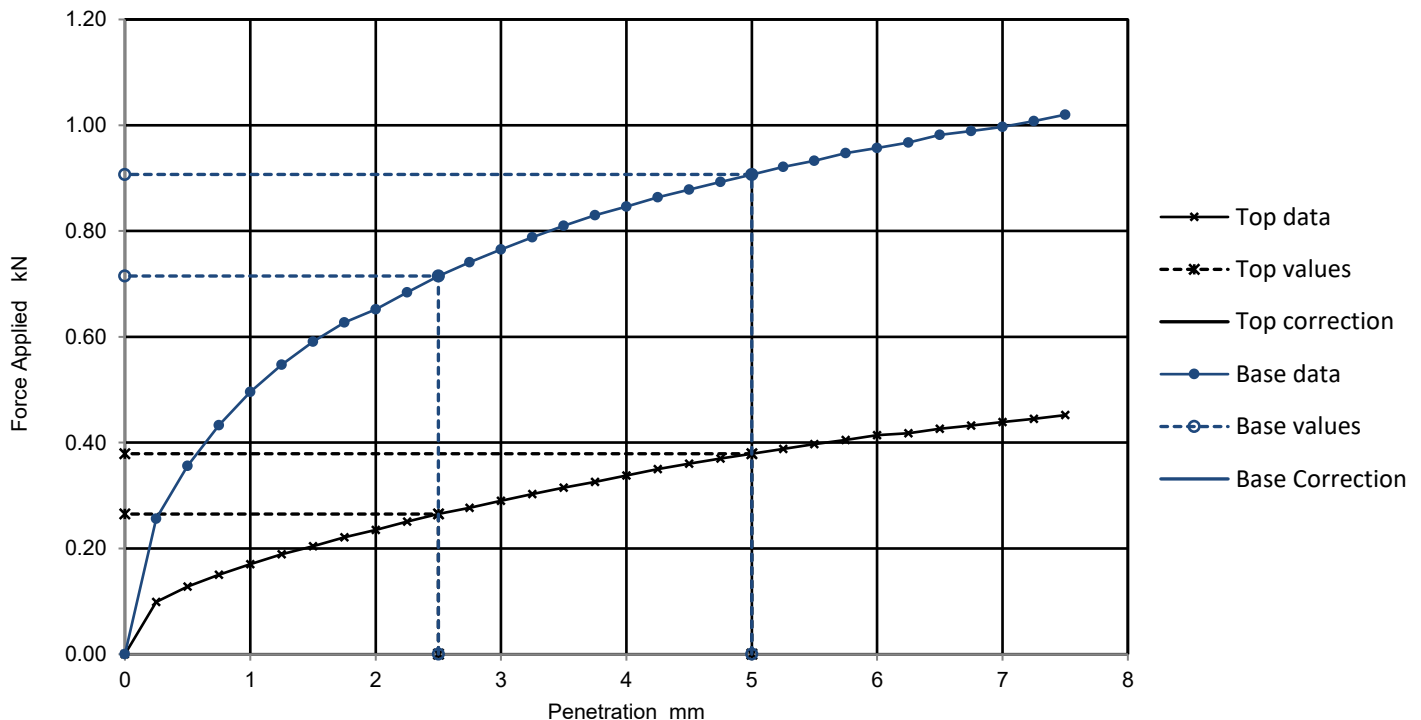
Soaking details
Period of soaking: 12 days
Time to surface: 4 days
Amount of swell recorded: 2.85 mm
Dry density after soaking: 1.50 Mg/m³

Material retained on 20mm sieve removed: 0 %

Initial Specimen details
Bulk density: 1.93 Mg/m³
Dry density: 1.54 Mg/m³
Moisture content: 26 %

Surcharge applied: 8 kg
4.9 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	2.0	1.9	2.0	
No	5.4	4.5	5.4	

Moisture Content %
29
29

Remarks:

Test/ Specimen
specific remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

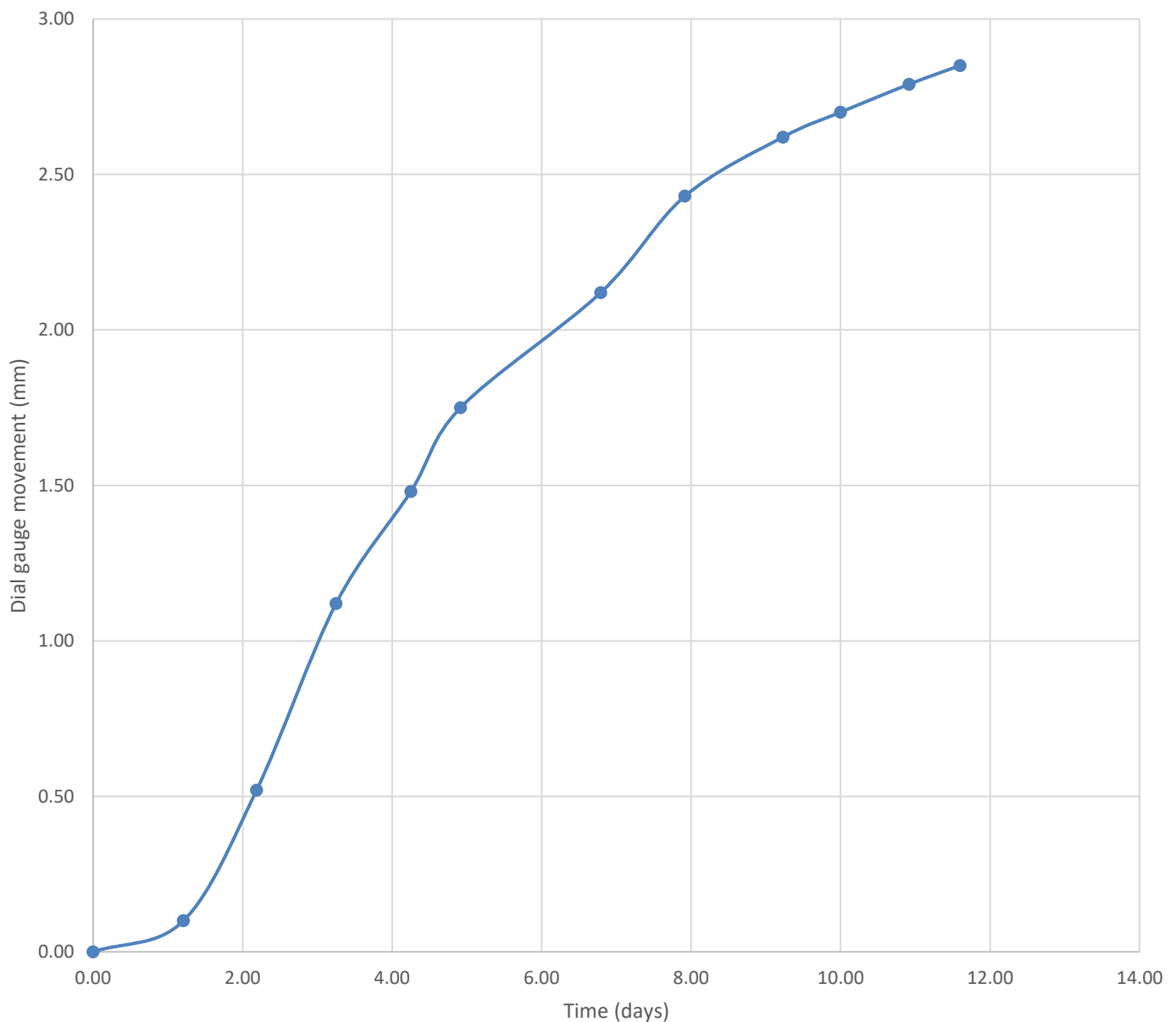
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1566632
Hole No.: TP28
Sample Reference: Not Given
Sample Description: Yellowish brown slightly gravelly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

CBR Soaked Graph



Remarks:

Test/ Specimen
specific 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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Environmental Science

Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566633
Hole No.: TP25
Sample Reference: Not Given
Sample Description: Brownish grey CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition: Remoulded
Details: Recompacted with specified standard effort using 2.5kg rammer

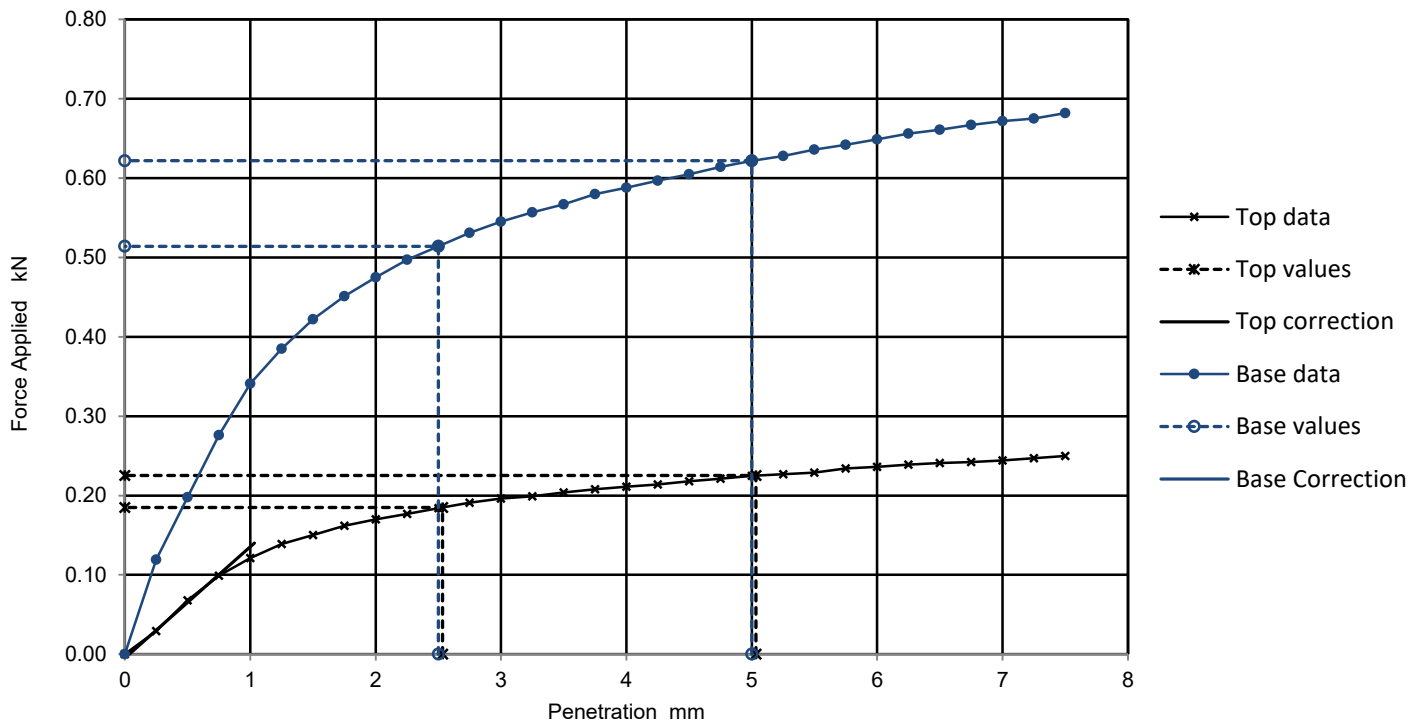
Soaking details
Period of soaking: 12 days
Time to surface: 4 days
Amount of swell recorded: 7.93 mm
Dry density after soaking: 1.34 Mg/m3

Material retained on 20mm sieve removed: 0 %

Initial Specimen details
Bulk density: 1.86 Mg/m3
Dry density: 1.43 Mg/m3
Moisture content: 30 %

Surcharge applied: 8 kg
4.9 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
Yes	1.4	1.1	1.4	
No	3.9	3.1	3.9	

Moisture Content %
42
37

Remarks:

Test/ Specimen
specific remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 10/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

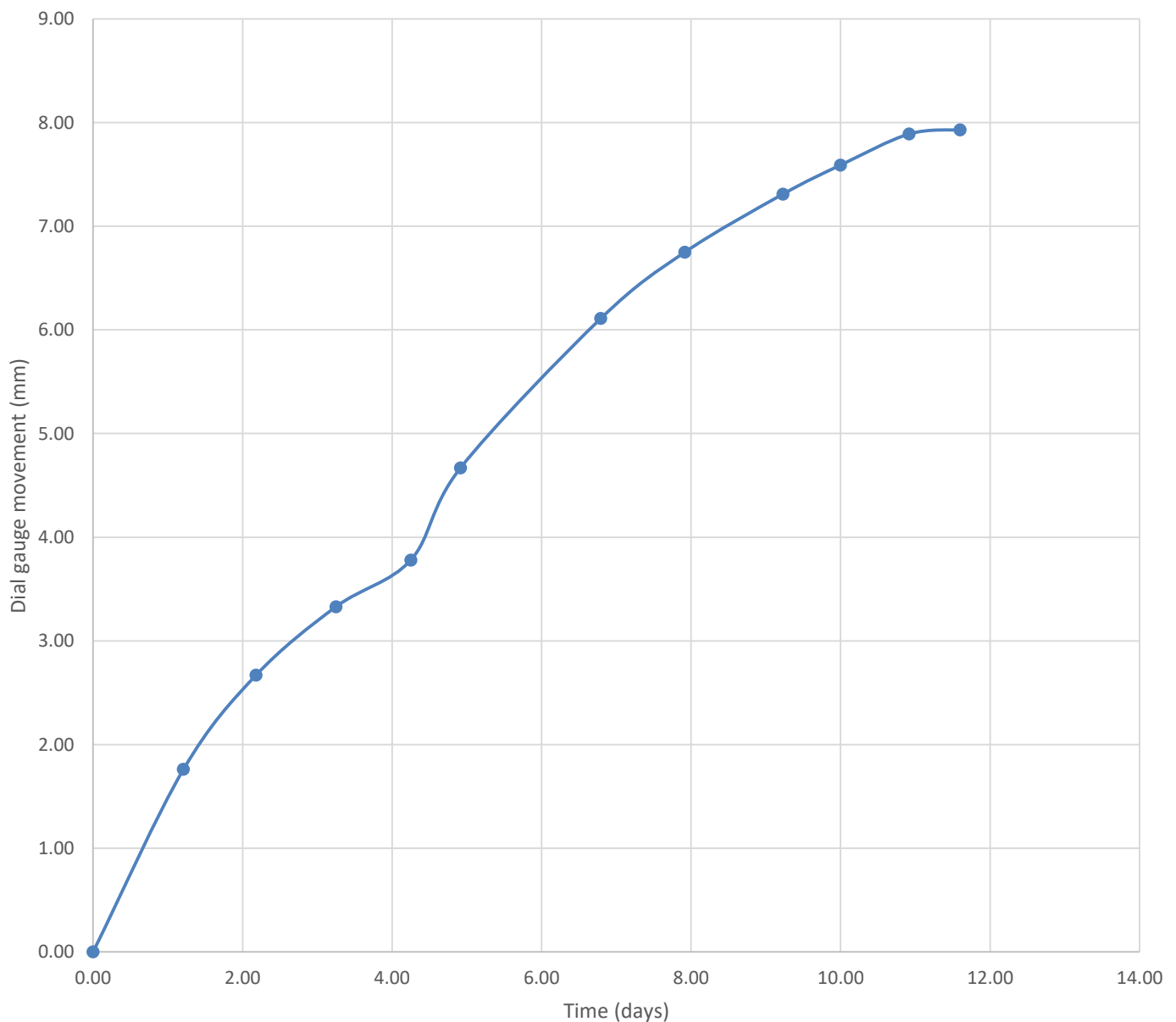
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1566633
Hole No.: TP25
Sample Reference: Not Given
Sample Description: Brownish grey CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

CBR Soaked Graph



Remarks:

Test/ Specimen
specific 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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

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



California Bearing Ratio Soaked

Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566634
Hole No.: TP15
Sample Reference: Not Given
Sample Description: Brownish grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition: Remoulded
Details: Recompacted with specified standard effort using 2.5kg rammer

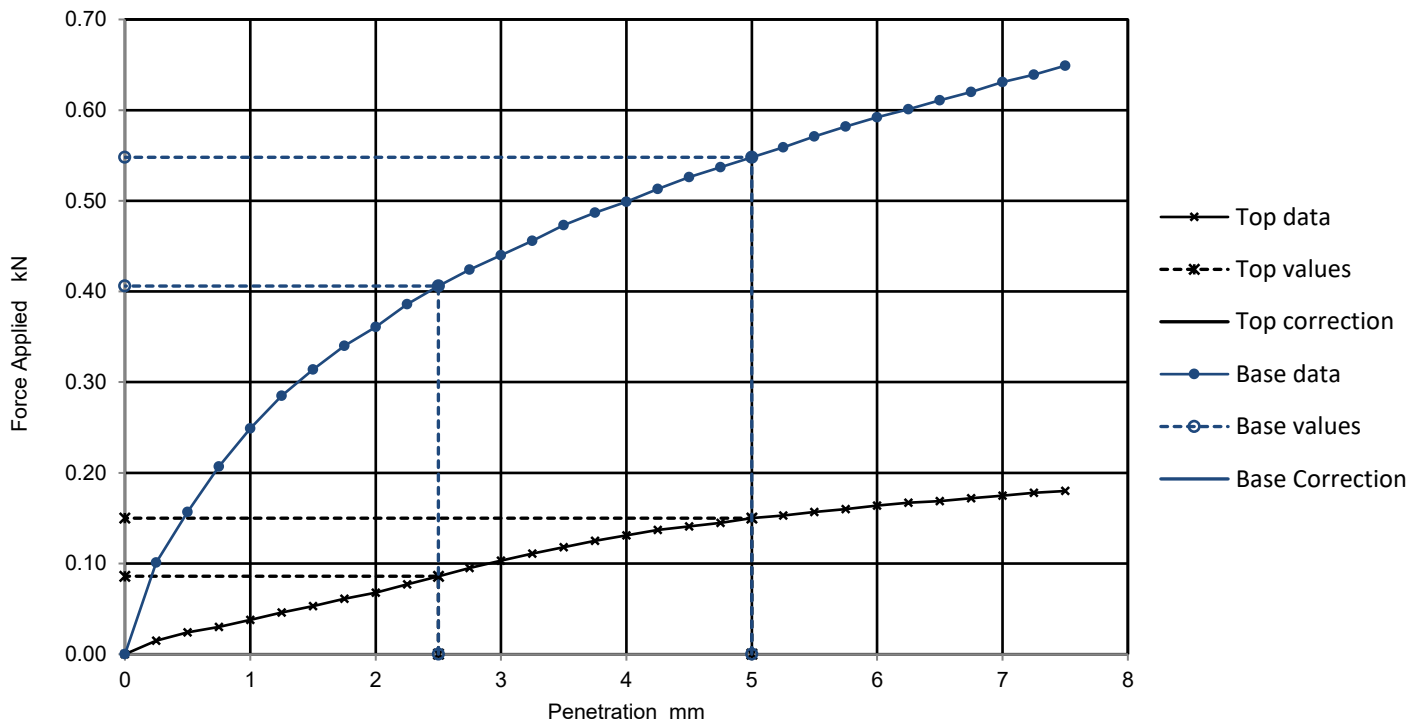
Soaking details
Period of soaking: 12 days
Time to surface: 4 days
Amount of swell recorded: 7.06 mm
Dry density after soaking: 1.50 Mg/m³

Material retained on 20mm sieve removed: 0 %

Initial Specimen details
Bulk density: 1.88 Mg/m³
Dry density: 1.58 Mg/m³
Moisture content: 19 %

Surcharge applied: 8 kg
4.9 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	0.7	0.8	0.8	
No	3.1	2.7	3.1	

Moisture Content %
33
29

Remarks:

Test/ Specimen
specific remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

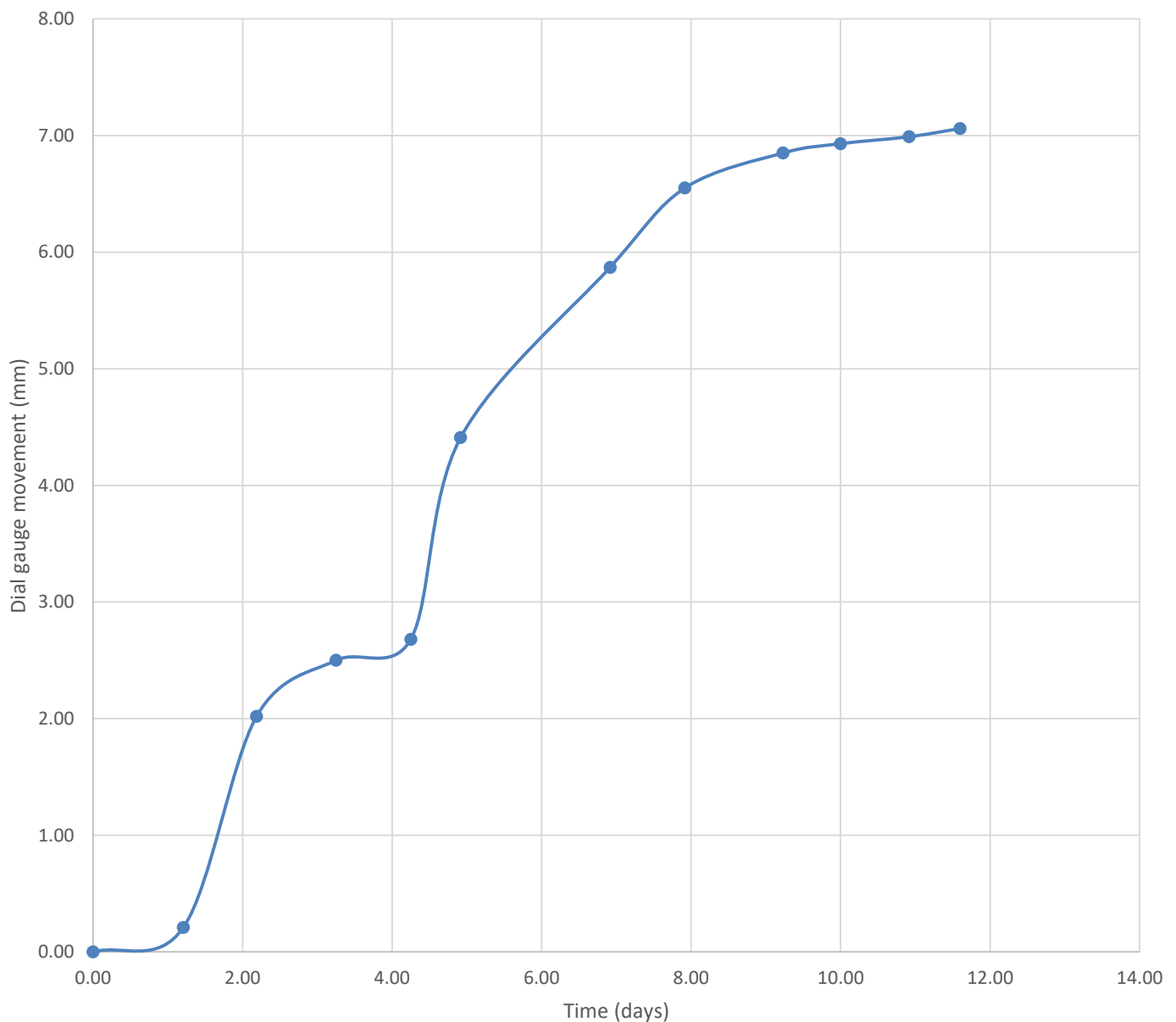
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1566634
Hole No.: TP15
Sample Reference: Not Given
Sample Description: Brownish grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

CBR Soaked Graph



Remarks:

Test/ Specimen
specific 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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

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

Test Results:

Laboratory Reference: 1566635
Hole No.: TP21
Sample Reference: Not Given
Sample Description: Yellowish brown mottled grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

Specimen Preparation:

Condition Remoulded
Details Recompacted with specified standard effort using 2.5kg rammer

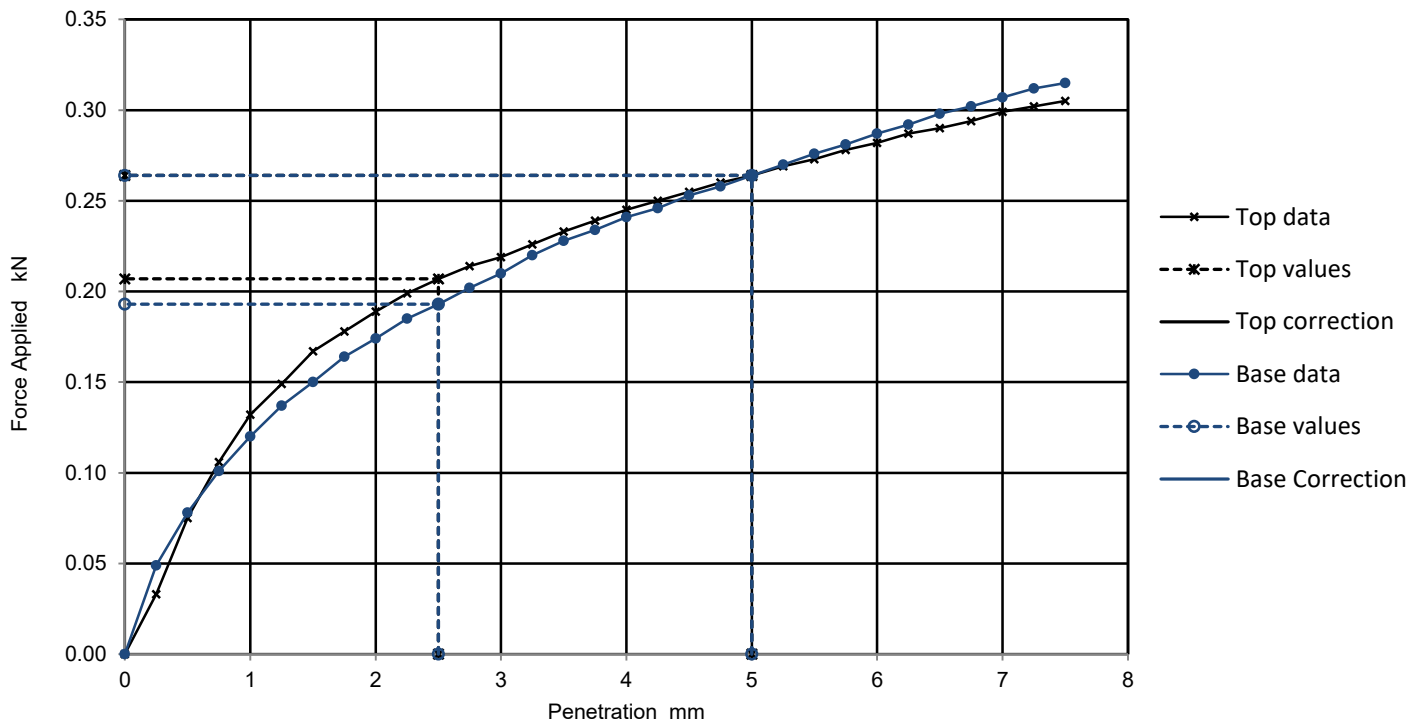
Soaking details
Period of soaking 10 days
Time to surface 4 days
Amount of swell recorded 0.09 mm
Dry density after soaking 1.49 Mg/m³

Material retained on 20mm sieve removed 0 %

Initial Specimen details
Bulk density 1.91 Mg/m³
Dry density 1.49 Mg/m³
Moisture content 28 %

Surcharge applied 8 kg
4.8 kPa

Force v Penetration Plots



Results

TOP
BASE

Curve correction applied	CBR Values, %			
	2.5mm	5mm	Highest	Average
No	1.6	1.3	1.6	1.5
No	1.5	1.3	1.5	

Moisture Content %
30
30

Remarks:

Test/ Specimen
specific remarks:

Signed:

Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

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.



TEST CERTIFICATE

California Bearing Ratio Soaked

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



Tested in Accordance with: BS 1377-4: 1990: Clause 7

Client: Geo-Environmental Services Ltd
Client Address: Unit 7, Danworth Farm, Cuckfield Road,
Hurstpierpoint, West Sussex,
BN6 9GL
Contact: Fiona Goode
Site Address: One Horton

Client Reference: GE18771
Job Number: 20-20186
Date Sampled: 08/07/2020
Date Received: 08/07/2020
Date Tested: 03/08/2020
Sampled By: Not Given

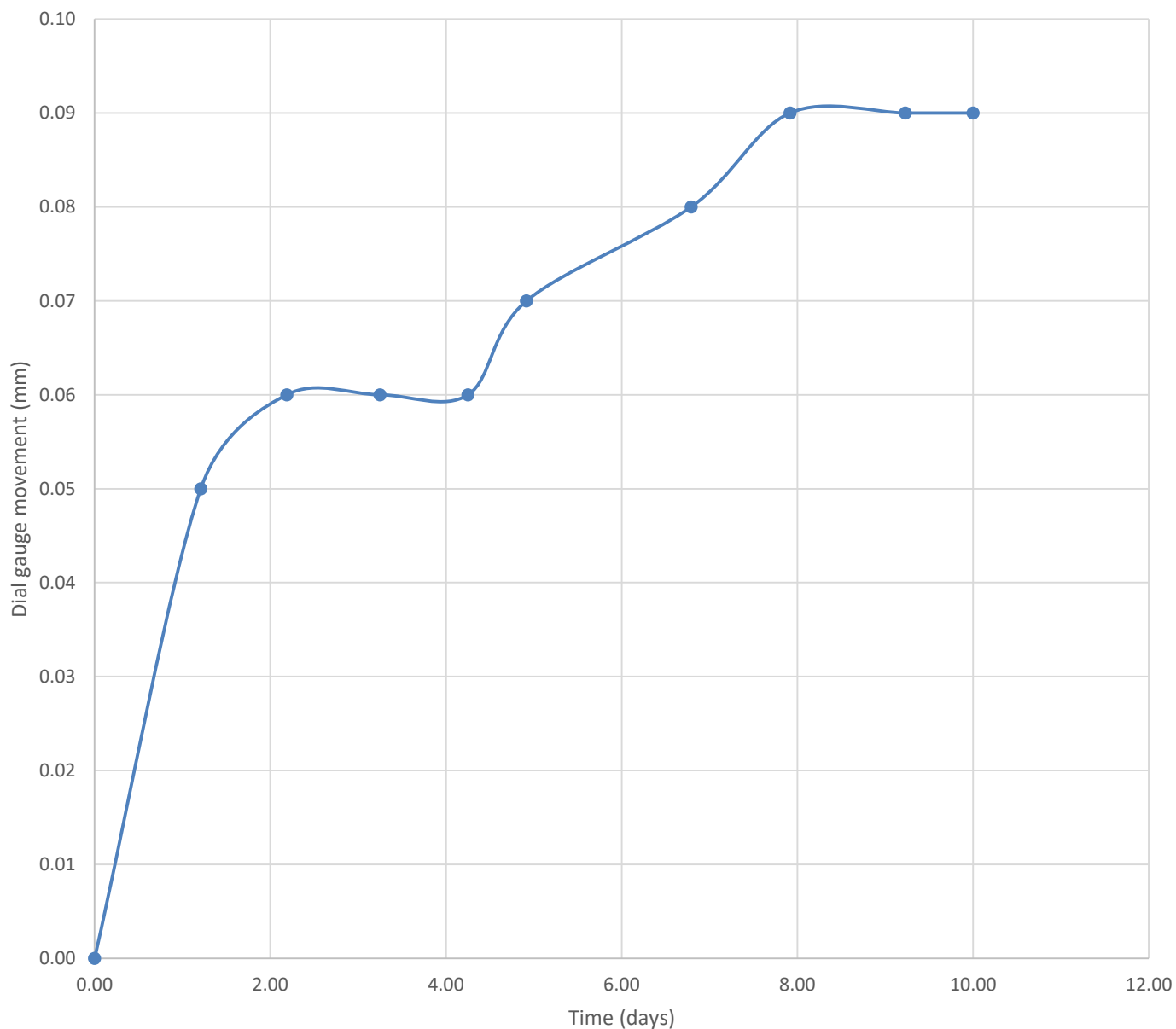
Testing carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 1566635
Hole No.: TP21
Sample Reference: Not Given
Sample Description: Yellowish brown mottled grey slightly sandy CLAY

Depth Top [m]: 0.60
Depth Base [m]: Not Given
Sample Type: B

CBR Soaked Graph



Remarks:

Test/ Specimen
specific 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:



Aleksandra Jurochnik
PL Technical Reviewer
for and on behalf of i2 Analytical Ltd

APPENDIX D

Geochemical Laboratory Results



**Fiona Goode**

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

t: 01273 832972

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 : 20-19015

Project / Site name:	One Horton	Samples received on:	10/07/2020
Your job number:	GE18771	Sample instructed/ Analysis started on:	10/07/2020
Your order number:	PO-2829	Analysis completed by:	20/07/2020
Report Issue Number:	1	Report issued on:	20/07/2020
Samples Analysed:	55 soil samples		

Signed: 

Karolina Marek
PL Head of Reporting Team

For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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

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

Iss No 20-19015-1 One Horton GE18771

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report relate only to the sample(s) submitted for testing.

Page 1 of 49



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559985	1559986	1559987	1559988	1559989
Sample Reference				TP1	TP2	TP3	TP4	TP5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.40	0.10
Date Sampled				08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020
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
Moisture Content	%	N/A	NONE	-	12	8.8	12	8.5
Total mass of sample received	kg	0.001	NONE	-	0.80	0.80	0.80	0.80

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	6.0	5.4	6.3	5.4
Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	< 1
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	33	33	10	30
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.016	0.017	0.0051	0.015
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	16.4	16.7	5.1	15.2
Sulphide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	10	4.1	5.0	33
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	-
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	< 5.0
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	0.9	2.9	0.5	3.9
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	-	-

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	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 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	MCERTS	-	< 0.80	< 0.80	< 0.80	< 0.80
-----------------------------	-------	-----	--------	---	--------	--------	--------	--------



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559985	1559986	1559987	1559988	1559989
Sample Reference				TP1	TP2	TP3	TP4	TP5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.40	0.10
Date Sampled				08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020
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	-	5.2	6.0	9.4	7.8
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.31	0.28	0.40	0.23
Boron (water soluble)	mg/kg	0.2	MCERTS	-	0.4	0.6	0.4	0.4
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	13	16	23	13
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	8.5	12	9.3	13
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	38	40	12	39
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	< 0.3	0.5	< 0.3	0.6
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	3.4	4.5	3.2	3.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	23	26	35	27
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	19	38	19	37

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	< 10	< 10

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559985	1559986	1559987	1559988	1559989
Sample Reference				TP1	TP2	TP3	TP4	TP5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.40	0.10
Date Sampled				08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559985	1559986	1559987	1559988	1559989
Sample Reference				TP1	TP2	TP3	TP4	TP5
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.10	0.40	0.10
Date Sampled				08/07/2020	08/07/2020	08/07/2020	08/07/2020	08/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559990	1559991	1559992	1559993	1559994
Sample Reference				TP6	TP7	TP8	TP10	TP11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.40	0.10	0.40
Date Sampled				08/07/2020	08/07/2020	08/07/2020	08/07/2020	07/07/2020
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	%	N/A	NONE	11	9.3	15	29	18
Total mass of sample received	kg	0.001	NONE	0.80	0.80	0.80	0.80	0.80

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.8	6.5	4.9	-	-
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	18	31	39	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0090	0.016	0.019	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	9.0	15.6	19.3	-	-
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	3.2	31	2.4	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	-
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.7	3.9	0.4	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	-	-

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number	1559990	1559991	1559992	1559993	1559994
Sample Reference	TP6	TP7	TP8	TP10	TP11
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.40	0.40	0.10	0.40
Date Sampled	08/07/2020	08/07/2020	08/07/2020	08/07/2020	07/07/2020
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	5.5	12	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.38	0.29	0.43	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.2	0.6	0.2	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	18	18	24	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.4	13	9.5	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	37	46	8.5	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.5	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.2	3.9	4.8	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	32	38	37	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	36	23	-	-

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	< 0.1	< 0.1
-------------------------------------	-------	-----	--------	---	---	---	-------	-------

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	-	-

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	< 10	< 10
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	< 10	< 10



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559990	1559991	1559992	1559993	1559994
Sample Reference				TP6	TP7	TP8	TP10	TP11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.40	0.10	0.40
Date Sampled				08/07/2020	08/07/2020	08/07/2020	08/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559990	1559991	1559992	1559993	1559994
Sample Reference				TP6	TP7	TP8	TP10	TP11
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.40	0.40	0.10	0.40
Date Sampled				08/07/2020	08/07/2020	08/07/2020	08/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559995	1559996	1559997	1559998	1559999
Sample Reference				TP11	TP12	TP12	TP14	TP14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.10	0.80	0.10	0.70
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
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	%	N/A	NONE	18	10	8.7	11	14
Total mass of sample received	kg	0.001	NONE	0.60	0.80	0.60	1.0	0.70

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.5	-	6.8	6.2	5.4
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.025	-	0.026	-	0.064
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	31	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.010	-	0.0084	0.016	0.0049
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	10.3	-	8.4	15.7	4.9
Sulphide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	-	-	9.2	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.6	-	4.1	-	3.8
Elemental Sulphur	mg/kg	5	MCERTS	-	-	-	< 5.0	-
Total Sulphur	%	0.005	MCERTS	0.021	-	0.021	-	0.052
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	3.9	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	-	2.6	-	< 2.0

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number	1559995	1559996	1559997	1559998	1559999
Sample Reference	TP11	TP12	TP12	TP14	TP14
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.20	0.10	0.80	0.10	0.70
Date Sampled	07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
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	-	-	-	6.6	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	0.30	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	0.6	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	20	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	15	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	49	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	0.7	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	4.3	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	40	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	40	-

Magnesium (water soluble)	mg/kg	5	NONE	5.0	-	< 5.0	-	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	2.5	-	< 2.5	-	< 2.5

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
-------------------------------------	-------	-----	--------	---	-------	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-

TPH (C10 - C25)	mg/kg	10	MCERTS	-	< 10	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	< 10	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559995	1559996	1559997	1559998	1559999
Sample Reference				TP11	TP12	TP12	TP14	TP14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.10	0.80	0.10	0.70
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1559995	1559996	1559997	1559998	1559999
Sample Reference				TP11	TP12	TP12	TP14	TP14
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.10	0.80	0.10	0.70
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560000	1560001	1560002	1560003	1560004
Sample Reference				TP15	TP15	TP16	TP16	TP17
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.00	0.10	0.90	0.40
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
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	%	N/A	NONE	15	24	9.0	11	22
Total mass of sample received	kg	0.001	NONE	0.90	0.60	0.80	0.60	1.2

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.7	4.3	5.4	6.8	-
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.037	-	0.018	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	110	-	25	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.054	0.029	0.013	0.0041	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	53.5	28.9	12.6	4.1	-
Sulphide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	120	-	3.9	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	28	-	3.9	-
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-
Total Sulphur	%	0.005	MCERTS	-	0.031	-	0.020	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.4	-	2.7	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	-	< 2.0	-

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number	1560000	1560001	1560002	1560003	1560004
Sample Reference	TP15	TP15	TP16	TP16	TP17
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	1.00	0.10	0.90	0.40
Date Sampled	07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
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	11	-	10	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.45	-	0.40	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.5	-	0.4	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	-	20	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.2	-	21	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	12	-	64	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	0.6	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	3.8	-	5.7	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	37	-	38	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	38	-	40	-	-

Magnesium (water soluble)	mg/kg	5	NONE	-	8.2	-	< 5.0	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	4.1	-	< 2.5	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	-

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560000	1560001	1560002	1560003	1560004
Sample Reference				TP15	TP15	TP16	TP16	TP17
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.00	0.10	0.90	0.40
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560000	1560001	1560002	1560003	1560004
Sample Reference				TP15	TP15	TP16	TP16	TP17
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	1.00	0.10	0.90	0.40
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	Tridecane
SVOC % Match	%	N/A	NONE	-	-	-	-	97
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	
SVOC % Match	%	N/A	NONE	-	-	-	-	



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560005	1560006	1560007	1560008	1560009
Sample Reference				TP18	TP18	TP19	TP19	TP20
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	1.20	0.10	0.80	0.40
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
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	%	N/A	NONE	8.6	20	11	12	22
Total mass of sample received	kg	0.001	NONE	1.0	0.60	0.80	0.60	0.80

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.7	4.4	5.9	6.1	-
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.035	-	0.048	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	42	-	57	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.021	0.014	0.029	0.015	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	21.2	14.1	28.7	14.6	-
Sulphide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	4.2	-	12	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	8.5	-	3.8	-
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-
Total Sulphur	%	0.005	MCERTS	-	0.026	-	0.045	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.8	-	3.6	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	-	< 2.0	-

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560005	1560006	1560007	1560008	1560009
Sample Reference				TP18	TP18	TP19	TP19	TP20
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	1.20	0.10	0.80	0.40
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
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	6.4	-	8.2	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.29	-	0.40	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	-	0.9	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	14	-	19	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	-	21	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	51	-	54	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	-	0.5	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	3.9	-	6.7	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	29	-	34	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	30	-	53	-	-
Magnesium (water soluble)	mg/kg	5	NONE	-	< 5.0	-	< 5.0	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	< 2.5	-	< 2.5	-
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	< 10
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	< 10



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560005	1560006	1560007	1560008	1560009
Sample Reference				TP18	TP18	TP19	TP19	TP20
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	1.20	0.10	0.80	0.40
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560005	1560006	1560007	1560008	1560009
Sample Reference				TP18	TP18	TP19	TP19	TP20
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	1.20	0.10	0.80	0.40
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560010	1560011	1560012	1560013	1560014
Sample Reference				TP21	TP22	TP22	TP23	TP23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.70	0.40	1.00
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
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	%	N/A	NONE	6.6	9.3	22	8.7	19
Total mass of sample received	kg	0.001	NONE	1.2	1.0	0.60	1.0	0.80

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	5.5	4.1	5.3	5.3
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	< 1	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	0.085	-	0.031
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	27	-	25	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.013	0.031	0.012	0.015
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	13.3	31.2	12.3	14.7
Sulphide	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	5.4	-	5.6	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	4.0	-	4.1
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5.0	-	< 5.0	-
Total Sulphur	%	0.005	MCERTS	-	-	0.065	-	0.034
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	3.2	-	1.5	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	< 2.0	-	< 2.0

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number	1560010	1560011	1560012	1560013	1560014
Sample Reference	TP21	TP22	TP22	TP23	TP23
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.40	0.10	0.70	0.40	1.00
Date Sampled	06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
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	-	8.3	-	8.9	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.36	-	0.34	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	0.7	-	0.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	24	-	18	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	21	-	11	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	61	-	32	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.5	-	0.4	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	7.7	-	5.5	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	33	-	31	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	45	-	26	-

Magnesium (water soluble)	mg/kg	5	NONE	-	-	< 5.0	-	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	< 2.5	-	< 2.5

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	-	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	< 10	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	< 10	-

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560010	1560011	1560012	1560013	1560014
Sample Reference				TP21	TP22	TP22	TP23	TP23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.70	0.40	1.00
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560010	1560011	1560012	1560013	1560014
Sample Reference				TP21	TP22	TP22	TP23	TP23
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.70	0.40	1.00
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	06/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	Tridecane	-	-	-	-
SVOC % Match	%	N/A	NONE	97	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	Bicyclo[10.8.0]eicosane, (E)-	-	-	-	-
SVOC % Match	%	N/A	NONE	95	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560015	1560016	1560017	1560018	1560019
Sample Reference				TP24	WS1	WS2	WS3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.20	0.60	0.40	0.70
Date Sampled				06/07/2020	08/07/2020	08/07/2020	07/07/2020	07/07/2020
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	%	N/A	NONE	22	9.5	19	9.2	12
Total mass of sample received	kg	0.001	NONE	1.0	1.0	0.60	0.80	0.60

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	6.2	6.5	6.6	6.6
Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	< 1	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	-	0.022
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	12	33	12	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.0059	0.017	0.0061	0.0044
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	5.9	16.7	6.1	4.4
Sulphide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	2.5	8.4	3.9	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	2.1
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5.0	< 5.0	< 5.0	-
Total Sulphur	%	0.005	MCERTS	-	-	-	-	0.023
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	1.6	0.3	0.8	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	-	< 2.0

Total Phenols

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

Speciated PAHs

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

Total PAH

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

Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560015	1560016	1560017	1560018	1560019
Sample Reference				TP24	WS1	WS2	WS3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.20	0.60	0.40	0.70
Date Sampled				06/07/2020	08/07/2020	08/07/2020	07/07/2020	07/07/2020
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	-	9.6	12	5.6	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.46	0.32	0.23	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.2	0.4	0.7	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	20	16	14	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	17	3.9	5.8	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	68	11	14	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.5	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	6.4	2.6	3.4	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	32	34	24	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	40	11	18	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	< 2.5
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	< 10	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	< 10	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	< 10	-
TPH (C10 - C25)	mg/kg	10	MCERTS	< 10	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	< 10	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560015	1560016	1560017	1560018	1560019
Sample Reference				TP24	WS1	WS2	WS3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.20	0.60	0.40	0.70
Date Sampled				06/07/2020	08/07/2020	08/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560015	1560016	1560017	1560018	1560019
Sample Reference				TP24	WS1	WS2	WS3	WS3
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.20	0.60	0.40	0.70
Date Sampled				06/07/2020	08/07/2020	08/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560020	1560021	1560022	1560023	1560024
Sample Reference				WS4	WS4	WS5	WS5	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.90	0.40	1.00	0.30
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	08/07/2020
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	%	N/A	NONE	8.8	14	15	22	9.8
Total mass of sample received	kg	0.001	NONE	0.90	0.60	1.0	0.60	0.60

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.7	5.3	5.8	4.8	6.5
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	-	< 1
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.035	-	0.056	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	20	-	110	-	21
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.010	0.022	0.053	0.032	0.010
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	10.0	21.9	53.2	31.5	10.3
Sulphide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	4.7	-	58	-	3.8
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	8.0	-	15	-
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Total Sulphur	%	0.005	MCERTS	-	0.024	-	0.033	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.9	-	0.4	-	1.7
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	-	< 2.0	-

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number	1560020	1560021	1560022	1560023	1560024
Sample Reference	WS4	WS4	WS5	WS5	WS6
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.90	0.40	1.00	0.30
Date Sampled	06/07/2020	06/07/2020	06/07/2020	06/07/2020	08/07/2020
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	8.2	-	16	-	10
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.36	-	0.37	-	0.34
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	-	0.7	-	1.1
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19	-	29	-	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	20	-	11	-	8.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	45	-	16	-	58
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	-	< 0.3	-	0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.6	-	4.9	-	5.7
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	-	43	-	38
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	-	30	-	32

Magnesium (water soluble)	mg/kg	5	NONE	-	6.1	-	7.6	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	3.0	-	3.8	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	< 10	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	< 10	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	< 10

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560020	1560021	1560022	1560023	1560024
Sample Reference				WS4	WS4	WS5	WS5	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.90	0.40	1.00	0.30
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	08/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560020	1560021	1560022	1560023	1560024
Sample Reference				WS4	WS4	WS5	WS5	WS6
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.90	0.40	1.00	0.30
Date Sampled				06/07/2020	06/07/2020	06/07/2020	06/07/2020	08/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560025	1560026	1560027	1560028	1560029
Sample Reference				WS7	WS7	WS8	WS9	WS9
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.80	0.70	0.20	1.20
Date Sampled				08/07/2020	08/07/2020	06/07/2020	06/07/2020	06/07/2020
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	%	N/A	NONE	9.1	22	14	9.8	21
Total mass of sample received	kg	0.001	NONE	1.0	0.60	1.0	1.0	0.60

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.4	7.6	6.9	6.5	4.7
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	< 1	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.015	-	-	0.070
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	15	-	12	20	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0077	0.0085	0.0058	0.0098	0.039
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	7.7	8.5	5.8	9.8	38.5
Sulphide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	8.9	-	8.6	7.5	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	20	-	-	18
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	-
Total Sulphur	%	0.005	MCERTS	-	0.011	-	-	0.037
Total Organic Carbon (TOC)	%	0.1	MCERTS	2.4	-	0.3	2.0	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	-	-	< 2.0

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	1.3	-	< 0.05	0.29	-
Pyrene	mg/kg	0.05	MCERTS	1.2	-	< 0.05	0.30	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.73	-	< 0.05	0.27	-
Chrysene	mg/kg	0.05	MCERTS	0.84	-	< 0.05	0.25	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	1.2	-	< 0.05	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.39	-	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.56	-	< 0.05	0.21	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.41	-	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.54	-	< 0.05	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	7.13	-	< 0.80	1.32	-
-----------------------------	-------	-----	--------	------	---	--------	------	---

Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number	1560025	1560026	1560027	1560028	1560029
Sample Reference	WS7	WS7	WS8	WS9	WS9
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.15	0.80	0.70	0.20	1.20
Date Sampled	08/07/2020	08/07/2020	06/07/2020	06/07/2020	06/07/2020
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	6.4	-	9.0	9.0	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.28	-	0.38	0.36	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	-	0.4	0.8	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	-	21	20	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.8	-	9.1	13	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	31	-	11	46	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	-	< 0.3	0.4	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	4.1	-	3.4	6.6	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	24	-	23	35	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	34	-	14	40	-

Magnesium (water soluble)	mg/kg	5	NONE	-	< 5.0	-	-	9.2
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	< 2.5	-	-	4.6

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	< 10	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	< 10	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	< 10	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	< 10	-

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560025	1560026	1560027	1560028	1560029
Sample Reference				WS7	WS7	WS8	WS9	WS9
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.80	0.70	0.20	1.20
Date Sampled				08/07/2020	08/07/2020	06/07/2020	06/07/2020	06/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560025	1560026	1560027	1560028	1560029
Sample Reference				WS7	WS7	WS8	WS9	WS9
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.15	0.80	0.70	0.20	1.20
Date Sampled				08/07/2020	08/07/2020	06/07/2020	06/07/2020	06/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560030	1560031	1560032	1560033	1560034
Sample Reference				WS10	WS10	WS11	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.70	0.15	0.30	0.60
Date Sampled				07/07/2020	07/07/2020	06/07/2020	06/07/2020	07/07/2020
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	%	N/A	NONE	15	14	12	18	7.9
Total mass of sample received	kg	0.001	NONE	1.0	0.60	1.0	1.0	1.0

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.1	7.4	6.5	5.9	5.9
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	< 1	< 1
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.025	-	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	24	-	34	8.6	9.5
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.012	0.0074	0.017	0.0043	0.0047
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	11.9	7.4	16.8	4.3	4.7
Sulphide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	20	-	4.8	4.8	7.3
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	9.1	-	-	-
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
Total Sulphur	%	0.005	MCERTS	-	0.012	-	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.3	-	3.0	0.4	0.6
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	-	-	-

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	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 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	MCERTS	< 0.80	-	< 0.80	< 0.80	< 0.80
-----------------------------	-------	-----	--------	--------	---	--------	--------	--------



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560030	1560031	1560032	1560033	1560034
Sample Reference				WS10	WS10	WS11	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.70	0.15	0.30	0.60
Date Sampled				07/07/2020	07/07/2020	06/07/2020	06/07/2020	07/07/2020
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	15	-	4.2	6.2	8.4
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.47	-	0.34	0.15	0.47
Boron (water soluble)	mg/kg	0.2	MCERTS	0.9	-	0.8	0.8	0.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	41	-	36	9.5	25
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	-	23	3.4	7.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14	-	18	9.8	29
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	8.0	-	3.3	2.2	5.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	53	-	43	21	36
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	37	-	14	11	41
Magnesium (water soluble)	mg/kg	5	NONE	-	< 5.0	-	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	< 2.5	-	-	-
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	< 10	< 10
TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560030	1560031	1560032	1560033	1560034
Sample Reference				WS10	WS10	WS11	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.70	0.15	0.30	0.60
Date Sampled				07/07/2020	07/07/2020	06/07/2020	06/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560030	1560031	1560032	1560033	1560034
Sample Reference				WS10	WS10	WS11	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.70	0.15	0.30	0.60
Date Sampled				07/07/2020	07/07/2020	06/07/2020	06/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560035	1560036	1560037	1560038	1560039
Sample Reference				WS14	WS14	WS15	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.80	0.15	0.90	0.30
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
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	%	N/A	NONE	8.9	17	15	20	12
Total mass of sample received	kg	0.001	NONE	1.0	0.60	1.0	0.60	0.60

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.5	6.5	5.7	6.4	-
Total Cyanide	mg/kg	1	MCERTS	< 1	-	< 1	-	-
Total Sulphate as SO ₄	%	0.005	MCERTS	-	0.022	-	0.022	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9.9	-	26	-	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0049	0.0041	0.013	0.015	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.9	4.1	13.1	15.1	-
Sulphide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	3.2	-	6.1	-	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	1.0	-	7.7	-
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	-	< 5.0	-	-
Total Sulphur	%	0.005	MCERTS	-	0.008	-	0.008	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.5	-	3.3	-	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	< 2.0	-	< 2.0	-

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number	1560035	1560036	1560037	1560038	1560039
Sample Reference	WS14	WS14	WS15	WS15	WS16
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.80	0.15	0.90	0.30
Date Sampled	07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
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	9.2	-	13	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.52	-	0.80	-	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.1	-	1.7	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	-
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-	< 4.0	-	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	27	-	29	-	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	9.0	-	9.4	-	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	30	-	35	-	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6.1	-	6.5	-	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	37	-	45	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	44	-	41	-	-

Magnesium (water soluble)	mg/kg	5	NONE	-	9.0	-	18	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	4.5	-	8.9	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	< 8.0	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	-

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	< 10	-	-

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560035	1560036	1560037	1560038	1560039
Sample Reference				WS14	WS14	WS15	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.80	0.15	0.90	0.30
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	< 0.05



Analytical Report Number: 20-19015

Project / Site name: One Horton

Your Order No: PO-2829

Lab Sample Number				1560035	1560036	1560037	1560038	1560039
Sample Reference				WS14	WS14	WS15	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.80	0.15	0.90	0.30
Date Sampled				07/07/2020	07/07/2020	07/07/2020	07/07/2020	07/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	9H-Fluorene, 3-methyl-
SVOC % Match	%	N/A	NONE	-	-	-	-	93
SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	
SVOC % Match	%	N/A	NONE	-	-	-	-	

**Analytical Report Number : 20-19015****Project / Site name: One Horton**

* 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 *
1559985	TP1	None Supplied	0.10	-
1559986	TP2	None Supplied	0.40	Brown clay.
1559987	TP3	None Supplied	0.10	Brown loam and clay with vegetation.
1559988	TP4	None Supplied	0.40	Brown clay.
1559989	TP5	None Supplied	0.10	Brown loam with vegetation.
1559990	TP6	None Supplied	0.10	Brown clay and loam with vegetation.
1559991	TP7	None Supplied	0.40	Brown loam and clay with vegetation.
1559992	TP8	None Supplied	0.40	Light brown clay.
1559993	TP10	None Supplied	0.10	Brown loam and clay with vegetation.
1559994	TP11	None Supplied	0.40	Light brown clay.
1559995	TP11	None Supplied	1.20	Light brown clay.
1559996	TP12	None Supplied	0.10	Light brown clay and sand.
1559997	TP12	None Supplied	0.80	Light brown sandy clay with gravel.
1559998	TP14	None Supplied	0.10	Brown loam and clay with vegetation and gravel
1559999	TP14	None Supplied	0.70	Light brown clay and sand with vegetation and gravel.
1560000	TP15	None Supplied	0.40	Light brown clay and sand with vegetation and gravel.
1560001	TP15	None Supplied	1.00	Brown clay with gravel.
1560002	TP16	None Supplied	0.10	Brown loam and clay with vegetation and gravel
1560003	TP16	None Supplied	0.90	Light brown sandy clay with vegetation and gravel.
1560004	TP17	None Supplied	0.40	Brown sandy clay.
1560005	TP18	None Supplied	0.10	Brown loam and clay with vegetation and gravel
1560006	TP18	None Supplied	1.20	Light brown sandy clay.
1560007	TP19	None Supplied	0.10	Brown loam and clay with vegetation and gravel
1560008	TP19	None Supplied	0.80	Brown loam and clay with vegetation and gravel
1560009	TP20	None Supplied	0.40	Brown clay and sand.
1560010	TP21	None Supplied	0.40	Brown loam and clay with vegetation and gravel
1560011	TP22	None Supplied	0.10	Brown loam and clay with vegetation and gravel
1560012	TP22	None Supplied	0.70	Light brown clay with vegetation and gravel.
1560013	TP23	None Supplied	0.40	Brown loam and clay with vegetation and gravel
1560014	TP23	None Supplied	1.00	Light brown clay with vegetation and gravel.
1560015	TP24	None Supplied	0.40	Light brown sandy clay with vegetation.
1560016	WS1	None Supplied	0.20	Brown loam and clay with vegetation and gravel
1560017	WS2	None Supplied	0.60	Light brown sandy clay with vegetation.
1560018	WS3	None Supplied	0.40	Brown sandy clay with vegetation.
1560019	WS3	None Supplied	0.70	Brown clay with gravel and vegetation.
1560020	WS4	None Supplied	0.10	Brown sandy clay with vegetation and gravel
1560021	WS4	None Supplied	0.90	Light grey sandy clay.
1560022	WS5	None Supplied	0.40	Light brown clay with vegetation and gravel.
1560023	WS5	None Supplied	1.00	Light brown clay with vegetation.
1560024	WS6	None Supplied	0.30	Brown loam and clay with vegetation and gravel
1560025	WS7	None Supplied	0.15	Brown sandy clay with vegetation and gravel
1560026	WS7	None Supplied	0.80	Light brown clay and sand with vegetation.
1560027	WS8	None Supplied	0.70	Light brown sandy clay.
1560028	WS9	None Supplied	0.20	Brown sandy clay with vegetation and gravel
1560029	WS9	None Supplied	1.20	Light brown clay with vegetation and gravel.
1560030	WS10	None Supplied	0.60	Brown clay with vegetation and gravel
1560031	WS10	None Supplied	0.70	Brown clay with gravel and vegetation.
1560032	WS11	None Supplied	0.15	Brown loam and clay with vegetation and gravel
1560033	WS12	None Supplied	0.30	Light brown clay with vegetation and gravel.
1560034	WS13	None Supplied	0.60	Brown loam and sand with vegetation and gravel.
1560035	WS14	None Supplied	0.30	Brown loam and clay with vegetation and gravel
1560036	WS14	None Supplied	0.80	Light brown sandy clay with vegetation.
1560037	WS15	None Supplied	0.15	Brown loam and clay with vegetation and gravel
1560038	WS15	None Supplied	0.90	Light brown clay with vegetation and gravel.
1560039	WS16	None Supplied	0.30	Brown clay and sand with vegetation and gravel

Analytical Report Number : 20-19015

Project / Site name: One Horton

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion 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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
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
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
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
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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
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

Iss No 20-19015-1 One Horton GE18771

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report relate only to the sample(s) submitted for testing.

Page 47 of 49

Analytical Report Number : 20-19015

Project / Site name: One Horton

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-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
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
TPH Oils (Soils)	Determination of extractable hydrocarbons in soil by GC-MS/FID.	In-house method with silica gel split/clean up.	L076-PL	D	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
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE

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

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

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

**Fiona Goode**

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

t: 01273 832972

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 : 20-19261

Project / Site name:	One Horton	Samples received on:	10/07/2020
Your job number:	GE 18771	Sample instructed/ Analysis started on:	10/07/2020
Your order number:	PO-2832	Analysis completed by:	20/07/2020
Report Issue Number:	1	Report issued on:	20/07/2020
Samples Analysed:	24 soil samples		

Signed: 

Karolina Marek
PL Head of Reporting Team

For & on behalf of i2 Analytical Ltd.

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

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

Standard sample disposal times, unless otherwise agreed with the laboratory, are :	soils	- 4 weeks from reporting
	leachates	- 2 weeks from reporting
	waters	- 2 weeks from reporting
	asbestos	- 6 months from reporting

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

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

Iss No 20-19261-1 One Horton GE 18771.XLS

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report relate only to the sample(s) submitted for testing.

Page 1 of 24



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561528	1561529	1561530	1561531	1561532
Sample Reference				TP24	TP25	TP26	TP26	TP27
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.30	0.90	0.15
Date Sampled				10/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020
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	%	N/A	NONE	31	12	13	20	11
Total mass of sample received	kg	0.001	NONE	1.0	1.0	1.0	0.50	1.0

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	4.5	5.9	6.8	6.3	6.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	-	< 1
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	0.072	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	130	49	77	-	56
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.065	0.024	0.039	0.11	0.028
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	64.5	24.4	38.7	109	28.2
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	32	13	42	-	4.7
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	24	-
Elemental Sulphur	mg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	-	< 5.0
Total Sulphur	%	0.005	MCERTS	-	-	-	0.026	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	0.5	4.0	0.4	-	3.2
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	< 2.0	-

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	-	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 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	MCERTS	< 0.80	< 0.80	< 0.80	-	< 0.80
-----------------------------	-------	-----	--------	--------	--------	--------	---	--------



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561528	1561529	1561530	1561531	1561532
Sample Reference				TP24	TP25	TP26	TP26	TP27
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.30	0.90	0.15
Date Sampled				10/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020
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	18	11	15	-	7.9
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.41	0.47	0.75	-	0.38
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	1.7	0.3	-	1.2
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	23	21	26	-	18
Copper (aqua regia extractable)	mg/kg	1	MCERTS	6.1	13	< 1.0	-	8.2
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.8	37	18	-	28
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	-	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	4.8	8.2	8.7	-	5.3
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	2.8	< 1.0	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	44	33	48	-	29
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	27	65	31	-	44

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	24	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	12	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	-	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	< 10	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	< 10	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	< 10	-	< 10

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561528	1561529	1561530	1561531	1561532
Sample Reference				TP24	TP25	TP26	TP26	TP27
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.30	0.90	0.15
Date Sampled				10/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561528	1561529	1561530	1561531	1561532
Sample Reference				TP24	TP25	TP26	TP26	TP27
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.30	0.90	0.15
Date Sampled				10/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-

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



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561533	1561534	1561535	1561536	1561537
Sample Reference				TP27	TP28	TP28	TP30	TP31
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.15	0.80	0.30	0.30
Date Sampled				10/07/2020	10/07/2020	10/07/2020	10/07/2020	09/07/2020
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	%	N/A	NONE	28	12	19	20	15
Total mass of sample received	kg	0.001	NONE	0.60	1.0	0.50	1.0	0.60

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	5.6	5.8	6.4	-	6.8
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	-	< 1
Total Sulphate as SO ₄	%	0.005	MCERTS	0.100	-	0.051	-	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	73	-	-	43
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.047	0.036	0.061	-	0.022
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	47.3	36.4	61.2	-	21.6
Sulphide	mg/kg	1	MCERTS	-	2.5	-	-	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	20	-	-	16
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	17	-	9.2	-	-
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Total Sulphur	%	0.005	MCERTS	0.037	-	0.020	-	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	3.8	-	-	1.3
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	-	< 2.0	-	-

Total Phenols

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

Speciated PAHs

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

Total PAH

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

Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number	1561533	1561534	1561535	1561536	1561537
Sample Reference	TP27	TP28	TP28	TP30	TP31
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	1.20	0.15	0.80	0.30	0.30
Date Sampled	10/07/2020	10/07/2020	10/07/2020	10/07/2020	09/07/2020
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	-	10	-	-	8.1
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.42	-	-	0.37
Boron (water soluble)	mg/kg	0.2	MCERTS	-	1.9	-	-	0.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	21	-	-	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	12	-	-	11
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	30	-	-	25
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.4	-	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	7.0	-	-	4.5
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	-	2.4
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	33	-	-	35
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	52	-	-	18

Magnesium (water soluble)	mg/kg	5	NONE	6.9	-	6.9	-	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	3.5	-	3.4	-	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	-
-------------------------------------	-------	-----	--------	---	---	---	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	-	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	< 10

TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561533	1561534	1561535	1561536	1561537
Sample Reference				TP27	TP28	TP28	TP30	TP31
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.15	0.80	0.30	0.30
Date Sampled				10/07/2020	10/07/2020	10/07/2020	10/07/2020	09/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561533	1561534	1561535	1561536	1561537
Sample Reference				TP27	TP28	TP28	TP30	TP31
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.15	0.80	0.30	0.30
Date Sampled				10/07/2020	10/07/2020	10/07/2020	10/07/2020	09/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	ND	-
SVOC % Match	%	N/A	NONE	-	-	-	0	-

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



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561538	1561539	1561540	1561541	1561542
Sample Reference				TP31	TP32	TP33	TP34	TP34
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.40	0.30	0.15	1.00
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
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	%	N/A	NONE	17	15	16	12	17
Total mass of sample received	kg	0.001	NONE	0.50	0.60	1.0	1.0	0.60

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.8	-	-	5.9	7.0
Total Cyanide	mg/kg	1	MCERTS	-	-	-	< 1	-
Total Sulphate as SO ₄	%	0.005	MCERTS	0.039	-	-	-	0.025
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	41	-
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.022	-	-	0.021	0.0037
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	22.3	-	-	20.6	3.7
Sulphide	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	-	-	8.2	-
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	15	-	-	-	11
Elemental Sulphur	mg/kg	5	MCERTS	-	-	-	< 5.0	-
Total Sulphur	%	0.005	MCERTS	0.016	-	-	-	0.010
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	-	-	2.6	-
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	-	-	-	< 2.0

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561538	1561539	1561540	1561541	1561542
Sample Reference				TP31	TP32	TP33	TP34	TP34
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.40	0.30	0.15	1.00
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
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	-	-	-	8.8	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	-	-	0.40	-
Boron (water soluble)	mg/kg	0.2	MCERTS	-	-	-	1.4	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Chromium (hexavalent)	mg/kg	4	MCERTS	-	-	-	< 4.0	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	23	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	13	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	38	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	-	-	0.4	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	6.9	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	35	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	45	-
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	-	-	-	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	-	-	-	< 2.5
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	-	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	< 1.0	-
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	< 8.0	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	< 10	-
TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	< 10	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	< 10	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561538	1561539	1561540	1561541	1561542
Sample Reference				TP31	TP32	TP33	TP34	TP34
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.40	0.30	0.15	1.00
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	< 0.1	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	< 0.1	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	< 0.3	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	< 0.3	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	< 0.3	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	-	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561538	1561539	1561540	1561541	1561542
Sample Reference				TP31	TP32	TP33	TP34	TP34
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.70	0.40	0.30	0.15	1.00
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	ND	-	-	-
SVOC % Match	%	N/A	NONE	-	0	-	-	-

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



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561543	1561544	1561545	1561546	1561547
Sample Reference				TP35	TP36	TP37	TP37	TP38
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.30	00.90	0.60
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
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	%	N/A	NONE	16	6.3	14	21	15
Total mass of sample received	kg	0.001	NONE	0.60	1.0	1.0	0.60	1.0

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	-	6.0	-	6.7	6.6
Total Cyanide	mg/kg	1	MCERTS	-	< 1	-	-	< 1
Total Sulphate as SO ₄	%	0.005	MCERTS	-	-	-	0.024	-
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	25	-	-	34
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	0.013	-	0.0053	0.017
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	12.7	-	5.3	17.1
Sulphide	mg/kg	1	MCERTS	-	1.0	-	-	< 1.0
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	8.2	-	-	25
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	19	-
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5.0	-	-	< 5.0
Total Sulphur	%	0.005	MCERTS	-	-	-	0.008	-
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	2.8	-	-	1.5
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	-	-	-	< 2.0	-

Total Phenols

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

Speciated PAHs

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

Total PAH

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



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number	1561543	1561544	1561545	1561546	1561547
Sample Reference	TP35	TP36	TP37	TP37	TP38
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)	0.30	0.15	0.30	00.90	0.60
Date Sampled	09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
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	-	5.3	-	-	17
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.13	-	-	0.46
Boron (water soluble)	mg/kg	0.2	MCERTS	-	0.6	-	-	0.8
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	-	-	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	-	-	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	7.9	-	-	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	6.7	-	-	6.1
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	28	-	-	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.4	-	-	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	3.0	-	-	4.9
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	15	-	-	39
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	25	-	-	23

Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	< 5.0	-
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	< 2.5	-

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0

Petroleum Hydrocarbons

Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	-
-------------------------------------	-------	-----	--------	-------	---	-------	---	---

TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	-	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	< 10

TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	-	-	< 10
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	-	-	< 10

TPH (C10 - C25)	mg/kg	10	MCERTS	< 10	-	< 10	-	-
TPH (C25 - C40)	mg/kg	10	MCERTS	< 10	-	< 10	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561543	1561544	1561545	1561546	1561547
Sample Reference				TP35	TP36	TP37	TP37	TP38
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.30	00.90	0.60
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	-
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	-	-	-	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561543	1561544	1561545	1561546	1561547
Sample Reference				TP35	TP36	TP37	TP37	TP38
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30	0.15	0.30	00.90	0.60
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	09/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	-
SVOC % Match	%	N/A	NONE	-	-	-	-	-

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



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561548	1561549	1561550	1561551	
Sample Reference				TP38	TP39	TP40	TP40	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.20	0.15	0.10	0.80	
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	
Time Taken				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	
Moisture Content	%	N/A	NONE	21	9.0	21	29	
Total mass of sample received	kg	0.001	NONE	0.60	1.0	1.0	0.60	

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.5	5.9	5.2	5.3	
Total Cyanide	mg/kg	1	MCERTS	-	< 1	< 1	-	
Total Sulphate as SO ₄	%	0.005	MCERTS	0.045	-	-	0.049	
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	41	140	-	
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0047	0.021	0.072	0.030	
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.7	20.5	72.0	29.8	
Sulphide	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	7.5	24	-	
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	20	-	-	17	
Elemental Sulphur	mg/kg	5	MCERTS	-	< 5.0	< 5.0	-	
Total Sulphur	%	0.005	MCERTS	0.018	-	-	0.019	
Total Organic Carbon (TOC)	%	0.1	MCERTS	-	3.4	3.6	-	
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	U/S*	-	-	< 2.0	

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Acenaphthene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Fluorene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Phenanthrene	mg/kg	0.05	MCERTS	-	0.57	< 0.05	-	
Anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Fluoranthene	mg/kg	0.05	MCERTS	-	0.50	< 0.05	-	
Pyrene	mg/kg	0.05	MCERTS	-	0.41	< 0.05	-	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.27	< 0.05	-	
Chrysene	mg/kg	0.05	MCERTS	-	0.27	< 0.05	-	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	0.24	< 0.05	-	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	0.19	< 0.05	-	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	< 0.05	< 0.05	-	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	2.45	< 0.80	-	
-----------------------------	-------	-----	--------	---	------	--------	---	--



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561548	1561549	1561550	1561551	
Sample Reference				TP38	TP39	TP40	TP40	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.20	0.15	0.10	0.80	
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	
Time Taken				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	-	7.5	10	-	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	-	0.27	0.28	-	
Boron (water soluble)	mg/kg	0.2	MCERTS	-	0.8	2.3	-	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	-	< 0.2	< 0.2	-	
Chromium (hexavalent)	mg/kg	4	MCERTS	-	< 4.0	< 4.0	-	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	13	13	-	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	-	7.9	5.4	-	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	-	34	39	-	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	-	0.5	0.6	-	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	-	4.3	4.1	-	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	-	25	23	-	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	-	31	34	-	
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	-	-	6.1	
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	-	-	3.1	
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	-	-	-	
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	-	
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	< 10	< 10	-	
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	< 10	< 10	-	
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	< 10	< 10	-	
TPH (C10 - C25)	mg/kg	10	MCERTS	-	-	-	-	
TPH (C25 - C40)	mg/kg	10	MCERTS	-	-	-	-	



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561548	1561549	1561550	1561551
Sample Reference				TP38	TP39	TP40	TP40
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.20	0.15	0.10	0.80
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
SVOCs							
Aniline	mg/kg	0.1	NONE	-	-	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-
Hexachloroethane	mg/kg	0.05	MCERTS	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-
2-Nitrophenol	mg/kg	0.3	MCERTS	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	-	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-
4-Nitroaniline	mg/kg	0.2	MCERTS	-	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	-
Azobenzene	mg/kg	0.3	MCERTS	-	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-
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	-	-	-	-



Analytical Report Number: 20-19261

Project / Site name: One Horton

Your Order No: PO-2832

Lab Sample Number				1561548	1561549	1561550	1561551	
Sample Reference				TP38	TP39	TP40	TP40	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				1.20	0.15	0.10	0.80	
Date Sampled				09/07/2020	09/07/2020	09/07/2020	09/07/2020	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs TICs

SVOCs TICs Compound Name		N/A	NONE	-	-	-	-	
SVOC % Match	%	N/A	NONE	-	-	-	-	

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



Analytical Report Number : 20-19261

Project / Site name: One Horton

* 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 *
1561528	TP24	None Supplied	0.30	Light brown clay with vegetation and gravel.
1561529	TP25	None Supplied	0.15	Brown loam and clay with vegetation and gravel
1561530	TP26	None Supplied	0.30	Brown clay and sand with vegetation and gravel
1561531	TP26	None Supplied	0.90	Light brown clay with vegetation and gravel.
1561532	TP27	None Supplied	0.15	Brown loam and sand with vegetation and gravel.
1561533	TP27	None Supplied	1.20	Light brown clay with vegetation and gravel.
1561534	TP28	None Supplied	0.15	Brown loam and sand with vegetation and gravel.
1561535	TP28	None Supplied	0.80	Brown clay with vegetation and gravel
1561536	TP30	None Supplied	0.30	Light brown clay with vegetation and gravel.
1561537	TP31	None Supplied	0.30	Brown clay and sand with vegetation.
1561538	TP31	None Supplied	0.70	Brown clay and sand with vegetation and gravel
1561539	TP32	None Supplied	0.40	Brown clay and sand with gravel and vegetation.
1561540	TP33	None Supplied	0.30	Brown clay and sand with vegetation.
1561541	TP34	None Supplied	0.15	Brown loam and clay with vegetation and gravel
1561542	TP34	None Supplied	1.00	Light grey clay with vegetation and gravel.
1561543	TP35	None Supplied	0.30	Brown clay and sand with vegetation and gravel
1561544	TP36	None Supplied	0.15	Brown sandy loam with vegetation and gravel
1561545	TP37	None Supplied	0.30	Brown clay and sand with vegetation and gravel
1561546	TP37	None Supplied	00.90	Light brown clay and sand with vegetation.
1561547	TP38	None Supplied	0.60	Brown clay and sand with vegetation and gravel
1561548	TP38	None Supplied	1.20	Brown clay and sand with vegetation and gravel
1561549	TP39	None Supplied	0.15	Brown loam and sand with vegetation and gravel.
1561550	TP40	None Supplied	0.10	Brown loam and sand with vegetation and gravel.
1561551	TP40	None Supplied	0.80	Brown clay and sand with vegetation.

Analytical Report Number : 20-19261

Project / Site name: One Horton

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion 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
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
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
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
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
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
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
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	MCERTS
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
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
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

Iss No 20-19261-1 One Horton GE 18771.XLS

This certificate should not be reproduced, except in full, without the express permission of the laboratory.

The results included within the report relate only to the sample(s) submitted for testing.

Page 23 of 24

Analytical Report Number : 20-19261

Project / Site name: One Horton

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

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Tentatively identified compounds (SVOC) in soil	Determination of semi-volatile organic compounds total ion count in soil by extraction with dichloromethane and hexane followed by GC-MS followed by a full library scan.	In-house method based on USEPA 8270	L064-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
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
TPH Oils (Soils)	Determination of extractable hydrocarbons in soil by GC-MS/FID.	In-house method with silica gel split/clean up.	L076-PL	D	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
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE

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

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

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

APPENDIX E

Soakage Testing 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 : One Horton Client : Eastleigh Borough Council		Job No. : GE18771 Date : 17/07/2020

Pit reference	TP2
Pit depth (m)	3.00
Pit width (m)	0.45
Pit length (m)	1.50
Depth to standing water (m)	1.74

Test 1

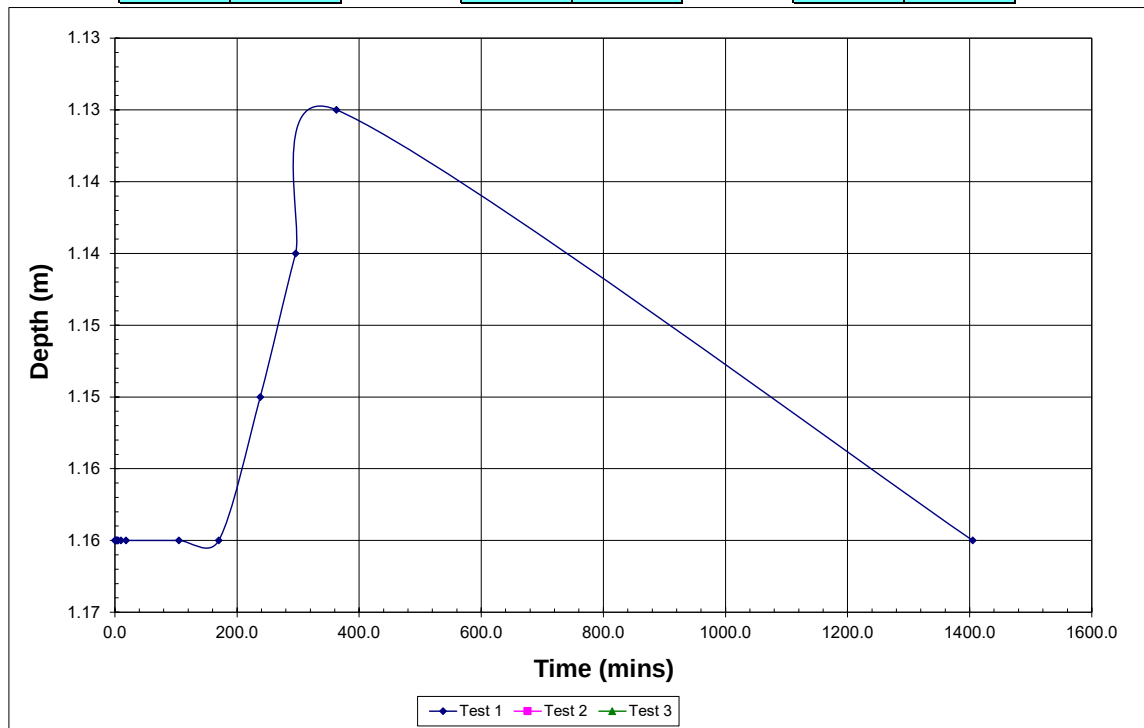
Time (min)	Depth (m)
0.0	1.16
1.0	1.16
2.0	1.16
3.0	1.16
4.0	1.16
5.0	1.16
10.0	1.16
18.0	1.16
105.0	1.16
170.0	1.16
238.0	1.15
296.0	1.14
363.0	1.13
1405.0	1.16

Test 2

Time (min)	Depth (m)

Test 3

Time (min)	Depth (m)



Max. depth (m)	3.00	3.00	3.00
Effective depth (m)	1.84	3.00	3.00
75% effective depth (m)	1.62	0.75	0.75
50% effective depth (m)	2.08	1.50	1.50
25% effective depth (m)	2.54	2.25	2.25
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.62	1.01	1.01
ap 50	4.263	6.525	6.525
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	

	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 : One Horton Client : Eastleigh Borough Council		Job No. : GE18771 Date : 17/07/2020

Pit reference	TP3
Pit depth (m)	3.20
Pit width (m)	0.45
Pit length (m)	1.50
Depth to standing water (m)	1.92

Test 1

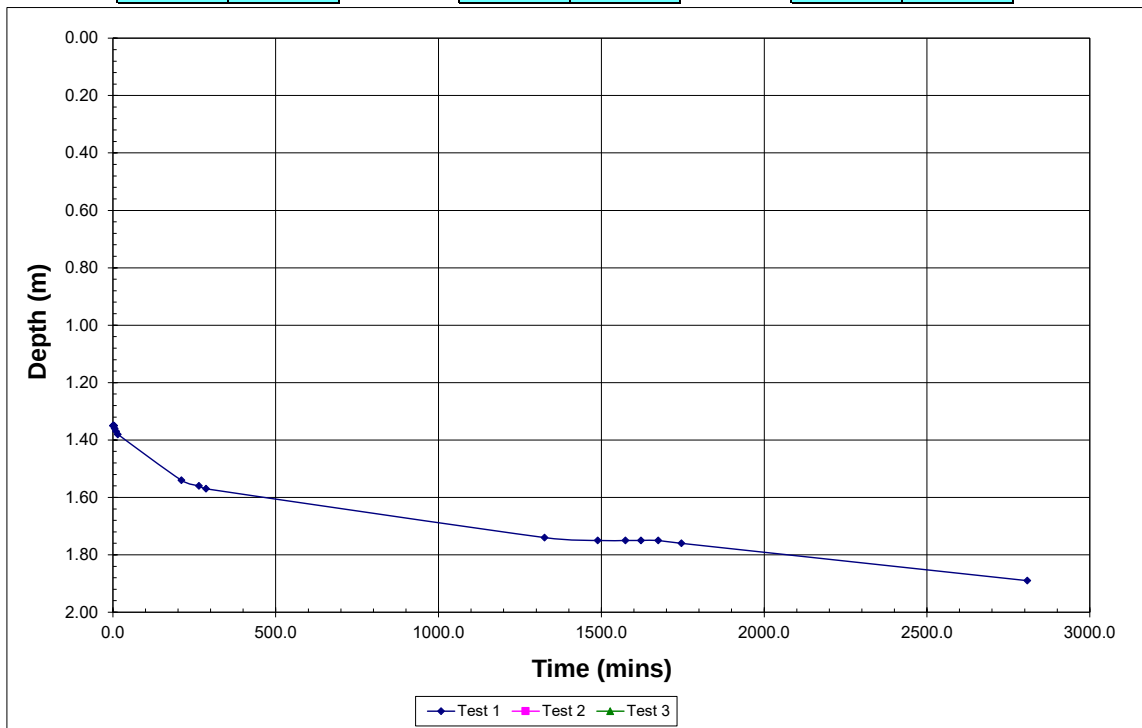
Time (min)	Depth (m)
0.0	1.35
1.0	1.35
2.0	1.35
3.0	1.35
4.0	1.35
5.0	1.36
10.0	1.37
15.0	1.38
210.0	1.54
264.0	1.56
286.0	1.57
1326.0	1.74
1489.0	1.75
1574.0	1.75
1622.0	1.75
1675.0	1.75
1746.0	1.76
2808.0	1.89

Test 2

Time (min)	Depth (m)

Test 3

Time (min)	Depth (m)



Max. depth (m)	3.20	3.20	3.20
Effective depth (m)	1.85	3.20	3.20
75% effective depth (m)	1.81	0.80	0.80
50% effective depth (m)	2.28	1.60	1.60
25% effective depth (m)	2.74	2.40	2.40
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.62	1.08	1.08
ap 50	4.2825	6.915	6.915
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	

	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 : One Horton		Job No. : GE18771
Client : Eastleigh Borough Council		Date : 17/07/2020

Pit reference	TP4
Pit depth (m)	3.00
Pit width (m)	0.45
Pit length (m)	1.50
Depth to standing water (m)	2.52

Test 1

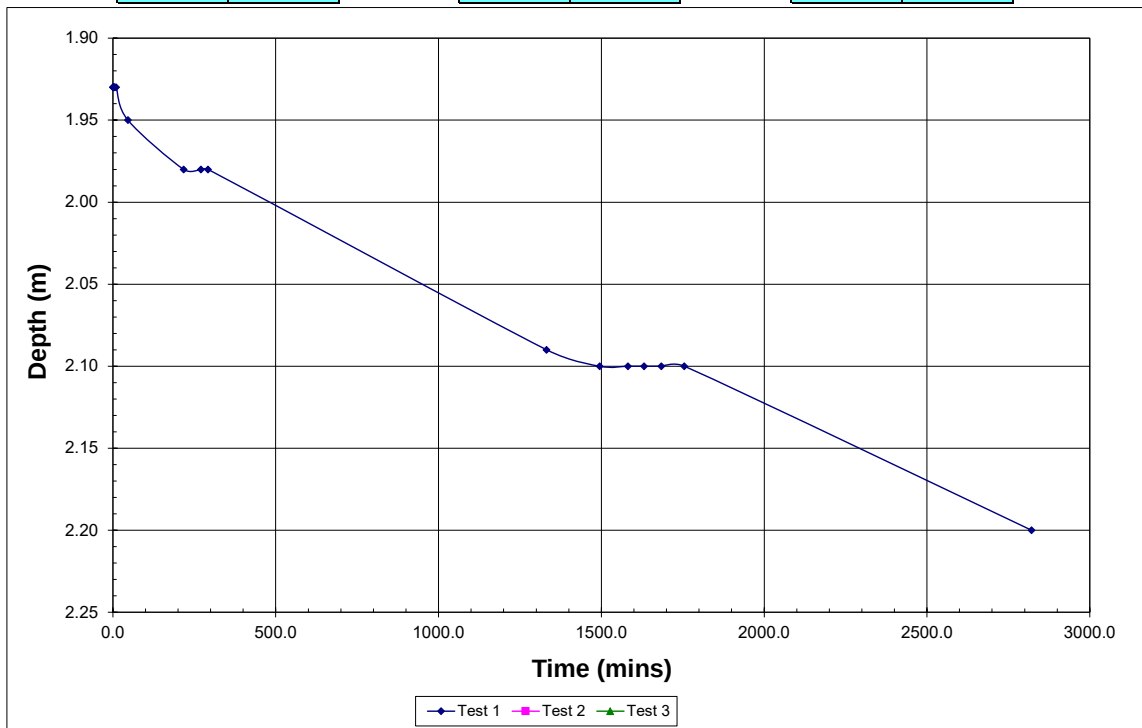
Time (min)	Depth (m)
0.0	1.93
1.0	1.93
2.0	1.93
3.0	1.93
4.0	1.93
5.0	1.93
10.0	1.93
46.0	1.95
217.0	1.98
270.0	1.98
292.0	1.98
1332.0	2.09
1495.0	2.10
1582.0	2.10
1631.0	2.10
1684.0	2.10
1755.0	2.10
2821.0	2.20

Test 2

Time (min)	Depth (m)

Test 3

Time (min)	Depth (m)



Max. depth (m)	3.00	3.00	3.00
Effective depth (m)	1.07	3.00	3.00
75% effective depth (m)	2.20	0.75	0.75
50% effective depth (m)	2.47	1.50	1.50
25% effective depth (m)	2.73	2.25	2.25
t75 (min)	2529.00		
t50 (min)			
t25 (min)			
Vp 75-25	0.36	1.01	1.01
ap 50	2.7615	6.525	6.525
tp 75-25	-2529.00	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	

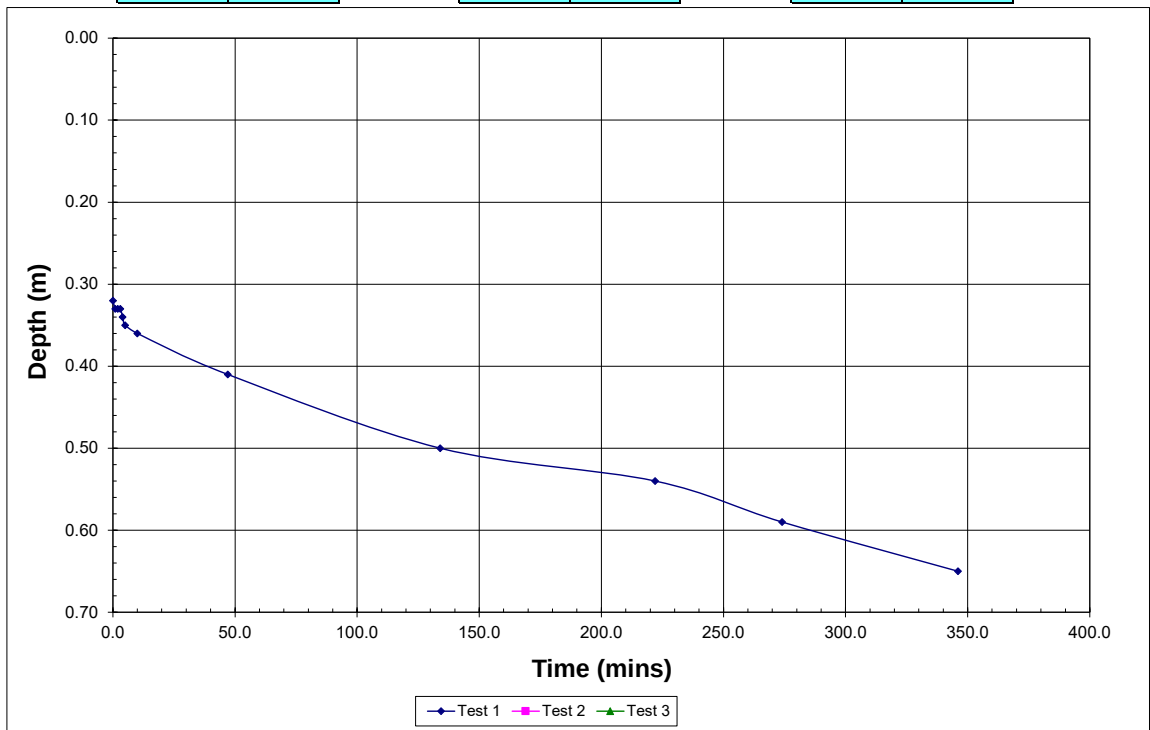
	Soakaway Test Results (after BRE Digest 365)	Geo-Environmental Services Limited Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net
Project Name : One Horton		Job No. : GE18771
Client : Eastleigh Borough Council		Date : 17/07/2020

Pit reference	TP5 (Shallow)
Pit depth (m)	0.65
Pit width (m)	0.45
Pit length (m)	1.30
Depth to standing water (m)	

Test 1	
Time (min)	Depth (m)
0.0	0.32
1.0	0.33
2.0	0.33
3.0	0.33
4.0	0.34
5.0	0.35
10.0	0.36
47.0	0.41
134.0	0.50
222.0	0.54
274.0	0.59
346.0	0.65

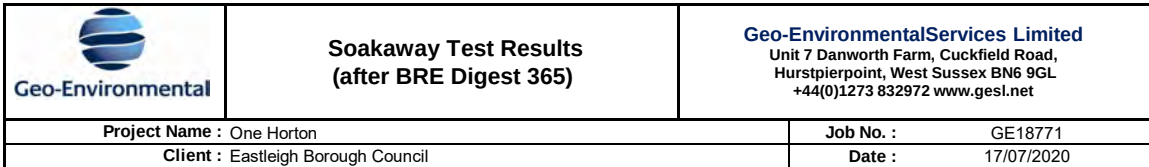
Test 2	
Time (min)	Depth (m)

Test 3	
Time (min)	Depth (m)



Max. depth (m)	0.65	0.65	0.65
Effective depth (m)	0.33	0.65	0.65
75% effective depth (m)	0.40	0.16	0.16
50% effective depth (m)	0.49	0.33	0.33
25% effective depth (m)	0.57	0.49	0.49
t75 (min)	40.00		
t50 (min)	127.00		
t25 (min)	270.00		
Vp 75-25	0.10	0.19	0.19
ap 50	1.1625	1.7225	1.7225
tp 75-25	230.00	0.00	0.00

Soil infiltration rate (m/s)	6.0E-06		
Soil infiltration rate (mm/hr)	2.17E+01		



Test 1

Test 2

Test 3

The graph displays the relationship between Depth (m) and Time (mins) for three different tests. The Y-axis represents Depth (m) and ranges from 1.04 to 1.11, with values increasing downwards. The X-axis represents Time (mins) and ranges from 0.0 to 1600.0. Test 1 (blue diamonds) shows a peak depth of 1.05 m at 300 mins. Test 2 (magenta squares) shows a peak depth of 1.05 m at 300 mins. Test 3 (green triangles) shows a peak depth of 1.05 m at 300 mins.

Time (mins)	Test 1 Depth (m)	Test 2 Depth (m)	Test 3 Depth (m)
0.0	1.100	1.100	1.100
100.0	1.080	1.080	1.080
200.0	1.070	1.070	1.070
300.0	1.050	1.050	1.050
400.0	1.055	1.055	1.055
600.0	1.065	1.065	1.065
800.0	1.075	1.075	1.075
1000.0	1.085	1.085	1.085
1200.0	1.095	1.095	1.095
1400.0	1.100	1.100	1.100

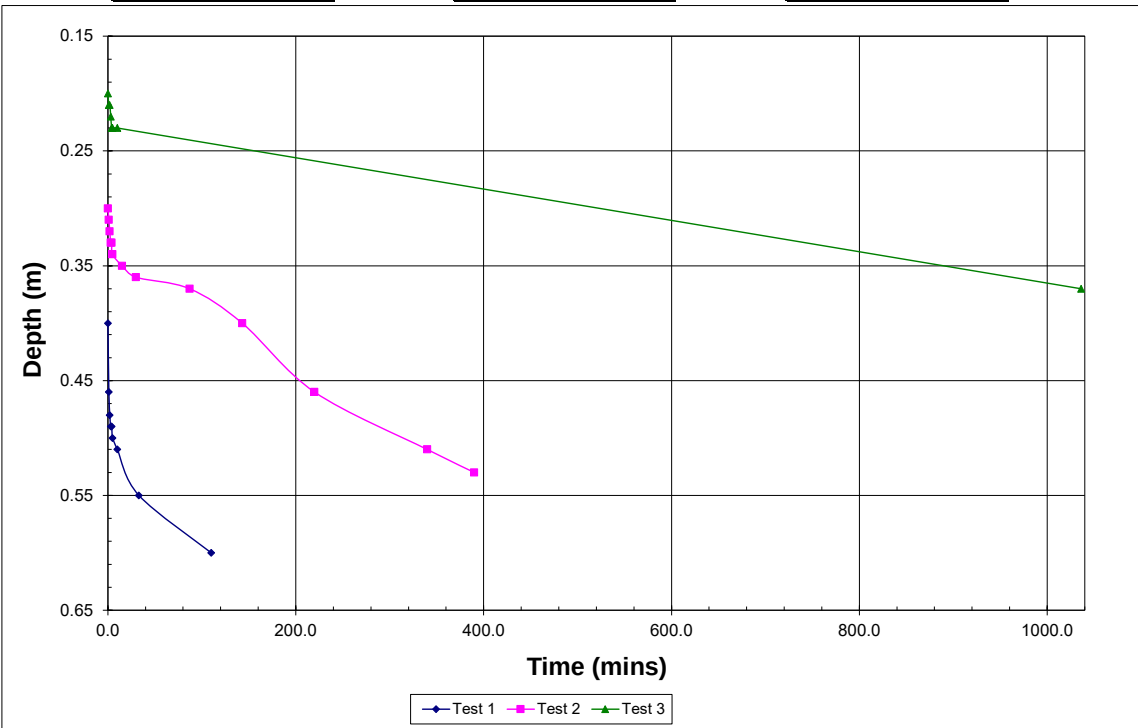
Soil infiltration rate (m/s)	Insufficient fall in water to complete test	
Soil infiltration rate (mm/hr)	Insufficient fall in water to complete test	

 Geo-Environmental	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 : One Horton	Job No. : GE18771
Client : Eastleigh Borough Council		Date : 17/07/2020	

Pit reference	TP7 (Shallow)
Pit depth (m)	0.60
Pit width (m)	0.45
Pit length (m)	1.30
Depth to standing water (m)	

[illegible]

Time (min)	Depth (m)
0.0	0.30
1.0	0.31
2.0	0.32
3.0	0.33
4.0	0.33
5.0	0.34
15.0	0.35
30.0	0.36
87.0	0.37
143.0	0.40
220.0	0.46
340.0	0.51
390.0	0.53

[illegible]

Max. depth (m)	0.60	0.60	0.60
Effective depth (m)	0.20	0.30	0.40
75% effective depth (m)	0.45	0.38	0.30
50% effective depth (m)	0.50	0.45	0.40
25% effective depth (m)	0.55	0.53	0.50
t75 (min)	1.00	92.00	600.00
t50 (min)	5.00	210.00	
t25 (min)	33.00	390.00	
Vp 75-25	0.06	0.09	0.12
ap 50	0.935	1.11	1.285
tp 75-25	32.00	298.00	-600.00

Soil infiltration rate (m/s)	3.3E-05	4.4E-06	Insufficient fall in water to complete test
Soil infiltration rate (mm/hr)	1.17E+02	1.59E+01	Insufficient fall in water to complete test

 Geo-Environmental	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 : One Horton		Job No. : GE18771
Client : Eastleigh Borough Council		Date : 17/07/2020

Pit reference	TP8 (Shallow)
Pit depth (m)	0.62
Pit width (m)	0.45
Pit length (m)	1.30
Depth to standing water (m)	

Test 1

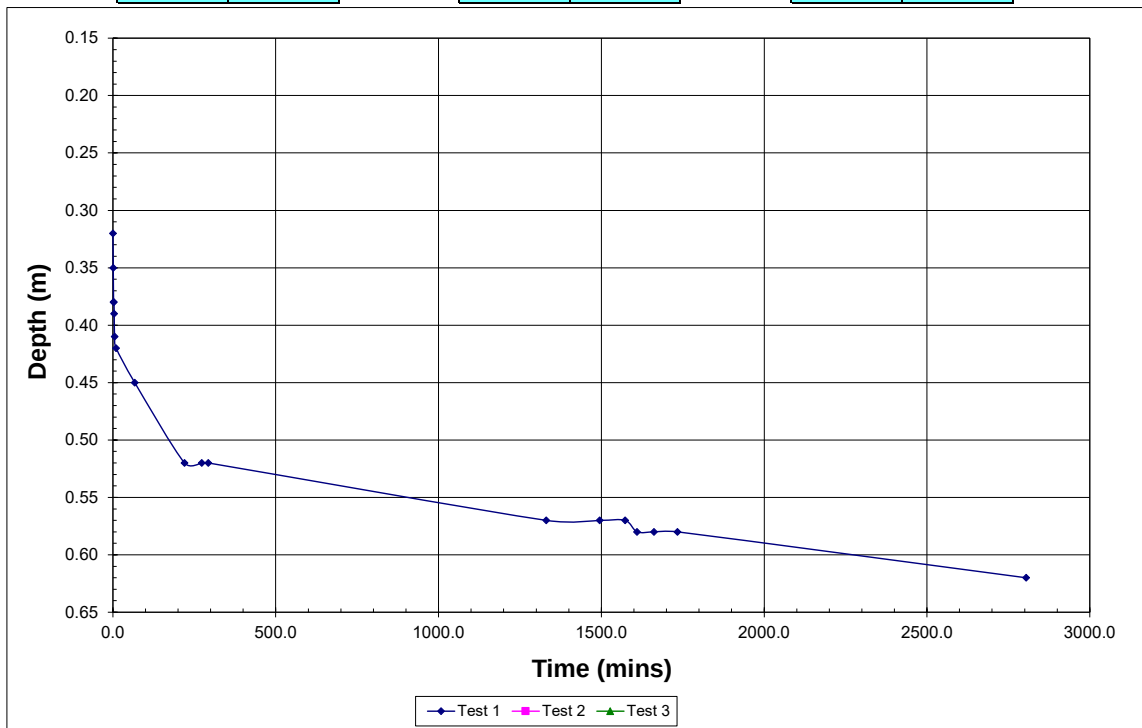
Time (min)	Depth (m)
0.0	0.32
1.0	0.35
2.0	0.38
3.0	0.38
4.0	0.39
5.0	0.41
10.0	0.42
67.0	0.45
220.0	0.52
273.0	0.52
293.0	0.52
1331.0	0.57
1495.0	0.57
1573.0	0.57
1610.0	0.58
1662.0	0.58
1734.0	0.58
2805.0	0.62

Test 2

Time (min)	Depth (m)

Test 3

Time (min)	Depth (m)



Max. depth (m)	0.62	0.62	0.62
Effective depth (m)	0.30	0.62	0.62
75% effective depth (m)	0.40	0.16	0.16
50% effective depth (m)	0.47	0.31	0.31
25% effective depth (m)	0.55	0.47	0.47
t75 (min)	4.75		
t50 (min)	95.00		
t25 (min)	880.00		
Vp 75-25	0.09	0.18	0.18
ap 50	1.11	1.67	1.67
tp 75-25	875.25	0.00	0.00

Soil infiltration rate (m/s)	1.5E-06		
Soil infiltration rate (mm/hr)	5.42E+00		

	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 : One Horton		Job No. : GE18771
Client : Eastleigh Borough Council		Date : 17/07/2020

Pit reference	TP8 (Deep)
Pit depth (m)	3.00
Pit width (m)	0.45
Pit length (m)	1.50
Depth to standing water (m)	1.75

Test 1

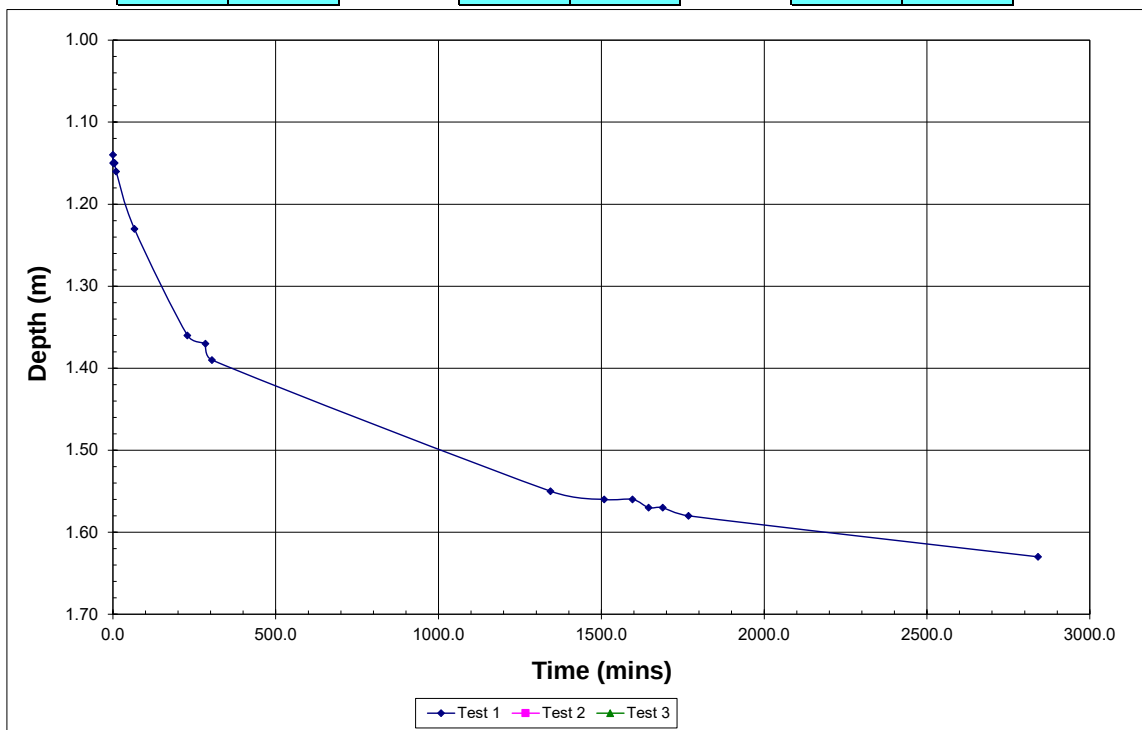
Time (min)	Depth (m)
0.0	1.14
1.0	1.15
2.0	1.15
3.0	1.15
4.0	1.15
5.0	1.15
10.0	1.16
66.0	1.23
229.0	1.36
284.0	1.37
304.0	1.39
1344.0	1.55
1509.0	1.56
1596.0	1.56
1645.0	1.57
1689.0	1.57
1768.0	1.58
2841.0	1.63

Test 2

Time (min)	Depth (m)

Test 3

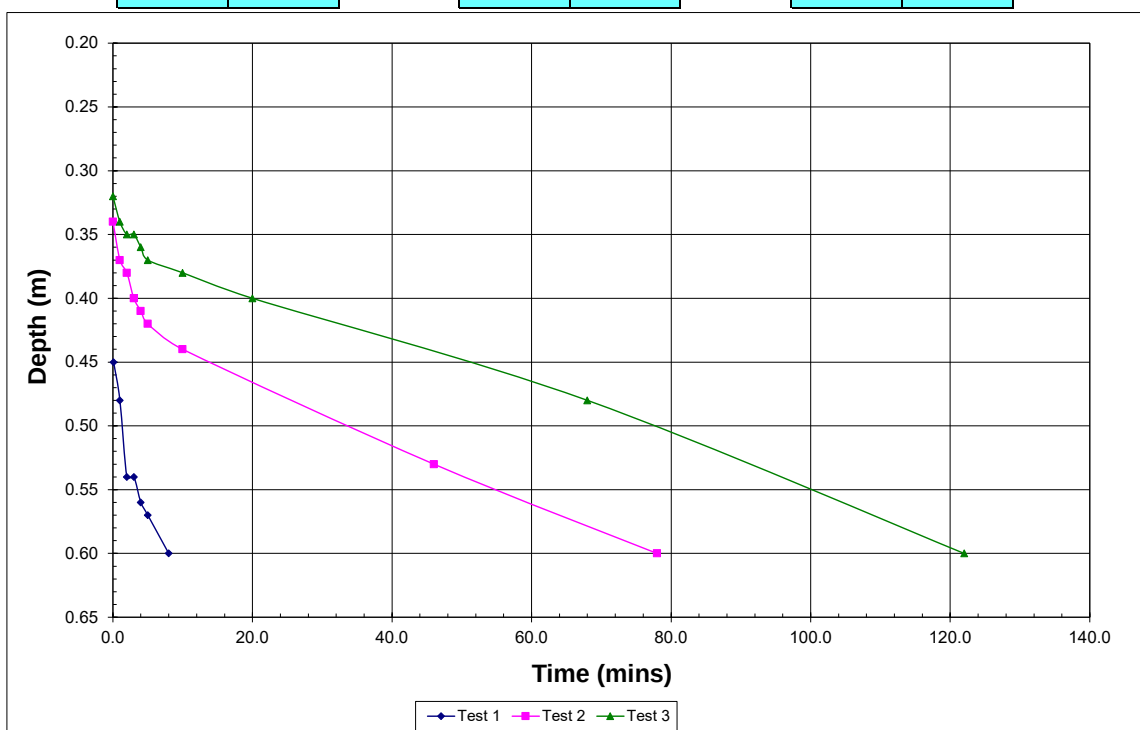
Time (min)	Depth (m)



Max. depth (m)	3.00	3.00	3.00
Effective depth (m)	1.86	3.00	3.00
75% effective depth (m)	1.61	0.75	0.75
50% effective depth (m)	2.07	1.50	1.50
25% effective depth (m)	2.54	2.25	2.25
t75 (min)	2300.00		
t50 (min)			
t25 (min)			
Vp 75-25	0.63	1.01	1.01
ap 50	4.302	6.525	6.525
tp 75-25	-2300.00	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	

Pit reference	TP9 (Shallow)
Pit depth (m)	0.60
Pit width (m)	0.45
Pit length (m)	1.30
Depth to standing water (m)	

[illegible][illegible][illegible]

Max. depth (m)	0.60	0.60	0.60
Effective depth (m)	0.15	0.26	0.28
75% effective depth (m)	0.49	0.41	0.39
50% effective depth (m)	0.53	0.47	0.46
25% effective depth (m)	0.56	0.54	0.53
t75 (min)	1.25	4.00	15.00
t50 (min)	3.50	20.00	56.00
t25 (min)	4.00	49.00	90.00
Vp 75-25	0.04	0.08	0.08
ap 50	0.8475	1.04	1.075
tp 75-25	2.75	45.00	75.00

Soil infiltration rate (m/s)	3.1E-04	2.7E-05	1.7E-05
Soil infiltration rate (mm/hr)	1.13E+03	9.75E+01	6.09E+01

 Geo-Environmental	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 : One Horton		Job No. : GE18771
Client : Eastleigh Borough Council		Date : 17/07/2020

Pit reference	TP9 (Deep)
Pit depth (m)	3.00
Pit width (m)	0.45
Pit length (m)	1.50
Depth to standing water (m)	2.03

Test 1

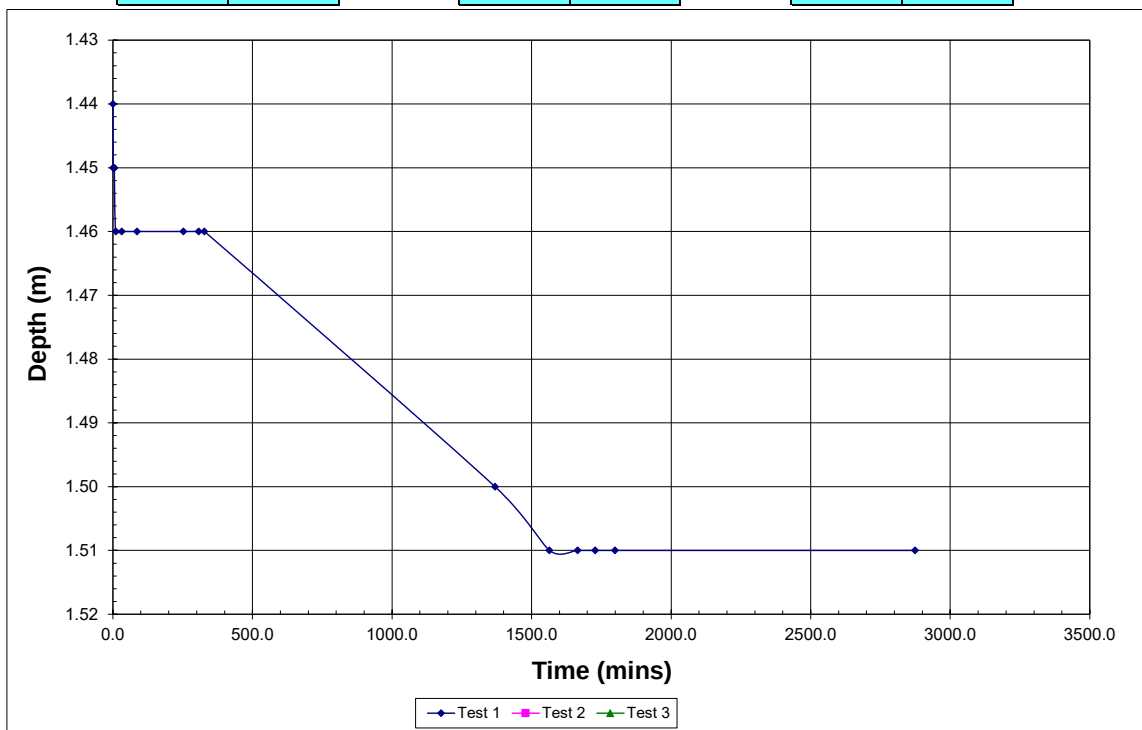
Time (min)	Depth (m)
0.0	1.44
1.0	1.45
2.0	1.45
3.0	1.45
4.0	1.45
5.0	1.45
10.0	1.46
32.0	1.46
86.0	1.46
253.0	1.46
307.0	1.46
328.0	1.46
1369.0	1.50
1564.0	1.51
1665.0	1.51
1728.0	1.51
1799.0	1.51
2874.0	1.51

Test 2

Time (min)	Depth (m)

Test 3

Time (min)	Depth (m)



Max. depth (m)	3.00	3.00	3.00
Effective depth (m)	1.56	3.00	3.00
75% effective depth (m)	1.83	0.75	0.75
50% effective depth (m)	2.22	1.50	1.50
25% effective depth (m)	2.61	2.25	2.25
t75 (min)			
t50 (min)			
t25 (min)			
Vp 75-25	0.53	1.01	1.01
ap 50	3.717	6.525	6.525
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	

	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 : One Horton Client : Eastleigh Borough Council		Job No. : GE18771 Date : 17/07/2020

Pit reference	TP10
Pit depth (m)	0.70
Pit width (m)	0.45
Pit length (m)	1.30
Depth to standing water (m)	0.65

Test 1

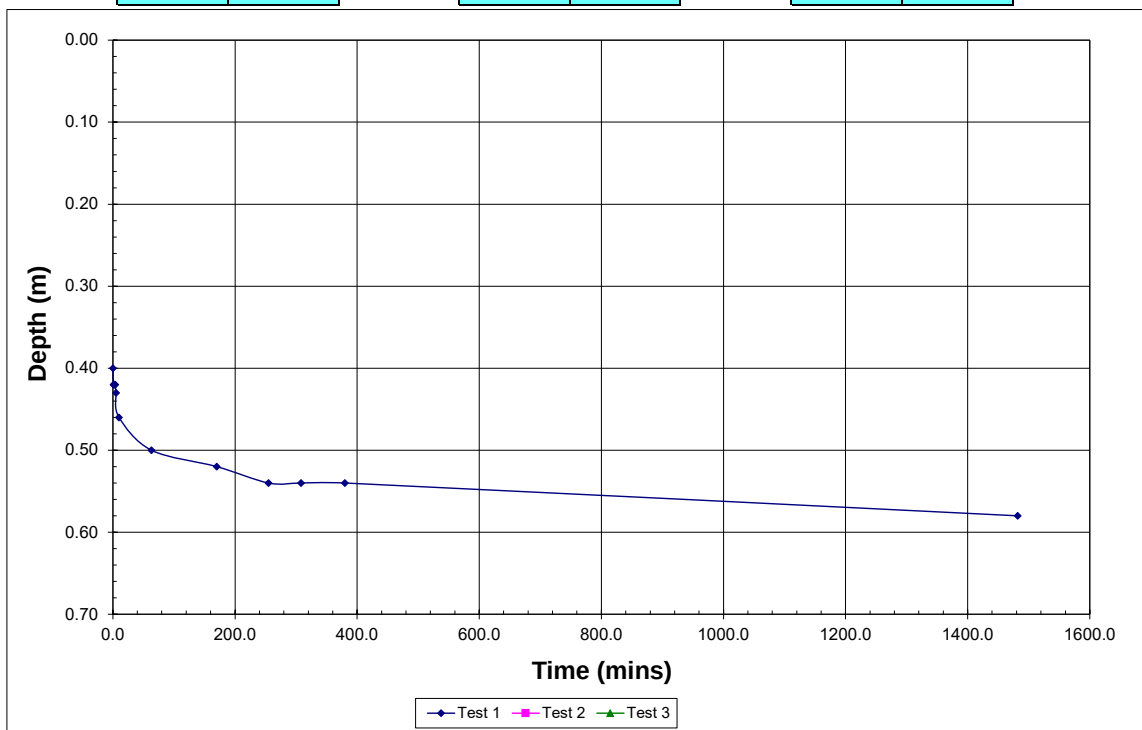
Time (min)	Depth (m)
0.0	0.40
1.0	0.42
2.0	0.42
3.0	0.42
4.0	0.42
5.0	0.43
10.0	0.46
63.0	0.50
170.0	0.52
255.0	0.54
308.0	0.54
380.0	0.54
1482.0	0.58

Test 2

Time (min)	Depth (m)

Test 3

Time (min)	Depth (m)



Max. depth (m)	0.70	0.70	0.70
Effective depth (m)	0.30	0.70	0.70
75% effective depth (m)	0.48	0.18	0.18
50% effective depth (m)	0.55	0.35	0.35
25% effective depth (m)	0.63	0.53	0.53
t75 (min)	45.00		
t50 (min)			
t25 (min)			
Vp 75-25	0.09	0.20	0.20
ap 50	1.11	1.81	1.81
tp 75-25	-45.00	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	

APPENDIX F

Gas and Groundwater Monitoring Results



Project: One Horton Heath
Ref: GE18771
Client: Eastleigh Borough Council



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS2	21/07/20	0	0.0	1.0	19.9	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	21/07/20	10	0.0	0.6	19.7	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	21/07/20	20	0.0	0.5	20.5	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	21/07/20	30	0.0	0.6	20.5	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	21/07/20	60	0.0	0.6	20.5	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	21/07/20	90	0.0	0.6	20.5	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	21/07/20	120	0.0	0.6	20.5	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	21/07/20	180	0.0	0.6	20.5	0.0	0.6	1023	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	0	0.0	0.0	20.6	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	10	0.0	0.0	21.0	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	20	0.0	0.0	20.9	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	30	0.0	0.0	20.9	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	60	0.0	0.0	20.9	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	90	0.0	0.0	20.9	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	120	0.0	0.0	20.9	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	21/07/20	180	0.0	0.0	20.9	0.0	0.1	1023	2.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	0	0.0	0.2	20.0	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	10	0.0	0.6	20.6	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	20	0.0	0.7	20.4	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	30	0.0	0.9	20.2	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	60	0.0	1.0	20.1	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	90	0.0	1.0	20.0	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	120	0.0	1.0	20.0	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	21/07/20	180	0.0	1.0	20.0	0.0	0.4	1023	1.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	0	0.0	0.9	20.5	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	10	0.0	0.4	20.7	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	20	0.0	0.4	20.7	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	30	0.0	0.5	20.6	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	60	0.0	0.7	20.5	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	90	0.0	0.8	20.4	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	120	0.0	0.9	20.3	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	21/07/20	180	0.0	0.9	20.3	0.0	0.3	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	0	0.0	0.9	20.3	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	10	0.0	0.5	20.7	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	20	0.0	0.4	20.8	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	30	0.0	0.4	20.8	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	60	0.0	0.1	20.9	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	90	0.0	0.0	21.0	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	120	0.0	0.0	21.0	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	21/07/20	180	0.0	0.0	21.0	0.0	0.0	1022	0.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	21/07/20	0	0.0	0.3	20.7	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	21/07/20	10	0.0	0.5	20.7	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	21/07/20	20	0.0	0.5	20.6	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	21/07/20	30	0.0	0.5	20.6	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	21/07/20	60	0.0	0.6	20.5	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN

Project: One Horton Heath
Ref: GE18771
Client: Eastleigh Borough Council



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS7	21/07/20	90	0.0	0.7	20.4	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	21/07/20	120	0.0	1.1	20.0	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	21/07/20	180	0.0	1.4	19.8	0.0	0.0	1022	1.40	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	0	0.0	0.0	20.7	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	10	0.0	0.3	21.0	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	20	0.0	0.3	20.7	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	30	0.0	0.4	20.7	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	60	0.0	0.5	20.5	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	90	0.0	0.6	20.4	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	120	0.0	0.7	20.3	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	04/08/20	180	0.0	0.7	20.3	0.0	0.3	1013	1.64	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	0	0.0	0.0	20.7	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	10	0.0	0.7	20.7	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	20	0.0	0.9	20.3	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	30	0.0	0.9	20.2	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	60	0.0	1.2	20.0	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	90	0.0	1.3	19.9	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	120	0.0	1.4	19.9	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	04/08/20	180	0.0	1.3	19.9	0.0	0.3	1012	2.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	0	0.0	0.0	20.7	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	10	0.0	0.4	20.9	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	20	0.0	0.7	20.6	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	30	0.0	0.7	20.6	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	60	0.0	0.8	20.5	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	90	0.0	0.8	20.5	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	120	0.0	0.8	20.5	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	04/08/20	180	0.0	0.7	20.5	0.0	0.0	1012	1.75	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	0	0.0	0.0	20.7	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	10	0.0	0.5	20.9	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	20	0.0	0.8	20.6	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	30	0.0	0.6	20.5	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	60	0.0	0.7	20.3	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	90	0.0	1.1	20.0	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	120	0.0	1.6	19.6	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	04/08/20	180	0.0	1.8	19.5	0.0	0.0	1012	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	0	0.0	0.0	20.7	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	10	0.0	0.0	21.0	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	20	0.0	0.0	20.9	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	30	0.0	0.0	20.9	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	60	0.0	0.0	20.9	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	90	0.0	0.0	20.9	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	120	0.0	0.0	20.9	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	04/08/20	180	0.0	0.0	20.9	0.0	0.0	1012	1.00	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	04/08/20	0	0.0	0.0	20.8	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	04/08/20	10	0.0	0.6	20.9	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN

Project: One Horton Heath
Ref: GE18771
Client: Eastleigh Borough Council



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS5	04/08/20	20	0.0	0.8	20.4	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	04/08/20	30	0.0	0.9	20.3	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	04/08/20	60	0.0	0.9	20.2	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	04/08/20	90	0.0	0.9	20.2	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	04/08/20	120	0.0	0.9	20.2	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	04/08/20	180	0.0	0.9	20.2	0.0	0.0	1011	0.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	0	0.0	0.0	20.4	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	10	0.0	0.3	19.8	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	20	0.0	0.3	19.1	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	30	0.0	0.3	19.0	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	60	0.0	0.3	18.8	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	90	0.0	0.4	18.4	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	120	0.0	0.4	18.1	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	18/08/20	180	0.0	0.4	18.0	0.0	1.0	1007	1.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	0	0.0	0.0	20.6	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	10	0.0	0.7	20.6	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	20	0.0	0.8	20.0	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	30	0.0	0.9	19.9	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	60	0.0	0.9	19.8	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	90	0.0	0.9	19.8	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	120	0.0	0.9	19.8	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	18/08/20	180	0.0	0.9	19.8	0.0	0.0	1005	1.65	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	0	0.0	0.0	20.6	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	10	0.0	0.6	20.5	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	20	0.0	0.7	20.2	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	30	0.0	0.7	20.1	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	60	0.0	0.8	20.1	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	90	0.0	0.8	19.9	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	120	0.0	0.9	19.8	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	18/08/20	180	0.0	1.0	19.8	0.0	0.1	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	0	0.0	0.0	20.4	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	10	0.0	0.9	20.3	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	20	0.0	1.1	19.7	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	30	0.0	1.2	19.6	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	60	0.0	1.2	19.5	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	90	0.0	1.2	19.5	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	120	0.0	1.1	19.6	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	18/08/20	180	0.0	1.1	19.6	0.0	0.3	1005	2.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	18/08/20	0	0.0	0.0	20.7	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	18/08/20	10	0.0	0.4	20.8	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	18/08/20	20	0.0	0.6	20.4	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	18/08/20	30	0.0	0.7	20.2	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	18/08/20	60	0.0	0.8	20.0	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	18/08/20	90	0.0	0.8	19.9	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	18/08/20	120	0.0	0.8	19.9	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN

Project: One Horton Heath
Ref: GE18771
Client: Eastleigh Borough Council



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS10	18/08/20	180	0.0	0.7	19.8	0.0	0.1	1005	1.35	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	0	0.0	0.0	20.5	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	10	0.0	0.0	20.9	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	20	0.0	0.0	20.8	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	30	0.0	0.0	20.7	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	60	0.0	0.0	20.7	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	90	0.0	0.0	20.6	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	120	0.0	0.1	20.6	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	18/08/20	180	0.0	0.1	20.6	0.0	0.4	1005	1.10	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	0	0.0	0.0	20.5	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	10	0.0	0.4	19.7	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	20	0.0	0.5	18.8	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	30	0.0	0.3	20.0	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	60	0.0	0.2	20.4	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	90	0.0	0.1	20.4	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	120	0.0	0.1	20.5	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	01/09/20	180	0.0	0.1	20.5	0.0	0.0	1017	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	0	0.0	0.0	20.4	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	10	0.0	0.0	20.7	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	20	0.0	0.1	20.4	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	30	0.0	0.1	20.4	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	60	0.0	0.3	20.1	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	90	0.0	0.5	19.9	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	120	0.0	0.6	19.5	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	01/09/20	180	0.0	0.7	19.2	0.0	0.0	1016	1.56	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	0	0.0	0.0	20.4	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	10	0.0	0.5	20.4	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	20	0.0	0.7	19.9	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	30	0.0	0.8	19.7	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	60	0.0	0.9	19.3	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	90	0.0	0.9	19.3	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	120	0.0	0.9	19.4	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	01/09/20	180	0.0	0.9	19.4	0.0	0.0	1017	1.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	0	0.0	0.0	20.4	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	10	0.0	0.7	20.4	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	20	0.0	0.8	20.0	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	30	0.0	0.8	19.9	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	60	0.0	0.9	19.7	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	90	0.0	1.2	19.4	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	120	0.0	1.4	19.2	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	01/09/20	180	0.0	1.4	19.2	0.0	0.1	1017	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	01/09/20	0	0.0	0.1	20.6	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	01/09/20	10	0.0	0.2	20.6	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	01/09/20	20	0.0	0.4	20.2	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	01/09/20	30	0.0	0.5	19.9	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN

Project: One Horton Heath
Ref: GE18771
Client: Eastleigh Borough Council



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS10	01/09/20	60	0.0	0.9	19.0	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	01/09/20	90	0.0	1.3	18.3	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	01/09/20	120	0.0	1.3	18.2	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	01/09/20	180	0.0	1.3	18.1	0.0	0.0	1017	1.25	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	0	0.0	0.0	20.5	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	10	0.0	0.3	20.8	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	20	0.0	0.4	20.6	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	30	0.0	0.4	20.6	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	60	0.0	0.1	20.6	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	90	0.0	0.0	20.6	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	120	0.0	0.0	20.6	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	01/09/20	180	0.0	0.0	20.6	0.0	0.1	1017	0.54	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	0	0.0	0.0	20.5	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	10	0.0	0.5	19.7	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	20	0.0	0.6	18.2	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	30	0.0	0.6	18.8	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	60	0.0	0.7	18.0	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	90	0.0	0.8	16.7	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	120	0.0	0.9	16.6	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	15/09/20	180	0.0	1.0	16.3	0.0	0.3	1014	1.85	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	0	0.0	0.0	20.8	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	10	0.0	0.7	20.7	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	20	0.0	0.8	20.2	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	30	0.0	0.8	20.2	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	60	0.0	1.0	19.9	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	90	0.0	1.1	19.8	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	120	0.0	1.3	19.6	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	15/09/20	180	0.0	1.3	19.6	0.0	0.7	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	0	0.0	0.0	20.7	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	10	0.0	0.1	21.1	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	20	0.0	0.2	20.9	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	30	0.0	0.3	20.8	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	60	0.0	0.3	20.7	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	90	0.0	0.4	20.7	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	120	0.0	0.4	20.7	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	15/09/20	180	0.0	0.5	20.7	0.0	0.0	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	0	0.0	0.0	20.5	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	10	0.0	0.8	19.9	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	20	0.0	0.9	19.4	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	30	0.0	1.0	19.1	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	60	0.0	1.3	18.9	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	90	0.0	1.5	18.3	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	120	0.0	1.6	18.1	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	15/09/20	180	0.0	1.6	18.1	0.0	0.4	1014	3.30	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	15/09/20	0	0.0	0.0	20.7	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN

Project: One Horton Heath
Ref: GE18771
Client: Eastleigh Borough Council



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS10	15/09/20	10	0.0	0.3	21.0	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	15/09/20	20	0.0	0.5	20.5	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	15/09/20	30	0.0	1.0	19.8	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	15/09/20	60	0.0	1.2	19.4	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	15/09/20	90	0.0	1.6	18.6	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	15/09/20	120	0.0	1.7	18.8	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	15/09/20	180	0.0	1.6	18.8	0.0	0.4	1014	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	15/09/20	0	0.0	0.0	20.7	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	15/09/20	10	0.0	4.5	19.6	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	15/09/20	20	0.0	5.0	19.1	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	AMBER 1
WS15	15/09/20	30	0.0	2.9	19.7	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	15/09/20	60	0.0	0.7	20.6	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	15/09/20	90	0.0	0.0	20.7	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	15/09/20	120	0.0	0.0	20.8	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	15/09/20	180	0.0	0.0	20.8	0.0	0.7	1014	0.55	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	0	0.0	0.0	20.6	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	10	0.0	0.0	20.5	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	20	0.0	0.2	20.4	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	30	0.0	0.1	20.5	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	60	0.0	0.1	20.7	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	90	0.0	0.1	20.7	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	120	0.0	0.0	20.5	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS2	30/09/20	180	0.0	0.1	20.0	0.0	0.1	1005	1.80	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	0	0.0	0.0	20.4	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	10	0.0	0.8	20.4	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	20	0.0	1.0	19.9	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	30	0.0	1.1	19.7	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	60	0.0	1.2	19.6	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	90	0.0	1.3	19.5	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	120	0.0	1.3	19.6	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS5	30/09/20	180	0.0	1.2	19.9	0.0	0.0	1004	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	0	0.0	0.0	20.3	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	10	0.0	0.2	20.5	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	20	0.0	0.2	20.5	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	30	0.0	0.3	20.5	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	60	0.0	0.2	20.4	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	90	0.0	0.2	20.5	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	120	0.0	0.2	20.4	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS7	30/09/20	180	0.0	0.2	20.4	0.0	0.0	1004	1.60	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	30/09/20	0	0.0	0.0	20.5	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	30/09/20	10	0.0	0.7	20.4	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	30/09/20	20	0.0	0.8	19.9	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	30/09/20	30	0.0	0.8	19.8	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	30/09/20	60	0.0	0.7	19.9	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	30/09/20	90	0.0	0.7	19.8	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN

Project: One Horton Heath
Ref: GE18771
Client: Eastleigh Borough Council



Location	Date	Time (sec)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Flow (l/hr)	VOC (ppm)	Pressure (mb)	GWL (m bgl)	GSV/Qhgs		Characteristic Situation		CS1 Limiting Value Check			NHBC			
										CH ₄	CO ₂	BS8485 & C665		Flow	CH ₄	CO ₂	CH ₄		CO ₂	
												CH ₄	CO ₂				GSV	Conc.	GSV	Conc.
WS8	30/09/20	120	0.0	0.8	19.8	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS8	30/09/20	180	0.0	0.8	19.8	0.0	0.0	1005	2.70	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	0	0.0	0.0	20.4	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	10	0.0	0.0	20.8	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	20	0.0	0.0	20.8	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	30	0.0	0.0	20.7	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	60	0.0	0.0	20.5	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	90	0.0	0.0	20.5	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	120	0.0	0.2	20.4	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS10	30/09/20	180	0.0	0.3	20.3	0.0	0.0	1005	1.50	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	30/09/20	0	0.0	0.0	20.4	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	30/09/20	10	0.0	4.6	19.2	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	30/09/20	20	0.0	6.0	18.3	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
WS15	30/09/20	30	0.0	4.9	18.5	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	30/09/20	60	0.0	0.2	20.4	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	30/09/20	90	0.0	0.6	20.4	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	30/09/20	120	0.0	0.6	20.4	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
WS15	30/09/20	180	0.0	0.6	20.4	0.0	0.2	1005	0.20	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
Max values			0.0	6.0	21.1	0.0	1.0	1023.0	3.3	0.000	0.000	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1
Min Vaules			0.0	0.0	16.3	0.0	0.0	1004.0	0.2	0.000	0.000	CS1	CS1	NO	NO	NO	GREEN	GREEN	GREEN	GREEN
BH Flow LoD check			0.0	6.0	21.1	0.1	-	-	-	0.000	0.006	CS1	CS1	NO	NO	CO2>CS1 limit	GREEN	GREEN	GREEN	AMBER 1

Project: One Horton - Winter Groundwater Monitoring
Ref: GE19462
Client: Eastleigh Borough Council



Location	Date	GWL (m bgl)		Location	Date	GWL (m bgl)
WS2	30/10/20	1.65		WS2	05/02/21	At surface
WS5	30/10/20	1.45		WS5	05/02/21	0.01
WS7A	30/10/20	0.60		WS7A	05/02/21	0.01
WS8	30/10/20	2.60		WS8	05/02/21	0.88
WS10A	30/10/20	0.10		WS10A	05/02/21	Under water
WS15A	30/10/20	0.50		WS15A	05/02/21	Under water
WS17	30/10/20	2.00		WS17	05/02/21	0.39
WS18	30/10/20	2.00		WS18	05/02/21	Obstructed
WS2	13/11/20	0.25		WS2	08/02/21	0.01
WS5	13/11/20	0.25		WS5	08/02/21	0.05
WS7A	13/11/20	0.60		WS7A	08/02/21	0.10
WS8	13/11/20	1.25		WS8	08/02/21	1.00
WS10A	13/11/20	0.10		WS10A	08/02/21	Under water
WS15A	13/11/20	At surface		WS15A	08/02/21	Under water
WS17	13/11/20	0.95		WS17	08/02/21	0.45
WS18	13/11/20	Obstructed		WS18	08/02/21	Obstructed
WS2	27/11/20	0.20		WS2	19/02/21	At surface
WS5	27/11/20	0.30		WS5	19/02/21	0.10
WS7A	27/11/20	0.35		WS7A	19/02/21	0.19
WS8	27/11/20	1.20		WS8	19/02/21	1.05
WS10A	27/11/20	0.05		WS10A	19/02/21	0.02
WS15A	27/11/20	0.10		WS15A	19/02/21	At surface
WS17	27/11/20	0.70		WS17	19/02/21	0.38
WS18	27/11/20	0.60		WS18	19/02/21	Obstructed
WS2	11/12/20	0.20		WS2	05/03/21	0.27
WS5	11/12/20	0.10		WS5	05/03/21	1.33
WS7A	11/12/20	0.20		WS7A	05/03/21	0.16
WS8	11/12/20	1.10		WS8	05/03/21	2.30
WS10A	11/12/20	At surface		WS10A	05/03/21	0.25
WS15A	11/12/20	At surface		WS15A	05/03/21	At surface
WS17	11/12/20	0.50		WS17	05/03/21	0.55
WS18	11/12/20	Obstructed		WS18	05/03/21	Obstructed
WS2	21/12/20	At surface		WS2	19/03/21	0.05
WS5	21/12/20	0.50		WS5	19/03/21	0.25
WS7A	21/12/20	0.05		WS7A	19/03/21	0.18
WS8	21/12/20	0.85		WS8	19/03/21	1.23
WS10A	21/12/20	Under water		WS10A	19/03/21	0.25
WS15A	21/12/20	Under water		WS15A	19/03/21	At Surface
WS17	21/12/20	0.50		WS17	19/03/21	0.69
WS18	21/12/20	Under water		WS18	19/03/21	Obstructed
WS2	08/01/21	0.10				
WS5	08/01/21	1.20				
WS7A	08/01/21	0.10				
WS8	08/01/21	Inaccessible				
WS10A	08/01/21	At surface				
WS15A	08/01/21	At surface				
WS17	08/01/21	0.65				
WS18	08/01/21	At surface				

APPENDIX G

Winter Groundwater Monitoring Letter Report



14th April 2021

Our ref: GE19462/FG02/210414

David Cranmer
Eastleigh Borough Council
Eastleigh House
Upper Market Street
Eastleigh
Hampshire
SO50 9YN



By email only

Dear David

RE: One Horton Heath – First Residential Parcel – Winter Groundwater Monitoring

Geo-Environmental Services Limited (Geo-Environmental) was instructed by Eastleigh Borough Council to undertake winter groundwater monitoring at the above named site. Initial groundwater monitoring was undertaken as part of the intrusive investigation works between 21st July and 30th September 2020 and reported within the Ground Investigation Report for the site ref, GE18771-GIRv3.0-DEC20, dated December 2020.

It was recommended within the Ground Investigation Report that due to shallow groundwater being encountered across the site, a period of winter groundwater monitoring be undertaken in order to inform the emerging drainage strategy and aid with the design of foundation and road construction across the site. The initial groundwater monitoring results have been presented within this letter report together with the winter groundwater monitoring results for ease of cross reference and completeness.

This letter report should be read in conjunction with the Ground Investigation Report (GE18771-GIRv3.0-DEC20) for the site, as it provides supplementary investigation, assessment and recommendations to that already undertaken and reported within the Ground Investigation Report.

Scope of Works

The following scope of works was agreed with the Client:

- Construction of 6No. dynamic sampler boreholes to depths of up to 5m bgl, depending on drilling conditions, using a self-propelled track mounted rig. (these wells were installed as part of the original intrusive investigation works)
- Construction of 2No. additional dynamic sampler boreholes to depths of up to 5m bgl, depending on drilling conditions, using a self-propelled track mounted rig. Positions as requested by the Drainage Engineer to target a proposed basin area.
- Installation of 8No. groundwater monitoring wells to a depth of 5m to facilitate winter groundwater monitoring. The wells were to be completed with a lockable cover fitted flush with adjacent ground.
- Return visits to undertake groundwater depth monitoring within all the installed monitoring wells.

The original intrusive investigation was undertaken from 6th July to 10th July 2020 and included the installation of 6No. groundwater monitoring wells. The supplementary winter groundwater monitoring intrusive investigation works were undertaken on 30th October 2020. During these works it was necessary to redrill 3No. of the original monitoring wells (WS07A, WS10A and WS15A) as these wells had become damaged and were not useable. These

Geo-Environmental Services Ltd
Unit 7 Danworth Farm, Cuckfield Road, Hurstpierpoint, West Sussex BN6 9GL
+44(0)1273 832972 www.gesl.net

Environmental Consultants | Geotechnical Engineers | Site Investigations

Geo-Environmental Services Ltd incorporated in England number 3214980 VAT number 679544479



replacement wells were drilled within close proximity to the original wells so as to be representative and comparable to the initial groundwater monitoring data. All of the intrusive investigation works were supervised by a Geo-Environmental Engineer. The locations of the groundwater monitoring wells are presented within Figure 2.

Groundwater

Groundwater was encountered within a number of exploratory holes during the initial intrusive investigation works undertaken in July 2020 as summarised in Tables 1 (for trial pits) and 2 (for boreholes) below.

Location	Depth (m bgl)	Comment
TP02	2.5	Seepage
TP03	3.0	Seepage
TP05	2.0	Water level in pit rose to 1.5m bgl
TP06	1.1	Seepage through side wall
TP08	2.8	Seepages at 2.8m and 3m bgl
TP09	3.0	Very slow water seepage
TP10	1.7	Seepages at 1.7m, 2.0m and 2.4m bgl
TP16	2.5	Seepage
TP18	2.8	Slow seepage
TP19	2.9	Seepage
TP20	2.3	Seepages at 2.3m and 3.2m bgl
TP21	2.9	Slow seepage at 2.9m bgl
TP23	3.2	Seepage
TP24	3.1	Seepage
TP26	3.3	Water seepage in base of pit
TP27	3.0	Water seepage in base of pit
TP28	3.1	Water seepage in base of pit
TP30	1.5	Seepage through side wall
TP31	3.1	Water seepage in base of pit
TP32	3.0	Water seepage in base of pit
TP33	3.1	Water seepage in base of pit
TP34	2.8	Seepage
TP35	2.3	Seepage
TP36	1.6	Running sand
TP37	2.1	Running sand
TP38	2.9	Water seepage in base of pit
TP39	2.2	Seepage
TP40	1.5	Running sand

Table 1 Summary of groundwater encountered within trial pits during investigation works in July 2020

Location	Depth of Groundwater (m bgl)	Depth of Groundwater after 20mins (m bgl)	Comments
BH1	2.8	2.20	
WS02	1.5	-	Seepages at 1.5m and 4.2m bgl
WS03	3.0	-	Seepages at 3m and 5m bgl
WS04	4.0	-	Seepage between 4m and 4.5m bgl
WS05	3.0	-	Seepage at 3m bgl
WS06	2.0	1.2	
WS07	3.0	-	Seepage at 3m bgl
WS08	3.0	-	Seepage between 3m and 3.5m bgl

Location	Depth of Groundwater (m bgl)	Depth of Groundwater after 20mins (m bgl)	Comments
WS09	4.4	-	Water within sandy lenses between 4.4m and 4.6m bgl
WS10	4.0	-	Seepage at 4m bgl
WS11	2.2	1.8	
WS12	4.0	-	Seepage between 4m and 4.6m bgl
WS13	4.0	-	Seepage at 4m bgl inhibited sample recovery
WS15	2.2	-	Seepage at 2.2m, 3.5m and 4m bgl
WS16	1.0	-	Seepage at 1m bgl

Table 2 Summary of groundwater encountered within boreholes during investigation works in July 2020

Groundwater was also encountered within a number of exploratory holes during the intrusive investigation works undertaken in October 2020 as summarised in Table 3 below.

Location	Depth of Groundwater (m bgl)	Depth of Groundwater after 20mins (m bgl)
WS07A	2.0	0.6
WS10A	2.0	0.1
WS15A	1.8	0.5
WS17	2.3	2.0
WS18	3.5	2.0

Table 3 Summary of groundwater encountered within boreholes during investigation works in October 2020

Groundwater monitoring was initially undertaken on 6No. separate occasions between July and September 2020 within the initial groundwater monitoring wells, WS02, WS05, WS07, WS08, WS10 and WS15. The depths at which groundwater was encountered at each location during these monitoring rounds are presented in Table 4 below, and enclosed within Appendix A.

Location	Depth of Groundwater (m bgl)					
	21/07/2020	04/08/2020	18/08/2020	01/09/2020	15/09/2020	30/09/2020
WS02	1.50	1.64	1.55	1.60	1.85	1.80
WS05	1.20	0.65	1.60	1.56	1.50	1.50
WS07	1.40	1.50	1.50	1.30	1.50	1.60
WS08	2.30	2.80	2.60	3.30	3.30	2.70
WS10	1.40	1.75	1.35	1.25	1.50	1.50
WS15	0.80	1.00	1.10	0.54	0.55	0.20

Table 4 Summary of initial monitored groundwater depths (m bgl)

Further groundwater monitoring was undertaken on an additional 11No. separate occasions between October 2020 and March 2021 in order to monitor groundwater levels over the winter period. Two additional new wells were monitored during this monitoring period and three of the original wells were redrilled (WS07A, WS10A and WS15A) close to the original position due to damage occurring to the initial wells. The depths at which groundwater was encountered at each location during these additional monitoring rounds are presented in Table 5 below, and enclosed within Appendix A, and a graph displaying the fluctuations in groundwater depths over the monitoring period is presented in Chart 1.

Location	Depth of Groundwater (m bgl)										
	30/10/20	13/11/20	27/11/20	11/12/20	21/12/20	08/01/21	05/02/21	08/02/21	19/02/21	05/03/21	19/03/21
WS02	1.65	0.25	0.20	0.20	At Surface	0.10	At Surface	0.01	At surface	0.27	0.05
WS05	1.45	0.25	0.30	0.10	0.50	1.20	0.01	0.05	0.10	1.33	0.25
WS07A	0.60	0.60	0.35	0.20	0.05	0.10	0.01	0.10	0.19	0.16	0.18
WS08	2.60	1.25	1.20	1.10	0.85	Obstructed	0.88	1.00	1.05	2.30	1.23
WS10A	0.10	0.10	0.05	At Surface	Underwater	At Surface	Underwater	Underwater	0.02	0.25	0.25
WS15A	0.50	At Surface	0.10	At Surface	Underwater	At Surface	Underwater	Underwater	At Surface	At Surface	At Surface
WS17	2.00	0.95	0.70	0.50	0.50	0.65	0.39	0.45	0.38	0.55	0.69
WS18	2.00	Obstructed	0.60	Obstructed	Underwater	At Surface	Obstructed	Obstructed	Obstructed	Obstructed	Obstructed

NOTES: At Surface – water level was at the top of the monitoring well when the cover was removed; Underwater – the monitoring well was fully submerged; Obstructed – the monitoring well was obstructed by on-going farming activity of the placement of material on top of it

Table 5 Summary of Groundwater Depths – Additional Monitoring Rounds



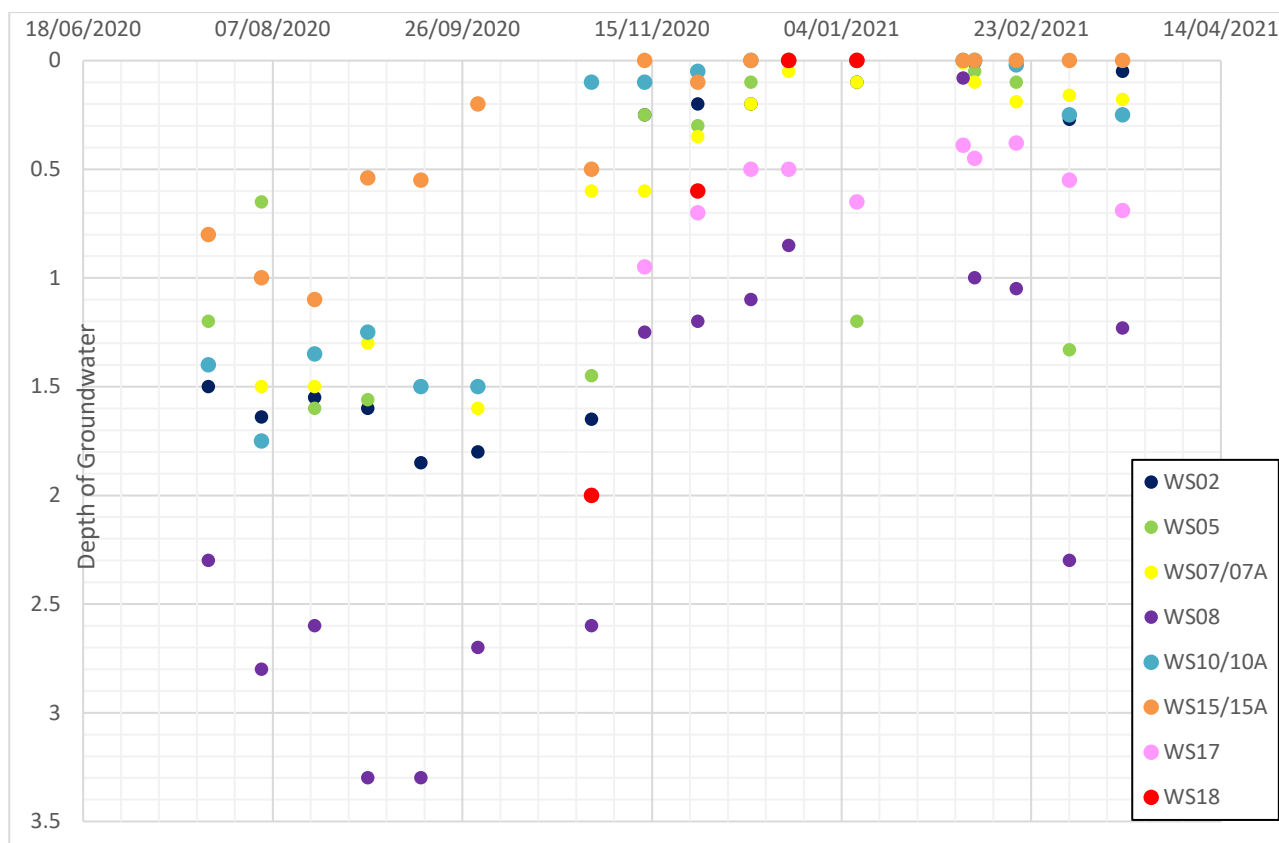


Chart 1 – Fluctuations in groundwater depths over monitoring period (m bgl)

Foundations

Given the groundwater conditions recorded at the site, it is considered that conventional foundation construction would not be feasible unless the groundwater could be removed, lowered or otherwise controlled, e.g. by pumping or dewatering, and would also be likely to require trench support. The conventional founding recommendations made within the Ground Investigation Report (GE18771-GIRv3.0-DEC20) are based on an assumption that groundwater would not be present (either due to dewatering or favourable groundwater levels) in the construction depth zone during foundation construction. However, the absence of groundwater cannot be guaranteed and thus any solution which relies upon, or requires groundwater being lower than the construction depth zone is unlikely to be the option with the lowest construction risk.

If groundwater is present within the foundation construction depth zone and cannot adequately be controlled, then conventional foundations are unlikely to be constructable and an alternative foundation solution could be required. Recommendations with regards to pile foundation design including preliminary pile load capacities have been provided within the Ground Investigation Report (GE18771-GIRv3.0-DEC20).

Excavations

If groundwater conditions as indicated from monitoring prevail then groundwater control will be required for excavations on this site. The capacity and specification of any such groundwater control measures should be determined by the groundworks contractor prior to commencement of major excavations on the site, e.g. requiring a dewatering/pumping trial. Any water pumped from excavations will require disposal in accordance with current statutory regulations and best practice, e.g. sediment control, discharge licence and the like.

Due to the presence of running sands and groundwater encountered during the intrusive investigation works mainly within trial pits located on the eastern field of the site, excavations are likely to be unstable and will therefore need to be adequately shored with appropriate retention systems and dewatering. Conventional sump pumping might not be sufficient to control water within excavations. Dewatering on a large scale could be considered but could cause consolidation settlement of the ground during dewatering and potentially loss of fines from the soil mass causing additional and potentially unpredictable settlement.

In the event that excavations become unstable, the sides should either be shuttered or over-excavated to form vertical sides in order to avoid potential adverse heave on foundations at a later date. Long, deep excavations may require some support, particularly if they are to be left open for long periods.

Ground works should be designed in such a manner to avoid personnel entry into unsupported excavations. Where this cannot be avoided, such entry should only be into supported excavations in accordance with a safe system of work and relevant legislation, e.g. Confined Spaces Regulations.

Closure

We trust we have interpreted your request correctly and provided sufficient information for your current requirements. If you have any questions or queries in relation the information provided at this stage, please do not hesitate to contact us.

Yours sincerely
For and on Behalf of Geo-Environmental



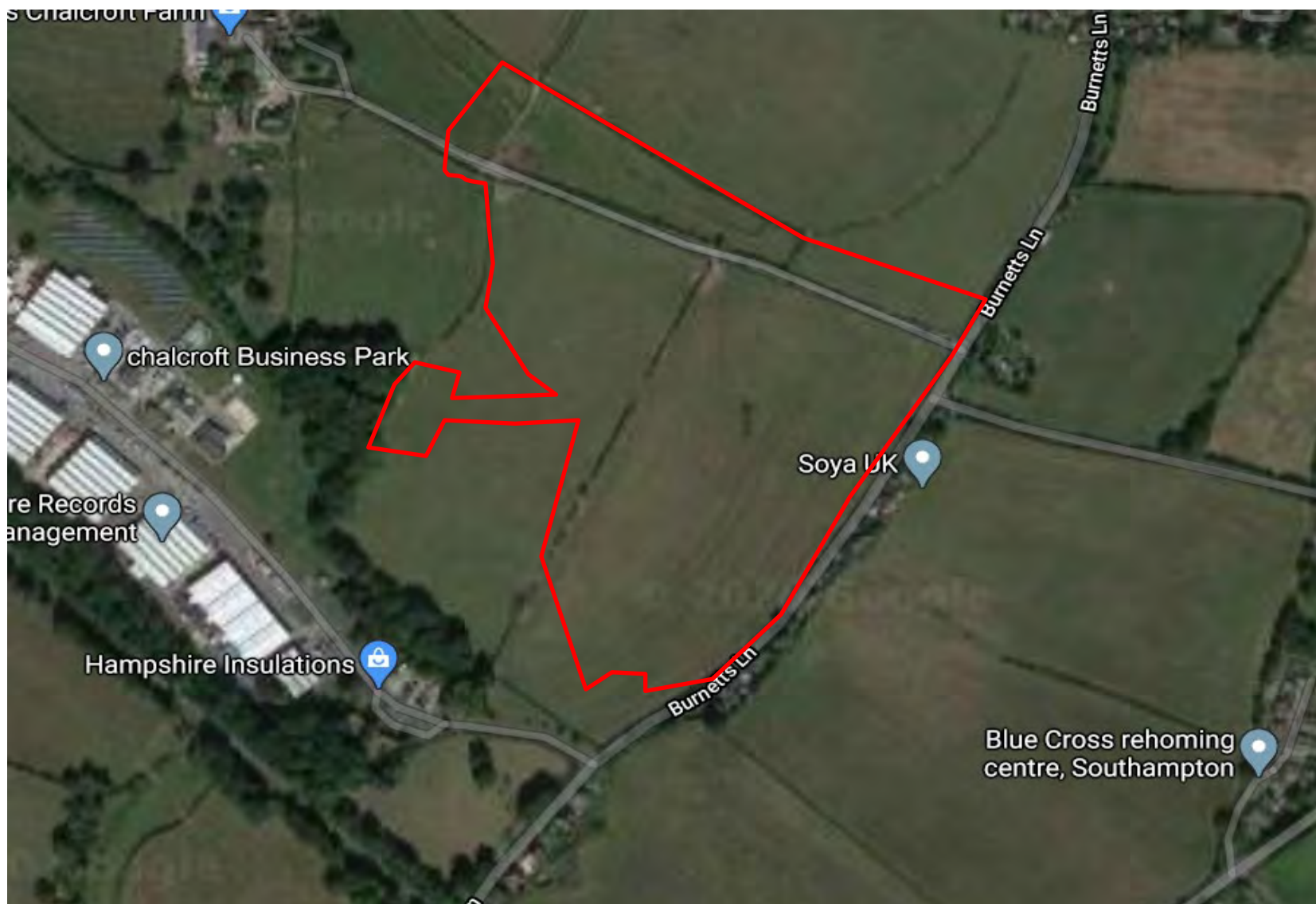
FIONA GOODE BSc (Hons), MSc, FGS, MEnvSc, RSoBRA
Senior Consultant Engineer
fiona.goode@gesl.net

Enc Figure 1 – Site Location Plan
 Figure 2 – Groundwater Monitoring Well Locations
 Appendix A – Groundwater Monitoring Results



FIGURES





Project:	One Horton Heath - First Residential Parcel			Title	Site Location Plan (aerial)	
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:	GE19462	Revision:	0			
Drawn:	FG	Date:	28/05/2020			
Figure:	1	Scale:	Not To Scale			



Project:	One Horton Heath - First Residential Parcel			Title	Groundwater Monitoring Wells	
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:	GE19462	Revision:	0			
Drawn:	FG	Date:	02/11/2020			
Figure:	2	Scale:	Not To Scale			

APPENDIX A

Groundwater Monitoring Results



Project: One Horton - Winter Groundwater Monitoring
Ref: GE19462
Client: Eastleigh Borough Council



Location	Date	GWL (m bgl)		Location	Date	GWL (m bgl)
WS2	30/10/20	1.65		WS2	05/02/21	At surface
WS5	30/10/20	1.45		WS5	05/02/21	0.01
WS7A	30/10/20	0.60		WS7A	05/02/21	0.01
WS8	30/10/20	2.60		WS8	05/02/21	0.88
WS10A	30/10/20	0.10		WS10A	05/02/21	Under water
WS15A	30/10/20	0.50		WS15A	05/02/21	Under water
WS17	30/10/20	2.00		WS17	05/02/21	0.39
WS18	30/10/20	2.00		WS18	05/02/21	Obstructed
WS2	13/11/20	0.25		WS2	08/02/21	0.01
WS5	13/11/20	0.25		WS5	08/02/21	0.05
WS7A	13/11/20	0.60		WS7A	08/02/21	0.10
WS8	13/11/20	1.25		WS8	08/02/21	1.00
WS10A	13/11/20	0.10		WS10A	08/02/21	Under water
WS15A	13/11/20	At surface		WS15A	08/02/21	Under water
WS17	13/11/20	0.95		WS17	08/02/21	0.45
WS18	13/11/20	Obstructed		WS18	08/02/21	Obstructed
WS2	27/11/20	0.20		WS2	19/02/21	At surface
WS5	27/11/20	0.30		WS5	19/02/21	0.10
WS7A	27/11/20	0.35		WS7A	19/02/21	0.19
WS8	27/11/20	1.20		WS8	19/02/21	1.05
WS10A	27/11/20	0.05		WS10A	19/02/21	0.02
WS15A	27/11/20	0.10		WS15A	19/02/21	At surface
WS17	27/11/20	0.70		WS17	19/02/21	0.38
WS18	27/11/20	0.60		WS18	19/02/21	Obstructed
WS2	11/12/20	0.20		WS2	05/03/21	0.27
WS5	11/12/20	0.10		WS5	05/03/21	1.33
WS7A	11/12/20	0.20		WS7A	05/03/21	0.16
WS8	11/12/20	1.10		WS8	05/03/21	2.30
WS10A	11/12/20	At surface		WS10A	05/03/21	0.25
WS15A	11/12/20	At surface		WS15A	05/03/21	At surface
WS17	11/12/20	0.50		WS17	05/03/21	0.55
WS18	11/12/20	Obstructed		WS18	05/03/21	Obstructed
WS2	21/12/20	At surface		WS2	19/03/21	0.05
WS5	21/12/20	0.50		WS5	19/03/21	0.25
WS7A	21/12/20	0.05		WS7A	19/03/21	0.18
WS8	21/12/20	0.85		WS8	19/03/21	1.23
WS10A	21/12/20	Under water		WS10A	19/03/21	0.25
WS15A	21/12/20	Under water		WS15A	19/03/21	At Surface
WS17	21/12/20	0.50		WS17	19/03/21	0.69
WS18	21/12/20	Under water		WS18	19/03/21	Obstructed
WS2	08/01/21	0.10				
WS5	08/01/21	1.20				
WS7A	08/01/21	0.10				
WS8	08/01/21	Inaccessible				
WS10A	08/01/21	At surface				
WS15A	08/01/21	At surface				
WS17	08/01/21	0.65				
WS18	08/01/21	At surface				