

GROUND INVESTIGATION REPORT

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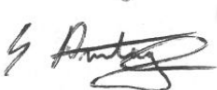
ALLINGTON LANE (PHASE 3),

FAIR OAK, HAMPSHIRE,

SO50 7DB

on behalf of

VISTRY SOUTHERN

Report:	GROUND INVESTIGATION REPORT
Site:	ALLINGTON LANE (PHASE 3), FAIR OAK, HAMPSHIRE, SO50 7DB
Client:	VISTRY SOUTHERN
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CONTENTS

EXECUTIVE SUMMARY	
1.0 INTRODUCTION	1
1.1 General	1
1.2 Form of Development	1
1.3 Objectives	1
1.4 Standards and References	1
1.5 Conditions	1
2.0 BACKGROUND	3
2.1 Site Description	3
2.2 Desk Study and Previous Reports	3
2.2.1 Geology	3
2.2.2 Hydrogeology	3
2.2.3 Hydrology	4
2.2.4 Potential Geological Hazards	4
2.2.5 Geotechnical Findings	4
3.0 GROUND INVESTIGATION	6
3.1 Scope of Works	6
3.2 Investigation Strategy	6
4.0 ENCOUNTERED CONDITIONS	7
4.1 Soils	7
4.2 Groundwater	8
4.3 Obstructions	9
4.4 Geotechnical Testing	9
5.0 ENGINEERING CONSIDERATIONS	11
5.1 Geotechnical Assessment	11
5.2 Conventional Foundations	13
5.3 Alternative Foundations	16
5.3.1 Ground Improvement	16
5.3.2 Piled Foundations	17
5.4 Floor Slabs	17
5.5 Excavations	17
5.6 Pavements	18
5.7 Sub-Surface Concrete	18
5.8 Drainage	18
6.0 DISCOVERY STRATEGY	19

FIGURES

FIGURE 1	Site Location Plan
FIGURE 2	Development Proposals
FIGURE 3	Site Constraints
FIGURE 4	Exploratory Hole Location Plan
FIGURE 5	Hand Shear Vane vs Depth
FIGURE 6	Hand Pen vs Depth Plot
FIGURE 7	Moisture Content vs Depth Plot
FIGURE 8	Exploratory Holes where Soft Clay and/or Lignite Encountered
FIGURE 9	Encountered Groundwater Depths
FIGURE 10	Foundation Zoning Plan



APPENDICES

APPENDIX A	Exploratory Hole Logs and In-situ Test Results
APPENDIX B	Site Photographs
APPENDIX C	Geotechnical Laboratory Test Results



EXECUTIVE SUMMARY		
Site Details	Site Address	Land south of May Close, Allington Lane, SO50 7QD
	National Grid Reference	448766, 118001
	Site Area	1.44Ha (approx.)
	Form of Development	The proposed development is understood to comprise the construction of a number of residential properties with gardens, areas of soft landscaping, public open space, access roads, parking and associated development infrastructure.
Encountered Conditions	Scope of works	A previous investigation undertaken by a third party encountered variable ground conditions. A phase of supplementary ground investigation was commissioned to target specific locations and to inform the foundation design strategy for this development parcel. This supplementary investigation included undertaking intrusive investigation by trial pitting and laboratory testing to inform an updated geotechnical assessment.
	Ground Conditions	The ground conditions encountered within the exploratory holes were broadly consistent with those anticipated, i.e. a thickness Topsoil overlying the Wittering Formation with lignite tentatively identified as being present within a number of locations. Soft clays were also recorded within a number of exploratory holes. Material consistent with lignite was encountered within the following locations: • TP01 – 0.30m - 1.20m • TP01a – 0.30m to 0.60m • TP02 – 0.60m to 2.00m (incompressible fragments) • TP10 – 0.20 to 0.50m Soft clays were recorded in the locations below: • TP02 – 0.30m – 0.60m bgl; low pocket penetrometer results to 1.5m bgl • TP03 – 0.20m – 0.50m bgl; low pocket penetrometer results to 1.5m bgl • TP04 – variable pocket penetrometer results to 3.0m bgl (max. depth of pit) • TP05 – 0.30m – 0.70m bgl; low pocket penetrometer results to 2.0m bgl • TP06 – low pocket penetrometer results 0.5-1.5m bgl • TP07 – low pocket penetrometer results to 1.0m bgl • TP08 – low pocket penetrometer results to 1.5m bgl • TP09 – 0.20m – 0.50m bgl & 2.0m; low pocket penetrometer results 0.5-1.0m bgl & 2.0-3.0m bgl • TP10 – 0.50m – 3.0m bgl; low pocket penetrometer results to 3.0m bgl • TP11 – 0.50m – 2.3m bgl; low pocket penetrometer results 0.5-2.5m bgl & 3.5m bgl The geological depositional environment of the Wittering Formation can give rise to zones, lenses and linear features and variations in composition as well as more laterally extensive deposits. It is only possible to report on conditions encountered at exploratory hole locations and thus, variation in ground conditions remote from exploratory holes cannot be ruled out.
	Groundwater	Groundwater was encountered during the intrusive investigation within the majority of exploratory holes, with inflows recorded at depths of between 0.20m to 3.50m bgl within the trial pits.



EXECUTIVE SUMMARY		
Geotechnical Considerations	Foundations	On the basis of testing from this and previous investigation phases, the clay soils encountered are considered <i>en masse</i> to be characteristic of Medium Volume Change Potential. Only one sample (TP03 at 1.5m bgl) fell into the High Volume Change Potential classification (with an Ip' value of 41%), this represented <2% of the dataset. It is considered that there could be scope to zone the site with regards to foundation solutions, with conventional foundations in some areas and piled foundations in others. It is anticipated that piled foundations will be required for some plots due to tree influence and this should be confirmed as part of the detailed design. In addition and subject to consultation with NHBC, there may be scope to utilise ground improvement in some areas of the site where constructability risks have been identified, where poor ground conditions were encountered and where shallow water may adversely impact construction and viability of conventional foundations. Where conventional foundations are proposed, it is recommended that a net allowable bearing capacity of 75kPa is used. Whilst higher bearing capacities may be available locally, the ground conditions were found to vary in terms of soil strength and thus a lower single value is considered more suitable. Total settlement should remain within tolerable limits. No evidence of desiccation was encountered, albeit that desiccation is a transient condition and the investigation was undertaken in late autumn/early winter, i.e. at a time when desiccation is less likely.
	Floor Slabs	Suspended floor slabs are recommended due to the presence of shrinkable soils at shallow depth on the site.
	Excavations	During the intrusive investigation works, instability of pit side walls was noted within a number of the excavated trial pits and primarily associated with ingress of water. Therefore, it is considered that excavations are likely to be unstable in the short term, where excavations are exposed to water (groundwater, surface water run off entering excavations, perched water, water discharging from land drains and the like). Adequate groundwater control and shoring with appropriate retention systems will be required. Excavation stability and groundwater represent potentially significant constructability risks. Long and/or deep excavations should be avoided due to their potential to initiate instability of the ground to the sides of the excavation and possible catastrophic collapse. The need for entry into excavations should, where possible, be designed out. However, where this cannot be achieved a robust risk assessment must be undertaken and entry of any personnel only permitted in accordance with an approved risk assessment, method statement and safe system of work.
	Pavements	Investigation and testing for road design was outside of the scope of this investigation.
	Drainage	Soakage testing was outside of the scope of this phase of intrusive investigation.
	Buried Concrete	Reference should be made to the third party ground investigation reports for advice on buried concrete classification.
	Further Action: If abnormal conditions are encountered, Geotechnical/Geo-Environmental advice must be sought to determine a suitable source of action.	
<i>This Executive Summary is intended to provide a brief summary of the main findings and conclusions of the investigation. For detailed information, the reader is referred to the main report ref. GE21296/GIR/JAN23.</i>		



1.0 INTRODUCTION

1.1 General

Geo-Environmental Services Limited (Geo-Environmental) was instructed by Vistry Southern (the Client) to undertake an additional investigation of the geotechnical factors pertaining to proposed development for Allington Lane – Phase 3, south of May Close, Allington Lane, SO50 7QD.

1.2 Form of Development

The proposed development is understood to comprise the construction of a number of residential properties with gardens, areas of soft landscaping, public open space, access roads, parking and associated development infrastructure.

1.3 Objectives

The investigation was commissioned to acquire additional information regarding the composition and geotechnical characteristics of the ground beneath the subject site.

The data from the geotechnical investigation was to form the basis of an interpretation with respect to foundation design, excavation stability and other pertinent construction issues.

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;
- BS5930: 2015+A1:2020 - Code of Practice for Site Investigations, BSI 2020;
- EN ISO 14688 Geotechnical Investigation and Testing Part 1-2002 and Part 2-2004;
- BS1377: 1990 - Soils for Civil Engineering Purposes, BSI1990;
- NHBC Standards Chapter 4.1 Land Quality - Managing Ground Conditions;
- NHBC Standards Chapter 4.2 Building Near Trees;
- NHBC Standards Chapter 4.3 Strip and trench fill foundations;
- NHBC Standards Chapter 4.4 Raft, pile, pier and beam foundations;
- NHBC Standards Chapter 4.5 Vibratory Ground Improvement techniques.

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 data collected from the investigations have been used to provide an interpretation of the geotechnical 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, or that result from updates to



desk based data utilised subsequent to that presented herein and at the time of writing which may in turn alter the presented assessment. Whilst every effort has been made to interpret the conditions, such information is only indicative and liability cannot be accepted for its accuracy.

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2.0 BACKGROUND

2.1 Site Description

The site comprised a rectangular shaped parcel of land off Allington Lane, bounded by residential estates to the north and south.

At the time of the intrusive investigation, the site comprised hard landscaping and an abandoned residential property in the western portion of the site and soft landscaping to the west. This plot of land was understood to have been used as the site office during Phase 2 development. Pallets of bricks and other materials and fencing remained in stockpiles across the site.

Overhead services crosscut the western site boundary and also cut through the centre of the site along a north to south trend.

2.2 Desk Study and Previous Reports

The findings of the third-party desk study summary are presented in the following section. Site uses have remained unchanged since the desk study was prepared.

Comments made in the following sections regarding possible ground conditions on the site are based on the findings of a number of third-party desk study and ground investigation reports provided to Geo-Environmental by the Client:

- Omnia, Report Ref: A11463/1.0, November 2020: *Phase I-II Geo-Environmental Site Assessment*
- Omnia, Report Ref: A11609/210809/L1, August 2021, *Treetops Nurseries, Allington Way, Fair Oak, SO50 7QD – Geotechnical Ground Investigation*

Whilst reference has been made to these reports and summarises presented herein, Geo-Environmental accepts no liability for errors or omissions in the information presented in the third party reports.

A general summary of the expected ground conditions across the site and pertinent information has been compiled from information within the third-party reports listed above. For further detail reference should be made to the third party reports.

2.2.1 Geology

Previously encountered conditions on site, as reported by Omnia, comprised a mantle of Topsoil over clay, sand and gravel of the Wittering Formation. The ground conditions varied across the site due to variation in geological strata beneath the site.

The **Wittering Formation** is the lowest unit of the Bracklesham Group and was deposited by intertidal sedimentation during the Eocene. It comprises mainly brown grey laminated sandy clays and clayey sands with beds of green to brown glauconitic sands. Lignite beds may be encountered towards the base of the formation.

2.2.2 Hydrogeology

The Wittering Formation was classified as a Secondary A Aquifer.

According to information sourced from the third-party reports, the site was located outside of any recorded Source Protection Zone.



During the Omnia (2021) investigation, groundwater was encountered at depths between 1.00m and 7.20m bgl.

2.2.3 Hydrology

No surface water features were identified on site.

The Omnia (2020) identified nineteen surface water features within 250m, the nearest located 53m south of the site.

2.2.4 Potential Geological Hazards

Description	On-site
Coal Mining Activity	Negligible hazard
Shallow Mining	Negligible hazard
Collapsible Ground Stability	Very low
Compressible Ground Stability	Negligible
Ground Dissolution Stability	Negligible
Landslide Ground Stability	Very low
Running Sand Ground Stability	Very low
Shrinking or Swelling Clay	Moderate

Table 2.1 Potential geological hazards on site

2.2.5 Geotechnical Findings

A summary of key ground and groundwater conditions encountered in the third party ground investigations is presented in Table 2.2 below. For further information, reference should be made to the relevant exploratory hole logs, test results and third party reports.

Location	Depth (m bgl)			Comments
	Soft ground	Lignite	Water	
TP101	-	-	-	-
TP102	-	-	2.1	-
TP103	-	-	-	-
TP104	2.0	-	-	Soft ground determined from shear vane results [£]
WS101	2.0	-	1.2	Soft ground derived from SPT N value [§]
WS102	2.0	-	0.6	Soft ground derived from SPT N value [§]
WS103	2.0	-	-	Soft ground derived from SPT N value [§]
WS104	2.0	-	-	Soft ground derived from SPT N value [§]
WS105	2.0	-	0.5	Soft ground derived from SPT N value [§]
WS106	2.0	2.8 – 3.0	-	Soft ground derived from SPT N value [§]
WS107	3.0	0.3 – 1.5	2.1	Soft ground derived from SPT N value [§]
WS108	2.0	-	3.0	Soft ground derived from SPT N value [§]
WS109	3.0	1.0 – 4.0	3.0	Soft ground derived from SPT N value [§]
WS110	2.0	-	-	Soft ground derived from SPT N value [§]
CP101	5.0	-	2.5*	Soft ground derived from SPT N value [§]
CP102	3.5	-	0.8*	Soft ground derived from SPT N value [§]
CP103	1.5	-	6.2*	Soft ground derived from SPT N value [§]



Location	Depth (m bgl)			Comments
	Soft ground	Lignite	Water	
CP104	2.0		5.1*	Soft ground derived from SPT N value [§]
CP105	3.0 ⁺⁺		6.0*	Soft ground derived from SPT N value [§]

NOTE: £ - shear strength results <40kPa used to determine soft; § SPT N value of ≤9 used to estimate soft; * short term standing water depth; ++ Made Ground reported to 3.0m bgl

Table 2.2 Summary of soft ground, lignite and groundwater conditions from third party investigations

Whilst lignite was reportedly encountered and appeared potentially to be present as a sporadic occurrence disseminated through the generally clay soil mass, the descriptions were limited either to 'lignite' or with a frequency of occurrence. No information was provided in relation to the compressibility/incompressibility or other condition of the lignite encountered. The descriptions did not appear generally to indicate the presence of distinct seams of lignite.

It must be noted that the soil descriptions on the deeper borehole logs often described soils as soft, or soft to firm, but the accompanying SPT N values were suggestive of higher strengths. It is unclear where this discrepancy originates, but it is possible that descriptions were made on disturbed samples which may have already lost some of their strength due to sampling disturbance. As such, it was considered likely that SPT N values were more reliable indicators of the ground's strength at any given depth.

Geotechnical laboratory testing was undertaken as part of the third party investigations. In total, 11No. Atterberg Limit tests were undertaken, the results of which indicated one sample to be non-plastic (hence non-shrinkable), 1No. to be of Low Volume Change Potential and the balance (9No. samples) to be of Medium Volume Change Potential. Sulphate and pH testing was undertaken as part of both phases of investigation, with the results from the initial investigation indicating a buried concrete classification of DS-1 AC-2z. However, reporting for the second investigation (deeper boreholes) stated *"Utilising Table C2 and the sulphate classes for groundwater and the water/soil extracts tests the results are indicative of a Design Sulphate Class 1 and an Aggressive Chemical Environment for Concrete of AC-4z."*



3.0 GROUND INVESTIGATION

3.1 Scope of Works

The following scope of works for the intrusive investigation was agreed with the Client:

- Undertake a pre-dig buried utilities survey of the proposed exploratory hole locations using radio-detection and ground penetrating radar techniques. The survey included capture of co-ordinates and levels of exploratory holes using GPS surveying where possible.
- The construction of 11No. machine dug trial pits (TP01 to TP11) to depths of 3.50m bgl.
- Undertake hand shear vane testing and/or hand penetrometer testing on clay soils recovered from trial pits.
- Geotechnical laboratory testing to support the geotechnical assessment for foundations.

3.2 Investigation Strategy

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

Area of Concern	Investigation	Positions
General ground conditions	Exploratory holes located across the site, coupled with sampling and laboratory analysis.	All
Strength testing of underlying soils	Hand penetrometer testing and hand shear vane (where suitable) testing of cohesive soils recovered from trial pits.	All

Table 3.1 Summary of the Investigation Strategy

The geotechnical testing was undertaken by a UKAS accredited laboratory. Samples were stored in controlled conditions from sampling until receipt at the laboratory from which time sample preparation and storage was determined by testing requirements and in line with laboratory's protocols.



4.0 ENCOUNTERED CONDITIONS

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

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

The physical ground investigation works were undertaken on 21st and 22nd November 2022.

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

4.1 Soils

With reference to British Geological Survey (BGS) mapping and previous investigations undertaken by Omnia (Ref: A11463/1.0), the geology of the site was anticipated to comprise a mantle of Topsoil over clay, sand and gravel of the Wittering Formation. In addition, lignite is present sporadically within the Wittering Formation and can vary from a soft, compressible peaty material to a charcoal-like brittle material. Lignite is not present as a continuous layer, but as sporadic lenticular deposits and as such, delineation of lignite extent can be very difficult to achieve.

The ground conditions encountered within the exploratory holes excavated as part of this supplementary ground investigation were broadly consistent with those anticipated, i.e. a mantle of Topsoil or Made Ground overlying the Wittering Formation with lignite encountered within a number of locations (TP01, TP01a, TP02 & TP10). A generalised summary of the encountered ground conditions is presented in Table 4.1. Table 4.2 summarises the locations and depths where soft clay and/or lignite were encountered.

Top (m bgl)	Base (m bgl)	Geology	Positions
0.00	0.05 – 0.50	TOPSOIL: Turf over dark brown slightly gravelly SILT. Gravel is fine subrounded flint. Abundant 1-2mm rootlets.	All (Except TP08)
0.0	0.25 ->1.3	MADE GROUND: Brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subrounded to subangular flint. Abundant 1-5mm rootlets; Firm orangish brown and grey mottled slightly gravelly CLAY. Gravel is fine to coarse angular to subangular lignite. Lignite is black incompressible to very soft compressible. Frequent 1-5mm rootlets over Plastic sheet and shingle. Dark brown very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse concrete, brick, tile, limestone and glass.	TP01 & TP08
0.05-0.50	3.7 (base of hole)	WITTERING FORMATION: Firm extremely closely fissured orangish brown and grey mottled slightly sandy CLAY. Frequent 1-5mm compressible organic flecks; Firm becoming stiff extremely closely fissured orangish brown and grey mottled slightly gravelly CLAY. Gravel is fine to coarse angular moderately strong ironstone; Soft becoming stiff orangish brown and grey mottled CLAY. <u>Lignite described as:</u> Lignite is black incompressible to very soft compressible. Encountered as fragments disseminated in the soil mass not as distinct layers.	All See Table 4.2

Table 4.1 Summary of Ground Conditions Encountered on Site



Location and depth of adverse ground conditions	
Soft Clay	Lignite
TP02 – 0.30m – 0.60m bgl; low pocket penetrometer results to 1.5m bgl TP03 – 0.20m – 0.50m bgl; low pocket penetrometer results to 1.5m bgl TP04 – variable pocket penetrometer results to 3.0m bgl (max. depth of pit) TP05 – 0.30m – 0.70m bgl; low pocket penetrometer results to 2.0m bgl TP06 – low pocket penetrometer results 0.5-1.5m bgl TP07 – low pocket penetrometer results to 1.0m bgl TP08 – low pocket penetrometer results to 1.5m bgl TP09 – 0.20m – 0.50m bgl & 2.0m; low pocket penetrometer results 0.5-1.0m bgl & 2.0-3.0m bgl TP10 – 0.50m – 3.0m bgl; low pocket penetrometer results to 3.0m bgl TP11 – 0.50m – 2.3m bgl; low pocket penetrometer results 0.5-2.5m bgl & 3.5m bgl	TP01 – 0.30m - 1.20m (in Made Ground soils) TP01a – 0.30m to 0.60m TP02 – 0.60m to 2.00m (rare to occasional) TP10 – 0.20 to 0.50m

Table 4.2 Soft Ground and Lignite Summary

Lignite was formed by localised aggregation of organic matter, such as wood, tree stumps and leaf vegetation which became trapped within sediments typically in braided stream/deltaic type environment and thus it tends to be present sporadically laterally and vertically rather than present as a distinct and continuous stratum. As such, lignite could be present in varying form and at different depths elsewhere beneath the site.

Although hand shear vanes testing was attempted on clay soils recovered from each trial pit, the success of the testing was limited on occasion by the composition and/or condition of the excavated soils. In some cases the recovered soils had sand and gravel contents above that at which shear vane testing is feasible. In other cases the clays were fissured and would 'burst' upon testing providing an unreliable result which would likely underestimate the undrained cohesion of the soils.

Where testing was feasible, hand shear vane results ranged from 37kPa (low strength/soft) to 123kPa (high strength/stiff) and hand penetrometer results ranged from 0.1kg/cm² (very soft) to 2kg/cm² (stiff) within the cohesive soils of the Wittering Formation between 0.5m and 3.5m bgl.

Details of live roots encountered in trial pits are presented in Table 5.2.

For more detailed descriptions at specific locations, reference should be made to the exploratory hole logs presented in Appendix A. The exploratory hole location plan is presented in Figure 4. Figure 8 shows the investigation locations where either soft clays or lignite were encountered, and Figure 9 presents the locations where groundwater was encountered and the depths at which it was recorded.

4.2 Groundwater

Groundwater was encountered within the majority of exploratory holes, as summarised in Table 4.3. Groundwater was not encountered within any of the other exploratory holes constructed during this phase of intrusive investigation, but could be present at other times, e.g. during winter or wetter periods.



Location	Depth to water (m bgl)
TP01	Very fast water ingress from the side of the pit at 0.8m bgl
TP01a	Very fast water ingress from the side of the pit at 0.9m bgl
TP04	Water seepage on backwall at 0.2m bgl
TP05	Water seepage at 2.2m bgl
TP06	Water seepage at 1.4m bgl
TP07	Water seepage on backwall at 1.7m bgl
TP08	Seepage from 1.1m on both sides of the pit and 2.1m on backwall.
TP09	Water seepage on Blackwall at 2.9m bgl
TP10	Fast water ingress on backwall from 0.2m bgl.
TP11	Water seepage through at 3.5m bgl

Table 4.3 Groundwater Strikes within Exploratory Holes

With regards to the water encountered in TP01 and TP01a, it is considered that this was more likely to be water perched at shallow depth, e.g. over the membrane in TP01, rather than groundwater. In addition, it is possible that some of the shallow water inflows might have been associated with redundant drainage, e.g. land drains or drainage runs associated with the site's historic uses. As such, water could be encountered at shallow depth elsewhere on the site.

It is considered likely that the water ingresses observed from 1.40-3.50m bgl are representative of perched water within more granular strata in the soil rather than a continuous shallow groundwater body. However, shallow water is likely variable at other times of the year. The presence of groundwater in excavations could influence suitability and buildability of foundations, services and the like. This may mean that conventional foundations are not constructible under some conditions, e.g. during winter months and following heavy rainfall. This will require careful consideration throughout the design and construction process.

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 with monitoring over an extended period of time.

4.3 Obstructions

Very fast water ingress from the sides of the trial pit within TP01 and TP01a limited the progression of the pits within these locations. Furthermore, shingle and plastic sheeting was excavated from the base of TP01. Due to the risk of a service strike the excavation of TP01 was ceased and the hole backfilled. It was later established from review of the third party Omnia report (Ref: A11463/1.0) that this was the location of a residential soakaway.

4.4 Geotechnical Testing

Geotechnical laboratory tests were undertaken on selected samples of the key strata encountered on this site. The results are summarised in Table 4.4.

Parameter	Wittering Formation
Moisture Content (%)	23 – 36
Liquid Limit (%)	43 – 63
Plastic Limit (%)	18 – 26
Plasticity Index Ip (%)	22 – 41
Modified Plasticity Index Ip' (%)*	22 – 41

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

Table 4.4 Summary of Geotechnical Laboratory Test Results



The Modified Plasticity Indices showed the cohesive soils of the Wittering Formation to be of Medium to High Volume Change Potential as defined in NHBC guidance. Of the 50No. soil samples tested, only 1No. sample (TP03 at 1.5m bgl) recorded a Modified Plasticity Index in excess of 40%, i.e. 41%. The previous investigations as reported by Omnia included testing of 11No. soil samples for Atterberg Limits, with 9No. results indicating Medium Volume Change Potential and the remaining results either being Low Volume Change Potential or non-plastic (so non-shrinkable). As such, of the 61No. soil samples tested, >98% of the results indicate Medium Volume Change Potential or lower with only one marginal exceedance into High Volume Change Potential.



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 Geotechnical Assessment

Geotechnical testing comprised Atterberg Limits and moisture content testing of clay soils recovered to depths of up to 3.50m bgl supplemented with strength indicator testing using a hand shear vane and hand penetrometer testing on site on the recovered soils.

Soft ground

Soft clays (i.e. undrained shear strength <40kPa) were encountered within a number of the exploratory holes both at and below likely possible founding depths. Whilst 40kPa was assumed as the boundary between soft and firm soils, as per BS5930, a hand penetrometer value of <1kg/cm² (approximate to a strength of 50kPa) was used as an approximation of the soft strength boundary.

Hand shear vane and hand penetrometer test results of the soils encountered within all the investigation locations from across the site are plotted on Figures 5 and 6. The results indicate the presence of potential soft clays between depths of 0.20m and 3.60m bgl within several locations across the site. As noted in Section 4.1, whilst hand shear vane tests were attempted, the sandy composition and/or 'fissured' texture of some of the soils encountered rendered those shear vane test results unreliable and as such, those results have not been presented or used in this assessment.

A previous investigation undertaken by a third party (Ref: A11463/1.0) identified a number of positions where soft clays were encountered at/within depths likely to be influenced by conventional foundations. A summary of these positions is provided in Table 2.2. It was concluded by the third party in a later report (Ref: A11609/210809/L1) that piled foundations should be considered due to the insufficient bearing capacity of the of these soft clays. Recommendations were made for auger piling methods over driven piles as the benefits of reduced environmental impacts (noise and vibration) to surrounding residential properties outweigh the benefits of increased bearing capacity provided by driven piles.

Soil moisture content test results from across the site are plotted on Figure 7. Moisture content values were reported within the range of between 24% and 35%. Whilst the moisture content profile for TP09 was on the low side of the dataset and could potentially be an outlier, cross reference to the trial pit log indicated that the reduction in moisture content appeared to be associated with a more gravelly stratum and not a description considered characteristic of desiccated soil.

A summary of the presence of factors that may limit the construction of conventional foundations is presented in Table 5.1 (possible poor ground) and Table 5.2 (possible indicators of desiccation). It must be noted that these are indicators of potential limiting factors and whilst each method can have limitations, the assessments are based on using several lines of evidence to determine potential correlations and estimates the presence and depth of possible limiting factors.

Exploratory Hole	HSV (≤40kPa)	HP (<1kg/cm ²)	GW	Lignite*	Within zone of influence of trees [£]
TP01	-	-	0.80 [§]	0.30-1.20	Yes
TP01a	-	-	0.90 [§]	0.30-0.60	Yes
TP02	-	0.50-1.50		0.60-2.00	Yes



Exploratory Hole	HSV (≤40kPa)	HP (<1kg/cm ²)	GW	Lignite*	Within zone of influence of trees [£]
TP03	-	0.50-1.90		-	Yes
TP04	-	1.00-2.50	0.20	-	Yes
TP05	-	0.50-2.00	2.20	-	Yes
TP06	-	0.50-2.50	1.40	-	Yes
TP07	-	1.00-1.50	1.70	-	Yes
TP08	-	1.00-2.00	1.10	-	Yes
TP09	2.00-2.50	0.50-1.00, 2.00-2.50	2.90	-	Yes
TP10	-	1.00-3.00	0.20	0.20-0.50	Yes
TP11	-	0.50-3.00	3.50	-	Yes

NOTE: \$ Perched water associated with probable soakaway; £ based off a soft landscaping proposal plan designed by ACD Environmental (Ref: VYH23077-11 sheet 1) provided by the client; *Tentatively logged as Lignite. Lignite was not found in significant concentrations considered to negatively impact the bearing capacity of the soils.

Table 5.1 Geotechnical indicator factors

Hand shear vane and hand penetrometers indicated the soils of the Wittering Formation to generally range from very soft to stiff consistency, with soft soils encountered below minimum founding depths and within the depth range that would become stressed. In addition, lignite was tentatively identified within a number of locations (TP01, TP02 & TP10), as shown on Figure 8. However, this was only encountered within the depth zone which would be stressed by conventional foundations within TP02. As the lignite was disseminated throughout the soil and observed to be incompressible is considered unlikely that it would have a detrimental effect on the bearing capacity of the host strata.

Desiccation

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. The intrusive investigation was undertaken in late November, a time of year when desiccation tends not to be particularly prevalent.

Exploratory Hole	Depth of Desiccation Indicator (m bgl)					HP
	Maximum observed depth of live roots (including rootlets)	w	w = PL	w < PL+2	w < 0.4LL	
TP02	0.3 – 0.6 ^{\$} 0.6 – 1.4 [£]	-	-	-	-	-
TP03	0.2 – 1.9 ^{\$}	3.5 ^c	-	-	-	-
TP04	0.3 – 0.6 [£]	3.0 ^c	-	3.0 ^c	-	-
TP05	0.3 – 0.7 ^{\$} 0.7 – 1.2 ^{££}	-	-	-	-	-
TP06	0.3 – 1.9 ^{\$}	3.5 ^c	-	-	-	-
TP07	0.5 – 1.7 [£]	3.5 ^a	-	-	-	2.0 ^a 2.5 ^a
TP08	None recorded	-	-	-	-	-
TP09	0.2 – 0.5 [£]	1.5 ^d 2.0 ^d 2.5 ^c 3.0 ^c 3.5 ^c	-	-	-	1.5 ^d
TP10	None recorded	1.5 ^d	-	-	-	-



Exploratory Hole	Depth of Desiccation Indicator (m bgl)					HP
	Maximum observed depth of live roots (including rootlets)	w	w = PL	w < PL+2	w < 0.4LL	
		2.0 ^d 2.5 ^d				
TP11	0.5 – 2.3 [£]	1.5 ^d 2.0 ^d 2.5 ^d	-	-	-	-

NOTE: \$ - frequent rootlets; £ - occasional rootlets; ££ - rare rootlets; w – as received soil moisture content; PL – plastic limit; LL – liquid limit; HP – hand penetrometer strength; a – sandy/silty CLAY; b – cobbly gravelly CLAY; c – sandy gravelly CLAY; d - CLAY

Table 5.2 Soil Desiccation Depth Indicators

It is acknowledged that comparison of moisture content against potential desiccation indicators such as Plastic Limit and Liquid Limit was based on research undertaken on clay soils which may be more sensitive to shrinkage and swelling than the medium volume change potential soils encountered in the exploratory holes. As such, whilst these comparisons are included, they are considered to have a lower importance and weighting in any assessment than factors such as roots, zones of low moisture content and high strength.

The roots observed in soils recovered from the exploratory holes varied in depth and diameter (typically 1-2mm, 1-3mm, 1-4mm and 1-20mm diameter) as described in the individual exploratory hole logs presented in Appendix B. The frequency of roots was most commonly highest at shallower depth.

The various comparison techniques applied and summarised in Table 5.2 are not considered to have identified any clear or specific evidence of desiccation, or potential onset of desiccation in the soils tested.

Whilst the testing has not generally demonstrated the presence of several lines of evidence in which might indicate the onset of significant desiccation, the presence of roots may still require deepening of foundations beyond the minimum depth required based on volume change potential. This may also have an influence on the foundation solution, as may other factors such as depth of Made Ground or the like. Whilst frequent roots were recorded in TP03 to 1.9m bgl and TP06 to 1.9m bgl, they were either absent below 1.5m bgl in other pits or described as 'occasional' occurrence, e.g. TP07 to 1.7m bgl and TP11 to 2.3m bgl.

5.2 Conventional Foundations

Geotechnical testing comprised Atterberg Limits and moisture content testing of clay soils recovered to depths of up to 3.50m bgl supplemented with strength indicator testing using hand shear vane and hand penetrometer testing on site on the recovered soils.

Based on the ground and groundwater conditions encountered in the exploratory holes, in-situ testing and laboratory testing from across the third party and this supplementary investigation it is considered that a combination of piled foundations, possible alternative foundations, such as vibrated ground improvement, and conventional foundations, might be suitable or required for the site. Figure 10 presents the foundation zoning plan for the site.

The firm to very stiff soils where neither lignite, nor deeper soft or more compressible soils have been encountered may be a suitable bearing stratum for conventional strip or trench foundations, albeit assuming that groundwater is absent at the proposed founding depth at the time of construction. It is considered that conventional foundations are unlikely to be suitable for several areas of the site. However, Figure 10 presents a zone of the site where conventional foundations may be possible. The presence of water within excavations could significantly hinder, or potentially prevent construction of conventional foundations. It must be noted the pit instability below water ingress was only observed within TP01a, but the remaining excavations were only open for a short duration



prior to backfilling whereas foundation excavations could be open for c.1-2 days to allow for inspection and concreting and the risk of collapse could be greater in that timeframe.

The time of year of proposed construction is likely to have a bearing on whether conventional foundations are considered constructable. It is considered that if construction is planned for the winter months, then groundwater is likely to be present within proposed founding depths, and therefore an alternative founding solution may be required due to anticipated instability of excavations and constructability issues of conventional foundations.

It is considered that the cohesive soils of the of the Wittering Formation should be classified '*en-masse*' as Medium Volume Change Potential, as defined by NHBC Standards, Chapter 4.2. Therefore, a minimum founding depth of 0.9m bgl is recommended. However, it is, common for modern foundations to extend to depths of c.1.2-1.5m bgl due to the requirement to accommodate sub-floor services and the like within the construction. This would exceed the minimum requirement based on volume change potential for foundations outside of the zone of influence of trees and shrubs.

All foundations would be required to pass through any Topsoil, Made Ground, disturbed zones, root zones, and soft ground to terminate within the firm to stiff clays of the Wittering Formation. The presence of water within excavations and/or the instability of the granular soils could significantly hinder, or potentially prevent construction of conventional foundations.

If site levels need to be increased in some areas in order to achieve final site development level thereby increasing the total thickness of ground through which foundations need to be constructed. This increase in excavation depth and surcharging of the existing relatively weak strata with earthworks fill may result in conventional foundations becoming unsuitable (e.g. due to total depth of excavation, stability/constructability risks and the like).

Groundwater inflows were recorded within several of the exploratory holes during the intrusive investigation works between depths of 0.20m and 3.50m bgl. Moreover, the central portion of the site was noted to be very wet at ground level during the site walkover and intrusive investigation. As such, it is considered likely that a combination of poor surface infiltration, standing surface water and groundwater could be present within excavations in these, and possibly other areas of the site during construction and might impact the constructability of conventional foundations due to excavation instability. Therefore, the foundation construction method should account for the potential to encounter water during excavation and foundation construction, and mitigate the risks to buildability, e.g. water control and trench support. There may also be benefit in considering programming of foundation construction for drier periods such that the risk of encountering water in excavations is reduced. However, there remains the potential for construction difficulty in some locations and thus allowance for appropriate control measures would be recommended. It must be noted that water is likely to be present at shallower depth during winter months and this must be accounted for in the foundation design and construction strategies.

On the basis of the ground conditions encountered and taking into account the foundation zoning plan presented in Figure 10, a preliminary net allowable bearing capacity of 75kPa is recommended for the firm to stiff clay strata of the Wittering Formation. Whilst higher allowable bearing capacity might be achievable in some areas/zones of the site, or where foundations span differing strata, use of a variable bearing capacity could introduce ambiguity with a result that incorrect assumptions are made during detailed design or construction leading to unsuitable foundations being constructed. Total settlement should remain within tolerable limits for this allowable bearing capacity.

Foundations terminating in, on or loading soft or soft to firm clay will not be suitable. Conventional foundations are not considered suitable in areas where soft is present within the stressed zone beneath a foundation.



Table 5.3 presents a summary of an initial foundation assessment based on the information available. It must be noted the minimum foundation depths are based on the geotechnical information available and do not account for the influence of trees (existing, felled or proposed), consideration of which may change the foundation depth and/or type. In addition, changes in the presence of, and depth to water could influence excavation stability and hence constructability of conventional foundations.

Location	Minimum founding depth (m bgl)	Commentary
TP01/01a	Pile	Disturbed ground and possible old soakaway present. Likely constructability issues even if water is drained off.
TP02	1.5	No account of tree influence. Proximal to CP105 where piled foundations are required due to depth of Made Ground encountered. Recommend piling.
TP03	1.5	-
TP04	1.8	Water recorded at 0.2m bgl. Possible constructability issue.
TP05	1.8	Water recorded at 2.2m bgl. Possible constructability issue.
TP06	1.9	Water recorded at 1.4m bgl. Probable constructability issue.
TP07	1.2	Water recorded at 1.7m bgl. Possible constructability issue.
TP08	1.5	Water recorded at 1.1m bgl. Probable constructability issue.
TP09	2.5	At limiting depth for conventional foundations. Possible constructability risk with deep excavations and trench collapse. Water recorded at 2.9m bgl. Recommend piled foundation or alternative solution.
TP10	>2.5	Beyond limiting depth for conventional foundations. Possible constructability risk with deep excavations and trench collapse. Water recorded at 0.2m bgl. Recommend piled foundation or alternative solution.
TP11	2.5	At limiting depth for conventional foundations. Possible constructability risk with deep excavation and trench collapse. Recommend piled foundation or alternative solution.
<i>Omnia positions*</i>		
TP101	1.2	-
TP102	1.2	Water recorded at 2.1m bgl.
TP103	1.2	-
TP104	2.0	Water recorded at 2.0m bgl. Possible constructability issue.
WS101	2.0	Water recorded at 1.2m bgl. Possible constructability issue.
WS102	2.0	-
WS103	2.0	-
WS104	2.0	-
WS105	2.0	Water recorded at 0.5m bgl. Possible constructability issue.
WS106	2.0	-
WS107	3.0	Beyond limiting depth for conventional foundations. Possible constructability risk with deep excavation and trench collapse. Water recorded at 2.1m bgl. Recommend piled foundation or alternative solution.
WS108	2.0	Water recorded at 3.0m bgl.
WS109	3.0	Beyond limiting depth for conventional foundations. Possible constructability risk with deep excavation and trench collapse. Water recorded at 3.0m bgl. Recommend piled foundation or alternative solution.
WS110	2.0	-
CP101	Pile	Water recorded at 2.5m bgl.
CP102	Pile	Water recorded at 0.8m bgl.
CP103	1.5	Water recorded at 6.2m bgl. Soils described as 'soft to firm', SPTs indicate some improvement with depth. Possible deepening required to >2.0m bgl. Construction risk, recommend piling or alternative solution.
CP104	2.0	Water recorded at 5.1m bgl.



Location	Minimum founding depth (m bgl)	Commentary
CP105	Pile	Made Ground recorded to 3.0m bgl. Piled foundation required. Water recorded at 6.0m bgl.

NOTE: * whilst commentary and assessment is presented for Omnia positions, this is presented for the purposes of completeness. Reference must be made to the Omnia reports for specific details, constraints and advice relating to the findings of their investigations; No account taken for tree influence which might require some positions change to piled foundations.

Table 5.3 Foundation Depth Assessment Summary

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.

Heave protection measures in accordance with NHBC Standards will be required where foundation depths exceed 1.50m and where foundations pass through desiccated ground.

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 0.50m of cover is only removed immediately prior to concreting.

Where constructability is an issue due to the presence of shallow groundwater, ground instability or proposed loadings cannot be accommodated on conventional foundations, a piled foundation or vibro ground improvement solution for the site may be more appropriate with piles terminating within competent strata at depth. The feasibility of a vibro ground improvement solution must be discussed with the building control/warranty provider at the earliest practicable opportunity to determine whether it would be approved in principle.

5.3 Alternative Foundations

As noted above, it is likely that conventional foundations will not be suitable across some areas of the site, as shown in Figure 10, due to the presence of soft/compressible clays at or below founding depth, the proximity of trees, and water at shallow depth causing constructability issues for conventional foundations. Alternative options could include solutions such as vibratory ground improvement (vibrated concrete columns) and piled foundations.

5.3.1 Ground Improvement

The ground investigations undertaken on this site have encountered clay strata of variable strength and groundwater at varying depths. Laboratory testing has indicated the samples tested primarily (>98% of the results) to be of Medium Volume Change Potential or lower. The single exceedance above Medium Volume Change Potential related to a modified plasticity index of 41% (TP03 at 1.5m bgl), a relatively marginal exceedance when considering the bulk of the results and likely behaviour of the soil mass indicated by the bulk of results. Lignite was recorded in several of the exploratory holes, but appeared to comprise a relatively minor constituent disseminated within the clay soil mass rather than as significant seams or layers. NHBC Standards Chapter 4.5 sets a lower bound shear strength of 30kPa for clay soils below which consideration must be given to possible group effects. With reference to the shear vane testing undertaken as part of this phase of investigation, no results fell below this lower bound limit.

On the basis of the above, it might be possible to consider the use of vibratory ground improvement, whether stone column to enhance bearing capacity or concrete column to transfer load to more competent strata. This could be considered in areas of the site where the ground conditions are not suitable for shallow foundations due to their low strength, poor bearing characteristics and/or presence of shallow groundwater or other constructability issues. It must be noted that the NHBC might raise concern regarding vibrated stone columns



acting as vertical drains, albeit that the investigations undertaken on this site have indicated the presence of water at varying depths within the likely 'treatment' depth zone already. In addition, desiccation and/or lower moisture contents have not been identified to date, so heave risk might be reduced.

Any form of vibratory ground treatment comprises a displacement method and introduces vibration into the ground. Whilst the effects of groundborne vibration might be transient and short term, their impact both as nuisance and potential for damage, e.g. to nearby properties, must be considered.

It is recommended if ground treatment is to be considered as a construction option for this site, the advice of a competent ground improvement contractor and consultation with the NHBC must be sought as the earliest practicable opportunity. The design and construction of any ground improvement solution must be undertaken by competent specialists. Based on the conditions encountered, the depth of improved ground is anticipated generally to be c. 5-6m or less albeit that this would be subject to confirmation following specialist design.

A temporary working platform would be required for any tracked ground improvement plant to track around the site and operate from. This must be designed in accordance with guidance for temporary working platforms.

5.3.2 Piled Foundations

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.

Whilst this phase of ground investigation did not include construction of deep boreholes to inform pile design, the second phase of investigation undertaken by Omina did comprise deep boreholes. It is recommended that reference is made to the Omnia report for relevant information and parameters from which to design piled foundations.

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.

A working platform may be required for the ground improvement and piling plant to traverse and operate on. This should be clarified once piling plant and relevant load cases have been confirmed. The design of a temporary working platform should be undertaken in accordance with BRE Report BR470, or similar good practice guidance.

5.4 Floor Slabs

Given the presence of shrinkable soils encountered at shallow depth, it is recommended that suspended floor slabs are constructed throughout the site. Reference should be made to NHBC Standards for guidance on minimum subfloor void heights to account for the volume change potential of the clay soils beneath the site.

5.5 Excavations

During the intrusive investigation works, instability of pit side walls was noted within TP01a. However, the remaining excavations were only open for a short duration prior to backfilling whereas foundation excavations could be open for c.1-2 days to allow for inspection and concreting and the risk of collapse could be greater especially where excavations are exposed to water (groundwater, surface water run off entering excavations,



perched water, water discharging from land drains and the like). Adequate water control and shoring with appropriate retention systems will be required.

The presence of water and observed instability of excavations represent a constructability risk.

The need for entry into excavations should, where possible, be designed out. However, where this cannot be achieved a robust risk assessment should be undertaken and entry of any personnel only permitted in accordance with an approved risk assessment, method statement and safe system of work.

5.6 Pavements

Investigation and testing for road design were outside of the scope of the investigation.

Hampshire County Council's Companion Document for Manual for Streets states, '*Where the subgrade is a shrinkable clay, where trees have been cleared and/or where trees are to be planted or retained within 10 metres of the carriageway edge, geogrids shall be incorporated within the pavement construction as appropriate to minimise the effects of cracking caused by clay shrinkage.*' It is recommended that consideration is also given to the incorporation of geogrid under footpaths on clay soils near trees, new/proposed planting so as to reduce the potential for seasonal reflective cracking due to variation in soil moisture content and associated clay shrinkage and swelling.

5.7 Sub-Surface Concrete

Testing for buried concrete assessment did not form part of the scope of works instructed. Results are presented in the two reports prepared by Omnia.

5.8 Drainage

Soakage testing was not undertaken as part of this phase of investigation.



6.0 DISCOVERY STRATEGY

Whilst an intrusive investigation has been undertaken on the site, it remains possible that unexpected soil 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, 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.

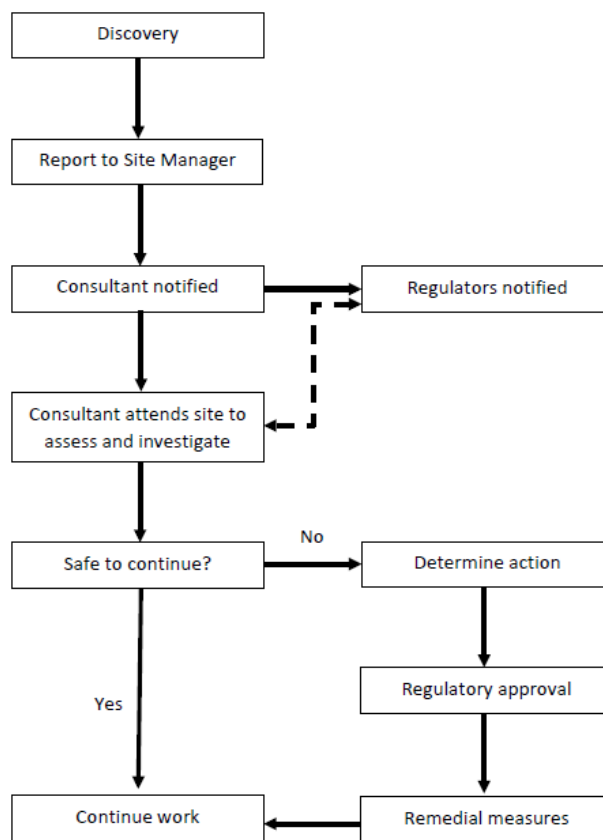
A copy of the discovery strategy must be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious, abnormal unforeseen or contaminated soils ground and/or groundwater conditions they may encounter.

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 regulatory consultation with the client, other technical personnel and/or regulatory/appraisal 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 an Officer 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 shown below.

**Chart 1 Discovery Strategy Process**

FIGURES



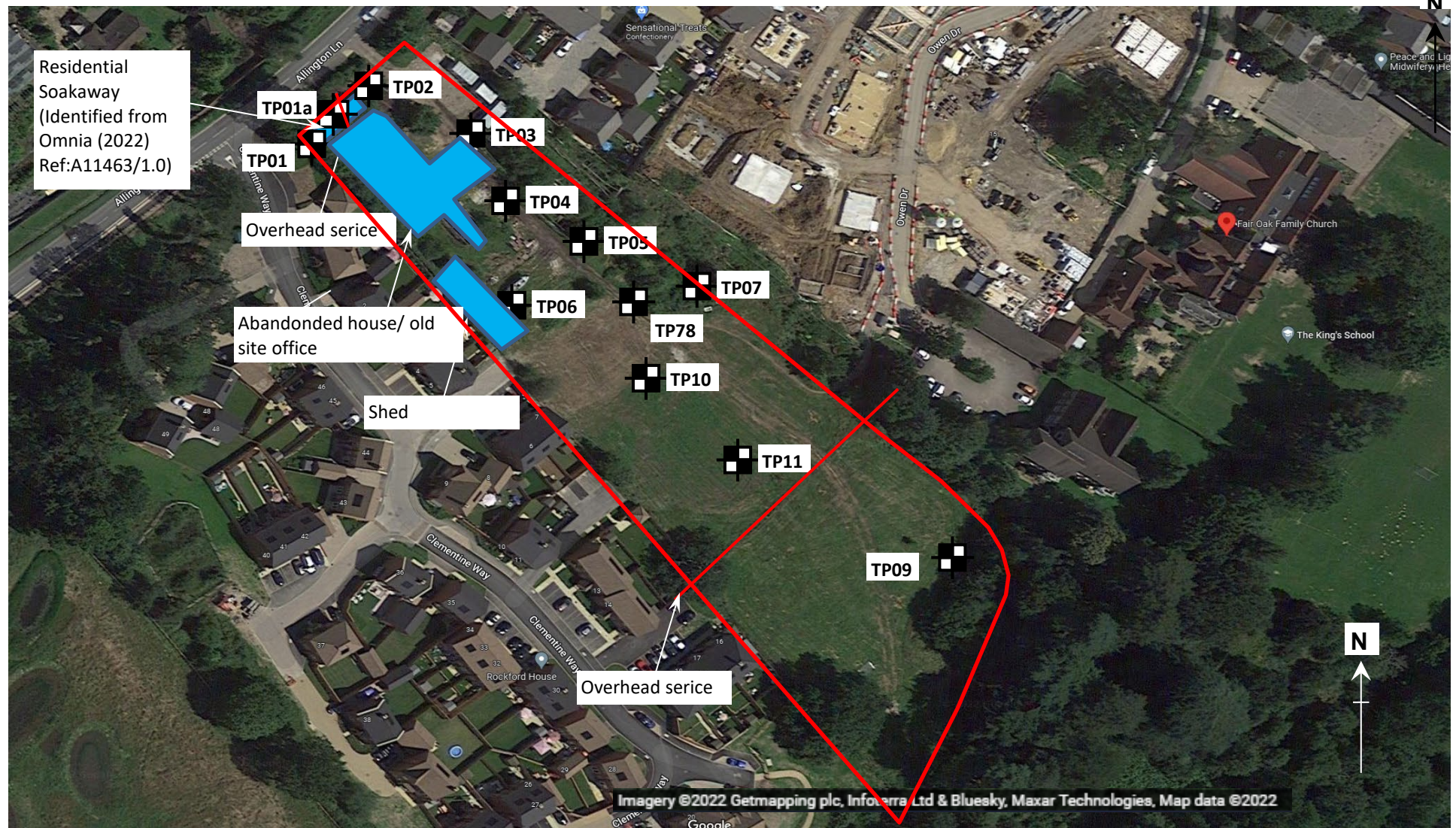


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Project:	Allington Lane – Phase 3 Supplementary GI			Title	Site Location Plan		
Client:	Vistry Southern			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net		 Geo-Environmental	
Ref No:	GE21296	Revision:	0				
Drawn:	TM	Date:	16/11/2022				
Figure:	1	Scale:	Not To Scale				



Project:	Allington Lane – Phase 3 Supplementary GI			Title	Development Plan	
Client:	Vistry Southern			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:	GE21296	Revision:	0			
Drawn:	WP	Date:	24/11/2022			
Figure:	2	Scale:	Not To Scale			



Project:	Allington Lane – Phase 3 Supplementary GI			Title	Site Constraints
Client:	Vistry Southern			Geo-Environmental Services Ltd Unit 7 Danworth Farm, Cuckfield Road Hurstpierpoint, West Sussex BN6 9GL +44(0)1273 832972 www.gesl.net	
Ref No:	GE21296	Version:	3		
Drawn:	WP	Date:	24/11/2022		
Figure:	3	Scale:	Not To Scale		
					 Geo-Environmental



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Project:	Allington Lane – Phase 3 Supplementary GI			Title	Explotary Hole Location Plan (Aerial Photograph)	
Client:	Vistry Southern			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:	GE21296	Revision:	0			
Drawn:	TM	Date:	24/11/2022			
Figure:	4	Scale:	Not To Scale			



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

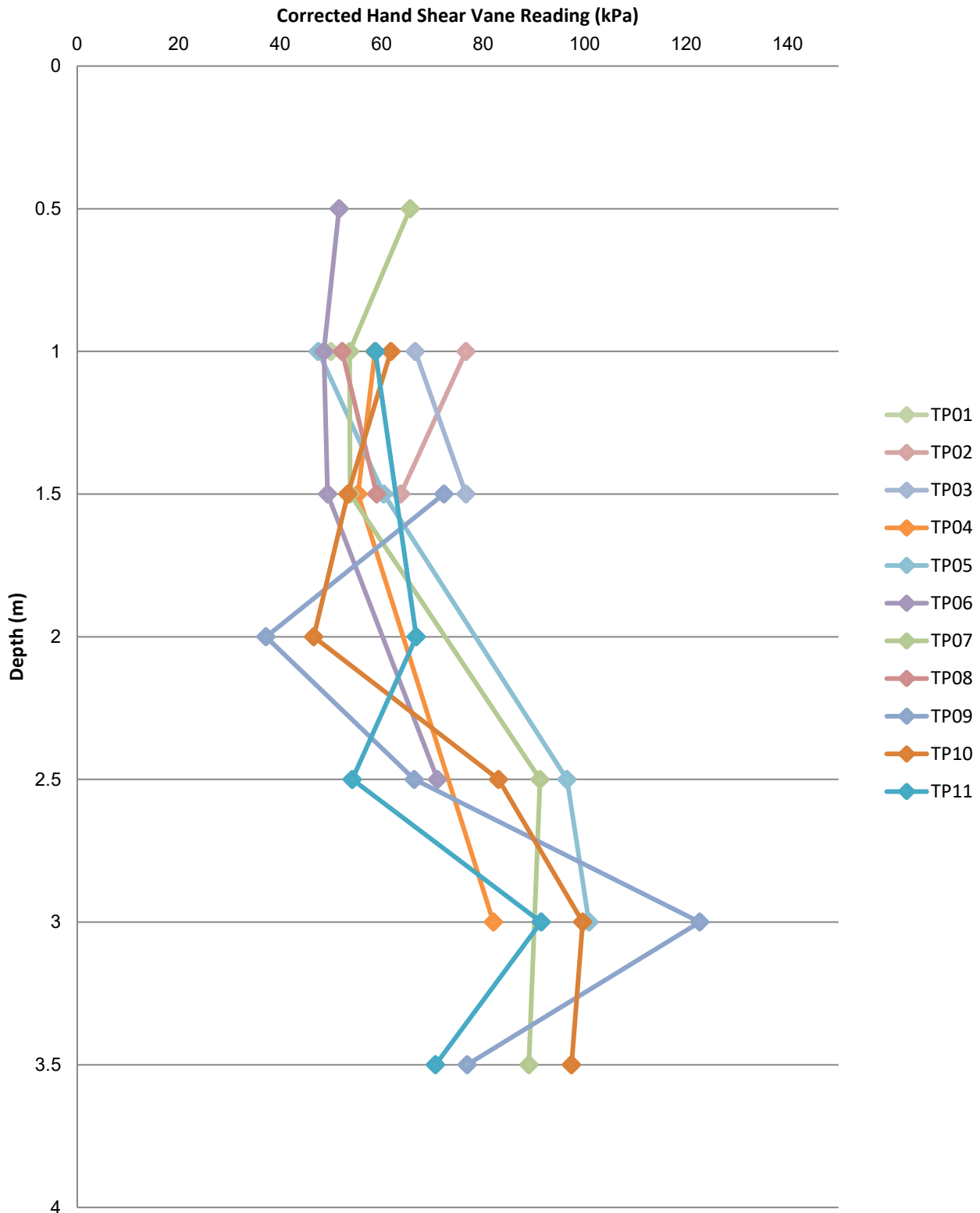
SHEAR VANE Vs DEPTH

Project ID: **GE21296**

Project Title: **Allington Lane - Phase 3 Additional GI**

Figure **5**

Client: **Vistry Southern**



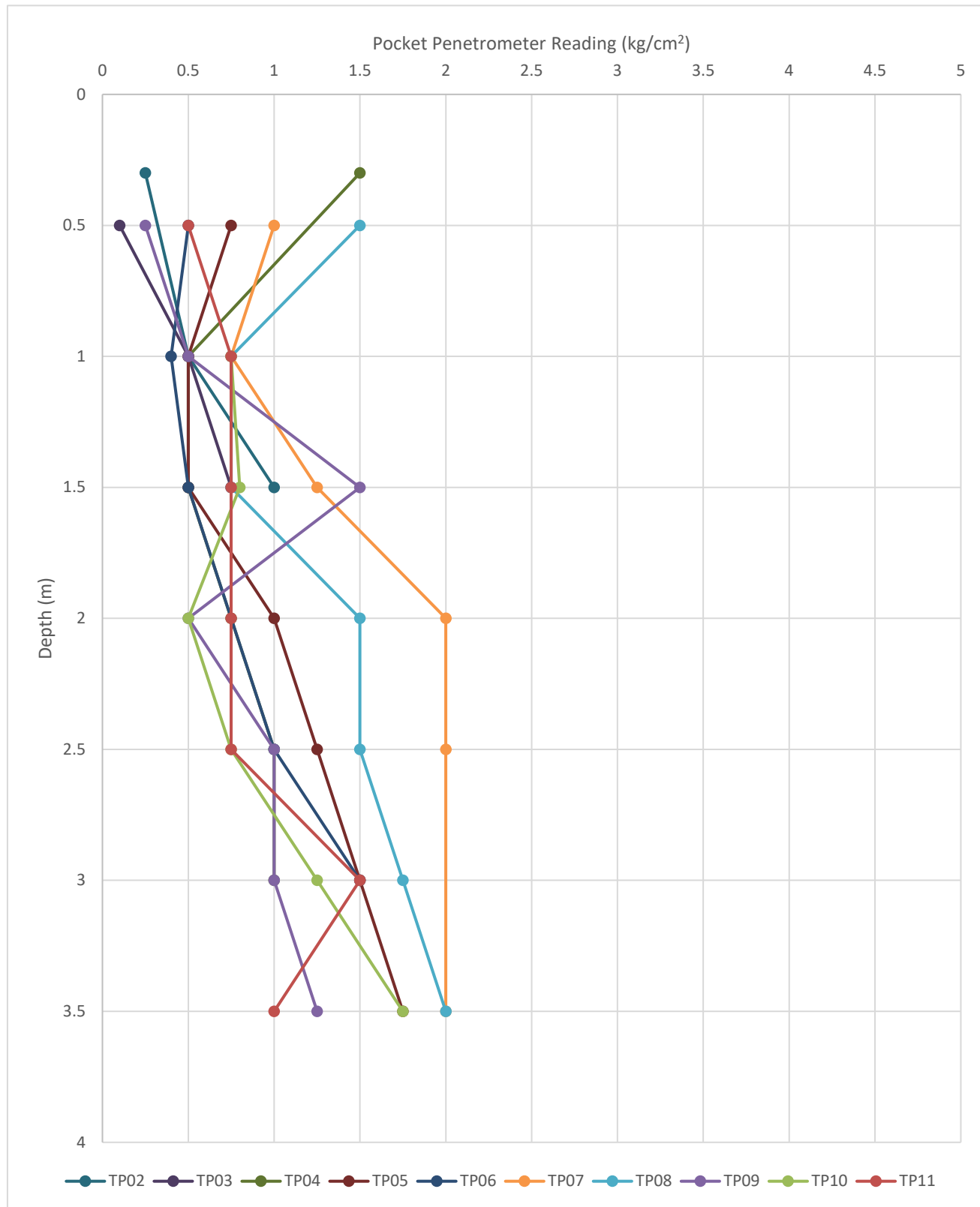
HPEN Vs DEPTH

Project ID: **GE21296**

Project Title: **Allington Lane - Phase 3 Additional GI**

Figure **6**

Client: **Vistry Southern**



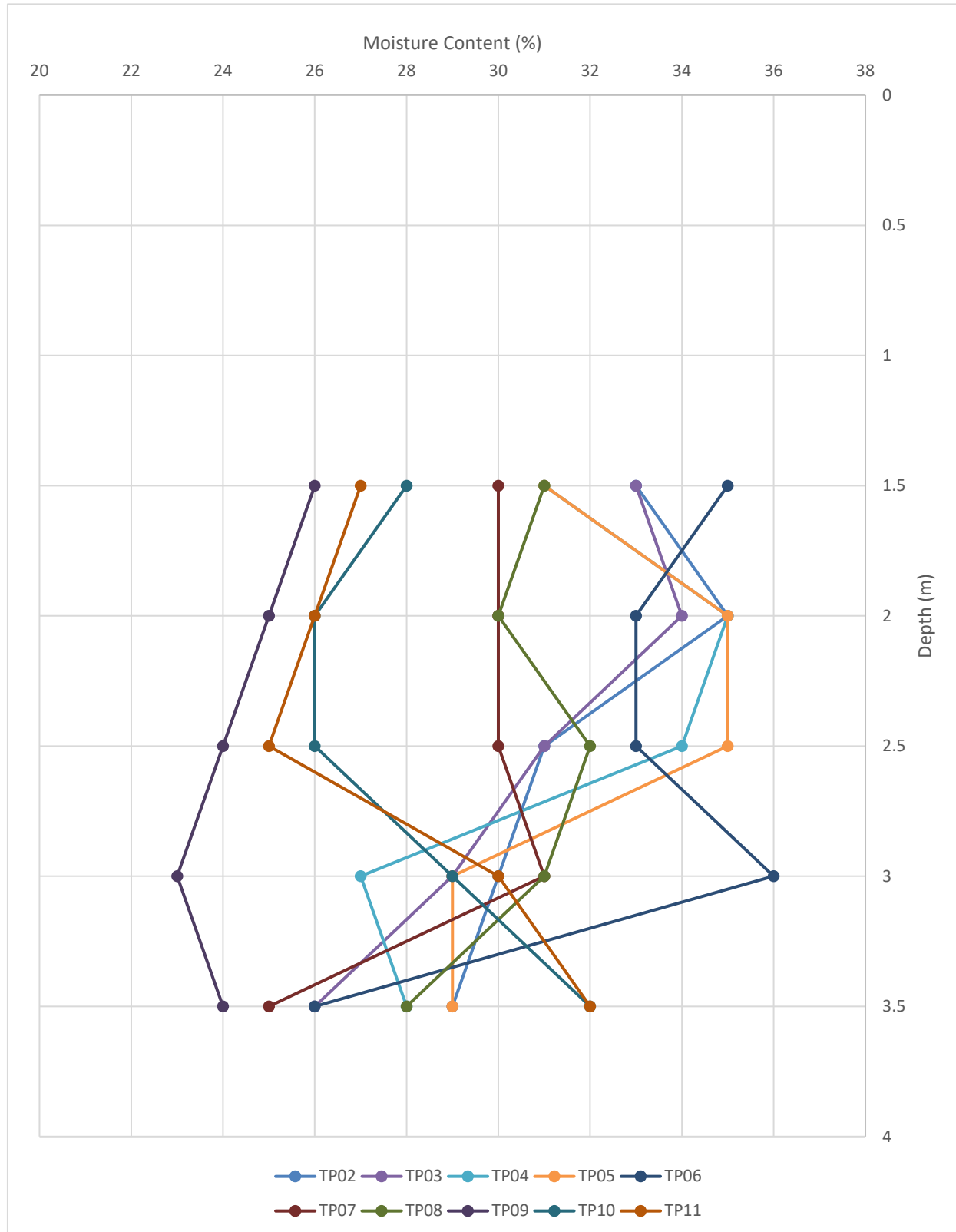
Moisture Content

Project ID: **GE21296**

Project Title: **Allington Lane - Phase 3 Additional GI**

Figure **7**

Client: **Vistry Southern**





Project:	Allington Lane – Phase 3 Supplementary GI			Title	Exploratory Holes where Soft Clay and/or Lignite encountered	
Client:	Vistry Southern			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:	GE21296	Revision:	0			
Drawn:	WP	Date:	24/11/2022			
Figure:	8	Scale:	Not To Scale			



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Project:	Allington Lane – Phase 3 Supplementary GI			Title	Encountered Groundwater Depths	
Client:	Vistry Southern			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:	GE21296	Revision:	0			
Drawn:	WP	Date:	24/11/2022			
Figure:	9	Scale:	Not To Scale			



Project:	Allington Lane – Phase 3 Supplementary GI			Title	Foundation Zoning Plan	
Client:	Vistry Southern			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:	GE21296	Revision:	1			
Drawn:	WP	Date:	24/11/2022			
Figure:	10	Scale:	Not To Scale			

APPENDIX A





Contract Name:
Allington Lane - Phase 3 Additional GI

Client:
Vistry Southern

Trial Pit ID:
TP01

Contract Number:
GE21296

Date Started:
21/11/2022

Logged By:
WP

Checked By:

Status:
FINAL

Easting:
448694.2

Northing:
118068.9

Ground Level:
26.50mOD

Plant Used:
JCB 3CX

Date Printed:
19/01/2023

Sheet 1 of 1

Trial Pit Log

Scale:
1:25

Weather: Raining

Hole Termination:

Stability: Sides stable

Samples & In Situ Testing

Depths

Sample ID

Test Result

Reduced Level

Depth (m)
(Thickness)

Legend

Strata Details

Strata Description

Water

Backfill

0.05
0.10

ES1
ES2

26.45

0.05



Turf over dark brown slightly gravelly SILT. Gravel is fine subrounded flint. Abundant 1-2mm rootlets.

TOPSOIL

Brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to coarse subrounded to subangular flint. Abundant 1-5mm rootlets.

MADE GROUND

Firm orangish brown and grey mottled slightly gravelly CLAY. Gravel is fine to coarse angular to subangular lignite. Lignite is black incompressible to very soft compressible. Frequent 1-5mm rootlets.

MADE GROUND

Very fast water ingress from coming through the side of the pit.

26.20

0.30



0.50

D1

(0.90)

1.00

D2

HV 1.00m, 50/50kPa

25.30

1.20



PLASTIC SHEET AND SHINGLE. HOLE STOPPED.

MADE GROUND

End of Trial Pit at 1.20m

25.20

1.30



0.5

1.0

1.5

2.0

2.5

3.0

3.5



Dimensions:

Photo:

Final Depth: 1.20m

← Length (m) →

2.10m

↑ Width (m) ↓

0.50m

Orientation: °





Inclination: °

PhotoofPit

PhotoofSpoil



Geo-Environmental

Contract Name:
Allington Lane - Phase 3 Additional GI

Contract Number:
GE21296

Easting:
448695.7

Client:
Vistry Southern

Date Started:
22/11/2022

Northing:
118070.7

Logged By:
WP

Checked By:

Ground Level:
26.48mOD

Status:
FINAL

Date Printed:
19/01/2023

Plant Used:
JCB

Trial Pit ID:
TP01a

Sheet 1 of 1

Scale:
1:25

Trial Pit Log

Weather: Sunny and wet

Hole Termination:

Stability: Sides unstable below water table

Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
				(0.30)		Turf over sandy SILT. Abundant 1-2mm rootlets. TOPSOIL			
			26.18	0.30		Brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is black fine to medium angular lignite. Frequent 1-4mm rootlets.			
				(0.30)		WITTERING FORMATION	0.5		
			25.88	0.60		Firm orangish brown and grey mottled CLAY.			
				(0.40)		WITTERING FORMATION			
						Very fast water ingress wit a dark blue tinge and strong fuel/foul water smell.	1.0		
			25.48	1.00		End of Trial Pit at 1.00m			
							1.5		
							2.0		
							2.5		
							3.0		
							3.5		

Dimensions:

Final Depth: 1.00m

← Length (m) →

2.20m

↑ Width (m) ↓

0.50m

Orientation: °

Photo:



PhotoofPit



PhotoofSpoil

Inclination: °

 Geo-Environmental	Contract Name: Allington Lane - Phase 3 Additional GI			Client: Vistry Southern		Trial Pit ID: TP02					
	Contract Number: GE21296	Date Started: 21/11/2022	Logged By: WP	Checked By:	Status: FINAL	Sheet 1 of 1					
	Easting: 448701.7	Northing: 118077.0	Ground Level: 26.60mOD	Plant Used: JCB	Date Printed: 19/01/2023	Scale: 1:25					
Weather: Raining		Hole Termination:			Stability: Sides stable						
Samples & In Situ Testing			Strata Details					Water	Backfill		
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description					
0.20	ES1	PP=0.25kg/cm2	26.30	(0.30)		Dark brown slightly gravelly sandy SILT. Sand is fine. Abundant 1-2mm rootlets. TOPSOIL	0.5				
				(0.30)		Soft extremely closely fissured orangish brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is fine to medium subangular flint. Frequent 1-20mm roots. WITTERING FORMATION					
				(0.60)		Firm orangish brown and grey mottled slightly sandy CLAY. Occasional 1-20mm roots. Occasional black coarse angular incompressible lignite. WITTERING FORMATION					
1.00	ES2	PP=0.5kg/cm2 HV 1.00m, 77/77kPa	25.20	(0.80)		Firm orangish brown and grey mottled slightly sandy CLAY. Singular 5mm decomposing root. Rare coarse angular incompressible lignite. WITTERING FORMATION	1.0				
1.50	D1	PP=1kg/cm2 HV 1.50m, 64/64kPa		(0.60)		Firm orangish brown and grey mottled slightly sandy CLAY. Singular 5mm decomposing root. Rare coarse angular incompressible lignite. WITTERING FORMATION				1.5	
2.00	D2			(0.50)		Firm extremely closely fissured orangish brown and grey slightly sandy CLAY. WITTERING FORMATION					2.0
2.50	D3		24.10	2.50		Light orangish brown and grey clayey cobbly GRAVEL. Gravel is fine to coarse subangular weak siltstone. Clay is extremely closely fissured. Cobble is up to 300mm weak ironstone/ siltstone. WITTERING FORMATION	2.5				
3.00	D4		(1.00)			3.0					
3.50	D5									3.5	
			23.10	3.50		End of Trial Pit at 3.50m					
Dimensions:										Photo:	
Final Depth: 3.50m											
← Length (m) → 2.30m ↑ Width (m) ↓ 0.50m Orientation: ° ←										 PhotoofPit	
Inclination: °										 PhotoofSpoil	



Geo-Environmental

Contract Name:
Allington Lane - Phase 3 Additional GI

Client:
Vistry Southern

Contract Number:
GE21296

Date Started:
21/11/2022

Logged By:
WP

Checked By:

Status:
FINAL

Trial Pit ID:
TP03

Sheet 1 of 1

Trial Pit Log

Easting:
448728.3

Northing:
118059.7

Ground Level:
26.66mOD

Plant Used:
JCB

Date Printed:
19/01/2023

Scale:
1:25

Weather: Raining

Hole Termination:

Stability: Sides stable

Samples & In Situ Testing			Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description		
0.10	ES1	PP=0.1kg/cm2	26.46	0.20		Turf littered with brick, tile and concrete over dark brown slightly sandy SILT. Sand is fine. Abundant 1-2mm rootlets. TOPSOIL	0.5	
			26.16	0.50		Very soft brown slightly sandy CLAY. Sand is fine. Frequent 1-4mm rootlets. WITTERING FORMATION		
						Firm orangish brown and grey slightly sandy CLAY. Frequent 1-3mm rootlets. WITTERING FORMATION		
1.50	D1	PP=0.5kg/cm2 HV 1.00m, 67/67kPa	24.76	1.90		Firm extremely closely fissured orangish brown and grey mottled slightly cobbly gravelly, becoming very gravelly. CLAY. Gravel is fine to coarse subangular weak siltstone. Cobble is up to 200mm subangular siltstone. WITTERING FORMATION	1.0	
2.00	D2							
2.00	ES2							
2.50	D3						1.5	
3.00	D4						2.0	
3.50	D5		23.26	3.40		End of Trial Pit at 3.40m	2.5	
							3.0	
							3.5	

Dimensions:

Final Depth: 3.40m

Length (m)
2.50m

Width (m)
0.50m

Orientation: °

Inclination: °

Photo:



21/11/2022 14:03
PhotoofPit



PhotoofSpoil



Geo-Environmental

Contract Name:
Allington Lane - Phase 3 Additional GI

Contract Number:
GE21296

Easting:
448731.9

Client:
Vistry Southern

Date Started:
21/11/2022

Northing:
118044.6

Logged By:
WP

Checked By:

Ground Level:
26.38mOD

Status:
FINAL

Date Printed:
19/01/2023

Plant Used:
JCB

Trial Pit ID:
TP04

Sheet 1 of 1

Scale:
1:25

Trial Pit Log

Weather: Raining

Hole Termination:

Stability: Sides stable

Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.20	ES1	PP=1.5kg/cm2	26.08	(0.30)		Turf over dark brown slightly gravelly slightly sandy SILT. Sand is fine. Gravel is fine to medium subrounded to subangular flint. Abundant 1-2mm rootlets. TOPSOIL	0.5		
				(0.30)		Firm brown slightly gravelly sandy CLAY. Sand is fine. Gravel is fine subrounded flint. Occasional 1-2mm rootlets. WITTERING FORMATION			
				(0.60)		Firm orangish brown and grey slightly sandy CLAY. Sand is fine. WITTERING FORMATION			
		PP=0.5kg/cm2 HV 1.00m, 59/59kPa	25.18	1.20		Firm orangish brown and grey slightly sandy CLAY. Sand is fine. Frequent coarse sized brown organic smelling slightly sandy CLAY nodules. WITTERING FORMATION	1.0		
1.50 1.50	D1 ES2	PP=0.5kg/cm2 HV 1.50m, 55/55kPa	24.58	(0.60)		Firm to stiff extremely closely fissured orangish brown and grey mottled slightly sandy CLAY. WITTERING FORMATION	1.5		
				(0.30)					
				2.10			Firm becoming stiff orangish brown and grey mottled gravelly CLAY with occasional cobbles. Gravel is fine to coarse angular to subangular ironstone. Cobble is up to 200mm subrounded ironstone. WITTERING FORMATION	2.0	
2.00	D2	PP=0.75kg/cm2	22.98	(1.40)		End of Trial Pit at 3.40m	2.5		
2.50	D3	PP=1kg/cm2							
3.00	D4	PP=1kg/cm2 HV 3.00m, 82/82kPa							
3.50	D5						3.5		

Dimensions:

Final Depth: 3.40m

Length (m)
2.50m

Width (m)
0.50m

Orientation: °

Inclination: °

Photo:



PhotoofPit



PhotoofSpoil



Geo-Environmental

Contract Name:
Allington Lane - Phase 3 Additional GI

Contract Number:
GE21296

Easting:
448753.9

Client:
Vistry Southern

Date Started:
21/11/2022

Logged By:
WP

Ground Level:
26.55mOD

Checked By:

Status:
FINAL

Plant Used:
JCB

Trial Pit ID:
TP05

Sheet 1 of 1

Scale:
1:25

Trial Pit Log

Weather: Raining

Hole Termination:

Stability: Sides stable

Samples & In Situ Testing			Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description		
0.20	ES1	PP=0.75kg/cm2	26.25	(0.30)		Turf over dark brown slightly gravelly slightly clayey SILT. Gravel is fine to coarse subrounded to subangular flint. Abundant 1-2mm rootlets. TOPSOIL		
				0.30		Soft to firm extremely closely fissured brown CLAY. Occasional 1-2mm rootlets. WITTERING FORMATION	0.5	
			25.85	(0.40)		Firm orangish brown and grey mottled CLAY with rare medium to coarse subangular siltstone lithorelics. Rare 1-2mm rootlets. WITTERING FORMATION		
		PP=0.5kg/cm2 HV 1.00m, 48/48kPa		0.70		Firm orangish brown and grey mottled CLAY with rare medium to coarse subangular siltstone lithorelics. Rare 1-2mm rootlets. WITTERING FORMATION	1.0	
			25.35	1.20		Firm orangish brown and grey mottled CLAY. Rare 1-5mm decomposing roots. WITTERING FORMATION		
1.50	D1	PP=0.5kg/cm2 HV 1.50m, 60/60kPa		(0.60)		Firm orangish brown and grey mottled CLAY. Rare 1-5mm decomposing roots. WITTERING FORMATION	1.5	
			24.75	1.80		Firm extremely closely fissured orangish brown and grey mottled CLAY. WITTERING FORMATION	2.0	
2.00	D2	PP=1.0kg/cm2		(0.50)		Firm extremely closely fissured orangish brown and grey mottled CLAY. WITTERING FORMATION		
			24.25	2.30		Stiff orangish brown and grey mottled gravelly CLAY. Gravel is fine to coarse angular to subangular ironstone. WITTERING FORMATION	2.5	
2.50	D3	PP=1.25kg/cm2 HV 2.50m, 96/96kPa		(1.20)		Stiff orangish brown and grey mottled gravelly CLAY. Gravel is fine to coarse angular to subangular ironstone. WITTERING FORMATION		
3.00	D4	PP=1.5kg/cm2 HV 3.00m, 101/101kPa				Stiff orangish brown and grey mottled gravelly CLAY. Gravel is fine to coarse angular to subangular ironstone. WITTERING FORMATION	3.0	
3.00	ES2					Stiff orangish brown and grey mottled gravelly CLAY. Gravel is fine to coarse angular to subangular ironstone. WITTERING FORMATION		
3.50	D5	PP=1.75kg/cm2	23.05	3.50		End of Trial Pit at 3.50m	3.5	

Dimensions:

Final Depth: 3.50m

Length (m)
2.50m

Width (m)
0.50m

Orientation: °

Inclination: °

Photo:



PhotoofPit



PhotoofSpoil



Geo-Environmental

Contract Name:
Allington Lane - Phase 3 Additional GI

Contract Number:
GE21296

Easting:
448735.7

Client:
Vistry Southern

Date Started:
21/11/2022

Northing:
118018.3

Logged By:
WP

Checked By:

Ground Level:
26.36mOD

Status:
FINAL

Date Printed:
19/01/2023

Plant Used:
JCB

Trial Pit ID:
TP06

Sheet 1 of 1

Scale:
1:25

Trial Pit Log

Weather: Raining

Hole Termination:

Stability: Sides stable

Samples & In Situ Testing			Strata Details				Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description		
0.20	ES1	PP=0.5kg/cm2 HV 0.50m, 52/52kPa	26.06	(0.30)		Turf over dark brown very gravelly SILT. Gravel is fine subangular flint. Abundant 1-2mm rootlets. TOPSOIL		
				0.30		Firm orangish brown and grey mottled CLAY. Frequent 1-2mm rootlets. WITTERING FORMATION	0.5	
1.30	ES2	PP=0.4kg/cm2 HV 1.00m, 49/49kPa		(1.60)		Strong fuel odour.	1.0	
1.50	D1	PP=0.5kg/cm2 HV 1.50m, 49/49kPa					1.5	
2.00	D2		24.46	1.90		Firm extremely closely fissured orangish brown and grey mottled CLAY. WITTERING FORMATION	2.0	
			24.16	2.20		Firm to stiff orangish brown slightly gravelly CLAY. Gravel is weak fine to coarse angular to subangular siltstone/ironstone lithorelics. WITTERING FORMATION	2.5	
2.50	D3	PP=1kg/cm2 HV 2.50m, 71/71kPa		(1.20)			3.0	
3.00	D4	PP=1.5kg/cm2					3.5	
3.50	D5		22.96	3.40		Bluish grey GRAVEL. Gravel is fine to coarse angular to subangular siltstone. WITTERING FORMATION		
			22.76	3.60		End of Trial Pit at 3.60m		

Dimensions:

Final Depth: 3.60m

Length (m)
2.50m

Width (m)
0.50m

Orientation: °

Inclination: °

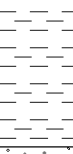
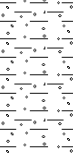
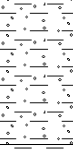
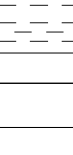
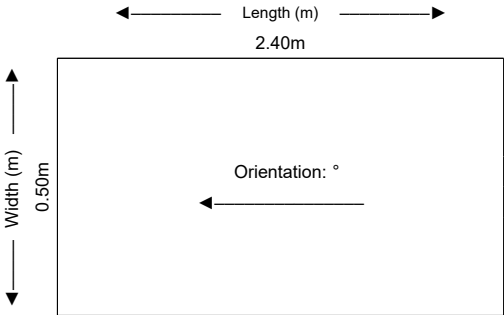
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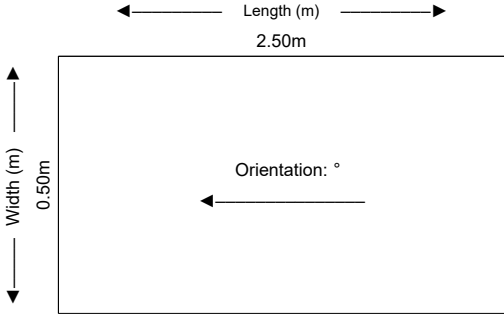


PhotoofPit



PhotoofSpoil

 Geo-Environmental	Contract Name: Allington Lane - Phase 3 Additional GI		Client: Vistry Southern			Trial Pit ID: TP07			
	Contract Number: GE21296	Date Started: 22/11/2022	Logged By: WP	Checked By:	Status: FINAL	Sheet 1 of 1			
	Easting: 448783.9	Northing: 118016.8	Ground Level: 27.08mOD	Plant Used: JCB	Date Printed: 19/01/2023	Scale: 1:25			
Trial Pit Log		Weather: Sunny and wet		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1			(0.50)		Turf over dark brown slightly clayey SILT. Frequent 20-100mm shards of glass. Abundant 1-2mm rootlets. TOPSOIL			
		PP=1kg/cm2 HV 0.50m, 66/66kPa	26.58	0.50		Firm extremely closely fissured orangish brown and grey mottled CLAY. Occasional 1-4mm rootlets. WITTERING FORMATION		0.5	
		PP=0.75kg/cm2 HV 1.00m, 54/54kPa		(1.20)				1.0	
1.50 1.50	D1 ES2	PP=1.25kg/cm2 HV 1.50m, 54/54kPa	25.38	1.70		Stiff extremely closely fissured orangish brown and light grey CLAY. WITTERING FORMATION		1.5	
2.00	D2	PP=2kg/cm2		(0.80)				2.0	
2.50	D3	PP=2kg/cm2 HV 2.50m, 91/91kPa	24.58	2.50		Stiff orangish brown and grey mottled slightly cobbly gravelly CLAY. Gravel is fine to coarse angular to subangular ironstone. Cobbles are up to 200mm angular ironstone. WITTERING FORMATION		2.5	
3.00	D4			(1.00)				3.0	
3.50	D5	PP=2kg/cm2 HV 3.50m, 89/89kPa	23.58	3.50		Stiff extremely closely fissured bluish grey CLAY. WITTERING FORMATION		3.5	
			23.38	3.70		End of Trial Pit at 3.70m			
Dimensions:			Photo:						
Final Depth: 3.70m			 22/11/2022 10:05						
									
Inclination: °			PhotoofPit PhotoofSpoil						

 Geo-Environmental	Contract Name: Allington Lane - Phase 3 Additional GI			Client: Vistry Southern		Trial Pit ID: TP08			
	Contract Number: GE21296	Date Started: 22/11/2022	Logged By: WP	Checked By:	Status: FINAL	Sheet 1 of 1			
	Easting: 448761.3	Northing: 118024.4	Ground Level: 26.88mOD	Plant Used: JCB	Date Printed: 19/01/2023	Scale: 1:25			
Trial Pit Log		Weather: Sunny and wet		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.20	ES1	PP=0.75kg/cm2 HV 1.00m, 52/52kPa	26.62	0.25		Dark brown very sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse concrete, brick, tile, limestone and glass. MADE GROUND		0.5	
0.50	ES2			(0.35)		Dark brown slightly gravelly sandy SILT. Sand is fine to coarse. Gravel is fine to coarse subrounded flint. Strong organic odour. WITTERING FORMATION			
				0.60		Firm extremely closely fissured orangish brown and grey mottled slightly sandy CLAY. Frequent 1-5mm compressible organic flecks. WITTERING FORMATION			
1.50	D1	PP=0.75kg/cm2 HV 1.50m, 59/59kPa	24.78	(1.50)		Firm becoming stiff extremely closely fissured orangish brown and grey mottled slightly gravelly CLAY. Gravel is fine to coarse angular moderately strong ironstone. WITTERING FORMATION		1.0	
2.00	D2			2.10					
2.50	D3	PP=1.5kg/cm2	23.28	(1.50)				2.0	
3.00	D4					3.60	End of Trial Pit at 3.60m		
3.50	D5	PP=2kg/cm2						2.5	
								3.0	
								3.5	
Dimensions:					Photo:				
Final Depth: 3.60m									
									
Inclination: °					PhotoofPit PhotoofSpoil				



Client:	Vistry Southern
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Trial Pit ID:	TP09
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Status:	FINAL
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Sheet 1 of 1

Trial Pit Log

Date Printed:
19/01/2023

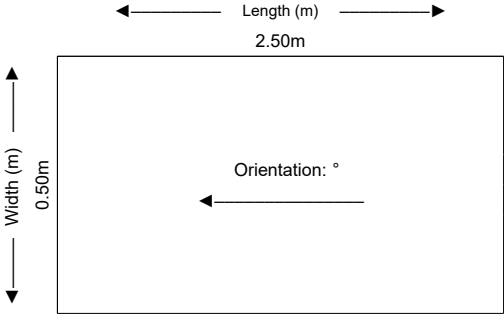
Scale: 1:25

Weather: Sunny and wet

Hole Termination:

Stability: Sides stable

Dimensions: Final Depth: 3.70m Length (m) 2.40m Width (m) 0.50m Orientation: ° Inclination: °	Photo: PhotoofPit PhotoofSpoil
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 Geo-Environmental	Contract Name: Allington Lane - Phase 3 Additional GI			Client: Vistry Southern		Trial Pit ID: TP10			
	Contract Number: GE21296	Date Started: 22/11/2022	Logged By: WP	Checked By:	Status: FINAL	Sheet 1 of 1			
	Easting: 448770.7	Northing: 118006.7	Ground Level: 27.06mOD	Plant Used: JCB	Date Printed: 19/01/2023	Scale: 1:25			
Trial Pit Log		Weather: Wet and sunny		Hole Termination:		Stability: Sides stable			
Samples & In Situ Testing			Strata Details					Water ▼	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.10	ES1	PP=0.75kg/cm2 HV 1.00m, 62/62kPa	26.86	0.20		Turf over dark brown slightly gravelly clayey SILT. Gravel is fine to medium subrounded flint. Abundant 1-2mm rootlets. TOPSOIL			0.5
			26.56	(0.30)		Brown extremely closely fissured slightly gravelly CLAY. Gravel is fine to coarse angular to subangular black incompressible lignite. WITTERING FORMATION			
				0.50		Soft becoming stiff orangish brown and grey mottled CLAY. WITTERING FORMATION			
1.50	D1	PP=0.8kg/cm2 HV 1.50m, 53/53kPa		(2.50)					1.5
2.00	D2	PP=0.5kg/cm2 HV 2.00m, 47/47kPa							2.0
2.50	D3	PP=0.75kg/cm2 HV 2.50m, 83/83kPa							2.5
3.00	D4	PP=1.25kg/cm2 HV 3.00m, 100/100kPa	24.06	3.00		Stiff orangish brown and grey mottled CLAY. WITTERING FORMATION			3.0
3.50	D5	PP=1.75kg/cm2 HV 3.50m, 97/97kPa	23.46	3.60		End of Trial Pit at 3.60m			3.5
Dimensions:					Photo:				
Final Depth: 3.60m									
									
Inclination: °					PhotoofPit PhotoofSpoil				



Client:	Vistry Southern
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Trial Pit ID:	TP11
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Contract Number:	Date Started:	Logged By:	Checked By:	Status:
GE21296	22/11/2022	WP		FINAL

Sheet 1 of 1

Trial Pit Log

Easting:	Northing:	Ground Level:	Plant Used:	Date Printed:
448789.0	117995.7	27.34mOD	JCB	19/01/2023

Scale:	1:25
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Weather: Sunny and wet

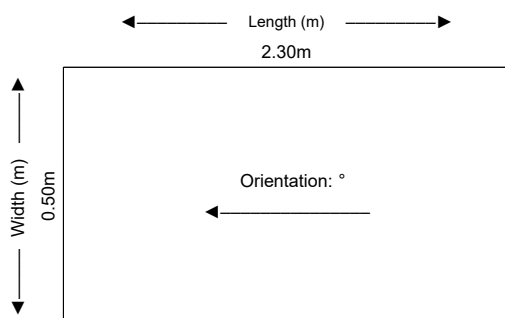
Hole Termination:

Stability: Sides stable

Samples & In Situ Testing			Strata Details					Water	Backfill
Depths	Sample ID	Test Result	Reduced Level	Depth (m) (Thickness)	Legend	Strata Description			
0.30	ES1	PP=0.5kg/cm2	26.84	(0.50)		Turf over dark brown clayey SILT. Occasional coarse subrounded flint gravel. Singular 10mm pottery fragment. Abundant 1-2mm rootlets. TOPSOIL	0.5		
		PP=0.75kg/cm2 HV 1.00m, 59/59kPa		0.50		Firm extremely fissured orangish brown CLAY. Occasional 1-2mm rootlets. WITTERING FORMATION	1.0		
1.50	D1	PP=0.75kg/cm2		(1.80)			1.5		
2.00	D2	PP=0.75kg/cm2				Black compressible organic flecks.	2.0		
2.00	ES2	HV 2.00m, 67/67kPa	25.04	2.30		Firm becoming stiff orangish brown and grey mottled CLAY. Clay becomes more fissured with depth. WITTERING FORMATION	2.5		
2.50	D3	PP=0.75kg/cm2 HV 2.50m, 54/54kPa		(1.30)			3.0		
3.00	D4	PP=1.5kg/cm2 HV 3.00m, 91/91kPa					3.5		
3.50	D5	PP=1kg/cm2 HV 3.50m, 71/71kPa	23.74	3.60		End of Trial Pit at 3.60m			

Dimensions:

Final Depth: 3.60m



Inclination: °

Photo:



PhotoofPit



PhotoofSpoil

APPENDIX B





Plate 1: Trees on eastern site boundary.



Plate 2: Immature to mature trees along northern site boundary.



Plate 3: Mature to immature trees along the southern site boundary.



Plate 4: Overgrown vegetation and trees along the central portion of the northern site boundary.



Plate 5: Hedgerow in the centre of the site.



Plate 6: Immature trees along the Western portion of the southern site boundary.



Plate 7: Mature to immature trees in the south western corner of the site.



Plate 8: Hard landscaping in the centre of the site.



Plate 9: Hard landscaping in the western portion of the site.



Plate 10: Soft landscaping in Eastern portion of the site. Gently sloping east.



Plate 11: Soft landscaping in central portion of the site.



Plate 12: Soft landscaping in the southern portion of the centre of the site.



Plate 13: Potential buried service from the rear of the house.



Plate 14: Overhead cables cross cutting the eastern soft landscaping.



Plate 15: Overhead services in the south western corner of the site.



Plate 16: Stockpile of fencing in the centre of the eastern soft landscaping.



Plate 17: Stockpile of fencing in the centre of the site.



Plate 18: A small skip of materials and stockpiles of brick, sand and plastic bollards in the central portion of the site.



Plate 19: Stockpiles of wood and windows in the centre of the site.



Plate 20: Plastic tubs located in the north eastern corner of the site.



Plate 21: Plastic piping in the centre of the eastern soft landscaping.



Plate 22: Disused fridge in the central soft landscaping.



Plate 23: Evidence of high water table in the centre of the site.



Plate 24: Evidence of high water table in the centre of the site.



Plate 25: Oil tank behind the western shed. Strong fuel smell.



Plate 26: Various gas and chemical bottles in the south western workshop.



Plate 27: Paint cans in south-western workshop.



Plate 28: Heras fencing lining the southern site boundary.



Plate 29: Boat in the central southern portion of the site.

APPENDIX C





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP02

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296

Client

GESL

Depth Top 1.50 m

Depth Base - m

Sample Type D

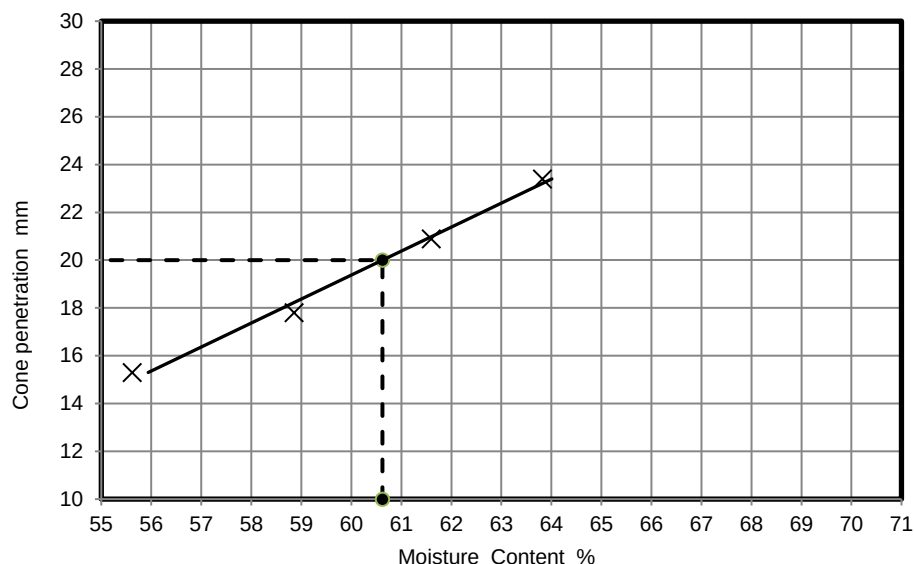
Soil Description Brown, orangish brown and grey mottled silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

33

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

61

%

PLASTIC LIMIT

24

%

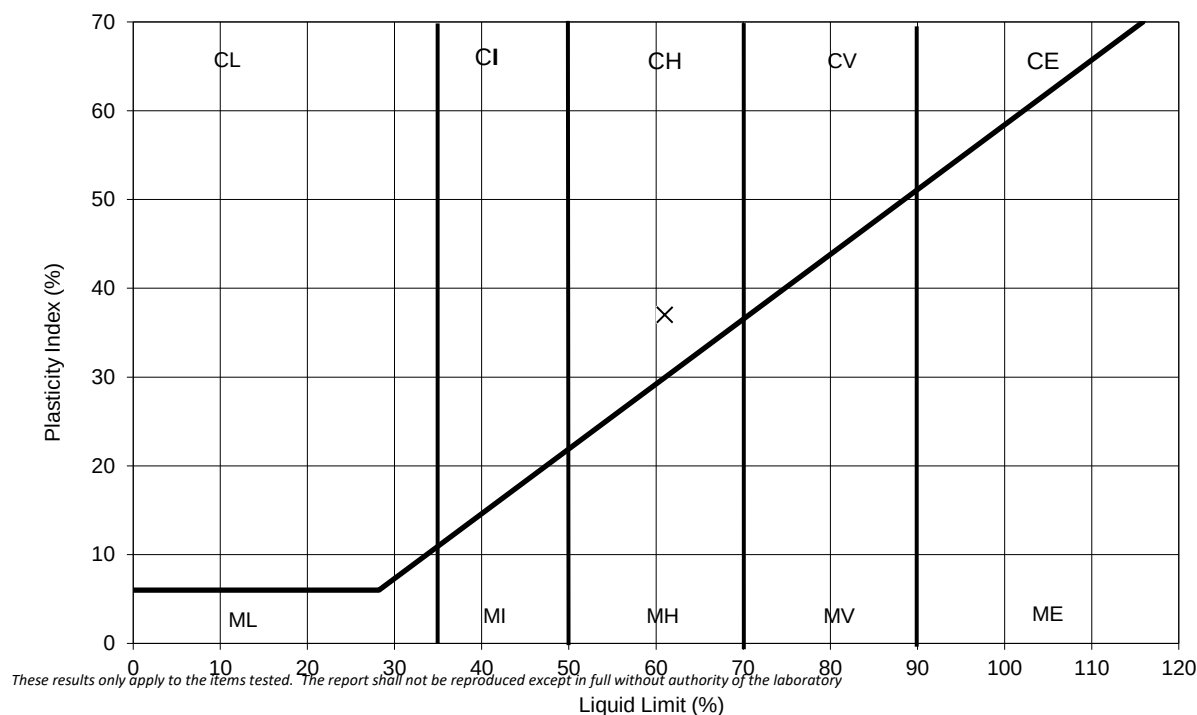
PLASTICITY INDEX

37

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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

Checked and Approved

Initials: J.P

Date: 04/01/2023

2519

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

MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP02

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

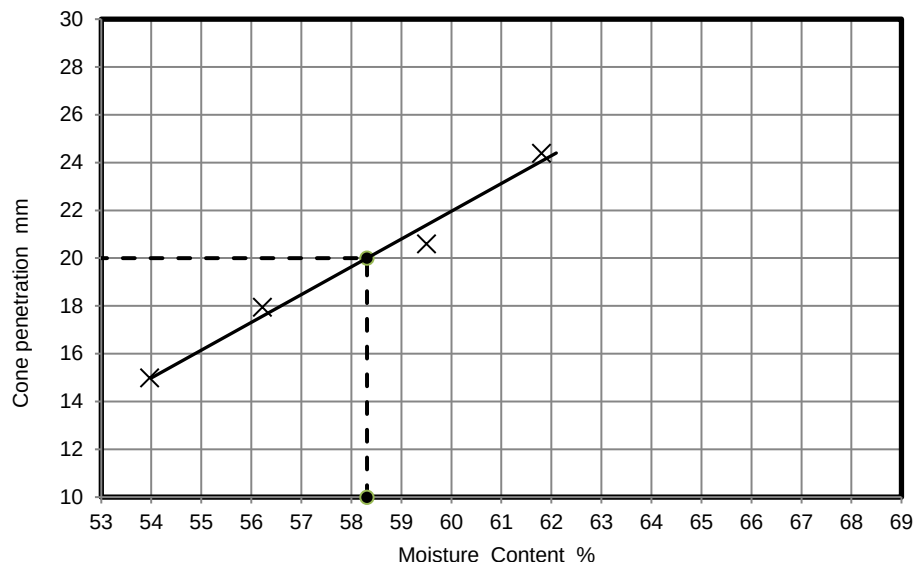
Soil Description Brown mottled orangish brown and light grey slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

35 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

58 %

PLASTIC LIMIT

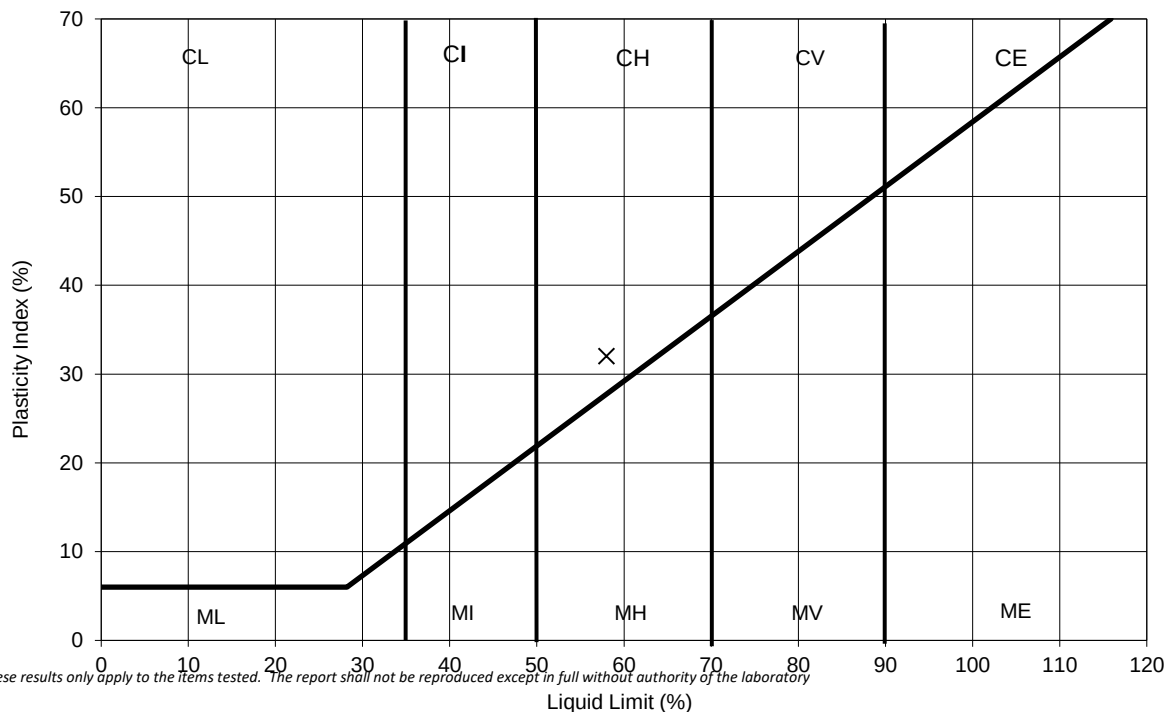
26 %

PLASTICITY INDEX

32 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP02

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296 Client GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

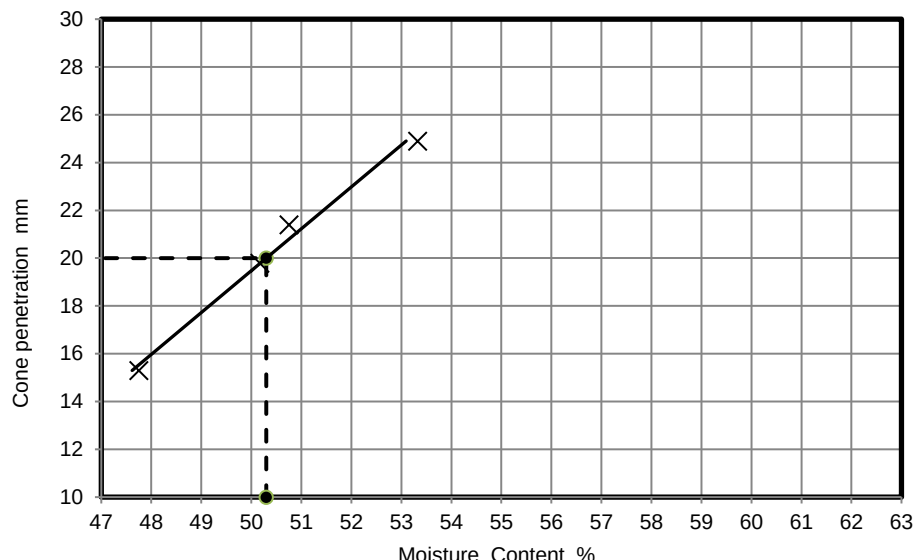
Soil Description Grey slightly shaley sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

31 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

50 %

PLASTIC LIMIT

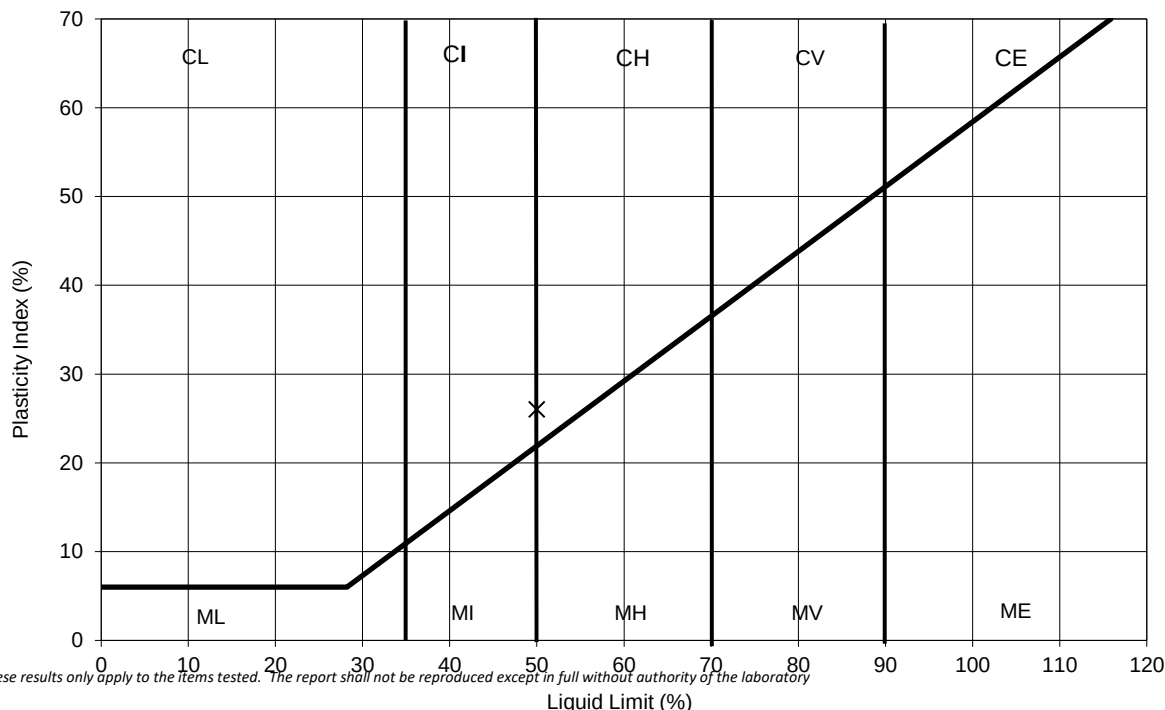
24 %

PLASTICITY INDEX

26 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP02

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296

Client

GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

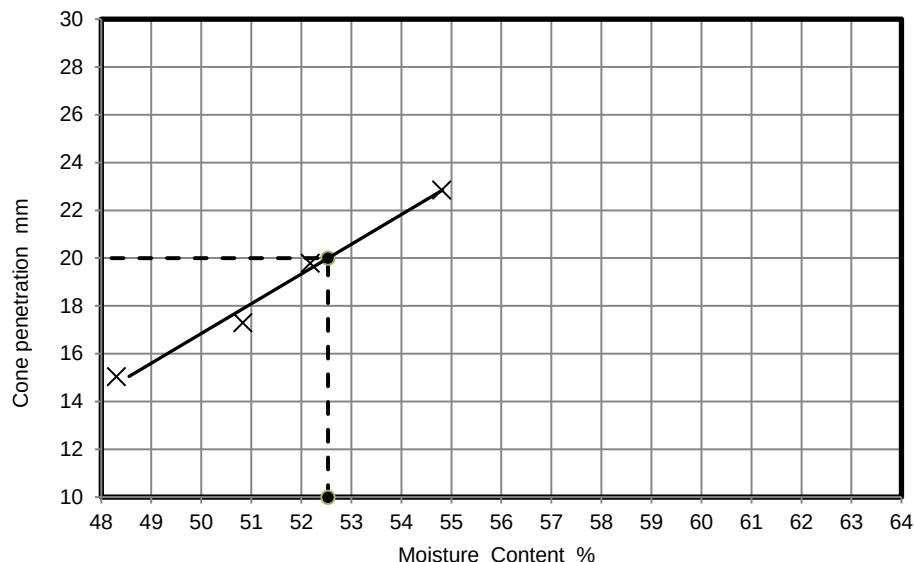
Soil Description Grey mottled orangish brown slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

30

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

53

%

PLASTIC LIMIT

23

%

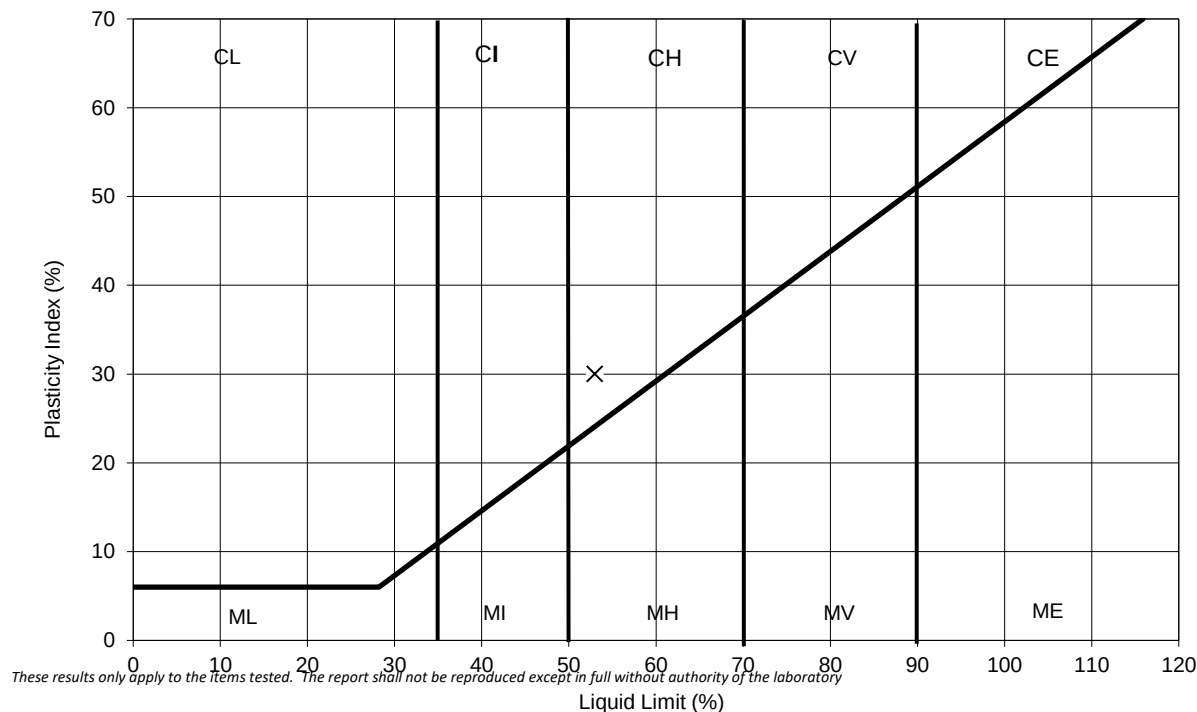
PLASTICITY INDEX

30

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP02

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296 Client GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

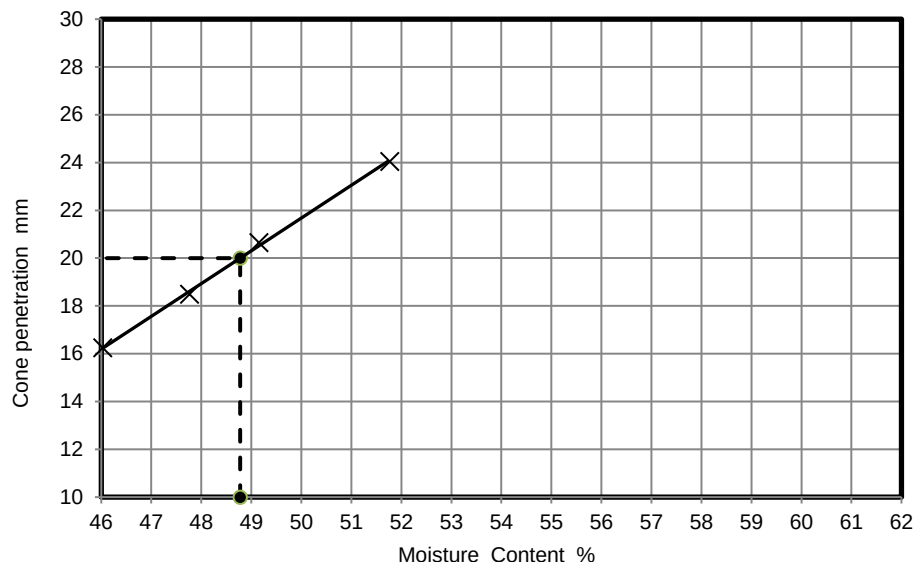
Soil Description Grey mottled orangish brown sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

29 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

49 %

PLASTIC LIMIT

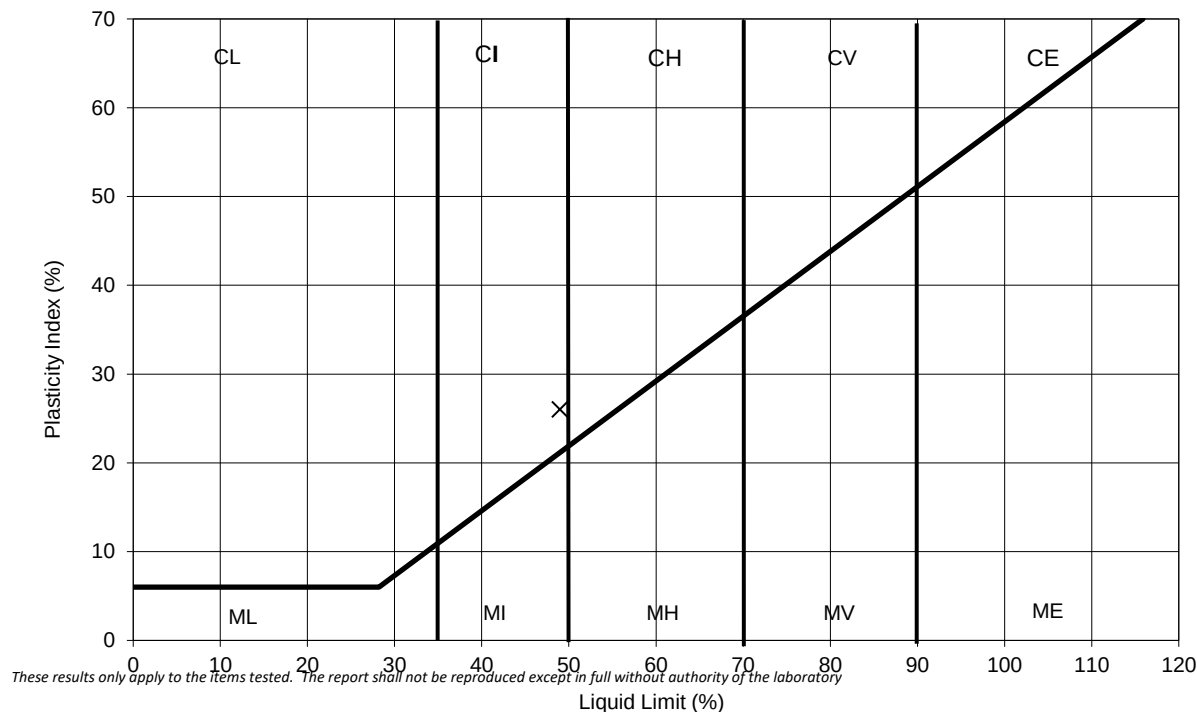
23 %

PLASTICITY INDEX

26 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP03

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296 Client GESL

Depth Top 1.50 m

Depth Base - m

Soil Description Brown and light grey mottled silty CLAY with orangish brown sandy patches

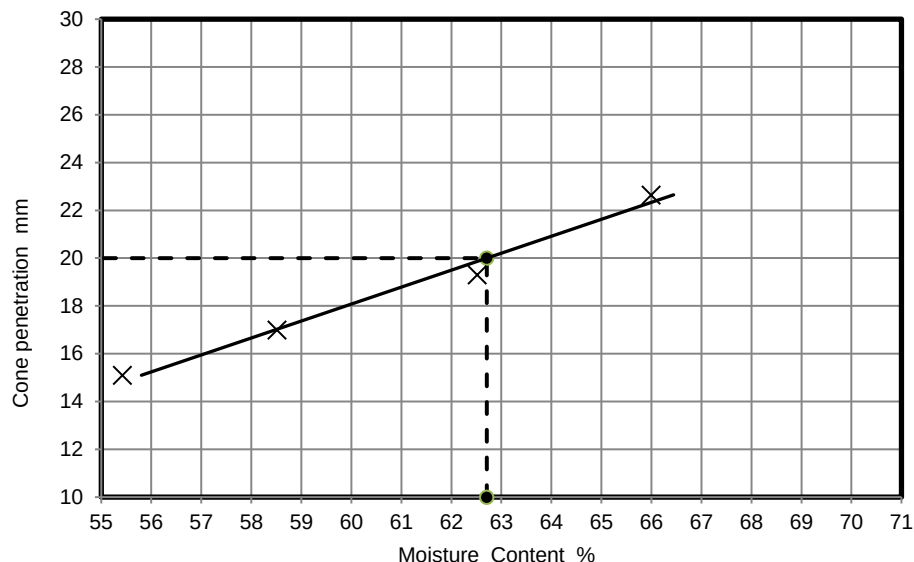
Sample Type D

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

33 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

63 %

PLASTIC LIMIT

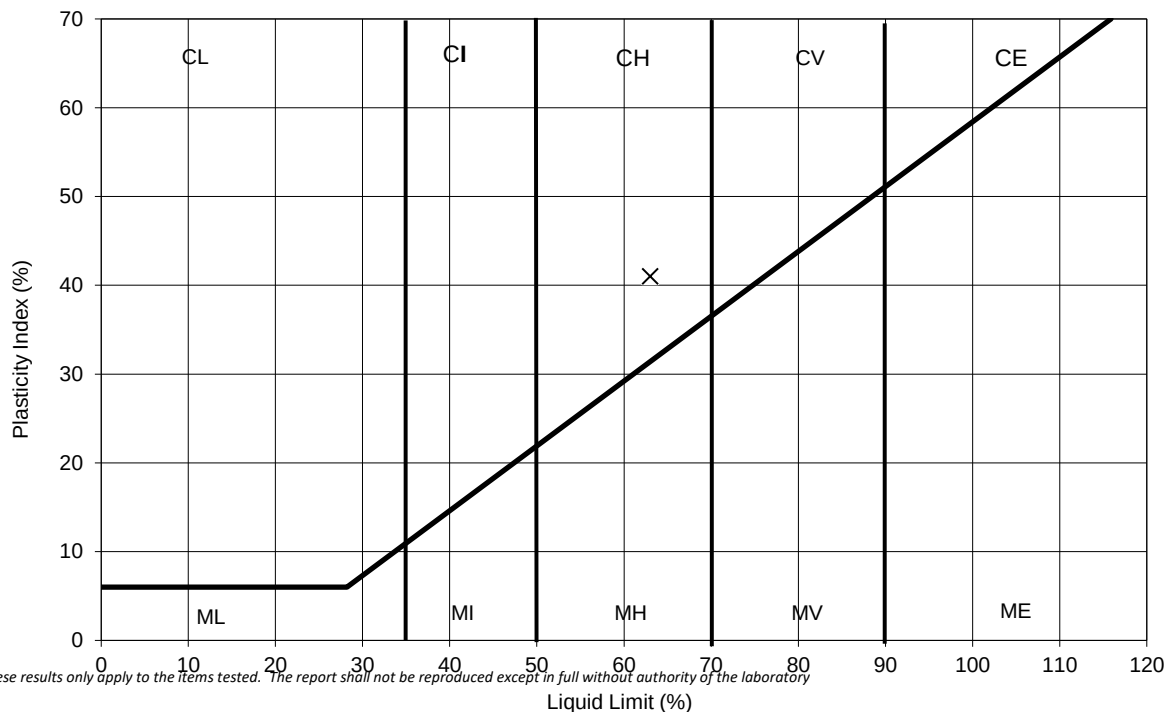
22 %

PLASTICITY INDEX

41 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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Checked and Approved

Initials: J.P

Date: 04/01/2023

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP03

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

Soil Description

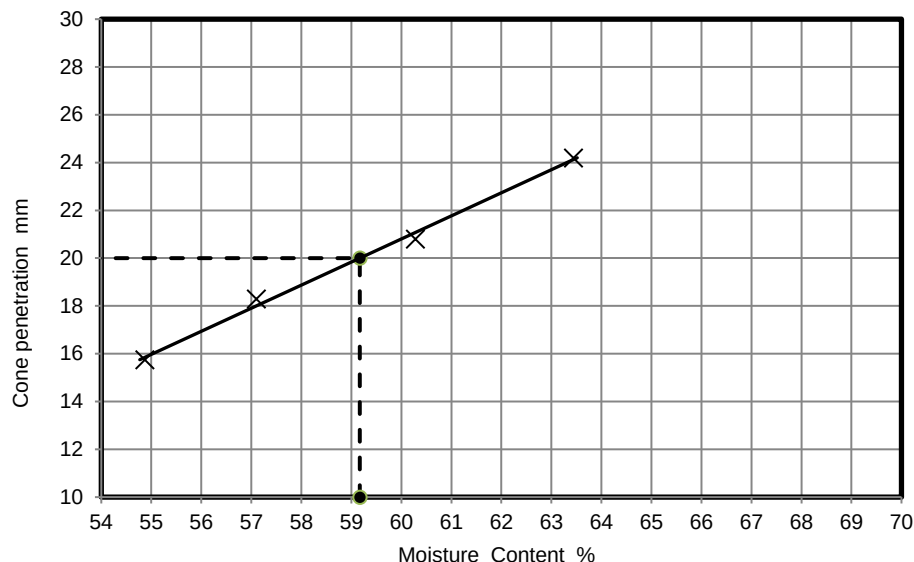
Grey and orangish brown mottled silty CLAY with sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

34

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

59

%

PLASTIC LIMIT

25

%

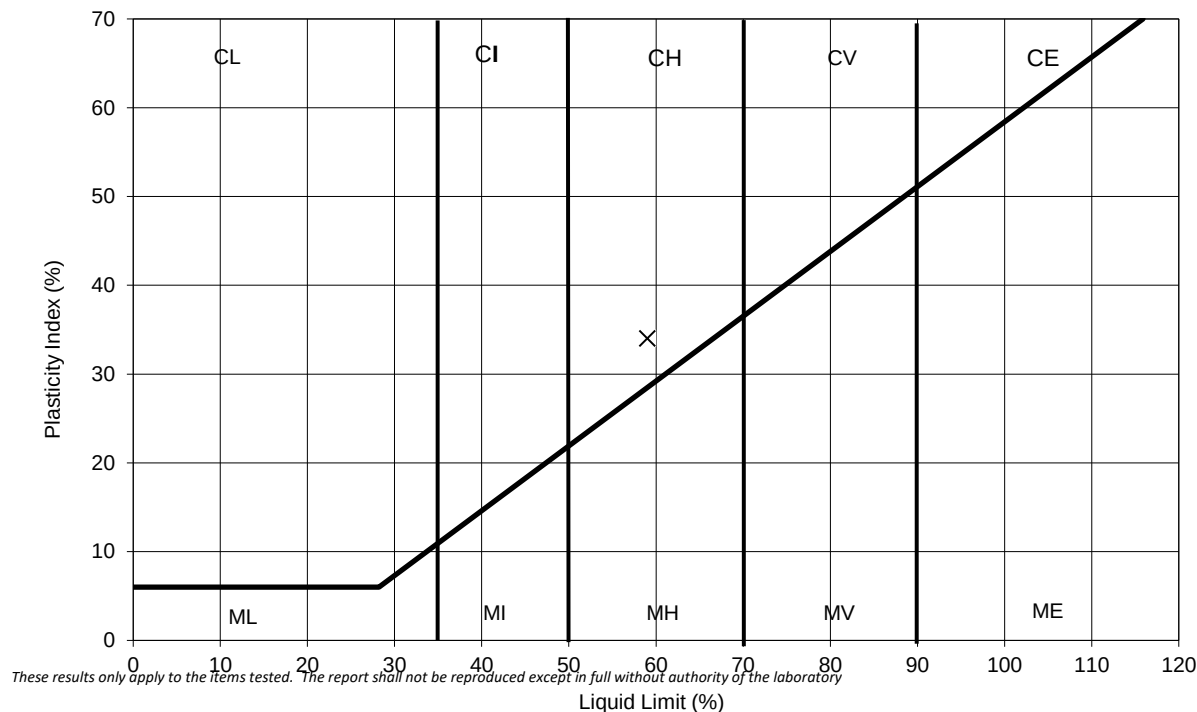
PLASTICITY INDEX

34

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP03

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296

Client

GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

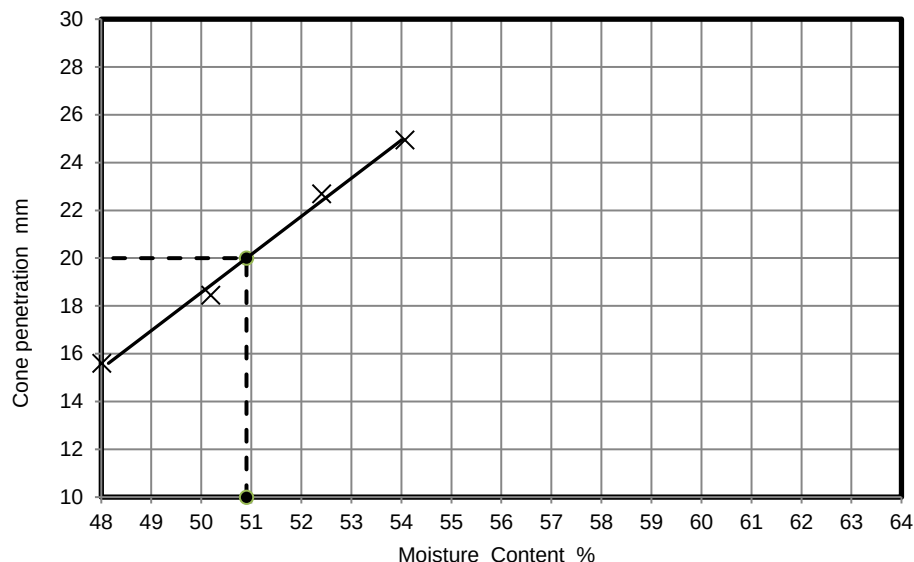
Soil Description Grey mottled orangish brown slightly shaley sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

31

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

51

%

PLASTIC LIMIT

23

%

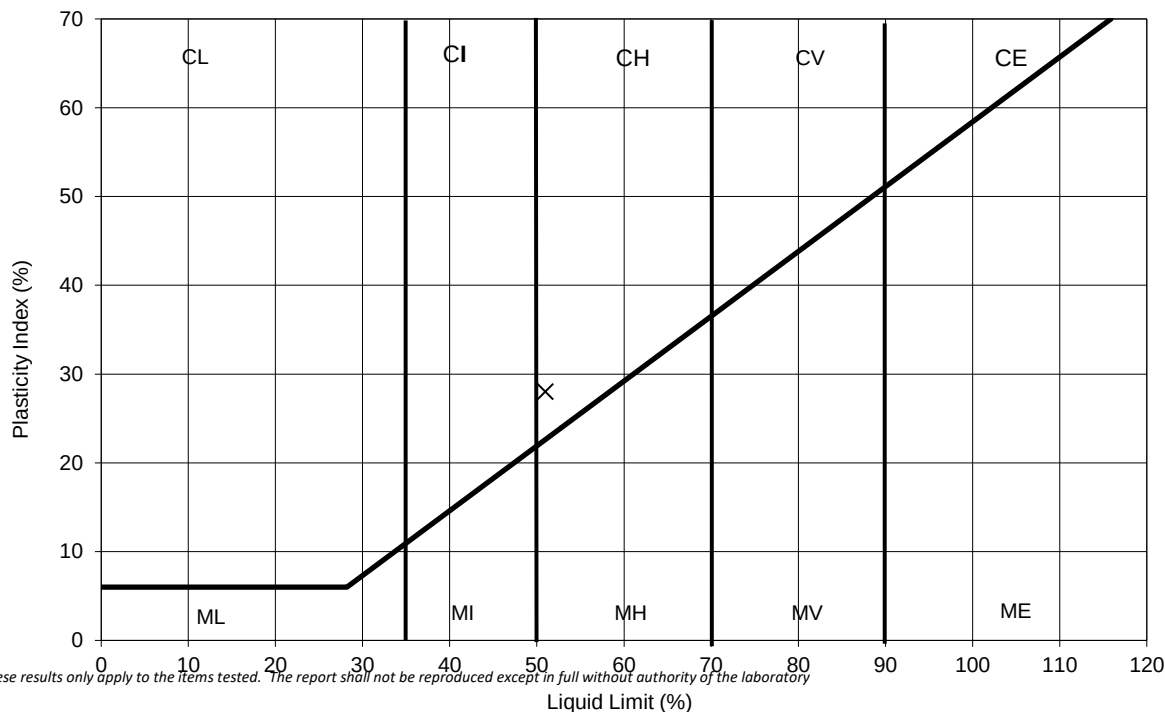
PLASTICITY INDEX

28

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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Date: 04/01/2023

2519

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

MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP03

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296 Client GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

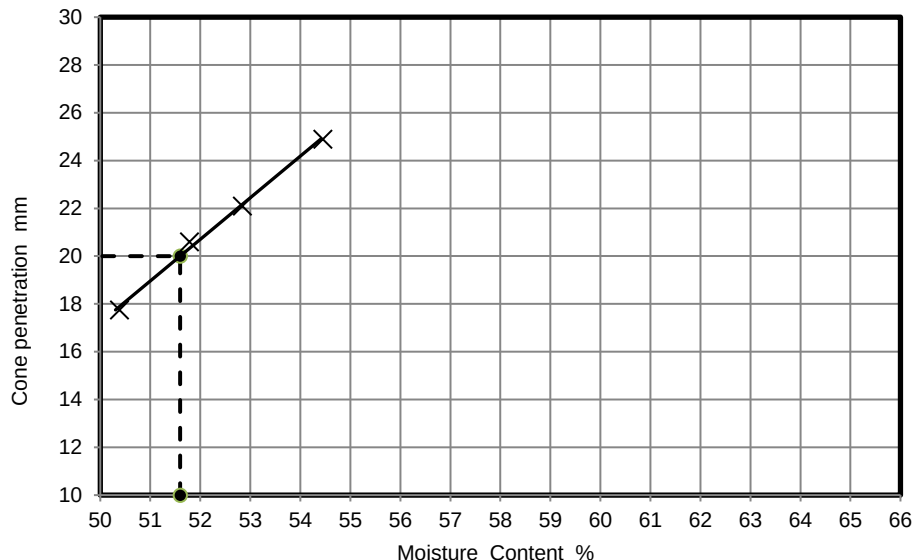
Soil Description Light grey shaley, locally ironstained, silty CLAY with occasional light grey sandy silty clay

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

29 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

52 %

PLASTIC LIMIT

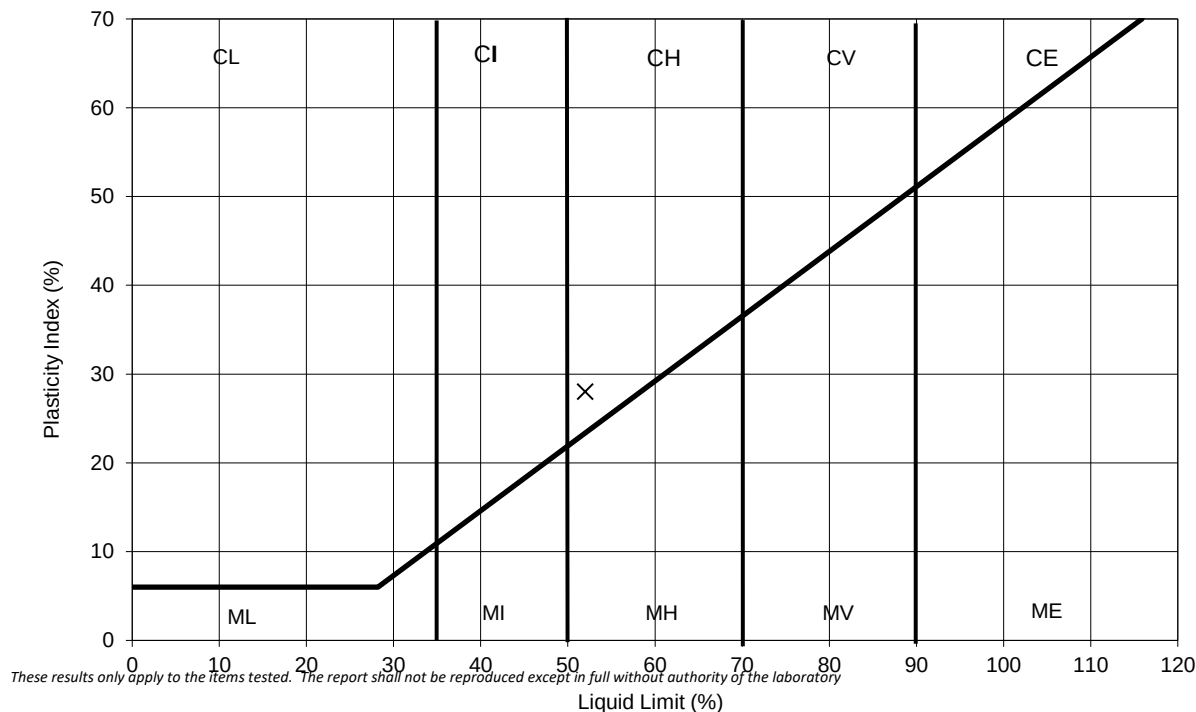
24 %

PLASTICITY INDEX

28 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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2519

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP03

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296

Client

GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

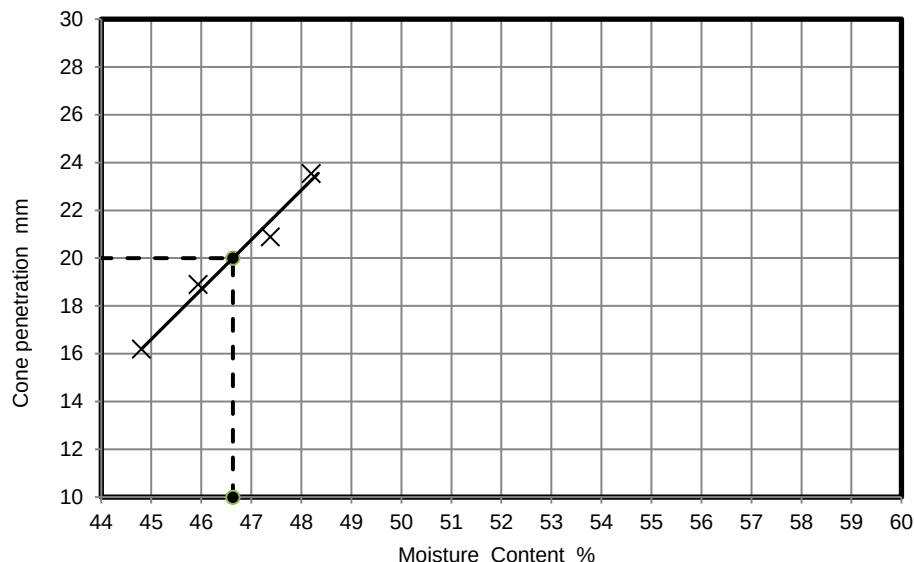
Soil Description Grey mottled orangish brown sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

26 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

47 %

PLASTIC LIMIT

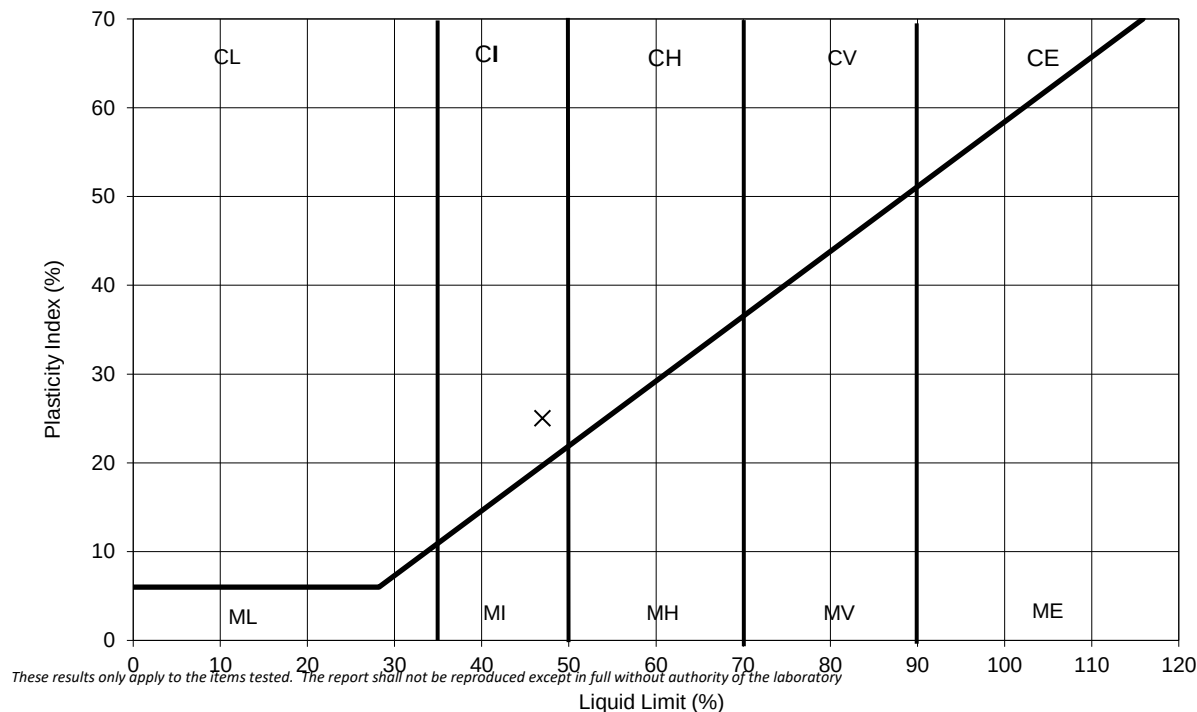
22 %

PLASTICITY INDEX

25 %

Remarks

PLASTICITY INDEX



These results only apply to the items tested. The report shall not be reproduced except in full without authority of the laboratory

Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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2519

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP04

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296

Client

GESL

Depth Top 1.50 m

Depth Base - m

Sample Type D

Soil Description

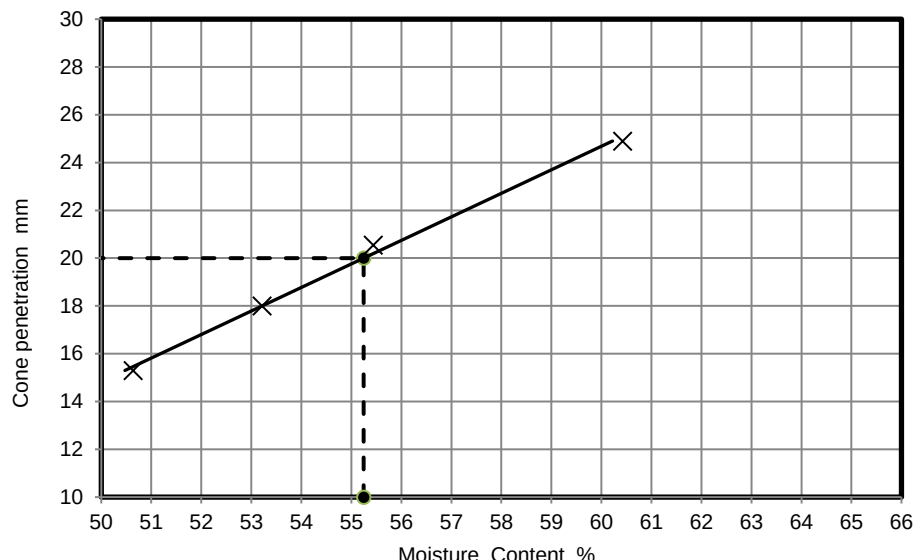
Orangish brown and grey mottled slightly sandy silty CLAY with rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

31

%

% PASSING 425µm SIEVE

99

%

LIQUID LIMIT

55

%

PLASTIC LIMIT

21

%

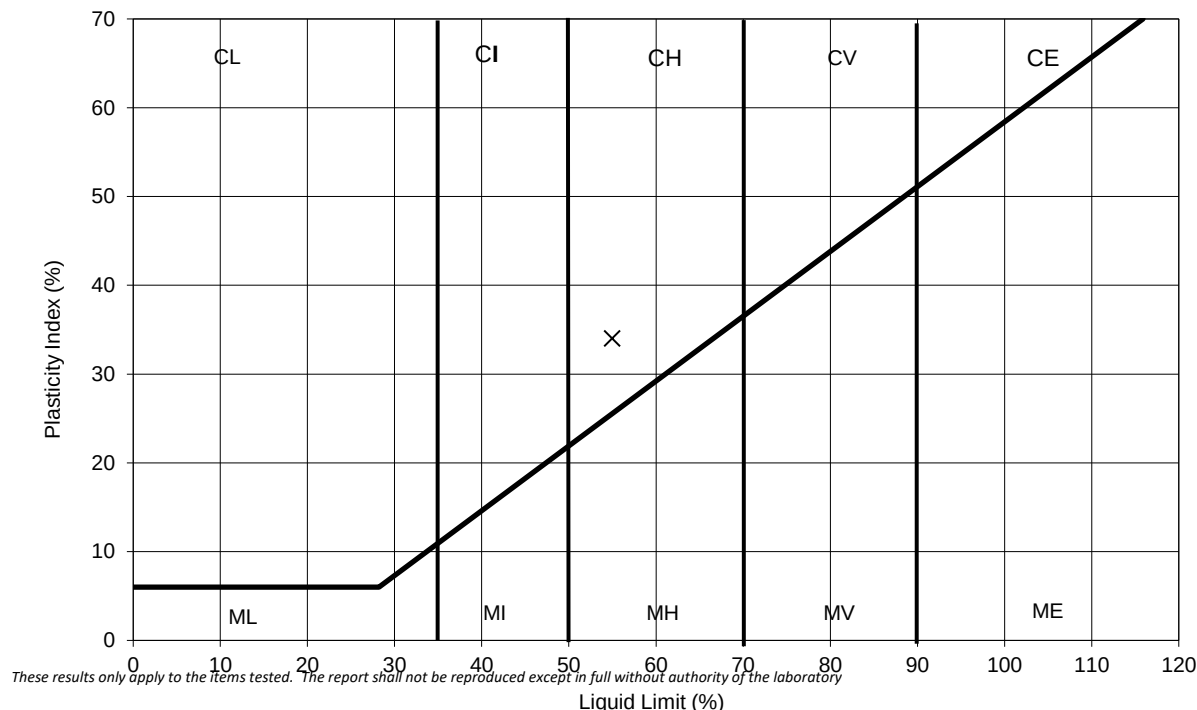
PLASTICITY INDEX

34

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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Checked and Approved

Initials: J.P

Date: 04/01/2023

2519

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

MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP04

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296 Client GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

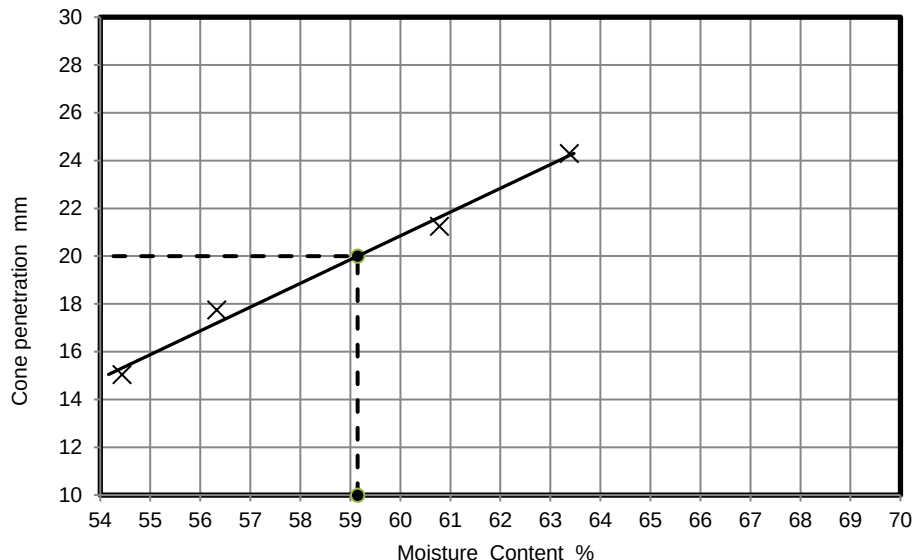
Soil Description Brown and grey mottled slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

35 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

59 %

PLASTIC LIMIT

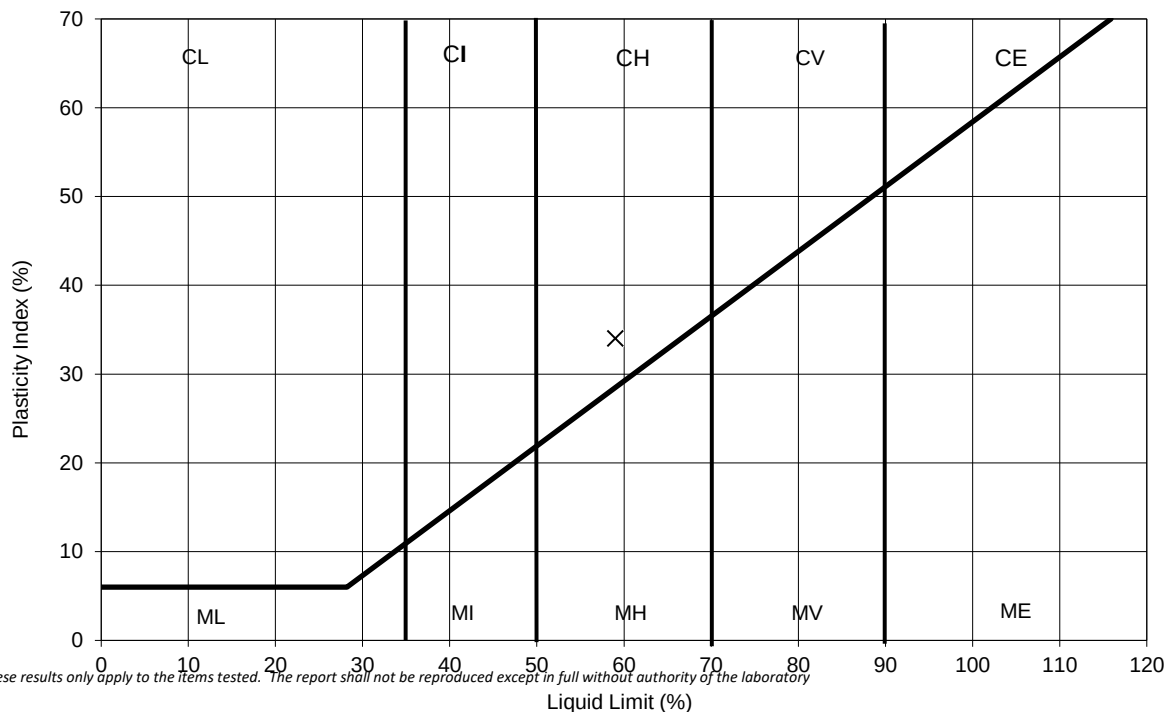
25 %

PLASTICITY INDEX

34 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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

Checked and Approved

Initials: J.P

Date: 04/01/2023

2519

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

MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP04

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296

Client

GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

Soil Description

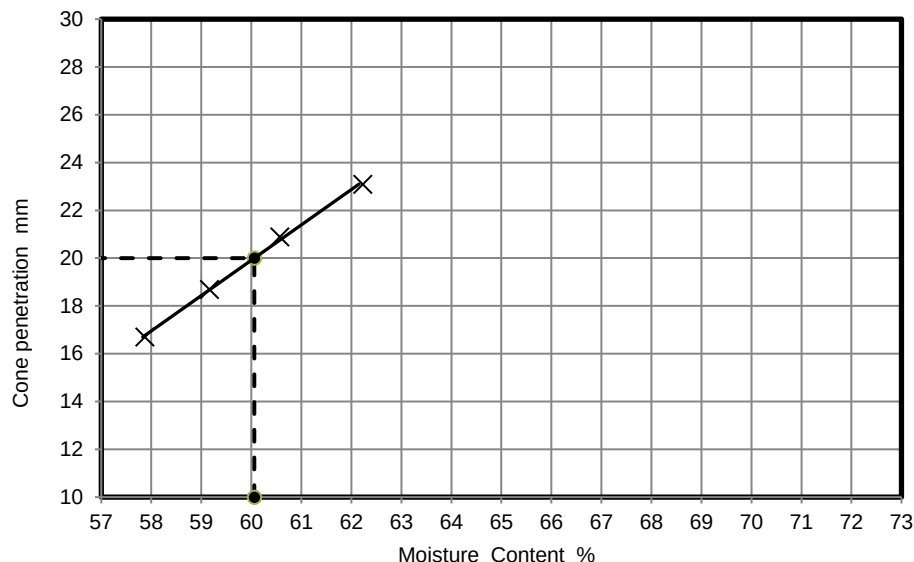
Grey and orangish brown mottled slightly shaley slightly sandy silty CLAY with rare fm mudstone fragments

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

34

%

% PASSING 425µm SIEVE

98

%

LIQUID LIMIT

60

%

PLASTIC LIMIT

26

%

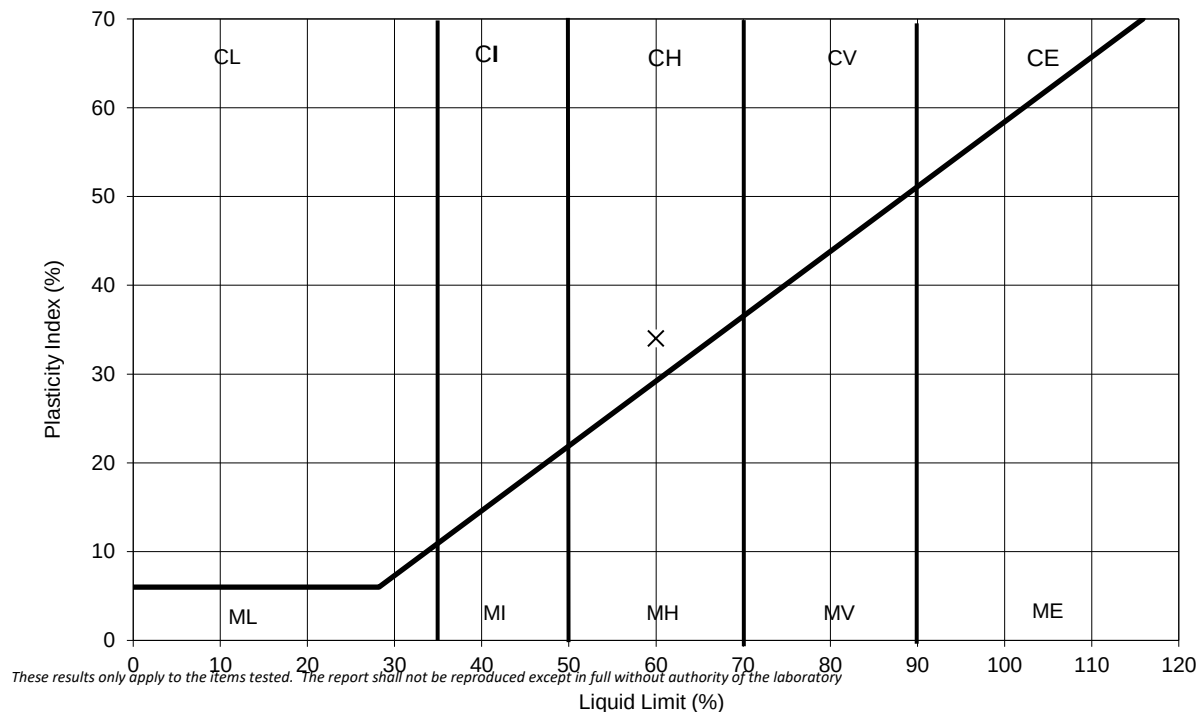
PLASTICITY INDEX

34

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP04

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296 Client GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

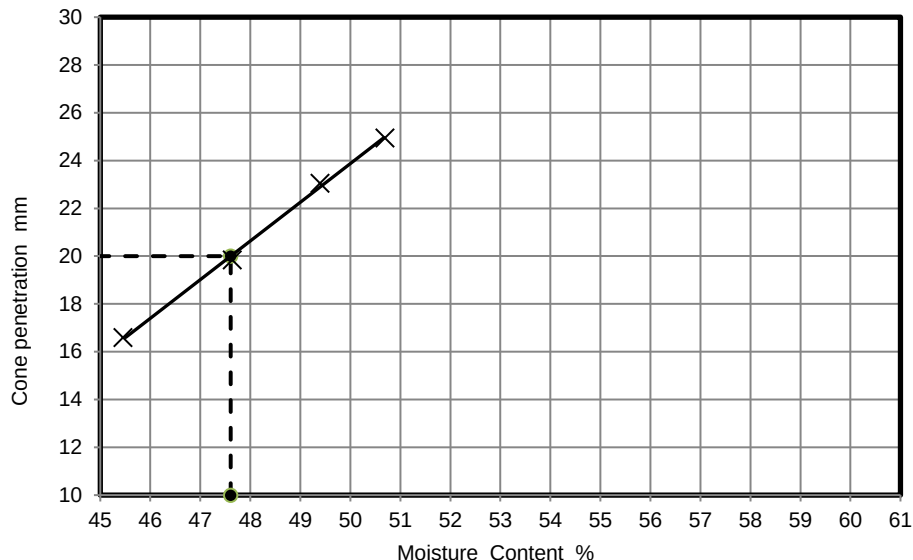
Soil Description Grey mottled orangish brown slightly shaley sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

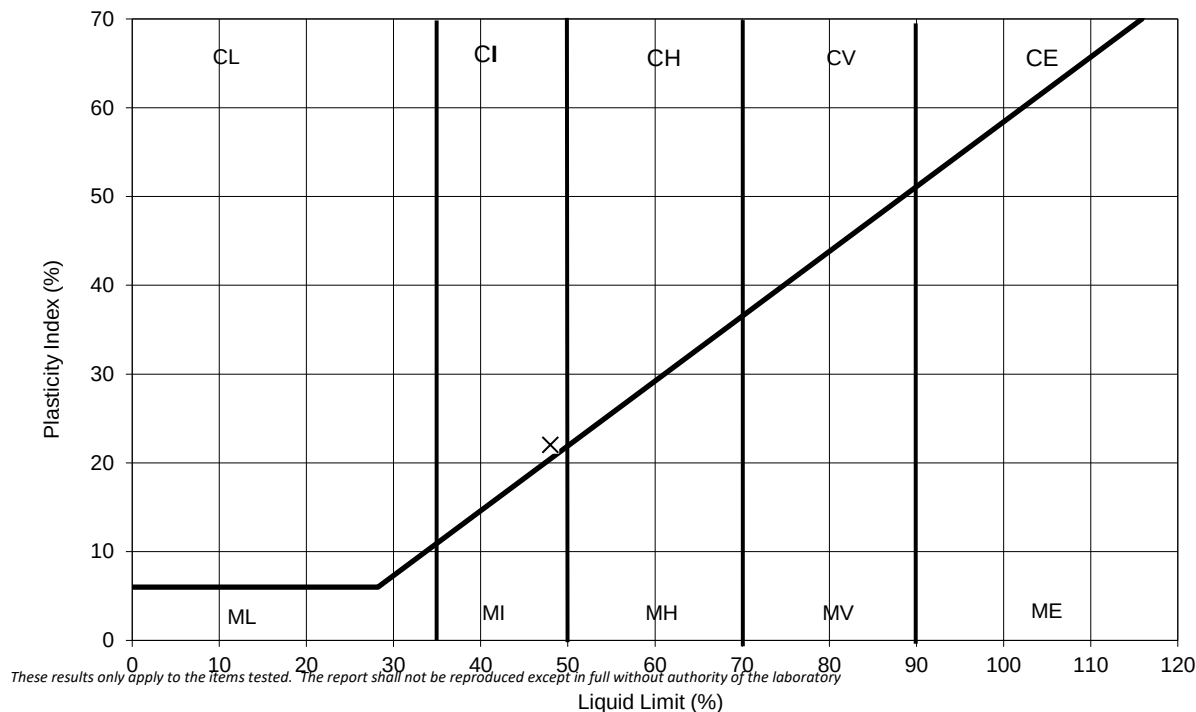
Date Tested 22/12/2022



NATURAL MOISTURE CONTENT	27	%
% PASSING 425µm SIEVE	100	%
LIQUID LIMIT	48	%
PLASTIC LIMIT	26	%
PLASTICITY INDEX	22	%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP04

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296

Client

GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

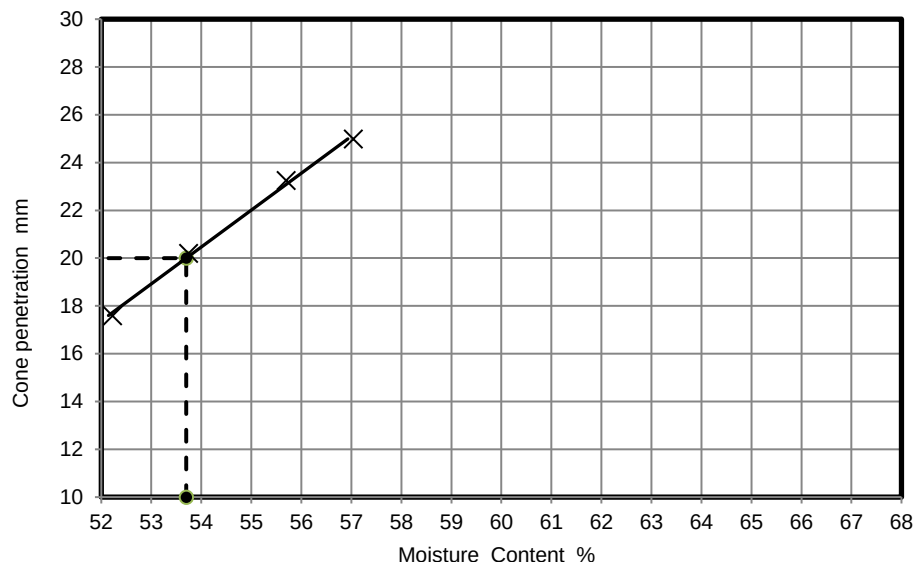
Soil Description Grey mottled brown and orangish brown slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

28

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

54

%

PLASTIC LIMIT

23

%

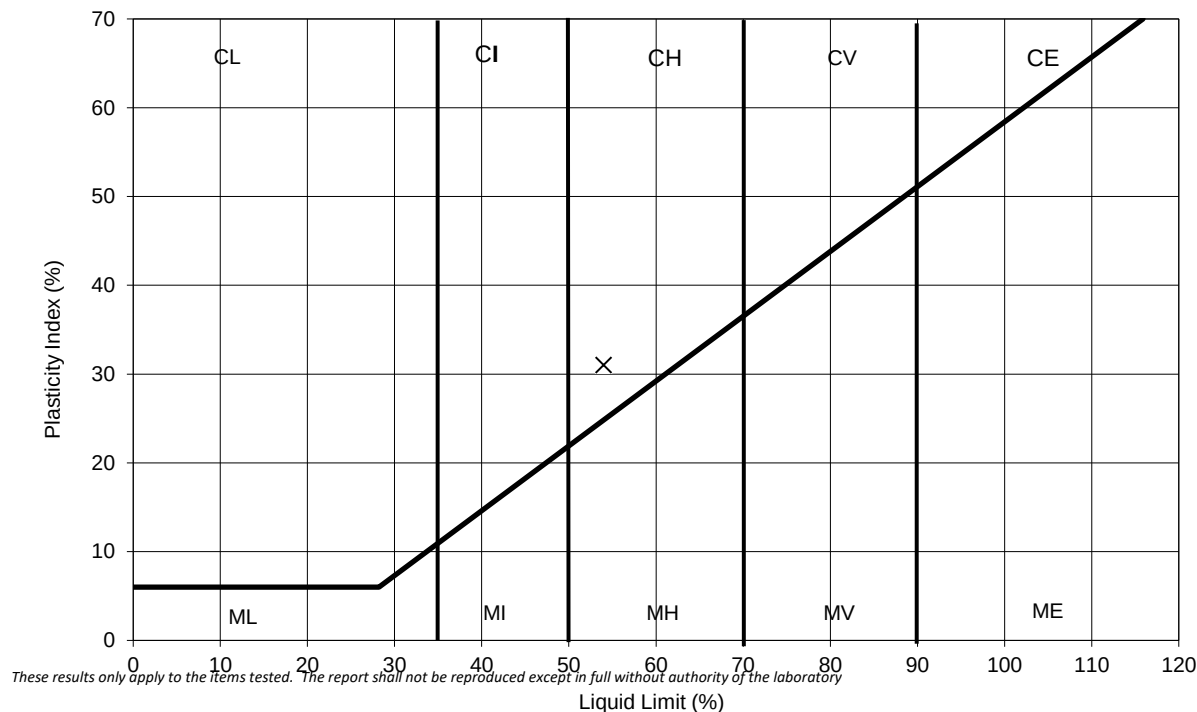
PLASTICITY INDEX

31

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP05

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296 Client GESL

Depth Top 1.50 m

Depth Base - m

Soil Description Brown mottled light grey silty CLAY with orangish brown sandy patches and roots

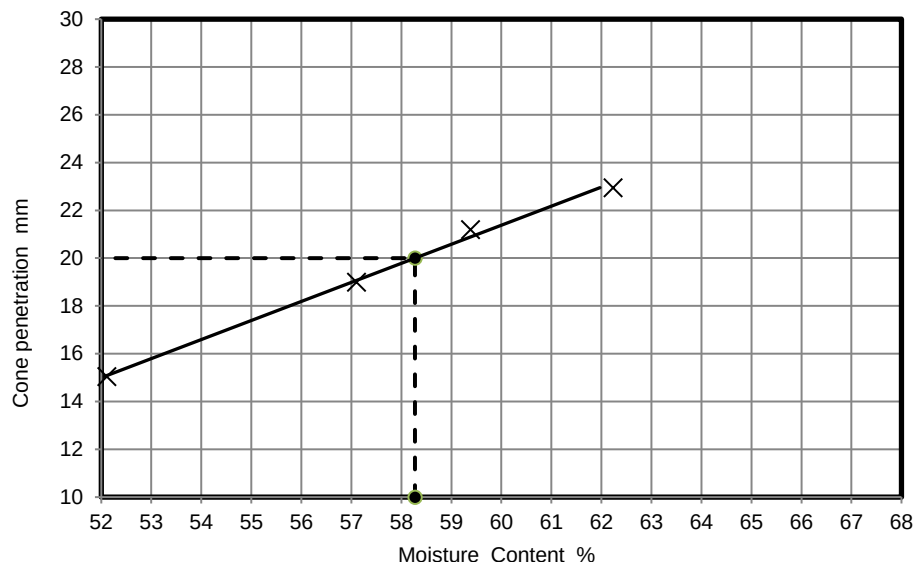
Sample Type D

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

31

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

58

%

PLASTIC LIMIT

23

%

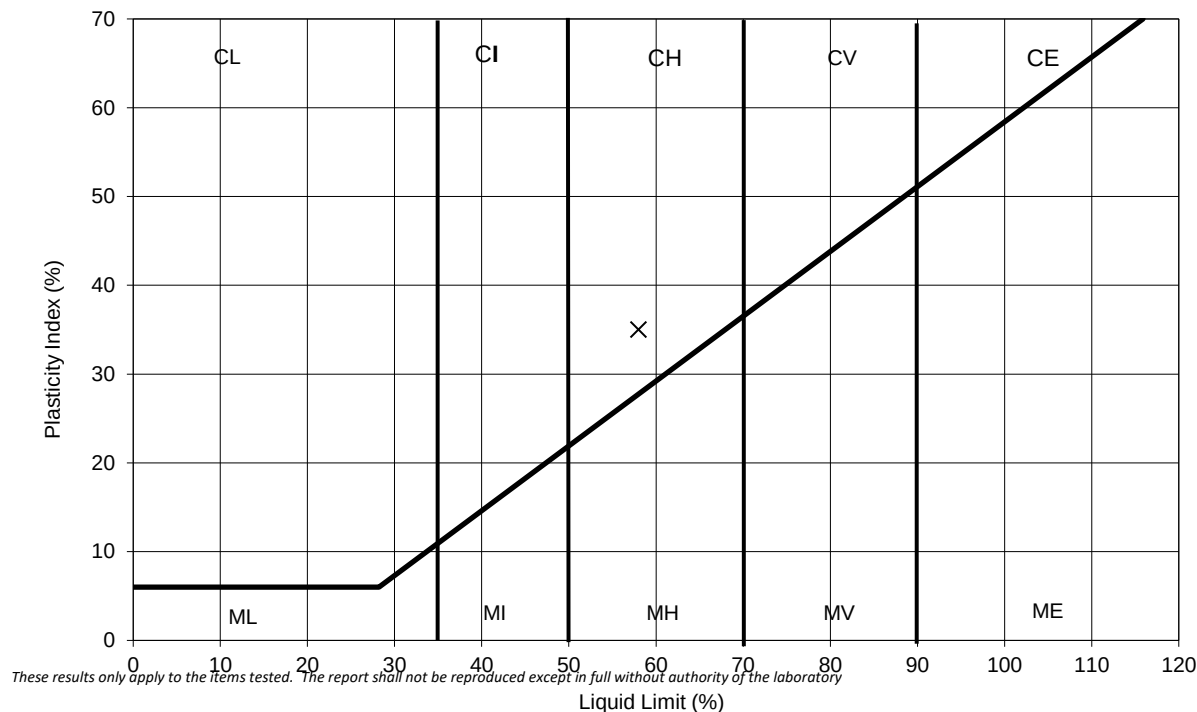
PLASTICITY INDEX

35

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP05

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

Soil Description

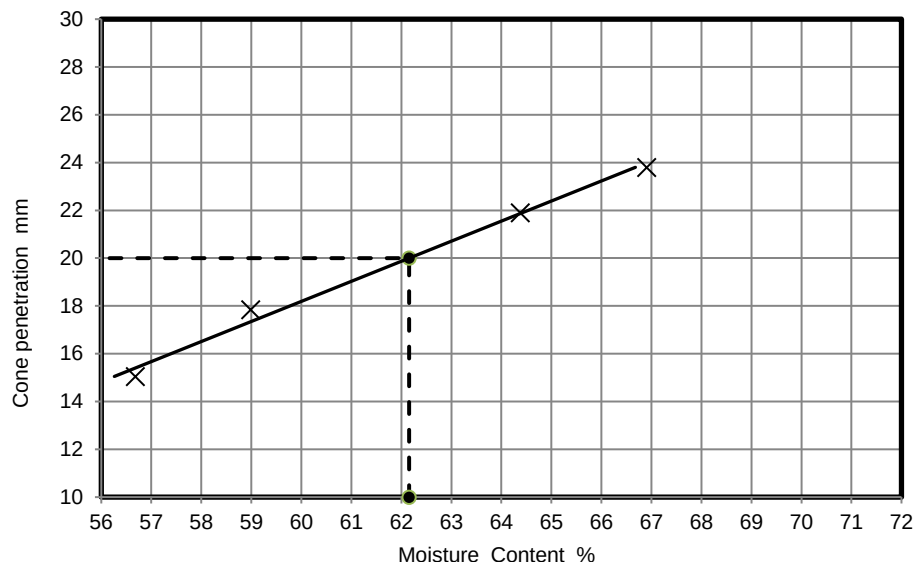
Brown, orangish brown and light grey mottled slightly sandy silty CLAY with rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

35 %

% PASSING 425µm SIEVE

99 %

LIQUID LIMIT

62 %

PLASTIC LIMIT

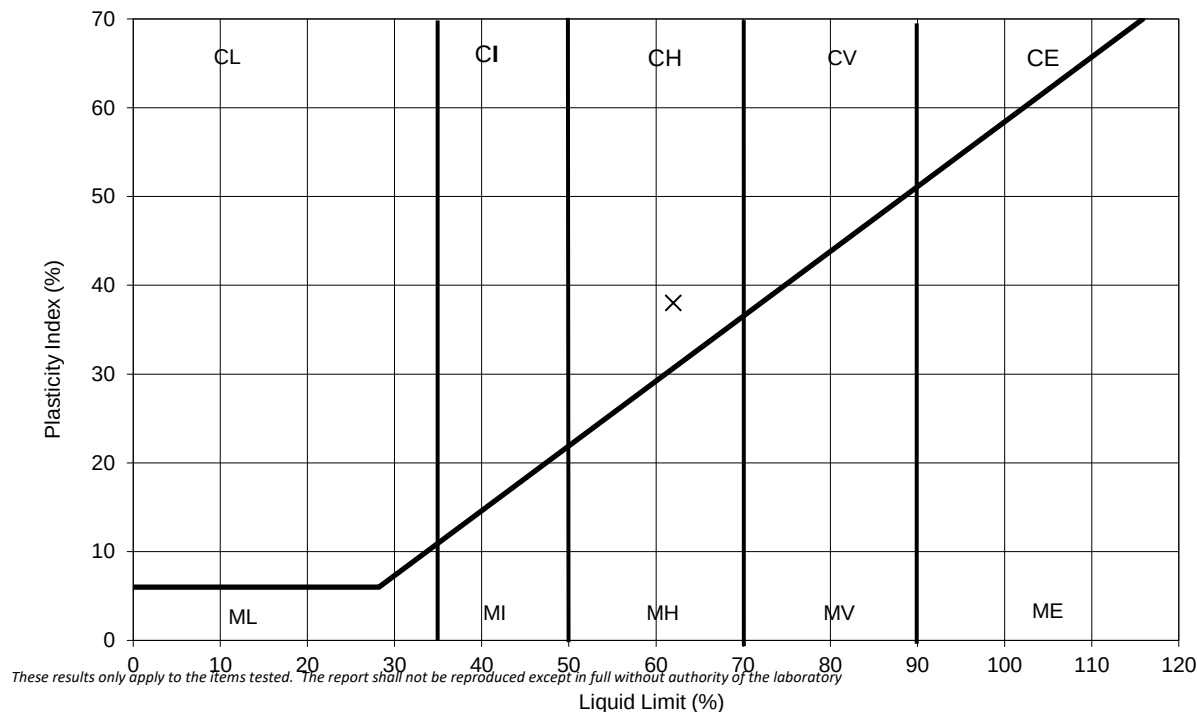
24 %

PLASTICITY INDEX

38 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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Date: 04/01/2023

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP05

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296 Client GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

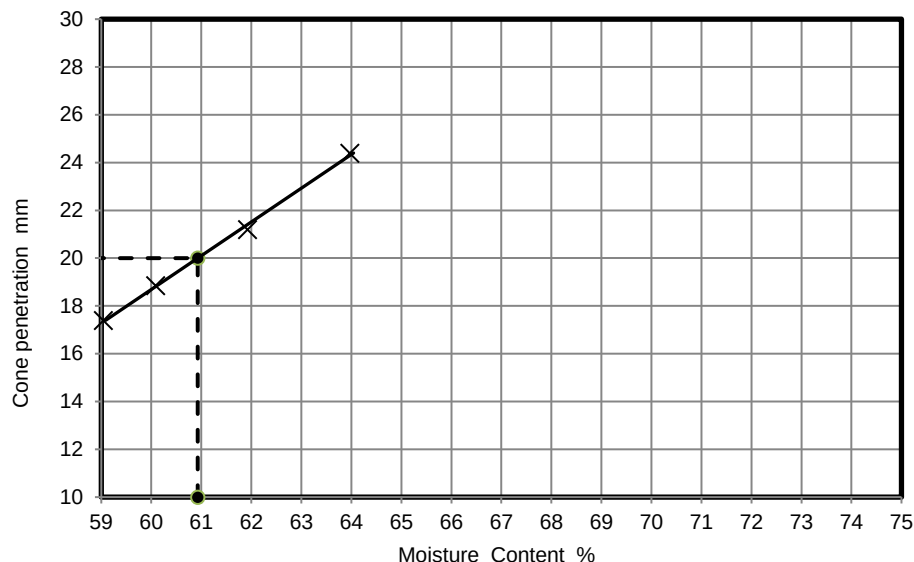
Soil Description Grey and brown mottled, locally slightly shaley silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

35 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

61 %

PLASTIC LIMIT

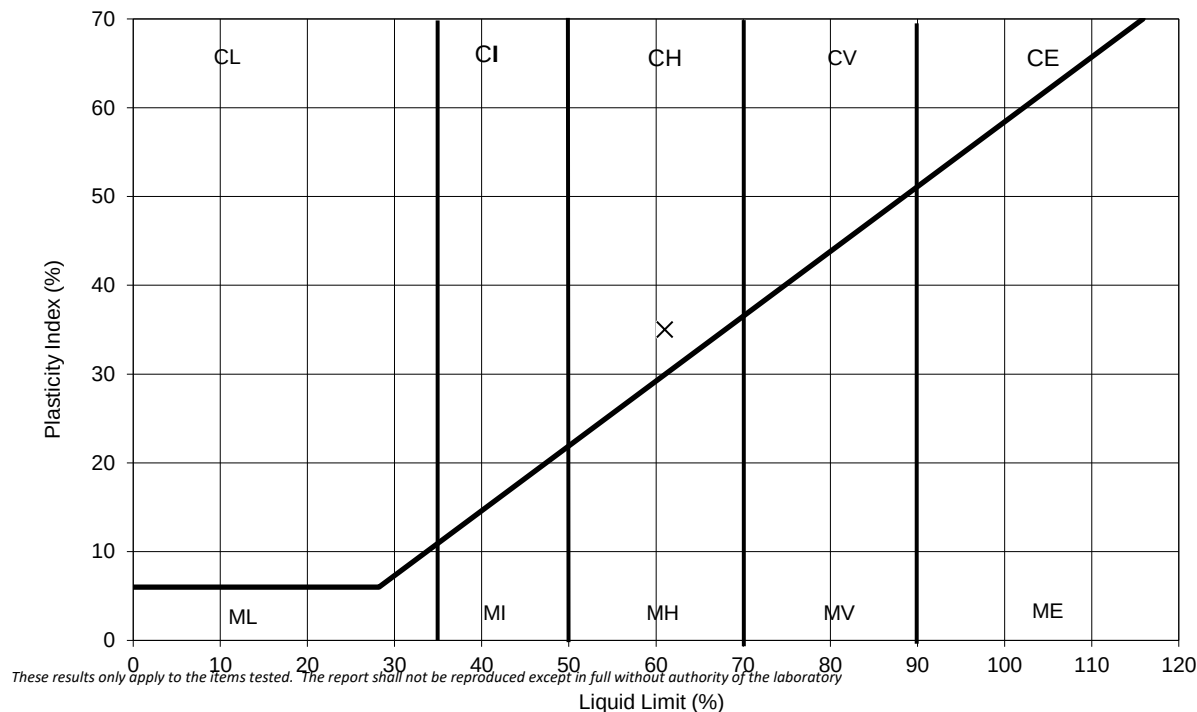
26 %

PLASTICITY INDEX

35 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP05

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296

Client

GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

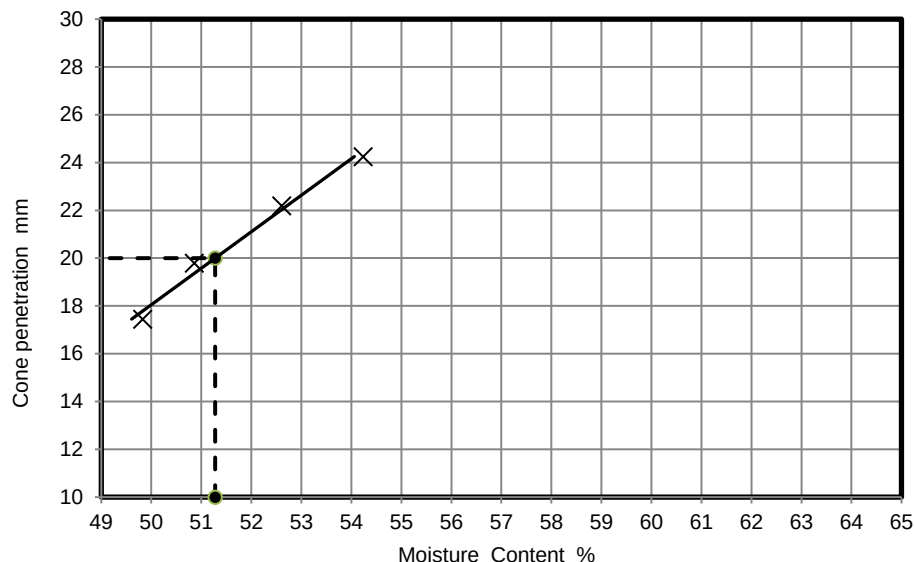
Soil Description Grey and brown mottled slightly sandy silty CLAY with rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

29

%

% PASSING 425µm SIEVE

99

%

LIQUID LIMIT

51

%

PLASTIC LIMIT

22

%

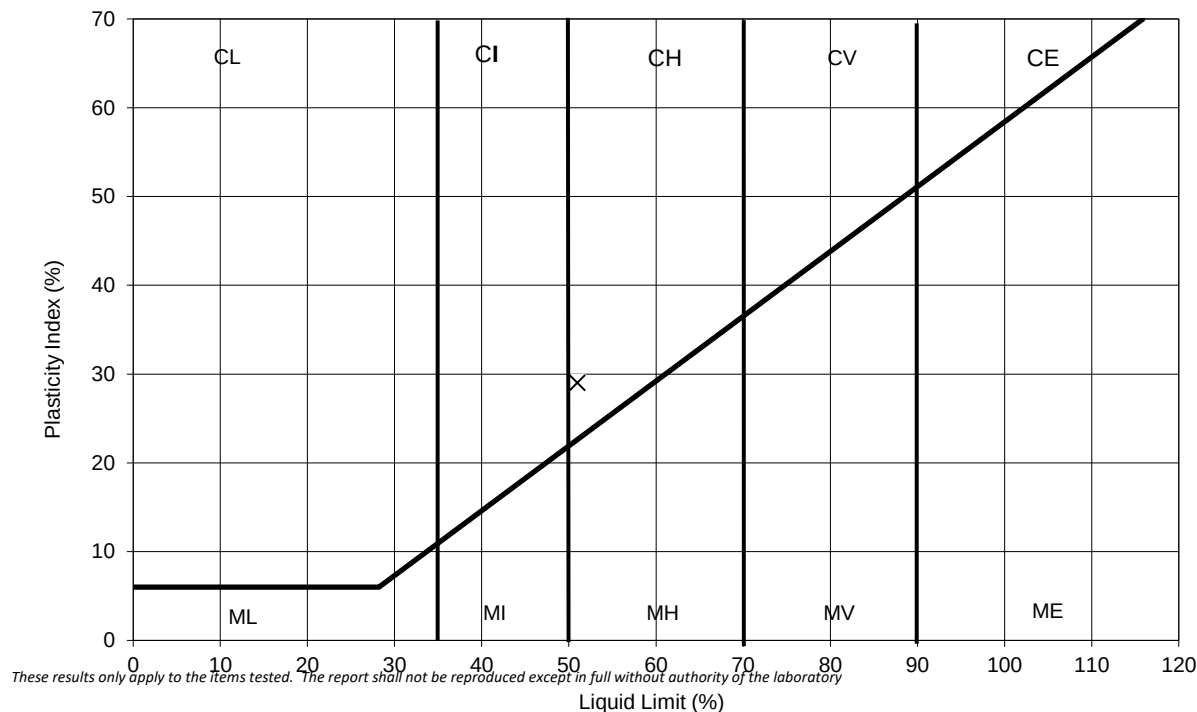
PLASTICITY INDEX

29

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP05

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296 Client GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

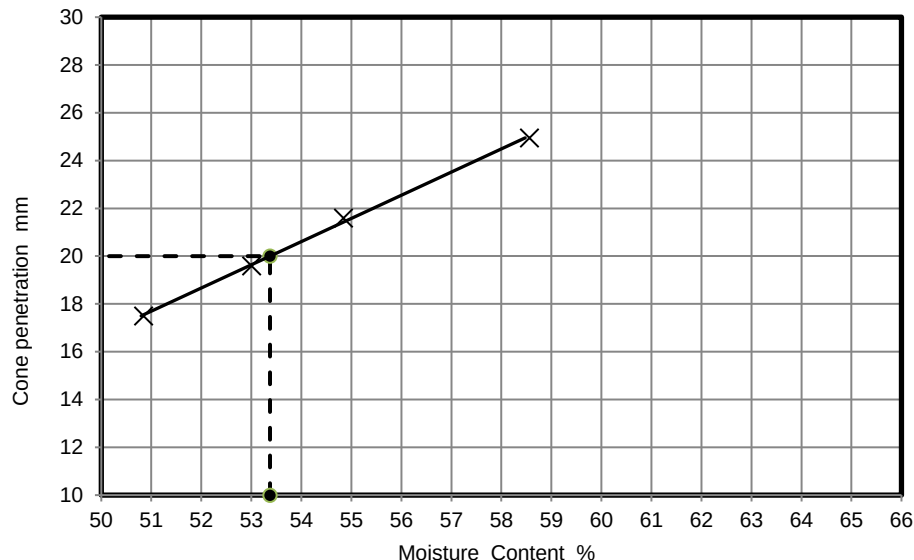
Soil Description Grey mottled orangish brown, locally slightly shaley, slightly sandy silty CLAY with rare fine mudstone fragments

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

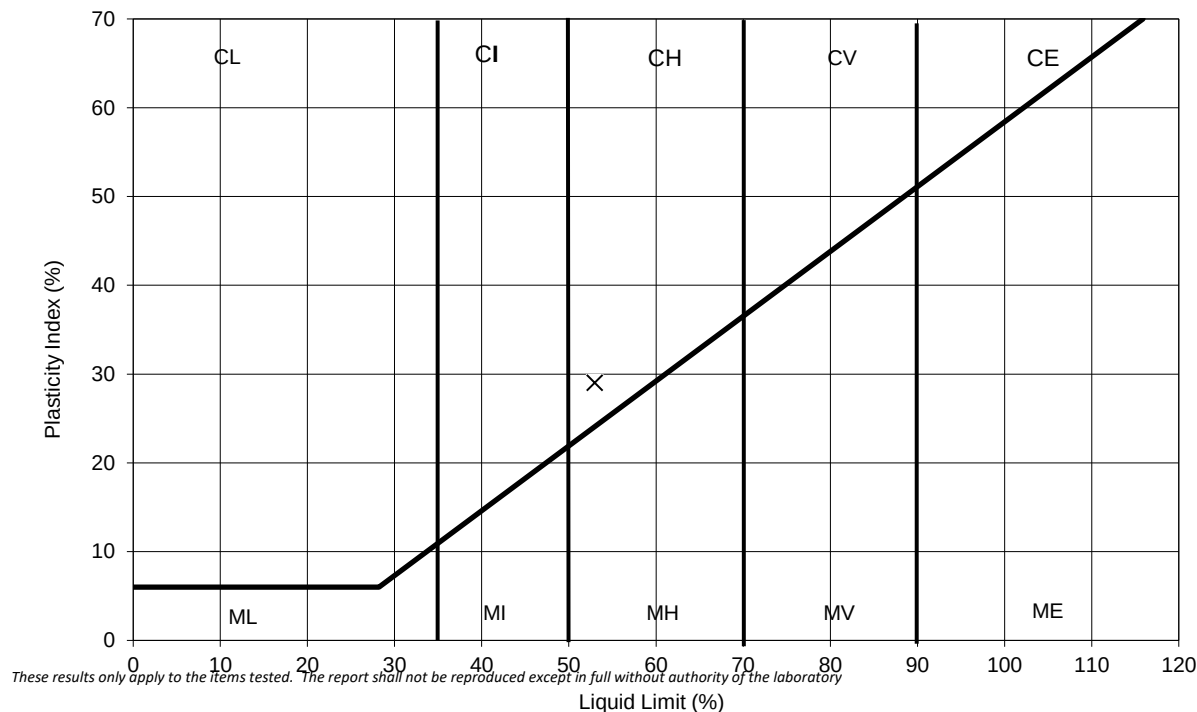
Date Tested 22/12/2022



NATURAL MOISTURE CONTENT	29	%
% PASSING 425µm SIEVE	98	%
LIQUID LIMIT	53	%
PLASTIC LIMIT	24	%
PLASTICITY INDEX	29	%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2

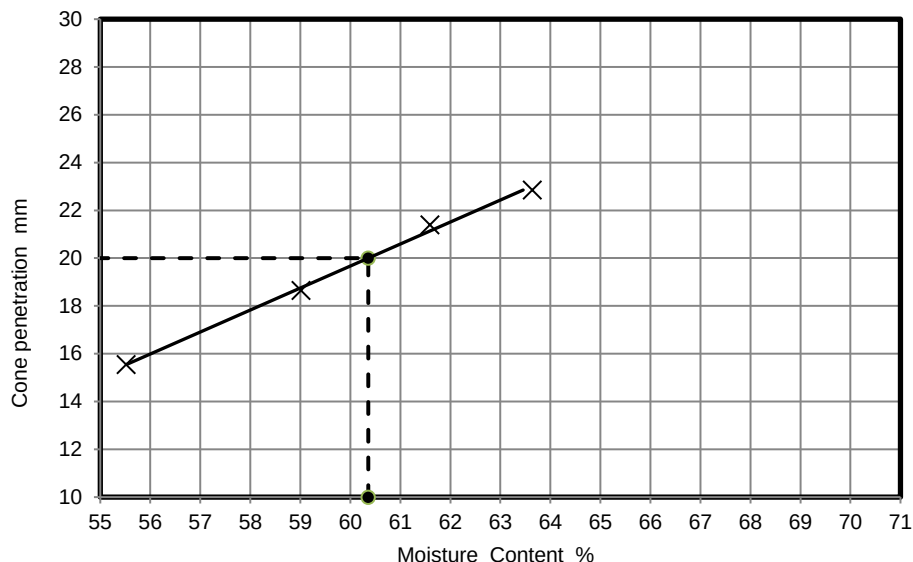




LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No.	32708
Borehole/Pit No.	TP06
Sample No.	1
Depth Top	1.50 m
Depth Base	- m
Sample Type	D
Samples received	28/11/2022
Schedules received	25/11/2022
Project Started	28/11/2022
Date Tested	22/12/2022

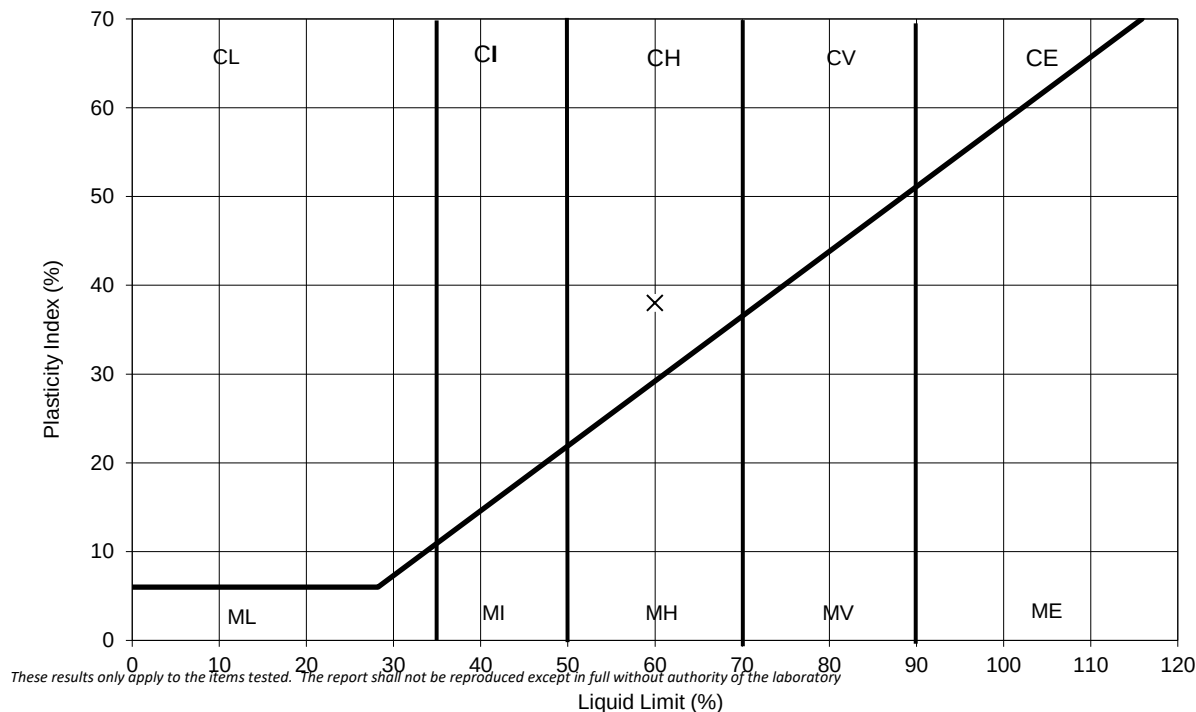
Site Name	Allington Lane - Phase 3 Additional GI		
Project No.	GE21296	Client	GESL
Soil Description	Grey mottled orangish brown silty CLAY with sandy patches		



NATURAL MOISTURE CONTENT	35	%
% PASSING 425µm SIEVE	100	%
LIQUID LIMIT	60	%
PLASTIC LIMIT	22	%
PLASTICITY INDEX	38	%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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Checked and Approved

Initials: J.P

Date: 04/01/2023

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP06

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296 Client GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

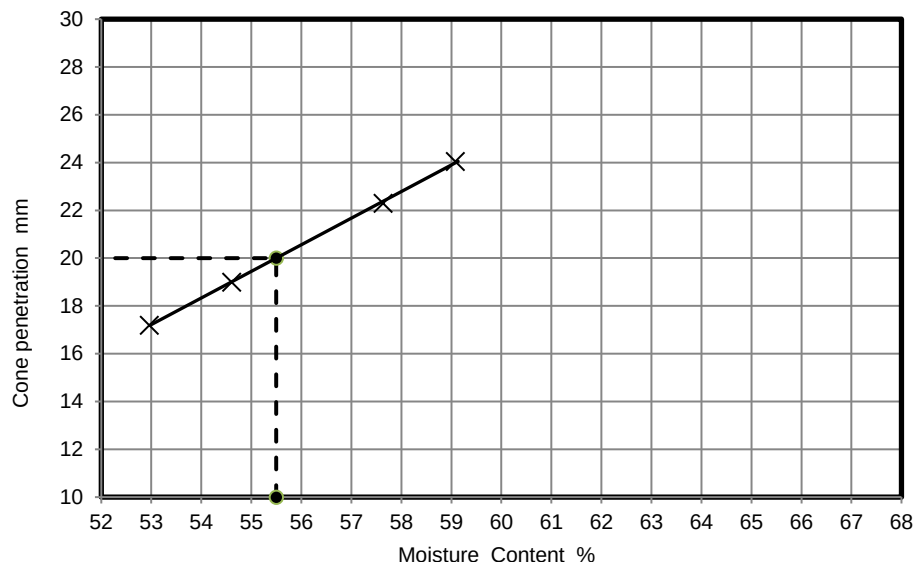
Soil Description Brown silty CLAY with orangish brown sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

33

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

55

%

PLASTIC LIMIT

23

%

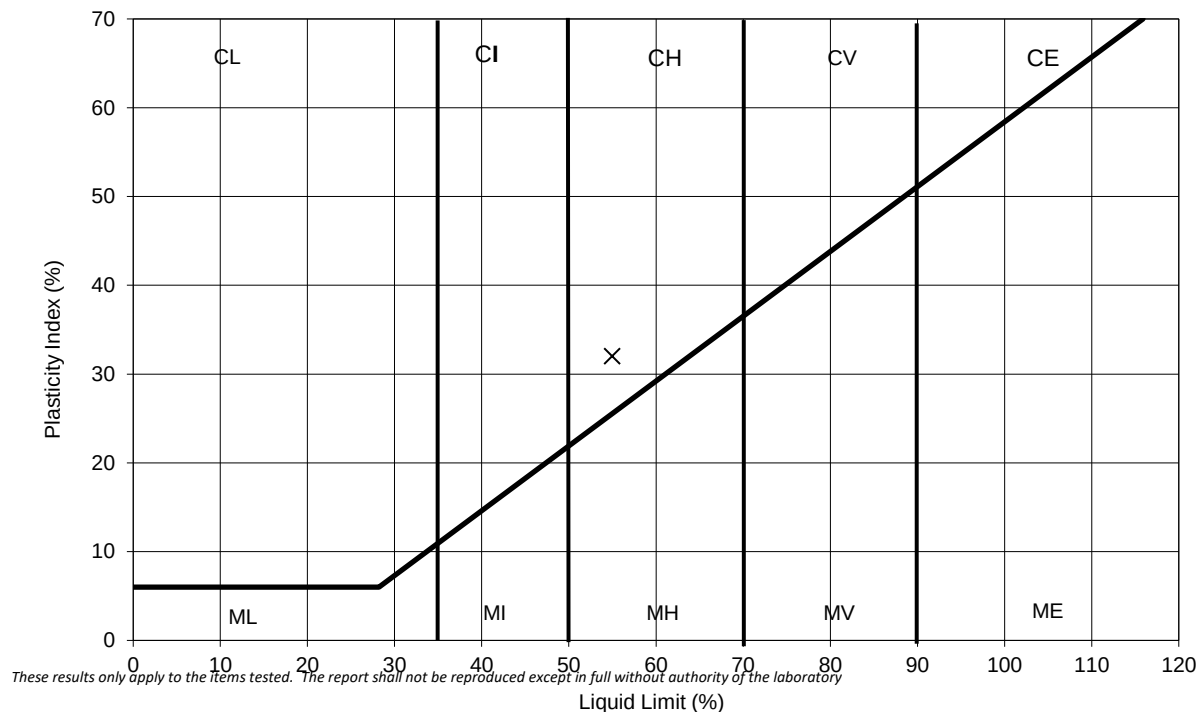
PLASTICITY INDEX

32

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP06

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296

Client

GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

Soil Description

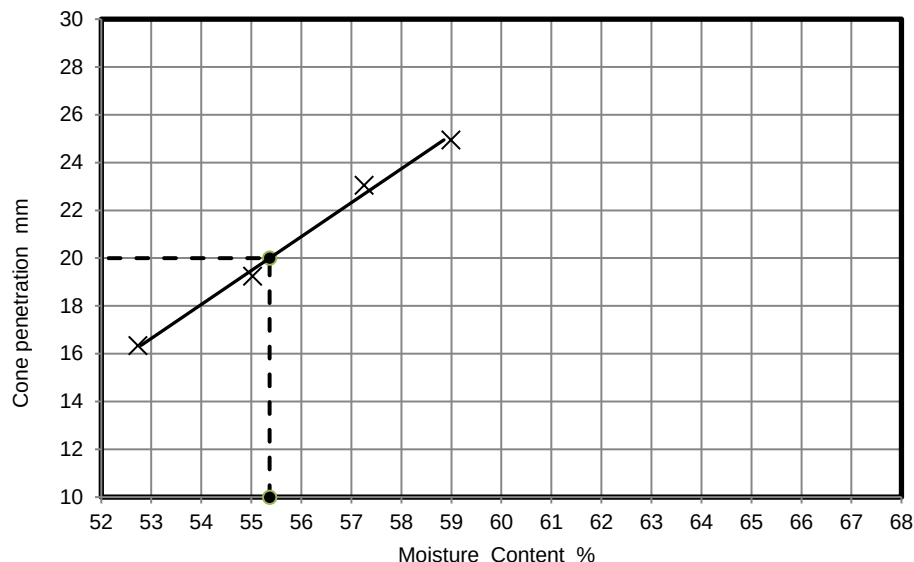
Grey and orangish brown mottled slightly shaley slightly sandy silty CLAY with rare fm mudstone fragments

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

33

%

% PASSING 425µm SIEVE

98

%

LIQUID LIMIT

55

%

PLASTIC LIMIT

24

%

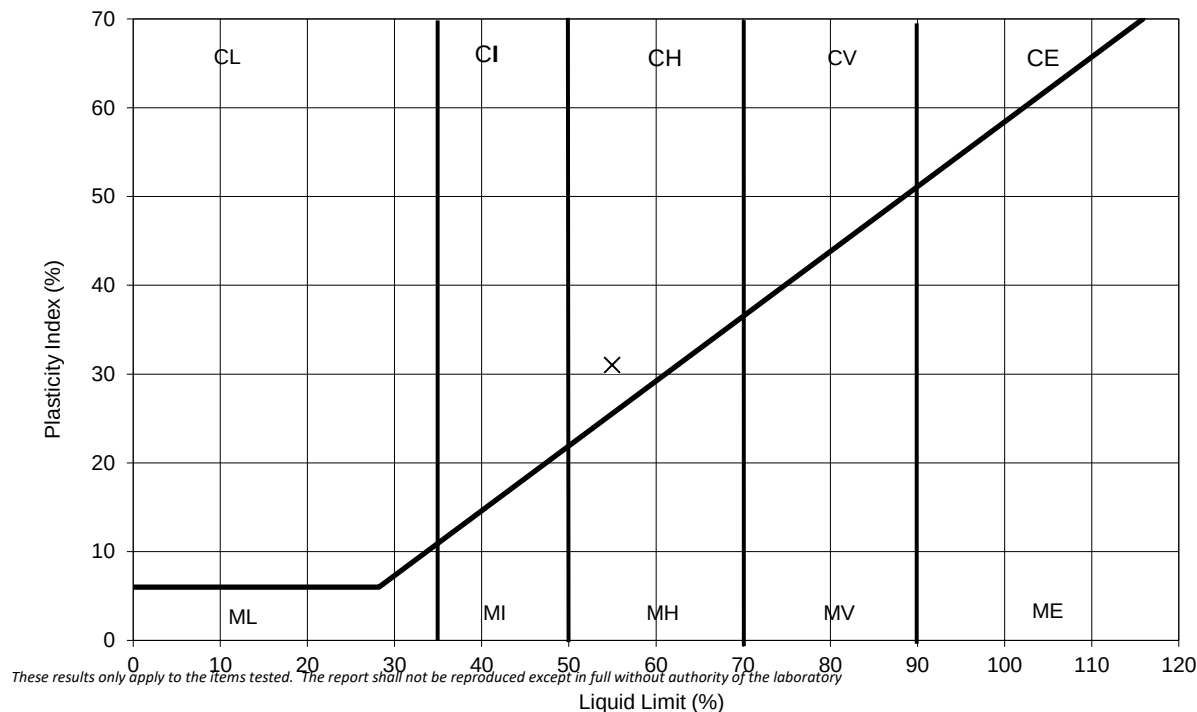
PLASTICITY INDEX

31

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP06

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296

Client

GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

Soil Description

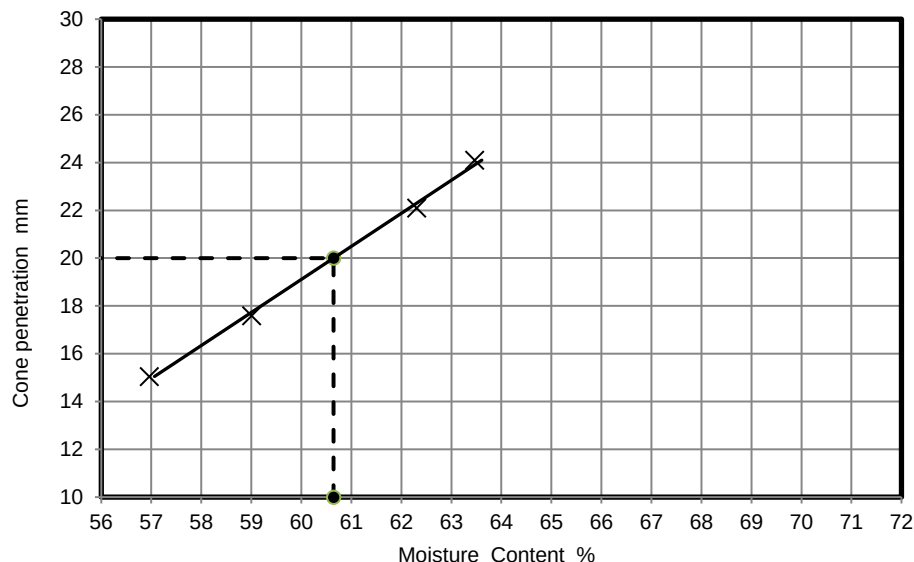
Grey mottled orangish brown slightly sandy silty CLAY with rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

36

%

% PASSING 425µm SIEVE

98

%

LIQUID LIMIT

61

%

PLASTIC LIMIT

25

%

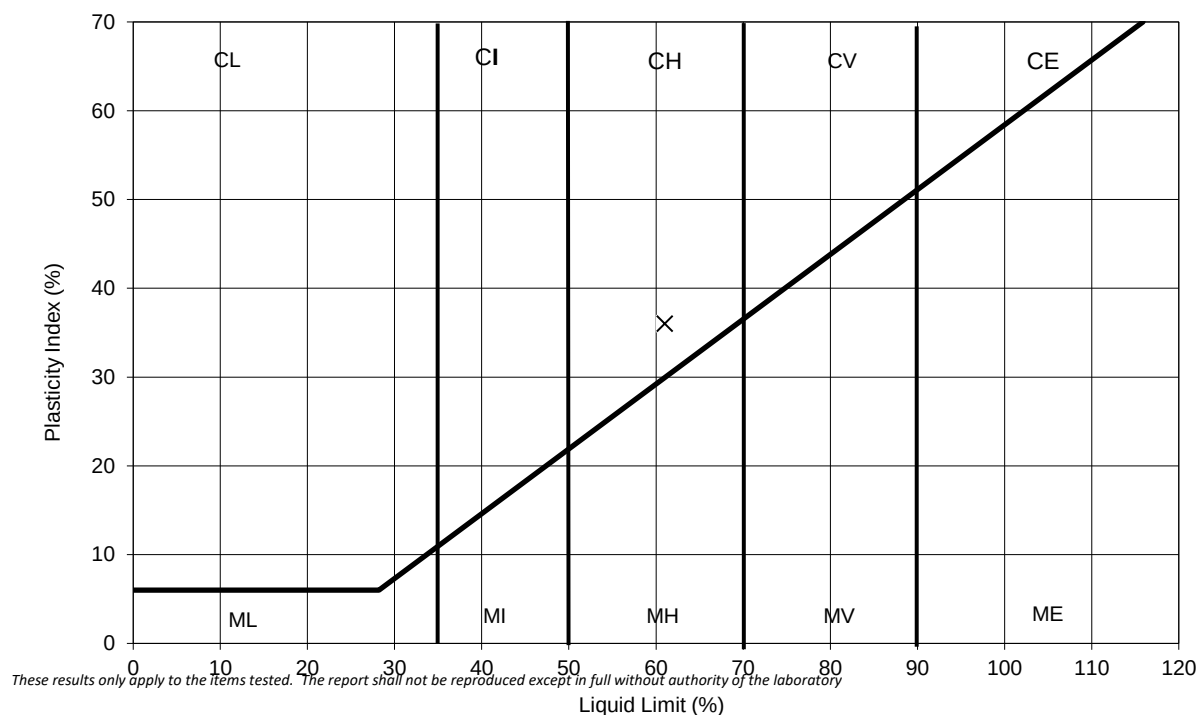
PLASTICITY INDEX

36

%

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP06

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296 Client GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

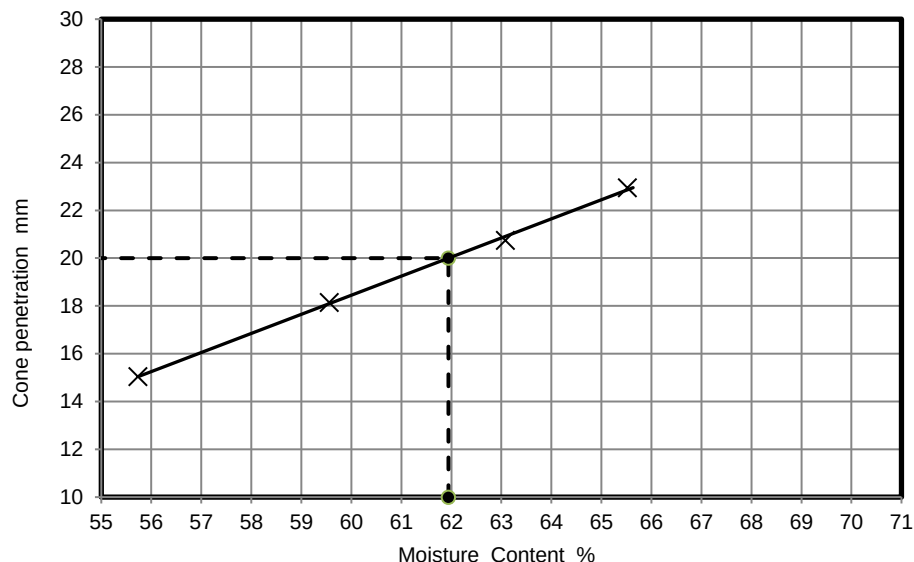
Soil Description Dark grey silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

26 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

62 %

PLASTIC LIMIT

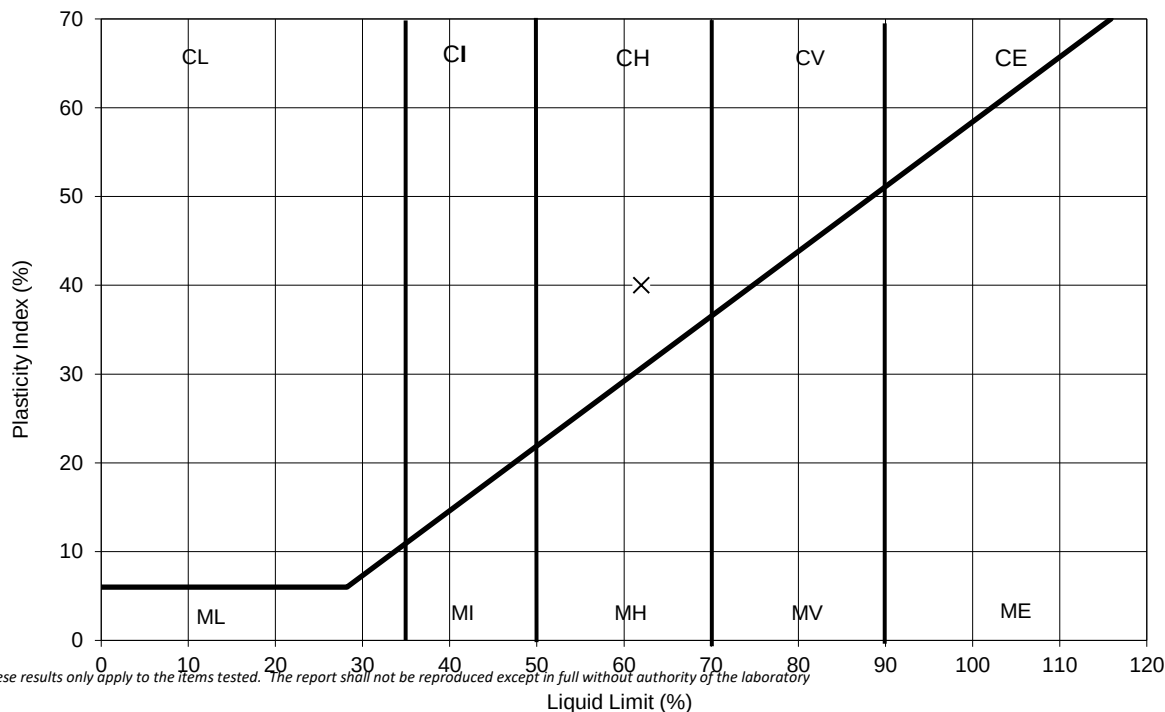
22 %

PLASTICITY INDEX

40 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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

Checked and Approved

Initials: J.P

Date: 04/01/2023

MSF-5 R2

2519

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





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP07

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296

Client

GESL

Depth Top 1.50 m

Depth Base - m

Sample Type D

Soil Description

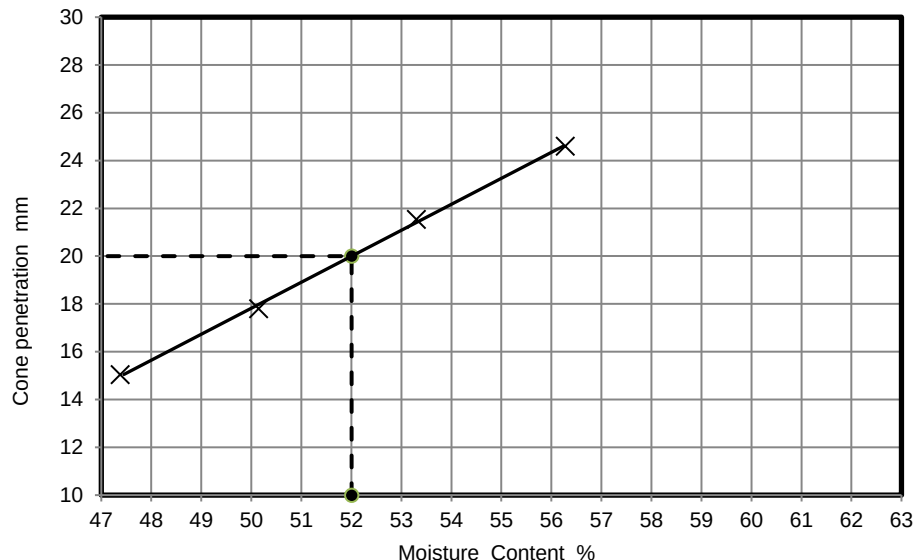
Brown mottled light grey silty CLAY with orangish brown sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

30

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

52

%

PLASTIC LIMIT

22

%

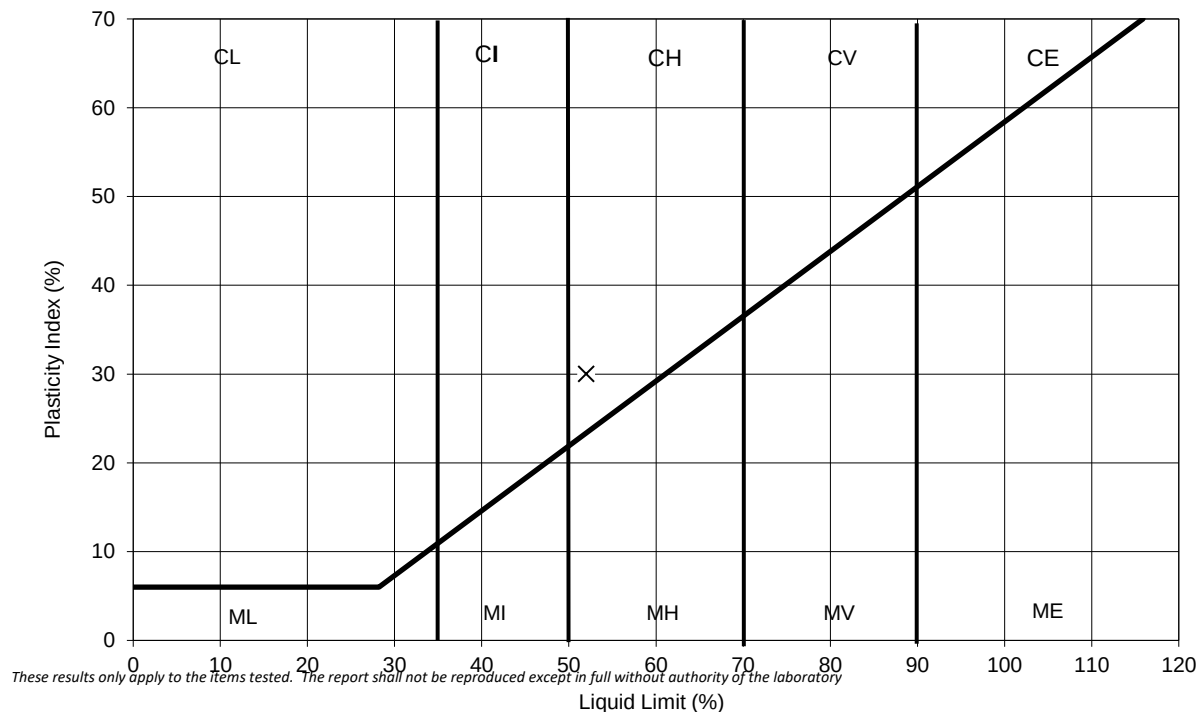
PLASTICITY INDEX

30

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

Checked and Approved

Initials: J.P

Date: 04/01/2023

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP07

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

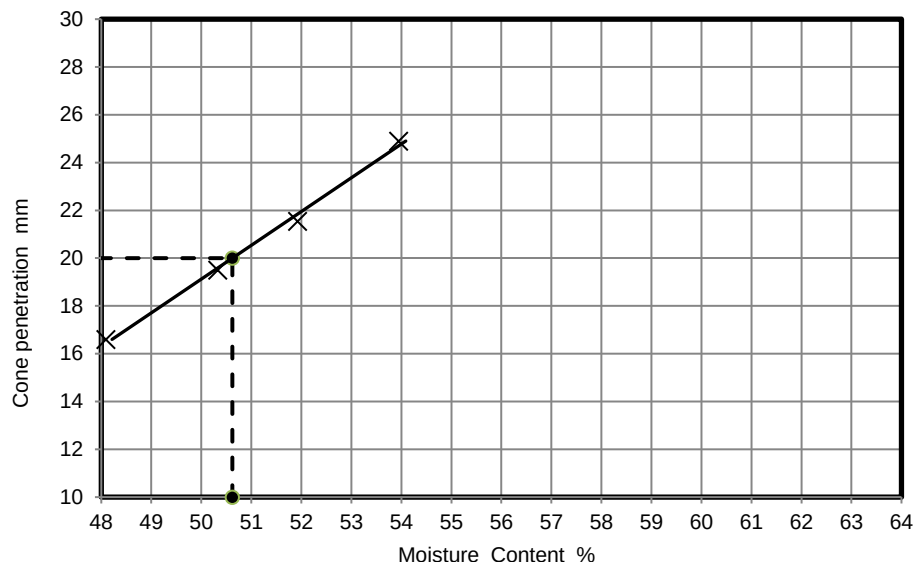
Soil Description Grey and orangish brown mottled slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

30 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

51 %

PLASTIC LIMIT

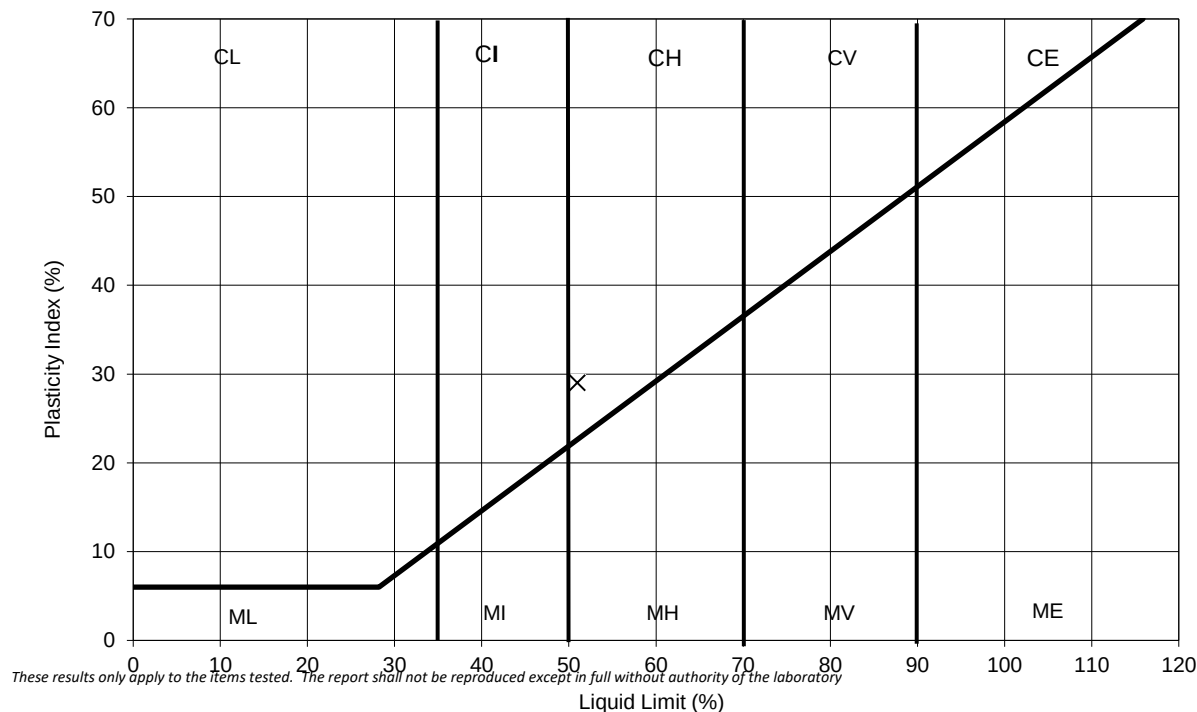
22 %

PLASTICITY INDEX

29 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP07

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296 Client GESL

Depth Top 2.50 m

Depth Base - m

Soil Description Brown slightly sandy silty CLAY with occasional light grey shaley silty clay

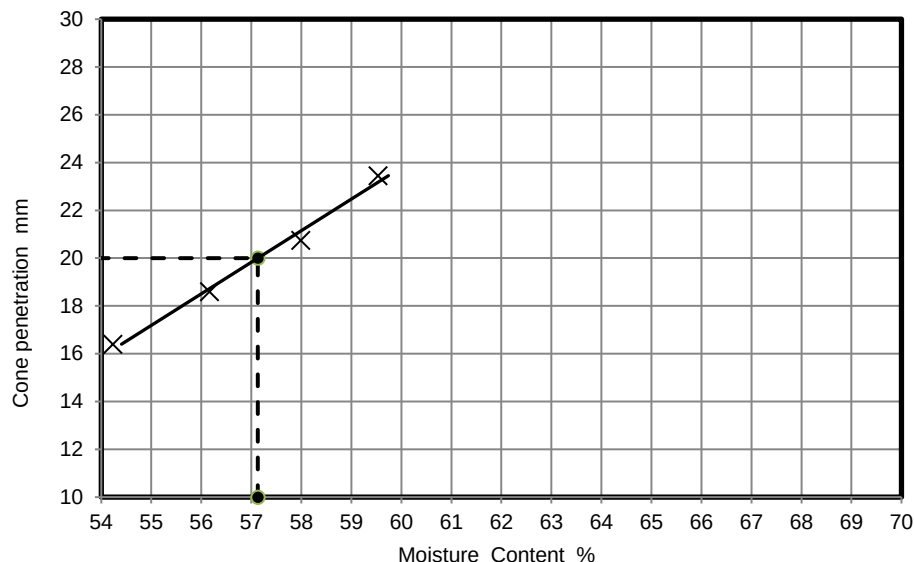
Sample Type D

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

30 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

57 %

PLASTIC LIMIT

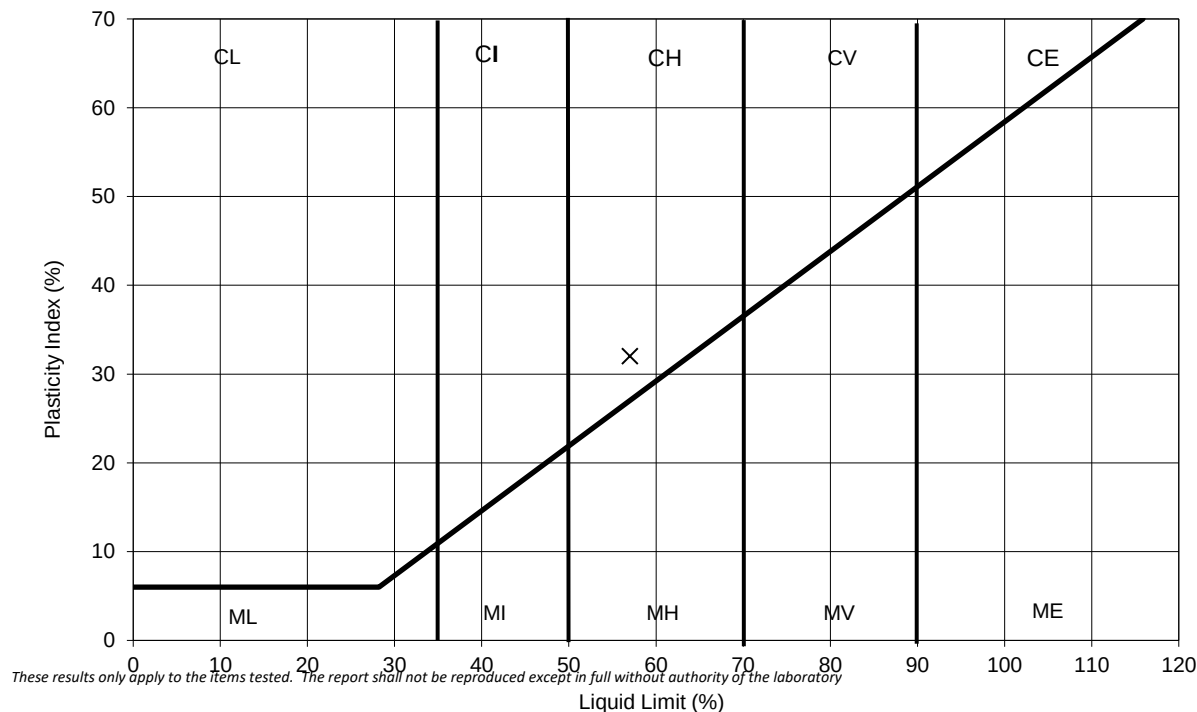
25 %

PLASTICITY INDEX

32 %

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP07

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296 Client GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

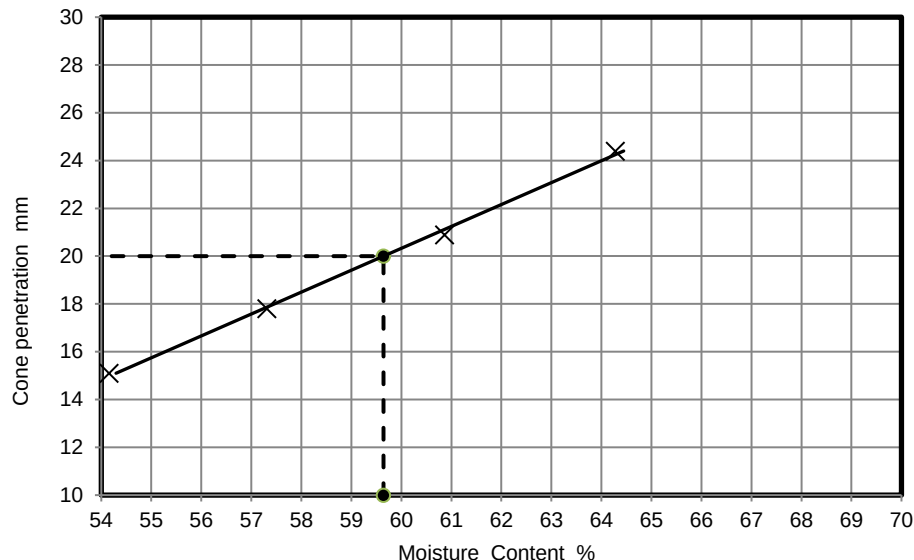
Soil Description Grey mottled orangish brown silty CLAY with sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

31 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

60 %

PLASTIC LIMIT

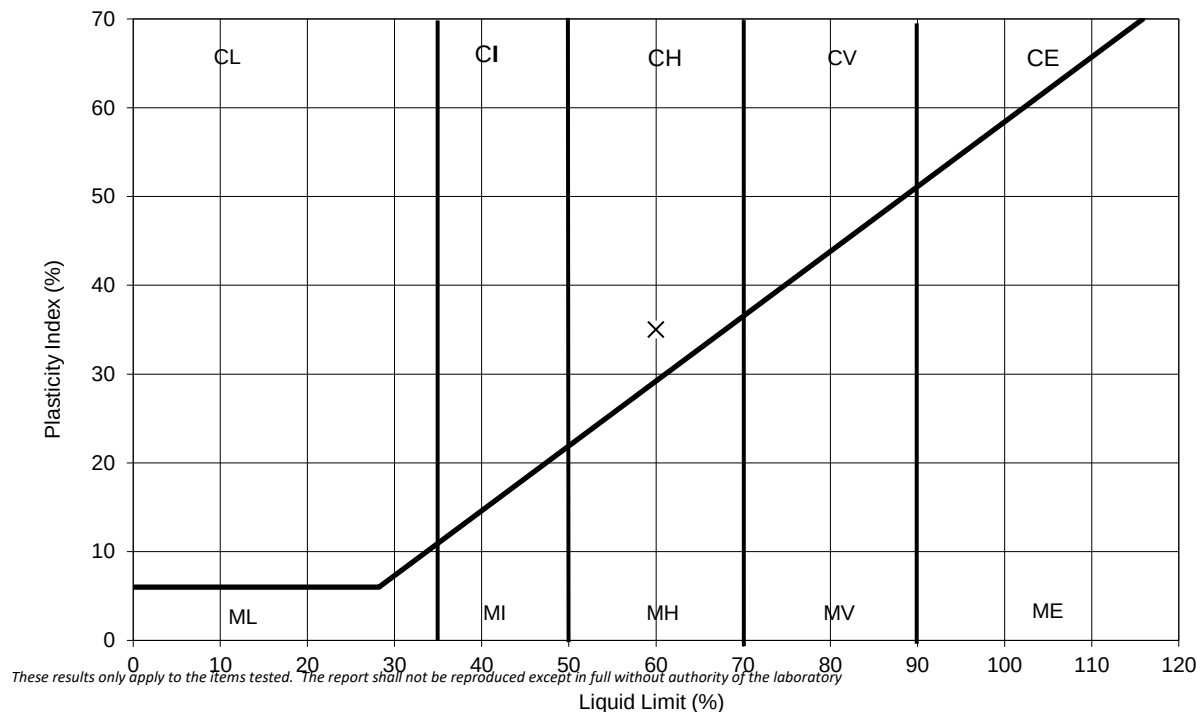
25 %

PLASTICITY INDEX

35 %

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP07

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296

Client

GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

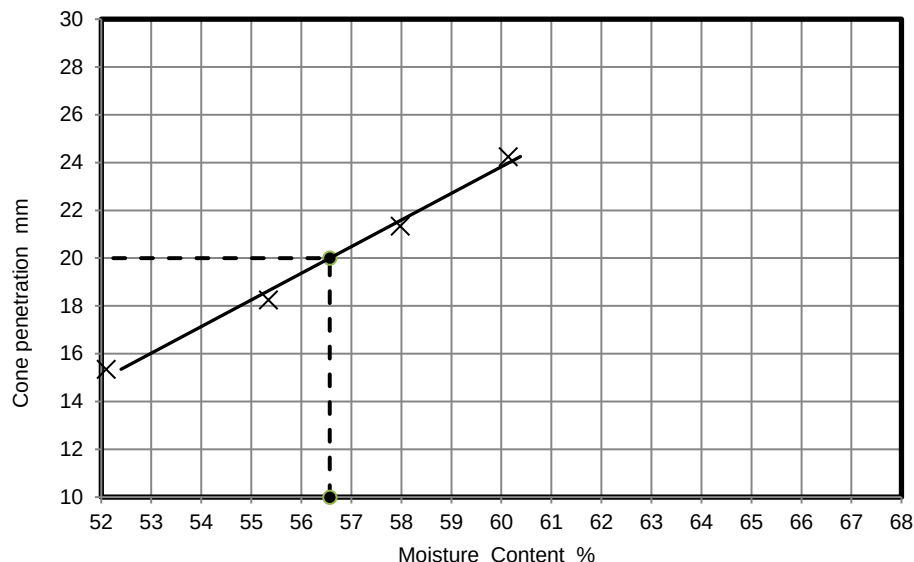
Soil Description Dark grey slightly shaley silty CLAY with sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

25

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

57

%

PLASTIC LIMIT

22

%

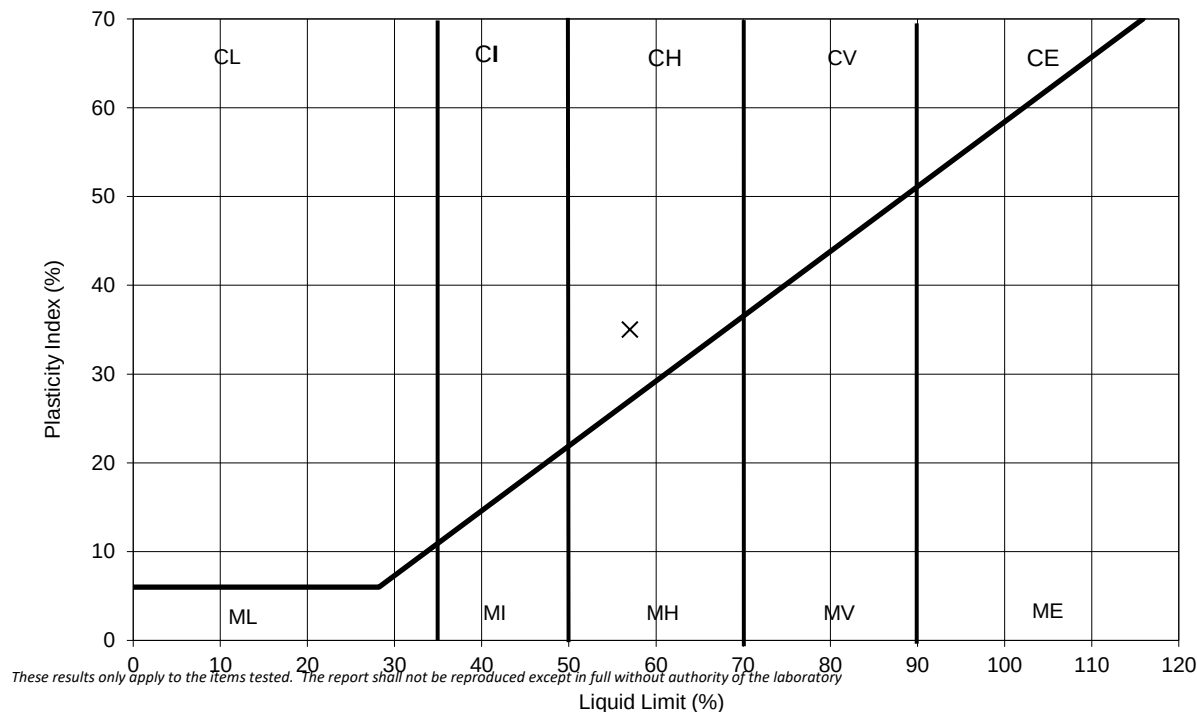
PLASTICITY INDEX

35

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP08

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296

Client

GESL

Depth Top 1.50 m

Depth Base - m

Sample Type D

Soil Description

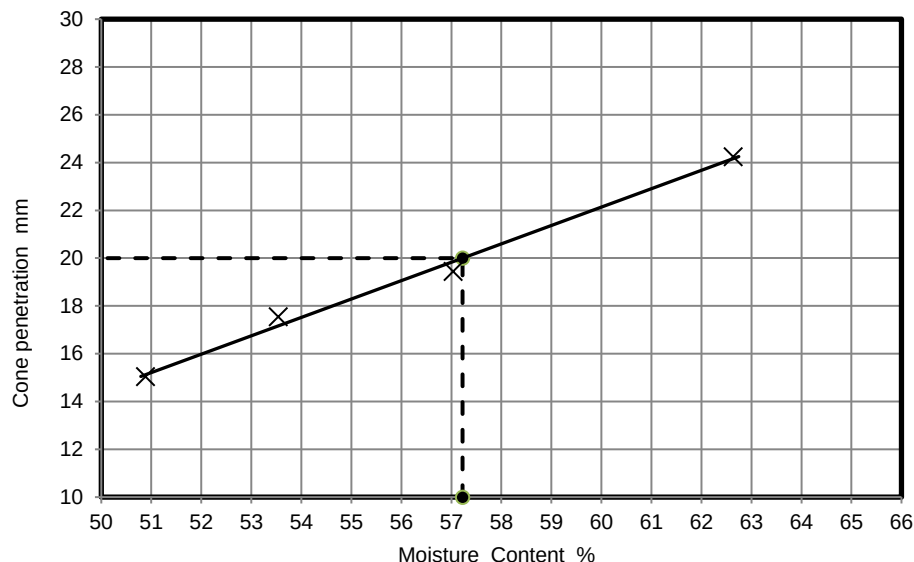
Brown and light grey mottled silty CLAY with orangish brown sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

31 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

57 %

PLASTIC LIMIT

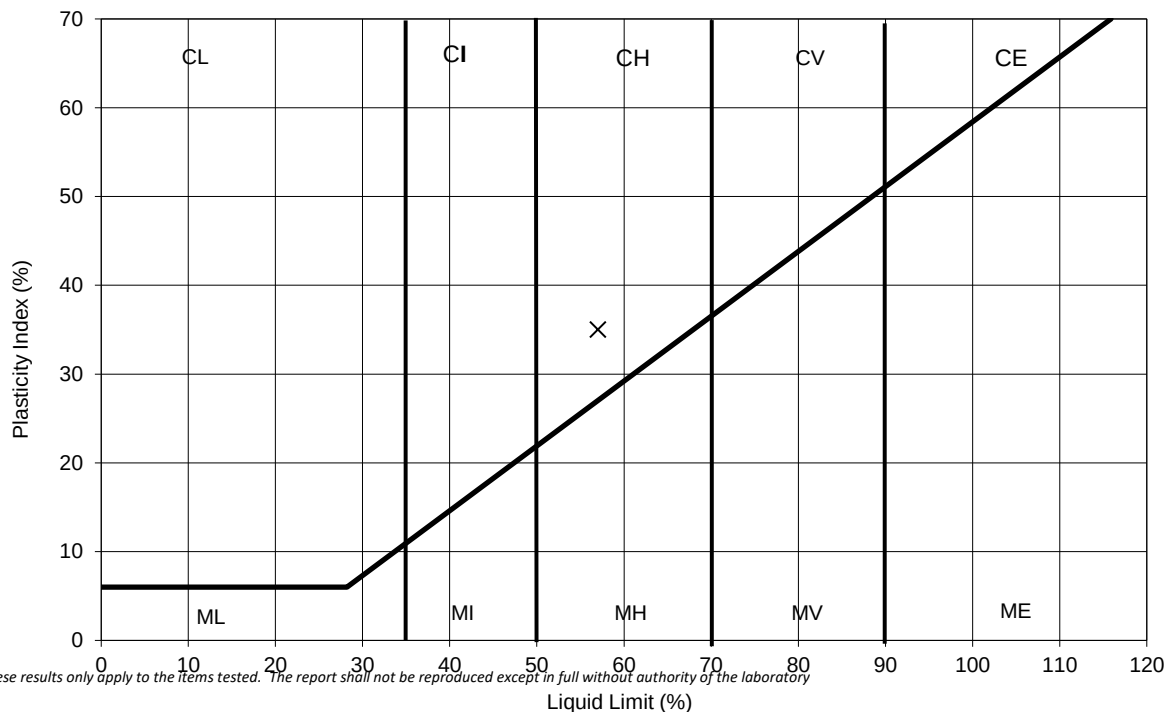
22 %

PLASTICITY INDEX

35 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP08

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

Soil Description

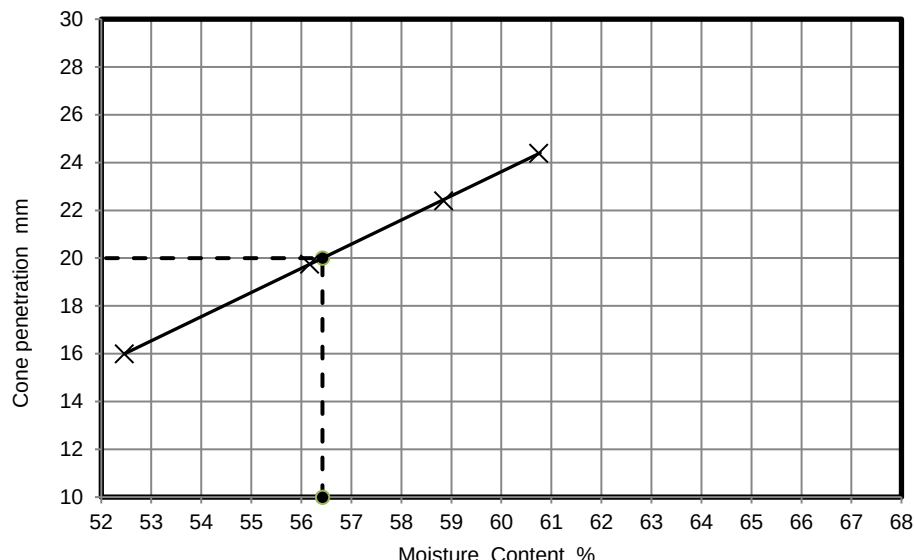
Brown silty CLAY with orangeish brown sandy patches and rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

30

%

% PASSING 425µm SIEVE

99

%

LIQUID LIMIT

56

%

PLASTIC LIMIT

22

%

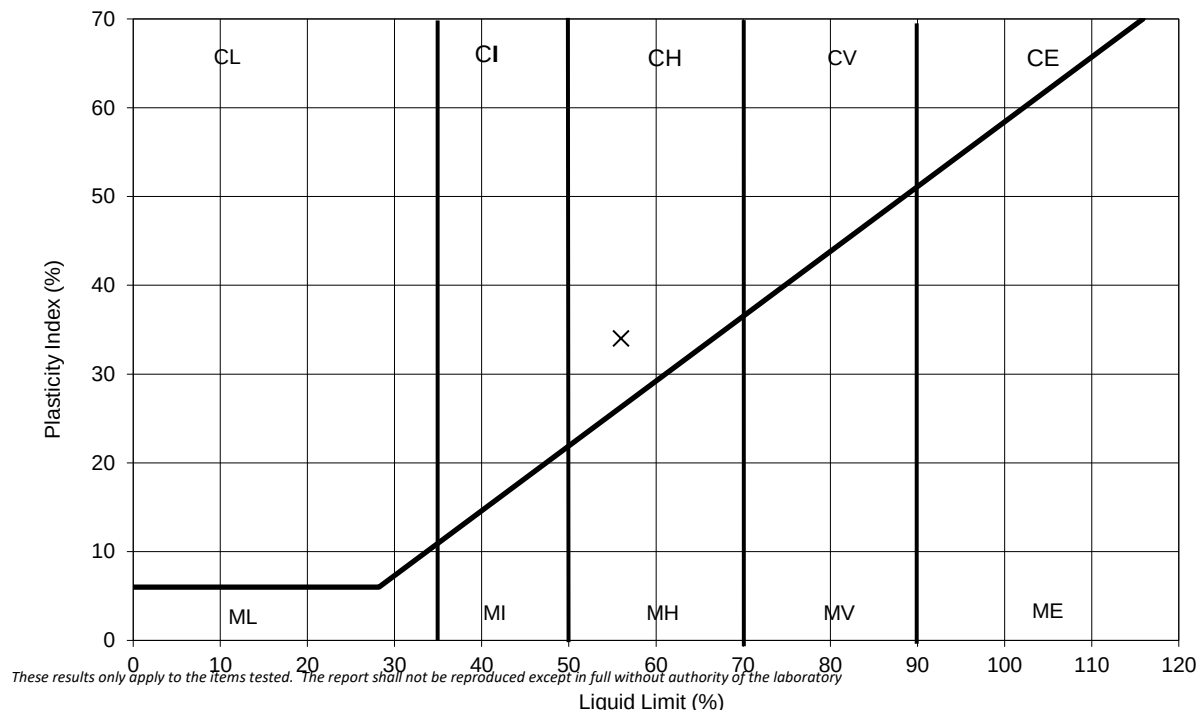
PLASTICITY INDEX

34

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP08

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296 Client GESL

Depth Top 2.50 m

Depth Base - m

Soil Description

Grey and brown mottled, locally shaley, slightly sandy silty CLAY with occasional fm mudstone fragments

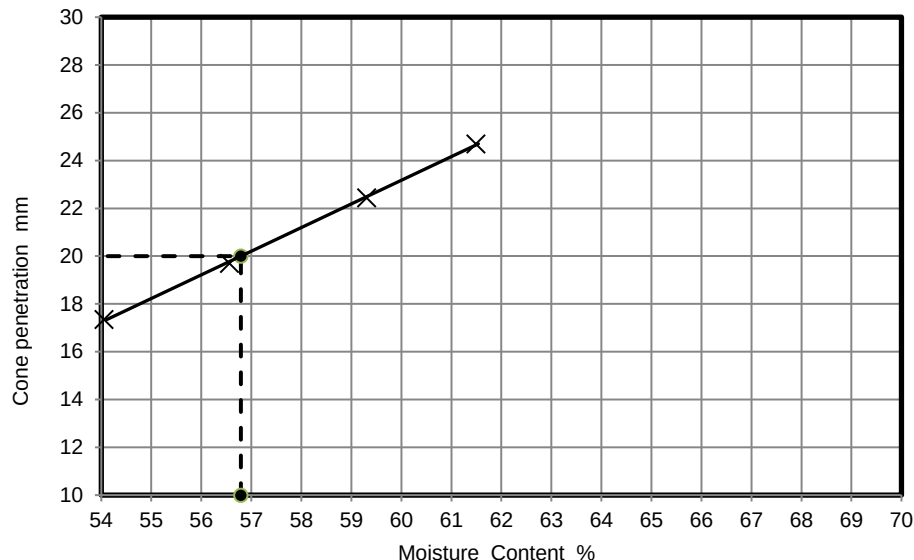
Sample Type D

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

32 %

% PASSING 425µm SIEVE

97 %

LIQUID LIMIT

57 %

PLASTIC LIMIT

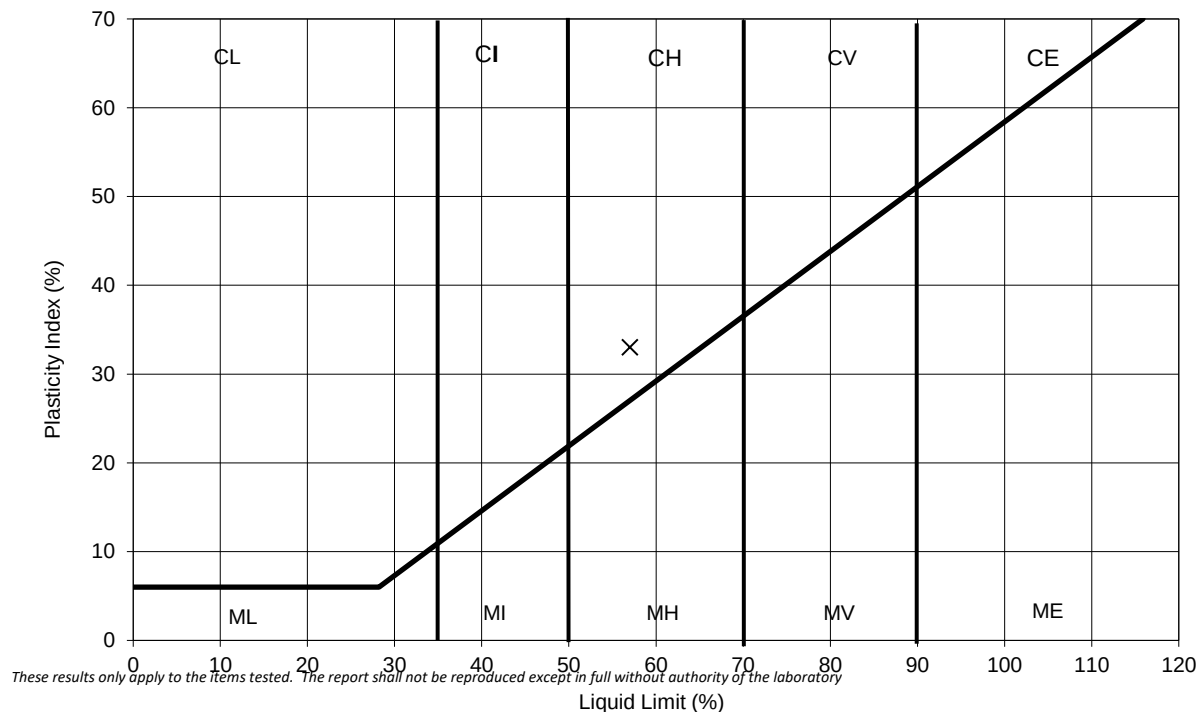
24 %

PLASTICITY INDEX

33 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP08

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296 Client GESL

Depth Top 3.00 m

Depth Base - m

Soil Description Light grey shaley silty CLAY with occasional brown slightly sandy silty clay

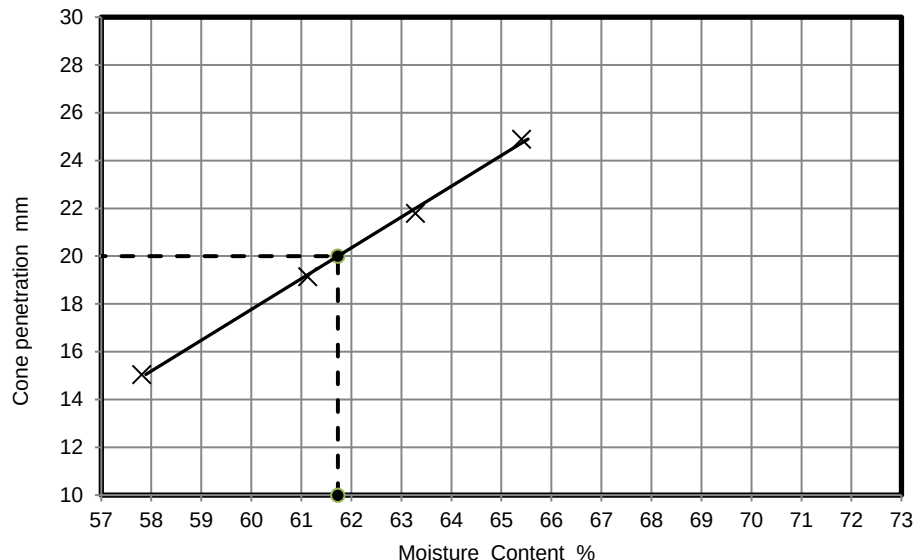
Sample Type D

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

31 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

62 %

PLASTIC LIMIT

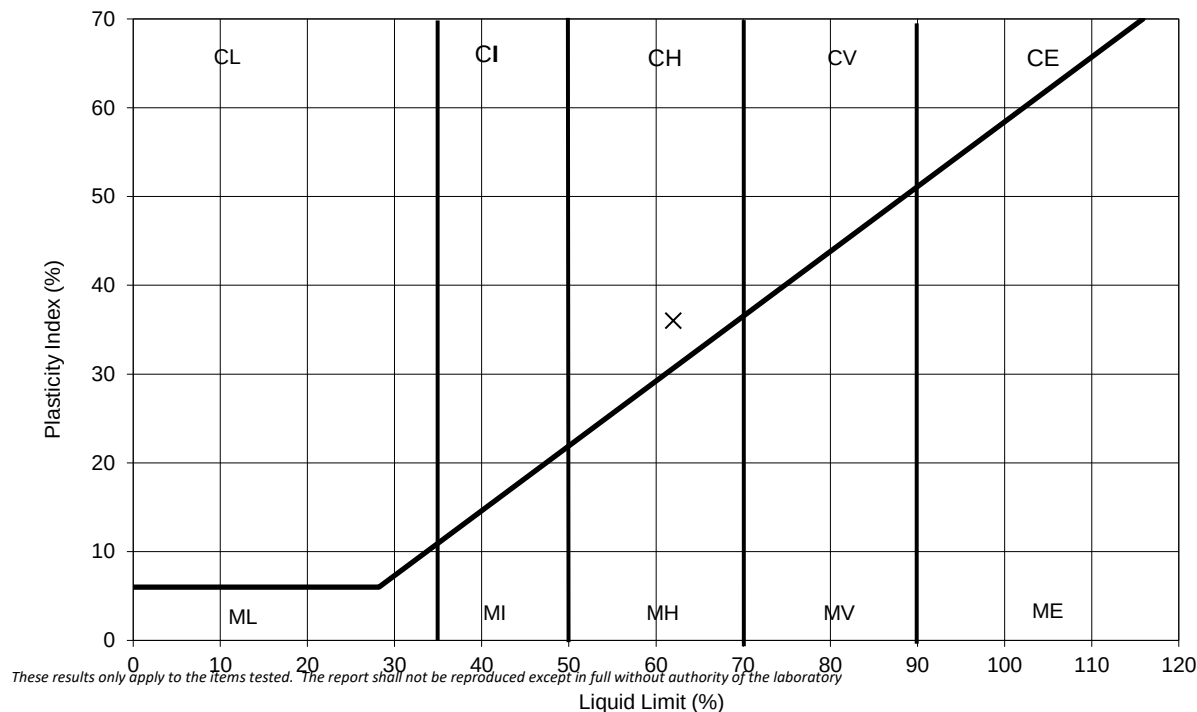
26 %

PLASTICITY INDEX

36 %

Remarks

PLASTICITY INDEX



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP08

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296

Client

GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

Soil Description

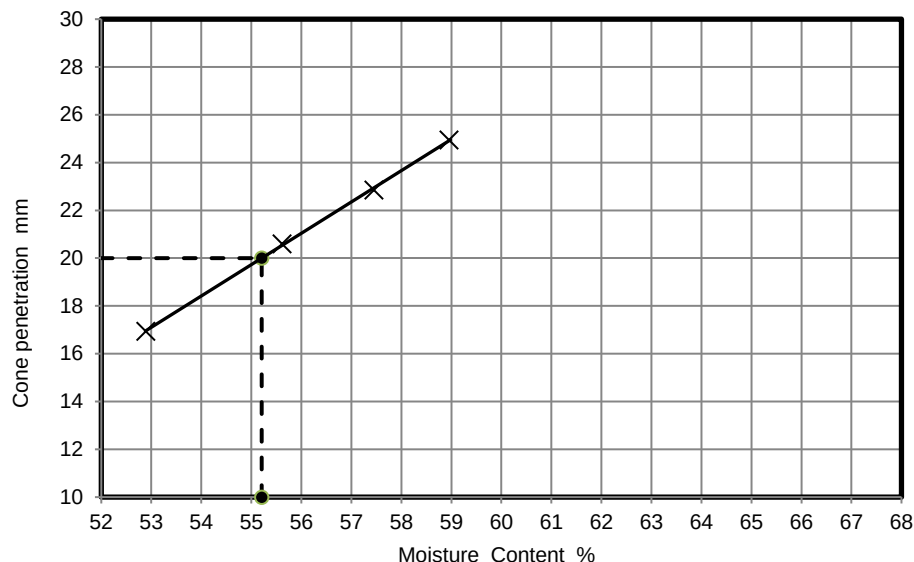
Grey mottled orangish brown silty CLAY with rare fm mudstone fragments

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

28

%

% PASSING 425µm SIEVE

98

%

LIQUID LIMIT

55

%

PLASTIC LIMIT

24

%

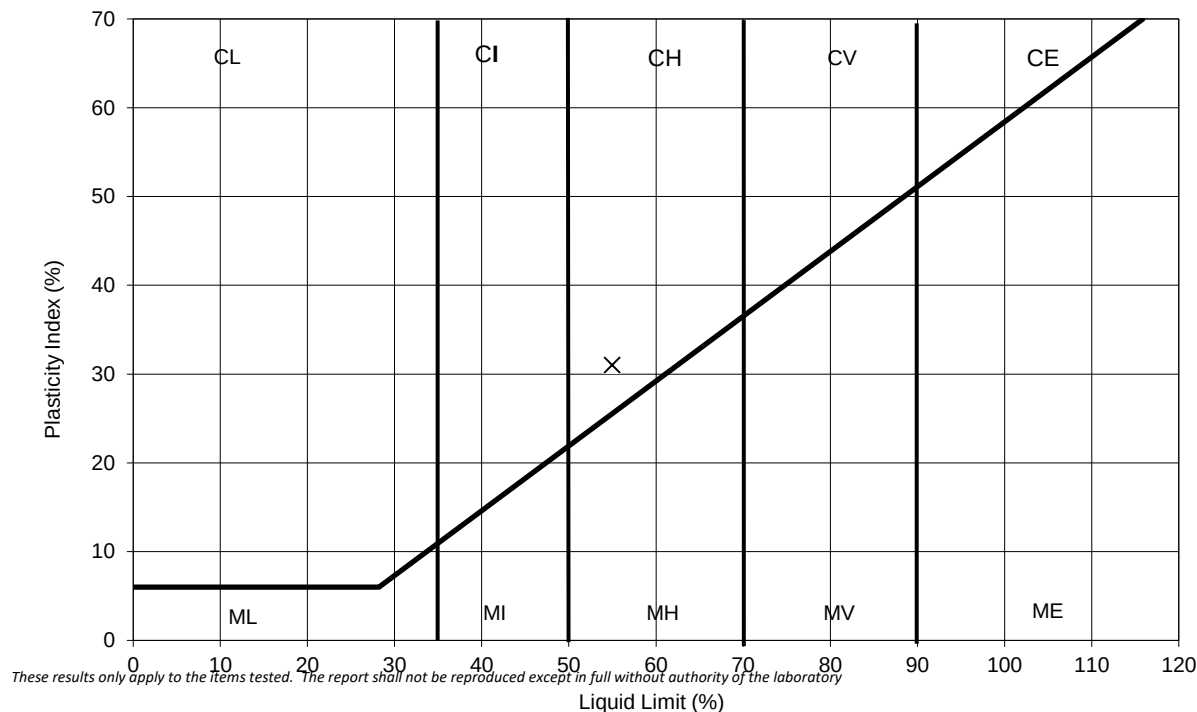
PLASTICITY INDEX

31

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP09

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296

Client

GESL

Depth Top 1.50 m

Depth Base - m

Sample Type D

Soil Description

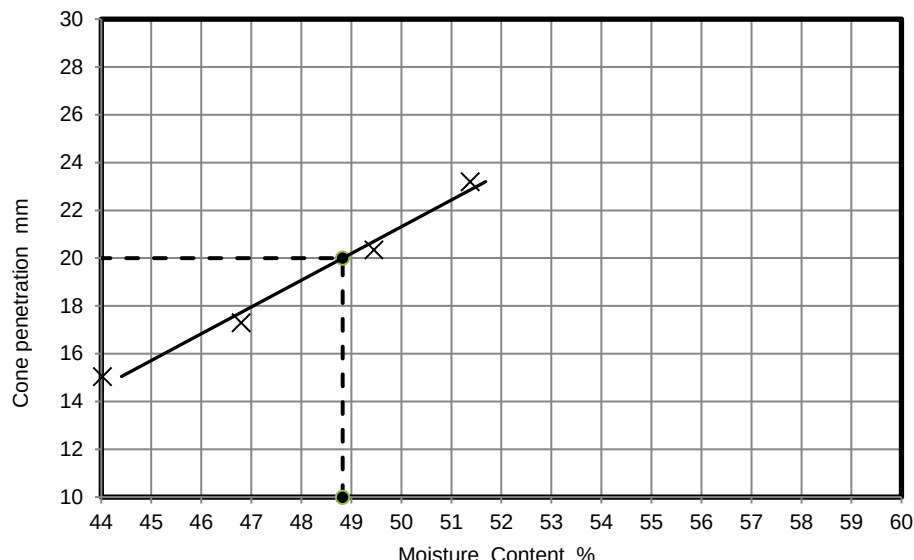
Brown mottled orangish brown slightly sandy silty CLAY with rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

26

%

% PASSING 425µm SIEVE

99

%

LIQUID LIMIT

49

%

PLASTIC LIMIT

21

%

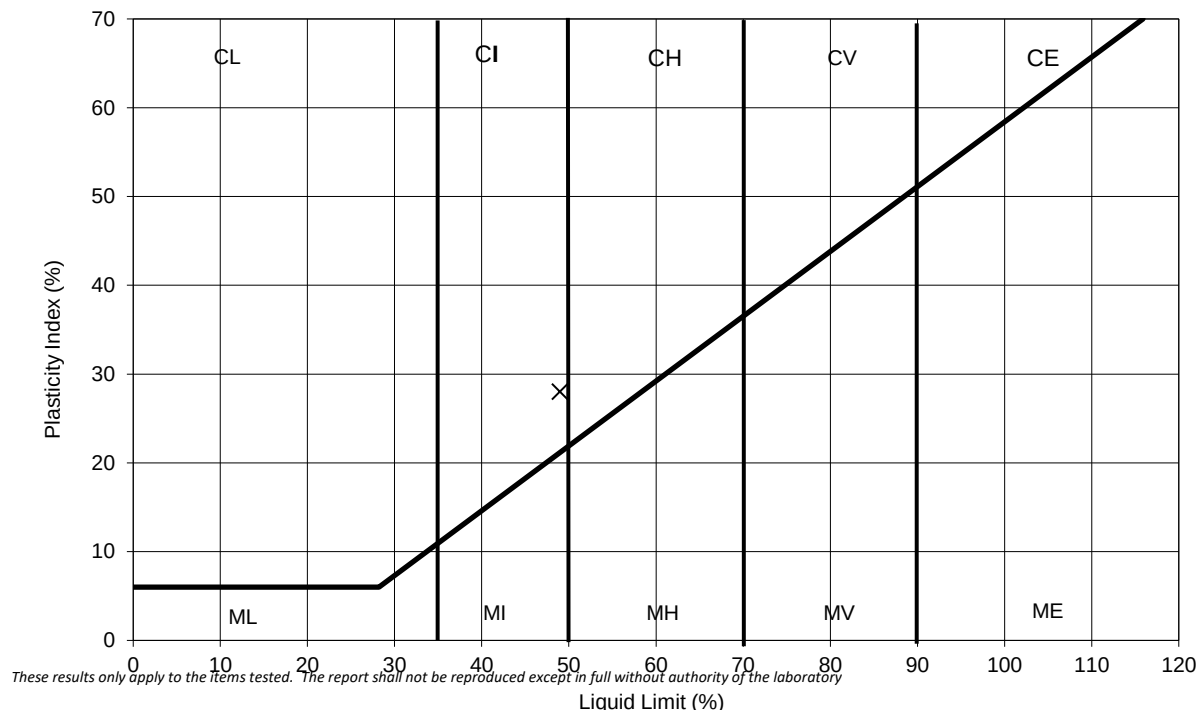
PLASTICITY INDEX

28

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP09

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

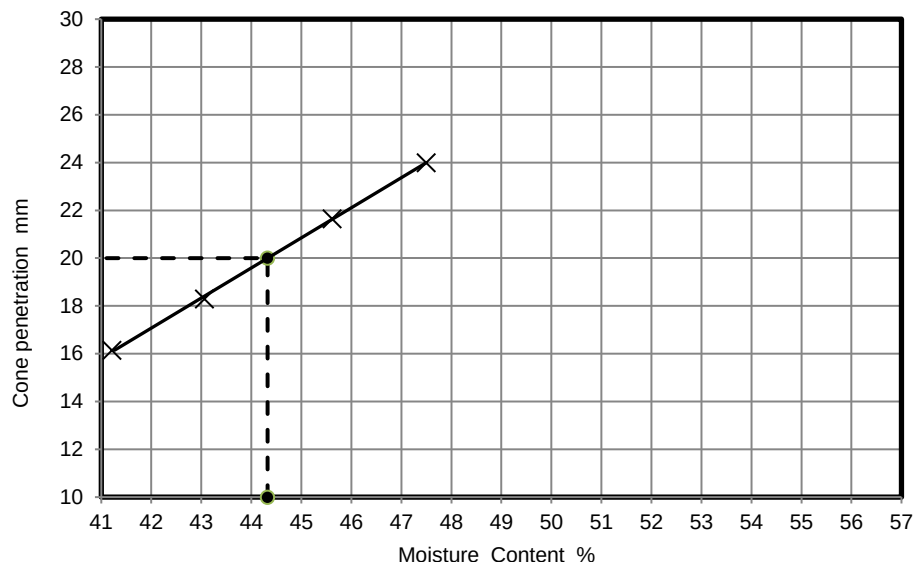
Soil Description Brown silty CLAY with orangish brown sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

25

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

44

%

PLASTIC LIMIT

20

%

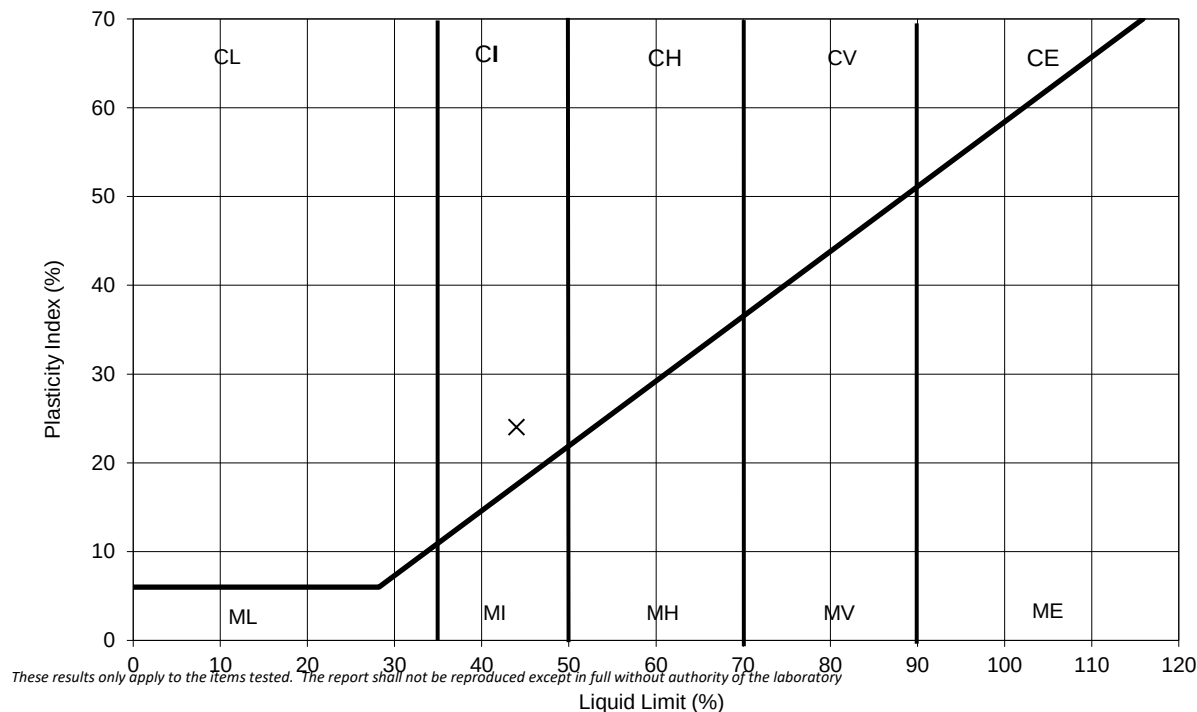
PLASTICITY INDEX

24

%

Remarks

PLASTICITY INDEX



These results only apply to the items tested. The report shall not be reproduced except in full without authority of the laboratory

Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP09

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296 Client GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

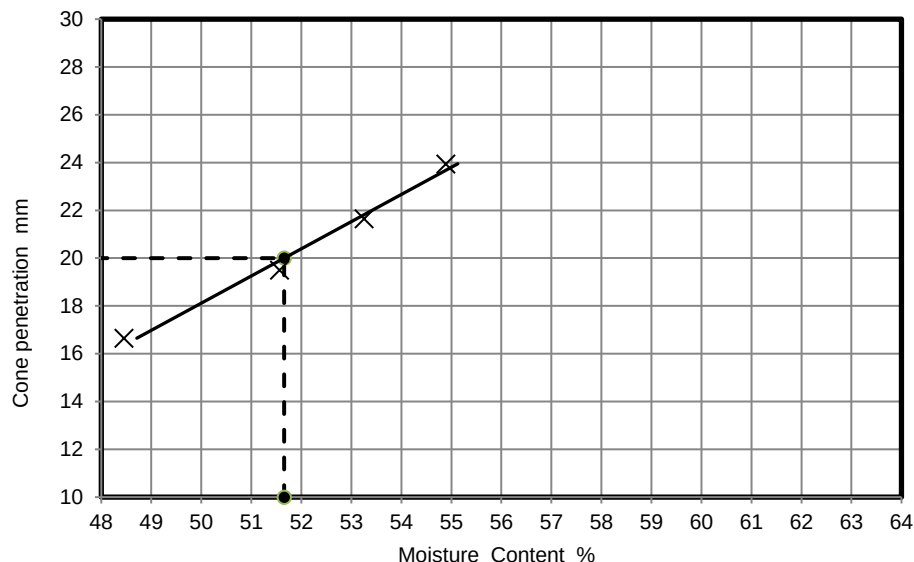
Soil Description Brown mottled light grey silty CLAY with orangish brown sandy patches and rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

24 %

% PASSING 425µm SIEVE

99 %

LIQUID LIMIT

52 %

PLASTIC LIMIT

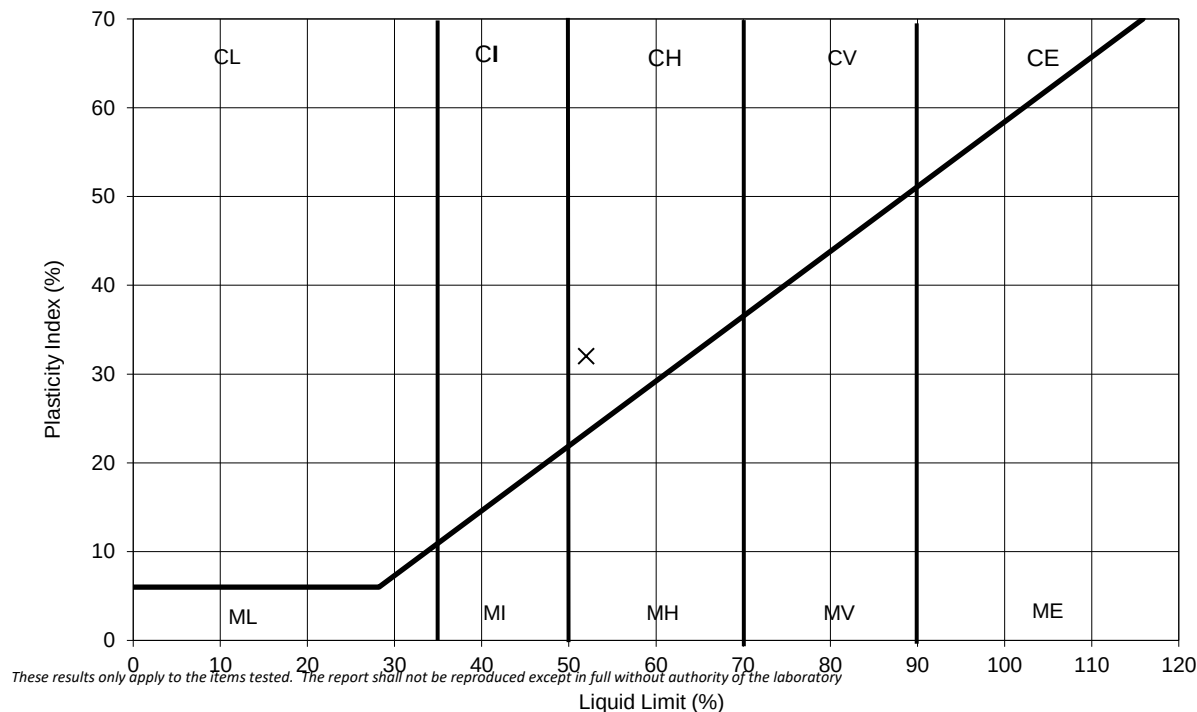
20 %

PLASTICITY INDEX

32 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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

Checked and Approved

Initials: J.P

Date: 04/01/2023

2519

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

MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP09

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296

Client

GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

Soil Description

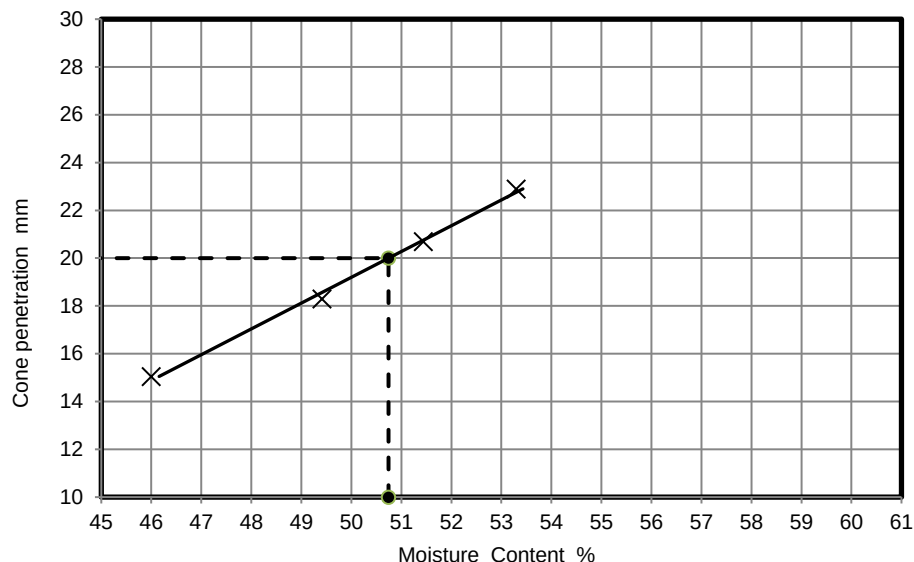
Brown mottled grey and orangish brown slightly gravelly slightly sandy silty CLAY (gravel is fm)

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

23

%

% PASSING 425µm SIEVE

97

%

LIQUID LIMIT

51

%

PLASTIC LIMIT

18

%

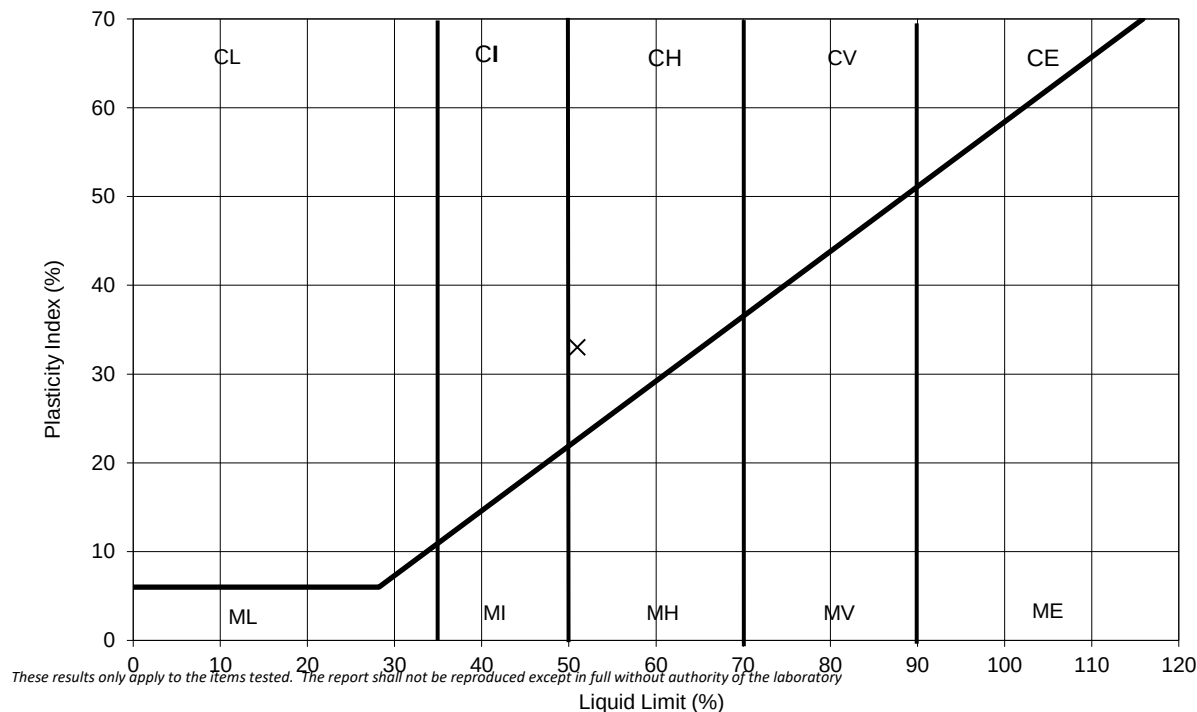
PLASTICITY INDEX

33

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP09

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296

Client

GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

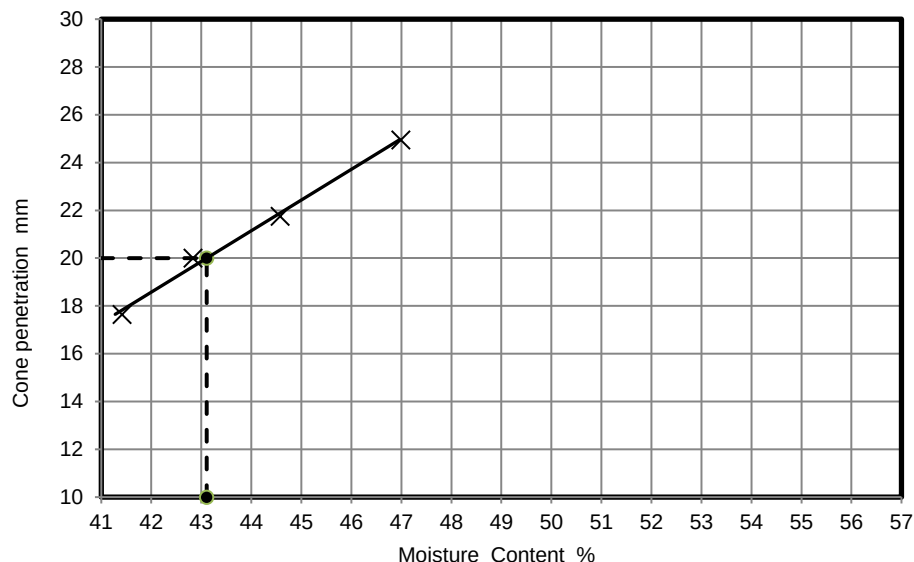
Soil Description Brown mottled orangish brown slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

24

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

43

%

PLASTIC LIMIT

18

%

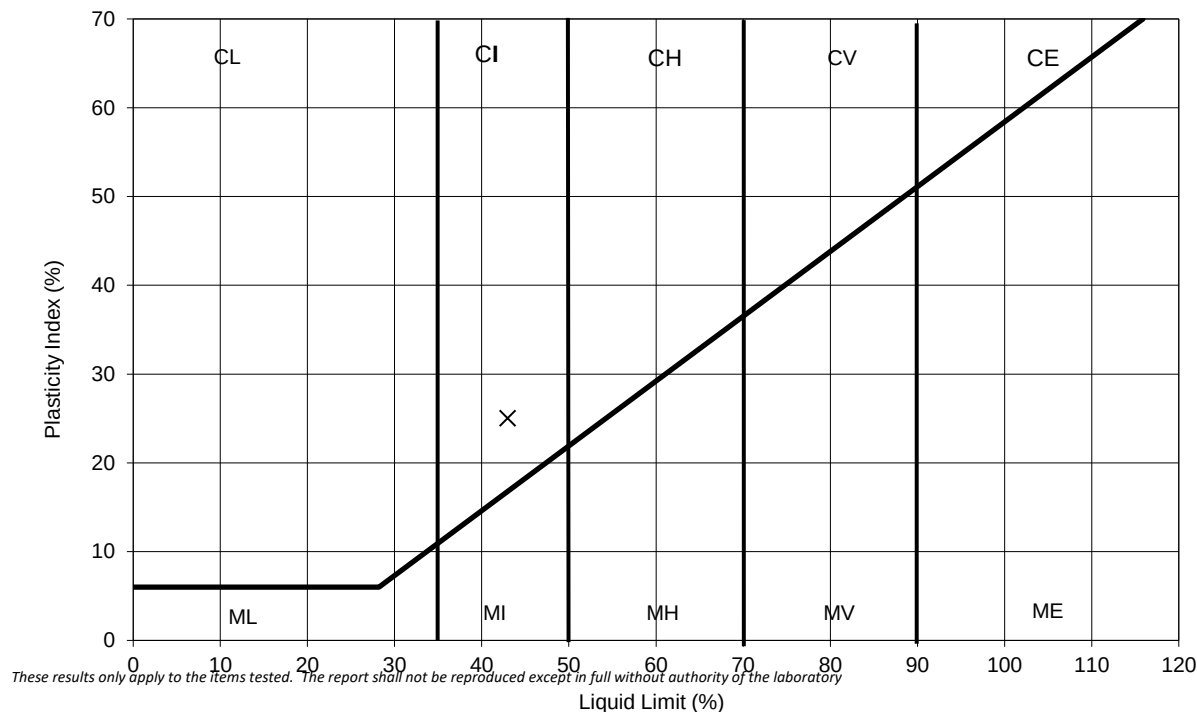
PLASTICITY INDEX

25

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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Initials: J.P

Date: 04/01/2023

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP10

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296 Client GESL

Depth Top 1.50 m

Depth Base - m

Sample Type D

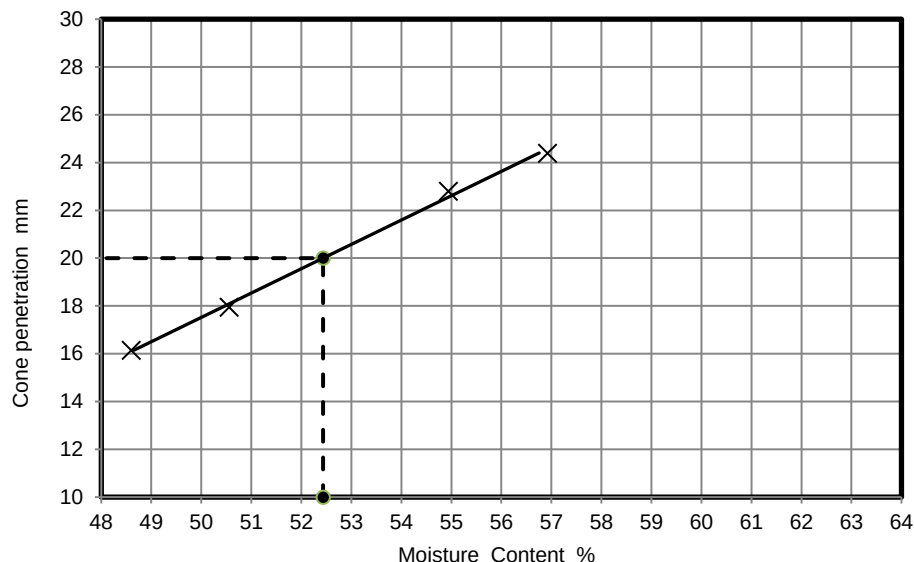
Soil Description Brown mottled light grey slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

28 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

52 %

PLASTIC LIMIT

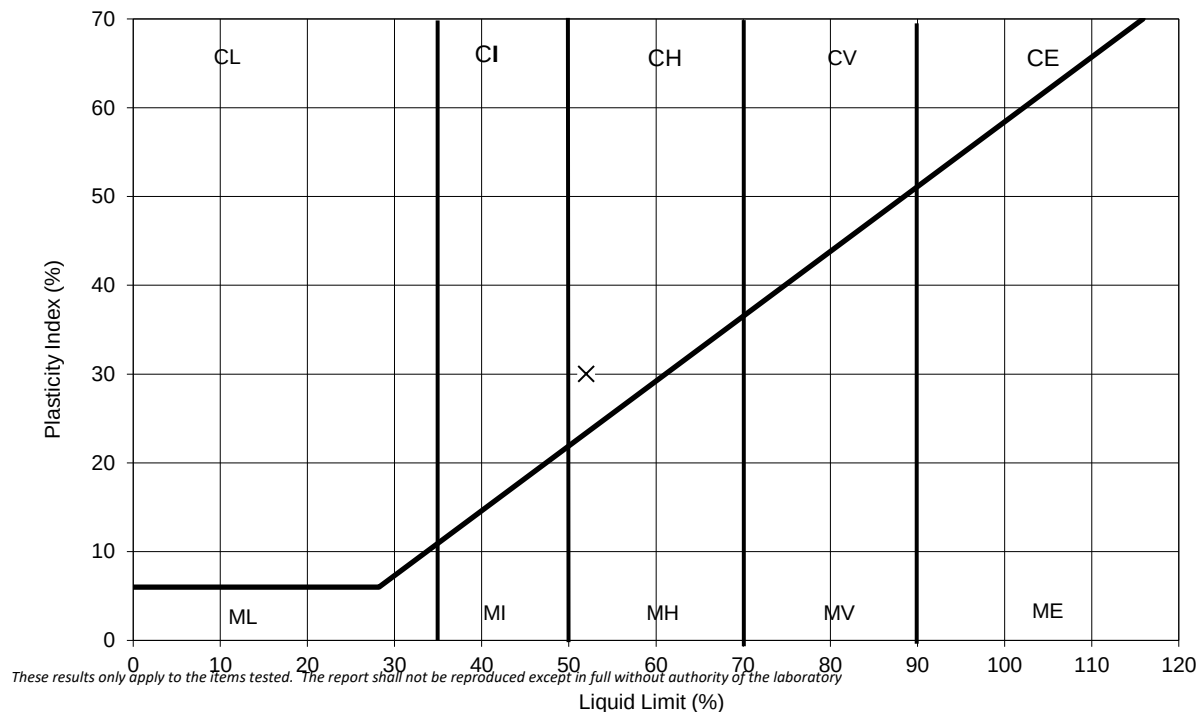
22 %

PLASTICITY INDEX

30 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP10

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

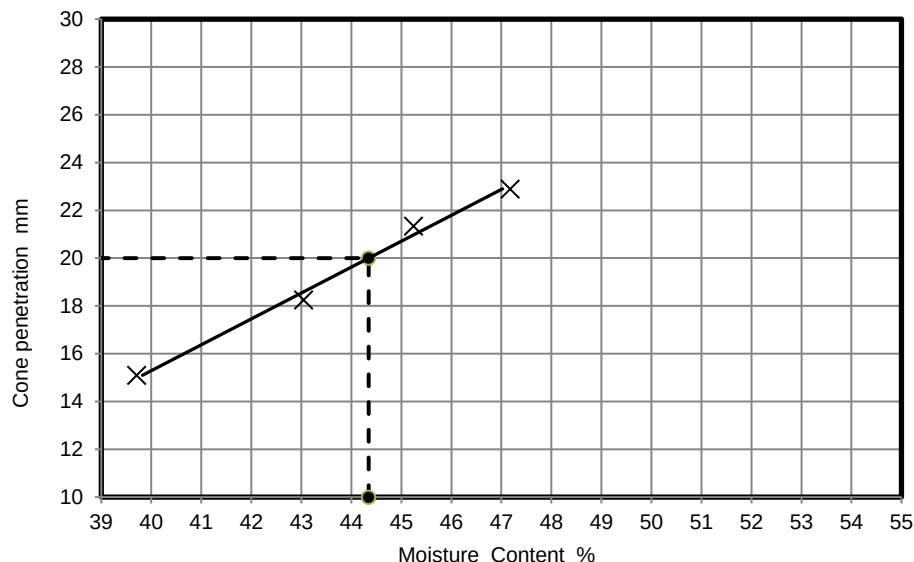
Soil Description Brown mottled orangish brown and light grey sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

26

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

44

%

PLASTIC LIMIT

18

%

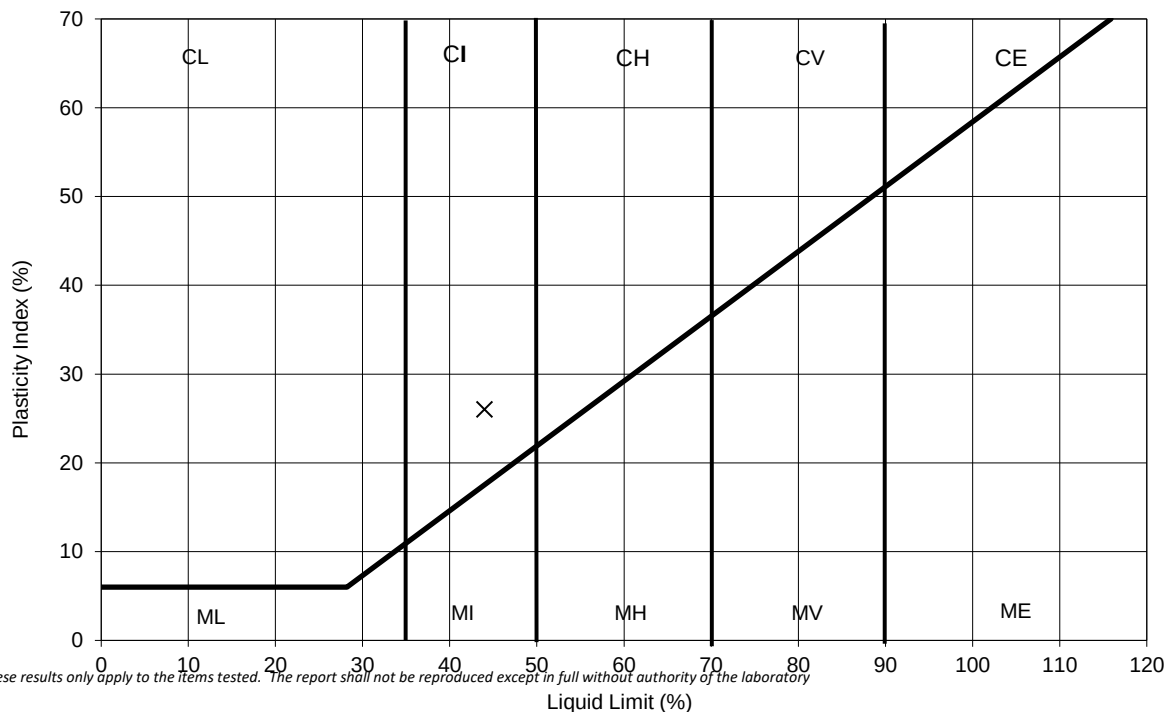
PLASTICITY INDEX

26

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP10

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296

Client

GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

Soil Description

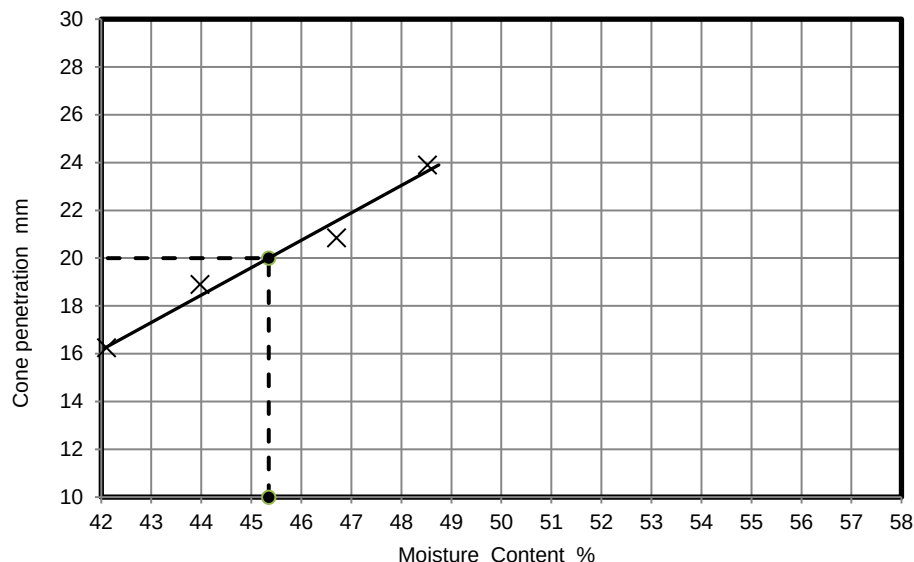
Brown mottled light grey silty CLAY with orangish brown sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

26

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

45

%

PLASTIC LIMIT

18

%

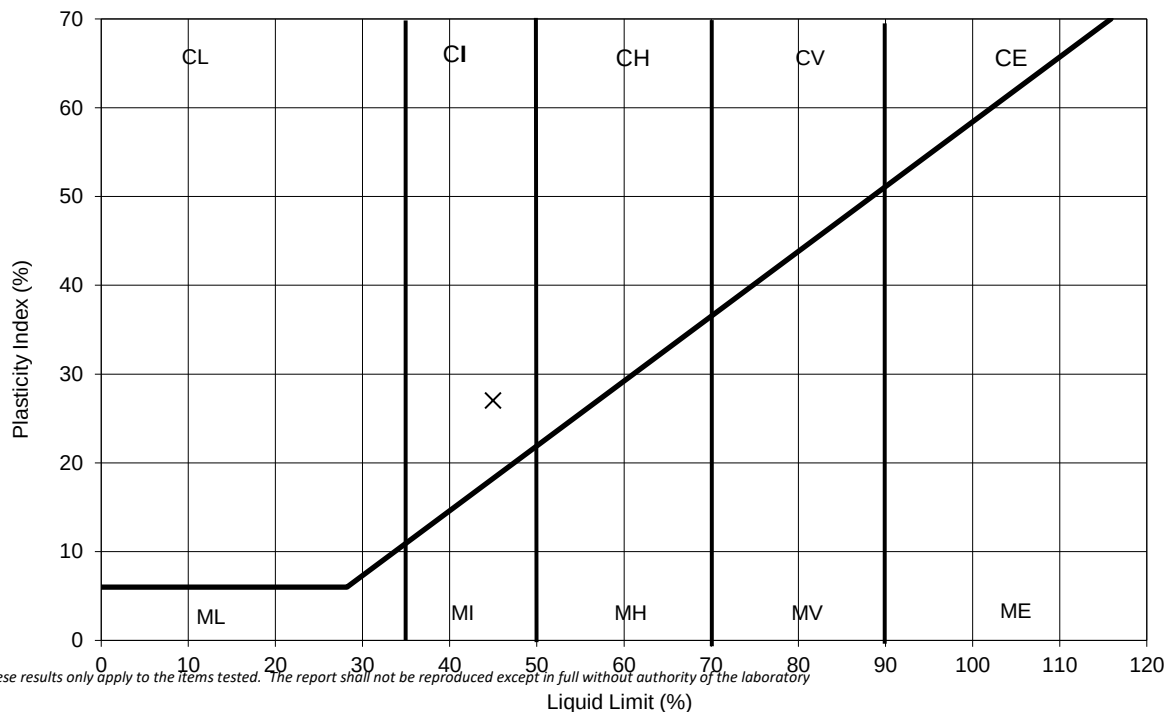
PLASTICITY INDEX

27

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)



TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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Checked and Approved

Initials: J.P

Date: 04/01/2023

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP10

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296

Client

GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

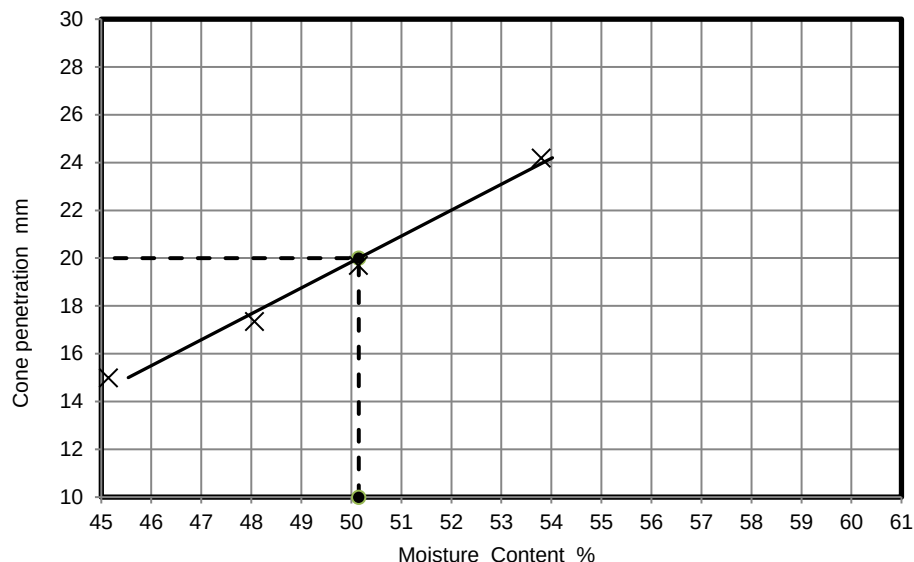
Soil Description Brown mottled orangish brown and light grey sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

29 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

50 %

PLASTIC LIMIT

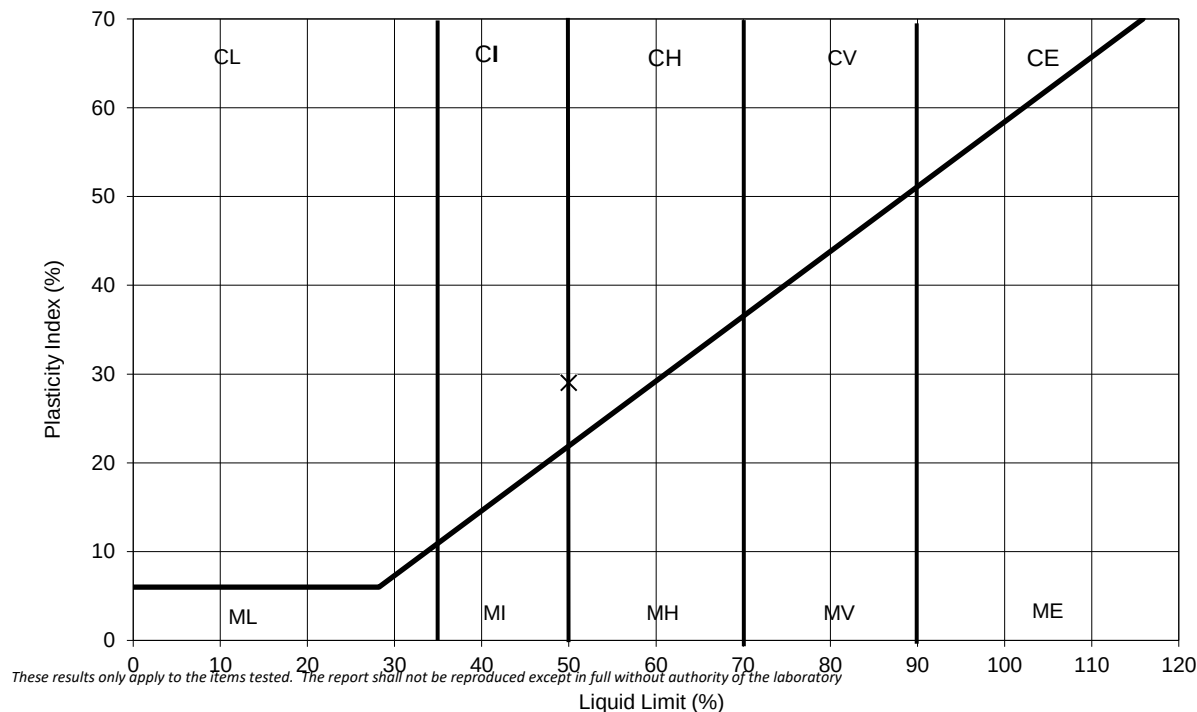
21 %

PLASTICITY INDEX

29 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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MSF-5 R2



2519

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LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP10

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296

Client

GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

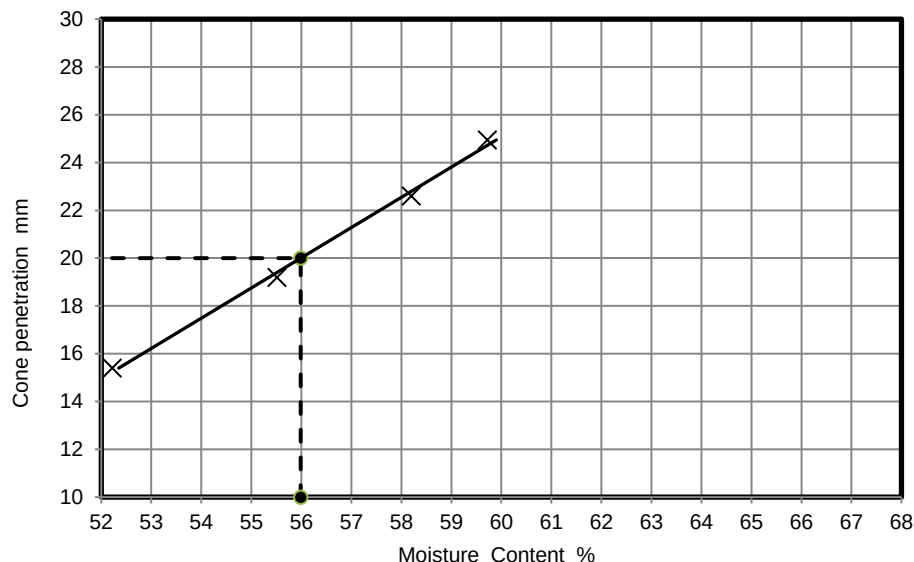
Soil Description Grey and orangish brown mottled slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

32

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

56

%

PLASTIC LIMIT

24

%

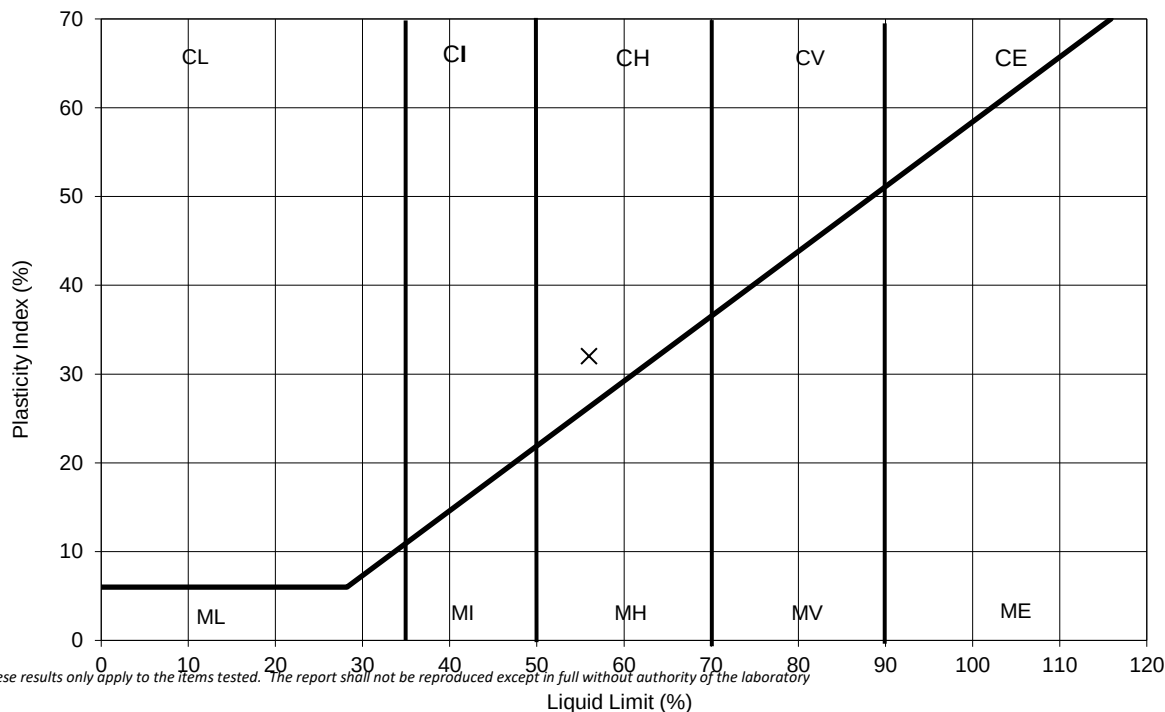
PLASTICITY INDEX

32

%

Remarks

PLASTICITY INDEX



These results only apply to the items tested. The report shall not be reproduced except in full without authority of the laboratory

Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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

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2519

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP11

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 1

Project No. GE21296

Client

GESL

Depth Top 1.50 m

Depth Base - m

Sample Type D

Soil Description

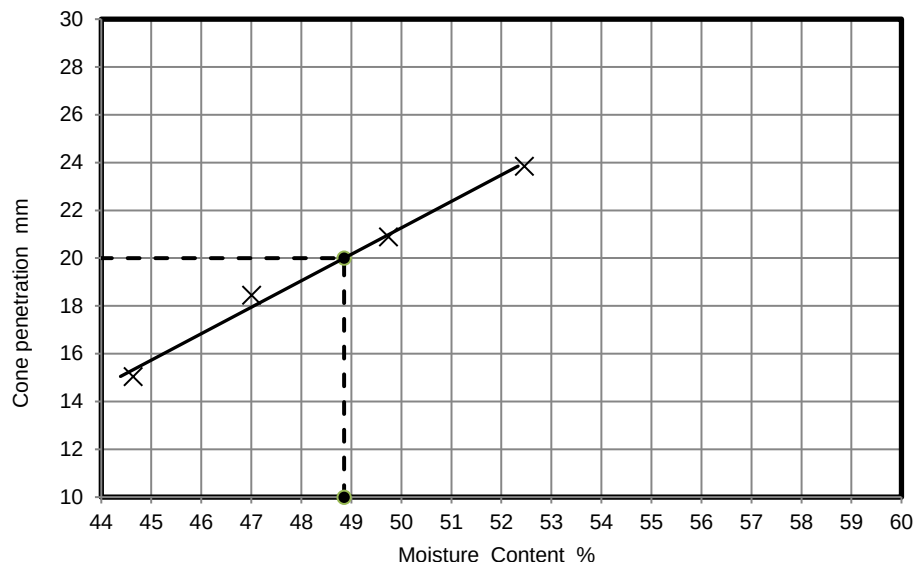
Brown mottled light grey silty CLAY with orangish brown sandy patches and rare fine gravel

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

27

%

% PASSING 425µm SIEVE

99

%

LIQUID LIMIT

49

%

PLASTIC LIMIT

21

%

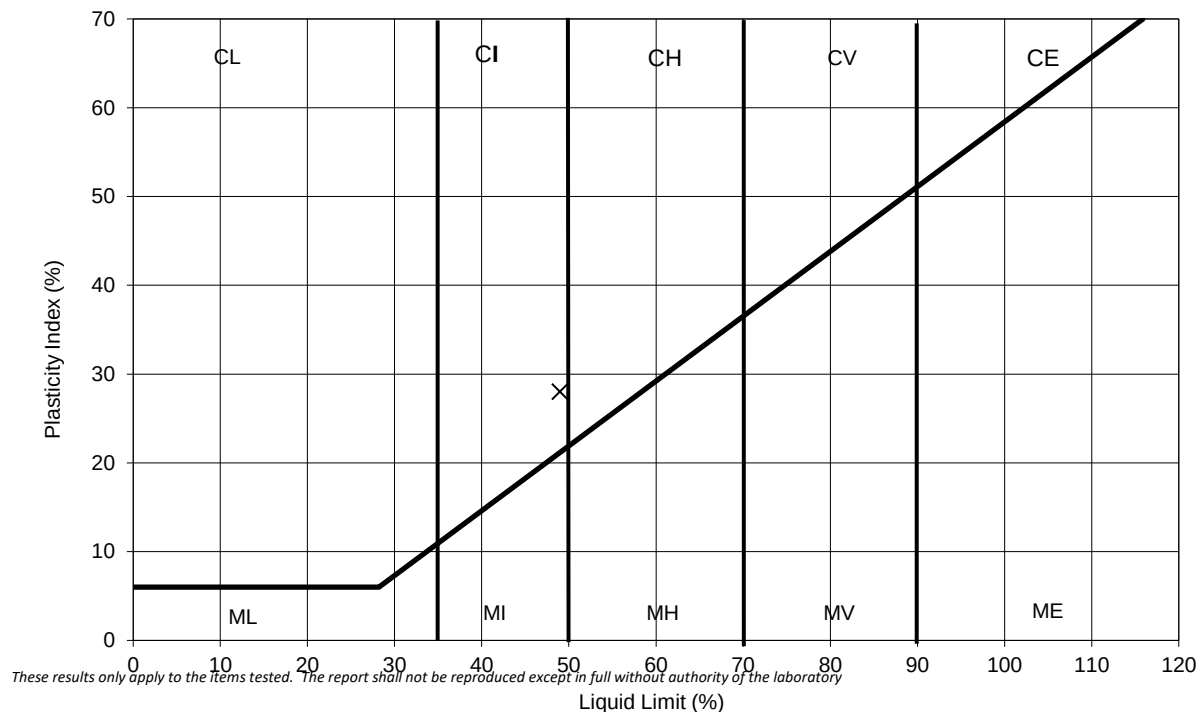
PLASTICITY INDEX

28

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP11

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 2

Project No. GE21296

Client

GESL

Depth Top 2.00 m

Depth Base - m

Sample Type D

Soil Description

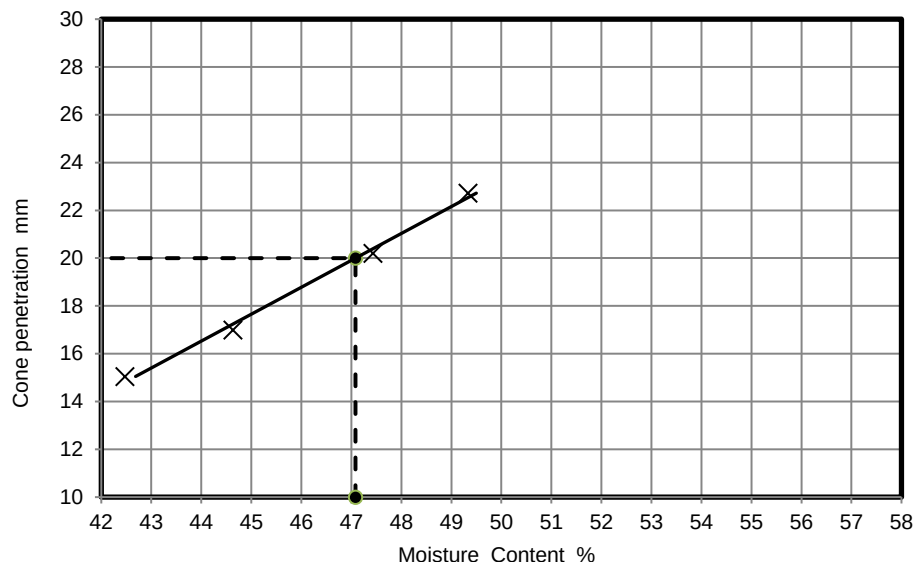
Brown mottled light grey silty CLAY with orangish brown sandy patches

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

26

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

47

%

PLASTIC LIMIT

20

%

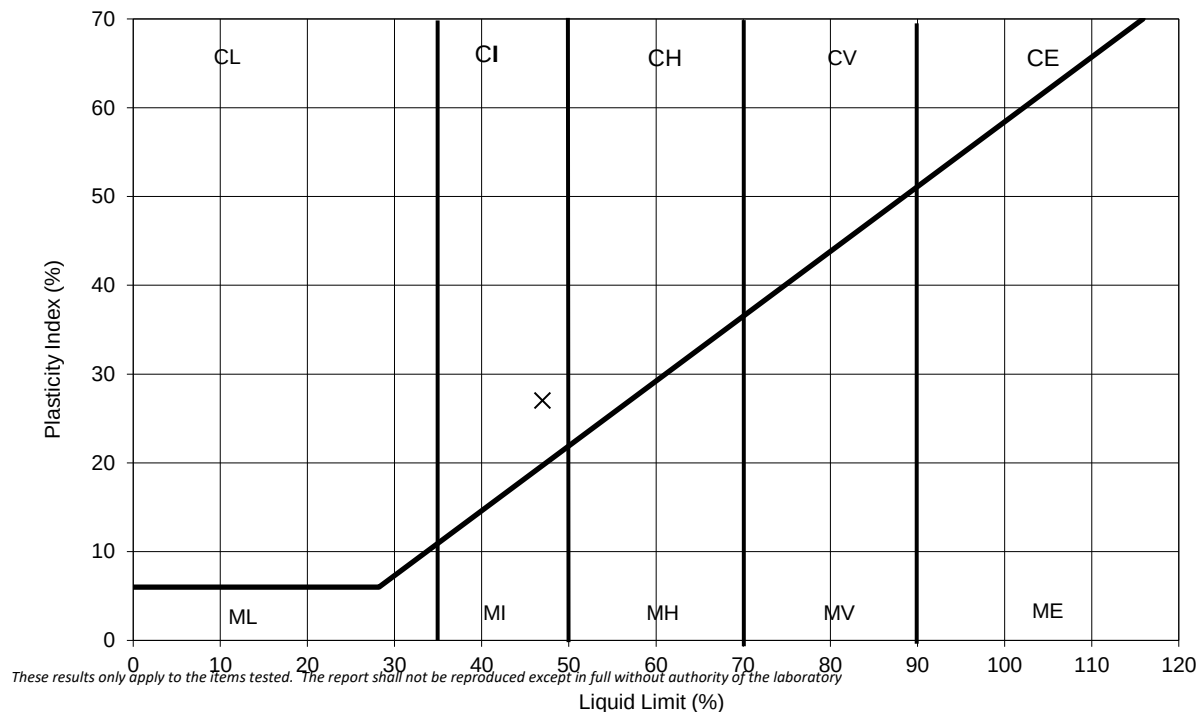
PLASTICITY INDEX

27

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2



LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP11

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 3

Project No. GE21296

Client

GESL

Depth Top 2.50 m

Depth Base - m

Sample Type D

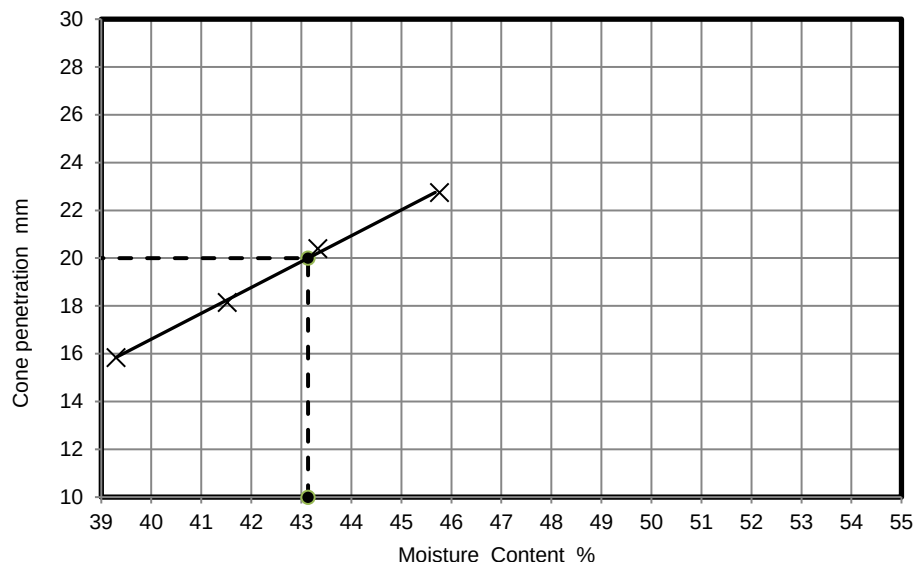
Soil Description Brown mottled orangish brown and light grey sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 22/12/2022



NATURAL MOISTURE CONTENT

25

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

43

%

PLASTIC LIMIT

20

%

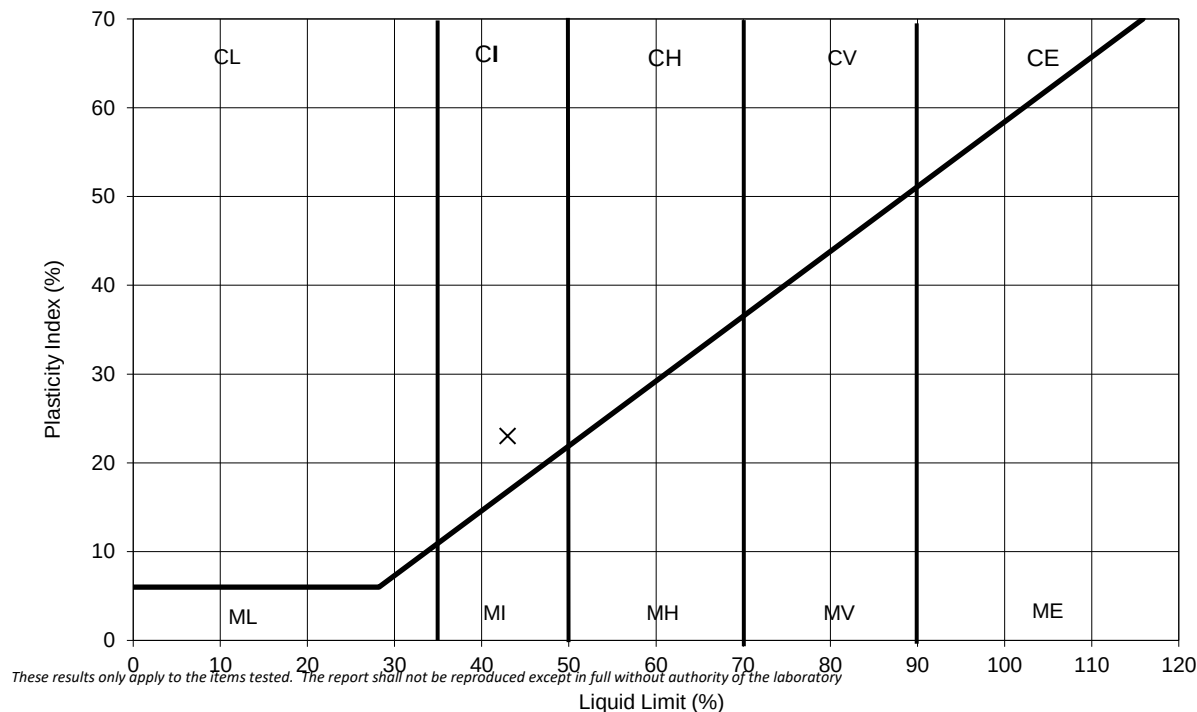
PLASTICITY INDEX

23

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP11

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 4

Project No. GE21296

Client

GESL

Depth Top 3.00 m

Depth Base - m

Sample Type D

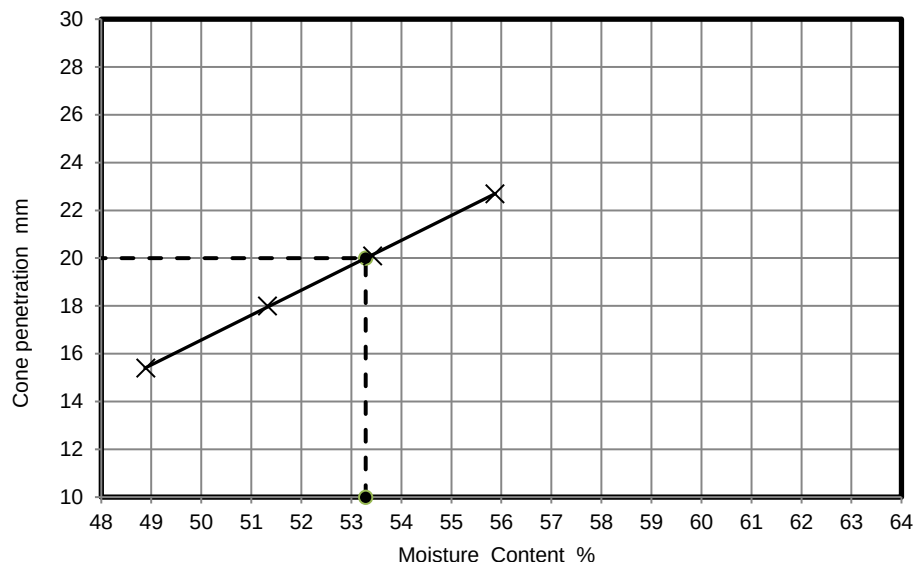
Soil Description Brown mottled orangish brown slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 21/12/2022



NATURAL MOISTURE CONTENT

30 %

% PASSING 425µm SIEVE

100 %

LIQUID LIMIT

53 %

PLASTIC LIMIT

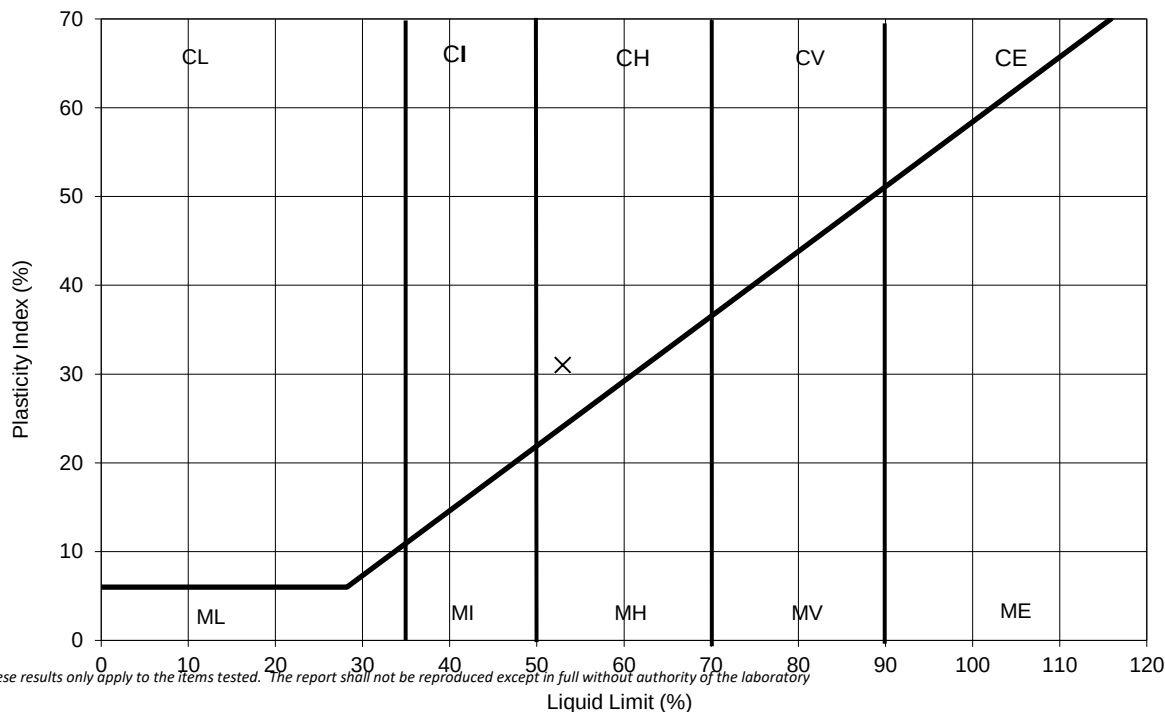
22 %

PLASTICITY INDEX

31 %

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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MSF-5 R2





LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

Job No. 32708

Borehole/Pit No. TP11

Site Name Allington Lane - Phase 3 Additional GI

Sample No. 5

Project No. GE21296

Client

GESL

Depth Top 3.50 m

Depth Base - m

Sample Type D

Soil Description

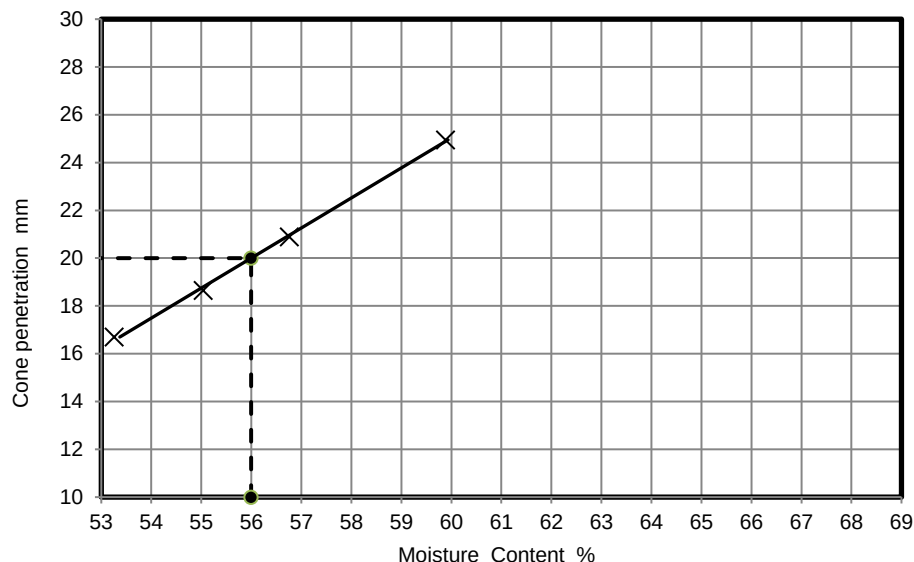
Grey and orangish brown mottled slightly sandy silty CLAY

Samples received 28/11/2022

Schedules received 25/11/2022

Project Started 28/11/2022

Date Tested 20/12/2022



NATURAL MOISTURE CONTENT

32

%

% PASSING 425µm SIEVE

100

%

LIQUID LIMIT

56

%

PLASTIC LIMIT

24

%

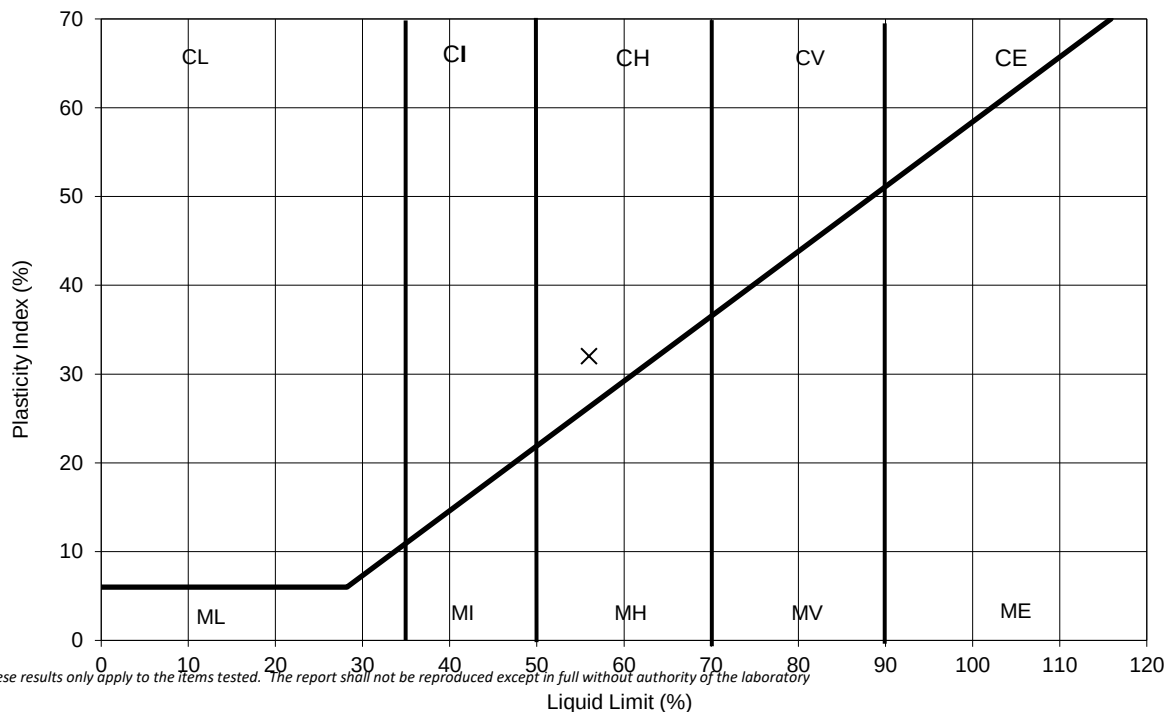
PLASTICITY INDEX

32

%

Remarks

PLASTICITY INDEX



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Liquid Limit (%)

TEST METHOD

BS1377: Part 2 :Clause 4.3 : 1990 Determination of the liquid limit by the cone penetrometer method

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

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

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Checked and Approved

Initials: J.P

Date: 04/01/2023

2519

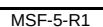
Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

MSF-5 R2





Hole No.	Sample				Soil Description	NMC	Passing 425µm	LL	PL	PI	Remarks
	Ref	Top m	Base m	Type							
TP02	1	1.50	-	D	Brown, orangish brown and grey mottled silty CLAY	33	100	61	24	37	
TP02	2	2.00	-	D	Brown mottled orangish brown and light grey slightly sandy silty CLAY	35	100	58	26	32	
TP02	3	2.50	-	D	Grey slightly shaley sandy silty CLAY	31	100	50	24	26	
TP02	4	3.00	-	D	Grey mottled orangish brown slightly sandy silty CLAY	30	100	53	23	30	
TP02	5	3.50	-	D	Grey mottled orangish brown sandy silty CLAY	29	100	49	23	26	
TP03	1	1.50	-	D	Brown and light grey mottled silty CLAY with orangish brown sandy patches	33	100	63	22	41	
TP03	2	2.00	-	D	Grey and orangish brown mottled silty CLAY with sandy patches	34	100	59	25	34	
TP03	3	2.50	-	D	Grey mottled orangish brown slightly shaley sandy silty CLAY	31	100	51	23	28	
TP03	4	3.00	-	D	Light grey shaley, locally ironstained, silty CLAY with occasional light grey sandy silty clay	29	100	52	24	28	
TP03	5	3.50	-	D	Grey mottled orangish brown sandy silty CLAY	26	100	47	22	25	
TP04	1	1.50	-	D	Orangish brown and grey mottled slightly sandy silty CLAY with rare fine gravel	31	99	55	21	34	
TP04	2	2.00	-	D	Brown and grey mottled slightly sandy silty CLAY	35	100	59	25	34	



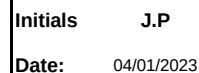


Hole No.	Sample				Soil Description	NMC	Passing 425µm	LL	PL	PI	Remarks
	Ref	Top m	Base m	Type							
TP04	3	2.50	-	D	Grey and orangish brown mottled slightly shaley slightly sandy silty CLAY with rare fm mudstone fragments	34	98	60	26	34	
TP04	4	3.00	-	D	Grey mottled orangish brown slightly shaley sandy silty CLAY	27	100	48	26	22	
TP04	5	3.50	-	D	Grey mottled brown and orangish brown slightly sandy silty CLAY	28	100	54	23	31	
TP05	1	1.50	-	D	Brown mottled light grey silty CLAY with orangish brown sandy patches and roots	31	100	58	23	35	
TP05	2	2.00	-	D	Brown, orangish brown and light grey mottled slightly sandy silty CLAY with rare fine gravel	35	99	62	24	38	
TP05	3	2.50	-	D	Grey and brown mottled, locally slightly shaley silty CLAY	35	100	61	26	35	
TP05	4	3.00	-	D	Grey and brown mottled slightly sandy silty CLAY with rare fine gravel	29	99	51	22	29	
TP05	5	3.50	-	D	Grey mottled orangish brown, locally slightly shaley, slightly sandy silty CLAY with rare fine mudstone fragments	29	98	53	24	29	
TP06	1	1.50	-	D	Grey mottled orangish brown silty CLAY with sandy patches	35	100	60	22	38	
TP06	2	2.00	-	D	Brown silty CLAY with orangish brown sandy patches	33	100	55	23	32	
TP06	3	2.50	-	D	Grey and orangish brown mottled slightly shaley slightly sandy silty CLAY with rare fm mudstone fragments	33	98	55	24	31	
TP06	4	3.00	-	D	Grey mottled orangish brown slightly sandy silty CLAY with rare fine gravel	36	98	61	25	36	

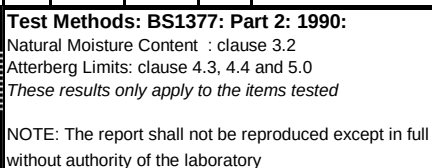




Hole No.	Sample				Soil Description	NMC	Passing 425µm	LL	PL	PI	Remarks
	Ref	Top m	Base m	Type							
TP06	5	3.50	-	D	Dark grey silty CLAY	26	100	62	22	40	
TP07	1	1.50	-	D	Brown mottled light grey silty CLAY with orangish brown sandy patches	30	100	52	22	30	
TP07	2	2.00	-	D	Grey and orangish brown mottled slightly sandy silty CLAY	30	100	51	22	29	
TP07	3	2.50	-	D	Brown slightly sandy silty CLAY with occasional light grey shaley silty clay	30	100	57	25	32	
TP07	4	3.00	-	D	Grey mottled orangish brown silty CLAY with sandy patches	31	100	60	25	35	
TP07	5	3.50	-	D	Dark grey slightly shaley silty CLAY with sandy patches	25	100	57	22	35	
TP08	1	1.50	-	D	Brown and light grey mottled silty CLAY with orangish brown sandy patches	31	100	57	22	35	
TP08	2	2.00	-	D	Brown silty CLAY with orangeish brown sandy patches and rare fine gravel	30	99	56	22	34	
TP08	3	2.50	-	D	Grey and brown mottled, locally shaley, slightly sandy silty CLAY with occasional fm mudstone fragments	32	97	57	24	33	
TP08	4	3.00	-	D	Light grey shaley silty CLAY with occasional brown slightly sandy silty clay	31	100	62	26	36	
TP08	5	3.50	-	D	Grey mottled orangish brown silty CLAY with rare fm mudstone fragments	28	98	55	24	31	
TP09	1	1.50	-	D	Brown mottled orangish brown slightly sandy silty CLAY with rare fine gravel	26	99	49	21	28	



					Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results													
Job No. 32708		Project Name Allington Lane - Phase 3 Additional GI						Programme										
								Samples received		28/11/2022								
								Schedule received		25/11/2022								
Project No. GE21296		Client GESL						Project started		28/11/2022								
								Testing Started		20/12/2022								
Hole No.	Sample				Soil Description	NMC %	Passing 425µm %	LL %	PL %	PI %	Remarks							
	Ref	Top m	Base m	Type														
TP09	2	2.00	-	D	Brown silty CLAY with orangish brown sandy patches	25	100	44	20	24								
TP09	3	2.50	-	D	Brown mottled light grey silty CLAY with orangish brown sandy patches and rare fine gravel	24	99	52	20	32								
TP09	4	3.00	-	D	Brown mottled grey and orangish brown slightly gravelly slightly sandy silty CLAY (gravel is fm)	23	97	51	18	33								
TP09	5	3.50	-	D	Brown mottled orangish brown slightly sandy silty CLAY	24	100	43	18	25								
TP10	1	1.50	-	D	Brown mottled light grey slightly sandy silty CLAY	28	100	52	22	30								
TP10	2	2.00	-	D	Brown mottled orangish brown and light grey sandy silty CLAY	26	100	44	18	26								
TP10	3	2.50	-	D	Brown mottled light grey silty CLAY with orangish brown sandy patches	26	100	45	18	27								
TP10	4	3.00	-	D	Brown mottled orangish brown and light grey sandy silty CLAY	29	100	50	21	29								
TP10	5	3.50	-	D	Grey and orangish brown mottled slightly sandy silty CLAY	32	100	56	24	32								
TP11	1	1.50	-	D	Brown mottled light grey silty CLAY with orangish brown sandy patches and rare fine gravel	27	99	49	21	28								
TP11	2	2.00	-	D	Brown mottled light grey silty CLAY with orangish brown sandy patches	26	100	47	20	27								
TP11	3	2.50	-	D	Brown mottled orangish brown and light grey sandy silty CLAY	25	100	43	20	23								
 2519					Test Methods: BS1377: Part 2: 1990: Natural Moisture Content : clause 3.2 Atterberg Limits: clause 4.3, 4.4 and 5.0 These results only apply to the items tested NOTE: The report shall not be reproduced except in full without authority of the laboratory						Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU Tel: 01923 711 288 Email: James@k4soils.com						Checked and Approved Initials J.P Date: 04/01/2023	
					Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)						MSF-5-R1							

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Date:	04/01/2023