



*Photo 45: Trees and vegetation adjacent to the rear elevation of the property*



*Photo 46: Trees and vegetation adjacent to the right hand side elevation of the property*



*Photo 47: Conifer adjacent to the front right hand corner of the front projection*



*Photo 48: Cracking and movement to the boundary wall to the left hand side of the property*





*Photo 49: Cracking and movement to the boundary wall to the left hand side of the property. Damage at location of Cherry tree*



*Photo 50: Cracking and movement to the boundary wall to the left hand side of the property. Damage at location of Cherry tree*



*Photo 51: Cracking and movement to the boundary wall to the left-hand side of the property. Damage at location of Cherry tree*



*Photo 52: Cracking and movement to the boundary wall to the left-hand side of the property. Damage at location of Cherry tree*





*Photo 53: Isolated diagonal crack above the South side of the window to the side elevation of the Front Bedroom*



*Photo 54: Isolated diagonal crack above the East side of the window to the front elevation of the Front Bedroom*



*Photo 55: Crack at high level to the East side of the window to the front elevation of the Front Bedroom*



*Photo 56: Cracking at high level to the West side wall of the Front Bedroom*



*Photo 57: Stressing to the wallpaper at the junction between the Rear Bedroom wall and the external wall within the Middle Bedroom*



*Photo 58: Cracking to the ceiling above the Entrance*



*Photo 59: Cracking to the Entrance Hall ceiling*



*Photo 60: Cracking to the Bathroom ceiling*





*Photo 61: Cracking to the Bathroom ceiling*



*Photo 62: Cracking to the Front Reception Room ceiling*



*Photo 63: Cracking to the Front Reception Room ceiling*



*Photo 64: Cracking to the Rear Reception Room ceiling*



*Photo 65: Cracking to the Rear Reception Room ceiling*



*Photo 66: Cracking to the Rear Reception Room ceiling*



*Photo 67: Opening within the wall which separates the Reception Rooms*



*Photo 68: Tapered vertical crack to the reveal to the side of the opening within the wall which separates the Reception Rooms*





*Photo 69: Damp staining to the ceiling*



*Photo 70: Damp staining to the external walls*



*Photo 71: Damp staining to the ceiling*



*Photo 72: Damp staining at low level to the external walls*



*Photo 73: Cracking to the Kitchen ceiling within the extension*



*Photo 74: Cracking to the Kitchen ceiling within the extension*



*Photo 75: Cracking to the Kitchen ceiling within the extension*



*Photo 76: Stepped crack above the back door to the Kitchen*

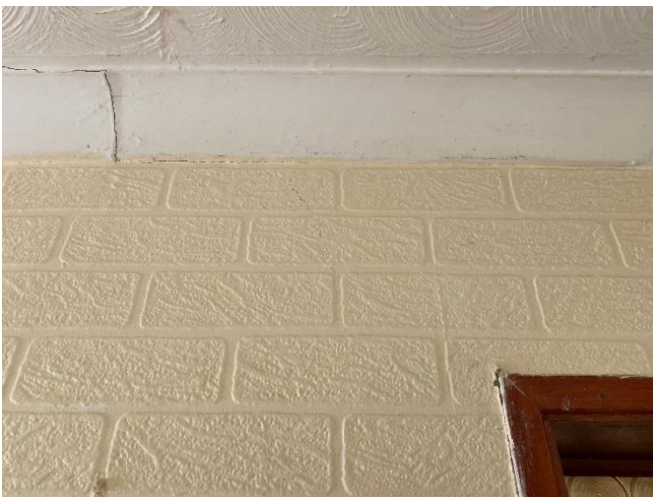




*Photo 77: Stepped crack above the back door to the Kitchen*



*Photo 78: Movement to the external wall to the side of the back door to the Kitchen*



*Photo 79: Hairline crack at high level to the rear external elevation of the main property within the Kitchen*



*Photo 80: Hairline crack at high level to the rear external elevation of the main property within the Kitchen*



*Photo 81: Gap between the underside of the skirting board to the rear external wall and the Kitchen floor below*



*Photo 82: Gap between the top of the worktops and the wall tiles above to the rear external wall of the Kitchen*



*Photo 83: Cracking between the ceiling and the coving to the external walls within the Shower Room to the extension*



*Photo 84: Cracking above the Kitchen door within the Shower Room*





*Photo 85: Roof space above the main property*



*Photo 86: Roof space above the main property*



*Photo 87: Roof space above the main property*



*Photo 88: Roof space above the main property*



*Photo 89: Deflection of supporting purlin to the rear roof slope*



*Photo 90: Raking struts to the East side of the roof space are not opposite or acting against each other*



*Photo 91: The ceiling joists are not fixed together where they were spliced over the central spine wall*



*Photo 92: Limited safe access due to the presence of insulation*





**APPENDIX B**  
**CK CONSULTING AND GEOTECHNICAL LIMITED**  
**GEOTECHNICAL REPORT ON GROUND CONDITIONS**  
**NOVEMBER 2022**

**GEOTECHNICAL REPORT ON  
GROUND INVESTIGATION**

**15 GORDON CLOSE, SANDOWN**

**FOR**

**FRANKHAM CONSULTANCY GROUP LTD**



## CONTENTS

## PAGE No.

Approval & Distribution Sheet	i
Foreword	ii
1. INTRODUCTION	1
2. SITE SETTINGS	2-3
3. GROUND INVESTIGATION	4-6
4. LABORATORY TESTING	7
5. DISCUSSION AND RECOMMENDATIONS	8-11

## FIGURES

Figure 1	Site Location Plan
Figure 2	Approximate Exploratory Hole Location Plan

## APPENDICES

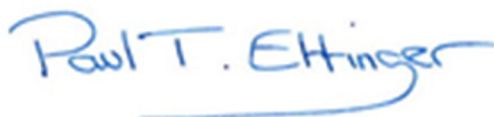
APPENDIX A	Fieldwork
APPENDIX B	Laboratory Testing

## APPROVAL & DISTRIBUTION SHEET

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CK LEAD NO.	GI-5
JOB NAME	15 Gordon Close, Sandown
CLIENT	Frankham Consultancy Group Ltd
STATUS	Final
VERSION	V0

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## FOREWORD

This document has been prepared by CK Consulting and Geotechnical Limited with all reasonable skill, care and diligence within the terms of the contract with the Client and within the limitations of the resources devoted to it by agreement with the Client.

This document is confidential to the Client and CK Consulting and Geotechnical Limited accepts no responsibility whatsoever to third parties to whom this document, or any part thereof, is made known. Any such party relies upon the document at their own risk.

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## 1. INTRODUCTION

This interpretative report has been prepared on the instruction from Frankham Consultancy Group Ltd, purchase order reference 62248, dated 22<sup>nd</sup> September 2022.

The subject site is located at 15 Gordon Close, Sandown, Isle of Wight and comprises a detached bungalow with garden areas to the north and south of the property. The building has undergone movement causing cracking of external and internal walls, over the entire property, of varying magnitude. A ground investigation was requested by the appointed consultant engineer, Frankham Consultancy Group Ltd, to provide information on the ground conditions underlying the site, existing foundation type and likely cause(s) of building movement.

The agreed fieldwork comprised three hand augered boreholes to a maximum depth of 3.5m below ground level and two hand dug foundation pits undertaken in October 2022. This report is based upon the above fieldwork and subsequent geotechnical laboratory testing programme.

Attention is drawn to the fact that whilst every effort has been made to ensure the accuracy of the data supplied and any analysis derived from it, there is a potential for variations in ground and groundwater conditions between and beyond the specific locations investigated. No liability can be accepted for any such variations. Furthermore, any recommendations are specific to the client's requirements as detailed herein and no liability will be accepted should these be used by third parties without prior consultation with CK Consulting and Geotechnical Limited.



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## 2. SITE SETTINGS

The subject site is located at 15 Gordon Close, Sandown, which is centred at the approximate National Grid Reference SZ596847 as shown on Figure 1.

At the time of the investigation the site comprised a detached three-bedroom bungalow with the appearance of an extension to the north east of the property. The building occupies an L-shaped "footprint" with a garden areas to the north and south. To the west of the property is a concrete hardstanding area suggesting the previous presence of a garage. The garden area contains a mix of soft landscaping and concrete paving surfacing including a concrete drive to the front of the property. The area around the property is essentially level except towards the northern of the subject site, where the ground begins to slope downwards as it approaches the crest of a railway cutting that is located beyond the site's northern boundary.

To the east and west of the subject site are residential properties with the turning circle of Gordon Close forming the southern boundary.

There are several mature trees located on and adjacent to the property. There are mature sycamore, eucalyptus, possible sweet chestnut as well as several large bushes and other trees of various age and size.

Reference to the publications of the British Geological Survey indicates that the site is underlain by the deposits of Vectis Formation, which typically comprises dark grey siltstone and mudstone with subordinate beds of sandstone, shelly limestone, clay ironstone and ironstone. This stratum is commonly described as thinly-bedded mudstone ("shale" or "paper shale"). Close to ground level, the siltstone and mudstone horizons will weather to horizons of clay and/or silt.

To the north and east of the site are superficial deposits of Alluvium that typically comprise a series of clay, silt, sand and gravel strata with horizons of peat.

Three boreholes are recorded at 17 Gordon Close located to the west of the subject site. The deepest is located to the front of this property and dates from 1991. There is no indication on the BGS website as to the reason for this exploratory however it should be noted that two other boreholes, progressively closer to the railway butting located to the north, were dated only three years earlier, with the shallowest being located on Network Rail (British Rail at the time) land.

It is also of significance that the subject site had four boreholes constructed within the rear garden. One was installed with a standpipe, whilst inclinometer pipes were within the other three. Each installation is understood to be about 10m deep however this could not be confirmed during the course of the fieldwork.

---

The standpipe would have been used for monitoring groundwater levels, if present. The inclinometer pipes would have been installed for the purpose of measuring slope movement.

The concrete hardstanding that appeared to be the base of the former garage had a large transitional crack that was essentially parallel to the crest of the cutting slope. Distortions were also noted in the paved areas to the immediate north of the bungalow and outside the kitchen door. There was also a large crack over the kitchen door as you enter the garden. The shape of the crack pattern would suggest downward movement towards the crest of the cutting slope that leads down to the railway line that is about 5m to 8m below site level.

An opportunity was taken to view the cutting slope from a public footbridge that crosses the railway line about 10m to 20m to the east of the subject site. It was not possible to view the topography of the slope as it was covered with vegetation however on the opposite cutting slope, the outcrop of mudstone and possible sandstone could be clearly seen.

Where mudstone weather to clay, these strata typically exhibits medium to high volume change potential and high plasticity. As a result significant volume changes occur with variations in the natural moisture content. These volume changes may affect foundations and cause structural damage to buildings with footings within the affected zone. Such changes can occur due to climatic and seasonal variations and, more significantly, as a result of the growth and removal of trees and shrubs. Seasonal moisture content variations are likely to occur within the top 1m to 1.5m of the subsoil, whilst trees may abstract moisture to depth of 4m to 5m or more. As a tree grows it abstracts moisture from the ground and as a result subsidence of the ground surface may occur. If the tree is removed, or dies, the ground will swell causing heave of the ground surface. Both subsidence and heave can cause significant damage to structures with inappropriate foundations.

The ground investigation ascertained that the site was underlain by deposits of the Weathered Vectis Formation. Possible Alluvium was encountered to the rear of the property. These geological sequence were mantled by Made Ground to a maximum depth of 0.9m below ground level in WS02.

### 3. GROUND INVESTIGATION

The agreed fieldwork comprised three boreholes to a maximum depth of 3.5m and two hand dug foundation pits that were undertaken on the 12<sup>th</sup> October 2022.

The exploratory hole WS01/TP01 were located to the front of the property, whilst WS02/TP02 were positioned within the rear garden and against the wall with the kitchen window. WS03 was located carried out internally and within the kitchen.

Details of the ground conditions encountered in the borehole and trial pits are presented on the engineer's logs in Appendix A, as Figures A1 to A5. Reference should be made to these logs for detailed descriptions of the strata penetrated and the results of any in situ tests carried out. A summary only of the ground conditions encountered in the boreholes is presented below.

#### Front Elevation

WS01 was located along the southern wall of what has been designated as Bedroom 1. Below concrete hardstanding, Made Ground was encountered to 0.46m below ground level and comprised a sandy, gravelly CLAY, with the gravel comprising flint, brick and concrete. Allow cobble content of brick was also observed within this stratum.

Below the Made Ground, a series of weathered horizons of the Vectis Formation were encountered as typically CLAY with notable colour changes and a varying quantity of possible lignite of clay ironstone gravel. The Vectis Formation deposits were encountered to the base of the borehole at 3.5m below ground level.

#### Rear Elevation

WS02 was positioned within the flowerbed located under the kitchen window and below the vegetation Made Ground was encountered to a depth of 0.9m below ground level. The Made Ground was initially encountered as a firm, sandy, gravelly CLAY however with depth the nature of this material changed to a soft consistency. The quantity and nature of the gravel changed with depth, but typically comprised flint, brick wood and metal. Cobbles of brick and wood were observed within the Made Ground from 0.3m to 0.9m below ground level.

Below the Made Ground, soft to firm, greyish brown, bluish grey and brown CLAY was encountered and proved to 1.4m below ground level. This stratum has been tentatively described as Alluvium due to its colour, consistency and by cross referencing this stratum with that encountered in WS03, described below.



Weathered strata of the Vectis Formation were encountered below the possible Alluvium, with this material having a similar appearance to that observed in WS01 located to the front of the property.

From 2.6m to 3.1m below ground level in WS02, the stratum had the appearance of the Vectis Formation however the structure, change in consistency as well as the rapid reduction in directly recorded shear strength using the hand vane would suggest that this could be zone of possible soliflucted material that is typically related to the gradual movement of wet soil or other material down a slope and could be evidential of a slip zone.

## **Kitchen**

Within the kitchen area an area was cored through a sand screed and concrete (total depth 200mm) with Made Ground encountered from 0.2m to 0.6m below ground level. This material comprised firm, sandy, gravelly CLAY with the gravel observed as being flint and brick.

Beneath the Made Ground, very soft, grey with occasional brown and black streaks, sandy, locally silty CLAY was encountered. An organic odour was also recorded throughout this stratum, which has been tentatively described as Alluvium. The similarities in colour between this material and that observed in WS02 from 0.9m to 1.4m below ground level, suggest that an undefined area under the property's footprint is mantled by possible Alluvium.

Stiff, brown mottled grey deposits of the Vectis Formation were encountered below the Alluvium, and proved to the base of the borehole at 2m below ground level.

## **Foundations**

Details of the observed foundations in trial pits TP01 and TP02 are presented in the trial pit cross-section drawings in Appendix A. Reference should be made to these figures for detailed layout and measurements of existing foundations in the two trial pit locations.

TP01 established that the foundations supporting the front brick elevation, near the room designated as Bedroom 1, comprised 240mm of concrete. The foundations were proved to be bearing within the Weathered Vectis Formation at a depth of 0.46m below ground level.

TP02 established that the kitchen extension comprised concrete blocks placed upon a 280mm thick concrete foundation that was proved to be bearing with Made Ground at a depth of 0.88m below ground level.

## Drains

Several of the inspection covers were lifted during the course of the fieldwork, initially as a means to determine the depth of direction of the foul and surface drains but also to assess the observable condition of the manholes.

It could be seen that the foul/surface water drain from the bathroom (MH01) went under the kitchen extension at a relatively shallow depth. Close to the north east corner of the property and the shower room, was another cover (MH02) that confirmed the shallow depth of the drains, which might explain the “elevated” level of the shower cubicle inside the bungalow, as this would be the only way to achieve any “fall” and allow the water to drain. This manhole was also noted to be in a poor state of repair. A third cover (MH03) was lifted at the south east corner of the property. Water was poured from MH02 to MH03 however little of the water was observed in the latter manhole suggesting that the drain run may also be in a poor state of repair.

## General

Roots and rootlets were observed in each exploratory hole to depths of 3.2m (WS01), 2.9m (WS02) and 1.8m (WS03) below ground level.

WS01 remained dry whilst open however groundwater was encountered in WS02 at 0.8m, rising to 0.54m below ground level upon completion. Groundwater was not encountered during the construction of WS03 however the borehole was left open overnight and in the morning, water was measured at 1.33m below ground level. WS01 encountered predominantly cohesive soils and therefore it is likely that the permeability of the soils to the front of the property is lower than those soils to the rear. Where groundwater was encountered in WS02 and WS03, the groundwater levels may not have attained an equilibrium level due to the relatively short period of time the exploratory hole remained open. It should be noted that groundwater levels may vary both seasonally and in the long term.

## 4. LABORATORY TESTING

The following geotechnical laboratory testing programme was carried out to provide further information on the engineering properties of the subsoil. Unless stated otherwise, these tests were carried out in accordance with BS 1377 "Methods of Test for Soils for Civil Engineering Purposes".

No.	Test	UKAS Accreditation
11	Moisture content determination	CK Supplier
8	Atterberg Limits	CK Supplier



## 5. DISCUSSION AND RECOMMENDATIONS

### GENERAL

The subject site is located at 15 Gordon Close, Sandown, Isle of Wight and comprises a detached bungalow with garden areas to the north and south of the property. The building has undergone movement causing cracking of external and internal walls, over the entire property, of varying magnitude. A ground investigation was requested by the appointed consultant engineer, Frankham Consultancy Group Ltd, to provide information on the ground conditions underlying the site, existing foundation type and likely cause(s) of building movement.

A ground investigation was requested by the client to provide information on the ground conditions underlying the site, existing foundation type and likely cause of building movement.

The fieldwork comprised three boreholes up to a depth of 3.5m below ground level and two hand dug foundation pits. The investigation established the site was underlain by Made Ground over the Weathered Vectis Formation. Possible deposits of Alluvium were encountered in WS02 and WS03, located to the rear of the property and in the kitchen, respectively. In addition, possible soliflucted material, suggesting the presence of a slip surface, was also encountered in WS02 from 2.6m to 3.1m below ground level.

WS01 remained dry whilst open however groundwater was encountered in WS02 and WS03 at the depths indicated on the engineer's logs enclosed within Appendix A of this report. Notwithstanding the above, the comments made in Section 3 of this report should be borne in mind.

Atterberg Limit tests carried out on the cohesive samples recovered from the possible Alluvium and the underlying Weathered Vectis Formation, including the soliflucted zone in WS02, indicate that these strata generally have a medium volume change potential as defined in the National House Building Council (NHBC) Standards Chapter 4.2 "Building near trees". It should be noted that in WS01, where the roots were encountered to 3.2m below ground level, the clay at this depth had a high volume change potential. Whether it is a medium or high volume change potential, these soils would be expected to exhibit changes in volume in response to variations in natural moisture content. Based on the plasticity index and liquid limit laboratory determinations and with reference to BS5930, the Weathered Vectis Formation typically has a high plasticity carrying the designation CH.

Roots and rootlets were observed in each exploratory borehole to depths of 3.2m (WS01), 2.9m (WS02) and 1.8m (WS03) below ground level.

---

## DISCUSSION

### *Desiccation*

There are numerous methods for assessing the depths to which the ground has been affected by seasonal drying and abstraction of moisture by tree roots. Due to the potential for inaccuracies, a variety of techniques are employed to estimate the depth of desiccation, including moisture content versus depth profiles, comparison of moisture contents with Atterberg Limits, dial gauge penetrometer readings versus depth profiles (included in Appendix A) and depths of root penetration.

With regard to the subject site, comparison of the plastic limit test results and moisture content are inconclusive for WS02 however the samples recovered from WS01 would suggest that the soils encountered in this exploratory hole are desiccated to about 3m below ground level.

At equilibrium moisture content, clay soils exhibit a roughly linear increase in strength with depth. As a clay soil becomes desiccated the strength of the soil increases above that at the equilibrium moisture content. A crude approximation of strength can be determined with the dial gauge penetrometer. Penetrometer profiles for each of the boreholes are included in Appendix A.

The pocket penetrometer readings taken from WS01 substantiate that desiccation is present to depths of at least 3m below ground level to the front of the property. Reference to the data from WS02 would suggest that the clayey Vectis Formation strata are desiccated to about 2.5m below ground level.

In light of the above and the observed depth of root penetration into a clayey stratum with a typically medium volume change potential, desiccation should be assumed to be present to at least the observed depth of root penetration.

### *Foundations*

The brick and concrete foundations forming the southern part of the property would appear to bear within the clayey Vectis Formation strata that have been impacted by changes in seasonal moisture content as well as variations in moisture uptake by nearby trees, bushes, etc.

To the rear, TP02 established that the foundations to the kitchen extension may be locally bearing within the Made Ground. This material would not be normally recommended as a bearing stratum due to this material's unpredictable settlement and strength characteristics and the inherent risk of collapse settlement. In addition, It is possible that the stability of the Made Ground may be impacted by a change in loading, vibration or

inundation of water. Any of these events or a combination may result in possible bearing failure, which would lead to ground movement and subsequent structural damage.

WS03 confirmed that the kitchen floor comprised about 100mm of sand screed over about 100mm of concrete. There was no evidence to suggest that the latter had been reinforced therefore any ground movement could not be “accommodated” without causing damage to the floor.

### *Slope Stability*

Evidence would suggest that slope stability has been a concern in the past, as implied by the presence of the inclinometer pipe and groundwater monitoring installations within the rear garden.

The cutting slope that leads down from the rear garden to 15 Gordon Close towards the railway line at the toe of the earth structure could not be readily inspected due to the lack of access to the lineside property and the heavily vegetated slope surface. However, there is evidence that movement has taken place and may be ongoing: -

- The cracks in the concrete floor that was the base of the former garage located to the west of the property are orientated parallel to the crest of the slope and this crack pattern is mimicked in the undulating paving slabs located outside the kitchen door;
- The crack pattern of the lintel above the kitchen would suggest significant clockwise rotational movement. This may be the failure of foundations to the northern flank wall, which appear to locally bear within Made Ground, but also may be as a result of a landslip as suggested by the presence of possible soliflucted material in WS02 from 2.6m to 3.1m below ground level; and
- The trees located on the cutting slope do not appear to have straight growth with the angle of some trees suggesting possible “downslope” movement.

### *Remediation*

At this stage it is not possible to provide definitive advice within regards to the remediation of the property as the structural damage, especially to the north and rear of the bungalow, may be due to several contributing factors or failure mechanisms impacting each other resulting in consequential damage.

To the front of the property, the foundations bear within soils impacted by desiccation that would appear to extend to depths of at least 3m below ground level. The method of remediation would initially suggest that the bungalow needs to be underpinned such that the foundations bear within a competent stratum and below the level of desiccation. With reference to field observations the depth of underpinning may have to extend



below the depth of possible desiccation and root penetration, which could be to depths in excess of 3.2m below ground level.

It is unlikely that “mass concrete” underpinning will be either practical or economical therefore consideration should be given to the underpinning scheme adopting a pile foundation solution. Additional fieldwork in the form of a deeper cable percussion borehole would have to be undertaken should pile foundations be adopted and additional laboratory testing undertaken to provide suitable design parameters.

The design of the remedial scheme must ensure that there is no increase in load during the temporary or permanent state. In light of this, it is recommended that remedial design is delayed until such time that a greater understanding as to the stability of the cutting slope is acquired. Even if the bungalow is fully underpinned to a depth below the zone of desiccation and any possible soliflucted material, the risk remains that future slope failure may result in the collapse of the garden area and subsequent loss of lateral support to any remedial scheme.

In light of the above, it is possible that the remedial design for the bungalow will have to incorporate a slope stability assessment and some form of scheme to prevent further movement.

There were a number of cracks observed in the manholes and water poured down MH02 did not reach the next chamber, MH03, in any quantity suggesting that the drain runs are also damaged. The drains are also constructed at a very shallow depth and are vulnerable to ground movements. It is likely that the drainage system around the property will have to be redesigned and the existing drains replaced and chambers rebuilt.

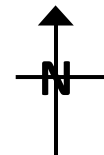
It should be noted that the Made Ground was observed to be stable in both the exploratory hole and trial pits and as such only nominal support is likely to be required to maintain the stability of the excavations in the short term. Where personnel are required to enter excavations or if excavations are required to remain open for any significant length of time any temporary support must be sufficient to provide a safe environment and to maintain the stability of the excavation.

Groundwater was encountered at relatively shallow depths within WS02 and WS03. On this basis it is likely that shallow excavations would be subject to groundwater ingress and groundwater control measures should be assessed in relation to the conditions encountered at the time of excavation/construction.

**FIGURES**



**THE SITE**

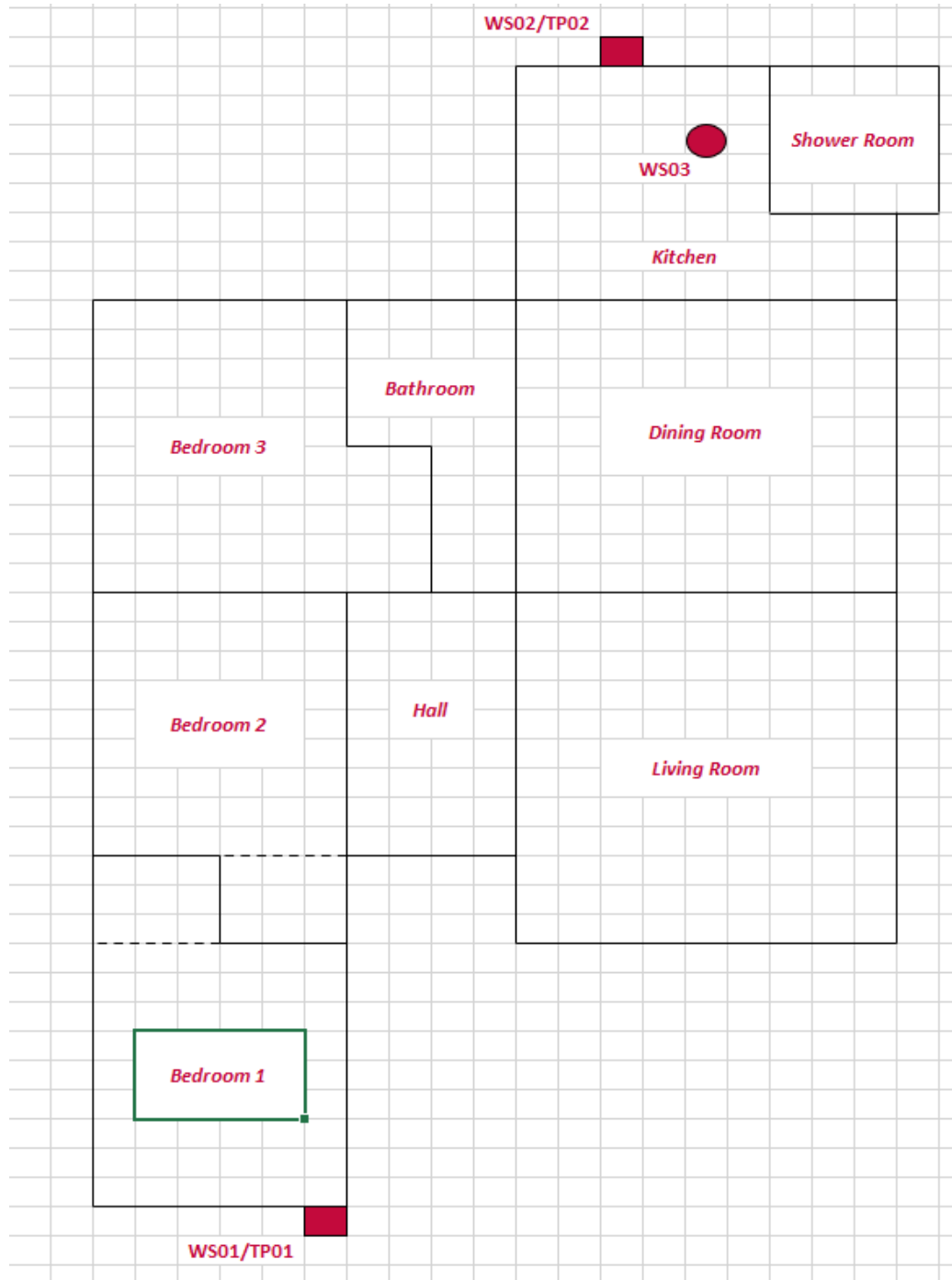


**Site Location Plan**

Scale: NTS

**FIGURE 1**





**Approximate Exploratory Hole Location Plan**

Scale: NTS

**FIGURE 2**

## APPENDIX A

Fieldwork

## KEY TO BOREHOLE AND TRIAL PIT LOGS








### Samples

D	Small disturbed sample
U	Undisturbed sample or thin-walled sample, 100mm nominal diameter
L	Liner sample
B	Bulk disturbed samples (bar indicates sample range)
U38	Hand driven 'undisturbed' sample, 38mm nominal diameter
P	Undisturbed piston sample (bar indicates sample range)
C	Core sample
W	Water sample
ICBR	In-situ California Bearing Ratio sample
*	Sample not recovered
ES	Environmental Sample that may include tub, jar and/or vial










### Tests

S	Standard penetration test
C	Cone penetration tests
N =	SPT/CPT 'N' Value (number of blows for 300mm full penetration)
80/150	Number of blows/total penetration(mm) for SPT/CPT test
25/25SP	As above for seating drive only
*	N value obtained over 450mm penetration
U =	Blows to achieve 450mm penetration for a U or UT sample
V <sub>h</sub> =	In-situ hand vane test in kN/m <sup>2</sup>
m =	In-situ CBR test by Mexe probe
V =	In-situ field vane test in kN/m <sup>2</sup>
ppm =	Parts per million of flammable gas as methane equivalents (FID or PID)
pp =	Pocket Penetrometer in kg/cm <sup>2</sup>

### Observations, Backfill and Installations



	Water strike – depth shown in metres below ground level.	
	Gravel backfill	 Bentonite backfill
	Arisings backfill	 Concrete
	Plain Pipe	 Slotted Pipe


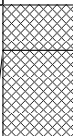



Client: <b>Frankham Consultancy Group Limited</b>				Hole Diameter (mm): 75mm to 3.5m			BOREHOLE NUMBER <b>WS01</b> Sheet 1 of 1		
Method: Hand Augering				Ground Level (m AOD)		Ref. No: <b>GI-5</b>			
Date Started: 12/10/2022		Co-ordinates							
Backfill/Well		Water	Samples		In Situ Tests	Reduced Level (mAOD)	Depth & (Thickness) (m)	Description of Strata	Legend
Depth (m)	Legend	Depth (m)	Depth (m)	Type	Results				
0.12							(0.12)	Concrete.	
			0.60	D			0.12 (0.34)	Firm, brown, slightly fine to coarse sandy, slightly gravelly CLAY. Gravel is angular to sub-rounded, fine to coarse flint, brick and concrete. Low cobble content of sub-angular brick.	
			1.00	D	pp = 2.1 Vh = 78.0 pp = 2.6		0.46 (0.74)	(Made Ground)	
			1.50	D	pp = 2.8 Vh = 108.0 pp = 3.3		1.20	Stiff, brown mottled grey CLAY. Occasional sub-angular, fine gravel of possible lignite or clay ironstone.	
			2.00	D	pp = 3.8 Vh = 112.0 pp = 3.6		(1.70)	(Weathered Vectis Formation)	
			2.50	D	pp = 3.4 Vh = 112.0 pp = 3.5		2.90	Very stiff, brown, orange brown and grey CLAY. Occasional sub-angular, fine and medium gravel of clay ironstone. Occasional dark reddish brown staining.	
			3.00	D	pp = 3.8 Vh = 118.0 pp = 3.2		(0.60)	(Weathered Vectis Formation)	
3.50			3.50	D	pp = 3.0 Vh = 105.0		3.50	Very stiff, dark brown mottled brown and grey CLAY.	
								(Weathered Vectis Formation)	
								End of Borehole at 3.50m	

General Remarks:



- Borehole remained dry and stable whilst open.
- Roots and rootlets observed to 3.2m below ground level.











Driller:	DI	BOREHOLE RECORD Scale 1:50 <small>See Key Sheet for explanation of symbols, etc.</small>	<b>CKConsulting and Geotechnical</b>
Logged:	PTE		
Checked:		<b>15 Gordon Close</b>	<b>FIG A1</b>
Appr'd:			

Client: <b>Frankham Consultancy Group Limited</b>				Hole Diameter (mm): 75mm to 3.1m			BOREHOLE NUMBER <b>WS02</b> Sheet 1 of 1		
Method: Hand Augering									
Date Started: 12/10/2022		Co-ordinates		Ground Level (m AOD)		Ref. No: <b>GI-5</b>			
Backfill/Well		Water	Samples		In Situ Tests	Reduced Level (m AOD)	Depth & (Thickness) (m)	Description of Strata	Legend
Depth (m)	Legend	Depth (m)	Depth (m)	Type	Results				
3.10		0.54 0.80	1.00 1.50 2.00 2.50 3.00	D D D D D	pp = 0.9 Vh = 32.0 pp = 1.4 pp = 2.1 Vh = 68.0 pp = 2.9 pp = 3.5 Vh = 110.0 pp = 3.6 pp = 3.5 Vh = 104.0 pp = 2.8 pp = 2.3 Vh = 40.0		(0.30) 0.30 (0.60) 0.90 (0.50) 1.40 (1.20) 2.60 (0.50) 3.10	Vegetation over firm, dark brown, slightly fine to coarse sandy, slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse flint and brick. (Made Ground) Soft, brownish grey, orange brown and dark brown, slightly fine to coarse, slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse, flint, brick, wood and metal. Low cobble content of angular concrete and wood. (Made Ground) Soft to firm, greyish brown, bluish grey and brown CLAY. (Alluvium?) Stiff to very stiff, brown mottled grey CLAY. Occasional sub-angular, fine gravel of clay ironstone. (Weathered Vectis Formation) Firm, brown and dark orange brown, slightly fine sandy, slightly gravelly CLAY. Gravel is angular and sub-angular, fine and medium mudstone. (Possible Soliflucted Material)	 
End of Borehole at 3.10m									

General Remarks:

1. Groundwater encountered at 0.8m, rising to 0.54m below ground level upon completion.
2. Roots and rootlets observed to 2.9m below ground level.
3. Borehole remained stable whilst open.

Driller:	DI	BOREHOLE RECORD Scale 1:50 <small>See Key Sheet for explanation of symbols, etc.</small>	<b>CKConsulting and Geotechnical</b>
Logged:	PTE		
Checked:		<b>15 Gordon Close</b>	<b>FIG A2</b>
Appr'd:			

Client: <b>Frankham Consultancy Group Limited</b>				Hole Diameter (mm): 75mm to 2m			BOREHOLE NUMBER <b>WS03</b> Sheet 1 of 1		
Method: Hand Augering									
Date Started: 12/10/2022		Co-ordinates		Ground Level (m AOD)		Ref. No: <b>GI-5</b>			
Backfill/Well		Water	Samples		In Situ Tests	Reduced Level (mAOD)	Depth & Thickness (m)	Description of Strata	Legend
Depth (m)	Legend	Depth (m)	Depth (m)	Type	Results				
0.20							(0.10)	Carpet tile over sand screed.	
							0.10	Concrete - no reinforcement observed in core sample.	
							(0.10)		
							0.20		
							(0.40)	Firm, brown and grey, slightly fine sandy, slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse flint and brick.	
							0.60		
							(1.00)	(Made Ground)	
							1.60	Very soft, grey with occasional brown and black streaks, slightly fine sandy, locally silty CLAY. Slight organic odour noted.	
2.00							(0.40)	(Alluvium?)	
							2.00	Stiff, brown mottled grey CLAY. (Weathered Vectis Formation)	
								End of Borehole at 2.00m	

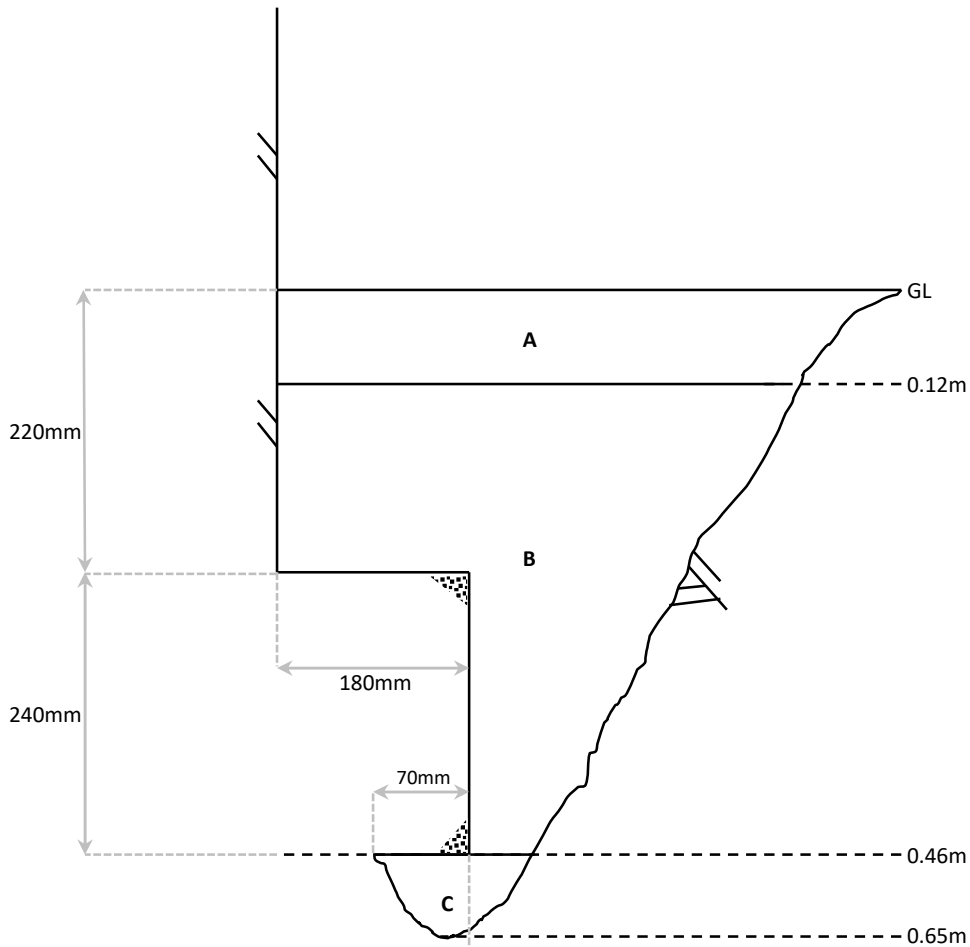
General Remarks:

- Borehole noted to have collapsed to 1.43m below ground level prior to backfilling.
- Groundwater was measured at 1.33m below ground level upon completion.
- Roots and rootlets observed to 1.8m below ground level.

Driller:	DI	BOREHOLE RECORD Scale 1:50 <small>See Key Sheet for explanation of symbols, etc.</small>	<b>CKConsulting and Geotechnical</b>
Logged:	PTE		
Checked:		<b>15 Gordon Close</b>	<b>FIG A3</b>
Appr'd:			



Lead No:	GI-5	Scale:	N.T.S	Date:	Drawn by:	Checked:	Approved:
Project:	15 Gordon Close, Sandown, IOW			12/10/2022	PTE	PTE	PTE



**Ground Conditions**

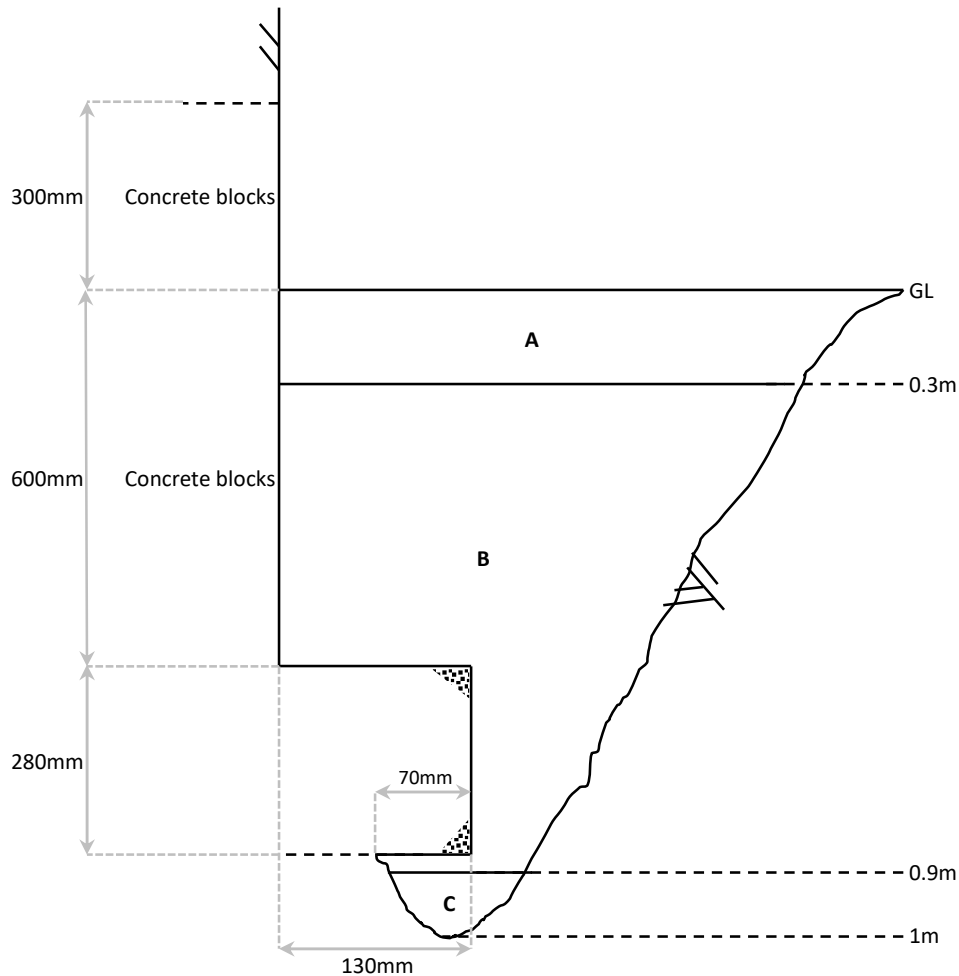
- A Concrete.
- B Firm, brown, slightly fine to coarse sandy, slightly gravelly CLAY. Gravel is angular to sub-rounded, fine to coarse flint, brick and concrete. Low cobble content of sub-angular brick. (Made Ground)
- C Stiff, brown mottled grey CLAY. Occasional sub-angular, fine gravel of possible lignite or clay ironstone. (Weathered Vectis Formation)

**Notes:**

- 1 Trial pit remained dry and stable whilst open.
- 2 Roots and rootlets observed to base of excavation.

<b>FIG</b>	<b>TP01</b>	<b>CKConsulting and Geotechnical</b>
<b>A4</b>		

Lead No:	GI-5	Scale:	N.T.S	Date:	Drawn by:	Checked:	Approved:
Project:	15 Gordon Close, Sandown, IOW			12/10/2022	PTE	PTE	PTE



#### Ground Conditions

- A** Firm, dark brown, slightly fine to coarse sandy, slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse flint and occasional brick. (Made Ground)
- B** Soft, brownish grey, orange brown and dark brown, slightly fine to coarse sandy, slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse, flint, brick, wood and metal. Low cobble content of angular concrete and wood. (Made Ground)
- C** Soft to firm, greyish brown, bluish grey and brown CLAY. (Alluvium?)

#### Notes:

- 1 Groundwater encountered at 0.8m, rising to 0.54m below ground level upon completion.
- 2 Trial pit noted to be stable whilst open.
- 3 Roots and rootlets observed to base of excavation.

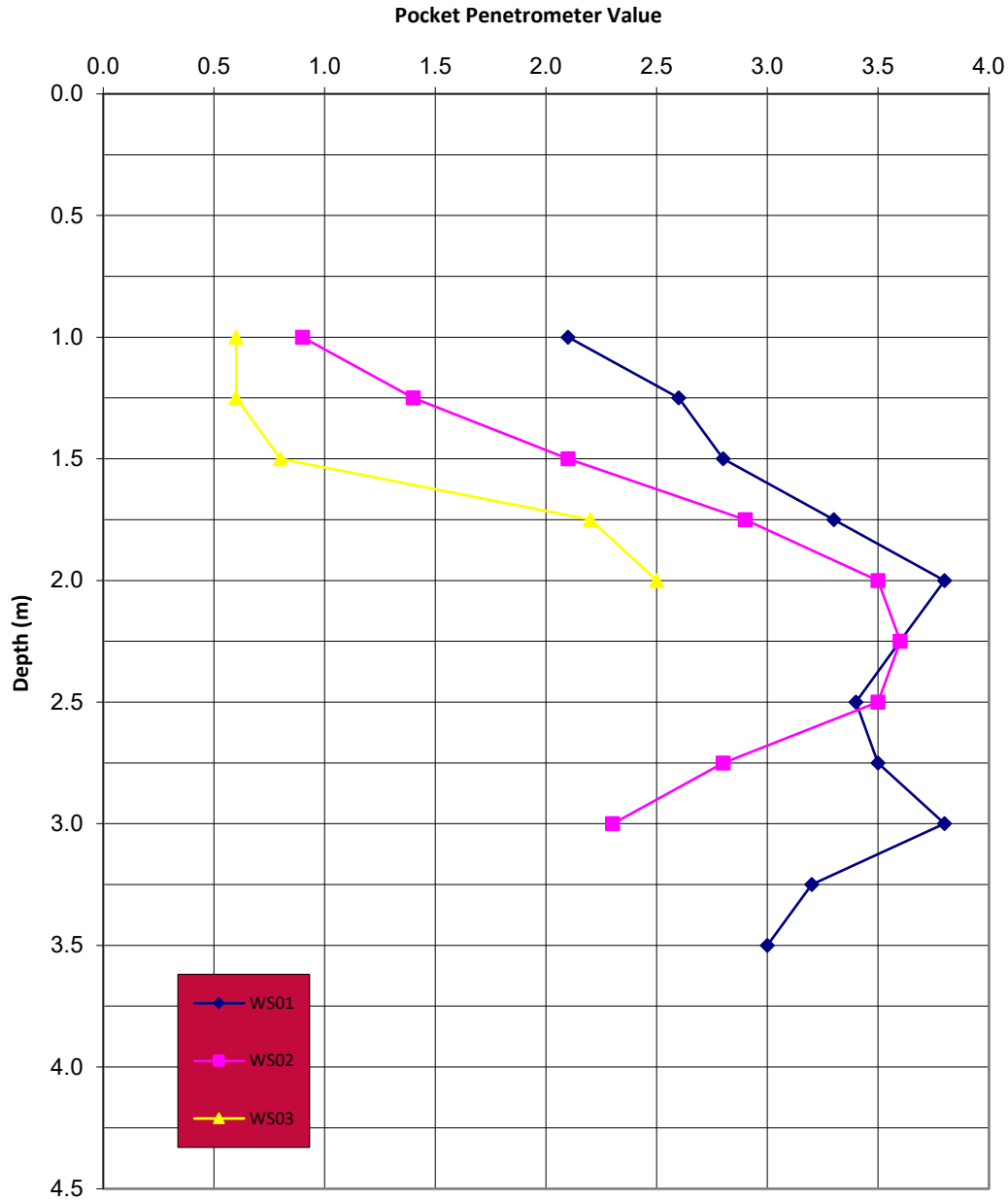
FIG

TP02

A5

**CK**Consulting  
and Geotechnical

Lead No.:	GI-5	Scale:	N.T.S	Date	Drawn by	Checked	Approved
Site:	15 Gordon Close, Sandown			12/10/222	AG	PTE	PTE



**POCKET PENETROMETER PROFILE**

**CKConsulting  
and Geotechnical**

## APPENDIX B

Laboratory Testing





# TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS  
Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

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



Environmental Science

4041

Client: CK Rail Solutions Ltd  
Client Address: McGregors Way, Turnoakes Business Park,  
Chesterfield, Derbyshire,  
S40 2WB  
Contact: Paul Ettinger  
Site Address: 15 Gordon Close

Client Reference: GI-5  
Job Number: 22-91168  
Date Sampled: 19/10/2022  
Date Received: 19/10/2022  
Date Tested: 25/10/2022  
Sampled By: Client - PTE

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

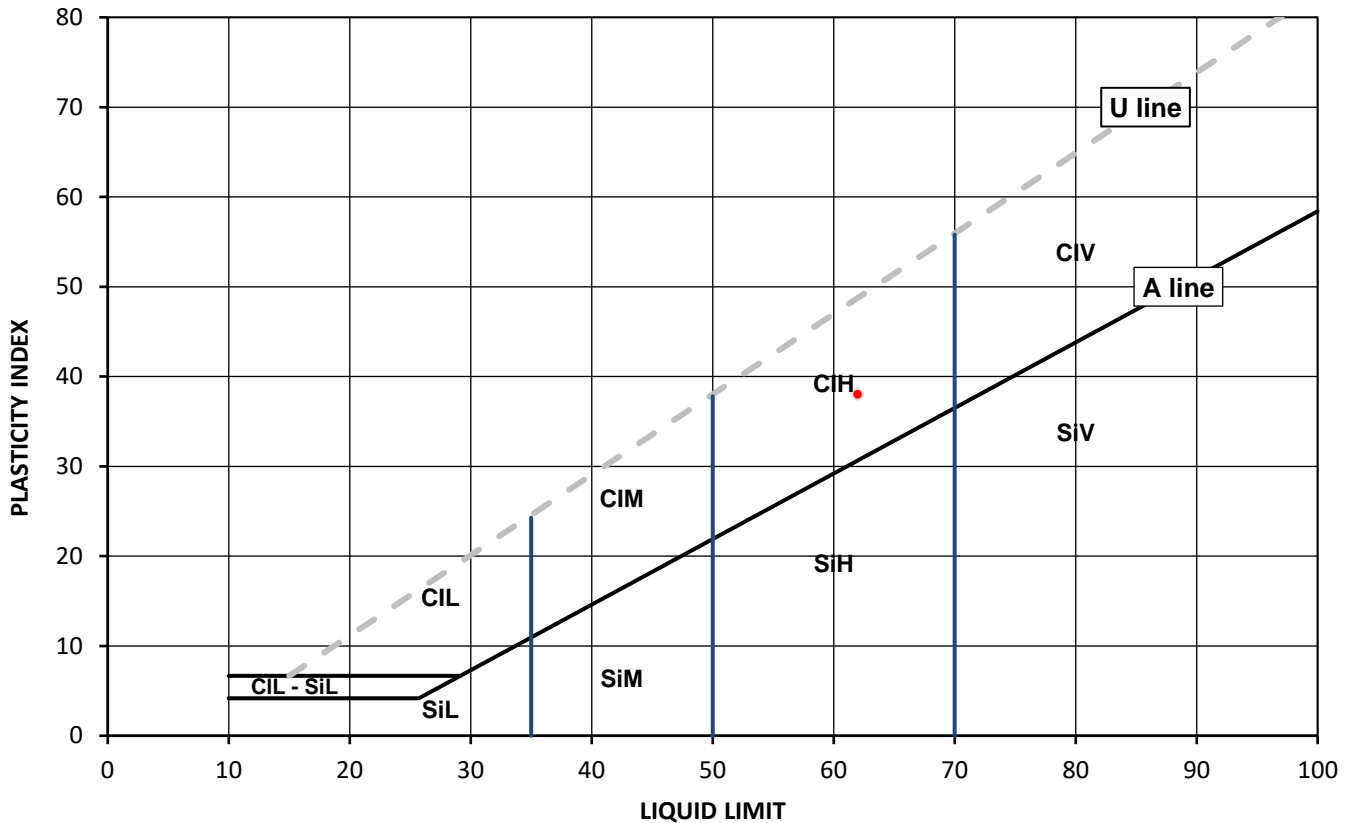
## Test Results:

Laboratory Reference: 2467680  
Hole No.: WS01  
Sample Reference: 1  
Sample Description: Yellowish brown CLAY

Depth Top [m]: 1m  
Depth Base [m]: 1m  
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
27	62	24	38	100



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

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

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

Remarks:

Signed:

Anna Dudzinska  
PL Deputy Head of Reporting Team  
for and on behalf of i2 Analytical Ltd

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Sampled By: Client - PTE

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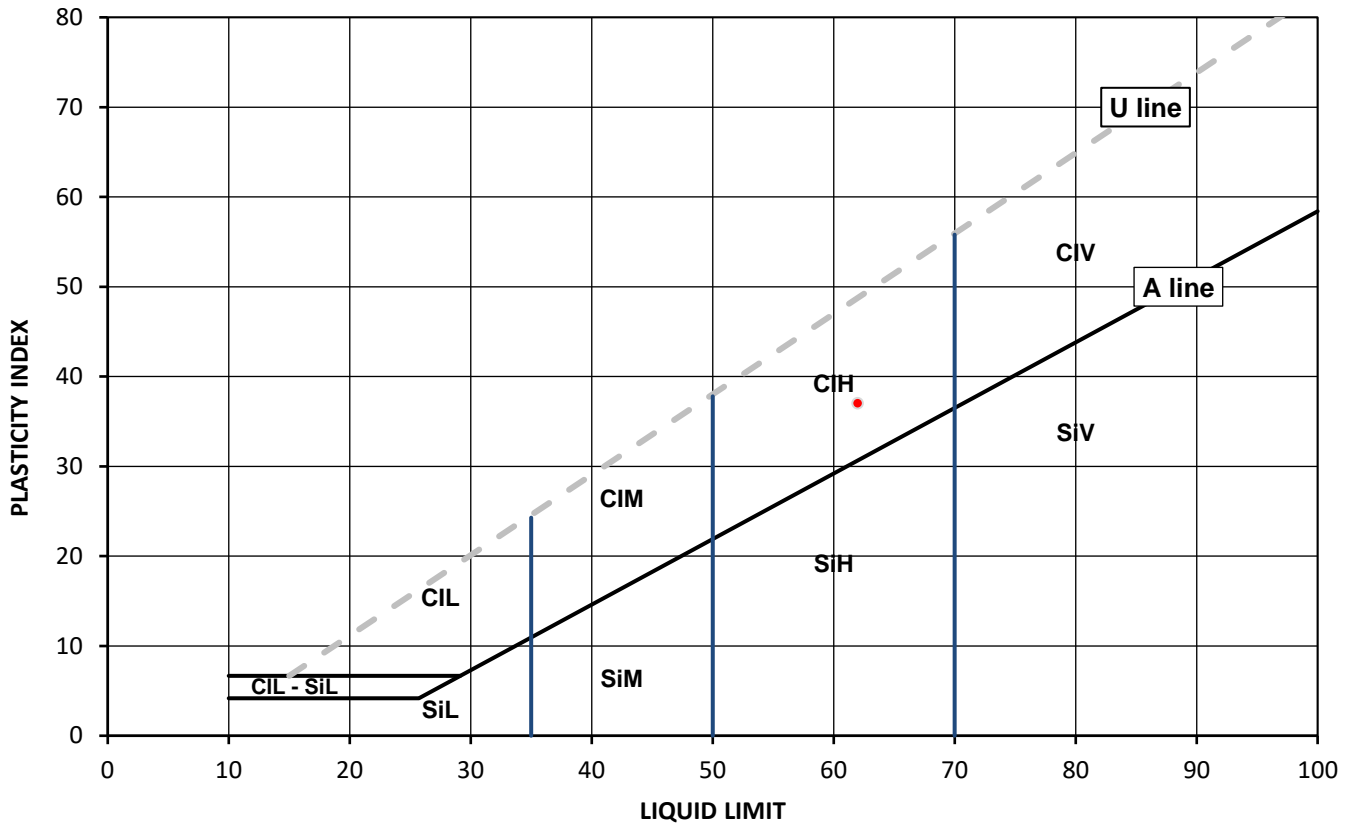
## Test Results:

Laboratory Reference: 2467682  
Hole No.: WS01  
Sample Reference: 3  
Sample Description: Yellowish brown CLAY

Depth Top [m]: 2m  
Depth Base [m]: 2m  
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
22	62	25	37	100



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

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

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

Remarks:

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

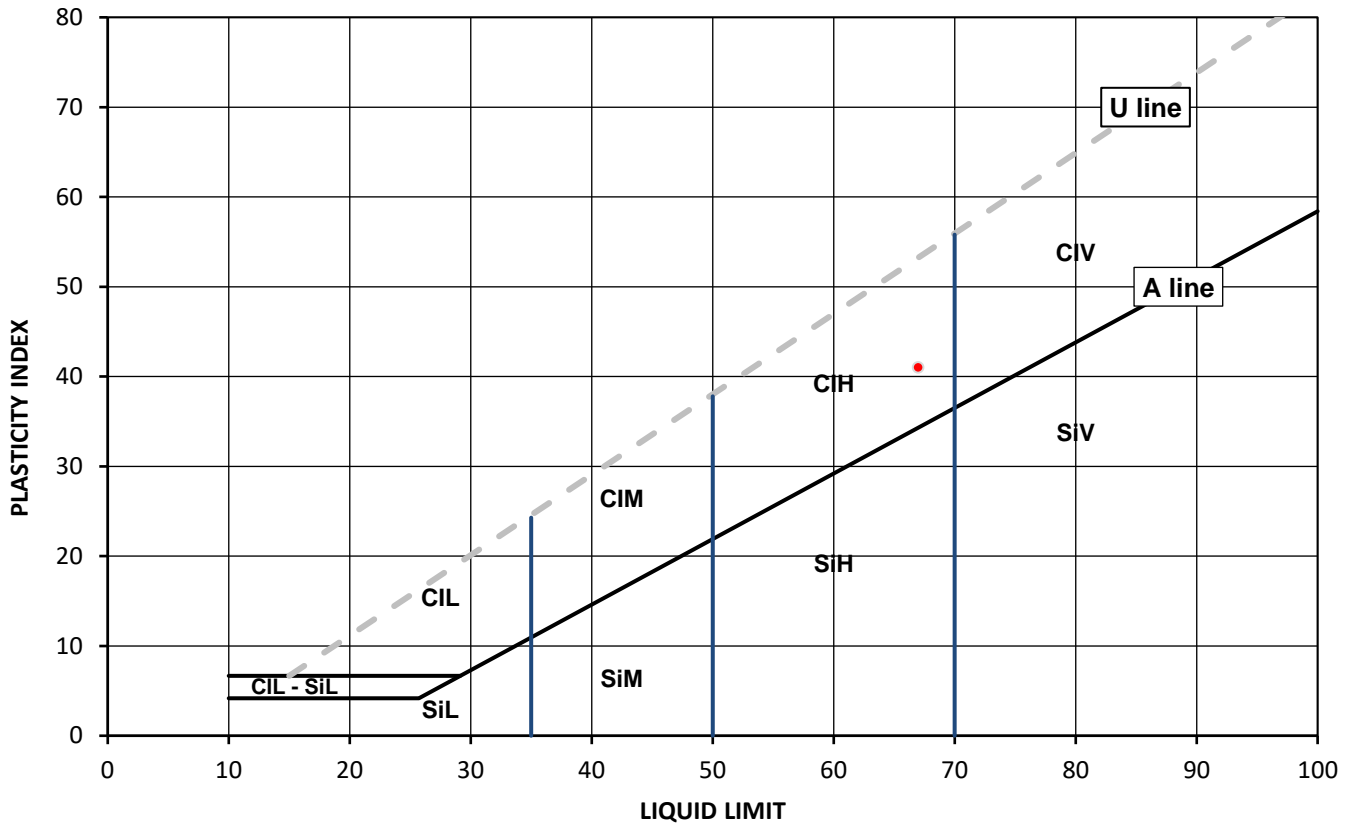
## Test Results:

Laboratory Reference: 2467684  
Hole No.: WS01  
Sample Reference: 5  
Sample Description: Brown CLAY

Depth Top [m]: 3m  
Depth Base [m]: 3m  
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
26	67	26	41	100



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

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

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

Remarks:

Signed:

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PL Deputy Head of Reporting Team  
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Contact: Paul Ettinger  
Site Address: 15 Gordon Close

Client Reference: GI-5  
Job Number: 22-91168  
Date Sampled: 19/10/2022  
Date Received: 19/10/2022  
Date Tested: 25/10/2022  
Sampled By: Client - PTE

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

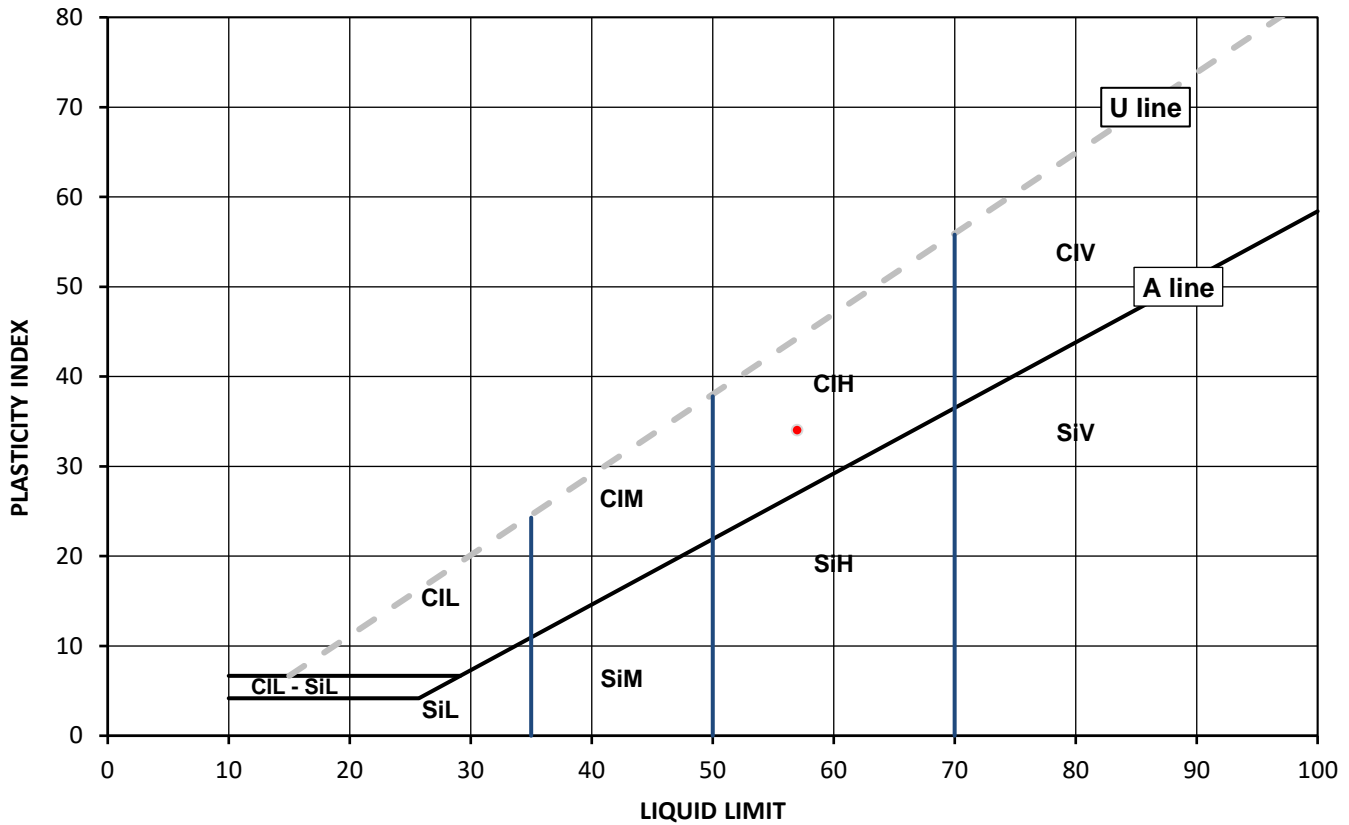
## Test Results:

Laboratory Reference: 2467685  
Hole No.: WS01  
Sample Reference: 6  
Sample Description: Yellowish brown slightly sandy CLAY

Depth Top [m]: 3.5m  
Depth Base [m]: 3.5m  
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
24	57	23	34	100



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

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

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

Remarks:

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Contact: Paul Ettinger  
Site Address: 15 Gordon Close

Client Reference: GI-5  
Job Number: 22-91168  
Date Sampled: 19/10/2022  
Date Received: 19/10/2022  
Date Tested: 24/10/2022  
Sampled By: Client - PTE

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

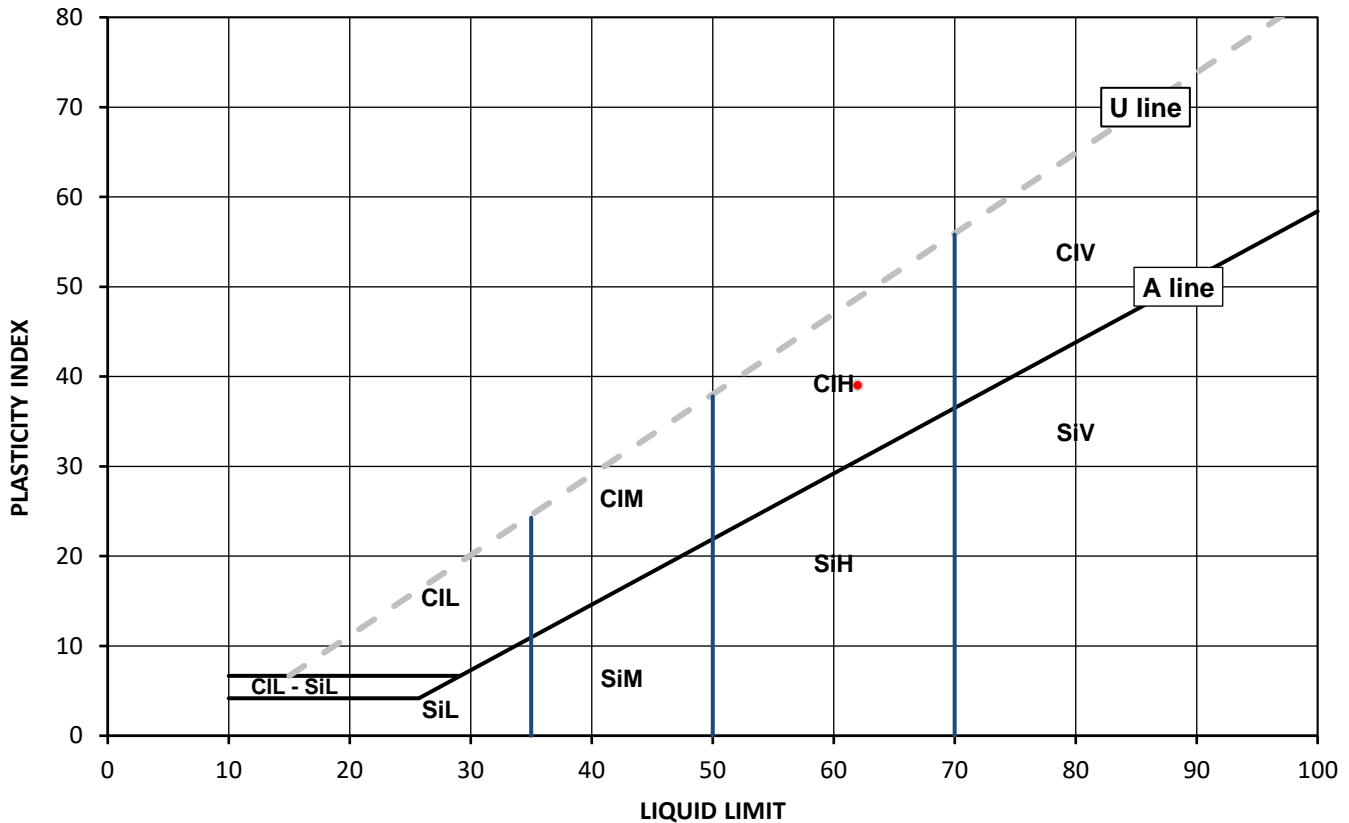
### Test Results:

Laboratory Reference: 2467686  
Hole No.: WS02  
Sample Reference: 1  
Sample Description: Brownish grey slightly gravelly CLAY

Depth Top [m]: 1m  
Depth Base [m]: 1m  
Sample Type: B

Sample Preparation: Tested after >425um removed by hand

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
34	62	23	39	98



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

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

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

Remarks:

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Job Number: 22-91168  
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Date Received: 19/10/2022  
Date Tested: 24/10/2022  
Sampled By: Client - PTE

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

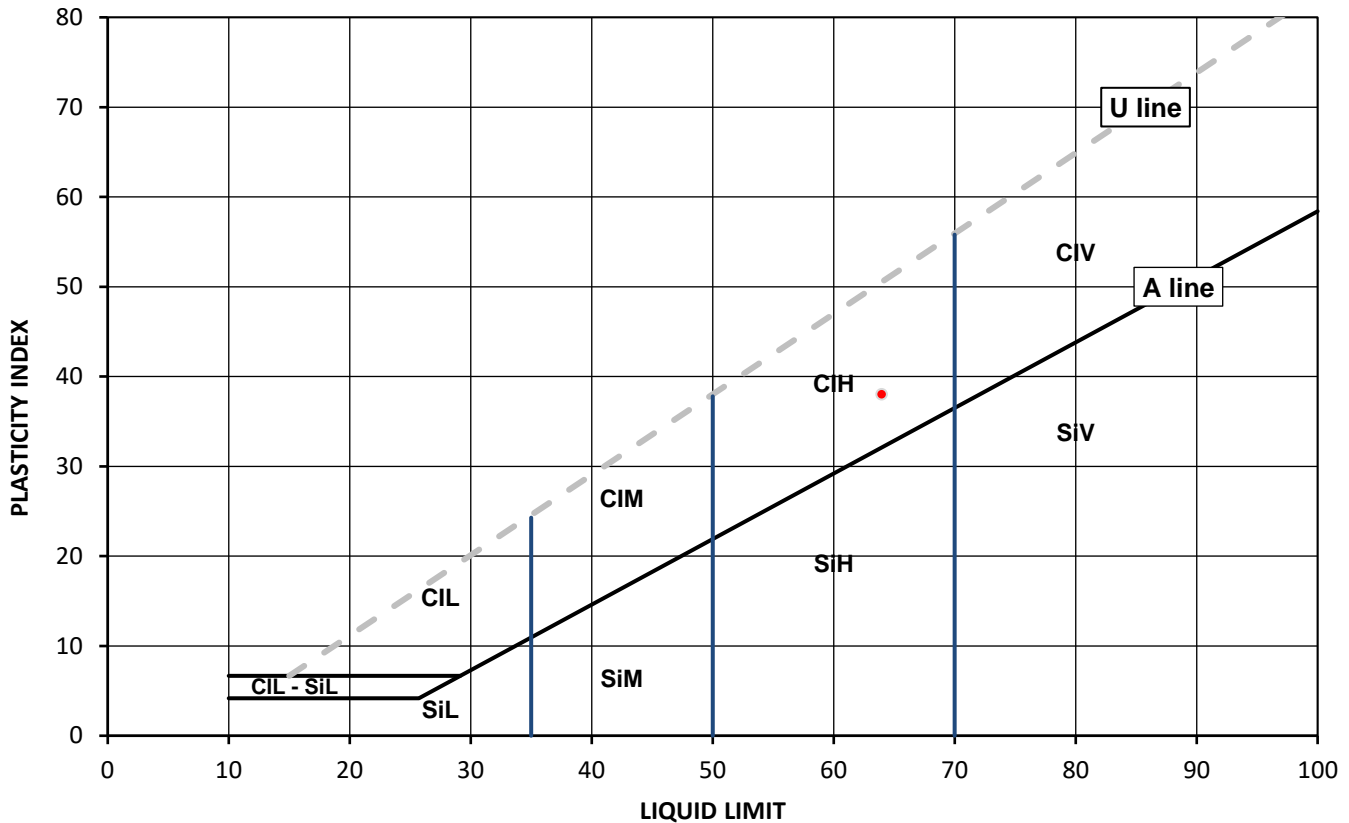
### Test Results:

Laboratory Reference: 2467687  
Hole No.: WS02  
Sample Reference: 2  
Sample Description: Brown CLAY

Depth Top [m]: 1.5m  
Depth Base [m]: 1.5m  
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
29	64	26	38	100



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

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

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

Remarks:

Signed:

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



Environmental Science

4041

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S40 2WB  
Contact: Paul Ettinger  
Site Address: 15 Gordon Close

Client Reference: GI-5  
Job Number: 22-91168  
Date Sampled: 19/10/2022  
Date Received: 19/10/2022  
Date Tested: 24/10/2022  
Sampled By: Client - PTE

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

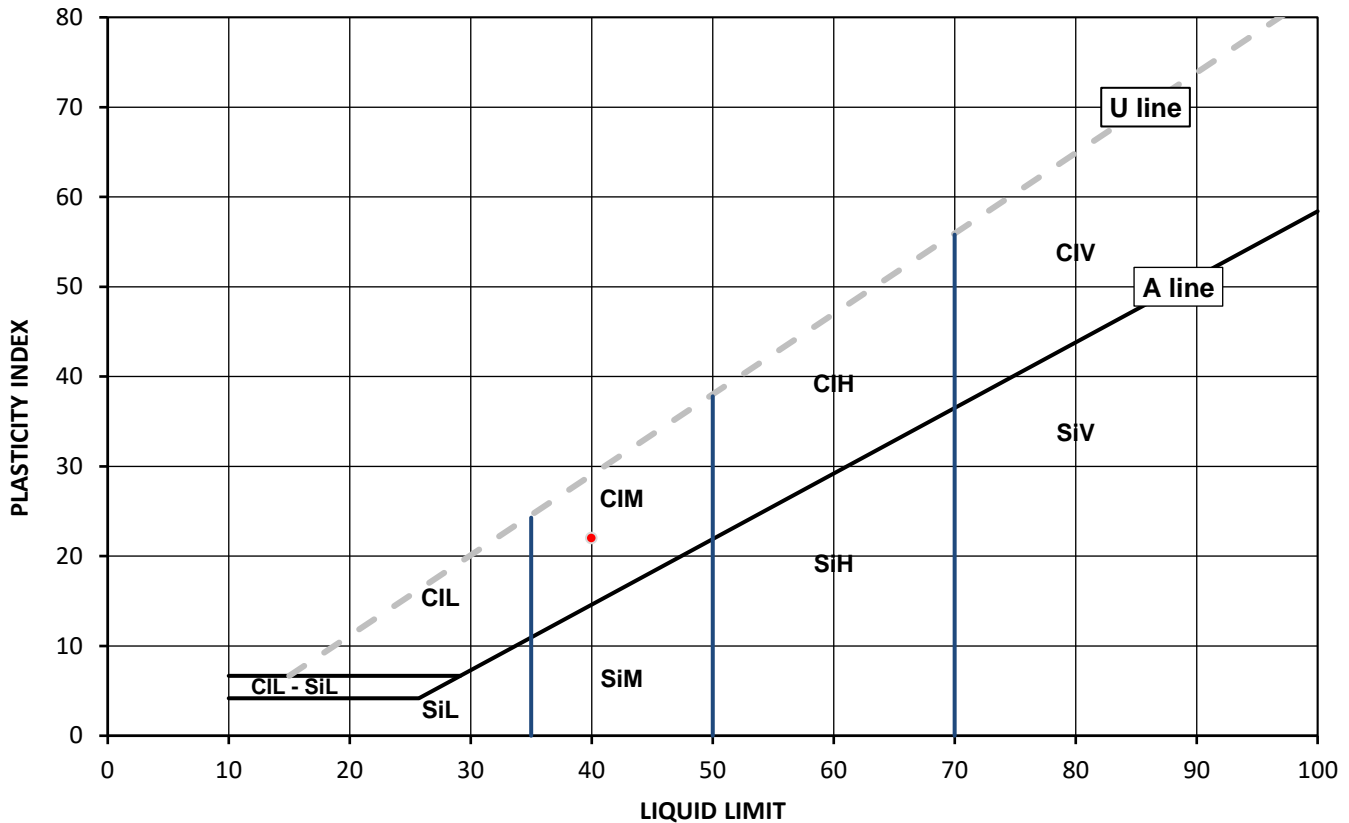
## Test Results:

Laboratory Reference: 2467689  
Hole No.: WS02  
Sample Reference: 4  
Sample Description: Brown sandy CLAY

Depth Top [m]: 2.5m  
Depth Base [m]: 2.5m  
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
27	40	18	22	100



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

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

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

Remarks:

Signed:

Anna Dudzinska  
PL Deputy Head of Reporting Team  
for and on behalf of i2 Analytical Ltd

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# TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS  
Tested in Accordance with: BS 1377-2:1990: Clause 4.4 and 5

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



Environmental Science

4041

Client: CK Rail Solutions Ltd  
Client Address: McGregors Way, Turnoakes Business Park,  
Chesterfield, Derbyshire,  
S40 2WB  
Contact: Paul Ettinger  
Site Address: 15 Gordon Close

Client Reference: GI-5  
Job Number: 22-91168  
Date Sampled: 19/10/2022  
Date Received: 19/10/2022  
Date Tested: 24/10/2022  
Sampled By: Client - PTE

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

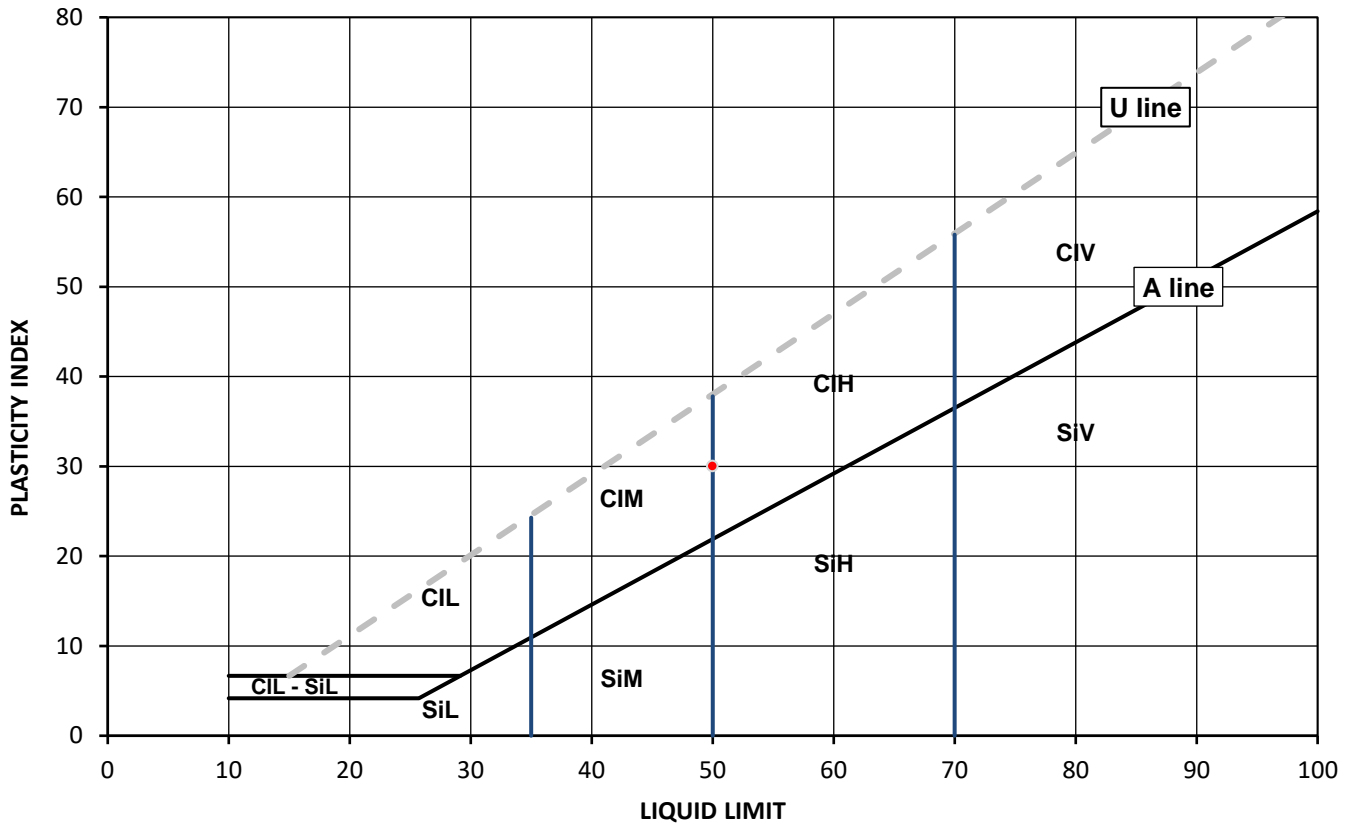
## Test Results:

Laboratory Reference: 2467690  
Hole No.: WS02  
Sample Reference: 5  
Sample Description: Yellowish brown slightly sandy CLAY

Depth Top [m]: 3m  
Depth Base [m]: 3m  
Sample Type: D

Sample Preparation: Tested in natural condition

As Received Water Content [ W ] %	Liquid Limit [ WL ] %	Plastic Limit [ Wp ] %	Plasticity Index [ Ip ] %	% Passing 425µm BS Test Sieve
27	50	20	30	100



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

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

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

Remarks:

Signed:

Anna Dudzinska  
PL Deputy Head of Reporting Team  
for and on behalf of i2 Analytical Ltd

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# SUMMARY REPORT

## SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

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



Environmental Science

4041

Client: CK Rail Solutions Ltd  
Client Address: McGregors Way, Turnoakes Business Park,  
Chesterfield, Derbyshire,  
S40 2WB  
Contact: Paul Ettinger  
Site Address: 15 Gordon Close

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

Client Reference: GI-5  
Job Number: 22-91168  
Date Sampled: 19/10/2022  
Date Received: 19/10/2022  
Date Tested: 24/10 - 25/10/2022  
Sampled By: Client - PTE

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

### Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [ W ] %	Water Content BS EN ISO 17892-1 [ W ] %	Atterberg				Density			Total Porosity# %	
		Reference	Depth Top m	Depth Base m	Type					% Passing 425um %	WL %	Wp %	Ip %	bulk Mg/m3	dry Mg/m3	PD Mg/m3		
2467680	WS01	1	1m	1m	D	Yellowish brown CLAY	Atterberg 1 Point	27		100	62	24	38					
2467681	WS01	2	1.5m	1.5m	D	Yellowish brown to light grey CLAY		25										
2467682	WS01	3	2m	2m	D	Yellowish brown CLAY	Atterberg 1 Point	22		100	62	25	37					
2467683	WS01	4	2.5m	2.5m	D	Yellowish brown CLAY		24										
2467684	WS01	5	3m	3m	D	Brown CLAY	Atterberg 1 Point	26		100	67	26	41					
2467685	WS01	6	3.5m	3.5m	D	Yellowish brown slightly sandy CLAY	Atterberg 1 Point	24		100	57	23	34					
2467686	WS02	1	1m	1m	D	Brownish grey slightly gravelly CLAY	Atterberg 1 Point	34		98	62	23	39					
2467687	WS02	2	1.5m	1.5m	D	Brown CLAY	Atterberg 1 Point	29		100	64	26	38					
2467688	WS02	3	2m	2m	D	Brown CLAY		31										
2467689	WS02	4	2.5m	2.5m	D	Brown sandy CLAY	Atterberg 1 Point	27		100	40	18	22					

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Anna Dudzinska  
PL Deputy Head of Reporting Team  
for and on behalf of i2 Analytical Ltd

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4041

Client: CK Rail Solutions Ltd  
 Client Address: McGregors Way, Turnoakes Business Park,  
 Chesterfield, Derbyshire,  
 S40 2WB  
 Contact: Paul Ettinger  
 Site Address: 15 Gordon Close

## SUMMARY REPORT

### SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

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

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



Environmental Science

Client Reference: GI-5  
 Job Number: 22-91168  
 Date Sampled: 19/10/2022  
 Date Received: 19/10/2022  
 Date Tested: 24/10/2022  
 Sampled By: Client - PTE

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

#### Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [ W ] %	Water Content BS EN ISO 17892-1 [ W ] %	Atterberg				Density			Total Porosity# %	
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk Mg/m3	dry Mg/m3	PD Mg/m3		
			m	m														
2467690	WS02	5	3m	3m	D	Yellowish brown slightly sandy CLAY	Atterberg 1 Point	27		100	50	20	30					

Note: # Non accredited; NP - Non plastic

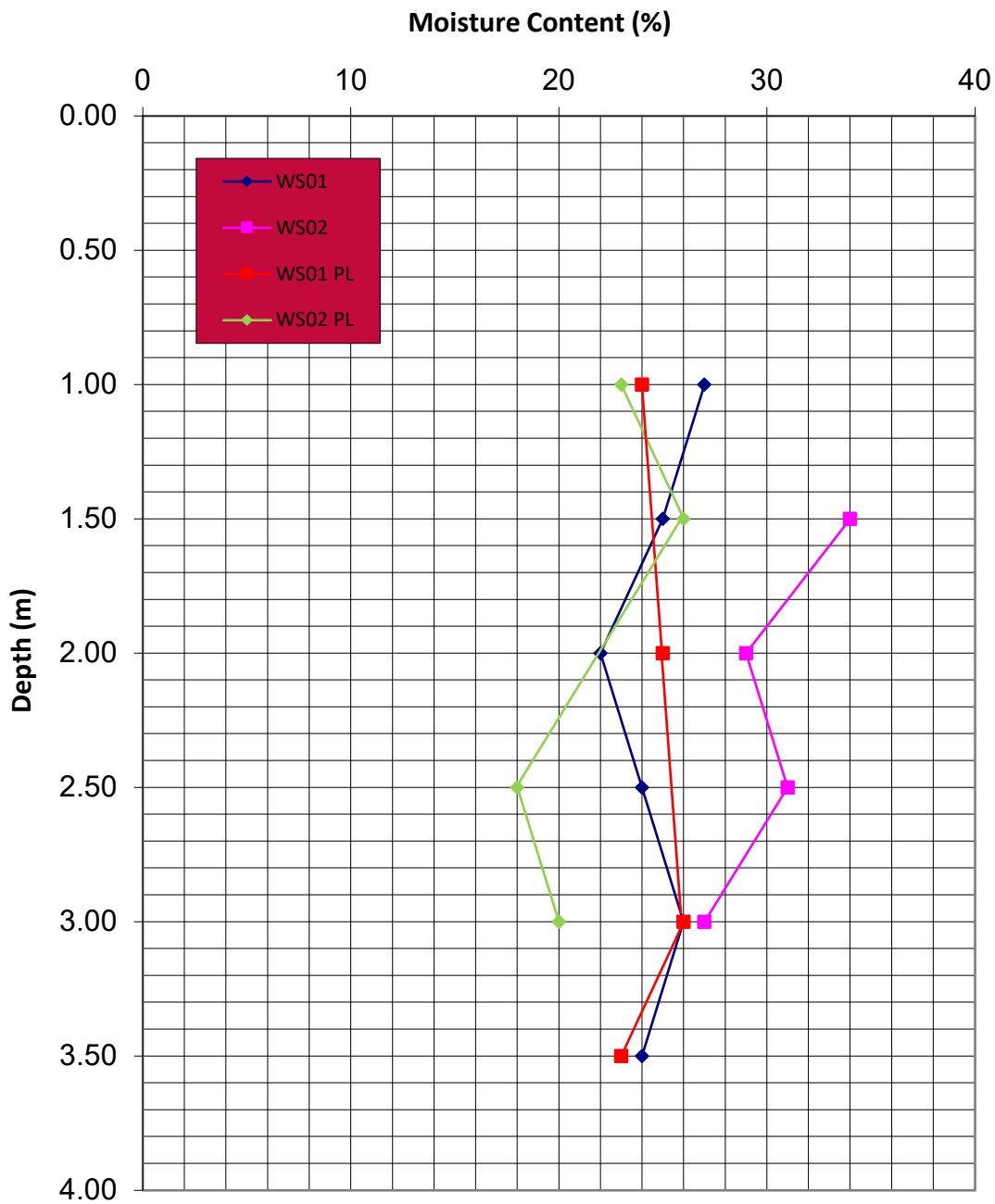
Comments:

Signed:

Anna Dudzinska  
 PL Deputy Head of Reporting Team  
 for and on behalf of i2 Analytical Ltd

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Lead No.: GI-5	Scale: N.T.S	Date	Drawn by	Checked	Approved
Site: 15 Gordon Close, Sandown		12/11/22	AG	PTE	PTE



MOISTURE CONTENT PROFILE

**CK**Consulting  
and Geotechnical



**APPENDIX C**  
**DRAINLINE LIMITED**  
**DRAINAGE SURVEY REPORT**  
**JULY 2022**





**Project**

**Project Name:** Spence 15 Gordon Close

**Project Date:** 25/07/2022

**Inspection Standard:** MSCC5 Sewers & Drainage GB (SRM5 Scoring)



## Table of Contents

Project Name	Project Number	Project Date
Spence 15 Gordon Close		25/07/2022

Project Information .....	P-1
Scoring Summary .....	P-5
Section Item 1: FWG > MH1 (FWGX) .....	1
Section Item 2: MH1 > MH2 (MH1X) .....	2
Section Item 3: MH2 > MH3 (MH2X) .....	3
Section Item 4: SVP (A) > MH3 (SVP (A)X) .....	4
Section Item 5: MH3 > MH4 (MH3X) .....	5
Section Item 6: RWG (A) > MH4 (RWG (A)X) .....	8
Section Item 7: MH4 > MH5 (MH4X) .....	9
Section Item 8: MH5 > Main (MH5X) .....	13
Section Item 9: Unknown > MH5 (UnknownX) .....	16

## Project Information

Project Name	Project Number	Project Date
Spence 15 Gordon Close		25/07/2022

### Client

**Company:** Spence Refit Ltd  
**Department:** MacMillan House  
**Street:** Paddington Station  
**Town or City:** LONDON  
**Post Code:** W2 1TF



### Site

**Company:** Spence Refit Ltd  
**Street:** 15 Gordon Close  
**Town or City:** Isle of White  
**County:** PO36 9AD

### Contractor

**Company:** Drainline  
**Contact:** Peter Garwood  
**Department:** Technical CCTV  
**Street:** Pookbourne Lane  
**Town or City:** Hickstead  
**County:** West Sussex  
**Post Code:** BN6 9HD  
**Email:** peter.garwood@drainline.co.uk



## Project Information

Project Name	Project Number	Project Date
Spence 15 Gordon Close		25/07/2022

## Project Notes



### SURVEY

### REPORT

#### Re: 15 Gordon Close, Sandown, Isle Of Wight, PO36 9AD - Cleansing & Condition Survey

Please find below our findings and recommendations upon completion of cleansing and surveying of underground drainage serving the subject property.

Please refer to the attached CCTV inspection report, footage and photographs.

#### Findings:

- The drainage serving the site is of pipe diameters 100mm and 150mm
- The predominately Foul drainage system has one surface water connection, (Rainwater Gully A - RWG A)
- RWG A requires replacement due to being broken and root infested
- The rear Rainwater downpipe discharges to a water butt for garden usage
- The other surface water gully located to the flank wall possibly discharges to a localised "builders" type soakaways, (rubble or shingle filled pit), or other drainage
- There is an internal manhole chamber, (MH2), that could not be accessed during the survey, this manhole chamber has one in number lateral connection, (usage unknown)
- Three main runs MH2 to MH3, MH3 to MH4 & MH4 to MH5 were observed to be of Pitch Fibre material
- Two of the Pitch Fibre runs are presently deformed by up to 30% - MH3 to MH4 & MH4 to MH5
- The run MH5 to Main manhole is of Vitrified Clayware material and has root infestation and displacements along its length
- The lateral connection to Manhole 5 was observed to be collapsed and root infested, it is assumed it is disused
- Manhole 1 has a broken and cracked channel
- The cover and frame of Manhole 4 requires re-bedding due to becoming loose from the surrounding concrete surface finish
- Manhole 5 requires root removal and re-benching

#### Summary:

The drainage system requires remediation to the defects observed to prevent other and worsening defects.

The already deformed/defective Pitch Fibre pipework within the system requires re-rounding and re-lining and the undefective section of Pitch Fibre requires re-lining to avoid it becoming defective/deformed.

Pitch Fibre pipework was installed during the 1960's and early 1970's as an alternative to Clayware pipework, it was manufactured using mainly laminated Bitumen layers, concerns regarding its longevity were raised and its production was ceased.

Pitch Fibre has a very short lifespan compared with other materials and will inevitably delaminate, deform, weaken and eventually become crushed from groundweight.

At this time the deformed runs/sections can be re-formed to a round profile and the structurally re-lined, this is far more cost effective option of excavation and replacement which will inevitably become necessary if the pipework is allowed to deteriorate further beyond the parameters/capabilities of re-forming and re-lining.

The disused connection to Manhole 5 should be sealed off at the manhole chamber to prevent groundwater and debris ingress and rodents nesting.

The defective manhole chambers 1, 4 and 5 require remediation to ensure future service.

Run Manhole 5 to Main Manhole requires root cutting and re-lining to seal the pipework from further root infestation and ensure clear flow.

The defective rainwater gully RWG a requires excavation and replacement to ensure water is not discharged to the sub strata near the property foundations.

Post remediation the system will be returned to a fully serviceable condition.

All recommendations are itemised to allow consideration of necessity to undertake.

## Project Information

Project Name	Project Number	Project Date
Spence 15 Gordon Close		25/07/2022

### A. Recommendations - Remedial:

1. Carry out re-lining of the Pitched Fibre pipework between MH2 and MH3 - £ 575.00
2. Carry out re-forming and re-lining of the Pitched Fibre pipework between MH3 and MH4 - £ 860.00
3. Carry out re-forming and re-lining of the Pitched Fibre pipework between MH4 and MH5 - £ 1,515.00
4. Carry out root cutting and re-lining of the defective pipework between MH5 and Main Manhole - £ 1,465.00
5. RWG A > Excavate and replace the defective gully and surround and reinstate - £ 890.00
6. Carry out repairs to Manhole Chambers 1, 4 & 5 - £ 775.00
7. Seal off the disused connection/lateral to Manhole 5 - £ 105.00

All costs/prices given are subject to VAT where applicable

### Please note:

- For the purposes of this quotation it has been assumed access to all subject externa and internal accesses, manholes/chambers, drainage items etc is available at all times during day and out of hours shifts
- Extra care will be taken when raising manhole covers etc, however if damage to the cover, frame or surrounding surface finish is possible attempts to raise will cease and the client informed, all raised/open manholes and chambers will be protected by barriers and surrounding areas protected
- This costing is valid for 30 days and is subject to our standard Terms and Conditions
- Client is to arrange and provide suitable access to subject work areas
- Client to provide all necessary permissions, licences and consents to carry out the works
- Client to liaise with all interested parties regarding the works and undertake any enablement works necessary

If we can be of any further assistance, please do not hesitate to contact myself or my colleague Joe LeBorgne.

Kind Regards

Mike Mogré

**Contract Manager**

**Tel:** 01403 261549

**E Mail:** [mike.mogre@drainline.co.uk](mailto:mike.mogre@drainline.co.uk) <<mailto:mike.mogre@drainline.co.uk>>

**Website:** [www.drainline.co.uk](http://www.drainline.co.uk) <<http://www.drainline.co.uk>>

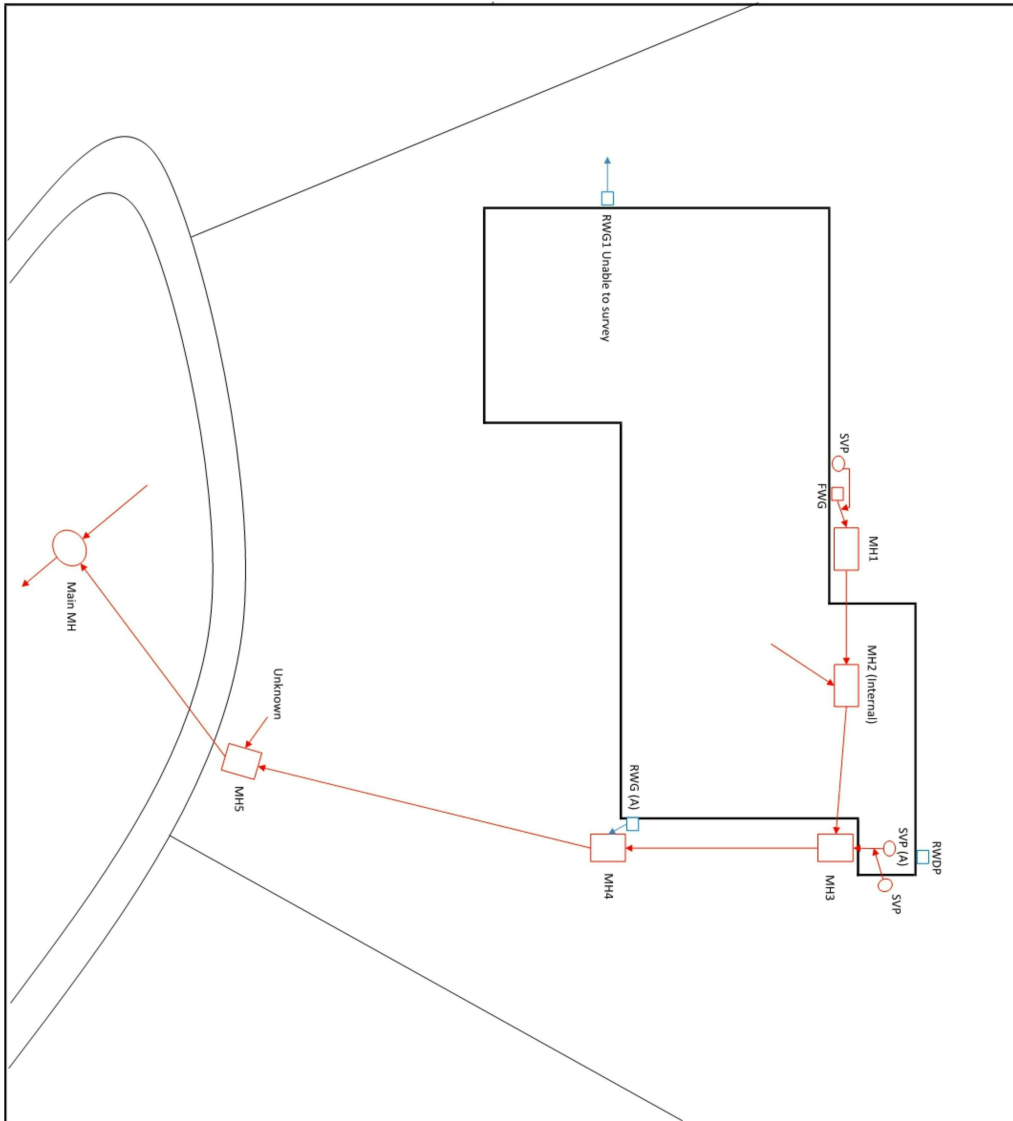
**Address:** Drainline Ltd, Jobs Depot, Pookbourne Lane, Hickstead, West Sussex BN6 9LS



### Project Information

<b>Project Name</b> Spence 15 Gordon Close	<b>Project Number</b>	<b>Project Date</b> 25/07/2022
---	-----------------------	-----------------------------------

### Project Drawing, Page 'Spence 15 Gordon Close'



**CLIENT:** Spence earth Ltd

**SITE:** 15 Gordon Close  
Ile of White  
PO26 3AD

**DATE:** 21/07/2022

PLEASE NOTE THAT THIS DRAWING IS ONLY TO BE USED  
 IN CONJUNCTION WITH OUR CIVIL/SURVEY REPORT  
 DRAWINGS IS NOT TO SCALE

## Scoring Summary

**Project Name**  
Spence 15 Gordon Close

**Project Number**

**Project Date**  
25/07/2022

### Structural Defects

Grade 3: Best practice suggests consideration should be given to repairs in the medium term.

Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.

Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
5	MH3X	4	Multiple defects
7	MH4X	4	Deformed sewer or drain, 30%, finish

### Service / Operational Condition

Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.

Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.

Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
4	SVP (A)X	3	Settled deposits, fine, 5% cross-sectional area loss
5	MH3X	4	Multiple defects
6	RWG (A)X	3	Settled deposits, fine, 10% cross-sectional area loss
7	MH4X	4	Multiple defects
8	MH5X	3	Multiple defects
9	UnknownX	5	Settled deposits, fine, 100% cross-sectional area loss

### Abandoned Surveys

Section	PLR	Description
9	UnknownX	Survey abandoned

### Information

These scoring summaries are based on the SRM grading from the WRc.

## Section Inspection - 21/07/2022 - FWGX



Item No. 1	Insp. No. 1	Date 21/07/22	Time 8:12	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR FWGX
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Isle Of White	Inspection Direction:	Upstream	Upstream Node:	FWG
Road:	15 Gordon Close	Inspected Length:	0.55 m	Upstream Pipe Depth:	
Location:		Total Length:	0.55 m	Downstream Node:	MH1
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.200 m

Use:	Foul	Pipe Shape:	Circular
Type of Pipe:		Dia/Height:	100 mm
Flow Control:	No flow control	Material:	Vitrified clay
Year Constructed:	Not Specified	Lining Type:	No Lining
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining

**Comments:**  
**Recommendations:**

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
		Depth: 0.20 m					
		MH1					
		0.00	MH	Start node, manhole, reference: MH1	00:00:00		
		0.00	WL	Water level, 0% of the vertical dimension	00:00:01		
		0.18	JN	Junction at 2 o'clock, 100mm dia	00:00:20		
		0.55	GYF	Finish node, gully, reference: FWG	00:00:37		
		FWG					
		Depth: m					

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

## Section Inspection - 21/07/2022 - MH1X



Item No. 2	Insp. No. 1	Date 21/07/22	Time 8:21	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR MH1X
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village: Isle Of White	Inspection Direction: Downstream	Upstream Node: MH1
Road: 15 Gordon Close	Inspected Length: 0.84 m	Upstream Pipe Depth: 0.200 m
Location:	Total Length: 0.84 m	Downstream Node: MH2
Surface Type:	Joint Length:	Downstream Pipe Depth:

Use: Foul	Pipe Shape: Circular
Type of Pipe:	Dia/Height: 100 mm
Flow Control: No flow control	Material: Vitrified clay
Year Constructed: Not Specified	Lining Type: No Lining
Inspection Purpose: Sample condition survey	Lining Material: No Lining

**Comments:**  
**Recommendations:**

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade												
<div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 20px;"> <p>Depth: 0.20 m</p> <p><b>MH1</b></p> <p><b>MH2</b></p> <p>Depth: m</p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">0.00</td> <td style="width: 15%; text-align: center;">MH</td> <td style="width: 45%;">Start node, manhole, reference: MH1</td> <td style="width: 10%; text-align: center;">00:00:00</td> </tr> <tr> <td style="text-align: center; color: blue;">0.00</td> <td style="text-align: center; color: blue;">WL</td> <td style="color: blue;">Water level, 0% of the vertical dimension</td> <td style="text-align: center; color: blue;">00:00:03</td> </tr> <tr> <td style="text-align: center;">0.84</td> <td style="text-align: center;">MHF</td> <td>Finish node, manhole, reference: MH2</td> <td style="text-align: center;">00:00:36</td> </tr> </table> </div>								0.00	MH	Start node, manhole, reference: MH1	00:00:00	0.00	WL	Water level, 0% of the vertical dimension	00:00:03	0.84	MHF	Finish node, manhole, reference: MH2	00:00:36
0.00	MH	Start node, manhole, reference: MH1	00:00:00																
0.00	WL	Water level, 0% of the vertical dimension	00:00:03																
0.84	MHF	Finish node, manhole, reference: MH2	00:00:36																

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0

## Section Inspection - 21/07/2022 - MH2X



Item No. 3	Insp. No. 1	Date 21/07/22	Time 8:37	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR MH2X
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village: Isle Of White	Inspection Direction: Upstream	Upstream Node: MH2
Road: 15 Gordon Close	Inspected Length: 3.98 m	Upstream Pipe Depth:
Location:	Total Length: 3.98 m	Downstream Node: MH3
Surface Type:	Joint Length:	Downstream Pipe Depth: 0.250 m

Use: Foul	Pipe Shape: Circular
Type of Pipe:	Dia/Height: 100 mm
Flow Control: No flow control	Material: Pitch fibre
Year Constructed: Not Specified	Lining Type: No Lining
Inspection Purpose: Sample condition survey	Lining Material: No Lining

**Comments:**  
**Recommendations:**



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	0	0.0	0.0	0.0	1.0



## Section Inspection - 21/07/2022 - SVP (A)X



Item No. 4	Insp. No. 1	Date 21/07/22	Time 8:48	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR SVP (A)X
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Isle Of White	Inspection Direction:	Upstream	Upstream Node:	SVP (A)
Road:	15 Gordon Close	Inspected Length:	0.65 m	Upstream Pipe Depth:	
Location:		Total Length:	0.65 m	Downstream Node:	MH3
Surface Type:		Joint Length:		Downstream Pipe Depth:	

Use:	Foul	Pipe Shape:	Circular
Type of Pipe:		Dia/Height:	100 mm
Flow Control:	No flow control	Material:	Polyvinyl chloride
Year Constructed:	Not Specified	Lining Type:	No Lining
Inspection Purpose:	Sample condition survey	Lining Material:	No Lining

**Comments:**  
**Recommendations:**

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																																				
<div style="display: flex; align-items: center;"> <div style="text-align: center; margin-right: 20px;"> <p>Depth: m</p> <p>Depth: m</p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">0.00</td> <td style="text-align: center;">MH</td> <td>Start node, manhole, reference: MH3</td> <td style="text-align: center;">00:00:00</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; color: blue;">0.00</td> <td style="text-align: center; color: blue;">WL</td> <td style="color: blue;">Water level, 0% of the vertical dimension</td> <td style="text-align: center; color: blue;">00:00:01</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">0.10</td> <td style="text-align: center;">JN</td> <td>Junction at 3 o'clock, 100mm dia</td> <td style="text-align: center;">00:00:20</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; color: green;">0.15</td> <td style="text-align: center; color: green;">DES</td> <td style="color: green;">Settled deposits, fine, 5% cross-sectional area loss</td> <td style="text-align: center; color: green;">00:00:21</td> <td></td> <td style="text-align: center; color: green;">3</td> </tr> <tr> <td style="text-align: center; color: green;">0.63</td> <td style="text-align: center; color: green;">LU</td> <td style="color: green;">Line deviates up</td> <td style="text-align: center; color: green;">00:00:31</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">0.65</td> <td style="text-align: center;">OCF</td> <td>Finish node, other special chamber, reference: SVP (A): Stack</td> <td style="text-align: center;">00:00:38</td> <td></td> <td></td> </tr> </table> </div>								0.00	MH	Start node, manhole, reference: MH3	00:00:00			0.00	WL	Water level, 0% of the vertical dimension	00:00:01			0.10	JN	Junction at 3 o'clock, 100mm dia	00:00:20			0.15	DES	Settled deposits, fine, 5% cross-sectional area loss	00:00:21		3	0.63	LU	Line deviates up	00:00:31			0.65	OCF	Finish node, other special chamber, reference: SVP (A): Stack	00:00:38		
0.00	MH	Start node, manhole, reference: MH3	00:00:00																																								
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Construction Features				Miscellaneous Features																																							
Structural Defects				Service & Operational Observations																																							

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	3.1	2.0	4.0

## Section Inspection - 21/07/2022 - MH3X

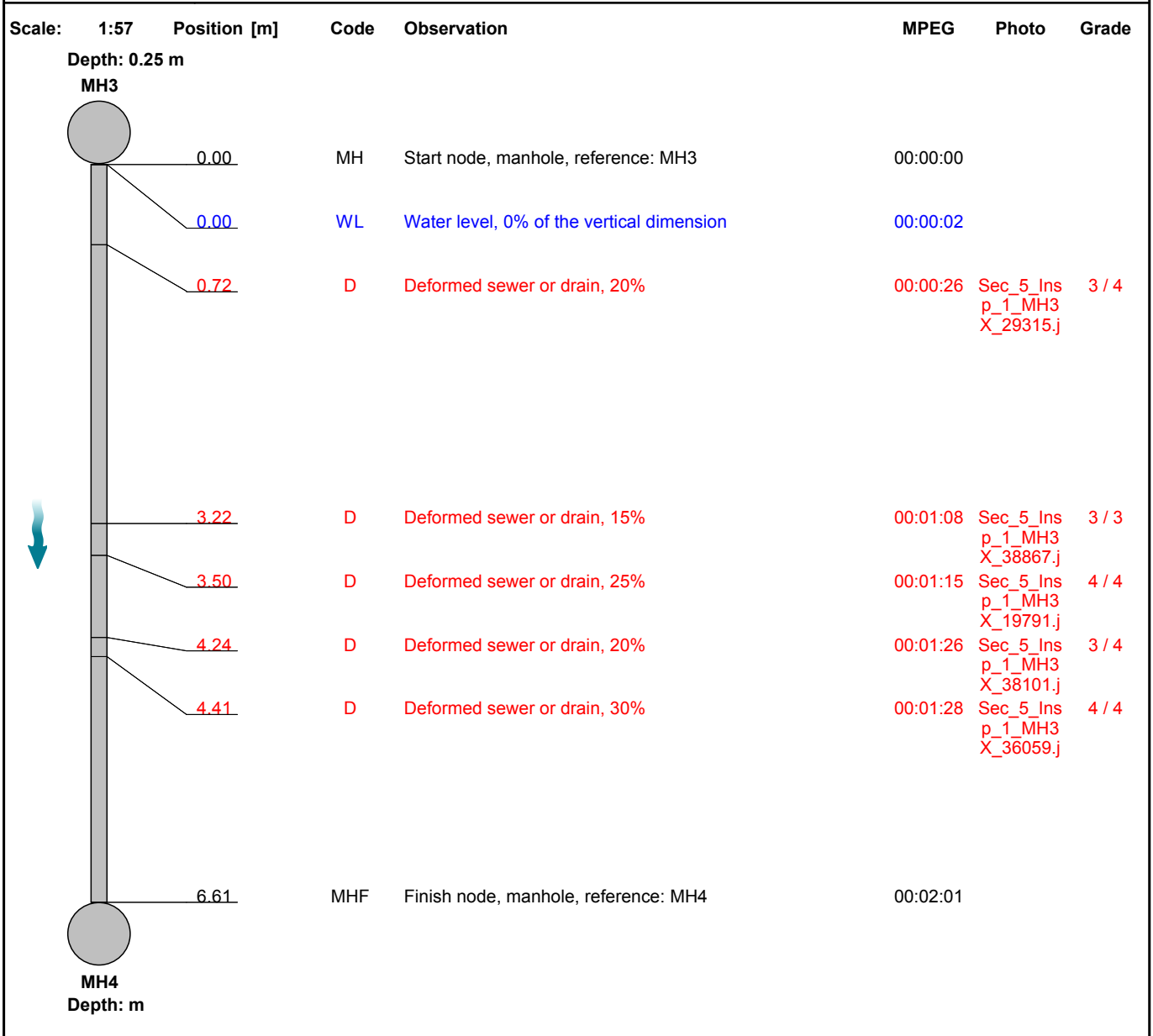


Item No. 5	Insp. No. 1	Date 21/07/22	Time 9:03	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR MH3X
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village: Isle Of White	Inspection Direction: Downstream	Upstream Node: MH3
Road: 15 Gordon Close	Inspected Length: 6.61 m	Upstream Pipe Depth: 0.250 m
Location: Surface Type:	Total Length: 6.61 m	Downstream Node: MH4
	Joint Length:	Downstream Pipe Depth:

Use: Foul	Pipe Shape: Circular
Type of Pipe:	Dia/Height: 100 mm
Flow Control: No flow control	Material: Pitch fibre
Year Constructed: Not Specified	Lining Type: No Lining
Inspection Purpose: Sample condition survey	Lining Material: No Lining

**Comments:**  
**Recommendations:**



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
5	80.0	42.4	280.0	4.0	5	5.0	3.3	22.0	4.0

**Section Pictures - 21/07/2022 - MH3X**

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Downstream	MH3X		



Sec\_5\_Insp\_1\_MH3X\_29315.jpg, 00:00:26, 0.72 m  
Deformed sewer or drain, 20%



Sec\_5\_Insp\_1\_MH3X\_38867.jpg, 00:01:08, 3.22 m  
Deformed sewer or drain, 15%



Sec\_5\_Insp\_1\_MH3X\_19791.jpg, 00:01:15, 3.50 m  
Deformed sewer or drain, 25%



Sec\_5\_Insp\_1\_MH3X\_38101.jpg, 00:01:26, 4.24 m  
Deformed sewer or drain, 20%

**Section Pictures - 21/07/2022 - MH3X**

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
5	Downstream	MH3X		



Sec\_5\_Insp\_1\_MH3X\_36059.jpg, 00:01:28, 4.41 m  
Deformed sewer or drain, 30%

## Section Inspection - 21/07/2022 - RWG (A)X



Item No. 6	Insp. No. 1	Date 21/07/22	Time 9:13	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR RWG (A)X
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village: Isle Of White	Inspection Direction: Upstream	Upstream Node: RWG (A)
Road: 15 Gordon Close	Inspected Length: 0.20 m	Upstream Pipe Depth: 
Location: 	Total Length: 0.20 m	Downstream Node: MH4
Surface Type: 	Joint Length: 	Downstream Pipe Depth: 0.600 m

Use: Foul	Pipe Shape: Circular
Type of Pipe: 	Dia/Height: 100 mm
Flow Control: No flow control	Material: Vitrified clay
Year Constructed: Not Specified	Lining Type: No Lining
Inspection Purpose: Sample condition survey	Lining Material: No Lining

**Comments:**  
**Recommendations:**

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade																												
<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 20px;"> <p>Depth: 0.60 m</p> <p>MH4</p> <p>RWG (A)</p> <p>Depth: m</p> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 10%;">0.00</td> <td style="width: 10%;">MH</td> <td style="width: 40%;">Start node, manhole, reference: MH4</td> <td style="width: 10%;">00:00:00</td> <td></td> <td></td> </tr> <tr> <td></td> <td>0.00</td> <td>WL</td> <td>Water level, 0% of the vertical dimension</td> <td>00:00:01</td> <td></td> <td></td> </tr> <tr> <td></td> <td>0.20</td> <td>DES</td> <td>Settled deposits, fine, 10% cross-sectional area loss</td> <td>00:00:42</td> <td></td> <td style="text-align: center;">3</td> </tr> <tr> <td></td> <td>0.20</td> <td>GYF</td> <td>Finish node, gully, reference: RWG (A)</td> <td>00:00:49</td> <td></td> <td></td> </tr> </table> </div>									0.00	MH	Start node, manhole, reference: MH4	00:00:00				0.00	WL	Water level, 0% of the vertical dimension	00:00:01				0.20	DES	Settled deposits, fine, 10% cross-sectional area loss	00:00:42		3		0.20	GYF	Finish node, gully, reference: RWG (A)	00:00:49		
	0.00	MH	Start node, manhole, reference: MH4	00:00:00																															
	0.00	WL	Water level, 0% of the vertical dimension	00:00:01																															
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	0.20	GYF	Finish node, gully, reference: RWG (A)	00:00:49																															

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
0	0.0	0.0	0.0	1.0	1	2.0	10.0	2.0	5.0



## Section Inspection - 21/07/2022 - MH4X



Item No. 7	Insp. No. 1	Date 21/07/22	Time 9:24	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR MH4X
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village: Isle Of White	Inspection Direction: Downstream	Upstream Node: MH4
Road: 15 Gordon Close	Inspected Length: 12.12 m	Upstream Pipe Depth: 0.600 m
Location:	Total Length: 12.12 m	Downstream Node: MH5
Surface Type:	Joint Length:	Downstream Pipe Depth:

Use: Foul	Pipe Shape: Circular
Type of Pipe:	Dia/Height: 150 mm
Flow Control: No flow control	Material: Pitch fibre
Year Constructed: Not Specified	Lining Type: No Lining
Inspection Purpose: Sample condition survey	Lining Material: No Lining

**Comments:**  
**Recommendations:**

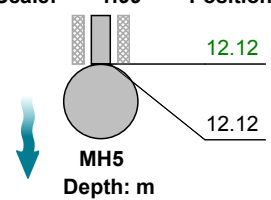
Scale:	1:99	Position [m]	Code	Observation	MPEG	Photo	Grade																																																																																				
<div style="display: flex; align-items: flex-start;"> <div style="width: 20%;"> <p style="margin-bottom: 5px;">Depth: 0.60 m</p> <p style="margin-bottom: 5px;">MH4</p> </div> <table border="1" style="width: 80%; border-collapse: collapse;"> <tr> <td style="text-align: right;">0.00</td> <td>MH</td> <td>Start node, manhole, reference: MH4</td> <td>00:00:00</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">0.00</td> <td>WL</td> <td>Water level, 0% of the vertical dimension</td> <td>00:00:23</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">0.00</td> <td>S01</td> <td>Deformed sewer or drain, 20%, start</td> <td>00:00:23</td> <td>Sec_7_Ins p_1_MH4 X_9366.jpg</td> <td></td> </tr> <tr> <td style="text-align: right;">3.81</td> <td>F01</td> <td>Deformed sewer or drain, 20%, finish</td> <td>00:01:05</td> <td></td> <td>3 / 4</td> </tr> <tr> <td style="text-align: right;">3.81</td> <td>S02</td> <td>Deformed sewer or drain, 30%, start</td> <td>00:01:05</td> <td>Sec_7_Ins p_1_MH4 X_36190.j</td> <td></td> </tr> <tr> <td style="text-align: right;">5.80</td> <td>F02</td> <td>Deformed sewer or drain, 30%, finish</td> <td>00:01:20</td> <td></td> <td>4 / 4</td> </tr> <tr> <td style="text-align: right;">5.80</td> <td>D</td> <td>Deformed sewer or drain, 15%</td> <td>00:01:20</td> <td>Sec_7_Ins p_1_MH4 X_46663.j</td> <td>3 / 3</td> </tr> <tr> <td style="text-align: right;">6.27</td> <td>D</td> <td>Deformed sewer or drain, 15%</td> <td>00:01:23</td> <td>Sec_7_Ins p_1_MH4 X_20830.j</td> <td>3 / 3</td> </tr> <tr> <td style="text-align: right;">7.20</td> <td>D</td> <td>Deformed sewer or drain, 10%</td> <td>00:01:33</td> <td>Sec_7_Ins p_1_MH4 X_820.jpg</td> <td>2 / 3</td> </tr> <tr> <td style="text-align: right;">7.56</td> <td>D</td> <td>Deformed sewer or drain, 10%</td> <td>00:01:37</td> <td>Sec_7_Ins p_1_MH4 X_15154.j</td> <td>2 / 3</td> </tr> <tr> <td style="text-align: right;">7.75</td> <td>WL</td> <td>Water level, 5% of the vertical dimension</td> <td>00:01:38</td> <td></td> <td></td> </tr> <tr> <td style="text-align: right;">9.38</td> <td>D</td> <td>Deformed sewer or drain, 15%</td> <td>00:01:59</td> <td>Sec_7_Ins p_1_MH4 X_42728.j</td> <td>3 / 3</td> </tr> <tr> <td style="text-align: right;">10.17</td> <td>S03</td> <td>Roots, fine, start</td> <td>00:02:13</td> <td>Sec_7_Ins p_1_MH4 X_42678.j</td> <td></td> </tr> <tr> <td style="text-align: right;">10.84</td> <td>D</td> <td>Deformed sewer or drain, 20%</td> <td>00:02:22</td> <td></td> <td>3 / 4</td> </tr> </table> </div>								0.00	MH	Start node, manhole, reference: MH4	00:00:00			0.00	WL	Water level, 0% of the vertical dimension	00:00:23			0.00	S01	Deformed sewer or drain, 20%, start	00:00:23	Sec_7_Ins p_1_MH4 X_9366.jpg		3.81	F01	Deformed sewer or drain, 20%, finish	00:01:05		3 / 4	3.81	S02	Deformed sewer or drain, 30%, start	00:01:05	Sec_7_Ins p_1_MH4 X_36190.j		5.80	F02	Deformed sewer or drain, 30%, finish	00:01:20		4 / 4	5.80	D	Deformed sewer or drain, 15%	00:01:20	Sec_7_Ins p_1_MH4 X_46663.j	3 / 3	6.27	D	Deformed sewer or drain, 15%	00:01:23	Sec_7_Ins p_1_MH4 X_20830.j	3 / 3	7.20	D	Deformed sewer or drain, 10%	00:01:33	Sec_7_Ins p_1_MH4 X_820.jpg	2 / 3	7.56	D	Deformed sewer or drain, 10%	00:01:37	Sec_7_Ins p_1_MH4 X_15154.j	2 / 3	7.75	WL	Water level, 5% of the vertical dimension	00:01:38			9.38	D	Deformed sewer or drain, 15%	00:01:59	Sec_7_Ins p_1_MH4 X_42728.j	3 / 3	10.17	S03	Roots, fine, start	00:02:13	Sec_7_Ins p_1_MH4 X_42678.j		10.84	D	Deformed sewer or drain, 20%	00:02:22		3 / 4
0.00	MH	Start node, manhole, reference: MH4	00:00:00																																																																																								
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## Section Inspection - 21/07/2022 - MH4X



Item No. 7	Insp. No. 1	Date 21/07/22	Time 9:24	Client's Job Ref Not Specified	Weather No Rain Or Snow	Pre Cleaned Unknown	PLR MH4X
Operator AC		Vehicle Not Specified		Camera Not Specified	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Scale:	1:99	Position [m]	Code	Observation	MPEG	Photo	Grade
		12.12	F03	RF	Roots, fine, finish: Stuck on inside of pipe	00:02:46	2
		12.12	MHF	Finish node, manhole, reference: MH5	00:02:46		



Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
8	120.0	42.9	520.0	4.0	9	10.0	3.9	47.0	5.0