Auger House, Cross Lane,
Wallasey, Wirral, CH45 8RH
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Site Investigation Report

Auger Ref:

Job Information	
Client	Crawford & Co
Client ref	
Visit date	04/09/2025
Report date	17/09/2025

Job Summary

- CCTV survey undertaken. Read more.
- Drainage repairs required. Read more.

Job Information

Overview

Brief	Auger were commissioned by Crawford & Co to undertake a site investigation and CCTV inspection of the underground drainage within the area of concern (AOC) at the property.

Findings

Trial Hole Findings	**Trial Hole 1** TH1 was completed in the proposed location and revealed the footing. Soil and root samples were taken.
Drain Survey	We carried out a CCTV survey of the below ground drainage system, our findings of which are as follows: **Line 1 - From MH1 upstream** Our survey of line 1 revealed no significant defects to the pipework on this line which could be allowing an escape of water. **Line 2 - From MH1 upstream** Our survey of line 2 revealed fractures. **Line 3 - From MH1 downstream** Our survey of line 3 revealed root ingress, joint displacements and cracking. **Line 4 - From RWG1 downstream to Line 3** Our survey of line 4 revealed joint displacements. **Line 5 - From RWG2 downstream to MH1** Our survey of line 5 revealed joint displacements.

Recommendations

Refer Back to Client

It is recommended that the following repairs are carried out to prevent an escape of water from the system:

Line 2
Install a 100mm patch liner approximately 5.3m upstream of MH1.

Line 3
Install 6m of 100mm liner directly downstream of MH1.

Line 4
Excavate and replace RWG1 and 1m of 100mm pipework including a branch connection at a depth no greater than 1.0m through block paving.

Line 5
Excavate and replace RWG2 and 1m of 100mm pipework at a depth no greater than 1.0m through block paving.

Auger have not allowed or will not be held responsible for any alteration or modification to the above ground drainage following the removal of the existing gully and reinstatement of a new gully. The customer must ensure that the above ground drainage correctly expels into the gully pot and avoids overcrowding the gully with numerous downpipes which could lead to the gully overflowing.

During the clean-up/reinstatement process we will endeavour to leave the area we are working in clean and tidy and as close to how we found it as possible. There will always be an element of general debris/mud/waste that will build up in the area which cannot be prevented. There may however be elements of this process that are outside our remit i.e., Repainting or cleaning. If this is the case, then we will need to speak to the customer's insures to help in this regard.

We will now refer the claim back to the client in order to progress the claim.

Repair Caveats

Once repairs have been undertaken the customer should ensure the drainage system is periodically inspected in the future for any deterioration and kept free flowing / free of blockages. Any damage noted during future inspections should be repaired immediately in accordance with current Building Regulations.

With any repair process, complications and unforeseen circumstances can arise. These scenarios will be reported whilst on-site and could potentially cause an increase in repair costs and inconvenience.

Where any excavation reinstatement of the surface is required, the reinstatement will always attempt to match the previous surface patterns and colouring, however we cannot guarantee an exact match.

If any of the above lining recommendations fail then excavation and replacement of the pipework would be required. This would severely increase the cost of repairs and would provide greater inconvenience to the residents. The relining of a severe joint displacement is normally unadvised due to the potential for complications in the future.

Recommendations have been made to reline or patch reline sections of the drainage system at the property. This process combines a number of chemicals in a resin, which then harden in a fibreglass matting to create a new section of drain within the original. The reaction creates ***a strong smell which can linger for up to 72 hours*** *once works are completed - this is not harmful. It is recommended that any areas where smells are experienced are kept well ventilated until the odour subsides.*

The above recommendations allow for the replacement of gullies & connected underground drainage only. The insured should be made aware that the aesthetic appearance of this gully may be different from what is currently in place.

Photographs

Trial Hole 1

Fig 1.1: Trial Hole 1 Location

Fig 1.2: Trial Hole 1 Footing

CCTV Stills

Fig 2.1: Line 4 Displacement

Fig 2.2: Line 2 Fracture

Site Photos

Fig 3.1: MH1

CCTV Survey – Inspection Listings *(WRc Guidelines Applied)*

LINE1			
Direction	Upstream	**From**	MH1
Pipe Size (mm)		**Depth (m)**	OUTFALL
Pipe Material		**To**	

1.9m	Connection
2.4m	Connection
4.3m	Junction
4.3m	Finish of Survey Length (OUT OF AOC)

LINE2

Direction	Upstream	**From**	MH1
Pipe Size (mm)		**Depth (m)**	OUTFALL
Pipe Material		**To**	

4.4m	Finish of Survey Length (OUT OF AOC)
5.2m	Fracture - Multiple
5.2m	H

LINE3

Direction	Downstream	**From**	MH1
Pipe Size (mm)		**Depth (m)**	OUTFALL
Pipe Material		**To**	

3.3m	Crack - Circumferential
5.7m	Crack - Circumferential
6.0m	Connection (RWG1)
7.8m	Finish of Survey Length (OUT OF AOC)

LINE4

Direction	Downstream	**From**	RWG1
Pipe Size (mm)		**Depth (m)**	LINE3
Pipe Material		**To**	

0.1m	Joint Displacement - Medium
0.5m	Joint Displacement - Large
0.7m	Finish of Survey Length (LINE3)

LINE5

Direction	Downstream	**From**	RWG2
Pipe Size (mm)		**Depth (m)**	LINE2
Pipe Material		**To**	

0.1m	Displacement (medium)
0.4m	Finish of Survey Length (LINE2)

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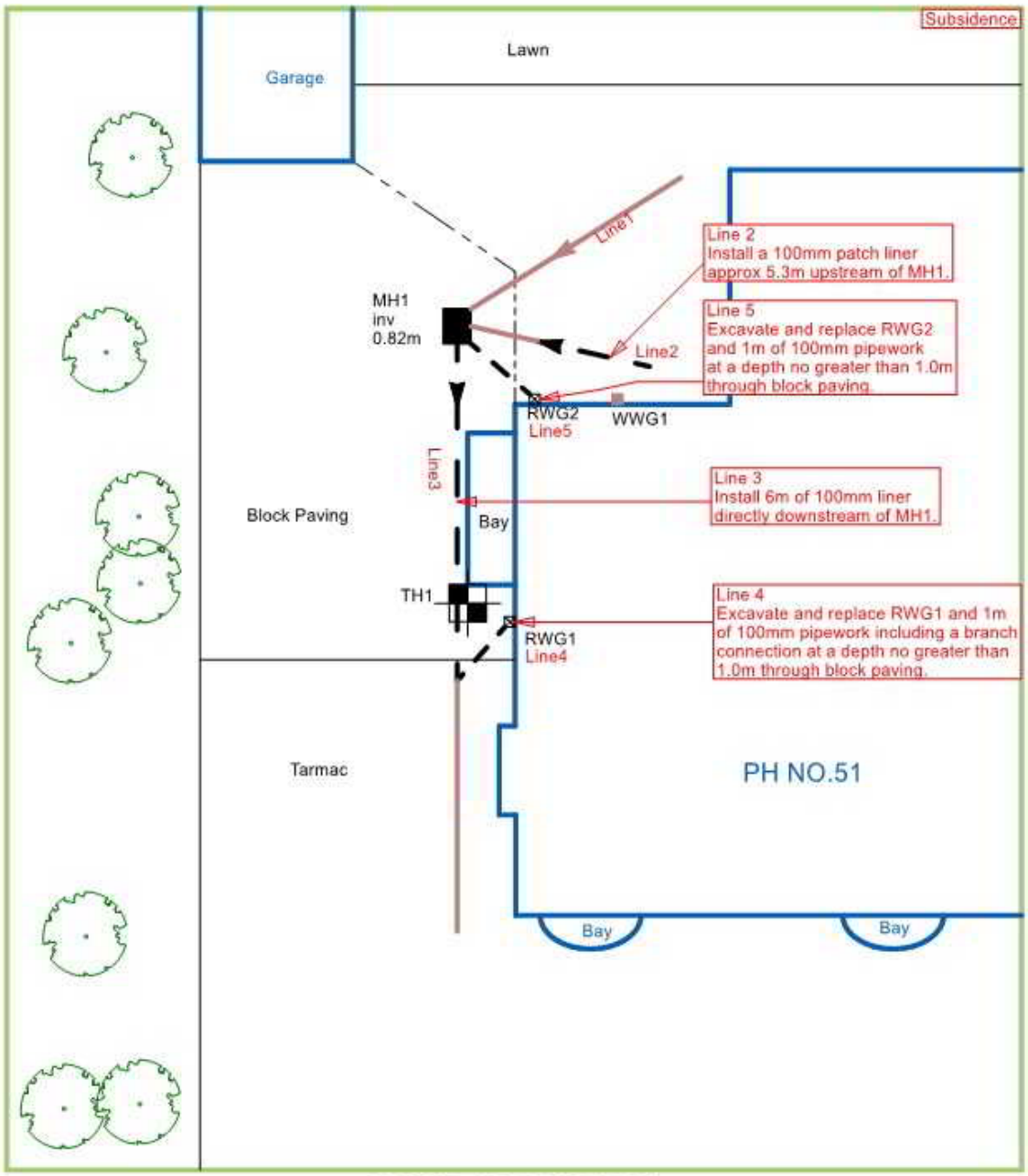
Proposed Layout

Job Ref:

Date: 05/09/2025



FRONT OF PROPERTY

LEGEND

- = Manhole (MH)
- = Inspection Chamber (IC)
- = Inspection Point (IP)
- = Blockage / Collapse
- = Soil Vent Pipe (SVP) / WC
- = Combined Waste Gully (CWG) / Foul Waste Gully (FWG)
- = Rainwater Gully (RWG)
- = Rainwater Pipe (RWP)
- = Lines not to be repaired
- = Lines to be repaired
- = Assumed water mains feed
- = Walls
- = Fences
- = Building Outline
- = Trial hole
- = Borehole
- = Direction of flow
- = Gate / Door
- = Shrubs / Bush
- = Hedge
- = Tree
- = Steps

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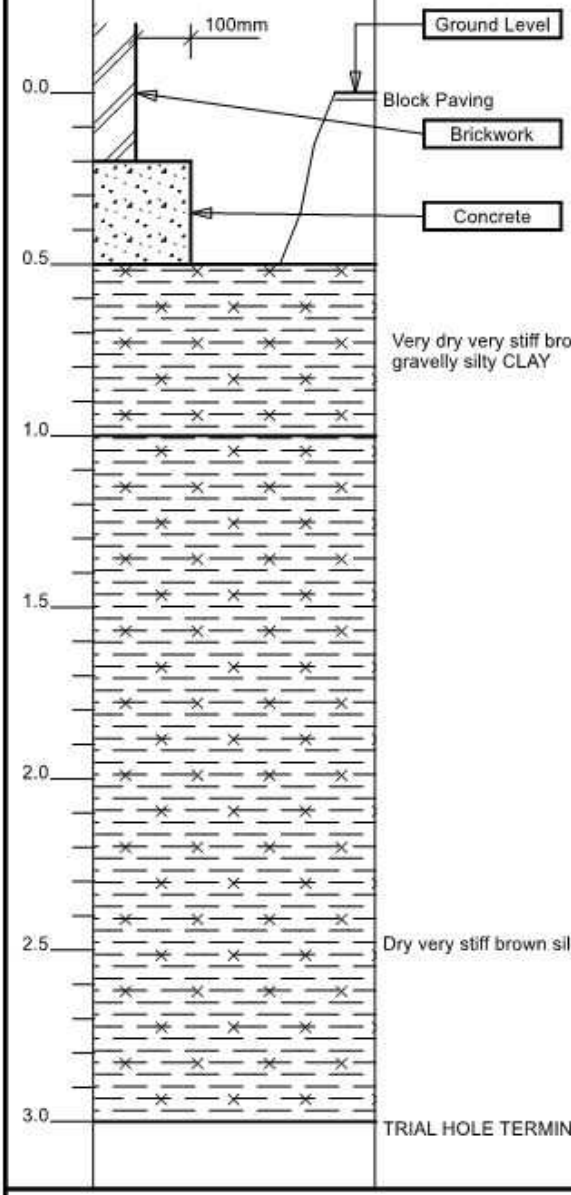
Trial Hole Log No.1

Location: Left hand side Bay window

Job Ref:



Depth (m)	Symbolic Log	Strata Description	Insitu Tests SV(19)	Soil Sample	Root Sample
0.0					
0.5		Very dry very stiff brown fine gravelly silty CLAY	98kpa	Soil @ 0.5m	Root @ 0.5m
1.0			102kpa	Soil @ 1m	Root @ 1m
1.5			104kpa	Soil @ 1.5m	
2.0			112kpa	Soil @ 2m	
2.5		Dry very stiff brown silty CLAY	130kpa	Soil @ 2.5m	
3.0		TRIAL HOLE TERMINATED	122kpa		

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	**Geotechnical Testing Analysis Report**	auger environmental + claims mgmt + subsidence + drainage +
Unit 3 & 4, Heol Aur, Dafen Ind Estate, Dafen Llanelli, Carmarthenshire, SA14 8QN	***The testing results contained within this report have been performed by GSTL a UKAS accredited laboratory on behalf of Auger.**	**Auger House, Cross Lane, Wallasey, Wirral, CH45 8RH**

Summary Of Claim Details

Policy Holder	
GSTL Job Reference	
SI Date	
Issue Date	04/09/2025
Report Date	04/09/2025
Auger Reference	
Insurance Company	NFU Mutual
LA Claim Reference	
LA Co. Reference	Crawford & Co

Checked and approved	26/09/2025	

GSTL GEOTECHNICAL SITE & TESTING LABORATORIES	LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX (BS 1377:1990 - Part 2 : 4.4 & 5.3) DESCRIPTIONS	auger environmental + claims mgmt + subsidence + drainage +
GSTL Contract Number	80777	
Report Date	04/09/2025	
Auger Reference		

TH Trial Hole	Sample Type	Depth (m)	Sample Description
TH1	S	0.50	Brown fine gravelly silty cLAY
TH1	S	1.00	Brown silty CLAY
TH1	S	1.50	Brown silty CLAY
TH1	S	2.00	Brown silty CLAY
TH1	S	2.50	Brown silty CLAY

Test Operator
Jason Smith

GSTL
GEOTECHNICAL SITE & TESTING LABORATORIES

LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.4 & 5.3)

auger
environmental + claims mgmt + subsidence + drainage +

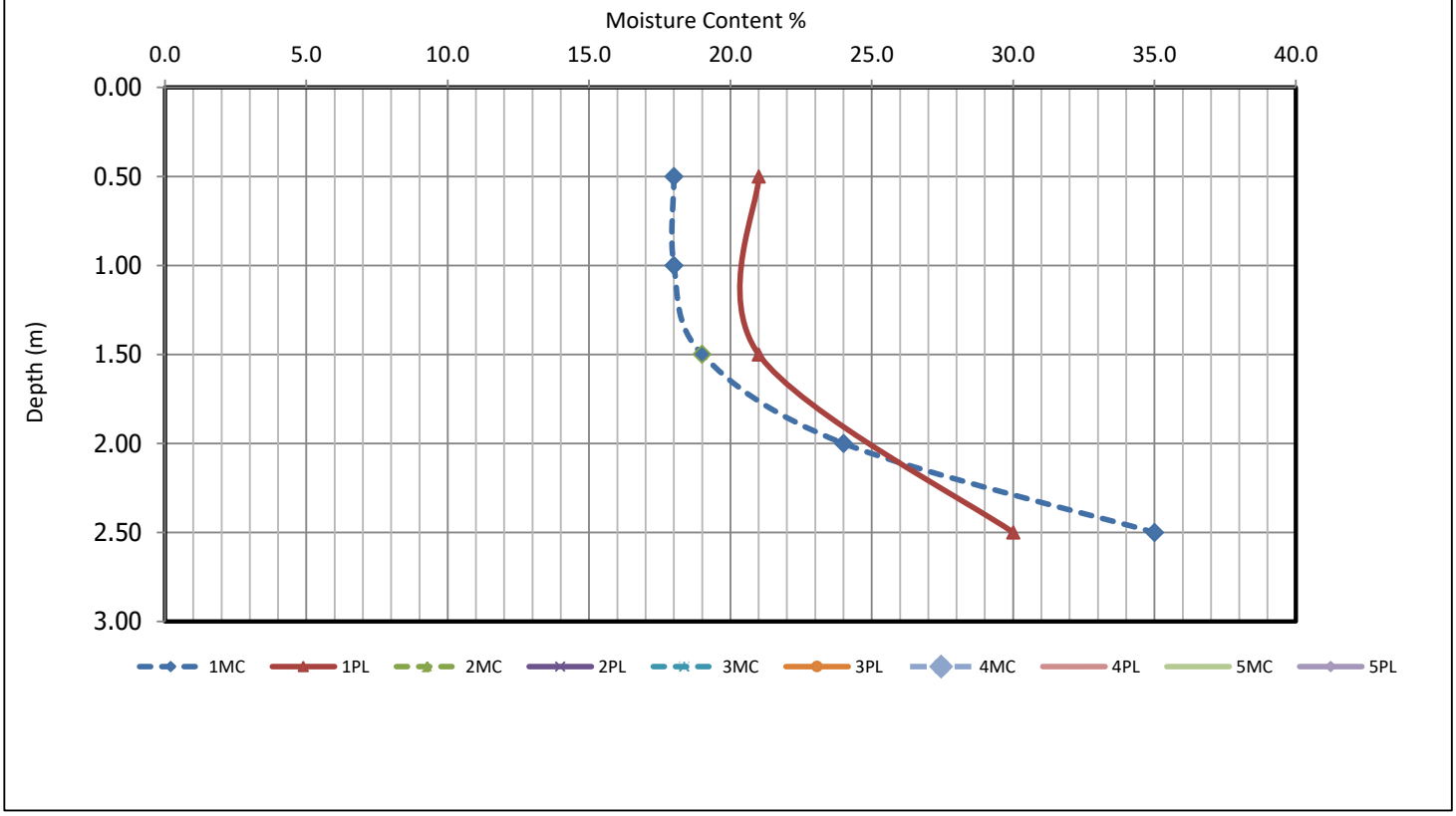
GSTL Contract Number		
Report Date	**04/09/2025**	
Auger Reference		
Remarks	NP - (Non-Plastic), # - (Liquid Limit and Plastic Limit Wet Sieved)	

TH Trial Hole	Sample Type	Depth (m)	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity index %	Passing .425mm %	NHBC Chapter 4.2	Remarks
TH1	S	0.50	18	47	21	26	90	MEDIUM VCP	CI Intermediate Plasticity
TH1	S	1.00	18						
TH1	S	1.50	19	49	21	28	100	MEDIUM VCP	CI Intermediate Plasticity
TH1	S	2.00	24						
TH1	S	2.50	35	66	30	36	100	MEDIUM VCP	CH High Plasticity

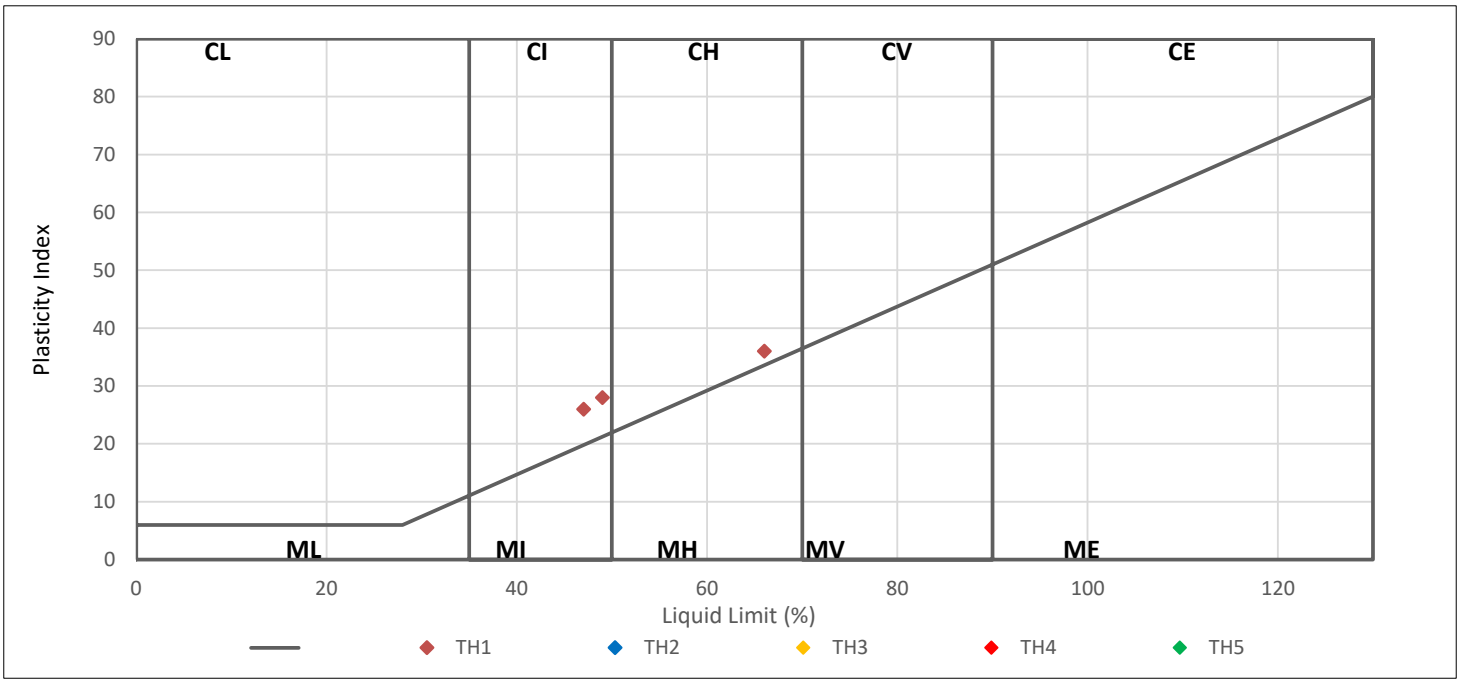
Modified Plasticity Index (PI) <10	: Non Classified
Modified PI = 10 to <20	: Low volume change potential (LOW VCP)
Modified PI = 20 to <40	: Medium volume change potential (Med VCP)
Modified PI = 40 or greater	: High volume change potential (HIGH VCP)

The Atterberg Limits May also be used to classify the volume change potential of fine soils using the National House building system, as given in the NHBC's Standards Chapter 4.2 (2003) "Building Near Trees"

Test Operator
Jason Smith



PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION
BS 5930:1999+A2:2010



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Test Operator
Jason Smith

Richardson's Botanical Identifications

Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

Dr Ian B K Richardson
BSc, MSc, PhD, MRSB, FLS
James Richardson
BSc (Hons. Biology)

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Web: www.botanical.net

Your ref:

Our ref:

Auger Solutions
Auger House
Cross Lane
WALLASEY
Wirral CH45 8RH

18/09/2025

Dear Sirs

Root ID

The samples you sent in relation to the above on 04/08/2025 have been examined. Their structures were referable as follows:

TH1, 0.5m		
6 no.	Examined root: FRAXINUS (Ash).	Alive, recently*.
TH1, 1.0m		
4 no.	Examined root: FRAXINUS (Ash).	Dead*.
3 no.	Unfortunately all with insufficient cells for identification.	

Click here for more information: FRAXINUS

I trust this is of help. Please call us if you have any queries; our Invoice is enclosed.

Yours faithfully

Dr Ian B K Richardson

* Based mainly on the Iodine test for starch. Starch is present in some cells of a living woody root, but is more or less rapidly broken down by soil micro-organisms on death of the root, sometimes before decay is evident. This result need not reflect the state of the parent tree.

Identified with no information on vegetation, on or off site.