

SITE INVESTIGATION FACTUAL REPORT

Report No: 493056

Client: Crawford Claims Management

Site: 9 The Laurels, Markfield Court Retirement

Client Ref: SU1800214-Openlink Limited Markfield Court Retirement Village

Date of Visit: 15/02/18

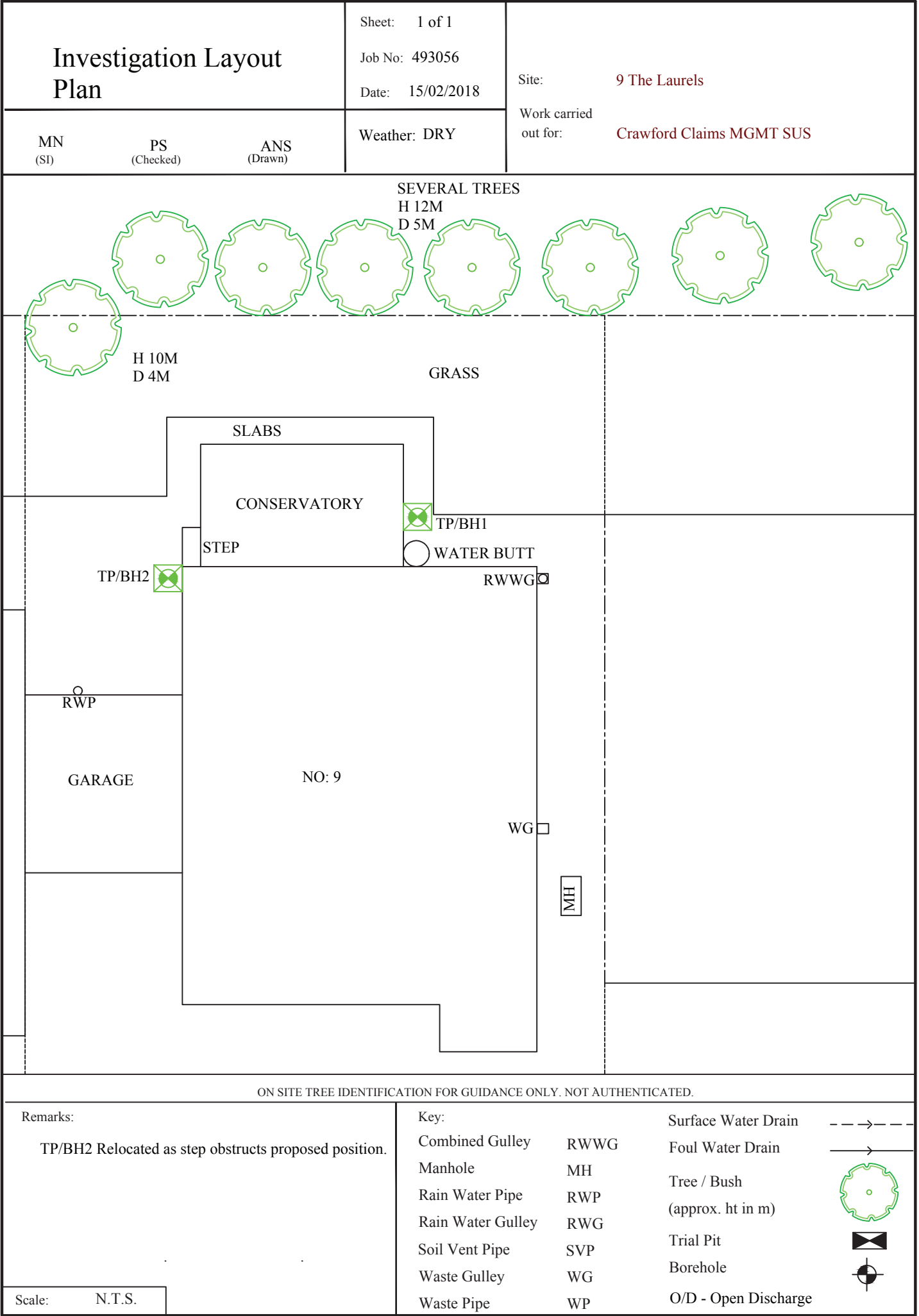


Home Emergency Response - Subsidence Investigation - Drainage Services – Crack & Level Monitoring – Property Video Surveys

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CET is the trading name of CET Structures Ltd
Registered in England No. 02527130



Trial Pit No: 1		Sheet: 1 of 1	Site: 9 The Laurels
		Job No: 493056	
		Date: 15/02/2018	
Hand Tools		Ground Level	Work carried out for: Crawford Claims MGMT SUS
Weather: DRY		Drawn By: ANS MOD:	

500 X 500

BRICK

70

50

300

350

650

CONCRETE FOUNDATION

GROUND LEVEL

PAVING SLAB

MADE GROUND: Medium compact dark brown sandy silty clay with brick fragments and clinker

ROOTS 5MMØ

550

FOR STRATA BELOW 600mm SEE BH LOG

Remarks: All measurements in millimetres.		Key:	
		D	Small disturbed sample
		B	Bulk disturbed sample
		W	Water sample
		TDTD	Too dense to drive
		J	Jar sample
		V	Pilcon Vane (kPa)
		M	Mackintosh probe

Logged: MN	Checked: PS	Approved:	Scale: N.T.S.
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[illegible]

Trial Pit No: 2		Sheet: 1 of 1	Site: 9 The Laurels
		Job No: 493056	
		Date: 15/02/2018	
Hand Tools	Drawn by: ANS	Work carried out for: Crawford Claims MGMT SUS	
Weather: DRY	Ground Level mOD:		

800 X 500

GROUND LEVEL

PAVING SLAB

MADE GROUND: Medium compact dark brown sandy silty clay with brick & concrete fragments

ROOTS TO 20MMØ

BRICK

1000

50

950

550

200

500

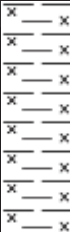
1200

CONCRETE FOUNDATION

D V 130+ 130+

FOR STRATA BELOW 1500mm SEE BH LOG

Remarks:	Steel pin driven 300mm under foundation at 1200mm below ground level.	Key:	D	Small disturbed sample	J	Jar sample
	All measurements in millimetres.		B	Bulk disturbed sample	V	Pilcon Vane (kPa)
			W	Water sample	M	Mackintosh probe
			TDTD	Too dense to drive		
Logged: MN	Checked: PS	Approved:	Scale:	N.T.S.		

Borehole		2			Sheet:	1 of 1	Site:	9 The Laurels					
					Job No:	493056							
					Date:	15/02/2018							
Boring Method:		Hand Auger			Ground Level:			Client:	Crawford Claims Management				
Diameter (mm):		75	Weather:		dry								
Depth		Soil Description						Samples and Tests					
(m)								Thickness	Legend	Depth	Type	Result	
0.00		See Trial Pit						1.50					
1.50		Stiff brown silty CLAY						0.80		1.50	DV	130+	
2.30		End of BH											
Remarks:		BH ends at 2.3m ,too stiff /too hard to hand auger. BH dry and open on completion.						Key:					
								D - Disturbed Sample					
								B - Bulk Sample					
								W - Water Sample Roots					
								J - Jar Sample Roots					
								V - Pilcon Shear Vane (kPa Roots					
								M - Mackintosh Probe Depth to Water (m)					
								TDTD - Too Dense To Drive					
Logged:		MN	PS	Checked:	Approved:	Version			V1.0 28/01/16				
											N.T.S.		

Laboratory Summary Results

Our Ref.: 493056 Date Sampled: 15/02/18

Location : 9, The Laurels, Markfield Court Retirement, Markfield Date Received : 19/02/18

Client: Crawford Claims Management Date Tested : 19/02/18

Address: Cartwright House, Tottle Road, Riverside Business Park, NG2 1RU Date of Report : 22/02/18

TP/BH No	Sample Ref		Moisture Content (%)	Soil Fraction > 0.425mm (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index	Modified * Plasticity Index (%)	Soil * Class	Filter Paper Contact Time (h)	Soil Sample Suction (kPa)	Oedometer Strain	Estimated Heave Potential (Dd) (mm)	In situ * Shear Vane Strength (kPa)	Organic * Content (%)	pH * Value	Sulphate Content * (g/l)		* Class
	Depth (m)	Type																SO ₃	SO ₄	
1	U/S 0.35	D	24	21	47	22	25	0.07	20	CI										
	1.0	D	30	<5	48	23	25	0.30	25	CI					113					
	1.5	D	29	6											> 130					
	2.0	D	23	5	53	19	34	0.11	32	CH					> 130					

Test Methods / Notes

[1] BS 1377 : Part 2 : 1990, Test No 3.2	[8] In-house method S9a adapted from BRE IP 4/93	[16] BRE Special Digest One (Concrete in Aggressive Ground) August 2005	Key D Disturbed sample (small) B Disturbed sample (bulk) U Undisturbed sample W Groundwater sample ENP Essentially Non-Plastic by inspection US Underside of Foundation
[2] Estimated if <5%, otherwise measured	[9] In-house Test Procedure S17a: One Dimensional Swell/Strain Test	Note that if the SO ₄ content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4M or DS-5M class respectively unless water soluble magnesium testing is undertaken to prove otherwise.	
[3] BS 1377 : Part 2 : 1990, Test No 4.4	[10] Estimated Heave Potential (Dd)		
[4] BS 1377 : Part 2 : 1990, Test No 5.3	[11] Values of shear strength were determined in situ by CET using a Picon hand vane or Geonor vane (GV).		
[5] BS 1377 : Part 2 : 1990, Test No 5.4	[12] BS 1377 : Part 3 : 1990, Test No 4		
[6] BRE Digest 240 : 1993	[13] BS 1377 : Part 2 : 1990, Test No 9		
[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils	[14] BS 1377 : Part 3 : 1990, Test No 5.6	* These tests are not UKAS accredited Full reports can be provided upon request	
	[15] SO ₄ = 1.2 x SO ₃		



Laboratory Testing Results

Our Ref: 493056

Date Sampled: 15/02/18

Location: 9, The Laurels, Markfield Court Retirement, Markfield

Date Received: 19/02/18

Client: Crawford Claims Management

Date Tested: 19/02/18

Address: Cartwright House, Tottle Road, Riverside Business Park, NG2 1RU

Date of Report: 22/02/18

TP/BH No.	Sample Ref.		Moisture Content (%)	Soil Fraction > 0.425mm (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Liquidity Index	Modified Plasticity Index (%)	Soil Class	Filter Paper Contact Time (h)	Soil Sample Suction (kPa)	Oedometer Strain	Estimated Heave Potential (Dd) (mm)	In situ Shear Vane Strength (kPa)	Organic Content (%)	pH Value	Sulphate Content (g/l)		* Class
	Depth (m)	Type																SO3	SO4	
2	U/S 1.20	D	30	<5	61	24	37	0.16	37	CH								[14]	[15]	[16]
	1.5	D	25	<5																
	2.0	D	20	10	55	18	37	0.06	33	CH										

Test Methods / Notes

[1] BS 1377 : Part 2 : 1990, Test No 3.2

[2] Estimated if <5%, otherwise measured

[3] BS 1377 : Part 2 : 1990, Test No 4.4

[4] BS 1377 : Part 2 : 1990, Test No 5.3

[5] BS 1377 : Part 2 : 1990, Test No 5.4

[6] BRE Digest 240 : 1993

[7] BS 5930 : 1981 : Figure 31 - Plasticity Chart for the classification of fine soils

[8] In-house method S9a adapted from BRE 114-993

[9] In-house Test Procedure S17a: One Dimensional Swell/Strain Test

[10] Estimated Heave Potential (Dd)

[11] Values of shear strength were determined in situ by CET using a Picon hand vane or Geonor vane (GV).

[12] BS 1377 : Part 3 : 1990, Test No 4

[13] BS 1377 : Part 2 : 1990, Test No 9

[14] BS 1377 : Part 3 : 1990, Test No 5.6

[15] SO₄ = 1.2 x SO₃

[16] BRE Special Digest One (Concrete in Aggressive Ground) August 2005

Note that if the SO₄ content falls into the DS-4 or DS-5 class, it would be prudent to consider the sample as falling into the DS-4M or DS-5M class respectively unless water soluble magnesium testing is undertaken to prove otherwise.

* These tests are not UKAS accredited

Full reports can be provided upon request

Key

D

B

U

W

ENP

US

Disturbed sample (small)

Disturbed sample (bulk)

Undisturbed sample

Groundwater sample

Essentially Non-Plastic by inspection

Underside of Foundation



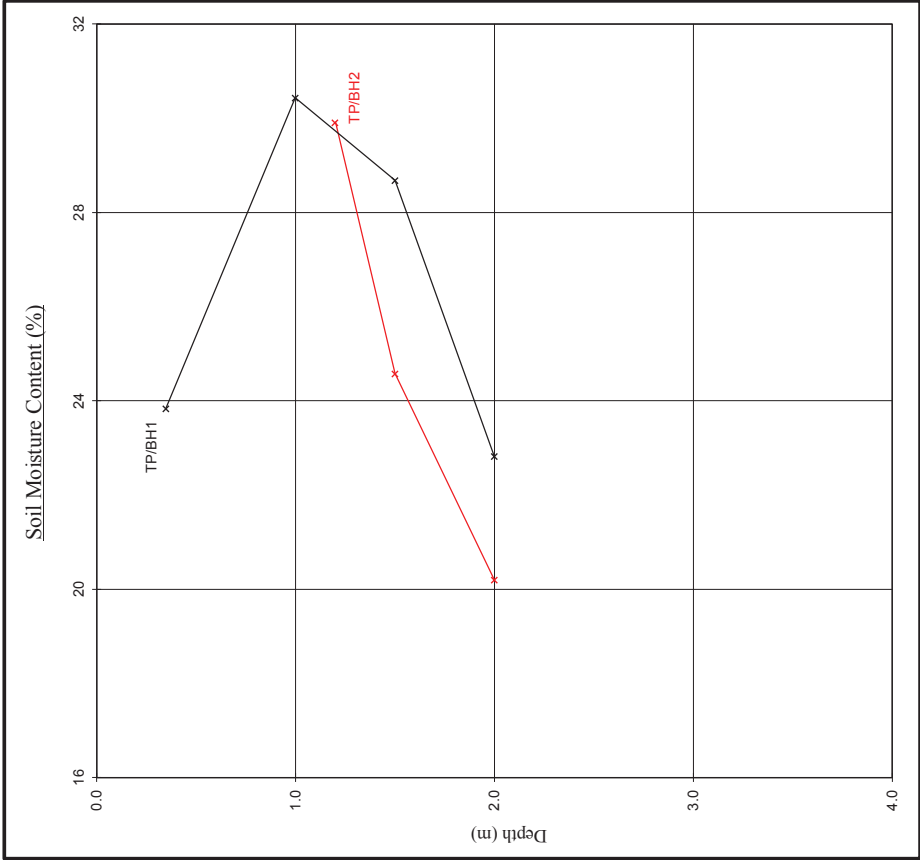
Version: 5BH V1.4 - 11/05/15

8618

Moisture Content Profiles

Our Ref : 493056
Location : 9, The Laurels, Markfield Court Retirement, Markfield
Work carried out for: Crawford Claims Management

Date Sampled : 15/02/18
Date Received : 19/02/18
Date Tested : 19/02/18
Date of Report : 22/02/18



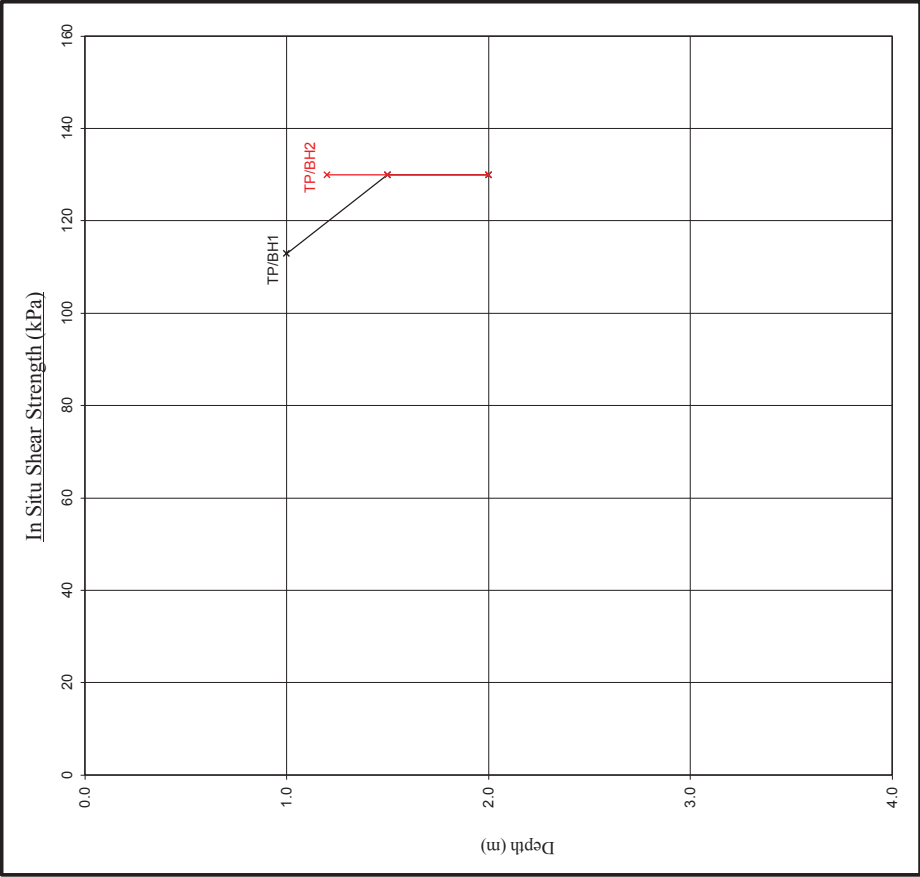
Notes

1. If plotted, 0.4 LL and PL+2 (after Driscoll, 1983) should only be applied to London Clay (and similarly overconsolidated clay) at shallow depths.

2. Unless specifically noted the profiles have not been related to a site datum.

Shear Strength Profiles

Date Sampled : 15/02/18
Date Received : 19/02/18
Date Tested : 19/02/18
Date of Report : 22/02/18



Note

1. Unless otherwise stated, values of Shear Strength were determined in situ by CET using a Picon Hand Vane the calibration of which is limited to a maximum reading of 130 kPa.

2. Unless specifically noted the profiles have not been related to a site datum.

EPSL**European Plant Science Laboratory**

Sheet: 1 of 1

Job No: **493056**Date: **21/02/2018**Order No: **1108838**EPSL Ref: **R21651**Site: **9 The Laurels, Markfield,**Work carried
out for: **Crawford Claims MGMT SUS*****Certificate of Analysis***

The following work was commissioned by CET on behalf of their client. Root samples were obtained in sealed packets from the above site with no reference given as to the types of tree or shrub from which they may have originated.

The results were as follows -

<u>Trial pit/ Borehole number</u>	<u>Root diameter (mm)</u>	<u>Tree, shrub or climber from which root originates</u>	<u>Result of starch test</u>
TP1 (USF)	5 mm	Quercus spp. 5 roots	Positive
BH1 (to 1.2m)	12 mm	Quercus spp.	Positive
BH1 (to 2.2m)	1 mm	broadleaved species, too juvenile for positive identification 3 roots	Positive
TP2 (USF)	14 mm	Quercus spp. 5 roots	Positive
BH2 (to 2.3m)	1 mm	Quercus spp. *	Positive

* Plus 4 other juvenile roots probably the same.

Quercus spp. are oaks (both deciduous and evergreen).



RJS

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Plant Anatomist : *Dr G S Turner B.Sc. (Hons), M.Sc., Ph.D*

Plant Anatomist : *Dr R J Shaw B.Sc. (Hons), Ph.D*

Consultant: *Dr M P Denne B.Sc. (Hons), M.Sc., Ph.D*

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