

Taylor Wimpey

# Chesterton

Supplementary factual soakaway test report

313035-03 (00)

NOVEMBER 2016





## RSK GENERAL NOTES

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**Project No.:** 313035-03(00)

**Title:** Supplementary factual soakaway test report: Chesterton

**Client:** Taylor Wimpey (Oxfordshire)

**Date:** 2<sup>nd</sup> November 2016

**Office:** Abbey Park, Humber Road, Coventry, CV3 4AQ. Tel: 02476 505600

**Status:** Final

**Author**

Adam Jones

Signature

Date:

2<sup>nd</sup> November 2016

**Approved by**

Marc Dixon

Signature

Date:

2<sup>nd</sup> November 2016

**Project manager**

Michael Lawson

Signature

Date:

2<sup>nd</sup> November 2016

RSK Environment Limited (RSK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and RSK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of RSK and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

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# 1 INTRODUCTION

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RSK Environment Limited (RSK) have been commissioned by Taylor Wimpey (Oxfordshire) (the Client) to carry out a series of shallow infiltration tests at a site off The Hale, Chesterton, Oxfordshire.

The investigation was undertaken in accordance with the requirements provided by RPS Planning and Development (the Engineer), on behalf of the Client. This report summarises the work undertaken and presents the data obtained.

This report is subject to the RSK service constraints given in Appendix A.

## 1.1 Objective and scope of investigation

The objective of the investigation was to provide information regarding the infiltration characteristics of the shallow soils, in order to inform the design of the proposed residential development.

The project was carried out to an agreed brief as set out in RSK's proposal (313035-T03(00), dated 20<sup>th</sup> October, 2016). The scope of testing was as follows:

- Excavate 6 trial holes into the Cornbrash Formation to depths of between 0.70m and 1.20m bgl (i.e. the maximum depths of the proposed soakaways); and
- Undertake three soakage tests to full BRE specification at each location to assess infiltration characteristics.

A description of the procedures followed during the testing are presented within Section 2. The exploratory hole records are presented in Appendix B, while factual data obtained during the soakaway tests is presented within Appendix C of this report.

## 1.2 Limitations

The comments provided and the opinions expressed within this report are based on the ground conditions encountered during the intrusive investigation, and on the results of testing undertaken in-situ. There may, however, be conditions pertaining to the site that have not been disclosed by the investigation; and therefore could not be taken into account. In particular, it should be noted that the thickness and quality of the made ground and underlying natural strata may be variable across the site. In addition, groundwater levels may vary from those reported due to seasonal, or other, effects.

## 2 TEST PROCEDURE AND RESULTS

Soakaway testing was undertaken in accordance with the instructions of the Client and Engineer between 27<sup>th</sup> and 29<sup>th</sup> October 2016.

The techniques adopted for the intrusive investigation were chosen based on the aims of the investigation, and the access constraints for plant and equipment.

The testing strategy was primarily focused on the characterisation of the shallow Cornbrash Formation; in order to confirm the infiltration characteristics of the formation. The testing was undertaken at the locations and depths specified by the Engineer. Three of the exploratory locations (TP101, TP103 and TP104), were targeted to investigate the infiltration characteristics beneath the proposed roadways on the site. Two of the exploratory locations were located to target the infiltration characteristics of strata underlying the proposed gardens (TP02 and TP06) and one beneath the proposed attenuation pond in the southeast corner of the site (TP05).

The investigation and the soil descriptions were carried out in accordance with 'BS 5930:1999. Code of Practice for Site Investigations' (BSI, 1999); and the testing was undertaken in accordance with Building Research Establishment (BRE) 365.

Each soakaway trial pit was excavated and logged by a suitably qualified engineer, with full logs for each location presented within Appendix B. Upon completion of the soakaway tests, the trial pits were extended in order to confirm the strata present beneath the base of each soakaway test location.

Table 1 below, summarises the programme of testing undertaken and the infiltration rates recorded for each individual test. The results of the tests are presented in full within Appendix C.

**Table 1: Summary of infiltration testing programme**

Location	Soakaway Depth (m bgl)	Stratum / Feature	Result (m/s)
TP101	0.93	Cornbrash Formation (limestone and silty clay)	$7.17 \times 10^{-5}$
			$3.96 \times 10^{-5}$
			$6.98 \times 10^{-5}$
TP102	1.14	Cornbrash Formation (limestone and silty clay)	$2.62 \times 10^{-5}$
			$1.33 \times 10^{-5}$
			$2.40 \times 10^{-5}$
TP103	0.95	Cornbrash Formation (limestone)	$4.18 \times 10^{-5}$
			$3.55 \times 10^{-5}$
			$5.01 \times 10^{-5}$
TP104	0.93	Cornbrash Formation (limestone)	$2.52 \times 10^{-4}$
			$1.63 \times 10^{-4}$
			$1.19 \times 10^{-4}$
TP105	1.20	Cornbrash Formation	$4.97 \times 10^{-5}$

Location	Soakaway Depth (m bgl)	Stratum / Feature	Result (m/s)
		(limestone and silty clay)	6.49 x 10 <sup>-5</sup>
			4.69 x 10 <sup>-5</sup>
TP106	1.20	Cornbrash Formation (limestone)	1.20 x 10 <sup>-4</sup>
			8.34 x 10 <sup>-5</sup>
			5.98 x 10 <sup>-5</sup>

As can be seen from the above, infiltration rates within the Cornbrash Formation ranged between 2.52x10<sup>-4</sup>m/s and 1.33x10<sup>-5</sup>m/s.

## FIGURES

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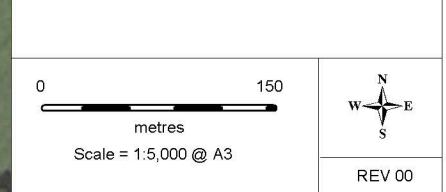
 Indicative site boundary



Rev	Date	Description	Drn	Chk	App
00	22.05.15	313035	RG	SP	AJ



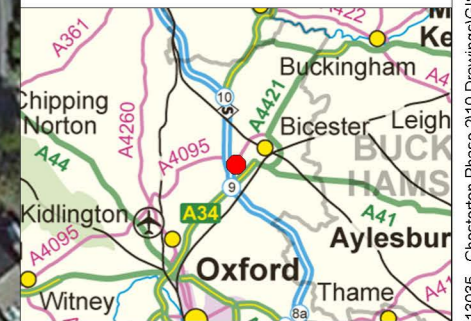
Figure 1  
Site Location Plan







- Indicative site boundary
- Trial pit and soakaway



Rev	Date	Description	Drn	Chk	App
01	01.11.16	313035	SP	RG	AJ

**Chesterton**

Figure 2  
Exploratory Hole Location Plan

Scale = 1:1,250 @ A3

REV 01

# APPENDIX A

## SERVICE CONSTRAINTS

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1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Taylor Wimpey Oxfordshire (the "client") in accordance with the terms of a contract between RSK and the "client", dated 20<sup>th</sup> October 2016. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.
2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
3. Unless otherwise agreed the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**
4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date hereof, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.
7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.
8. The phase II or intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.
9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.



# **APPENDIX B**

## **EXPLORATORY HOLE RECORDS**

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Contract: <b>Chesterton</b>		Client: <b>Taylor Wimpey Oxfordshire</b>		Trial Pit: <b>TP101</b>	
Contract Ref: <b>313035</b>		Start: <b>26.10.16</b> End: <b>26.10.16</b>	Ground Level: <b>---</b>	National Grid Co-ordinate: <b>E:455703.7 N:221419.6</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium limestone. (TOPSOIL)	0.25	
						Soft to firm reddish brown silty slightly sandy gravelly CLAY with a medium cobble content. Sand is fine. Gravel is fine to coarse angular to subangular of limestone. Cobbles are tabular angular to subangular up to 180mm of limestone. (CORNBRAASH FORMATION)	0.35 0.45	
						Soft to firm reddish brown slightly sandy silty CLAY. Sand is fine. (CORNBRAASH FORMATION)	(0.45)	
						Strong grey LIMESTONE recovered as tabular sandy medium to coarse gravel and cobble sized fragments in a red brown clayey matrix, shelly in places. (CORNBRAASH FORMATION)	0.90	
Trial pit terminated at 0.90m bgl.								

GINT LIBRARY V8 05.GLB LibVersion: v8 05 - Lib0004 PrjVersion: v8 05 - Core+Logs 0003 | Log TRIAL PIT LOG | 313035 - CHESTERTON PHASE 2.GPJ - v8 05 | 02/11/16 - 15:48 | DM1.  
 RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk

Plan (Not to Scale) 		<b>General Remarks</b> 1. Location scanned with a CAT and Signal Generator prior to breaking ground. No Services detected. 2. Trial pit remained stable during excavation. 3. Groundwater not encountered. 4. Trial pit infilled with gravel up to ground level for duration of soakaway test. Soakaway test carried out at 0.90m bgl. 5. Upon completion of three soakaway tests, gravel was removed and trial pit backfilled with arisings.	
Method Used: <b>Machine dug</b>		Plant Used: <b>JCB-3CX</b>	
Logged By: <b>HBovenizer</b>		Checked By: <b>AGS</b>	
All dimensions in metres		Scale: <b>1:25</b>	

Contract: <b>Chesterton</b>		Client: <b>Taylor Wimpey Oxfordshire</b>		Trial Pit: <b>TP102</b>	
Contract Ref: <b>313035</b>		Start: <b>26.10.16</b> End: <b>26.10.16</b>	Ground Level: <b>---</b>	National Grid Co-ordinate: <b>E:455737.9 N:221431.9</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium limestone. (TOPSOIL)	0.25	
						Strong grey LIMESTONE recovered as tabular sandy medium to coarse gravel and cobble sized fragments in a reddish brown clayey matrix, shelly in places. (CORNBRAH FORMATION)	(0.50)	
						Firm light yellow mottled grey silty CLAY with occasional limestone lithorelicts. (CORNBRAH FORMATION)	(0.50)	
						Grey strong LIMESTONE recovered as tabular sandy medium to coarse gravel and cobble sized fragments in a red brown clayey matrix, shelly in places. (CORNBRAH FORMATION)	(0.55)	
						Firm to stiff grey mottled orange sandy CLAY. (FOREST MARBLE FORMATION)	1.80 1.90	

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RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk

<p>Plan (Not to Scale)</p>	<h3 style="text-align: center;">General Remarks</h3> <ol style="list-style-type: none"> <li>1. Location scanned with a CAT and Signal Generator prior to breaking ground. No Services detected.</li> <li>2. Trial pit remained stable during excavation.</li> <li>3. Groundwater not encountered.</li> <li>4. Trial pit infilled with gravel up to ground level for duration of soakaway test. Soakaway test carried out at 1.14m bgl.</li> <li>5. Upon completion of three soakaway tests, gravel was removed and excavation extended.</li> <li>6. Trial pit backfilled with arising upon completion.</li> </ol>		
All dimensions in metres      Scale: <b>1:25</b>			
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>HBovenizer</b>	Checked By:

Contract: <b>Chesterton</b>		Client: <b>Taylor Wimpey Oxfordshire</b>		Trial Pit: <b>TP103</b>	
Contract Ref: <b>313035</b>	Start: <b>26.10.16</b> End: <b>26.10.16</b>	Ground Level: <b>---</b>	National Grid Co-ordinate: <b>E:455739.3 N:221376.6</b>		Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown slightly sandy slightly gravelly CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium limestone. (TOPSOIL)	(0.30) 0.30	
						Strong grey LIMESTONE recovered as tabular cobble sized and gravel sized lithorelicts in reddish brown clayey matrix. Gravel is angular medium to coarse limestone. Occasional shells in limestone. (CORNBRAsh FORMATION)	(0.80) 1.10	
						Firm light grey mottled orange gravelly sandy CLAY. Gravel is angular fine to medium mudstone. (FOREST MARBLE FORMATION)	(0.30) 1.40	
						Firm grey mottled orange CLAY (FOREST MARBLE FORMATION)	1.50	

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RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk.

<b>Plan (Not to Scale)</b> 		<b>General Remarks</b> <ol style="list-style-type: none"> <li>1. Location scanned with a CAT and Signal Generator prior to breaking ground. No Services detected.</li> <li>2. Trial pit remained stable during excavation.</li> <li>3. Groundwater not encountered.</li> <li>4. Trial pit infilled with gravel up to ground level for duration of soakaway test. Soakaway test carried out at 0.90m bgl.</li> <li>5. Upon completion of three soakaway tests, gravel was removed and excavation extended.</li> <li>6. Trial pit backfilled with arising upon completion.</li> </ol>		
		All dimensions in metres	Scale: <b>1:25</b>	
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>HBovenizer</b>	Checked By:	

Contract: <b>Chesterton</b>		Client: <b>Taylor Wimpey Oxfordshire</b>		Trial Pit: <b>TP104</b>	
Contract Ref: <b>313035</b>		Start: <b>26.10.16</b> End: <b>26.10.16</b>	Ground Level: <b>---</b>	National Grid Co-ordinate: <b>E:455783.5 N:221380.7</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown very sandy silty CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium mudstone. (TOPSOIL)	0.20	
						Strong grey LIMESTONE recovered as tabular gravel and cobbles sized fragments. Gravel is subangular to angular medium to coarse. Cobbles are up to 200mm to 300mm in reddish brown clayey matrix. (CORNBRAH FORMATION) ... at 0.60m bgl matrix becoming orange brown.	(1.10)	
						Soft to firm orangish brown sandy gravelly CLAY. Gravel is angular fine to coarse limestone. (CORNBRAH FORMATION)	1.30	
						Firm to stiff grey slightly sandy gravelly CLAY. Gravel is subangular fine to medium mudstone and limestone. (FOREST MARBLE FORMATION)	1.50	
							(0.30)	
							1.80	

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 RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk

Plan (Not to Scale) 		<b>General Remarks</b> 1. Location scanned with a CAT and Signal Generator prior to breaking ground. No Services detected. 2. Trial pit remained stable during excavation. 3. Groundwater not encountered. 4. Trial pit infilled with gravel up to ground level for duration of soakaway test. Soakaway test carried out at 0.75m bgl. 5. Upon completion of three soakaway tests, gravel was removed and excavation extended. 6. Trial pit backfilled with arising upon completion.	
Method Used: <b>Machine dug</b>		Plant Used: <b>JCB-3CX</b>	
Logged By: <b>HBovenizer</b>		Checked By: <b>AGS</b>	
All dimensions in metres		Scale: <b>1:25</b>	

Contract: <b>Chesterton</b>		Client: <b>Taylor Wimpey Oxfordshire</b>		Trial Pit: <b>TP105</b>	
Contract Ref: <b>313035</b>		Start: <b>26.10.16</b> End: <b>26.10.16</b>	Ground Level: <b>---</b>	National Grid Co-ordinate: <b>E:455807.7 N:221312.5</b>	Sheet: <b>1 of 1</b>

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown very sandy silty CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium mudstone. (TOPSOIL)	0.20	
						Grey strong LIMESTONE recovered as tabular gravel and cobbles sized fragments. Gravel is subangular to angular medium to coarse cobble up to 200mm to 300mm in red brown clayey matrix. (CORNBASH FORMATION)	(0.65)	
						Firm light yellow mottled light grey silty CLAY. Gravel is angular to subangular medium to coarse limestone. Cobbles recovered up to 200mm. (CORNBASH FORMATION)	0.85 (0.45)	
						Soft to firm orange brown sandy CLAY. (CORNBASH FORMATION)	1.30 1.50	
						Soft to firm light grey very gravelly sandy blocky CLAY. Gravel is subangular fine to coarse mudstone. (FOREST MARBLE FORMATION)	(0.60) 2.10	

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 RSK Environment Ltd, The Enterprise Centre, Coventry University Technology Park, Coventry, CV1 2TX. Tel: 02476 236816, Fax: 02476 236014, Web: www.rsk.co.uk

<p>Plan (Not to Scale)</p>	<h3 style="text-align: center;">General Remarks</h3> <ol style="list-style-type: none"> <li>1. Location scanned with a CAT and Signal Generator prior to breaking ground. No Services detected.</li> <li>2. Trial pit remained stable during excavation.</li> <li>3. Groundwater not encountered.</li> <li>4. Trial pit infilled with gravel up to ground level for duration of soakaway test. Soakaway test carried out at 1.200m bgl.</li> <li>5. Upon completion of three soakaway tests, gravel was removed and excavation extended.</li> <li>6. Trial pit backfilled with arising upon completion.</li> </ol>		
All dimensions in metres <span style="float: right;">Scale: <b>1:25</b></span>			
Method Used: <b>Machine dug</b>	Plant Used: <b>JCB-3CX</b>	Logged By: <b>HBovenizer</b>	Checked By:



Contract: <b>Chesterton</b>		Client: <b>Taylor Wimpey Oxfordshire</b>		Trial Pit: <b>TP106</b>	
Contract Ref: <b>313035</b>		Start: <b>26.10.16</b> End: <b>26.10.16</b>	Ground Level: <b>---</b>	National Grid Co-ordinate: <b>E:455846.2 N:221338.6</b>	Sheet: <b>1 of 1</b>

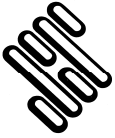
Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
						Dark brown very sandy silty CLAY. Sand is fine. Gravel is subangular to subrounded fine to medium mudstone. (TOPSOIL)	(0.30) 0.30	
						Grey strong LIMESTONE recovered as tabular gravel and cobbles sized fragments. Gravel is subangular to angular medium to coarse cobble up to 200mm to 300mm in red brown clayey matrix. (CORNBRAsh FORMATION) ... Matrix becoming yellowish brown from 0.60m bgl.	(0.85) 1.15	
						Soft to firm yellow mottled light creamy grey slightly gravelly clayey SILT. Sand is fine. (CORNBRAsh FORMATION)	1.40	
						Soft to firm orange brown sandy slightly gravelly CLAY. Gravel is subrounded fine to coarse mudstone and limestone. (CORNBRAsh FORMATION)	(0.30) 1.70	
						Firm to stiff grey mottled orange slightly gravelly CLAY with pockets of sand. Gravel is angular fine to medium mudstone and limestone. (FOREST MARBLE FORMATION)	(0.30) 2.00	

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Plan (Not to Scale) 		<b>General Remarks</b> 1. Location scanned with a CAT and Signal Generator prior to breaking ground. No Services detected. 2. Trial pit remained stable during excavation. 3. Groundwater not encountered. 4. Trial pit infilled with gravel up to ground level for duration of soakaway test. Soakaway test carried out at 1.20m bgl. 5. Upon completion of three soakaway tests, gravel was removed and excavation extended. 6. Trial pit backfilled with arising upon completion.	
Method Used: <b>Machine dug</b>		Plant Used: <b>JCB-3CX</b>	
All dimensions in metres		Scale: <b>1:25</b>	
Logged By: <b>HBovenizer</b>		Checked By:	

# APPENDIX C TEST RECORDS

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**STRUCTURAL SOILS LTD**  
**INSITU TESTING REPORT**

Report No. 746915R.01(00)

Date 01-November-2016 Contract Green Lane, Chesterton

Client RSK Environment Ltd  
Address Spring Lodge  
172 Chester Road  
Helsby  
Cheshire  
WA6 0AR

For the Attention of Michael Lawson

Order received	24-October-2016	Client Reference	313025
Testing Started	27-October-2016	Client Order No.	PO262641
Testing Completed	29-October-2016	Instruction Type	Written

Test(s) undertaken (Not UKAS Accredited)

6no. Insitu soakaway tests carried out at locations specified by the client.

Testing undertaken in the Laboratory

Environmental conditions (if relevant)

The results represent the ground conditions at the specified locations and depths at the time of testing.

Please Note: Remaining samples will be retained for a period of one month from today and will then be disposed of .  
Test were undertaken on samples 'as received' unless otherwise stated.  
Opinions and interpretations expressed in this report are outside the scope of accreditation for this laboratory.

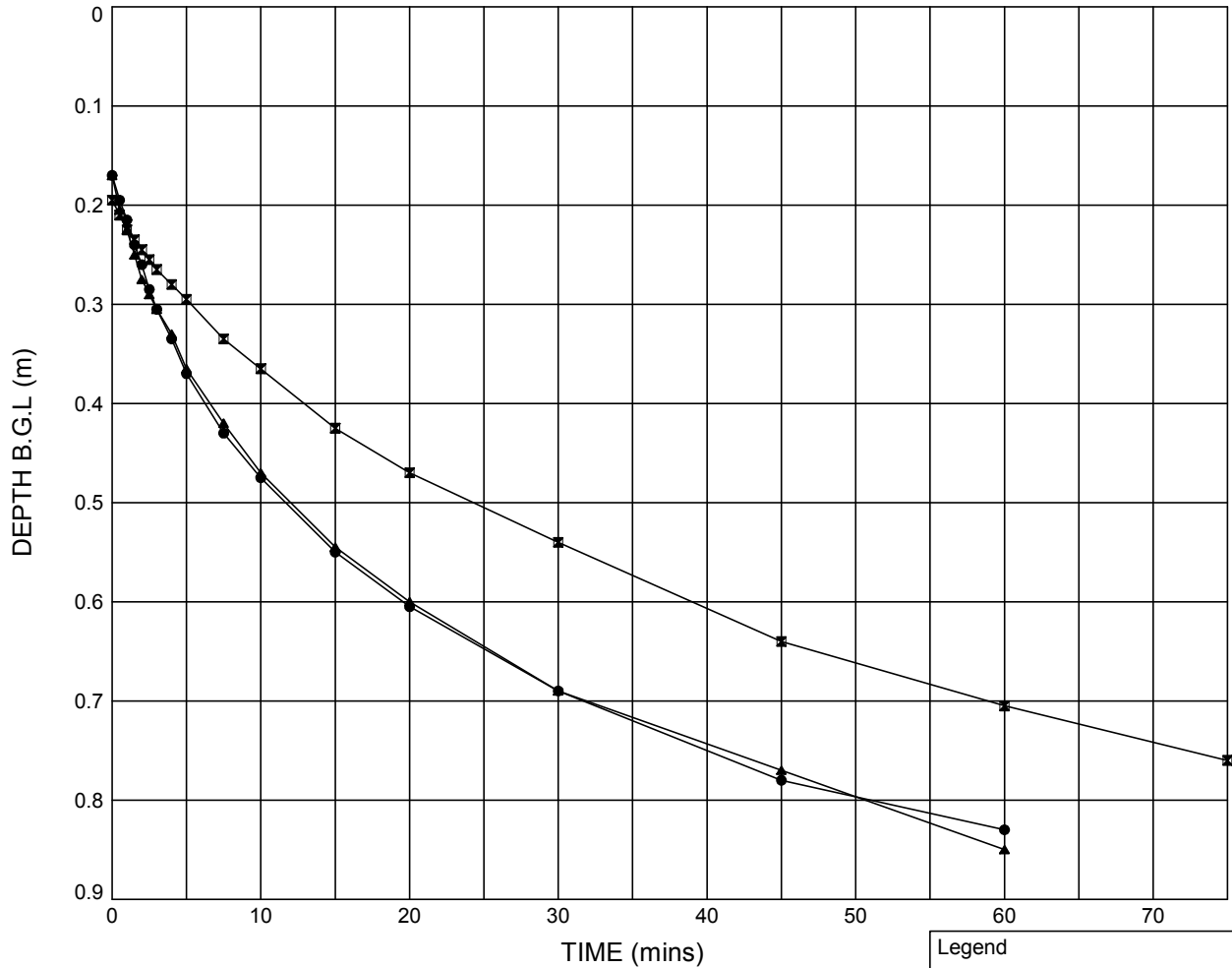
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# FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

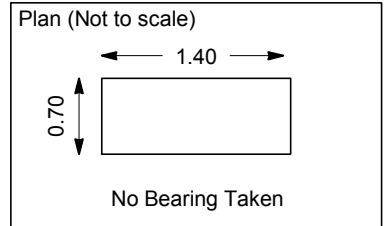
Soakaway Test - Position ID : TP101

## Plot of Depth of Water Below Ground Level Against Time

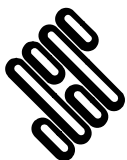


	Test 1	Test 2	Test 3	
Pit start depth:	= 0.93	<b>0.93</b>	0.93	m
Pit final depth:	= 0.93	<b>0.93</b>	0.93	m
Effective depth, $D_e$	= 0.76	<b>0.74</b>	0.76	m
Effective storage volume, $V_{p75-25}$	= 0.3724	<b>0.3602</b>	0.3724	$m^3$
Surface area, $a_{p50}$	= 2.5760	<b>2.5235</b>	2.5760	$m^2$
Time, $t_{p75-25}$	= 2017	<b>3606</b>	2072	secs
Infiltration rate, $f$	= $7.17 \times 10^{-5}$	<b><math>3.96 \times 10^{-5}</math></b>	$6.98 \times 10^{-5}$	m/s

Legend		
●	Test 1	(27.10.16)
■	Test 2	(27.10.16)
▲	Test 3	(29.10.16)



GINT\_LIBRARY\_V8\_06\_GLB.LibVersion: v8\_06\_013 ProjVersion: v8\_06 - Core+in Situ Testing - 004 | Graph 1 - TP SOAKAWAY - 2 - FINAL REPORT - A4P | 746915.GPJ - v8\_06 | 01/11/16 - 11:24 | MS4 |



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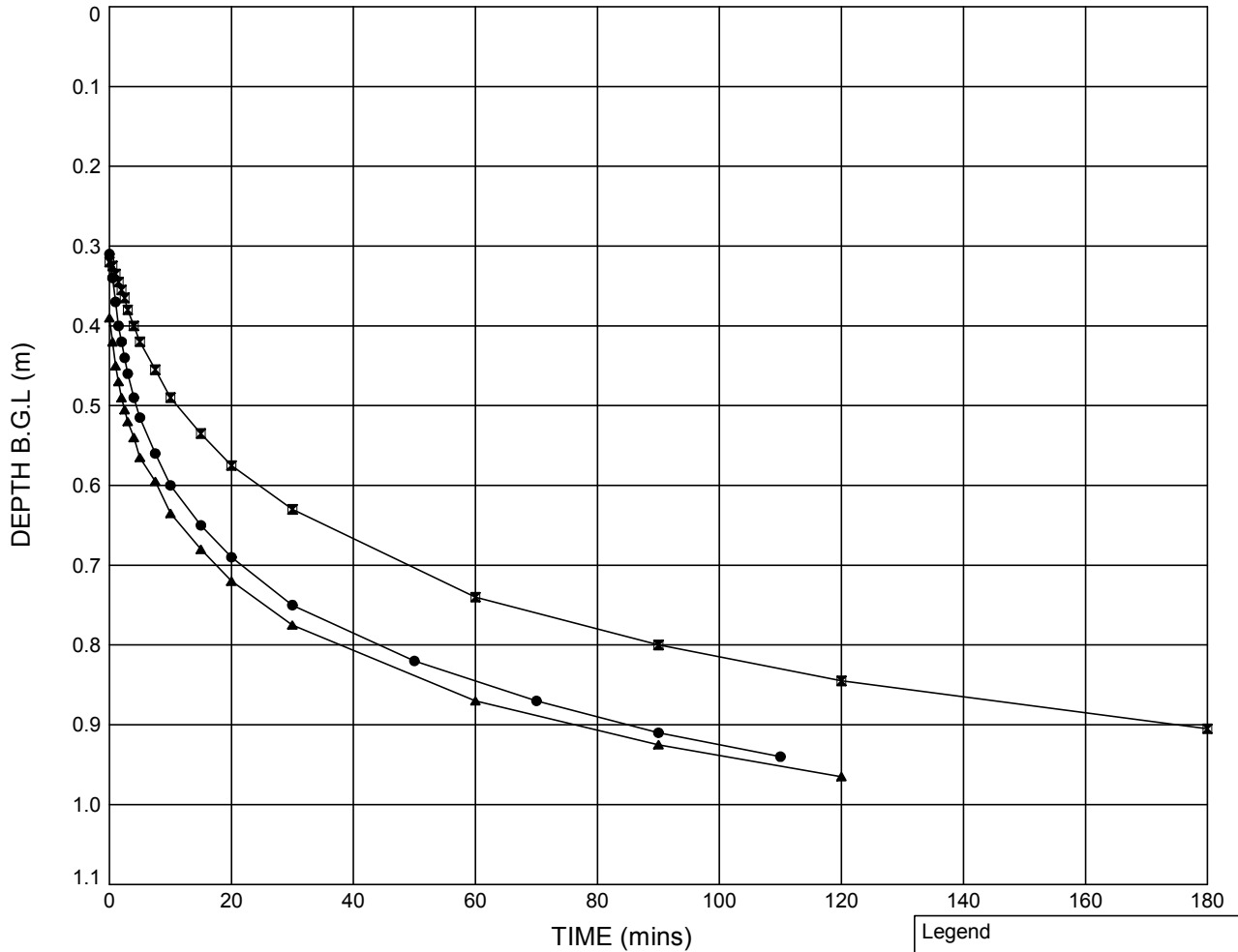
Compiled By	Date	Checked By	Date
<i>MDStranger</i>	01/11/16	<i>S. Philp</i>	01/11/16
Contract		Contract Ref:	
<b>Green Lane, Chesterton</b>		<b>746915</b>	

# FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

Soakaway Test - Position ID : TP102

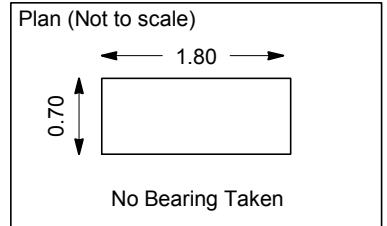
## Plot of Depth of Water Below Ground Level Against Time



	Test 1	Test 2	Test 3	
Pit start depth:	= 1.14	1.14	1.14	m
Pit final depth:	= 1.14	1.14	1.14	m
Effective depth, $D_e$	= 0.83	0.82	0.75	m
Effective storage volume, $V_{p75-25}$	= 0.5229	0.5166	0.4725	$m^3$
Surface area, $a_{p50}$	= 3.3350	3.3100	3.1350	$m^2$
Time, $t_{p75-25}$	= 5992	11767	6276	secs
Infiltration rate, $f$	= $2.62 \times 10^{-5}$	$1.33 \times 10^{-5}$	$2.40 \times 10^{-5}$	m/s

Please note test data was extrapolated to obtain  $t_{p75-tp25}$ .

Legend		
●	Test 1	(27.10.16)
■	Test 2	(27.10.16)
▲	Test 3	(29.10.16)



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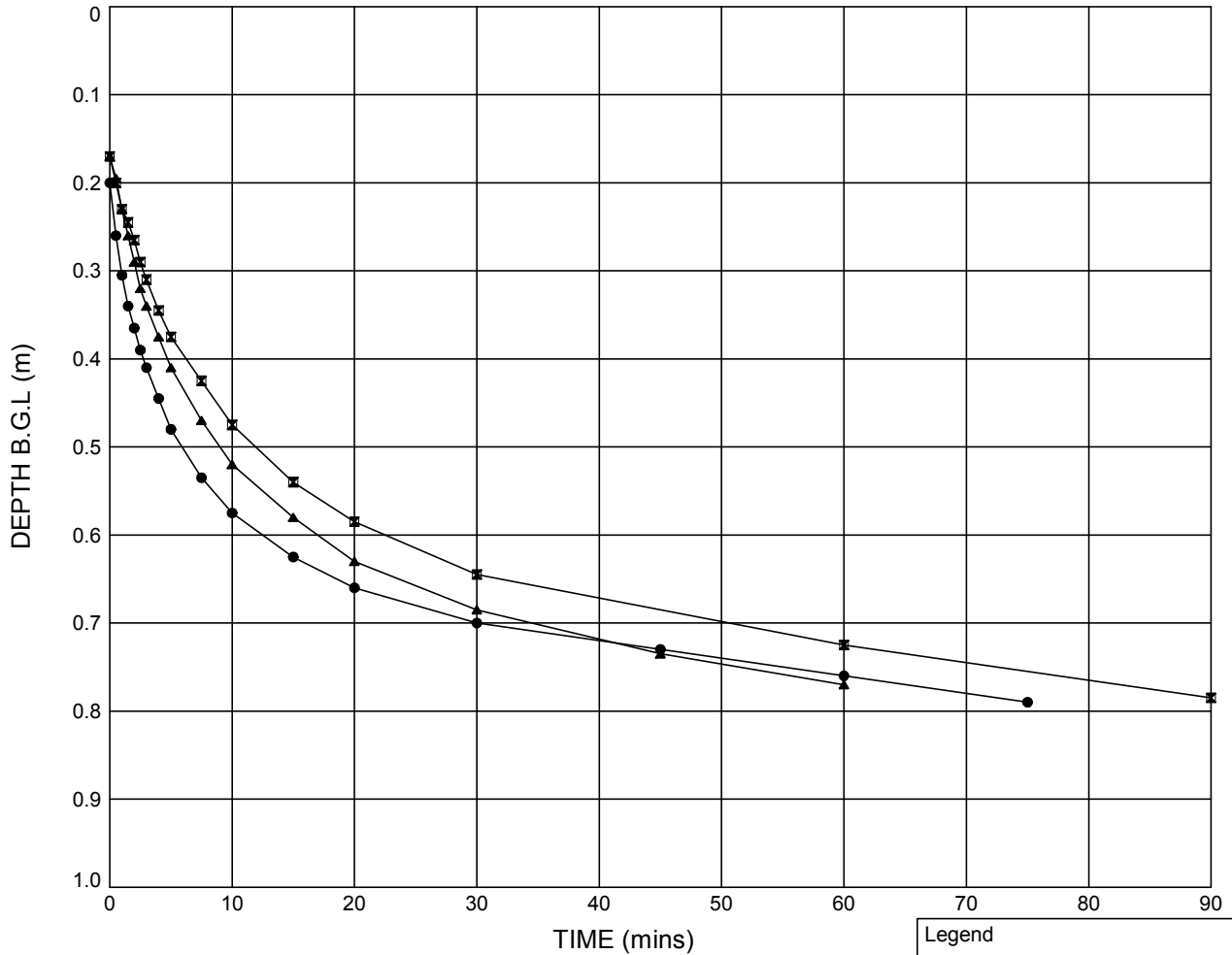
Compiled By	Date	Checked By	Date
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Contract		Contract Ref:	
Green Lane, Chesterton		746915	

# FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

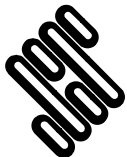
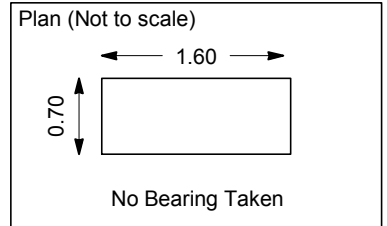
Soakaway Test - Position ID : TP103

## Plot of Depth of Water Below Ground Level Against Time



	Test 1	Test 2	Test 3	
Pit start depth:	= 0.95	0.95	0.95	m
Pit final depth:	= 0.95	0.95	0.95	m
Effective depth, $D_e$	= 0.75	0.78	0.78	m
Effective storage volume, $V_{p75-25}$	= 0.4200	0.4368	0.4368	$m^3$
Surface area, $a_{p50}$	= 2.8450	2.9140	2.9140	$m^2$
Time, $t_{p75-25}$	= 3528	4220	2991	secs
Infiltration rate, $f$	= $4.18 \times 10^{-5}$	$3.55 \times 10^{-5}$	$5.01 \times 10^{-5}$	m/s

Legend		
●	Test 1	(27.10.16)
■	Test 2	(27.10.16)
▲	Test 3	(29.10.16)



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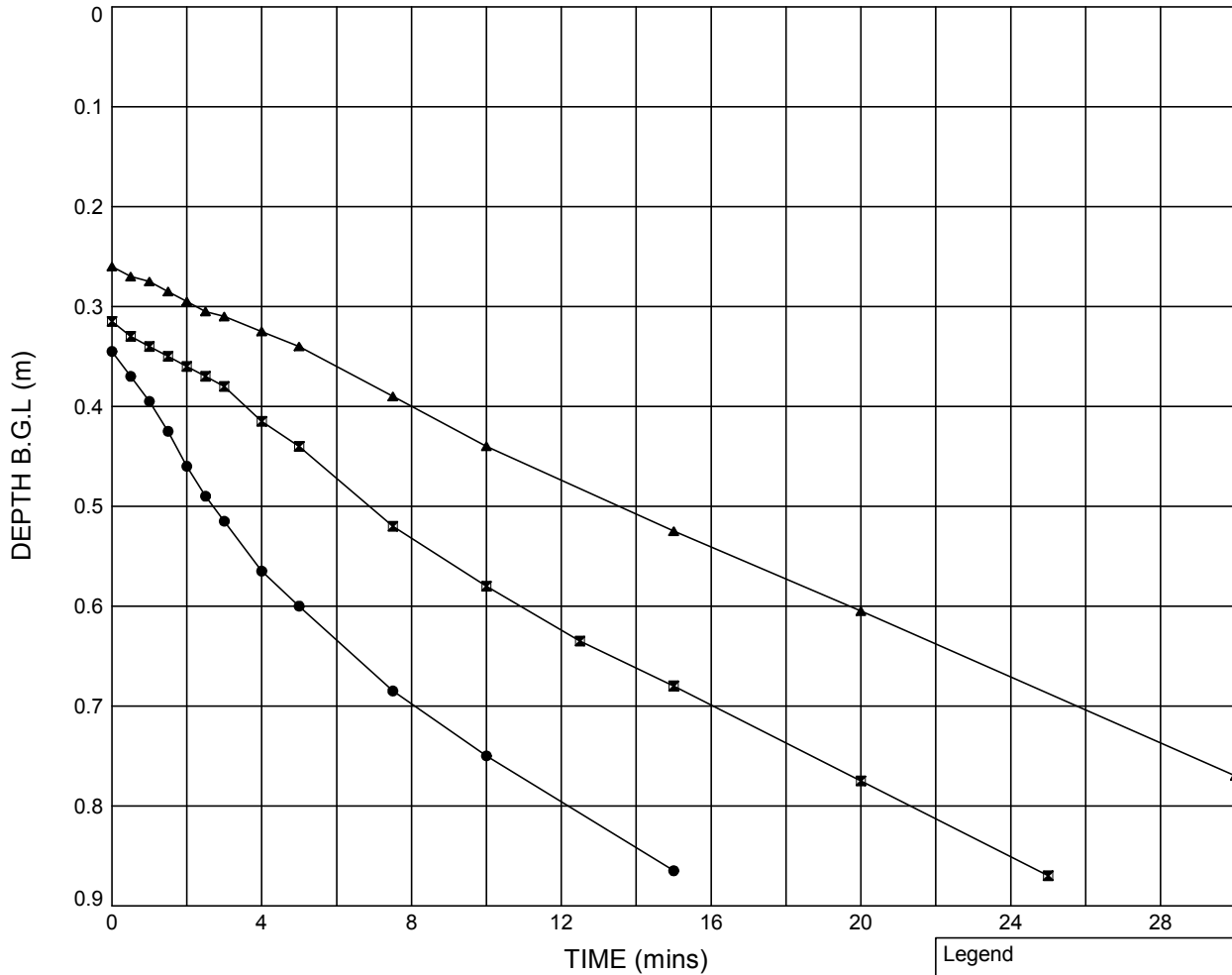
Compiled By	Date	Checked By	Date
<i>MD Stranges</i>	01/11/16	<i>S. Philp</i>	01/11/16
Contract		Contract Ref:	
<b>Green Lane, Chesterton</b>		<b>746915</b>	

# FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

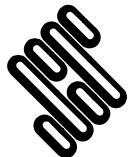
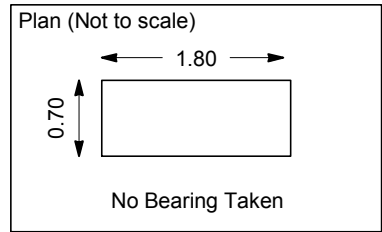
Soakaway Test - Position ID : TP104

## Plot of Depth of Water Below Ground Level Against Time



	Test 1	Test 2	Test 3	
Pit start depth:	= 0.93	0.93	<b>0.93</b>	m
Pit final depth:	= 0.93	0.93	<b>0.93</b>	m
Effective depth, $D_e$	= 0.59	0.62	<b>0.67</b>	m
Effective storage volume, $V_{p75-25}$	= 0.3686	0.3875	<b>0.4221</b>	$m^3$
Surface area, $a_{p50}$	= 2.7225	2.7975	<b>2.9350</b>	$m^2$
Time, $t_{p75-25}$	= 537	850	<b>1210</b>	secs
Infiltration rate, $f$	= $2.52 \times 10^{-4}$	$1.63 \times 10^{-4}$	<b><math>1.19 \times 10^{-4}</math></b>	m/s

Legend		
●	Test 1	(28.10.16)
■	Test 2	(28.10.16)
▲	Test 3	(28.10.16)



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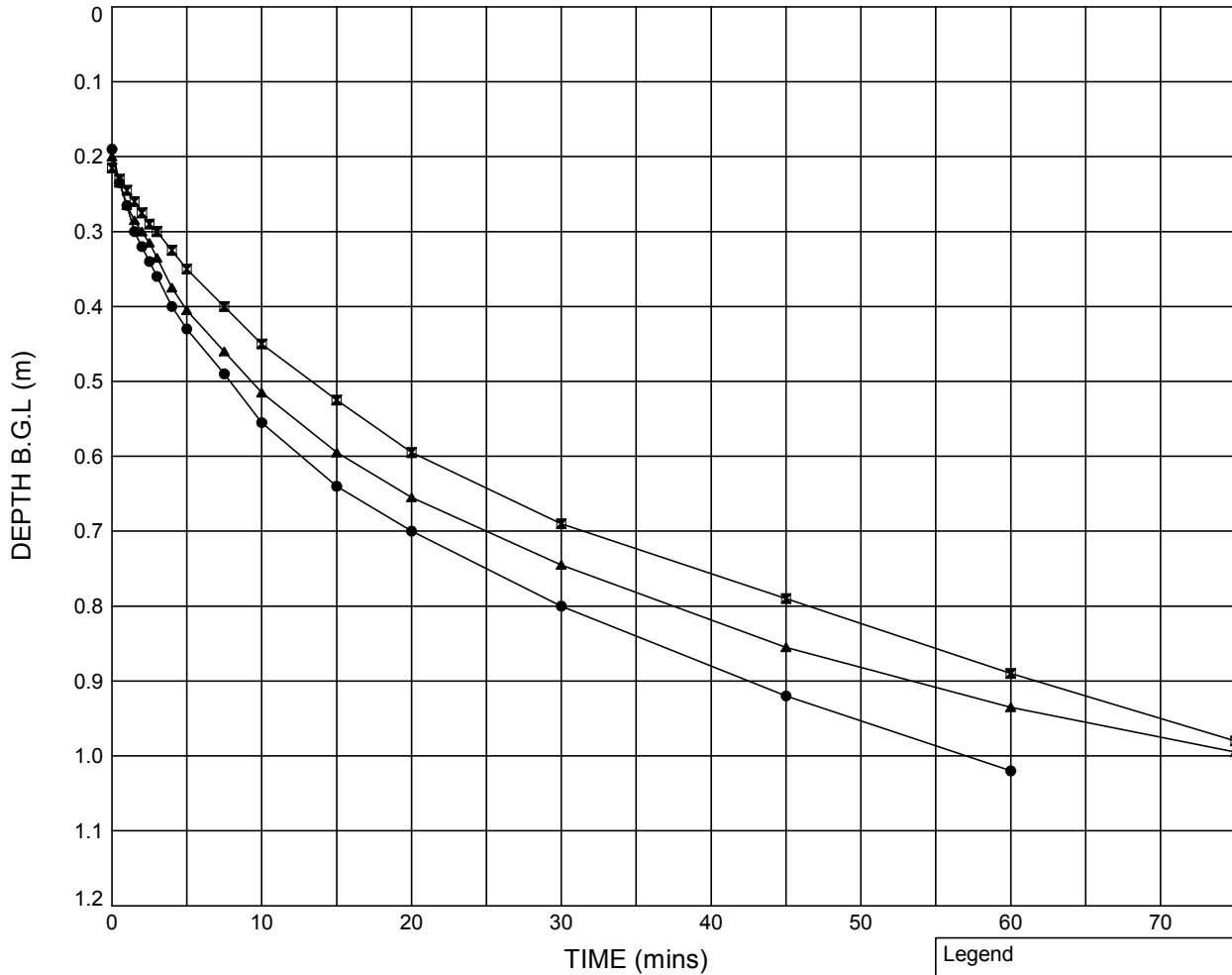
Compiled By	Date	Checked By	Date
<i>MDStranger</i>	01/11/16	<i>S. Philp</i>	01/11/16
Contract		Contract Ref:	
<b>Green Lane, Chesterton</b>		<b>746915</b>	

# FULL SCALE SOAKAWAY TEST

In accordance with BRE Digest 365

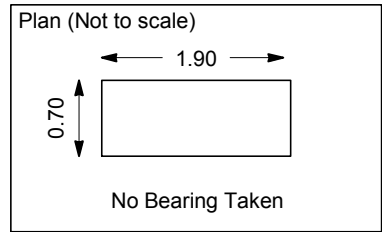
Soakaway Test - Position ID : TP105

## Plot of Depth of Water Below Ground Level Against Time

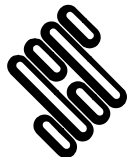


	Test 1	Test 2	Test 3	
Pit start depth:	= 1.20	1.20	1.20	m
Pit final depth:	= 1.20	1.20	1.20	m
Effective depth, $D_e$	= 1.00	1.01	0.99	m
Effective storage volume, $V_{p75-25}$	= 0.6650	0.6717	0.6550	$m^3$
Surface area, $a_{p50}$	= 3.9300	3.9560	3.8910	$m^2$
Time, $t_{p75-25}$	= 3402	2616	3593	secs
Infiltration rate, $f$	= $4.97 \times 10^{-5}$	$6.49 \times 10^{-5}$	$4.69 \times 10^{-5}$	m/s

Legend		
●	Test 1	(28.10.16)
⊠	Test 2	(28.10.16)
▲	Test 3	(29.10.16)



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Contract		Contract Ref:	
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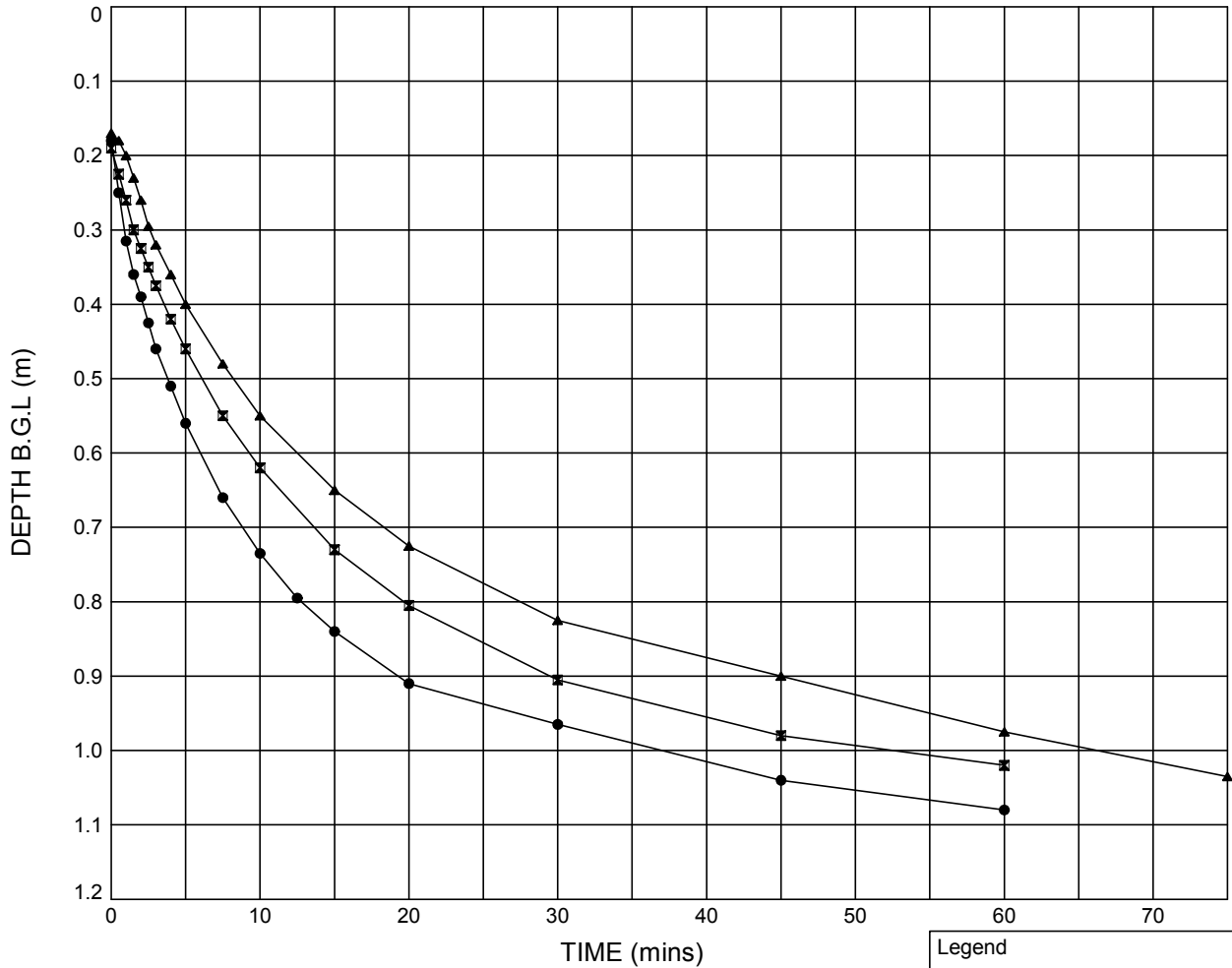


# FULL SCALE SOAKAWAY TEST

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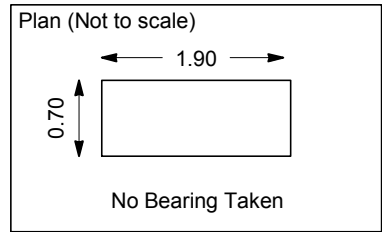
Soakaway Test - Position ID : TP106

## Plot of Depth of Water Below Ground Level Against Time

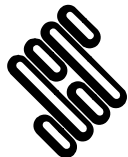


	Test 1	Test 2	Test 3	
Pit start depth:	= 1.20	1.20	1.20	m
Pit final depth:	= 1.20	1.20	1.20	m
Effective depth, $D_e$	= 1.02	1.01	1.03	m
Effective storage volume, $V_{p75-25}$	= 0.6783	0.6717	0.6850	$m^3$
Surface area, $a_{p50}$	= 3.9820	3.9560	4.0080	$m^2$
Time, $t_{p75-25}$	= 1423	2036	2858	secs
Infiltration rate, $f$	= $1.20 \times 10^{-4}$	$8.34 \times 10^{-5}$	$5.98 \times 10^{-5}$	m/s

Legend		
●	Test 1	(28.10.16)
■	Test 2	(28.10.16)
▲	Test 3	(28.10.16)



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Contract		Contract Ref:	
<b>Green Lane, Chesterton</b>		<b>746915</b>	