SHIELDS WILSON
e: info@shieldswilson.co.uk t: 01775 729252
STRUCTURAL AND CIVIL ENGINEERING

PERCOLATION TEST REPORT

UPON

LAND OFF

MILL LANE, GEDNEY HILL,

LINCOLNSHIRE, PE12 0PW

PROJECT No: SW 21-235

DOCUMENT REF: SW 21-235-REP-01



Mr Robert Spenceley
D&R Homes,
5, The Wentworths,
Long Sutton,
Lincolnshire,
PE12 9RT

D&R HOMES

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1. INTRODUCTION

Acting upon the instruction of Mr Robert Spenceley, on behalf of D&R Properties, we attended site on 23rd November 2021, the purpose being to observe the underlying ground conditions and determine the percolation characteristics and infiltration rates of the soil strata.

Percolation tests were undertaken in accordance with the method described within BRE digest 365 (2007 edition)

The opinions and comments expressed within this report are based upon ground conditions encountered in the trial pits excavated at the time of our visit.

This report has been prepared for the named client above and should not be relied upon by any other parties, with the exception of the client's professional advisors, for any use without the express written permission of Shields Wilson Limited.

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2. LOCATION & DESCRIPTION OF SITE

2.1. Site Location

The site is situated to the north of Mill Lane, Gedney Hill. Appropriate national grid reference TF 336 116.

A Location plan is contained with Appendix A.

2.2. Site Description

The site currently stands as flower beds for a local nursery.

The North of the site will be bound by existing properties off West Drove North.

The Eastern Boundary is boarded by the existing nursery.

The West & Southern boundaries of the site is boarded by the road Mill Lane, from which the proposed building plots will gain their access.

At the time of our visit the weather was dry and clear, however there had been some precipitation in the days leading up to the visit.

2.3. Geological Description

Desktop study of the area has been undertaken using the British Geological Society Maps.

The maps indicate the site to be underlain by superficial tidal flat deposits of Sand and Silt over the Ampthill Clay (Mudstone) formation.

This information is based upon publicly available records. An extract is contained with Appendix B.

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3. PERCOLATION TESTS

Two No. percolation tests were undertaken on the proposed site.

The ground conditions are proven to be consistent across the site by the original ground investigation report and as such two test holes one either side of the site was deemed an appropriate test sample.

SA01 was Undertaken adjacent the Eastern Boundary of the site and SA02 was undertaken to the West of the site.

Logs of the test and subsequent result calculations are contained within Appendix C, Appendix D contains a photographic record.

4. INFILTRATION TEST RESULTS

Results are summarised and tabulated below

Test Pit	Test 1
Eastern Pit – SA01	1.12×10^{-5}
Western Pit –SA02	1.71×10^{-5}

The results are average for infiltration in the South Holland area and demonstrate that the underlying geology on the site is suitable for infiltration.

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5. DISCUSSIONS

The ground conditions encountered on site, and percolation test results indicate that the site is suitable for the use of infiltration drainage techniques for disposal of run-off water.

The calculated infiltration rates are typical of South Lincolnshire sands and silts, and it is common for garden soakaways to have been successful utilised for residential roof water drainage in this area.

Designs of infiltration features and soakaways should be based upon the worst case calculated infiltration rate of 1.12×10^{-5}.

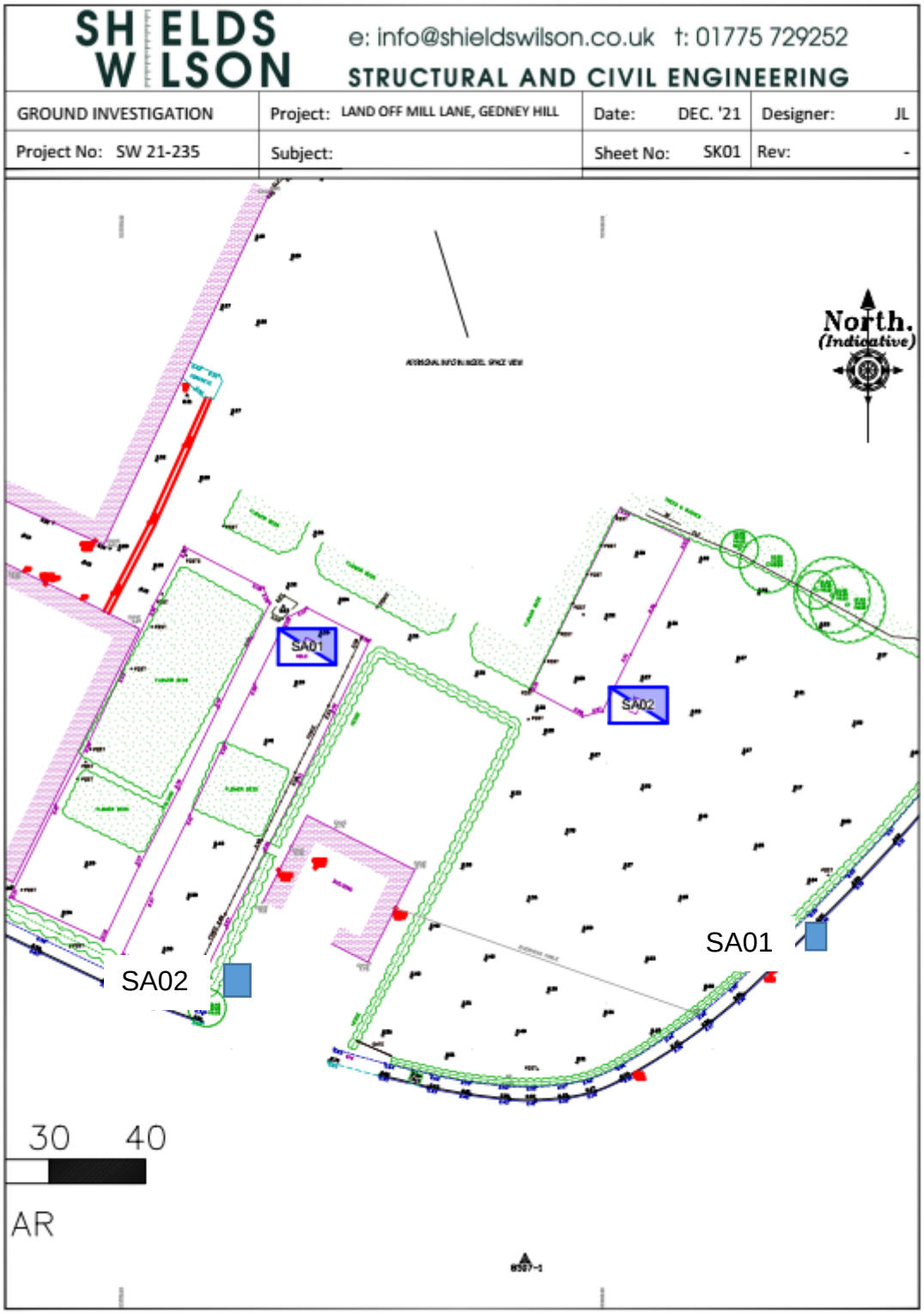
For and on behalf of **SHIELDS WILSON LIMITED**

A.P.Wilson CEng MIStructE **20th December 2021**.

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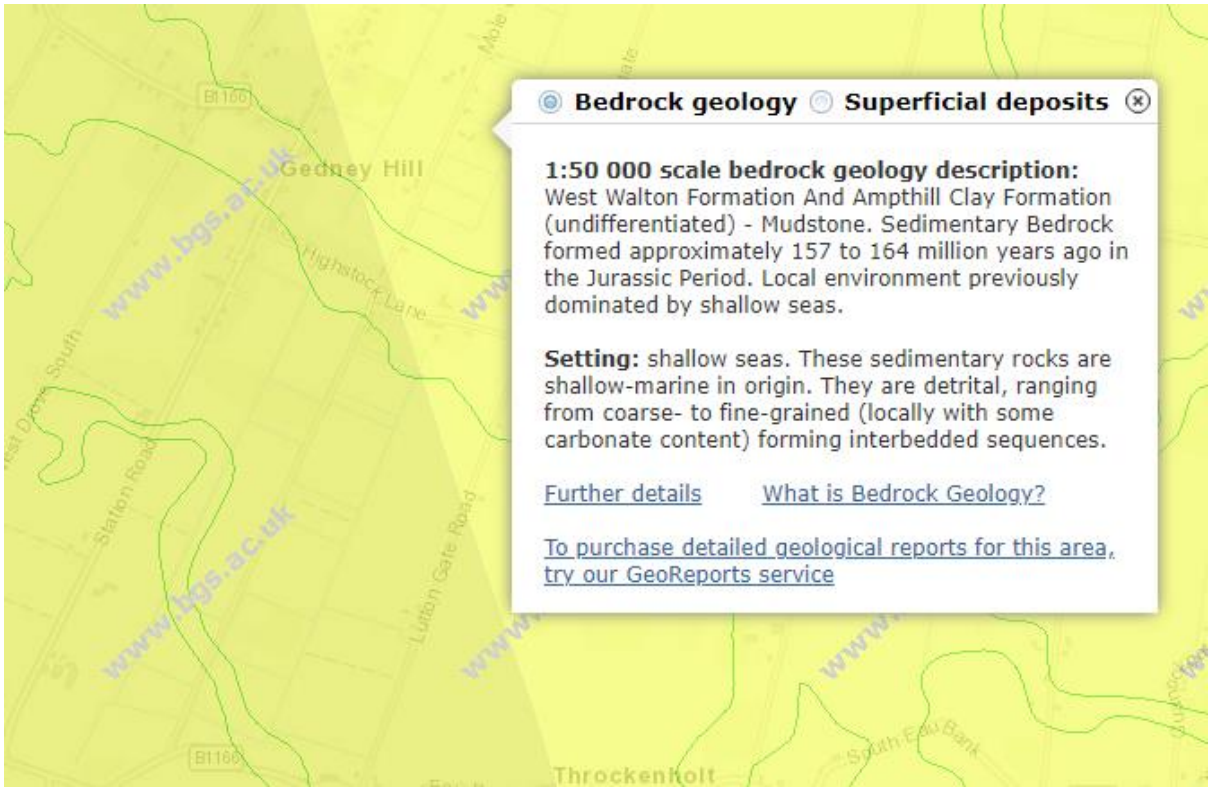
APPENDIX A

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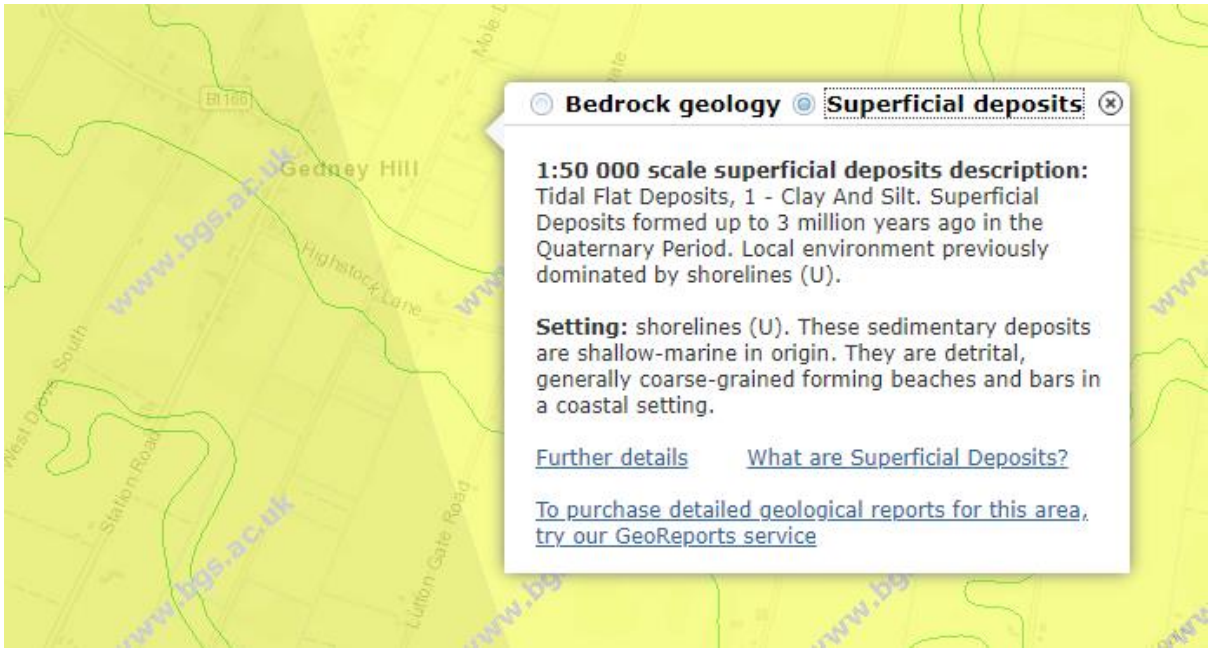

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GROUND INVESTIGATION
Project: LAND OFF MILL LANE, GEDNEY HILL
Date: DEC. '21
Designer: JL
Project No: SW 21-235
Subject:
Sheet No: SK01
Rev: -
North. (Indicative)
SA01
SA02
SA02
SA01
30 40
AR
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APPENDIX B

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Extract British Geological Society Maps – Bedrock Geology



Extract British Geological Society Maps – Superficial Deposits

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Project Title

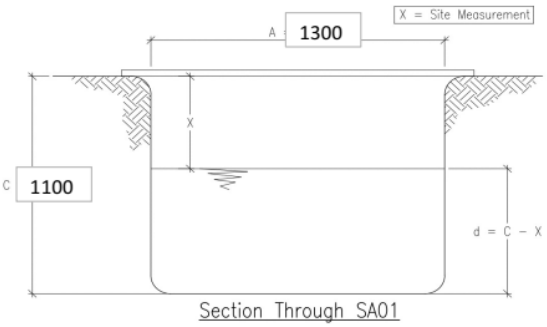
Proposed Residential Development
Mill Lane, Gedney Hill

Project No. 21-235

Site Visit Date 23/11/2021

Soak-Away Test SA 01

TEST 1	
SA01	
TIME (Mins)	DEPTH mm (d)
0	880
15	820
30	790
45	770
60	750
90	710
120	680
150	660
165	640
195	620
225	600
255	580
285	550



Section Through SA01

Trial Pit Dimensions		
A =	1.3	m
B =	1	m
C =	1.10	m

Plan Area of Trial Pit		
SA01 =	1.3	m^2
Total Volume =	0.429	m^3
75% Volume =	0.322	m^3
25%Volume =	0.107	m^3

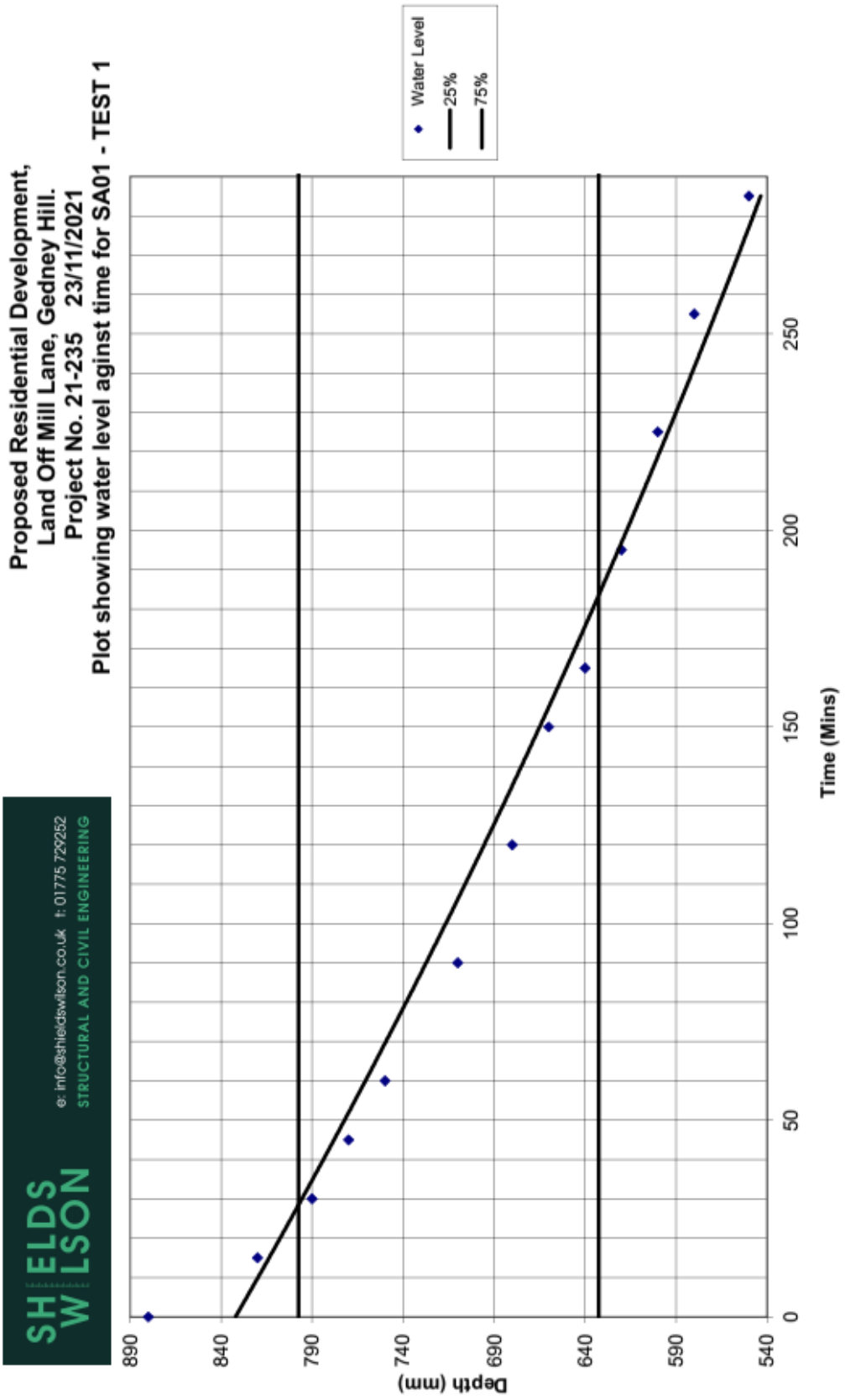
Time Taken From 75% Volume to 25% Volume	
155	Mins

Effective Depth From 75% Volume to 25% Volume
0.165 m

50% Effective Internal Surface Area Including Base Area
2.059 m^2

Soil Infiltration Rate, f
1.12018E-05 m/s
0.040326497 m/h

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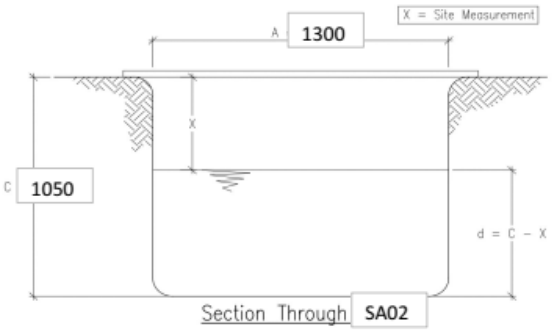
Proposed Residential Development
Mill Lane, Gedney Hill

Project No. 21-235

Site Visit Date 23/11/2021

Soak-Away Test SA 02

TEST 1	
SA01	
TIME (Mins)	DEPTH mm (d)
0	780
15	720
30	680
45	610
60	560
90	520
120	470
150	440
180	400
210	380
240	350



Trial Pit Dimensions		
A =	1.3	m
B =	1	m
C =	1.05	m

Plan Area of Trial Pit		
SA01 =	1.3	m^2
Total Volume =	0.559	m^3
75% Volume =	0.419	m^3
25%Volume =	0.140	m^3

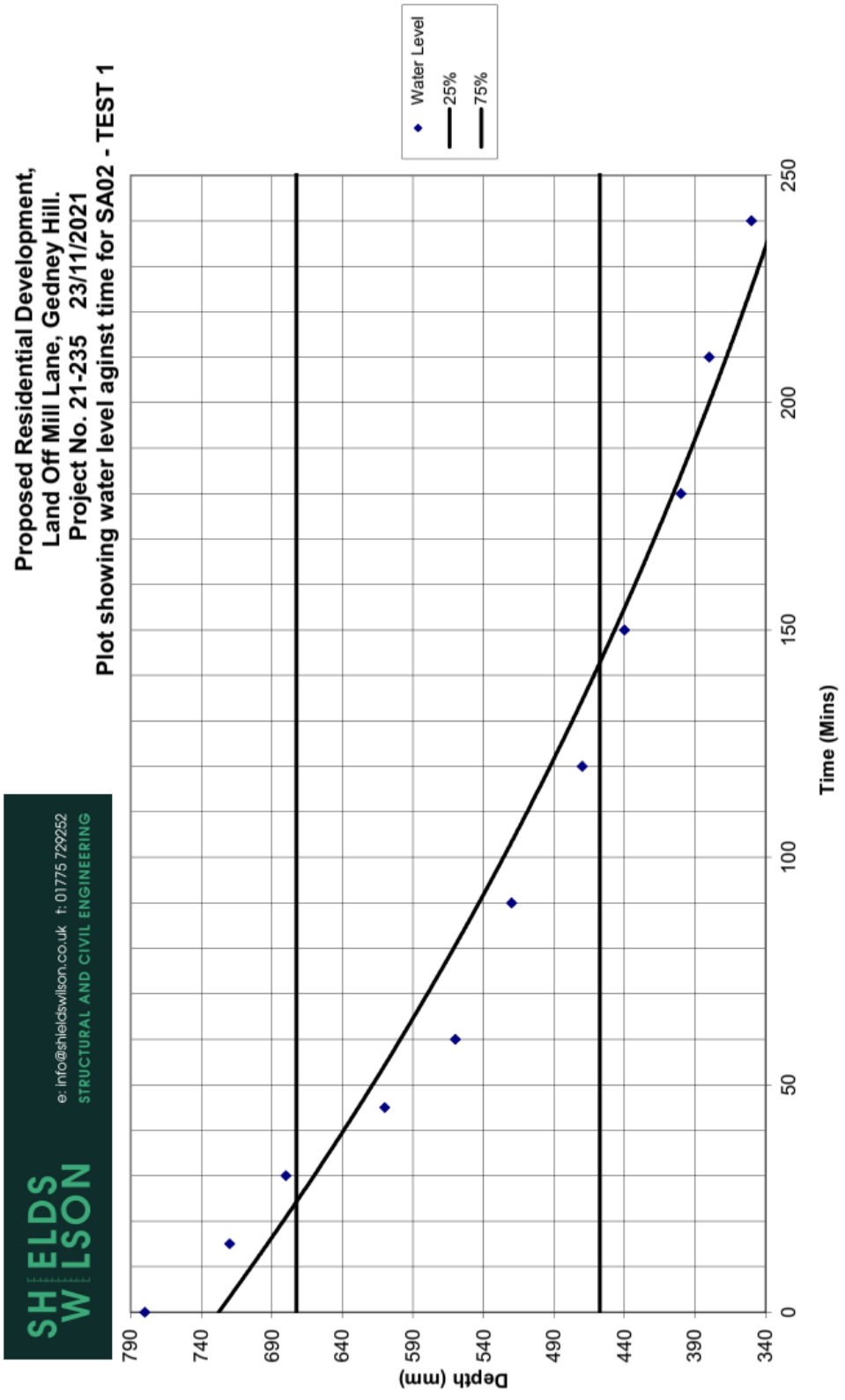
Time Taken From 75% Volume to 25% Volume	
119	Mins

Effective Depth From 75% Volume to 25% Volume
0.215 m

50% Effective Internal Surface Area Including Base Area
2.289 m^2

Soil Infiltration Rate, f
1.71016E-05 m/s
0.061565911 m/h

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APPENDIX D

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