041/4674/AG/cc

25th March 2026

LITHOS CONSULTING

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Mr P Kaszewski
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Dear Paul

Cudworth Parkway, Barnsley - soakaway results

Introduction

Further to your instruction, we have completed soakaway tests in seven locations at the above site.

It is understood that consideration is being given to redevelopment of the site with two and three storey domestic dwellings, associated gardens, POS and adoptable roads and sewers.

A site investigation has been previously undertaken by Lithos between the 25th March and 9th April 2024 which comprised 49 trial pits (with soakaway testing in 8 pits), 15 trial trenches, 19 rotary probeholes, 15 window sample boreholes and 3 rotary cored boreholes. Findings of this investigation are included in Report No. 4674/1 issued by Lithos in June 2024.

Fieldwork and ground conditions

Fieldwork was supervised by Lithos on the 17th & 18th March 2026 and comprised the excavation of 9 trial pits (SA101 to SA108 & SA106A) at targeted locations selected by Bright Young Consulting followed by soakaway testing in seven of these pits. Trial pit locations are shown on Drawing 4674/6A, which is appended to this letter report.

Ground conditions are generally consistent with those found in the Lithos 2024 investigation and are summarised in the table below.

Hole	Final depth (m)	Depth to Base of Made Ground (m)	Made Ground				Natural Soils			Depth to bedrock (m)
			Ash & Clinker	Macadam Hardstand	Sub-base	Granular Made Ground	Topsoil	Cohesive Residual Soil	Granular Residual Soil	
SA101	2.4	-	-	-	-	-	0.5	-	1.2	1.2
SA102	2.2	-	-	-	-	-	0.5	-	1.1	1.1
SA103	2.2	0.6	0.6	0.2	0.4	-	-	-	1.4	1.4
SA104	2.2	-	-	-	-	-	0.3	-	1.1	1.1
SA105	2.2	-	-	-	-	-	0.3	-	1.8	1.8
SA106	2.4	2.3	-	-	-	2.3	-	-	-	2.3
SA106A	1.1	1.1	-	-	-	1.1	-	-	-	-
SA107	2.3	-	-	-	-	-	0.3	1.7	-	1.7
SA108	2.1	-	-	-	-	-	0.3	-	1.2	2.1

With the exception of SA106 & 106A where deep made ground was encountered, trial pits remained stable.

Groundwater seepages were encountered in SA102 and SA105 at 2.2m depth (base of pit).

Trial pit logs are appended to this letter report.

Soakaway testing

Soakaway tests were carried out in accordance with BRE Digest 365[1] "Soakaway Design", within seven soakaway test locations (SA101 to SA105, SA107 & SA108).

No testing was undertaken in SA106 & SA106A due to the presence of deep made ground. SA106A and SA107 were additional test locations to replace SA106 in the east of site. SA108 was also an additional location, due to soakaway tests in the east of site being unsuccessful.

Infiltration rates for each soakaway test have been calculated (where possible) in accordance with BRE Digest 365. This design takes into account the time of emptying the soakaway pit between 25% and 75% of its effective depth. The effective depth is calculated from the starting water level to the soakaway pit base.

The calculated infiltration rates for each test are summarised in the Table below, and copies of these calculations are appended to this letter report.

Summary of soakaway infiltration rates

Soakaway	Stratum	Test no.	Infiltration rate (m/s)	Remarks
SA101	Granular Residual Soils (0.5 – 1.0m), Weathered Sandstone (1.0m – 2.4m)	1	4.34×10^{-4}	-
		2	4.40×10^{-4}	-
		3	4.06×10^{-4}	-
SA102	Granular Residual Soils (0.5 – 1.1m), Weathered Sandstone (1.1m – 2.2m)	1	5.27×10^{-5}	-
		2	4.87×10^{-5}	-
		3	3.79×10^{-5}	-
SA103	Granular Residual Soils (0.6 – 1.4m), Weathered Sandstone (1.4m – 2.2m)	1	3.78×10^{-5}	-
		2	3.19×10^{-5}	-
		3	2.91×10^{-5}	-
SA104	Granular Residual Soils (0.3 – 1.1m), Weathered Sandstone (1.1m – 2.2m)	1	Unable to calculate	Still c. 75% full after 4 hrs.
SA105	Granular Residual Soils (0.3 – 1.8m), Weathered Sandstone (1.8m – 2.2m)	1	Unable to calculate	Still c. 75% full after 4 hrs.
SA107	Granular Residual Soils (0.3 – 1.7m), Weathered Sandstone (1.7m – 2.3m)	1	Unable to calculate	Still c. 75% full after 3 hrs.
SA108	Granular Residual Soils (0.3 – 1.2m), Weathered Sandstone (1.2m – 2.1m)	1	2.52×10^{-4}	-
		2	2.01×10^{-4}	-
		3	1.78×10^{-4}	-

Discussion

General notes about soakaways, including their location, design, and Lithos' test methodology are appended.

Given anticipated water table depth and topography it is considered unlikely that springs will appear down-gradient.

[1] *BRE Digest 365, Soakaway Design (1991).*

CIRIA C753:2015[2] states that: "*A minimum distance of 1m between the base of the infiltration system and the maximum likely groundwater level should always be adopted. This is to minimise the risk of groundwater rising into the infiltration component and reducing the available storage volume, to protect the functionality of the infiltration process by ensuring a sufficient depth of unsaturated material and to protect the groundwater from any contamination in the run-off*".

Drainage Engineers could use the infiltration rates reported above to determine the feasibility of soakaways as a solution for the discharge of surface water run-off.

SA101 to 103 & SA108 (west)

Given that the soakaway tests have yielded satisfactory results in the west of site (SA101 to 103 & SA108), consideration could be given to undertaking seasonal groundwater level monitoring over about 12 months.

However, as part of our 2024 investigation, groundwater level monitoring was undertaken, alongside the gas monitoring over a 6-month period. The majority of the monitoring wells across the site remained dry, with the nearest monitoring locations (WS07, 11 and 13) dry for 10 of the 12 visits, but with groundwater recorded at depths of between 1.24m and 1.72m in two of the 12 visits.

Advice should be sought from the adopting authority and the drainage designer to determine if further seasonal groundwater monitoring is considered necessary.

SA104 to 107 & SA106A (east)

Made ground was encountered in SA106 & 106A in the east of site. Consequently, soakaway testing was not undertaken in these two trial pits, and an alternative location was determined (SA107).

UK guidance does not explicitly state that soakaways cannot be constructed in made ground, but such construction is not generally considered good practice. There may be a risk of settlement caused by wash out of fine soil particles if soakaway waters are allowed to infiltrate into made ground. Furthermore, UK guidance does state that the soakaways should not be built where the presence of contamination could result in pollution of groundwater.

Outside the area of made ground encountered in SA106 & 106A, increasing the soakaway effective depth might offer a solution in the far east where soakaways did not work, but consideration should be given to the cost of excavation (especially given the strong nature of the bedrock).

It should be noted that soakaway percolation in bedrock is predominately via joints within the rock mass. The relatively small-scale soakaway test pits may not intercept such joints and this can result in variable test results. It is possible that the larger surface area associated with soakaway construction during development will intercept such joints; although this cannot be guaranteed.

Conclusions

The site has been found to be divided into two areas based on soakaway test results. Tests in the west of site (SA101 to SA103 & SA108) were successful and have confirmed that soakaways will provide a suitable solution for disposal of surface water. Therefore, consideration could be given to undertaking seasonal groundwater level monitoring over about 12 months.

However, in the east of site (SA104, 105 & 107), soakaways were unsuccessful and therefore an alternative drainage solution will need to be found for discharge of surface water run-off.

In addition, deep made ground was encountered in SA106 & 106A in the east, which will reduce the size of the infrastructure currently proposed in this area.

[2] *CIRIA C753. The SuDS Manual (2015).*

It is hoped the above is sufficient for your present needs. However, should you require any further information, please contact the undersigned.

Yours sincerely

[redacted]

Adam Gomboczy
Director
for and on behalf of
LITHOS CONSULTING LIMITED

06 - Soakaways
Generic notes – geoenvironmental investigations

Background

Soakaways have been the traditional way to dispose of stormwater from buildings and paved areas remote from a public sewer or watercourse. In recent years, soakaways have been used within urban, fully-sewered areas to limit the impact on discharge of new upstream building works, and to avoid costs of sewer up-grading outside a development.

Soakaways are increasingly seen as a more widely applicable option alongside other means of stormwater control and disposal. Soakaways must store the immediate stormwater run-off and allow for its efficient infiltration into the adjacent soil. They must discharge their stored water sufficiently quickly to provide the necessary capacity to receive run-off from a subsequent storm. The time taken for discharge depends upon the soakaway shape and size, and the surrounding soil's infiltration characteristics. Soakaways can be constructed in many different forms and from a range of materials.

BRE Digest 365, DG365: 1991 describes design and construction procedures, explains how to calculate rainfall design values and soil infiltration rates, and gives design examples. Further advice is provided in **NHBC** Standards Chapter 5.3 (Section 9 & Appendix F), **Building Regulations** Section 3 of Approved Document H (Drainage & Waste Disposal), and Chapter 13 of **CIRIA's** SUDS Manual (C753:2015).

Soakaways should generally be built on land lower than or sloping away from buildings and be sited **at least 5m** from the foundations of a building.

BRE365 states that '**Groundwater should not rise to the level of the base of the soakaway** during annual variations in the water table' this is further reinforced in Chapter 13 of CIRIA C753:2015 which states that: "*A minimum distance of 1m between the base of the infiltration system and the maximum likely groundwater level should always be adopted. This is to minimise the risk of groundwater rising into the infiltration component and reducing the available storage volume, to protect the functionality of the infiltration process by ensuring a sufficient depth of unsaturated material and to protect the groundwater from any contamination in the run-off*". There may be a requirement to install groundwater monitoring wells at a site in order to monitor seasonal variations in groundwater level at least over a wet winter period.

Soakaways should **not be sited on sloping sites**, an assessment should also be made to ensure that infiltrating water will not cause a rise in groundwater levels, waterlogging of downhill areas or springs, and that slopes are not made unstable.

Made ground (and ground within 5m of deep fill) is not generally regarded as suitable for soakaways, due to the potential for inundation settlement and the leaching of contaminants.

Chalk: CIRIA C574:2002 notes that concentrated ingress of water into the chalk can initiate dissolution, particularly in low-density chalk. For this reason, soakaways should be sited well away from foundations for structures, roads or railways:-

- in areas where dissolution features are known to be prevalent, soakaways should be avoided but, if unavoidable, should be sited at least 20m away from foundations etc
- where the chalk is of low density (weak), or where density is not known, soakaways should be sited at least 10m away from foundations
- where the chalk is of medium density, or higher (moderately weak), soakaways should be sited at least 5m away from foundations

Test methodology

Lithos undertake soakaway tests in general accordance with BRE Digest 365 "Soakaway Design". The BRE Digest recommends that each soakaway pit is filled and allowed to drain three times to near empty; the three fillings to be on the same or consecutive days. However, each test can take over 2 hours to complete. Consequently, at site investigation / feasibility stage, testing is usually undertaken in a 'broad sweep', relatively widely spaced; often only 1 or 2 fills. The drainage designer reviews SI data and if soakaways look feasible, commences design with the incorporation of soakaways. Prior to finalising design, the Drainage Engineer will usually recommend further soakaway testing: (a) within 25m of proposed chamber locations; and (b) to include 3 fills.

Whilst in theory 3 fills is fine, in practice it is often not straightforward. Where drainage rates are quick (draining < 1 hour), allowing 3 fills per pit within a day, even larger water bowsers (say 2,300 gallon/10,000 litre) will run out of water after testing in two pits. Re-filling can take 2 to 3 hours depending on available water supplies etc. So, it is typically only possible to do fully compliant BRE 365 testing in 4 pits a day.

Where infiltration is moderate (a fill drains in say 2 to 4 hours), soakaways may be considered feasible, but it will not usually be possible to complete 3 fills in a day. Therefore, it becomes necessary to leave pits open overnight (usually with a consequent need for herras fencing, site security etc, or the use of stone backfill).

Infiltration rates

Infiltration rates for each soakaway test are calculated (where possible) in accordance with BRE Digest 365. This design takes into account the time of emptying the soakaway pit between 25% and 75% of its effective depth. The effective depth is calculated from the starting water level to the soakaway pit base. Where the water level did not fall to 25% effective depth, the data was interpolated in order to obtain a representative infiltration rate.

Soakaway design

Soakaway design should be carried out by a suitably qualified and experienced Drainage Engineer, in accordance with BRE Digest 365 using the infiltration rates calculated from soakaway testing during a ground investigation.

It is generally assumed that soakaways become impracticable on residential developments when:

- A chamber type design requires a square pit with side length in excess of 1.8m, or an effective depth greater than 1.5m.
- A trench type design requires a length greater than about 10m, or an effective depth greater than 1.5m.

Increasing the soakaway effective depth might offer a solution, but consideration should be given to:

- Standing groundwater level
- Depth to base of permeable strata
- Cost of excavation

Soakaway percolation in some rock types is predominately via the vertical joints within the rock mass. The relatively small-scale soakaway test pits may not intercept such joints and this can result in variable test results. However, it is likely that the larger surface area of a completed soakaway within the development will intercept such joints.

The drainage designer submits designs for approval to:

- The Lead Local Flood Authority (LLFA), usually part of the Local Authority (e.g. NYCC). The LLFA are a consultee to the planning authority. They review the full technical design to ensure that proposals (both plots & highways) are satisfactory. The LLFA may also set standards for soakaway design (NYCC have, and these now require 3 fills and soakaway testing within 25m of proposed chamber locations).
- Local Authority Highways Dept. The Highways Authority adopt highways drainage, so review drainage design (via approval of a Section 38 submission). They also visit site to inspect construction.
- Building warranty provider (e.g. NHBC, Premier etc), if soakaways are proposed for roof & driveway waters.

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CLIENT

FENWOOD ESTATES LIMITED

JOB TITLE

CUDWORTH PARKWAY, BARNSLEY

DRAWING TITLE

EXPLORATORY HOLE LOCATIONS

NOTES

- SOAKAWAY TEST LOCATION (2026)
- TRIAL PIT LOCATION (2024)
- SOAKAWAY TEST LOCATION (2024)
- TRIAL TRENCH LOCATION (2024)
- ROTARY PROBEHOLE LOCATION (2024)
- ROTARY CORED BOREHOLE LOCATION (2024)
- WINDOW SAMPLE LOCATION (2024)
- APPROXIMATE SITE BOUNDARY

EXPLORATORY HOLE LOCATIONS HAVE BEEN SURVEYED IN (COORDINATES & GROUND LEVEL) ON COMPLETION

REV.	DESCRIPTION	DATE
A	ADDITION OF 2026 SOAKAWAY TESTS	23/03/26

STATUS: FOR COMMENT ☐ FOR APPROVAL ☐ DRAFT ☐ FINAL ☑

DRAWN: CC	DATE: 10 04 24
APPROVED: AG	DATE: 10 04 24
SCALE: 1:1250	SHEET: A3
DRAWING NO.: 4674/6	REVISION: A

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CLIENT

FENWOOD ESTATES LIMITED

JOB TITLE

CUDWORTH PARKWAY, BARNSLEY

DRAWING TITLE

EXPLORATORY HOLE LOCATIONS (SOAKAWAY TESTS MARCH 2026)

NOTES

- SOAKAWAY LOCATION (MARCH 26)
- GRASS & OVERGROWN AREAS
- DENSE VEGETATION
- TARMAC HARDSTAND
- FORMER BUILDING
- APPROXIMATE SITE BOUNDARY

REV.	DESCRIPTION	DATE

STATUS: FOR COMMENT ☐ FOR APPROVAL ☐ DRAFT ☐ FINAL ☑

DRAWN: CC	DATE: 23 03 26
APPROVED: AG	DATE: 23 03 26
SCALE: 1:1000	SHEET: A3
DRAWING NO.: 4674/6A	REVISION:

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Trial Pit Log

TrialPit No: SA101
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 438981.00 - 410387.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 2.90 × 0.60 Depth 2.40	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Dark brown clayey slightly gravelly SAND with occasional rootlets. Gravel is angular to subrounded fine to coarse of sandstone. (TOPSOIL)
				0.50			Light brown very clayey gravelly SAND. Gravel is angular to subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)
				1.20			Medium strong light brown SANDSTONE. Recovered as angular, tabular fine to coarse GRAVEL with a high cobble content. (MEXBOROUGH ROCK) *From 1.5m, difficult to excavate.*
				2.40			End of Pit at 2.40m

1
2
3
4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

TrialPit No: SA102
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439030.00 - 410393.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 3.00 x 0.60 Depth 2.20	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Dark brown clayey slightly gravelly SAND with occasional rootlets. Gravel is angular to subrounded fine to coarse of sandstone and coal. (TOPSOIL)
				0.50			Light brown clayey slightly gravelly SAND. Gravel is angular to subangular fine to medium of sandstone. (GRANULAR RESIDUAL SOIL)
				1.10			Medium strong light brown SANDSTONE. Recovered as sandy angular to subangular, tabular fine to coarse GRAVEL with a high cobble content. (MEXBOROUGH ROCK)
							From 1.9m, difficult to excavate.
▼				2.20			*At 2.2m, water seepage at base of pit.* End of Pit at 2.20m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater encountered at 2.2m during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

TrialPit No: SA103
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439069.00 - 410399.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 2.80 × 0.60, Depth 2.20	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.15			MADE GROUND: Dark grey MACADAM hardstand. (MACADAM HARDSTAND)
				0.40			MADE GROUND: Light grey sandy angular to subangular fine to coarse GRAVEL of limestone. (SUB-BASE)
				0.60			MADE GROUND: Dark grey gravelly ASH. Gravel is angular to subrounded fine to coarse of mixed lithologies including clinker, brick, concrete and glass. (ASH & CLINKER)
				1.40			Light brown clayey slightly gravelly SAND. Gravel is angular to subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)
				2.20			Weak light brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse GRAVEL with a high cobble content. (MEXBOROUGH ROCK)
							End of Pit at 2.20m

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4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

TrialPit No: SA104
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439176.00 - 410408.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 3.10 × 0.60, Depth 2.20	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Dark brown clayey slightly gravelly SAND with occasional rootlets. Gravel is angular to subangular fine to medium of sandstone. (TOPSOIL)
				0.30			Light brown clayey slightly gravelly SAND. Gravel is angular to subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)
				1.10			Medium strong light brown SANDSTONE. Recovered as sandy slightly clayey angular, tabular fine to coarse GRAVEL with a medium cobble content. (MEXBOROUGH ROCK)
				1.60			Weak light brown SANDSTONE. Recovered as sandy angular, tabular fine to coarse GRAVEL. (MEXBOROUGH ROCK)
				2.20			End of Pit at 2.20m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

TrialPit No: SA105
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439180.00 - 410392.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 3.00 × 0.60, Depth 2.20	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Dark brown clayey slightly gravelly SAND with occasional rootlets. Gravel is angular to subangular fine to coarse of predominantly sandstone. Rare fragments of brick. (TOPSOIL)
				0.30			Light brown clayey slightly gravelly SAND. Gravel is angular to subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)
				1.80			Very weak light brown SANDSTONE. Recovered as slightly sandy slightly clayey angular, tabular fine to coarse gravel. (MEXBOROUGH ROCK)
▼				2.20			*At 2.2m, water seepage at base of pit.* End of Pit at 2.20m

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4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater encountered at 2.2m during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

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Trial Pit Log

TrialPit No: SA106
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439182.00 - 410378.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 3.10 x 0.60 Depth 2.40	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.50	J,K&T					MADE GROUND: Dark brown gravelly slightly clayey SAND. Gravel is angular to subangular fine to coarse of mixed lithologies including plastic wrappers, brick, concrete and glass. Occasional boulders of sandstone 0.6m x 0.3m in size. (TOPSOIL)
							No soakaway undertaken due to deep made ground. Between 0.0m and 2.3m, side walls unstable.
	1.80	J,K&T					
				2.30			Medium strong light brown SANDSTONE. Recovered as sandy angular to subangular fine to coarse GRAVEL with a high cobble content. (MEXBOROUGH ROCK)
				2.40			End of Pit at 2.40m

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not encountered during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit were unstable between 0.0m and 2.3m depth during excavation.

AGS

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Trial Pit Log

TrialPit No: SA106A
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439180.00 - 410384.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 2.80 x 0.60 Depth 1.10	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND: Dark brown gravelly slightly clayey SAND with occasional rootlets. Gravel is angular to subangular fine to coarse of mixed lithologies including sandstone, brick, concrete and plastic. (GRANULAR MADE GROUND) *Trial pit undertaken to delineate made ground and see if substitute soak away test location can be found.*
				1.10			End of Pit at 1.10m

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Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

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Trial Pit Log

TrialPit No: SA107
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439156.00 - 410403.00 Level:	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 3.10 × 0.60, Depth 2.30	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Dark brown clayey slightly gravelly SAND. Gravel is angular to subrounded fine to medium of predominantly sandstone. (TOPSOIL)
				0.30			Firm light orangish brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to medium of sandstone. (COHESIVE RESIDUAL SOIL)
				1.70			Medium strong light brown SANDSTONE. Recovered as slightly clayey angular tabular fine to coarse GRAVEL with a high cobble content. (MEXBOROUGH ROCK)
				2.30			End of Pit at 2.30m

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2
3
4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

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Trial Pit Log

TrialPit No: SA108
Sheet 1 of 1

Project Name: Cudworth Parkway	Project No. 4674	Co-ords: 439011.00 - 410352.00	Date 17/03/2026
Equipment & Method: JCB 3CX with 0.6m wide toothed bucket.		Dimensions (m): 3.10 x 0.60, Depth 2.10	Scale 1:20
Client: Fenwood Estates Limited			Logged CC

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Dark brown clayey slightly gravelly SAND with occasional rootlets. Gravel is angular to subangular fine to medium of sandstone. (TOPSOIL)
				0.30			Light brown clayey slightly sandy GRAVEL and COBBLES. Gravel is angular to subangular fine to coarse of sandstone. Cobbles are angular of sandstone. (GRANULAR RESIDUAL SOIL)
				1.20			Medium strong light brown SANDSTONE. Recovered as sandy angular, tabular fine to coarse GRAVEL with a high cobble content. (MEXBOROUGH ROCK)
				2.10			End of Pit at 2.10m

1
2
3
4

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit remained stable during excavation.

AGS

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA101**
Test No.	**1**

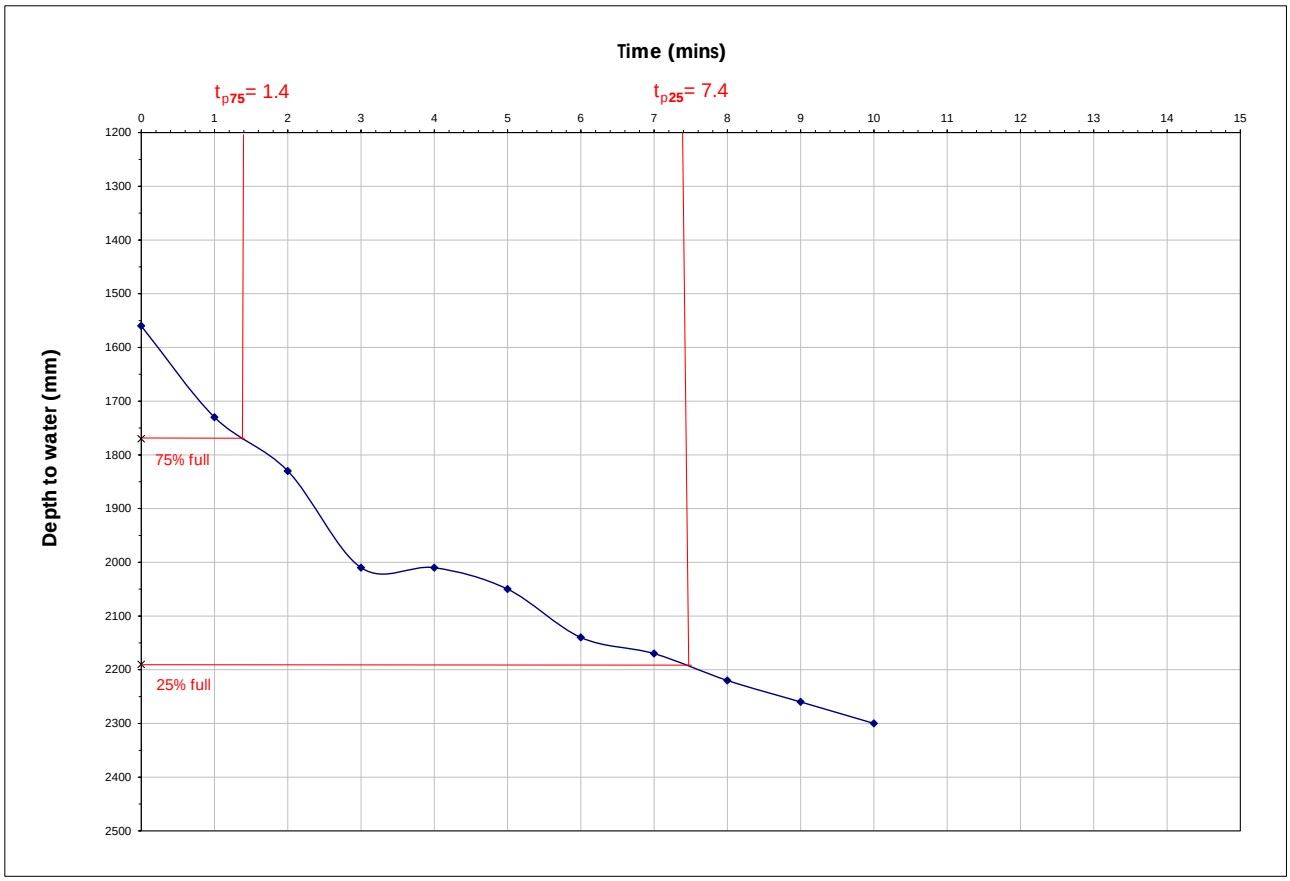
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
08:54	0	1.56	1560
08:55	1	1.73	1730
08:56	2	1.83	1830
08:57	3	2.01	2010
08:58	4	2.01	2010
08:59	5	2.05	2050
09:00	6	2.14	2140
09:01	7	2.17	2170
09:02	8	2.22	2220
09:03	9	2.26	2260
09:04	10	2.30	2300

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	2.90	2900
Width	=	0.60	600
Depth	=	2.40	2400

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	2190	2.19
0.50	=	1980	1.98
0.75	=	1770	1.77

Depth at start of test (mm)	=	1560
Depth at end of test (mm)	=	2300
Base area of pit	=	1.74
a_{p50} - 50% internal surface area inc. base	=	4.68
$V_{p75\text{-}25}$ - Volume 75 - 25%	=	0.7308

Read from the graph:		
$t_{p\ 75}$ (min)	=	1.4
$t_{p\ 25}$ (min)	=	7.4



Soil infiltration rate, f, (m/s) = 4.34E-04

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA101**
Test No.	**2**

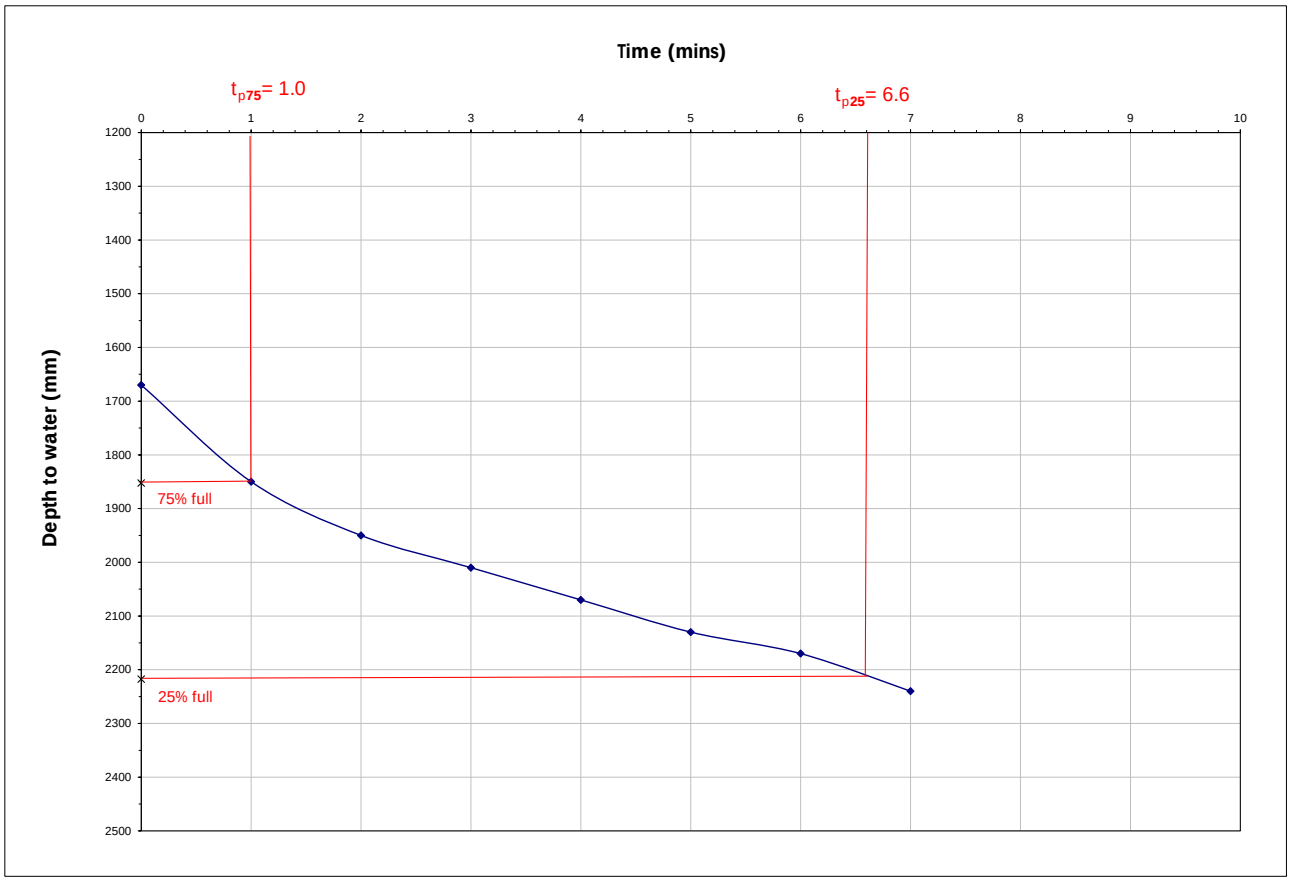
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
09:15	0	1.67	1670
09:16	1	1.85	1850
09:17	2	1.95	1950
09:18	3	2.01	2010
09:19	4	2.07	2070
09:20	5	2.13	2130
09:21	6	2.17	2170
09:22	7	2.24	2240

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	2.90	2900
Width	=	0.60	600
Depth	=	2.40	2400

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	2217.5	2.22
0.50	=	2035	2.04
0.75	=	1852.5	1.85

Depth at start of test (mm)	=	1670
Depth at end of test (mm)	=	2240
Base area of pit	=	1.74
a_{p50} - 50% internal surface area inc. base	=	4.295
V_{p75-25} - Volume 75 - 25%	=	0.6351

Read from the graph:		
$t_{p\ 75}$ (min)	=	1.0
$t_{p\ 25}$ (min)	=	6.6



Soil infiltration rate, f, (m/s) = 4.40E-04

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA101**
Test No.	**3**

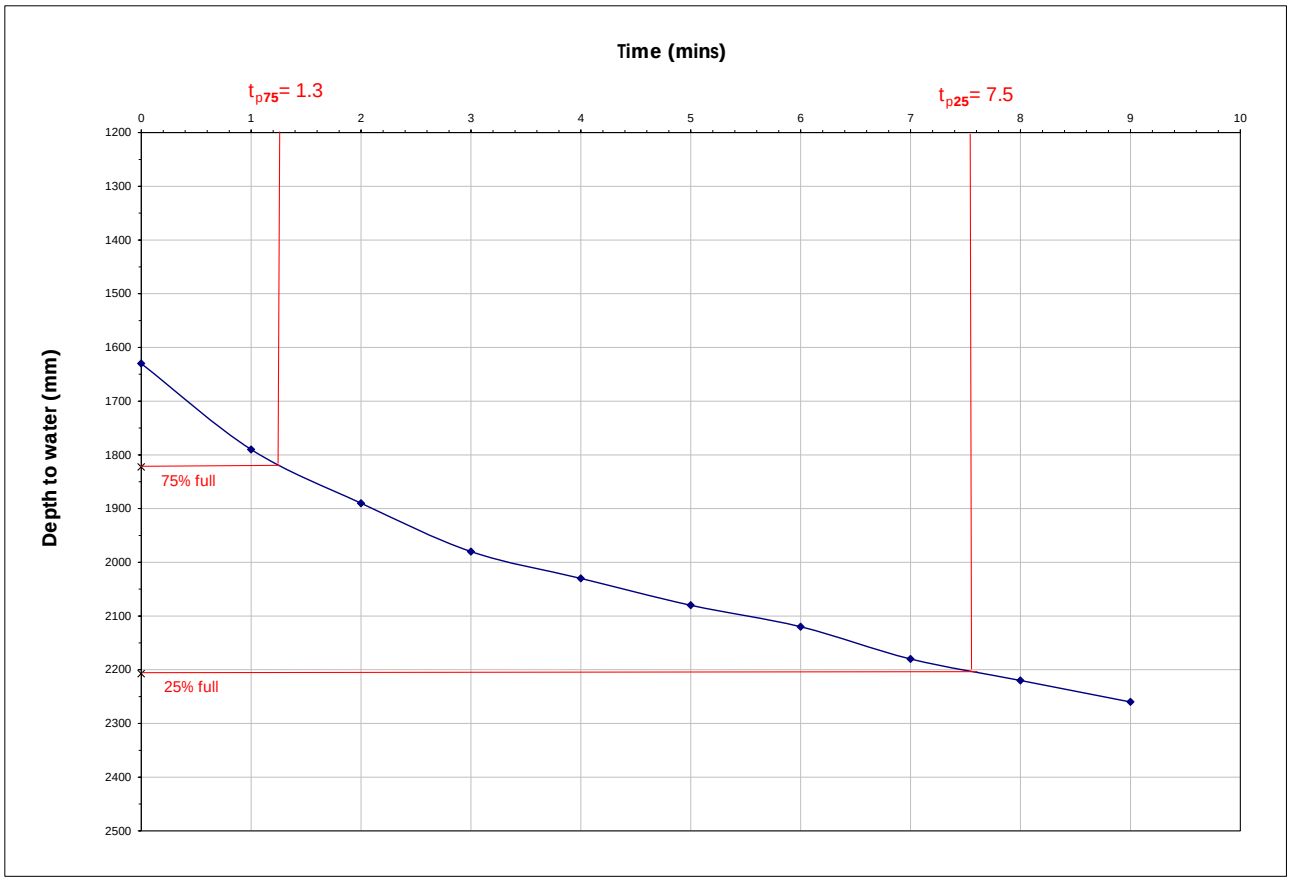
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
09:23	0	1.63	1630
09:24	1	1.79	1790
09:25	2	1.89	1890
09:26	3	1.98	1980
09:27	4	2.03	2030
09:28	5	2.08	2080
09:29	6	2.12	2120
09:30	7	2.18	2180
09:31	8	2.22	2220
09:32	9	2.26	2260

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	2.90	2900
Width	=	0.60	600
Depth	=	2.40	2400

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	2207.5	2.21
0.50	=	2015	2.02
0.75	=	1822.5	1.82

Depth at start of test (mm)	=	1630
Depth at end of test (mm)	=	2260
Base area of pit	=	1.74
a_{p50} - 50% internal surface area inc. base	=	4.435
V_{p75-25} - Volume 75 - 25%	=	0.6699

Read from the graph:		
$t_{p\ 75}$ (min)	=	1.3
$t_{p\ 25}$ (min)	=	7.5



Soil infiltration rate, f, (m/s) = 4.06E-04

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA102**
Test No.	**1**

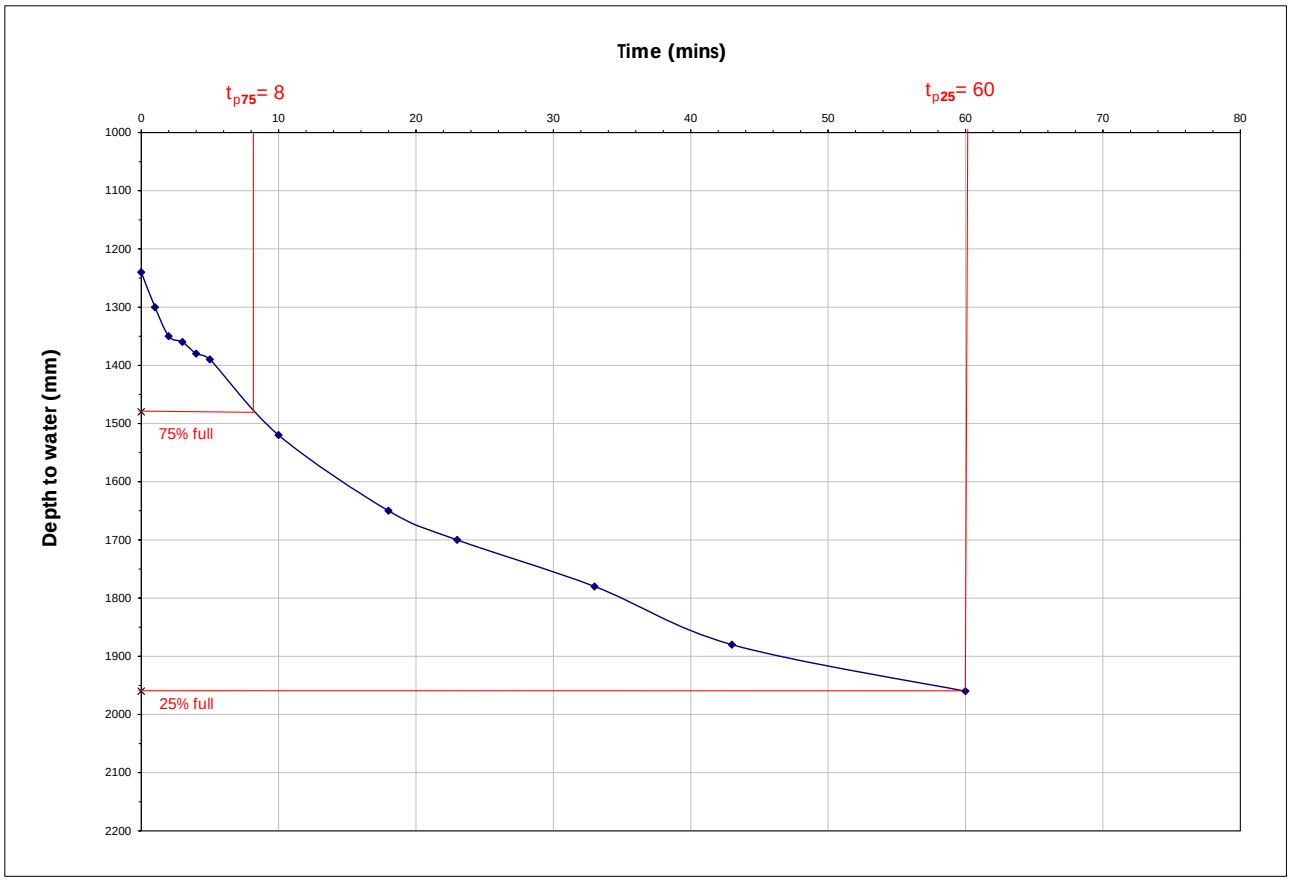
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
10:15	0	1.24	1240
10:16	1	1.30	1300
10:17	2	1.35	1350
10:18	3	1.36	1360
10:19	4	1.38	1380
10:20	5	1.39	1390
10:25	10	1.52	1520
10:33	18	1.65	1650
10:38	23	1.70	1700
10:48	33	1.78	1780
10:58	43	1.88	1880
11:15	60	1.96	1960

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.00	3000
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1960	1.96
0.50	=	1720	1.72
0.75	=	1480	1.48

Depth at start of test (mm)	=	1240
Depth at end of test (mm)	=	1960
Base area of pit	=	1.8
a_{p50} - 50% internal surface area inc. base	=	5.256
V_{p75-25} - Volume 75 - 25%	=	0.864

Read from the graph:		
$t_{p\,75}$ (min)	=	8
$t_{p\,25}$ (min)	=	60



Soil infiltration rate, f, (m/s) = 5.27E-05

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA102**
Test No.	**2**

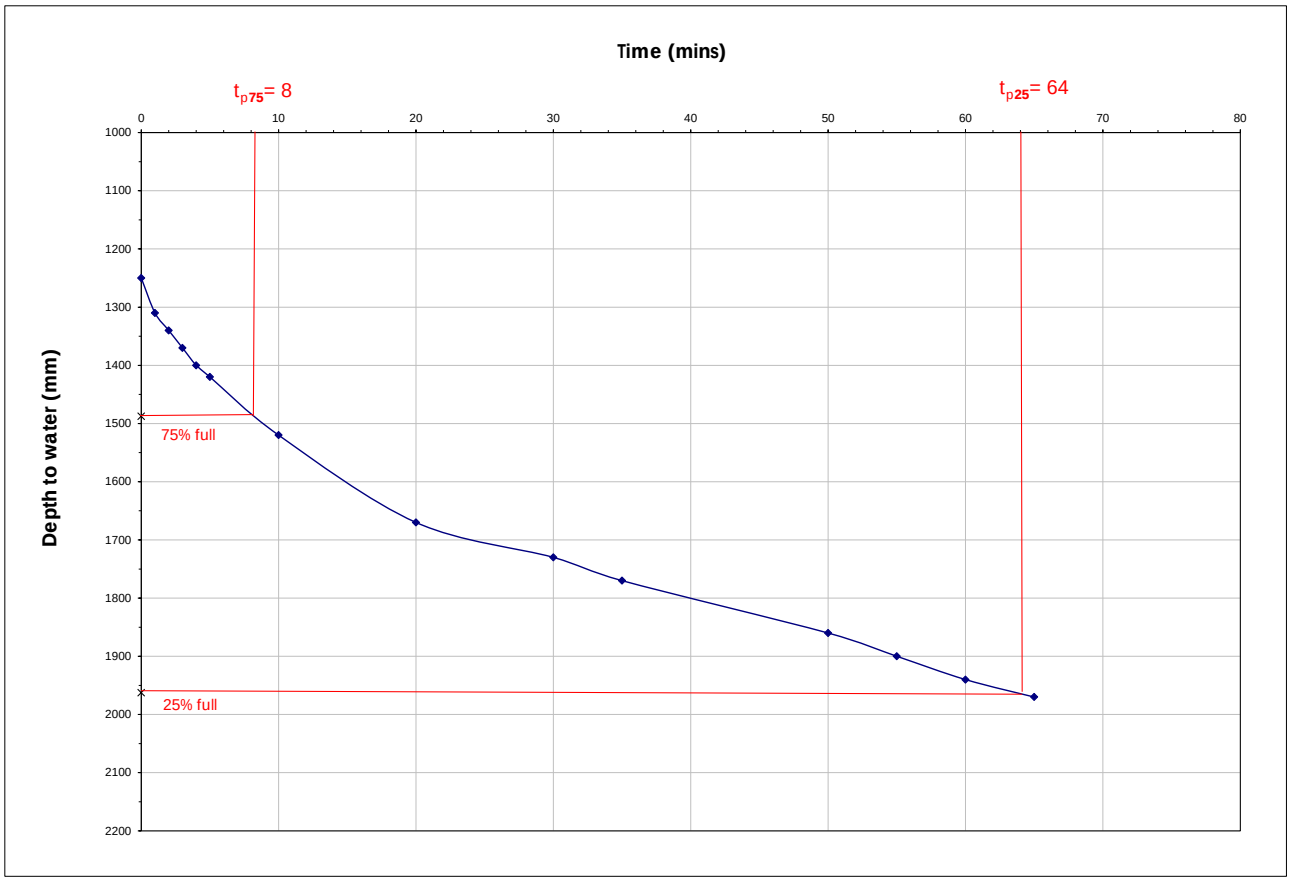
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
11:20	0	1.25	1250
11:21	1	1.31	1310
11:22	2	1.34	1340
11:23	3	1.37	1370
11:24	4	1.40	1400
11:25	5	1.42	1420
11:30	10	1.52	1520
11:40	20	1.67	1670
11:50	30	1.73	1730
11:55	35	1.77	1770
12:10	50	1.86	1860
12:15	55	1.90	1900
12:20	60	1.94	1940
12:25	65	1.97	1970

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.00	3000
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1962.5	1.96
0.50	=	1725	1.73
0.75	=	1487.5	1.49

Depth at start of test (mm)	=	1250
Depth at end of test (mm)	=	1970
Base area of pit	=	1.8
a_{p50} - 50% internal surface area inc. base	=	5.22
V_{p75-25} - Volume 75 - 25%	=	0.855

Read from the graph:		
$t_{p\,75}$ (min)	=	8
$t_{p\,25}$ (min)	=	64



Soil infiltration rate, f, (m/s) = 4.87E-05

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA102**
Test No.	**3**

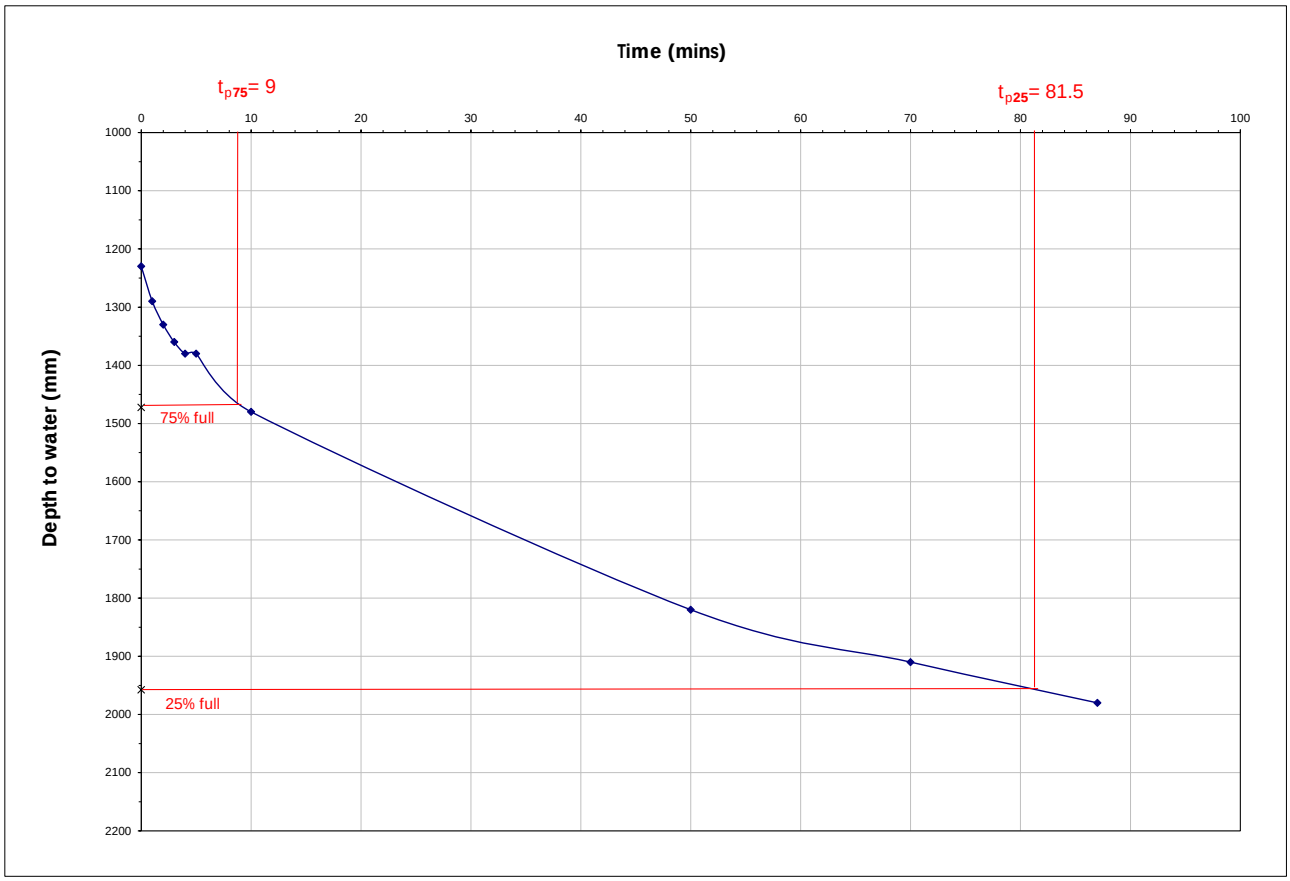
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
12:30	0	1.23	1230
12:31	1	1.29	1290
12:32	2	1.33	1330
12:33	3	1.36	1360
12:34	4	1.38	1380
12:35	5	1.38	1380
12:40	10	1.48	1480
13:20	50	1.82	1820
13:40	70	1.91	1910
13:57	87	1.98	1980

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.00	3000
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1957.5	1.96
0.50	=	1715	1.72
0.75	=	1472.5	1.47

Depth at start of test (mm)	=	1230
Depth at end of test (mm)	=	1980
Base area of pit	=	1.8
a_{p50} - 50% internal surface area inc. base	=	5.292
V_{p75-25} - Volume 75 - 25%	=	0.873

Read from the graph:		
$t_{p\ 75}$ (min)	=	9
$t_{p\ 25}$ (min)	=	81.5



Soil infiltration rate, f, (m/s) = 3.79E-05

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA103**
Test No.	**1**

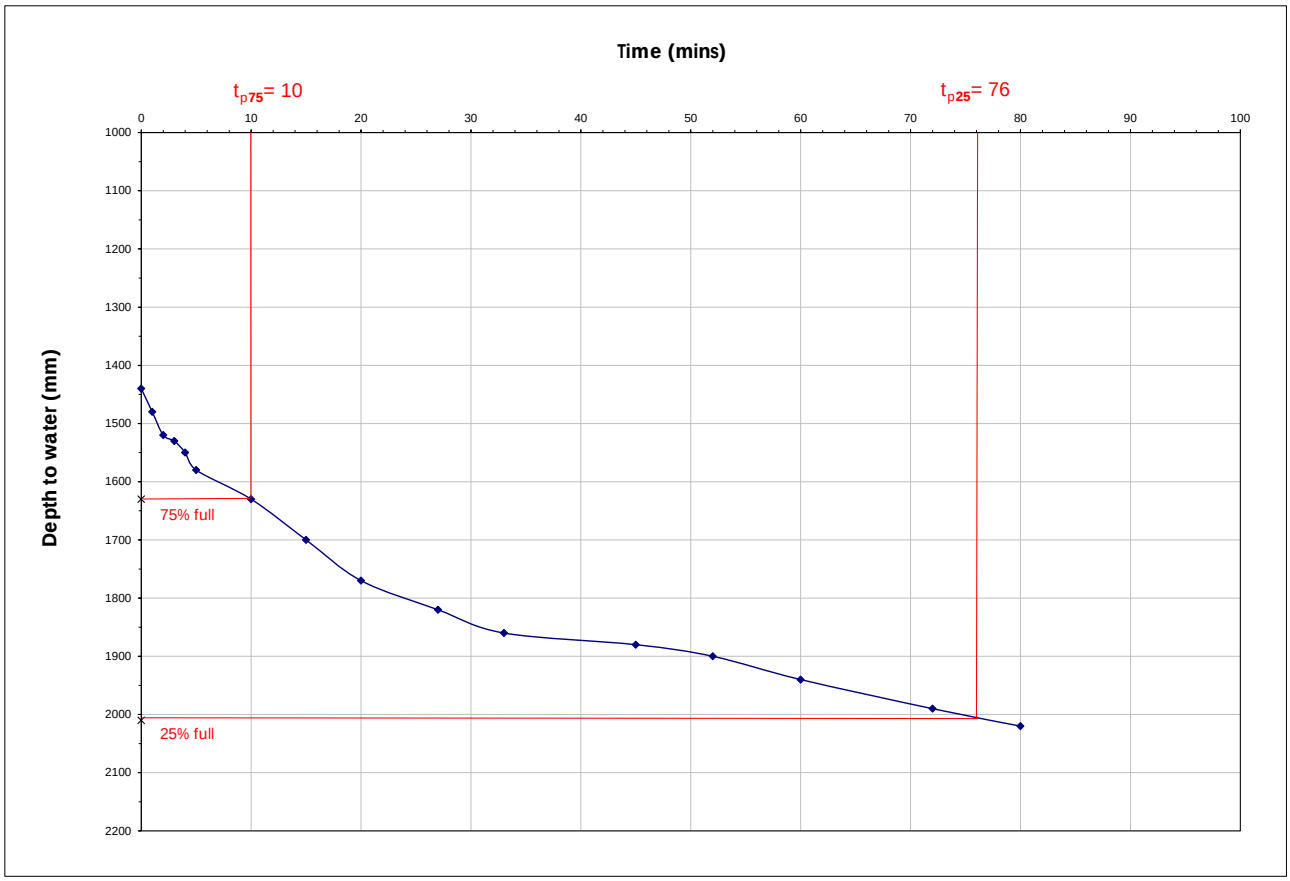
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
12:23	0	1.44	1440
12:24	1	1.48	1480
12:25	2	1.52	1520
12:26	3	1.53	1530
12:27	4	1.55	1550
12:28	5	1.58	1580
12:33	10	1.63	1630
12:38	15	1.70	1700
12:43	20	1.77	1770
12:50	27	1.82	1820
12:56	33	1.86	1860
13:08	45	1.88	1880
13:15	52	1.90	1900
13:23	60	1.94	1940
13:35	72	1.99	1990
13:43	80	2.02	2020

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	2.80	2800
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	2010	2.01
0.50	=	1820	1.82
0.75	=	1630	1.63

Depth at start of test (mm)	=	1440
Depth at end of test (mm)	=	2020
Base area of pit	=	1.68
a_{p50} - 50% internal surface area inc. base	=	4.264
V_{p75-25} - Volume 75 - 25%	=	0.6384

Read from the graph:		
$t_{p\ 75}$ (min)	=	10
$t_{p\ 25}$ (min)	=	76



Soil infiltration rate, f, (m/s) = 3.78E-05

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA103**
Test No.	**2**

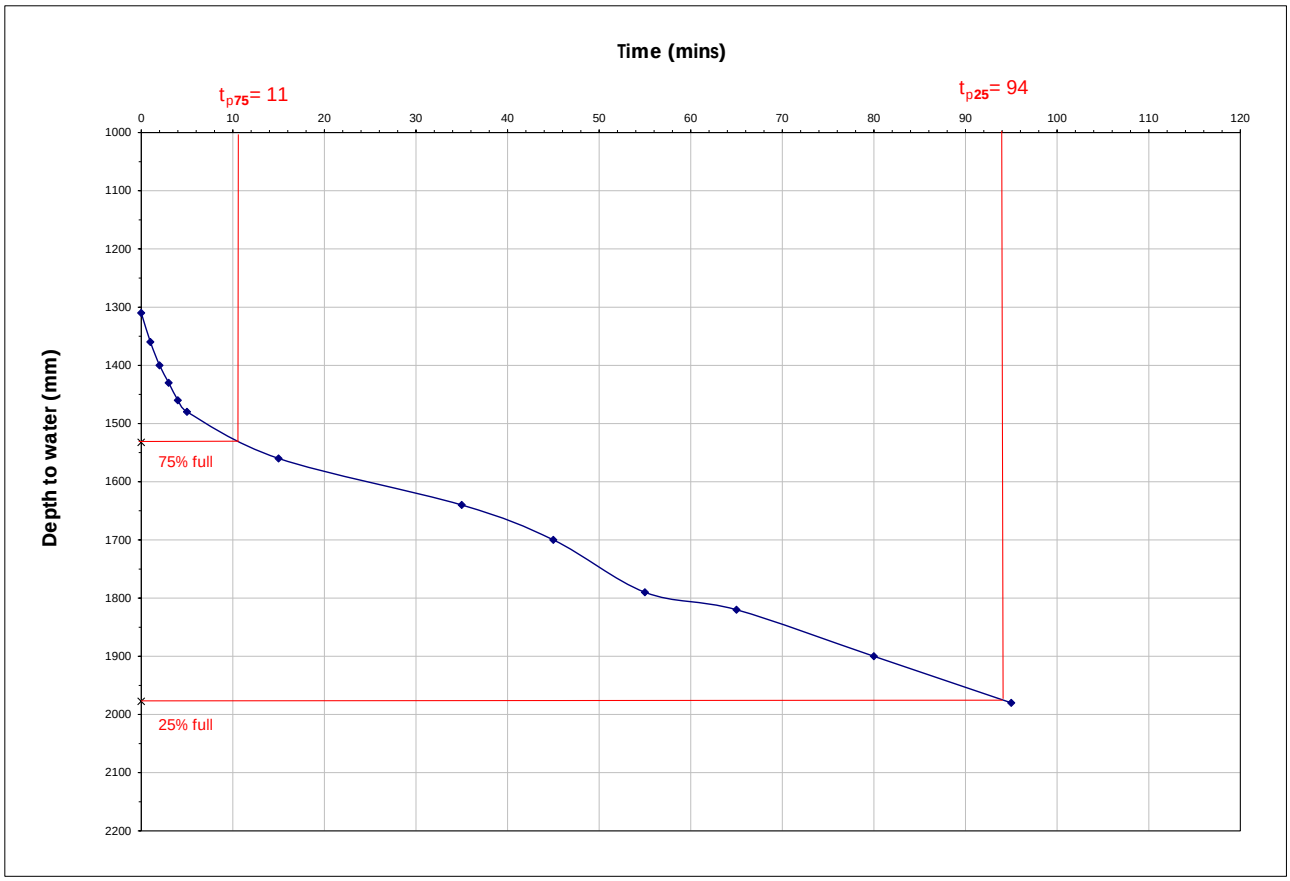
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
13:25	0	1.31	1310
13:26	1	1.36	1360
13:27	2	1.40	1400
13:28	3	1.43	1430
13:29	4	1.46	1460
13:30	5	1.48	1480
13:40	15	1.56	1560
14:00	35	1.64	1640
14:10	45	1.70	1700
14:20	55	1.79	1790
14:30	65	1.82	1820
14:45	80	1.90	1900
15:00	95	1.98	1980

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	2.80	2800
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1977.5	1.98
0.50	=	1755	1.76
0.75	=	1532.5	1.53

Depth at start of test (mm)	=	1310
Depth at end of test (mm)	=	1980
Base area of pit	=	1.68
a_{p50} - 50% internal surface area inc. base	=	4.706
V_{p75-25} - Volume 75 - 25%	=	0.7476

Read from the graph:		
$t_{p\ 75}$ (min)	=	11
$t_{p\ 25}$ (min)	=	94



Soil infiltration rate, f, (m/s) = 3.19E-05

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**17/03/2026**
Trial Pit No.	**SA103**
Test No.	**3**

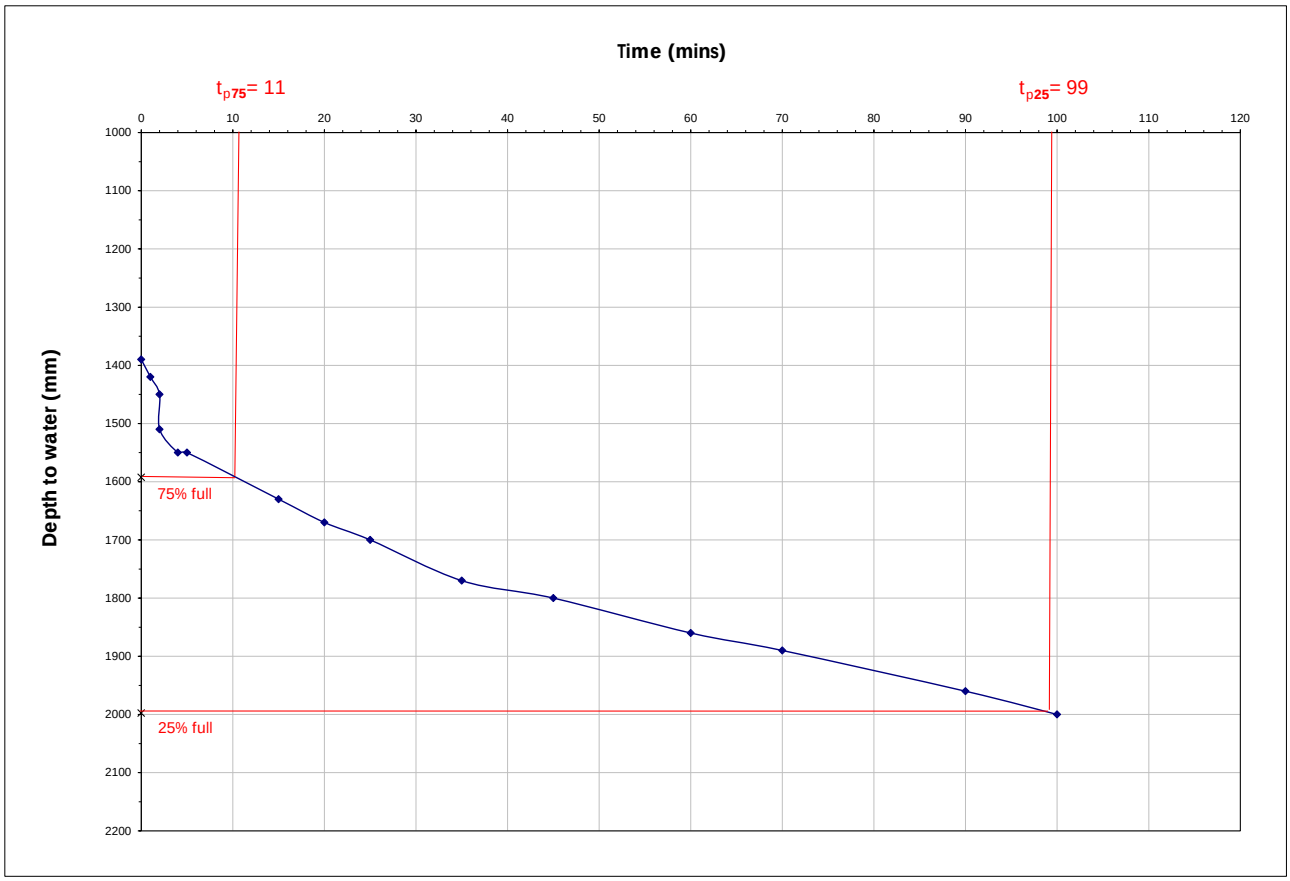
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
15:03	0	1.39	1390
15:04	1	1.42	1420
15:05	2	1.45	1450
15:05	2	1.51	1510
15:07	4	1.55	1550
15:08	5	1.55	1550
15:18	15	1.63	1630
15:23	20	1.67	1670
15:28	25	1.70	1700
15:38	35	1.77	1770
15:48	45	1.80	1800
16:03	60	1.86	1860
16:13	70	1.89	1890
16:33	90	1.96	1960
16:43	100	2.00	2000

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	2.80	2800
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1997.5	2.00
0.50	=	1795	1.80
0.75	=	1592.5	1.59

Depth at start of test (mm)	=	1390
Depth at end of test (mm)	=	2000
Base area of pit	=	1.68
a_{p50} - 50% internal surface area inc. base	=	4.434
$V_{p75\text{-}25}$ - Volume 75 - 25%	=	0.6804

Read from the graph:		
$t_{p\ 75}$ (min)	=	11
$t_{p\ 25}$ (min)	=	99



Soil infiltration rate, f, (m/s) = 2.91E-05

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**18/03/2026**
Trial Pit No.	**SA104**
Test No.	**1**

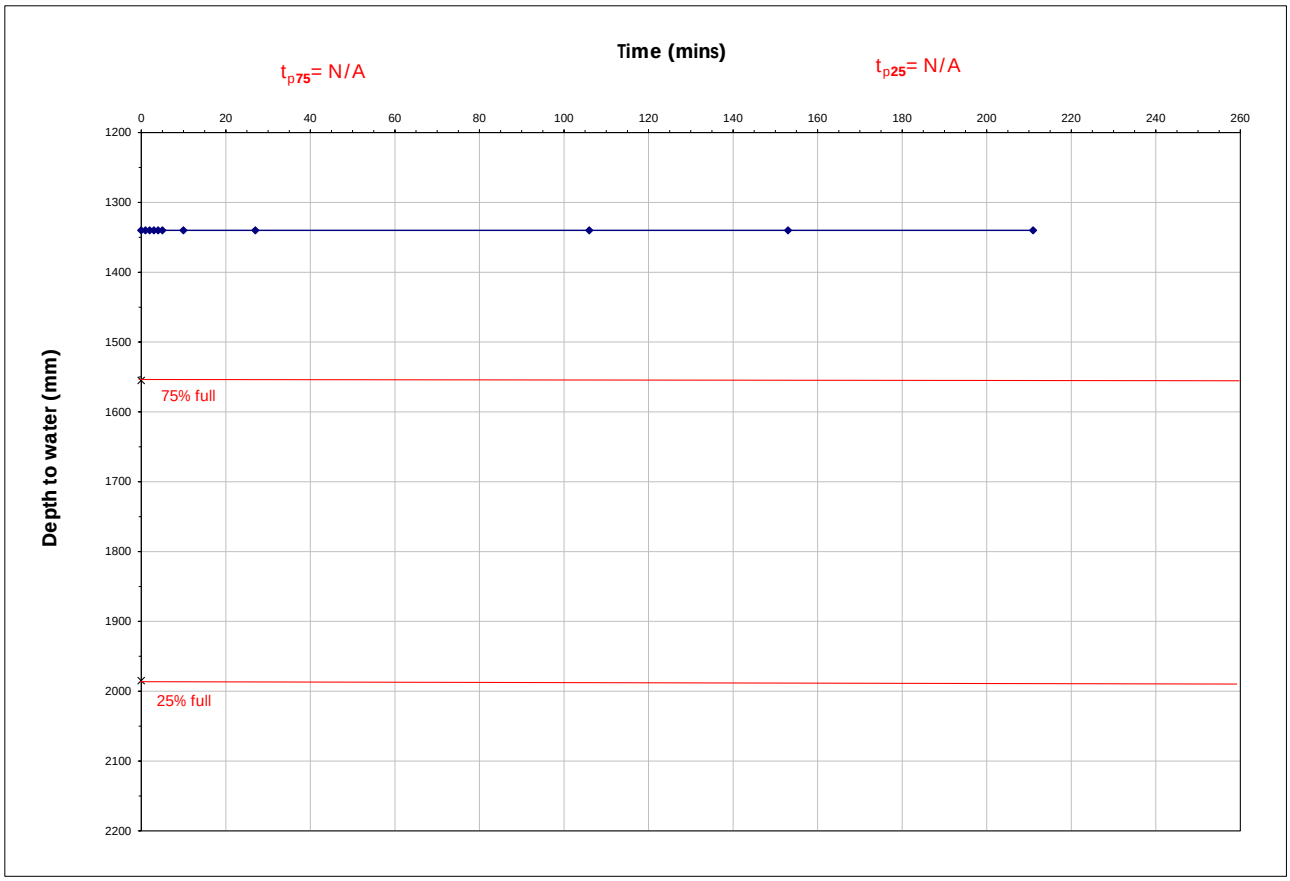
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
09:34	0	1.34	1340
09:35	1	1.34	1340
09:36	2	1.34	1340
09:37	3	1.34	1340
09:38	4	1.34	1340
09:39	5	1.34	1340
09:44	10	1.34	1340
10:01	27	1.34	1340
11:20	106	1.34	1340
12:07	153	1.34	1340
13:05	211	1.34	1340

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.10	3100
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1985	1.99
0.50	=	1770	1.77
0.75	=	1555	1.56

Depth at start of test (mm)	=	1340
Depth at end of test (mm)	=	1340
Base area of pit	=	1.86
a_{p50} - 50% internal surface area inc. base	=	5.042
V_{p75-25} - Volume 75 - 25%	=	0.7998

Read from the graph:		
$t_{p\,75}$ (min)	=	N/A
$t_{p\,25}$ (min)	=	N/A



Test did not attain 25% Effective depth. Unable to calculate soil infiltration rate

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**18/03/2026**
Trial Pit No.	**SA105**
Test No.	**1**

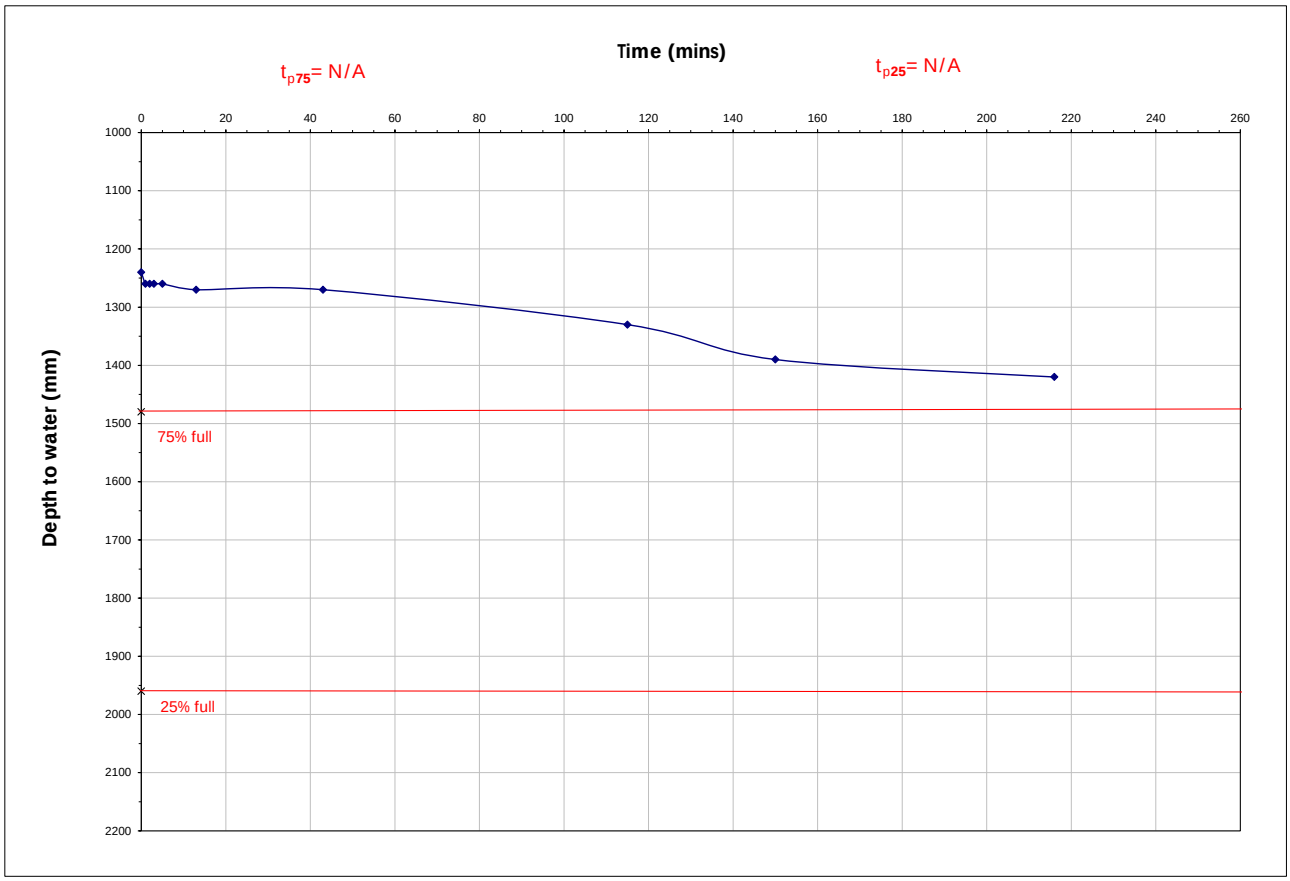
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
09:27	0	1.24	1240
09:28	1	1.26	1260
09:29	2	1.26	1260
09:30	3	1.26	1260
09:32	5	1.26	1260
09:40	13	1.27	1270
10:10	43	1.27	1270
11:22	115	1.33	1330
11:57	150	1.39	1390
13:03	216	1.42	1420

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.00	3000
Width	=	0.60	600
Depth	=	2.20	2200

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1960	1.96
0.50	=	1720	1.72
0.75	=	1480	1.48

Depth at start of test (mm)	=	1240
Depth at end of test (mm)	=	1420
Base area of pit	=	1.8
a_{p50} - 50% internal surface area inc. base	=	5.256
V_{p75-25} - Volume 75 - 25%	=	0.864

Read from the graph:		
$t_{p\ 75}$ (min)	=	N/A
$t_{p\ 25}$ (min)	=	N/A



Test did not attain 25% Effective depth. Unable to calculate soil infiltration rate

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**18/03/2026**
Trial Pit No.	**SA107**
Test No.	**1**

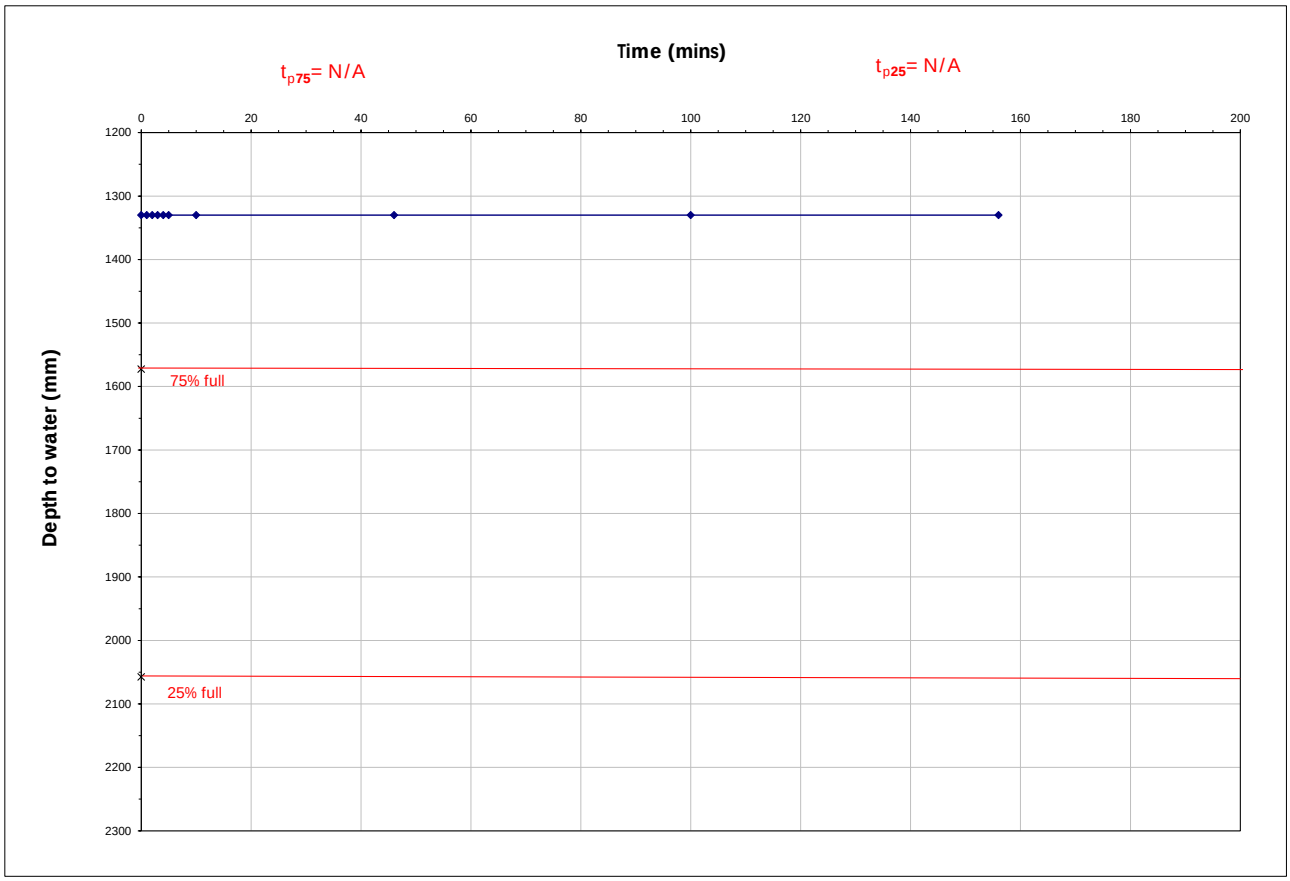
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
10:31	0	1.33	1330
10:32	1	1.33	1330
10:33	2	1.33	1330
10:34	3	1.33	1330
10:35	4	1.33	1330
10:36	5	1.33	1330
10:41	10	1.33	1330
11:17	46	1.33	1330
12:11	100	1.33	1330
13:07	156	1.33	1330

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.10	3100
Width	=	0.60	600
Depth	=	2.30	2300

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	2057.5	2.06
0.50	=	1815	1.82
0.75	=	1572.5	1.57

Depth at start of test (mm)	=	1330
Depth at end of test (mm)	=	1330
Base area of pit	=	1.86
a_{p50} - 50% internal surface area inc. base	=	5.449
V_{p75-25} - Volume 75 - 25%	=	0.9021

Read from the graph:		
$t_{p\ 75}$ (min)	=	N/A
$t_{p\ 25}$ (min)	=	N/A



Test did not attain 25% Effective depth. Unable to calculate soil infiltration rate

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**18/03/2026**
Trial Pit No.	**SA108**
Test No.	**1**

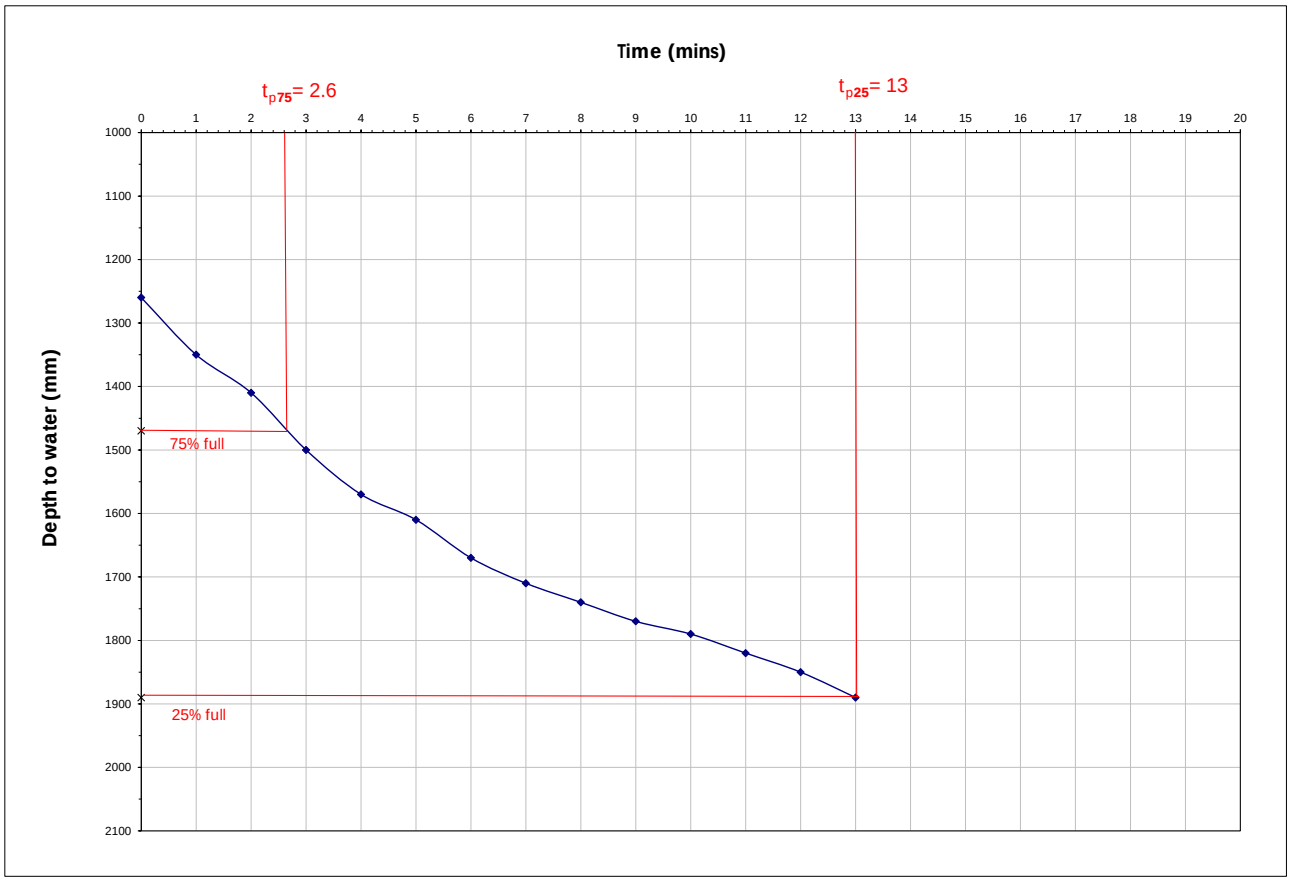
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
13:00	0	1.26	1260
13:01	1	1.35	1350
13:02	2	1.41	1410
13:03	3	1.50	1500
13:04	4	1.57	1570
13:05	5	1.61	1610
13:06	6	1.67	1670
13:07	7	1.71	1710
13:08	8	1.74	1740
13:09	9	1.77	1770
13:10	10	1.79	1790
13:11	11	1.82	1820
13:12	12	1.85	1850
13:13	13	1.89	1890

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.10	3100
Width	=	0.60	600
Depth	=	2.10	2100

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1890	1.89
0.50	=	1680	1.68
0.75	=	1470	1.47

Depth at start of test (mm)	=	1260
Depth at end of test (mm)	=	1890
Base area of pit	=	1.86
a_{p50} - 50% internal surface area inc. base	=	4.968
V_{p75-25} - Volume 75 - 25%	=	0.7812

Read from the graph:		
$t_{p\,75}$ (min)	=	2.6
$t_{p\,25}$ (min)	=	13



Soil infiltration rate, f, (m/s) = 2.52E-04

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**18/03/2026**
Trial Pit No.	**SA108**
Test No.	**2**

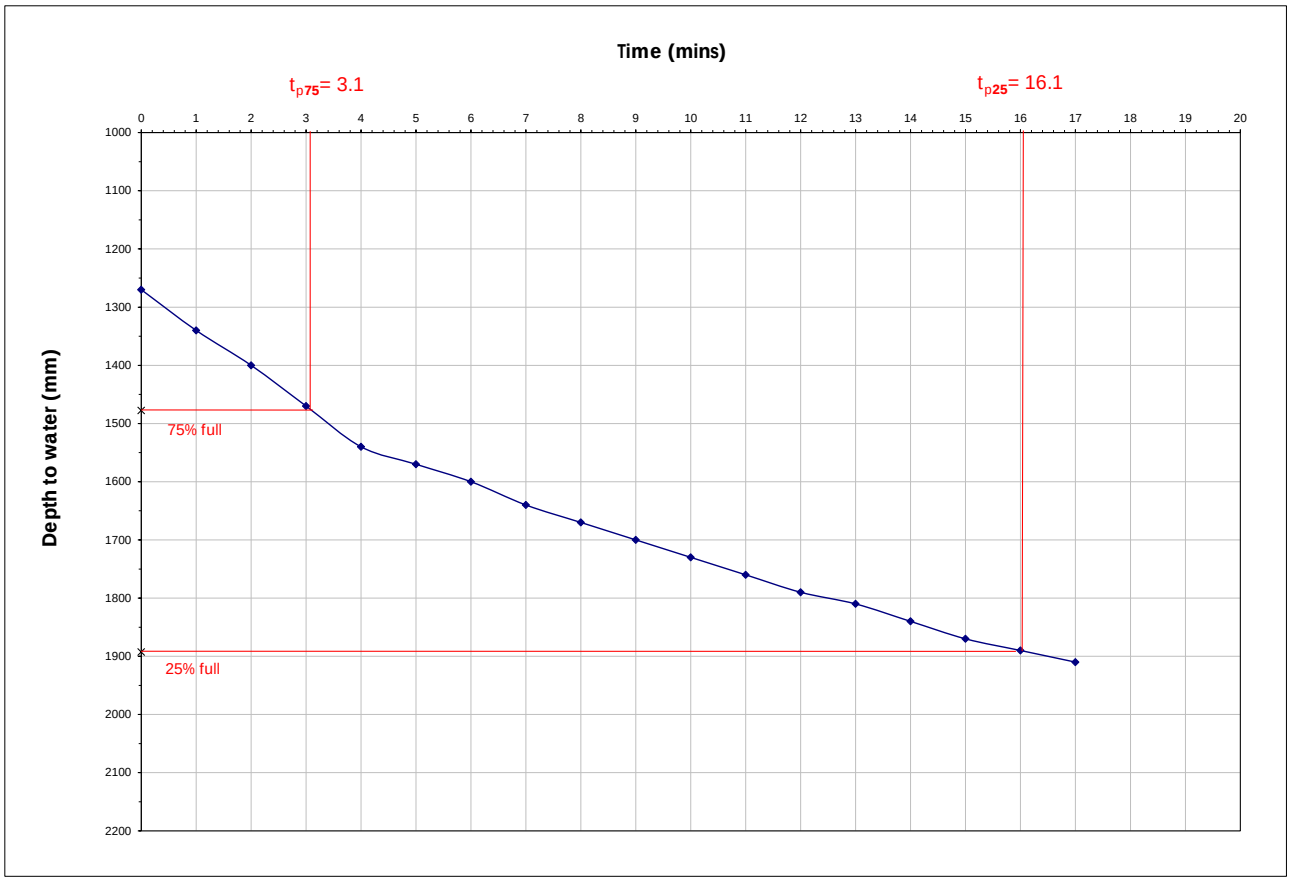
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
13:14	0	1.27	1270
13:15	1	1.34	1340
13:16	2	1.40	1400
13:17	3	1.47	1470
13:18	4	1.54	1540
13:19	5	1.57	1570
13:20	6	1.60	1600
13:21	7	1.64	1640
13:22	8	1.67	1670
13:23	9	1.70	1700
13:24	10	1.73	1730
13:25	11	1.76	1760
13:26	12	1.79	1790
13:27	13	1.81	1810
13:28	14	1.84	1840
13:29	15	1.87	1870
13:30	16	1.89	1890
13:31	17	1.91	1910

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.10	3100
Width	=	0.60	600
Depth	=	2.10	2100

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1892.5	1.89
0.50	=	1685	1.69
0.75	=	1477.5	1.48

Depth at start of test (mm)	=	1270
Depth at end of test (mm)	=	1910
Base area of pit	=	1.86
a_{p50} - 50% internal surface area inc. base	=	4.931
V_{p75-25} - Volume 75 - 25%	=	0.7719

Read from the graph:		
$t_{p\ 75}$ (min)	=	3.1
$t_{p\ 25}$ (min)	=	16.1



Soil infiltration rate, f, (m/s) = 2.01E-04

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Fenwood Estates Limited
Engineer	Charlotte Copley
Job Name:	Cudworth Parkway, Barnsley
Job No.:	4674

Date:	**18/03/2026**
Trial Pit No.	**SA108**
Test No.	**3**

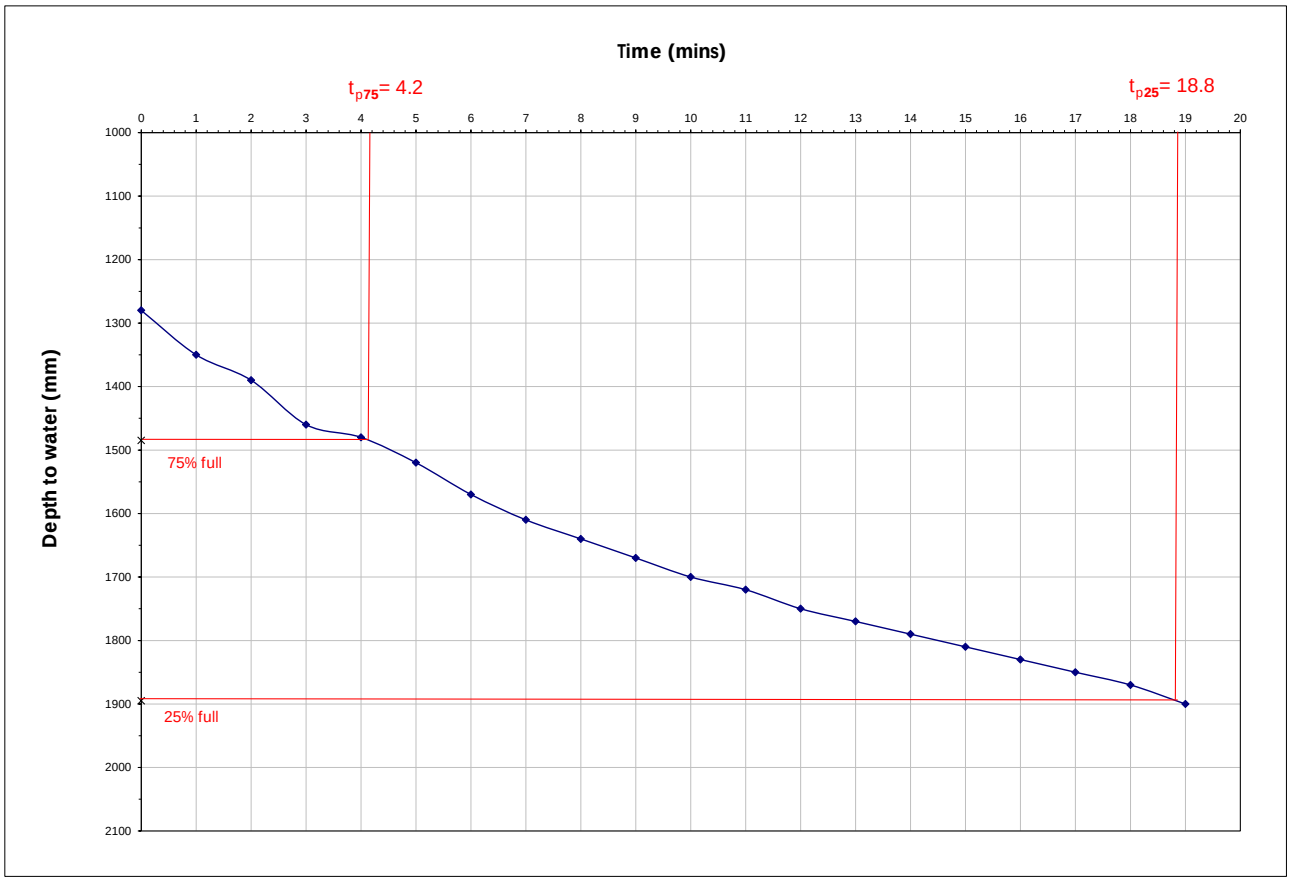
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
13:32	0	1.28	1280
13:33	1	1.35	1350
13:34	2	1.39	1390
13:35	3	1.46	1460
13:36	4	1.48	1480
13:37	5	1.52	1520
13:38	6	1.57	1570
13:39	7	1.61	1610
13:40	8	1.64	1640
13:41	9	1.67	1670
13:42	10	1.70	1700
13:43	11	1.72	1720
13:44	12	1.75	1750
13:45	13	1.77	1770
13:46	14	1.79	1790
13:47	15	1.81	1810
13:48	16	1.83	1830
13:49	17	1.85	1850
13:50	18	1.87	1870
13:51	19	1.9	1900

SOAKAWAY TRIAL PIT			
Dimensions		**(m)**	**(mm)**
Length	=	3.10	3100
Width	=	0.60	600
Depth	=	2.10	2100

Effective Depth (% full)		**(mm)**	**(m)**
0.25	=	1895	1.90
0.50	=	1690	1.69
0.75	=	1485	1.49

Depth at start of test (mm)	=	1280
Depth at end of test (mm)	=	1900
Base area of pit	=	1.86
a_{p50} - 50% internal surface area inc. base	=	4.894
V_{p75-25} - Volume 75 - 25%	=	0.7626

Read from the graph:		
$t_{p\,75}$ (min)	=	4.2
$t_{p\,25}$ (min)	=	18.8



Soil infiltration rate, f, (m/s) = 1.78E-04