



Thomas Telford House
Sun Valley Business Park
Winnall Close
Winchester SO23 0LR

Crayfern Homes

By Email only: AlastairD@crayfernhomes.co.uk

Our Ref: 16875/SL

7th February 2019

Dear Alastair,

RE: Land south of Burndell Road, West Sussex, BN18 0HR.

We are writing regarding the intrusive investigation undertaken at the above-named site.

Brief

The Soils Limited quotation (reference Q21025/rev1.01, dated 29th January 2019) set the scope of the investigation. The investigation was to comprise machine excavated trial holes and infiltration tests in accordance with the principles of BRE DG365: 2016 Soakaway Design.

General

The site had an approximate area of 2.2ha and was located at Land south of Burndell Road, Yapton, West Sussex BN18 0HR at O.S Land Ranger Grid Reference of SU985028.

A site location plan has been included as Figure 1.

Site Works

Site works were undertaken between the 30th January and 1st February 2019 and comprised the excavation of six trial pits (SK01-SK06) at locations selected and excavated by the client. Following the construction of the trial holes, infiltration tests in accordance with the principles of BRE DG365:2016 were carried out within all trial holes.

A trial hole location plan is included as Figure 2.

Upon completion of the trial hole logging and testing the trial holes were backfilled with arisings and mounded over to allow for future settlement.

Ground Conditions

The ground conditions encountered during the site investigation have been summarised in Table 1.

Topsoil (TS) River Terrace Deposits (undifferentiated) (RTDU)

Table 1 – Summary of Ground Conditions

Strata	Depth Encountered (m bgl)		Typical Description
	Top	Base	
TS	0.00	0.20	Dark brown clayey SILT with frequent rootlets/rootlets. TOPSOIL.
RTDU	0.00 – 0.20	0.60 ¹ – 0.65 ¹	Orangish brown slightly gravelly, very silty, CLAY with occasional rootlets. RIVER TERRACE DEPOSITS.

Notes: ¹ encountered to base of trial hole

Soils of the River Terrace Deposits were encountered in all six of the trial holes, either from the surface or underlying the Topsoil within one of the trial holes.

Infiltration Testing

Infiltration tests were performed in order to provide guidance on the suitability of the ground for the adoption of a shallow surface water drainage system. The tests were undertaken within the River Terrace Deposits at a depth of 0.30m bgl to the base of each trial hole. The tests comprised piping water from a water storage area into the open trial hole, the drop-in water level over time was then recorded to give an indication of soakage potential.

BRE DG365:2016 states that for an accurate infiltration rate to be obtained a soakage pit needs to be filled three times in quick succession. Each test is completed once 75% of the water present has drained away, in order to determine whether or not the underlying ground conditions may be suitable for surface water drainage.

A functioning soakaway should discharge from full to half-volume within 24 hours in readiness for subsequent storm inflow. In the event that the fall in head during infiltration testing is less than 50% of the total volume within a 24-hour period, the test is considered to have failed in accordance with BRE DG365:2016.

Only two tests were carried out within location SK04 due to the slow head loss observed over the test period.

Table 2 presents the infiltration test results performed within SK01 to SK06.

Table 2 - Infiltration Test Results

Trial Hole (Test No.)	Test Stratum	Trial Pit Depth (m bgl)	Water Level Start of Test (m bgl)	Infiltration Rate (m/sec)	Comments
SK01(1)	RTDU	0.65	0.30	8.204×10^{-6}	
SK01(2)	RTDU	0.65	0.30	2.348×10^{-6}	
SK01(3)	RTDU	0.65	0.30	2.217×10^{-6}	Infiltration stalled between 266 and 339 minutes (end of day) before continuing overnight. Data extrapolated overnight.
SK02(1)	RTDU	0.60	0.30	2.482×10^{-6}	Data extrapolated overnight.
SK02(2)	RTDU	0.60	0.30	5.932×10^{-7}	Data extrapolated.
SK02(3)	RTDU	0.60	0.30	Test failed in accordance with BRE 365	Within 21 hours the head of water dropped to 93%.
SK03(1)	RTDU	0.60	0.30	1.835×10^{-6}	Data extrapolated overnight.
SK03(2)	RTDU	0.60	0.30	1.163×10^{-6}	
SK03(3)	RTDU	0.60	0.30	9.868×10^{-7}	
SK04(1)	RTDU	0.60	0.30	Test failed in accordance with BRE 365	Within 47.6 hours the head of water dropped to 43%.
SK04(2)	RTDU	0.60	0.30	BRE 365	In 21.3 hours, the head of water dropped to 58%. Extrapolation of data showed that >24hrs were required for the head of water to fall by 50%
SK05(1)	RTDU	0.60	0.30	1.044×10^{-6}	Extrapolated data overnight soakage and to allow calculation of indicative infiltration rate.
SK05(2)	RTDU	0.60	0.30	8.020×10^{-7}	
SK05(3)	RTDU	0.60	0.30	2.526×10^{-6}	Data extrapolated overnight.
SK06(1)	RTDU	0.60	0.30	2.193×10^{-6}	
SK06(2)	RTDU	0.60	0.30	1.253×10^{-6}	Extrapolated data overnight soakage and to allow calculation of indicative infiltration rate.
SK06(3)	RTDU	0.60	0.30	8.364×10^{-7}	

Rates of between 8.204×10^{-6} m/sec and 5.932×10^{-7} m/sec were calculated based on the data from the tests within SK01 and SK02. It was not possible to calculate an infiltration rate for SK02(3) and SK04 as the head loss observed was not sufficient to be compliant with BRE DG365:2016.

Full results are included within Appendix A.

Conclusions

The south of the site is considered to be unsuitable for the adoption of soakaway drainage due to the insufficient infiltration recorded within SK02 and SK04, in addition to the poor infiltration rates calculated through extrapolation from tests within SK06.

Infiltration rates within the north of the site (SK01, SK03 and SK05) also displayed low end permeabilities that required extrapolation in order to calculate infiltration rates of between 8.204×10^{-6} m/sec and 8.020×10^{-7} m/sec. Shallow soakaway drainage, such as permeable paving, may work to an appropriate standard across some of this area, however, given that the tests were run for three full days and that rates could still only be

calculated through extrapolation of data, it is considered that drainage problems may arise during prolonged periods of wet weather when the ground is already saturated.

It should be noted that the Environment Agency must be consulted on any works which may impact groundwater sources.

The following attachments make up the remainder of this letter report.

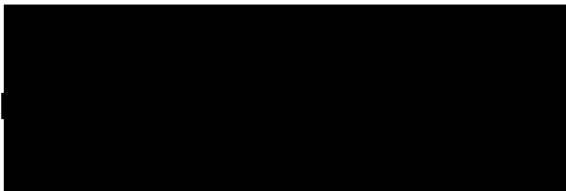
Figure 1. Site Location Plan

Figure 2. Trial Hole Location Plan

Appendix A. Field Data

Should you have any further questions please do not hesitate to contact the undersigned.

Yours Sincerely



C. Morrison BSc (Hons) FGS FHEVSC
Director

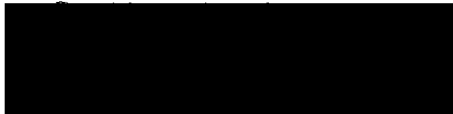


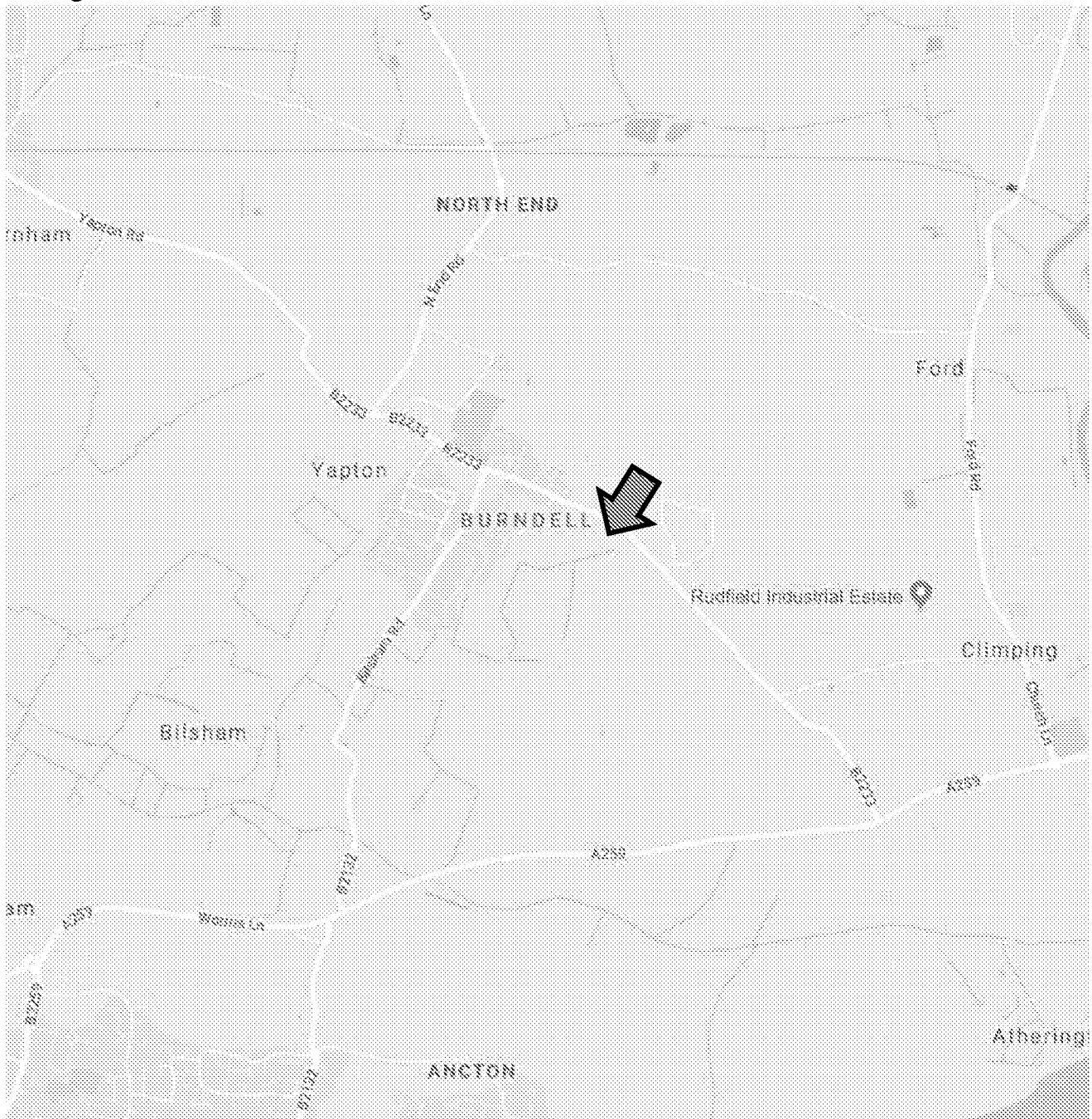
Figure 1 – Site Location Plan

Figure number
1

Title
Site Location Map

Project
Land south of Burndell Road, BN18 0HR.

Date
February 2019

Client
Crayfern Homes

Reference
16875/SL

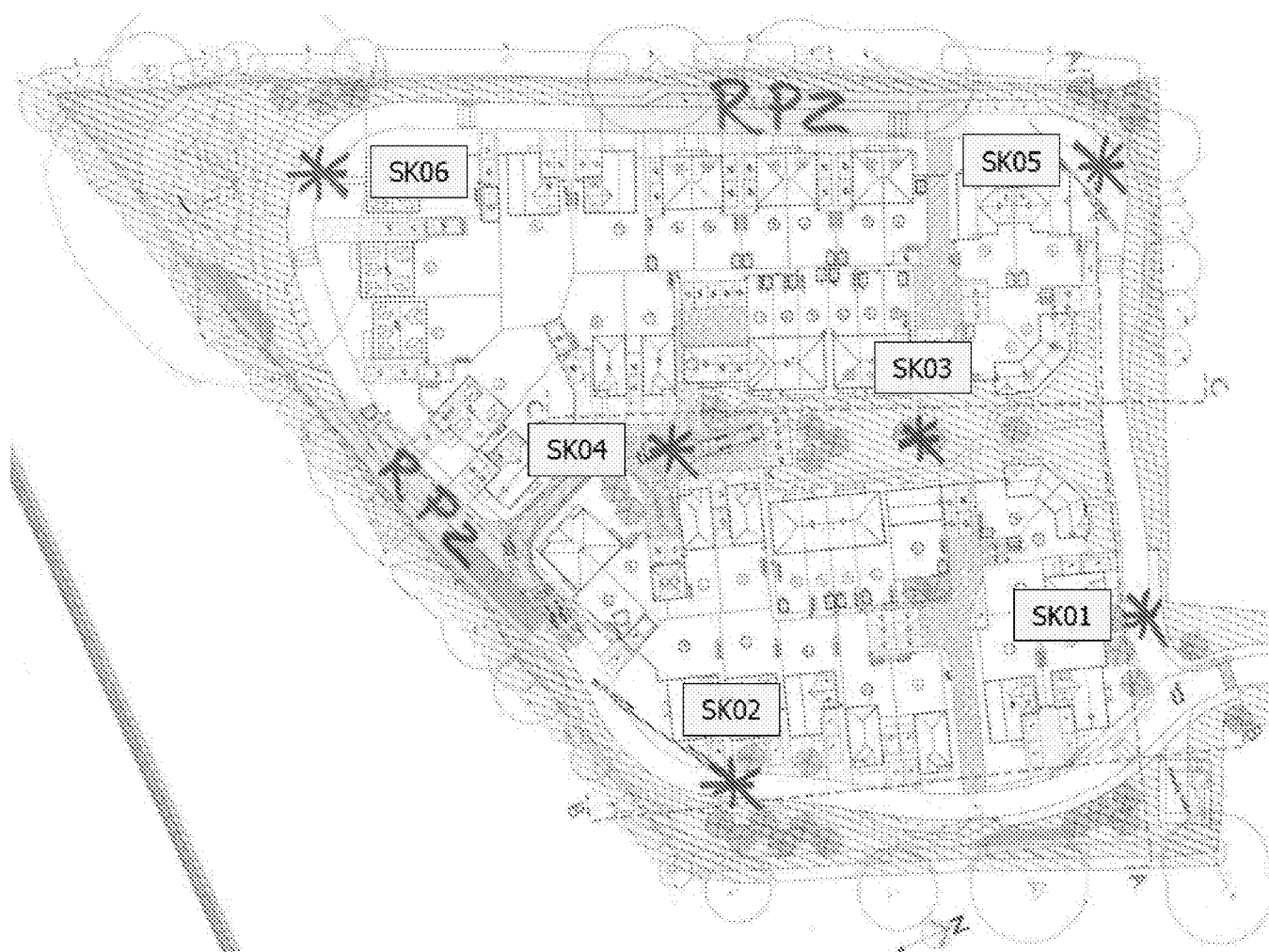
Figure 2. Trial Hole Location Plan

Figure number
2

Title
Trial hole location plan

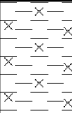
Project
Land south of Burndell Road, BN18 0HR.

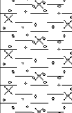
Date
February 2019

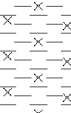
Client
Crayfern Homes

Reference
I6875/SL

Appendix A. Field Data

		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk			Trial Pit Log		Trial Pit No. SK2 Sheet 1 of 1	
Project Name: Land south of Burndell Road				Project No.: 16875		Method:		Hole Type TP
Location: Land south of Burndell Road, Yapton, West Sussex BN18 0HR						Plant:		
Client: Crayfern Homes				Trial Pit Length: m		Trial Pit Width: m		Scale 1:25
Dates: 30/01/2019				Level:		Co-ords:		Logged By TR
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Dark brown clayey SILT with frequent roots/rootlets TOPSOIL.	
				0.60			Orangish brown silty CLAY with occasional rootlets. RIVER TERRACE DEPOSITS.	
							End of Pit at 0.600m	
								1
								2
								3
								4
								5
General Remarks: Roots observed to 0.60m bgl								Sample Type D: Disturbed B: Bulk J: Jar W: Water
Groundwater Remarks:								

		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk		Trial Pit Log		Trial Pit No. SK3 Sheet 1 of 1	
Project Name: Land south of Burndell Road		Project No.: 16875		Method:		Hole Type	
Location: Land south of Burndell Road, Yapton, West Sussex BN18 0HR				Plant:		TP	
Client: Crayfern Homes		Trial Pit Length: m		Trial Pit Width: m		Scale	
Dates: 30/01/2019		Level:		Co-ords:		1:25	
						Logged By	
						TR	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description
	Depth	Type	Results				
				0.20			Dark brown clayey SILT with frequent rootlets/rootlets. TOPSOIL
				0.60			Orangish brown slightly gravelly silty CLAY with occasional rootlets. Gravel is medium to coarse sub angular to rounded clasts of flint. RIVER TERRACE DEPOSITS.
							End of Pit at 0.600m
							1
							2
							3
							4
							5
General Remarks: Roots observed to 0.60m bgl							Sample Type D: Disturbed B: Bulk J: Jar W: Water
Groundwater Remarks:							

		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk			Trial Pit Log		Trial Pit No. SK5 Sheet 1 of 1	
Project Name: Land south of Burndell Road				Project No.: 16875		Method:		Hole Type TP
Location: Land south of Burndell Road, Yapton, West Sussex BN18 0HR						Plant:		
Client: Crayfern Homes				Trial Pit Length: m		Trial Pit Width: m		Scale 1:25
Dates: 30/01/2019				Level:		Co-ords:		Logged By TR
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description	
	Depth	Type	Results					
				0.20			Dark brown clayey SILT with frequent roots/rootlets. TOPSOIL.	
				0.60			Orangish brown silty CLAY with occasional rootlets. RIVER TERRACE DEPOSITS.	
							End of Pit at 0.600m	
								1
								2
								3
								4
								5
General Remarks: Roots observed to 0.60m bgl								Sample Type D: Disturbed B: Bulk J: Jar W: Water
Groundwater Remarks:								

Soakaway Calculations

Soakaway Test No.	SK01 Test 1
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

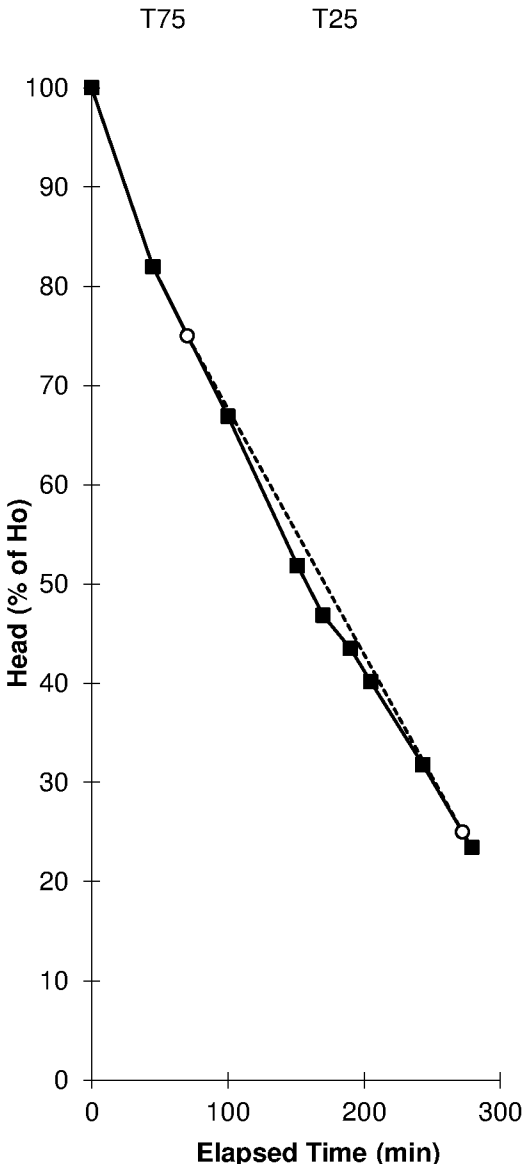
Depth of Pit	0.30 m
Width of Pit	1.11 m
Length of Pit	1.11 m
Depth of Pit Soaked	0.30 m

ap50	1.89588 m2
Vp75.25	0.18419895 m3
t75.25	201.8 min
water used	0.3684 m3
f	8.024E-06 m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.055	45	82	0.25
0.1	100	67	0.20
0.145	151	52	0.16
0.16	170	47	0.14
0.17	190	43	0.13
0.18	205	40	0.12
0.205	243	32	0.10
0.23	279	23	0.07

T75	70.361	75
T25	272.160	25
T75-25	201.799	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil

SOILS LIMITED

**Newton House, Cross Road, Tadworth
Surrey, KT20 5SR**

Telephone: 01737 814 221
Facsimile: 01737 812 557

Soakaway Calculations

Soakaway Test No.	SK01 Test 2
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

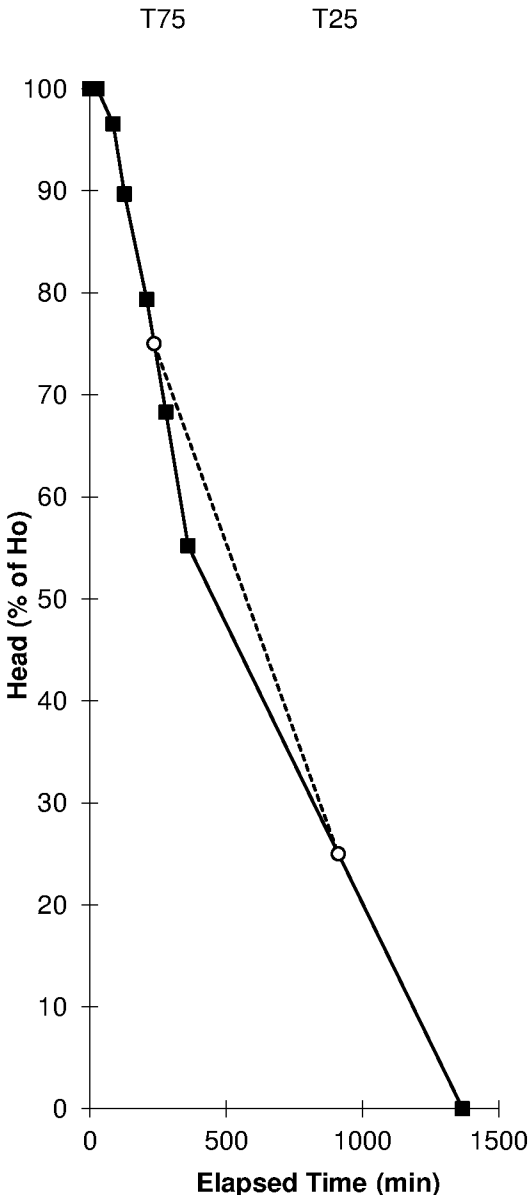
Depth of Pit	0.30 m
Width of Pit	1.11 m
Length of Pit	1.11 m
Depth of Pit Soaked	0.29 m

ap50	1.8759 m2
Vp75.25	0.1786545 m3
t75.25	676.0 min
water used	0.3573 m3
f	2.348E-06 m/sec.

Field Data

Depth to Water (m)	Elapsed Time (min)	Head of Water (% of Ho)	Head of Water (m)
0.01	0	100	0.29
0.01	26	100	0.29
0.02	86	97	0.28
0.04	127	90	0.26
0.07	208	79	0.23
0.102	279	68	0.20
0.14	361	55	0.16
0.3	1368	0	0.00

T75	235.734	75
T25	911.703	25
T75-25	675.969	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil

SOILS LIMITED

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Soakaway Calculations

Soakaway Test No.	SK01 Test 3
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

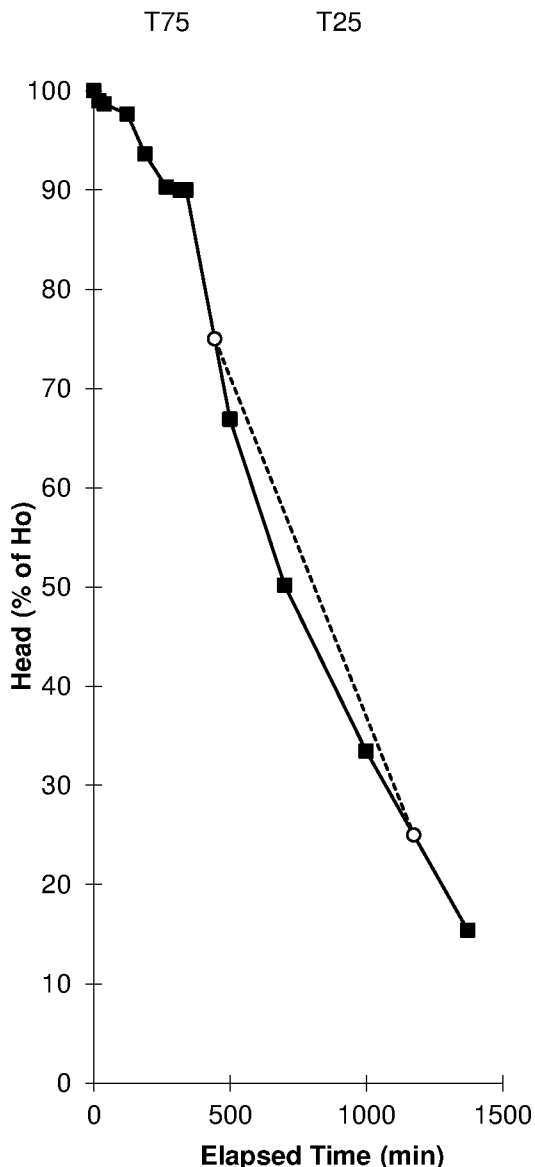
Depth of Pit	0.30 m
Width of Pit	1.11 m
Length of Pit	1.11 m
Depth of Pit Soaked	0.30 m

ap_{50}	1.89588 m2
Vp_{75-25}	0.18419895 m3
t_{75-25}	730.5 min
water used	0.3684 m3
f	2.217E-06 m/sec.

Field Data

Depth to	Elapsed	Head of	Head of
Water	Time	Water	Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.004	18	99	0.30
0.005	38	99	0.30
0.008	122	98	0.29
0.02	187	94	0.28
0.03	266	90	0.27
0.031	317	90	0.27
0.031	339	90	0.27
0.1	500	67	0.20
0.15	700.00	50	0.15
0.2	1000.00	33	0.10
0.254	1372	15	0.05

T75	443.417	75
T25	1173.944	25
T75-25	730.528	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil. Infiltration stalled between 266 and 339 minutes (end of day) before continuing overnight.

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Soakaway Calculations

Soakaway Test No.	SK02 Test 1
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

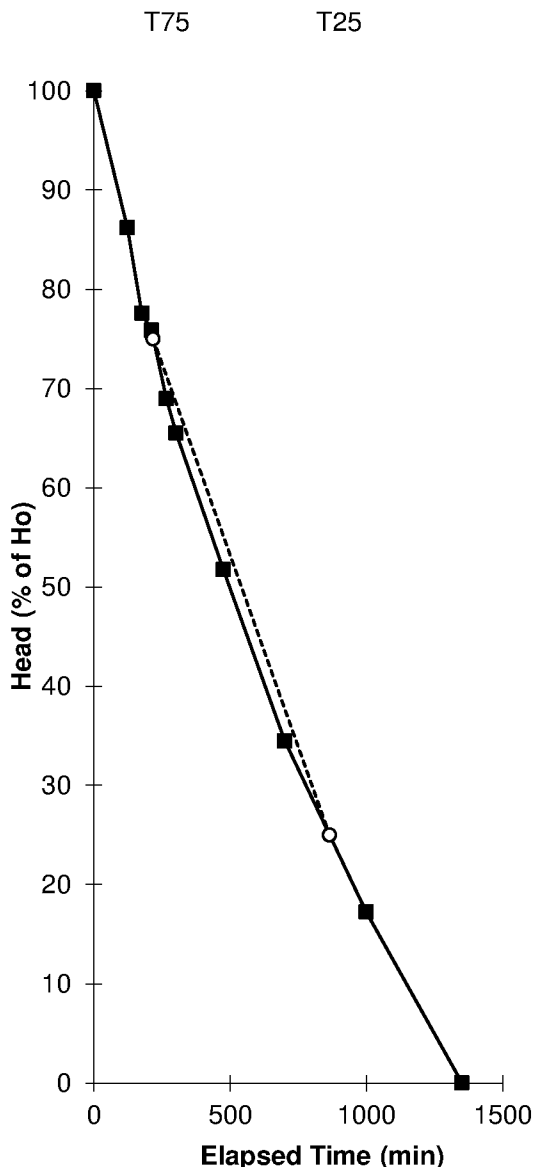
Depth of Pit	0.30 m
Width of Pit	1.15 m
Length of Pit	1.15 m
Depth of Pit Soaked	0.29 m

ap_{50}	1.9895 m2
V_{p75-25}	0.1917625 m3
t_{75-25}	647.1 min
water used	0.3835 m3
f	2.482E-06 m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.01	0	100	0.29
0.05	123	86	0.25
0.075	175	78	0.23
0.08	211	76	0.22
0.1	266	69	0.20
0.11	302	66	0.19
0.15	475	52	0.15
0.2	700.00	34	0.10
0.25	1000.00	17	0.05
0.3	1351	0	0.00

T75	217.875	75
T25	865.000	25
T75-25	647.125	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil. Figures in red are extrapolated (infiltration overnight).

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Soakaway Calculations

Soakaway Test No.	SK02 Test 2
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.15 m
Length of Pit	1.15 m
Depth of Pit Soaked	0.28 m

ap50	1.9642 m2
Vp75-25	0.18448875 m3
t75-25	2639.0 min
water used	0.3690 m3
i	5.932E-07 m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.021	0	100	0.28
0.022	16	100	0.28
0.033	98	96	0.27
0.04	257	93	0.26
0.044	340	92	0.26
0.045	374	91	0.26
0.12	1381	65	0.18
0.15	1850.00	54	0.15
0.2	2750.00	36	0.10
0.25	4200.00	18	0.05

T75	988.270	75
T25	3627.250	25
T75-25	2638.980	Derived from Best Fit

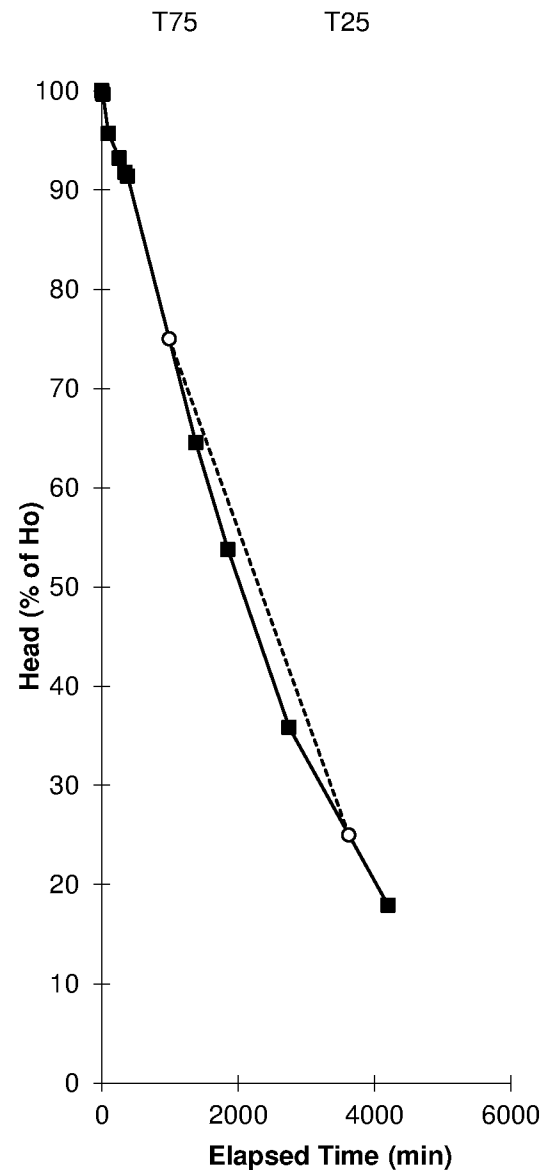
Comments

Depth of pit relates to depth of excavation below topsoil. In 23 hours the head of water dropped to 65% - Test Failed in accordance with BRE 365

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Soakaway Calculations

Soakaway Test No.	SK02 Test 3
Contract:	Land at Burndell Road
Contract No.	16875

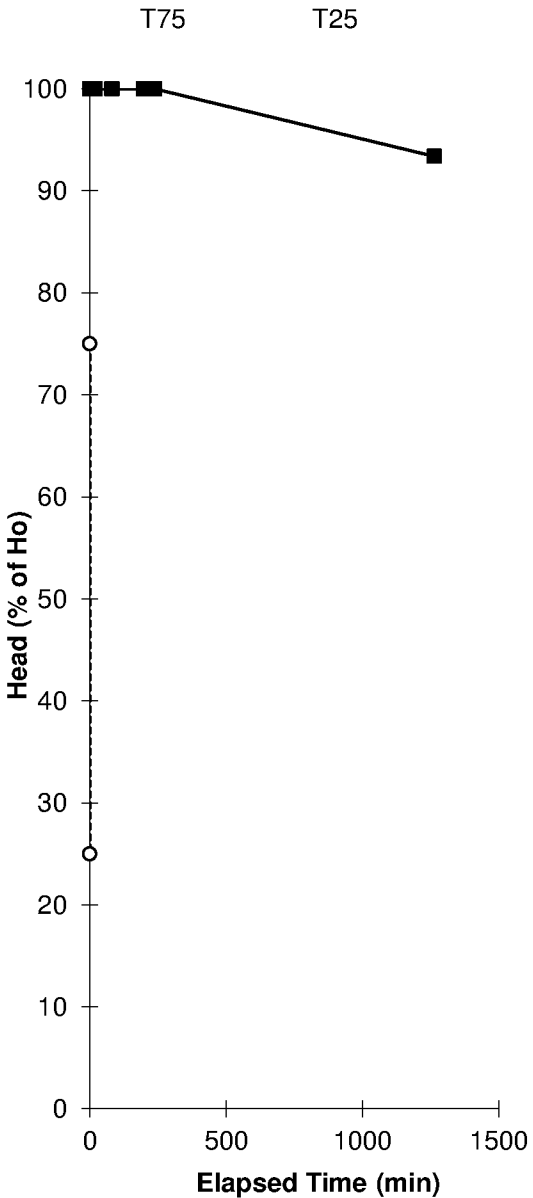
Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.15 m
Length of Pit	1.15 m
Depth of Pit Soaked	0.30 m
ap50	2.01227 m2
Vp75-25	0.198308875 m3
t75-25	0.0 min
water used	0.3966 m3
f	m/sec.

Field Data

<i>Depth to Water</i>	<i>Elapsed Time</i>	<i>Head of Water</i>	<i>Head of Water</i>
(m)	(min)	(% of Ho)	(m)
0.0001	0	100	0.30
0.0001	20	100	0.30
0.0001	81	100	0.30
0.0001	197	100	0.30
0.0001	237	100	0.30
0.02	1265	93	0.28
T75	0.000	75	
T25	0.000	25	
T75-25	0.000	Derived from Best Fit	



Comments

Depth of pit relates to depth of excavation below topsoil. Within 21 hours the head of water dropped to 93% - Test failed in accordance with BRE 365.

SOILS LIMITED

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Soakaway Calculations

Soakaway Test No.	SK03 Test 1
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

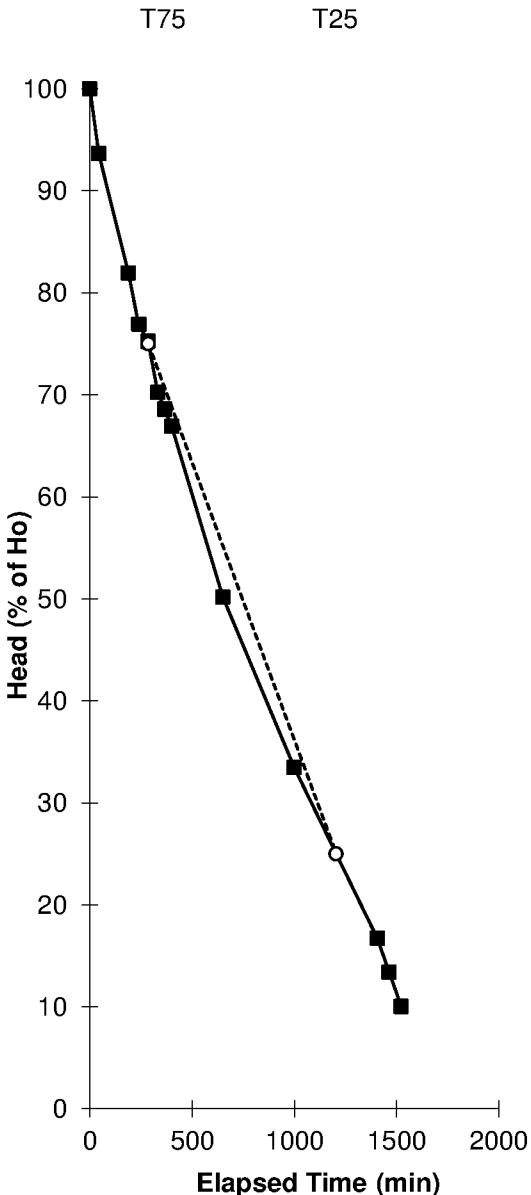
Depth of Pit	0.30 m
Width of Pit	1.25 m
Length of Pit	1.25 m
Depth of Pit Soaked	0.30 m

ap50	2.31 m2
Vp75.25	0.23359375 m3
t75.25	918.7 min
water used	0.4672 m3
f	1.835E-06 m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.02	43	94	0.28
0.055	188	82	0.25
0.07	239	77	0.23
0.075	284	75	0.23
0.09	331	70	0.21
0.095	366	69	0.21
0.1	400	67	0.20
0.15	650	50	0.15
0.2	1000	33	0.10
0.25	1406	17	0.05
0.26	1464	13	0.04
0.27	1523	10	0.03

T75	286.350	75
T25	1205.030	25
T75-25	918.680	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil. Extrapolated data in red (infiltration overnight).

SOILS LIMITED

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Soakaway Calculations

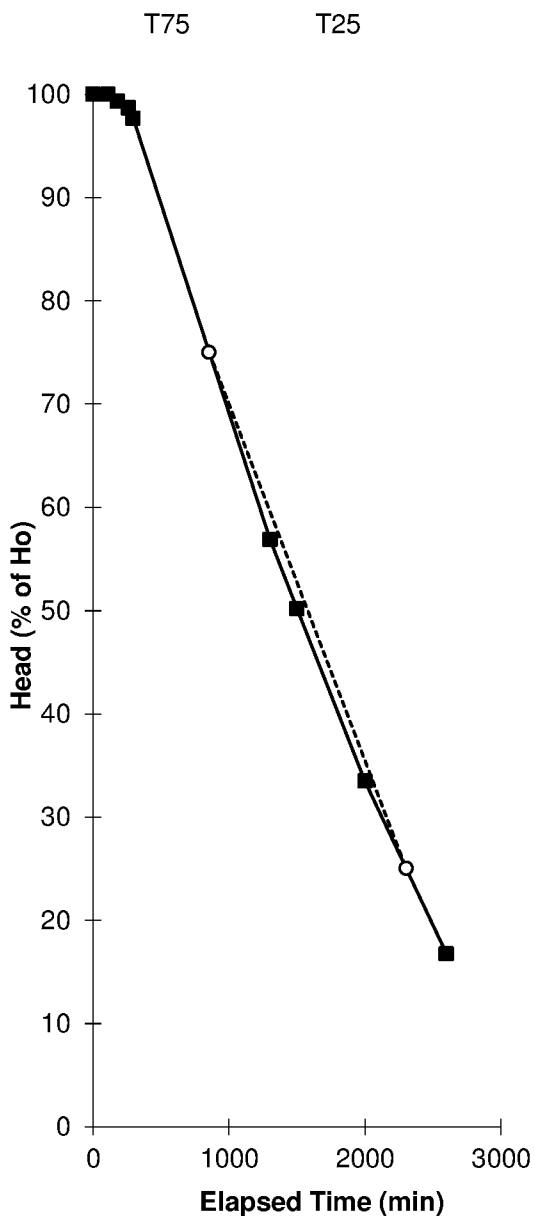
Soakaway Test No.	SK03 Test 2
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.25 m
Length of Pit	1.25 m
Depth of Pit Soaked	0.30 m
ap50	2.31 m ²
Vp75-25	0.23359375 m ³
t75-25	1449.2 min
water used	0.4672 m ³
f	1.163E-06 m/sec.

Field Data

[illegible]

Comments

Depth of pit relates to depth of excavation below topsoil. In 21.7 hours the head of water dropped to 57%. Extrapolated data in red (overnight infiltration) to allow calculation of indicative infiltration rate.

SOILS LIMITED

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Soakaway Calculations

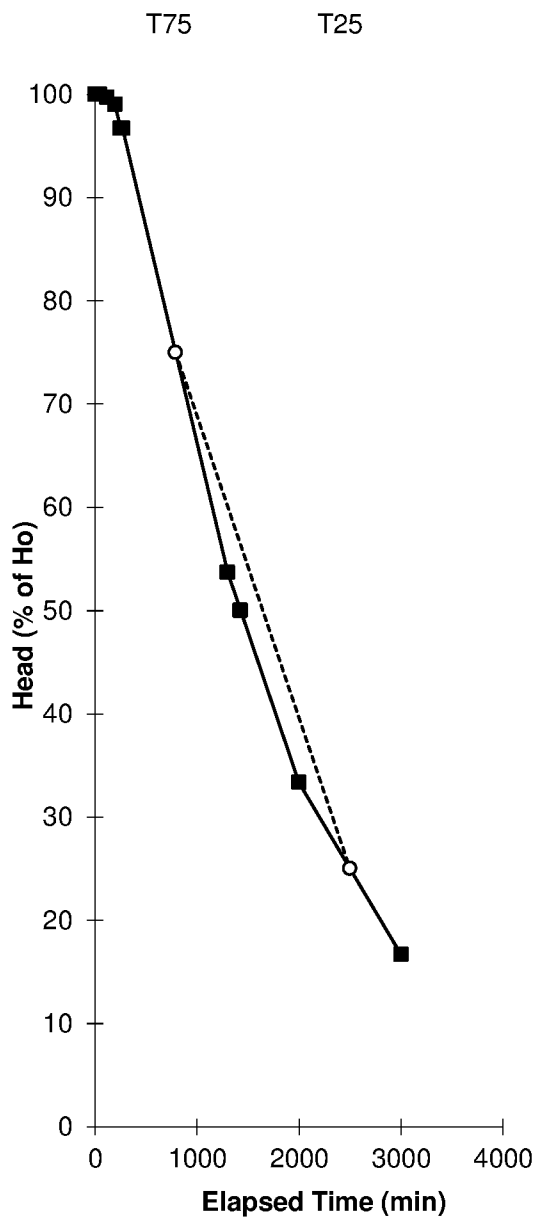
Soakaway Test No.	SK03 Test 3
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.25 m
Length of Pit	1.25 m
Depth of Pit Soaked	0.30 m
$ap50$	2.31225 m ²
$Vp75-25$	0.234296875 m ³
$t75-25$	1711.4 min
water used	0.4686 m ³
f	9.868E-07 m/sec.

Field Data

[illegible]

Comments

Depth of pit relates to depth of excavation below topsoil. Within 21.66 hours the head of water dropped to 54%. Extrapolated data in red (overnight infiltration) to allow calculation of indicative infiltration rate.

SOILS LIMITED

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Soakaway Calculations

Soakaway Test No.	SK04 Test 1
Contract	Land at Burndell Road
Contract No.	16875

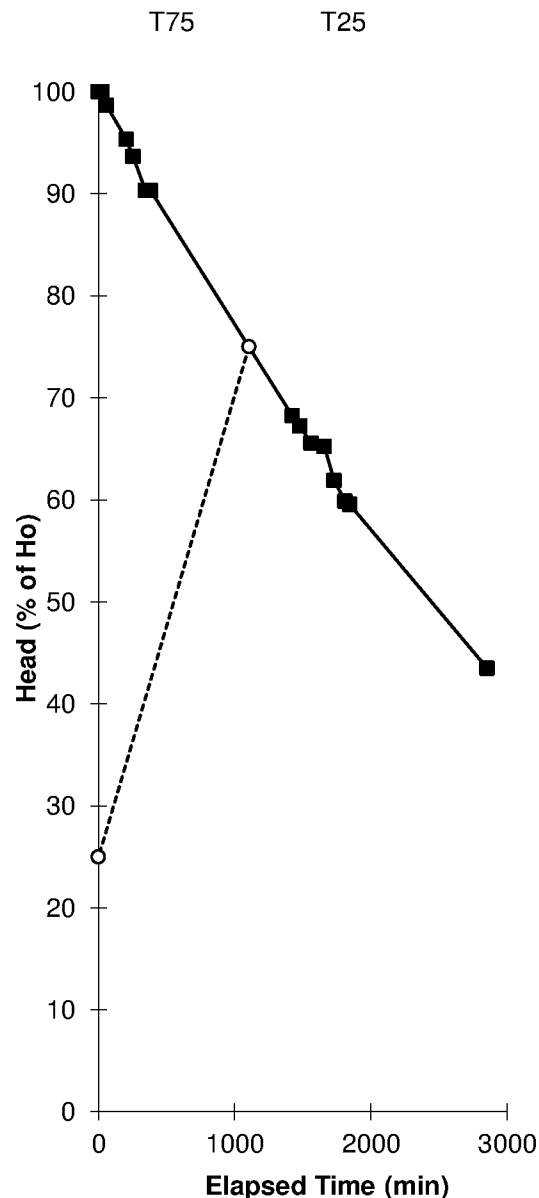
Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.20 m
Length of Pit	1.30 m
Depth of Pit Soaked	0.30 m
ap50	2.3075 m2
Vp75-25	0.23322 m3
t75-25	-1104.3 min
water used	0.4664 m3
f	m/sec.

Field Data

<i>Depth to</i>	<i>Elapsed</i>	<i>Head of</i>	<i>Head of</i>
<i>Water</i>	<i>Time</i>	<i>Water</i>	<i>Water</i>
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.001	27	100	0.30
0.005	58	99	0.30
0.015	204	95	0.29
0.02	255	94	0.28
0.03	346	90	0.27
0.03	382	90	0.27
0.096	1424	68	0.20
0.099	1478	67	0.20
0.104	1561	66	0.20
0.105	1659	65	0.20
0.115	1730	62	0.19
0.121	1811	60	0.18
0.122	1844	60	0.18
0.17	2853	43	0.13
T75	1104.295	75	
T25	0.000	25	
T75-25	-1104.295	Derived from Best Fit	



Comments

Depth of pit relates to depth of excavation below topsoil. Within 47.6 hours the head of water dropped to 43%. Test failed in accordance with BRE 365.

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Soakaway Calculations

Soakaway Test No.	SK04 Test 2
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.20 m
Length of Pit	1.30 m
Depth of Pit Soaked	0.30 m

ap_{50}	2.3075 m2
Vp_{75-25}	0.23322 m3
t_{75-25}	-609.0 min
water used	0.4664 m3
f	m/sec.

Field Data

Depth to	Elapsed	Head of	Head of
Water	Time	Water	Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.001	20	100	0.30
0.001	97	100	0.30
0.001	175	100	0.30
0.001	224	100	0.30
0.001	245	100	0.30
0.05	400	84	0.25
0.075	600.00	75	0.23
0.1	900.00	67	0.20
0.127	1277	58	0.17
0.15	1700.00	50	0.15

T75	609.000	75
T25	0.000	25
T75-25	-609.000	Derived from Best Fit

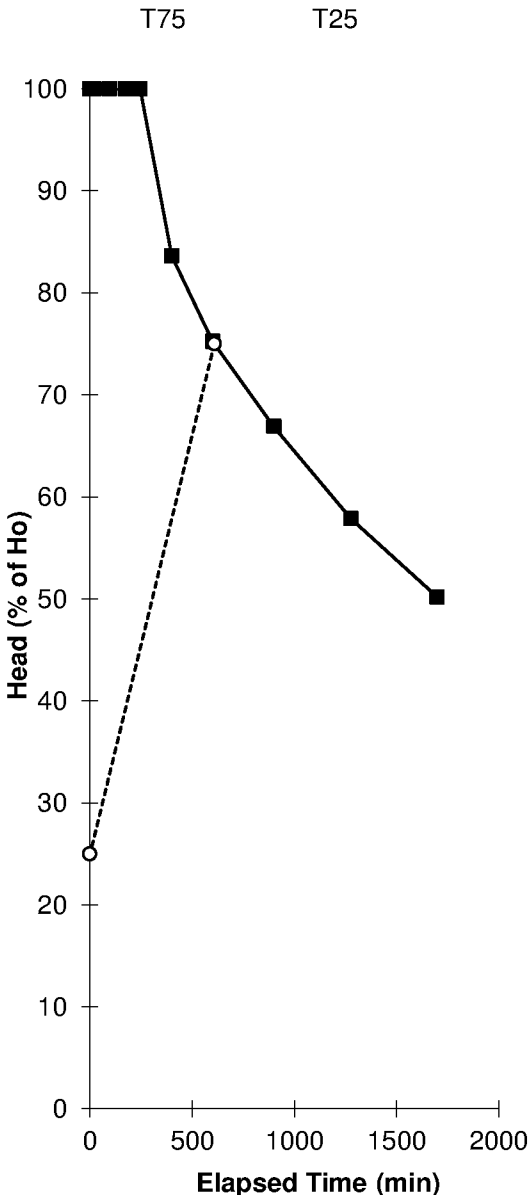
Comments

Depth of pit relates to depth of excavation below topsoil. In 21.3 hours the head of water dropped to 58%. Extrapolated figures in red. Test failed in accordance with BRE 365.

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Soakaway Calculations

Soakaway Test No.	SK05 Test 1
Contract:	Land at Burndell Road
Contract No.	16875

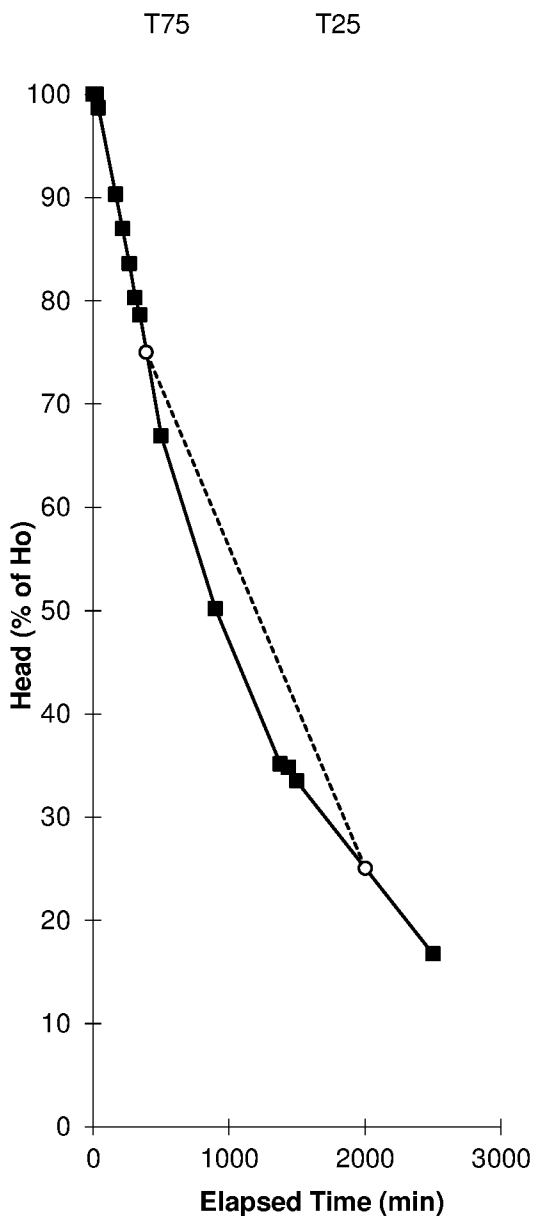
Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.30 m
Length of Pit	1.20 m
Depth of Pit Soaked	0.30 m
$ap50$	2.3075 m ²
$Vp75-25$	0.23322 m ³
$t75-25$	1613.1 min
water used	0.4664 m ³
f	1.044E-06 m/sec.

Field Data

<i>Depth to</i>	<i>Elapsed</i>	<i>Head of</i>	<i>Head of</i>
<i>Water</i>	<i>Time</i>	<i>Water</i>	<i>Water</i>
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.001	23	100	0.30
0.005	40	99	0.30
0.03	166	90	0.27
0.04	217	87	0.26
0.05	266	84	0.25
0.06	309	80	0.24
0.065	344	79	0.24
0.1	500	67	0.20
0.15	900	50	0.15
0.195	1378	35	0.11
0.196	1440	35	0.10
0.2	1500	33	0.10
0.25	2500.00	17	0.05
T75	391.914	75	
T25	2005.000	25	
T75-25	1613.086	Derived from Best Fit	



Comments

Depth of pit relates to depth of excavation below topsoil. Within 25 hours the head of water dropped to 33%. Extrapolated data in red (overnight soakage and to allow calculation of indicative infiltration rate).

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Soakaway Calculations

Soakaway Test No.	SK05 Test 2
Contract:	Land at Burndell Road
Contract No.	16875

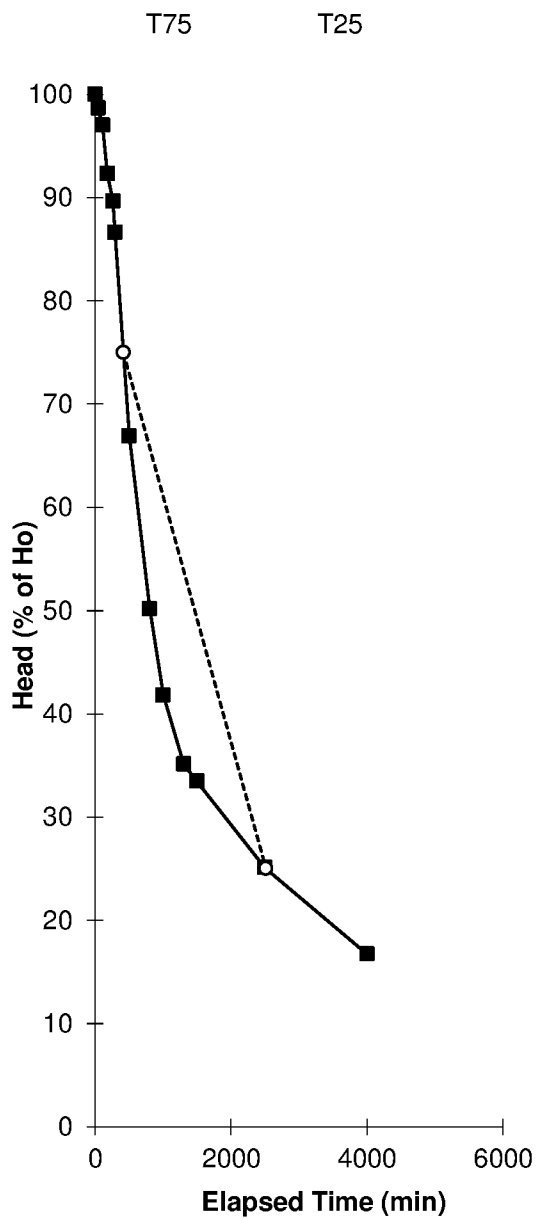
Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.30 m
Length of Pit	1.20 m
Depth of Pit Soaked	0.30 m
$ap50$	2.3075 m ²
$\sqrt{p75-25}$	0.23322 m ³
$t75-25$	2100.5 min
water used	0.4664 m ³
f	8.020E-07 m/sec.

Field Data

Depth to	Elapsed	Head of	Head of
Water	Time	Water	Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.005	45	99	0.30
0.01	109	97	0.29
0.024	179	92	0.28
0.032	262	90	0.27
0.041	292	87	0.26
0.1	500	67	0.20
0.15	800.00	50	0.15
0.175	1000.00	42	0.13
0.195	1303	35	0.11
0.2	1500.00	33	0.10
0.225	2500.00	25	0.08
0.25	4000.00	17	0.05
T75	414.508	75	
T25	2515.000	25	
T75-25	2100.492	Derived from Best Fit	



Comments

Depth of pit relates to depth of excavation below topsoil. In 21.7 hours the head of water dropped to 35%. Extrapolated data in red (overnight soakage and to allow calculation of indicative infiltration rate).

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Soakaway Calculations

Soakaway Test No.	SK05 Test 3
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

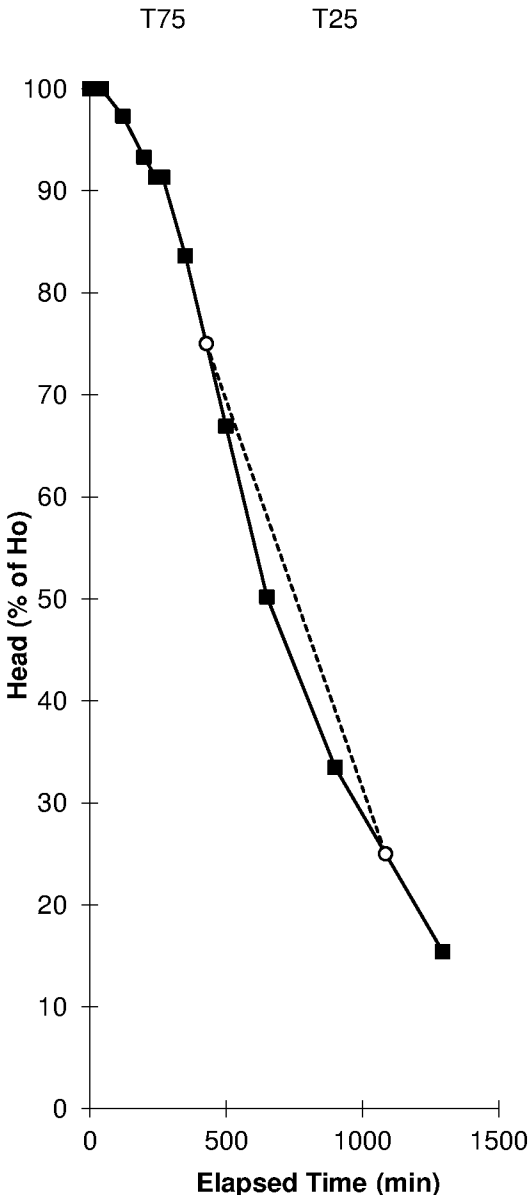
Depth of Pit	0.30 m
Width of Pit	1.30 m
Length of Pit	1.20 m
Depth of Pit Soaked	0.30 m

ap50	2.3075 m2
Vp75.25	0.23322 m3
t75.25	657.4 min
water used	0.4664 m3
f	2.562E-06 m/sec.

Field Data

Depth to	Elapsed	Head of	Head of
Water	Time	Water	Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.001	42	100	0.30
0.009	121	97	0.29
0.021	198	93	0.28
0.027	242	91	0.27
0.027	267	91	0.27
0.05	350	84	0.25
0.1	500.00	67	0.20
0.15	650.00	50	0.15
0.2	900.00	33	0.10
0.254	1295	15	0.05

T75	427.250	75
T25	1084.699	25
T75-25	657.449	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil. Extrapolated data in red (overnight soakage).

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Soakaway Calculations

Soakaway Test No.	SK06 Test 1
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

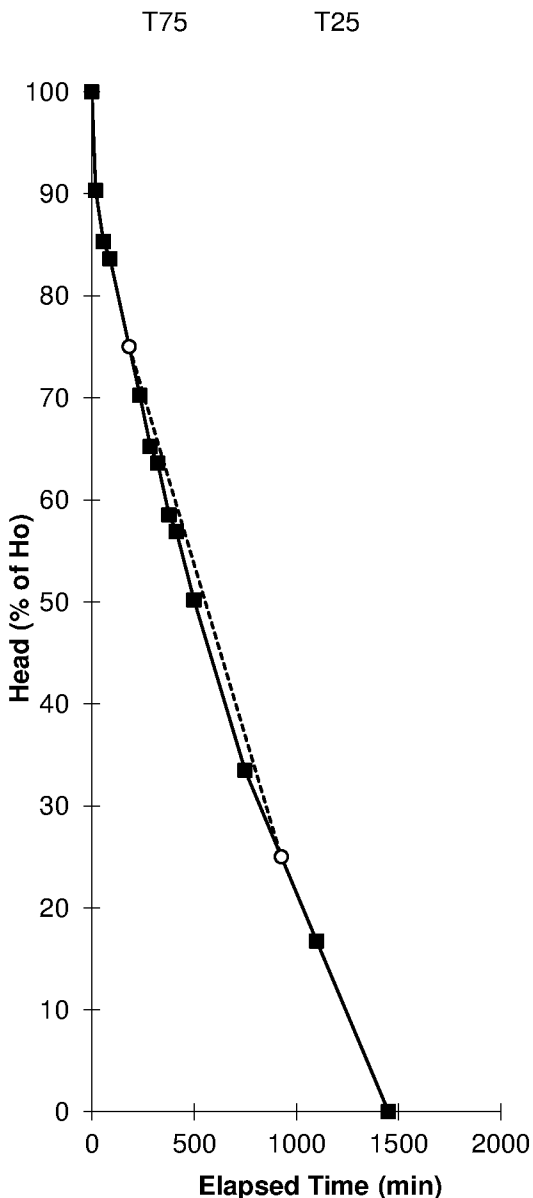
Depth of Pit	0.30 m
Width of Pit	1.10 m
Length of Pit	1.17 m
Depth of Pit Soaked	0.30 m

ap_{50}	1.96573 m2
Vp_{75-25}	0.1924065 m3
t_{75-25}	743.8 min
water used	0.3848 m3
f	2.193E-06 m/sec.

Field Data

Depth to Water (m)	Elapsed Time (min)	Head of Water (% of Ho)	Head of Water (m)
0.001	0	100	0.30
0.03	18	90	0.27
0.045	57	85	0.26
0.05	89	84	0.25
0.09	235	70	0.21
0.105	286	65	0.20
0.11	322	64	0.19
0.125	377	59	0.18
0.13	413	57	0.17
0.15	500	50	0.15
0.2	750.00	33	0.10
0.25	1100	17	0.05
0.3	1451	0	0.00

T75	182.988	75
T25	926.750	25
T75-25	743.763	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil. Extrapolated figures in red (overnight infiltration).

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Soakaway Calculations

Soakaway Test No.	SK06 Test 2
Contract:	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

Depth of Pit	0.30 m
Width of Pit	1.10 m
Length of Pit	1.17 m
Depth of Pit Soaked	0.30 m

ap50	1.96573 m2
Vp75-25	0.1924065 m3
t75-25	1302.1 min
water used	0.3848 m3
i	1.253E-06 m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.01	19	97	0.29
0.02	102	94	0.28
0.05	200	84	0.25
0.07	271	77	0.23
0.086	354	72	0.21
0.092	384	70	0.21
0.1	425	67	0.20
0.15	725	50	0.15
0.2	1200	33	0.10
0.215	1397	28	0.09
0.25	2100	17	0.05

T75	300.828	75
T25	1602.879	25
T75-25	1302.050	Derived from Best Fit

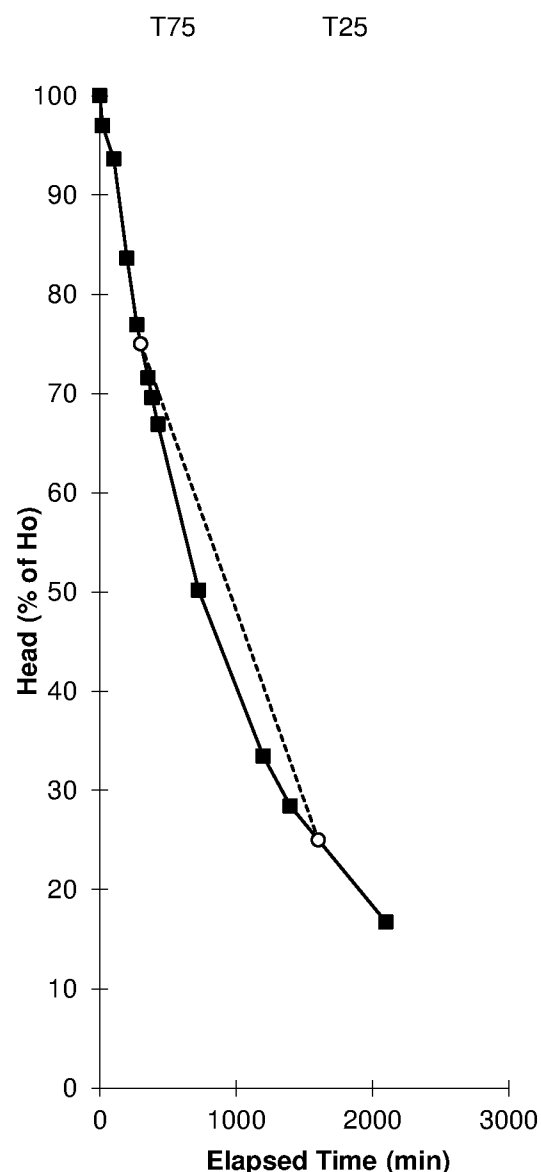
Comments

Depth of pit relates to depth of excavation below topsoil. In 23.3 hours the head of water dropped to 28%. Extrapolated data in red (overnight infiltration and to allow calculation of indicative infiltration rate).

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Soakaway Calculations

Soakaway Test No.	SK06 Test 3
Contract	Land at Burndell Road
Contract No.	16875

Field Test

Trial Pit Log (include details of groundwater):
See trial Pit record

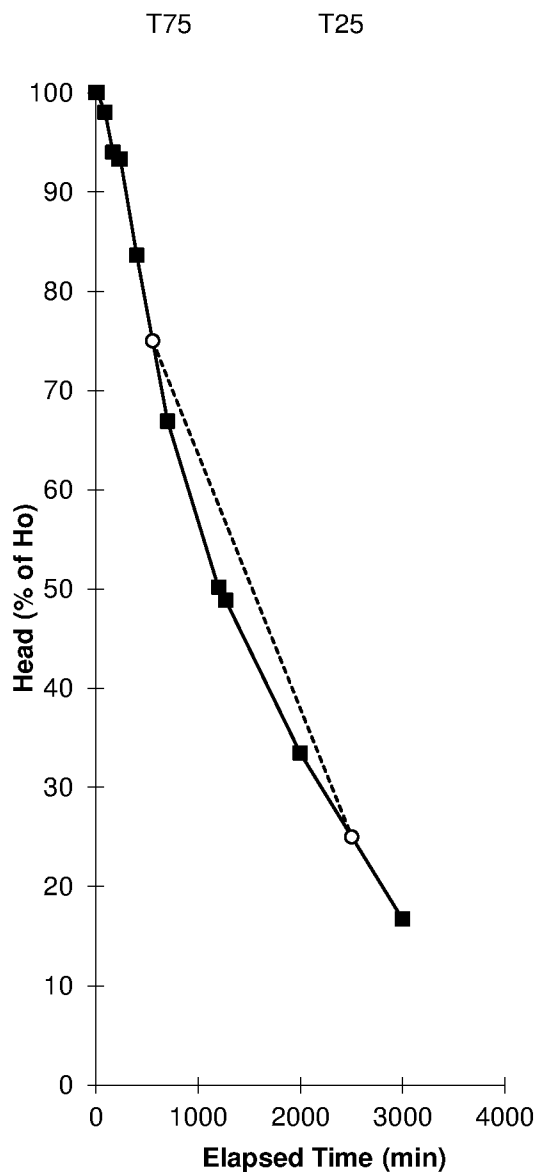
Depth of Pit	0.30 m
Width of Pit	1.10 m
Length of Pit	1.17 m
Depth of Pit Soaked	0.30 m

α_{p50}	1.96573 m2
V_{p75-25}	0.1924065 m3
t_{75-25}	1950.5 min
water used	0.3848 m3
f	8.364E-07 m/sec.

Field Data

Depth to Water	Elapsed Time	Head of Water	Head of Water
(m)	(min)	(% of Ho)	(m)
0.001	0	100	0.30
0.001	13	100	0.30
0.007	92	98	0.29
0.019	167	94	0.28
0.021	224	93	0.28
0.021	239	93	0.28
0.05	400	84	0.25
0.1	700.00	67	0.20
0.15	1200.00	50	0.15
0.154	1269	49	0.15
0.2	2000.00	33	0.10
0.25	3000.00	17	0.05

T75	554.500	75
T25	2505.000	25
T75-25	1950.500	Derived from Best Fit



Comments

Depth of pit relates to depth of excavation below topsoil. Within 21.15 hours the head of water dropped to 49%. Extrapolated data in red (overnight infiltration and to allow calculation of indicative infiltration rate).

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