



No.1 The Old Shippon
Sandlow Green Farm
Holmes Chapel Rd
Holmes Chapel
Cheshire, CW4 8AS

Our Ref: M506

Emily Roberts
Senior Planner

Knight Frank
One Marsden Street
Manchester
M2 1HW
United Kingdom

Date: 4th July 2017

SOAKAWAY TESTING – Royal British Legion, Llay

Dear Emily

Please find below our results from the recently completed soakaway testing on the 9th June 2017 at the above site.

Soakaway tests were undertaken at three locations, a plan showing the exploratory locations is enclosed.

The results of the testing are attached and indicate an infiltration rate of between 1.80 and 4.7 x 10⁻⁴ m/s. Based on published guidance the above rates would appear to be consistent with the strata encountered and should support the use of a SUDS.

Any proposed SUDS would need to be design in accordance with the relevant standards by a suitably qualified engineer.

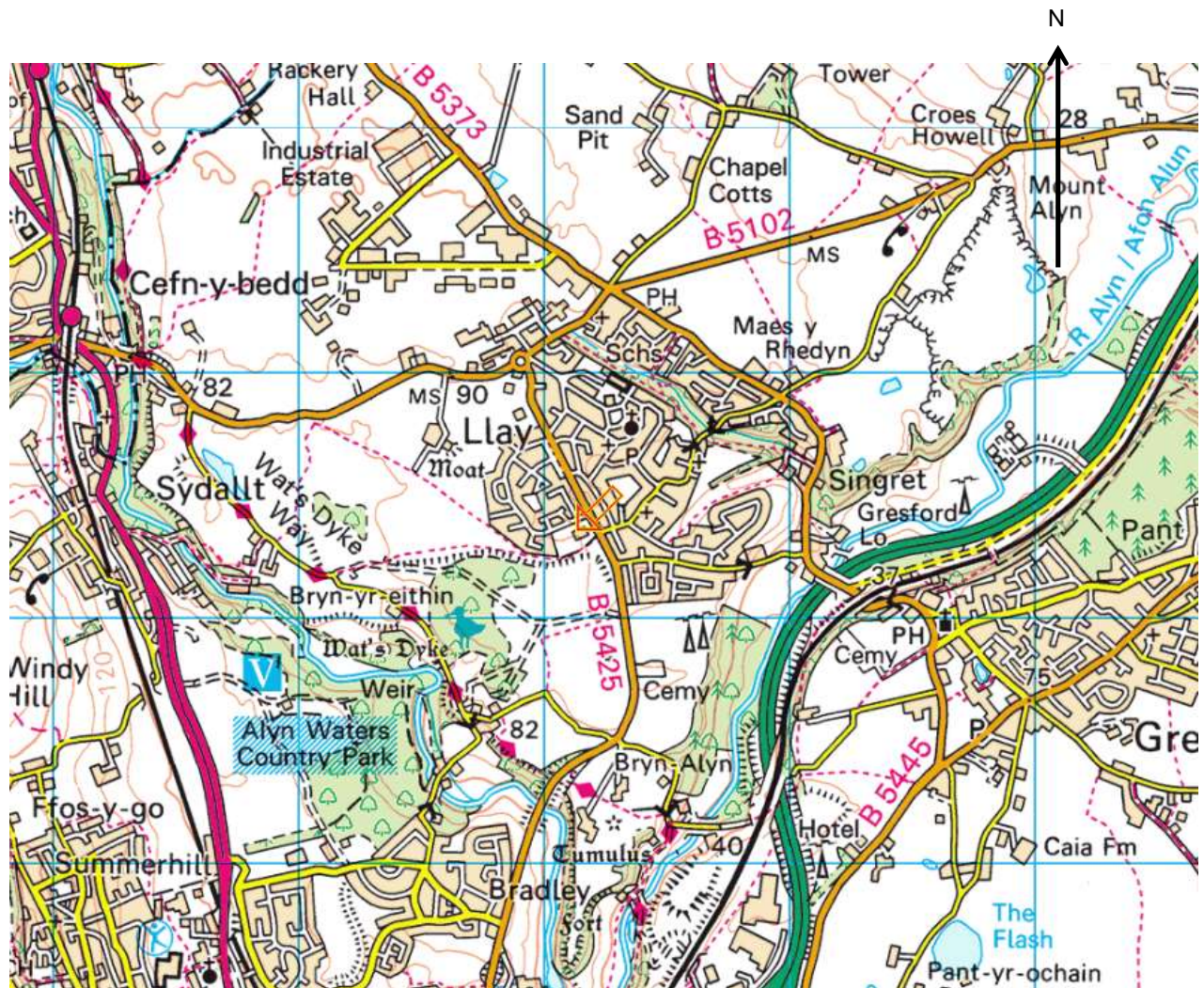
We trust that the enclosed are sufficient for your present needs, however, please do not hesitate to get in touch should you require any further information.

Yours sincerely,

Sam Fishburne
On behalf of Dunelm Geotechnical and Environmental Ltd
Encs

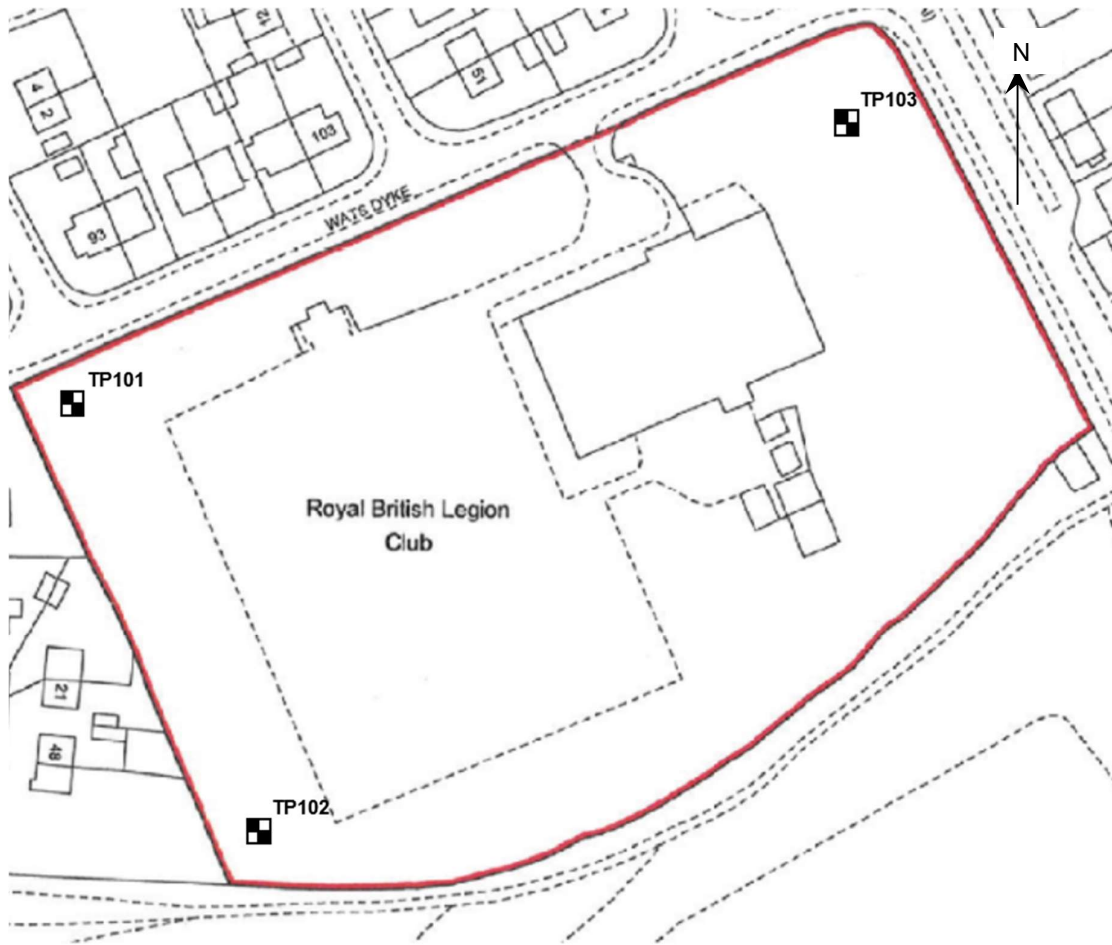
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	Contract: Royal British Legion, Llay			Contract No: M506
	Client: Royal British Legion			
TEL: 01477 668142	Drawing Title: Site Location Plan			
Drawing No: M506/01	Date: June 2017	Scale: NTS	Status: Final	Drawn by: SF



Contract:
Royal British Legion, Llay

Contract No:
M506

Client:
Royal British Legion

TEL: 01477 668142

Drawing Title:
Exploratory Hole location Plan

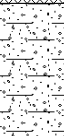
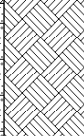
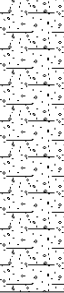
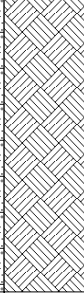
Drawing No:
M506/02

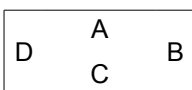
Date:
June 2017

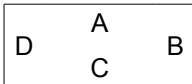
Scale:
NTS

Status:
Final

Drawn by:
SF

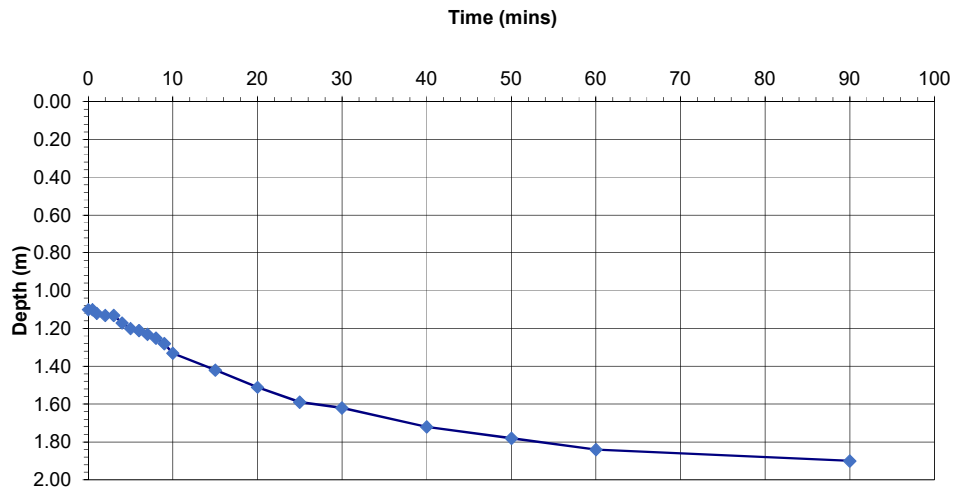
			TRIAL PIT RECORD			TP No. TP101			
Contract No.: M506			Site: Royal British Legion, Llay			Scale 1:25			
Client: Royal British Legion				Logged By: SF		Sheet 1 of 1			
Method: Machine Excavated Trial Pit				Checked By: SF		Dates: 09/06/2017			
SAMPLE DETAILS			Groundwater	STRATA RECORD Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill	
Type	Depth From-To (m)	Insitu Testing							
B ES	0.20 0.20			MADE GROUND: Brown slightly gravelly sand. Gravel is subrounded to rounded, fine to coarse of mixed lithologies topsoil.	(0.30)				
				MADE GROUND: Dark brown sand and gravel. Gravel is subangular to angular, fine to coarse of brick, concrete with medium cobble content. Cobbles of masonry and concrete. Dark brown slightly clayey slightly silty gravelly SAND. Gravel is subrounded to rounded, fine to coarse of mudstone, limestone, slate and sandstone.	0.30 (0.20) 0.50				
ES	1.00		1						
B	1.20				(1.40)				
			2	End of Trial Pit at 1.90 m	1.90				
			3						
			4						
			5						
Remarks				Ground Water (m)		Excavation Details		Orientation	
1. No groundwater encountered				Depth Strike	Remarks	Dimensions: m x m		D A C B °	
						Stability: Stable			
						Weather: Sunny			
						Remarks: Machine Excavated Trial Pit			

			TRIAL PIT RECORD			TP No. TP102		
Contract No.: M506			Site: Royal British Legion, Llay			Scale 1:25		
Client: Royal British Legion				Logged By: SF		Sheet 1 of 1		
Method: Machine Excavated Trial Pit				Checked By: SF		Dates: 09/06/2017		
SAMPLE DETAILS			Groundwater	STRATA RECORD Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill
Type	Depth From-To (m)	Insitu Testing						
B	0.25			Brown sandy slightly gravelly TOPSOIL. Gravel is subangular to subrounded, fine to coarse of sandstone, mudstone and slate.	(0.30)			
ES	0.25							
B	0.40			Brown slightly clayey gravelly SAND. Gravel is subrounded to rounded, fine to medium coarse of mudstone, slate and sandstone.	0.30			
ES	0.40							
			1		(1.50)			
			2					
			3					
			4					
			5					
				End of Trial Pit at 1.80 m	1.80			
Remarks				Ground Water (m)	Excavation Details		Orientation	
1. No groundwater encountered				Depth Strike	Remarks	Dimensions: m x m		
						Stability: Stable		
						Weather: Sunny		
						Remarks: Machine Excavated Trial Pit		

			TRIAL PIT RECORD				TP No. TP103		
Contract No.: M506			Site: Royal British Legion, Llay				Scale 1:25		
Client: Royal British Legion				Logged By: SF		Sheet 1 of 1			
Method: Machine Excavated Trial Pit				Checked By: SF		Dates: 09/06/2017			
SAMPLE DETAILS			Groundwater	STRATA RECORD Description	Depth (m)	Level (m AOD) PID (ppm)	Legend	Backfill	
Type	Depth From-To (m)	Insitu Testing							
B ES	0.20 0.20			MADE GROUND: Brown sandy gravelly topsoil. Gravel is rounded, fine to coarse of sandstone, limestone and slate.	(0.20)				
				MADE GROUND: Dark brown to black sandy gravel with high cobbles content of concrete and masonry. Gravel is fine to coarse of brick and concrete. Occasional fragments of glass and plastic.	0.20				
B ES	1.00 1.00		1		(1.00)				
				End of Trial Pit at 1.20 m	1.20				
			2						
			3						
			4						
			5						
Remarks				Ground Water (m)		Excavation Details		Orientation	
1. No groundwater encountered. 2. Terminated at 1.20m due to instability in trench.				Depth Strike	Remarks	Dimensions: m x m			
						Stability: Unstable			
						Weather: Sunny			
						Remarks: Machine Excavated Trial Pit			

SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 2016
BRE Digest 365, Figure 2, Page 5

Client:	Royal British Legion				
Site:	Royal British Legion				
Job No:	M506				
Pit No:	TP101		Test No:	1	
CALCULATION OF SOIL INFILTRATION RATE					
Time (min)	Depth (m)		Pit Dimensions	Length (m) =	2.30
0	1.10			Width (m) =	0.50
0.5	1.10			Depth (m) =	1.90
1	1.12				
2	1.13	Depth at start of test (m) =			1.100
3	1.13	Depth at end of test (m)=			1.900
4	1.17	75% level (m)=			1.300
5	1.20	50% Effective Depth			0.400
6	1.21	25% level (m)=			1.700
7	1.23				
8	1.25	Base area of pit (m ²) =			1.150
9	1.28	V _{p75-25} (m ³) =			0.460
10	1.33	α_{p50} (m ²) =			3.390
15	1.42				
20	1.51		From the graph:		
25	1.59		tp 75 (min) =		3.1
30	1.62		tp 25 (min) =		15
40	1.72				
50	1.78	Soil infiltration rate, f, (m/s) =		1.90E-04	normal test
60	1.84				
90	1.90				
		Input by:	CA	Date:	23/06/2017
		Checked by:		Date:	



SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 2016

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Client: Royal British Legion

Site: Royal British Legion

Job No: M506

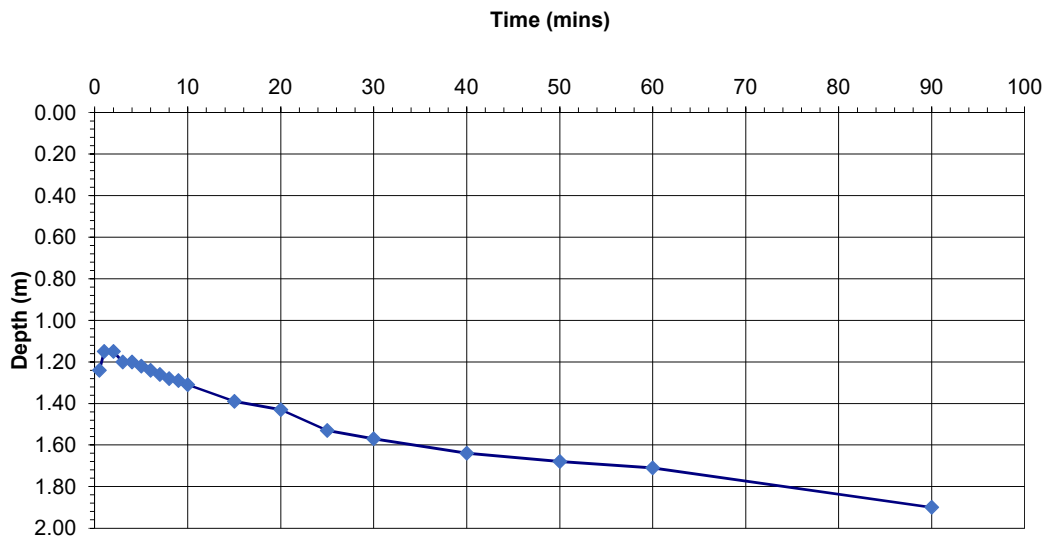
Pit No: TP101

Test No:

2

CALCULATION OF SOIL INFILTRATION RATE

Time (min)	Depth (m)		Pit Dimensions	Length (m) =	2.30
0				Width (m) =	0.50
0.5	1.24			Depth (m) =	1.90
1	1.15				
2	1.15	Depth at start of test (m) =			1.150
3	1.20	Depth at end of test (m)=			1.900
4	1.20	75% level (m)=			0.475
5	1.22	50% Effective Depth			0.950
6	1.24	25% level (m)=			1.425
7	1.26				
8	1.28	Base area of pit (m ²) =			1.150
9	1.29	V _{p75-25} (m ³) =			1.093
10	1.31	α_{p50} (m ²) =			3.250
15	1.39				
20	1.43		From the graph:		
25	1.53		tp 75 (min) =	3.1	
30	1.57		tp 25 (min) =	15	
40	1.64				
50	1.68	Soil infiltration rate, f, (m/s) =		4.71E-04	normal test
60	1.71				
90	1.90				
		Input by:	CA	Date:	23/06/2017
		Checked by:		Date:	





SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 2016

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Client: Royal British Legion

Site: Royal British Legion, Llay

Job No: M506

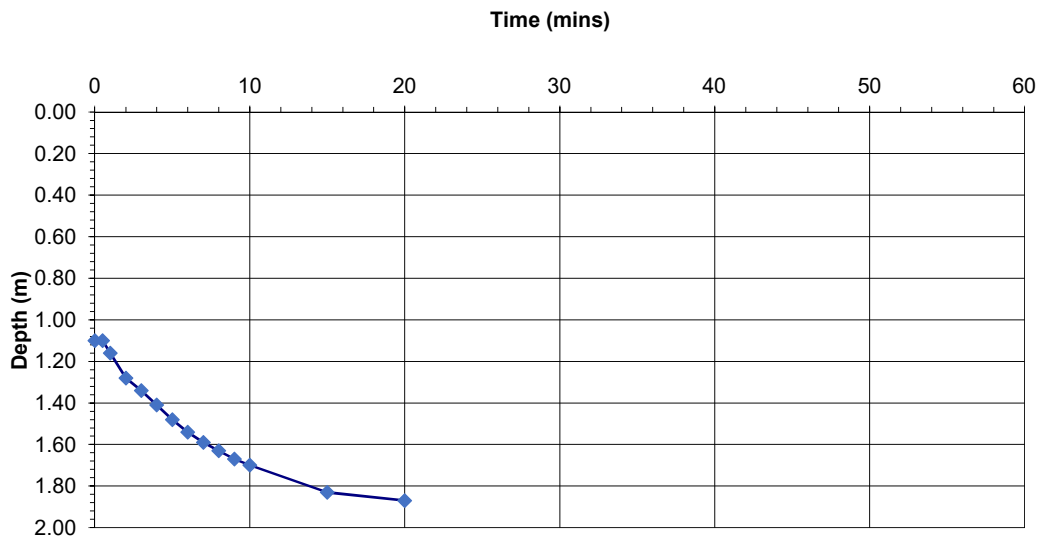
Pit No: TP102

Test No:

1

CALCULATION OF SOIL INFILTRATION RATE

Time (min)	Depth (m)		Pit Dimensions	Length (m) =	2.25
0	1.10			Width (m) =	0.50
0.5	1.10			Depth (m) =	1.90
1	1.16				
2	1.28	Depth at start of test (m) =			1.100
3	1.34	Depth at end of test (m)=			1.870
4	1.41	75% level (m)=			1.293
5	1.48	50% Effective Depth			0.385
6	1.54	25% level (m)=			1.678
7	1.59				
8	1.63	Base area of pit (m ²) =			1.125
9	1.67	V _{p75-25} (m ³) =			0.433
10	1.70	α_{p50} (m ²) =			3.243
15	1.83				
20	1.87		From the graph:		
25			tp 75 (min) =	3.1	
30			tp 25 (min) =	15	
40					
50		Soil infiltration rate, f, (m/s) =		1.87E-04	normal test
		Input by:	CA	Date:	23/06/2017
		Checked by:		Date:	





SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 2016

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Client: Royal British Legion

Site: Royal British Legion, Llay

Job No: M506

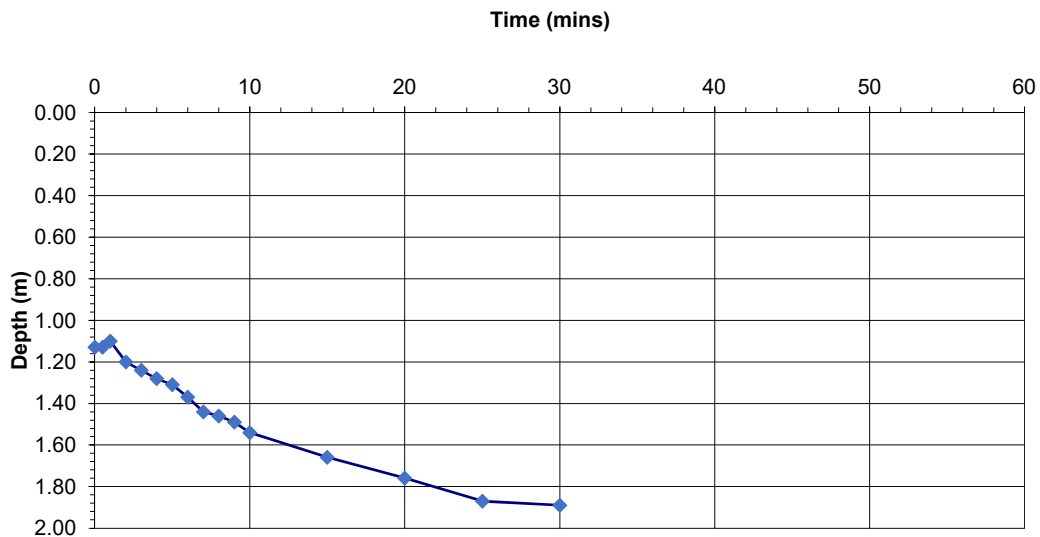
Pit No: TP102

Test No:

2

CALCULATION OF SOIL INFILTRATION RATE

Time (min)	Depth (m)		Pit Dimensions	Length (m) =	2.25
0	1.13			Width (m) =	0.50
0.5	1.13			Depth (m) =	1.90
1	1.10				
2	1.20	Depth at start of test (m) =			1.100
3	1.24	Depth at end of test (m)=			1.890
4	1.28	75% level (m)=			1.320
5	1.31	50% Effective Depth			0.380
6	1.37	25% level (m)=			1.700
7	1.44				
8	1.46	Base area of pit (m ²) =			1.125
9	1.49	V _{p75-25} (m ³) =			0.428
10	1.54	α_{p50} (m ²) =			3.298
15	1.66				
20	1.76		From the graph:		
25	1.87		tp 75 (min) =	3.1	
30	1.89		tp 25 (min) =	15	
40					
50		Soil infiltration rate, f, (m/s) =		1.82E-04	normal test
		Input by:	CA	Date:	23/06/2017
		Checked by:		Date:	





SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 2016

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Client: Royal British Legion

Site: Royal British Legion, Llay

Job No: M506

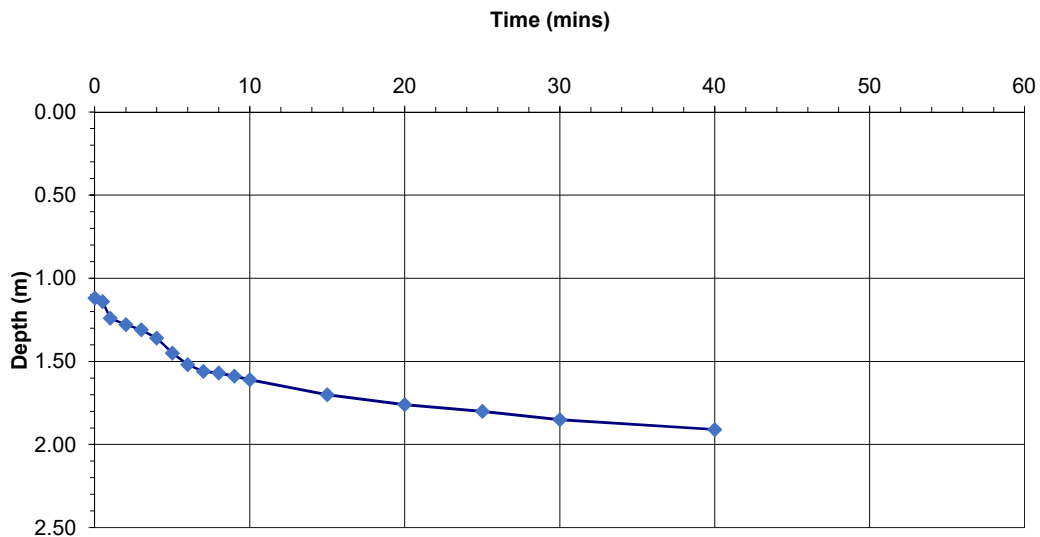
Pit No: TP102

Test No:

3

CALCULATION OF SOIL INFILTRATION RATE

Time (min)	Depth (m)		Pit Dimensions	Length (m) =	2.25
0	1.12			Width (m) =	0.50
0.5	1.14			Depth (m) =	1.90
1	1.24				
2	1.28	Depth at start of test (m) =			1.120
3	1.31	Depth at end of test (m)=			1.910
4	1.36	75% level (m)=			1.318
5	1.45	50% Effective Depth			0.395
6	1.52	25% level (m)=			1.713
7	1.56				
8	1.57	Base area of pit (m ⁴) =			1.125
9	1.59	Vp ₇₅₋₂₅ (m ³) =			0.444
10	1.61	α_{p50} (m ²) =			3.298
15	1.70				
20	1.76		From the graph:		
25	1.80		tp 75 (min) =	3.1	
30	1.85		tp 25 (min) =	15	
40	1.91				
50		Soil infiltration rate, f, (m/s) =		1.89E-04	normal test
		Input by:	CA	Date:	23/06/2017
		Checked by:		Date:	





SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 2016

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Client: Royal British Legion

Site: Royal British Legion, Llay

Job No: M506

Pit No: TP103

Test No:

1

CALCULATION OF SOIL INFILTRATION RATE

Time (min)	Depth (m)	Pit Dimensions		Length (m) =	2.40
0	0.77			Width (m) =	0.70
0.5	0.80			Depth (m) =	2.20
1	0.83				
2	0.89	Depth at start of test (m) =			
3	0.96	Depth at end of test (m) =			
4	1.00	75% level (m) =			
5	1.10	50% Effective Depth			
6	1.16	25% level (m) =			
7	1.20				
8	1.23	Base area of pit (m ²) =			
9	1.26	V _{p75-25} (m ³) =			
10	1.29	α_{p50} (m ²) =			
15	1.60				
20		From the graph:			
25		tp 75 (min) =			
30		tp 25 (min) =			
40					
50		Soil infiltration rate, f, (m/s) =		2.30E-04	normal test
		Input by:	CA	Date:	23/06/2017
		Checked by:		Date:	





SOAKAWAY DESIGN IN ACCORDANCE WITH BRE DIGEST 365: 2016

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Client: Royal British Legion

Site: Royal British Legion, Llay

Job No: M506

Pit No: TP103

Test No:

2

CALCULATION OF SOIL INFILTRATION RATE

Time (min)	Depth (m)	Pit Dimensions		Length (m) =	2.40
0	0.70			Width (m) =	0.50
0.5	0.72			Depth (m) =	1.60
1	0.73				
2	0.75	Depth at start of test (m) = 0.700			
3	0.78	Depth at end of test (m) = 1.600			
4	0.82	75% level (m) = 0.925			
5	0.85	50% Effective Depth 0.450			
6	0.90	25% level (m) = 1.375			
7	0.96				
8	1.00	Base area of pit (m ²) = 1.200			
9	1.05	V _{p75-25} (m ³) = 0.540			
10	1.13	α_{p50} (m ²) = 3.810			
15	1.30				
20	1.42	From the graph:			
25	1.48	tp 75 (min) = 3.1			
30	1.53	tp 25 (min) = 15			
40	1.60				
50		Soil infiltration rate, f, (m/s) =		1.99E-04	normal test
		Input by:	CA	Date:	23/06/2017
		Checked by:		Date:	

