



APPENDIX C

INFILTRATION TEST RESULTS – WILSON BAILEY 18.01.13

Site Manor Farm, Denvilles, Hallett Road, Havant, Hampshire

Job Number
J11002

Client BDW Southampton

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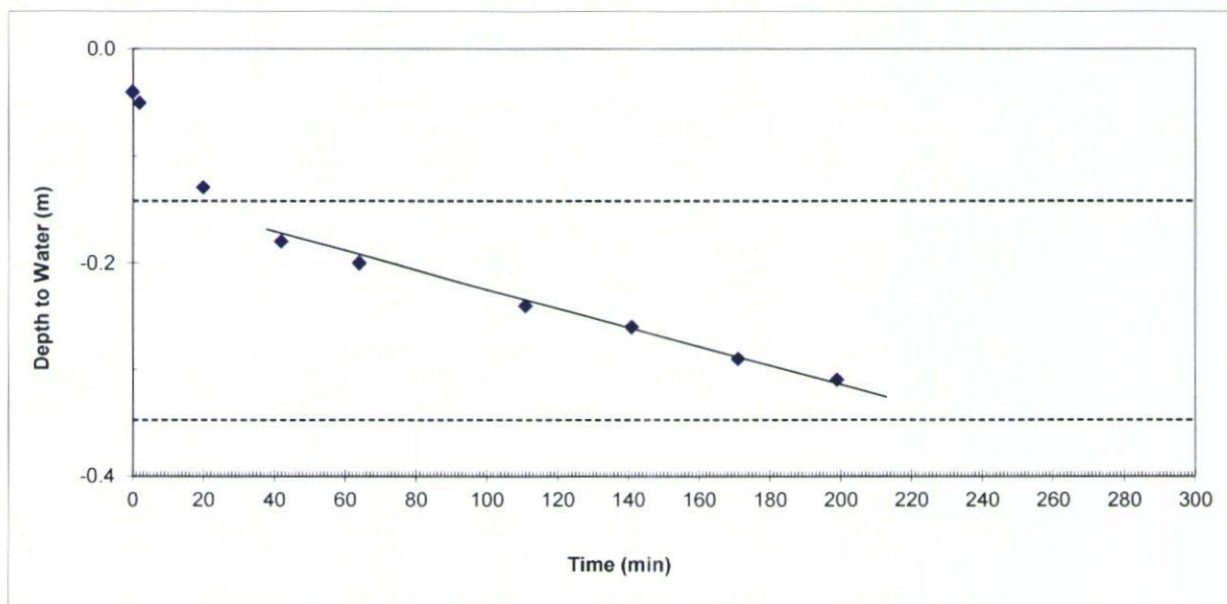
Trial Pit No. S1

Soakage Test No. 1

Pit Length (m) 0.6

Pit Width (m) 0.6

Pit Depth (m) 0.45



Design Soakage Rate 5.8E-06 m/s (based on linear portion of graph as shown)
0.50 m/day

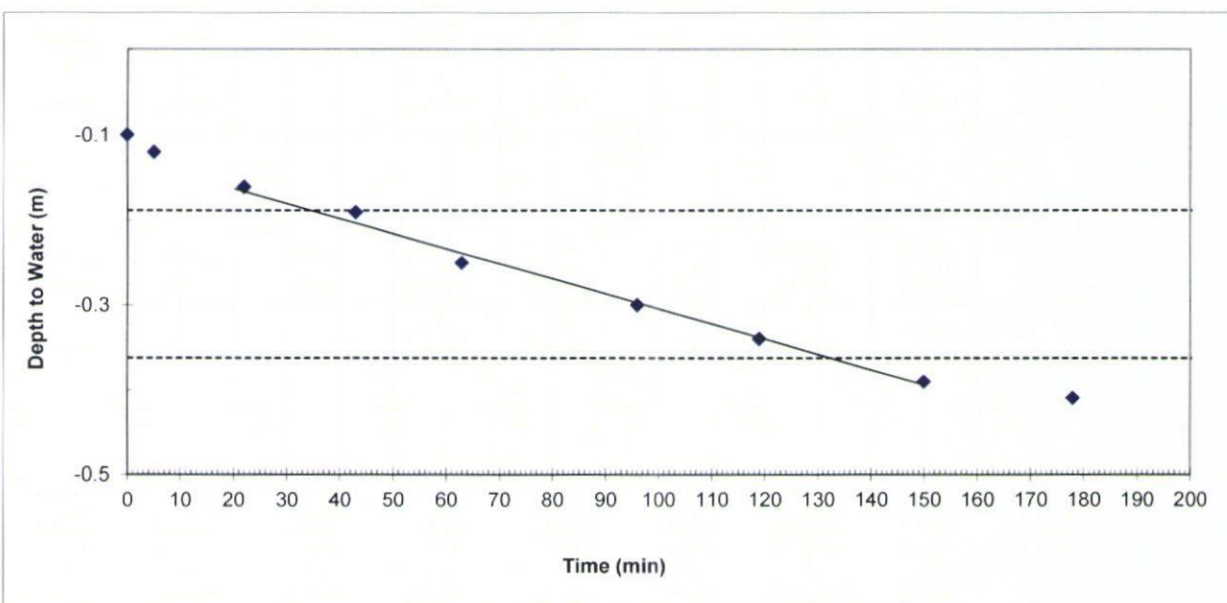
Trial Pit No. S2

Soakage Test No. 1

Pit Length (m) 0.5

Pit Width (m) 0.5

Pit Depth (m) 0.45



Design Soakage Rate 1.2E-05 m/s (based on linear portion of graph as shown)
1.05 m/day

Soakage Test Results

Site Manor Farm, Denvilles, Hallett Road, Havant, Hampshire

Client BDW Southampton

Job Number
J11002

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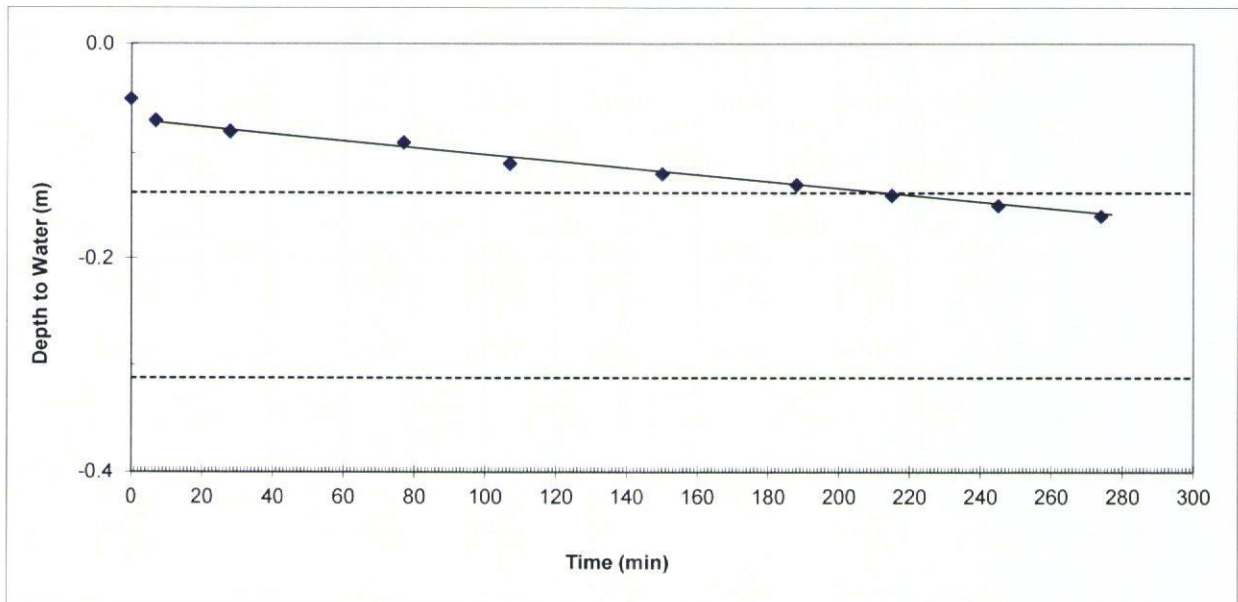
Trial Pit No. S3

Soakage Test No. 1

Pit Length (m) 0.6

Pit Width (m) 0.6

Pit Depth (m) 0.4



Design Soakage Rate

1.9E-06

m/s

(based on linear portion of graph as shown)

0.17

m/day

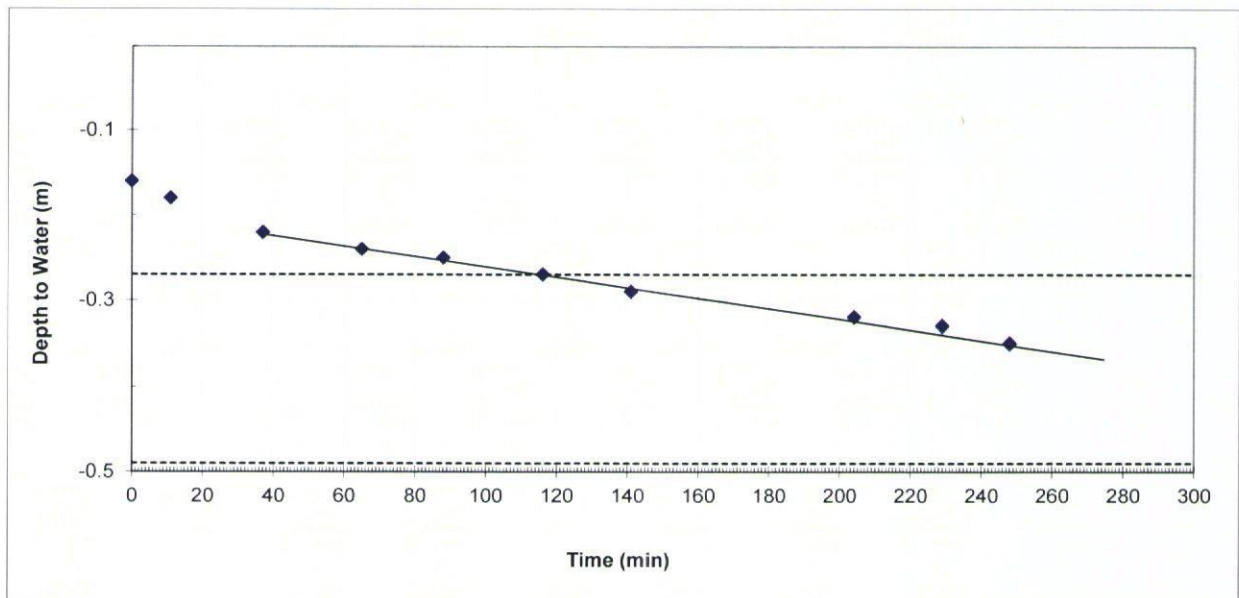
Trial Pit No. S4

Soakage Test No. 1

Pit Length (m) 0.6

Pit Width (m) 0.6

Pit Depth (m) 0.6



Design Soakage Rate

3.1E-06

m/s

(based on linear portion of graph as shown)

0.27

m/day

Soakage Test Results

Site Manor Farm, Denvilles, Hallett Road, Havant, Hampshire

Job Number
J11002

Client BDW Southampton

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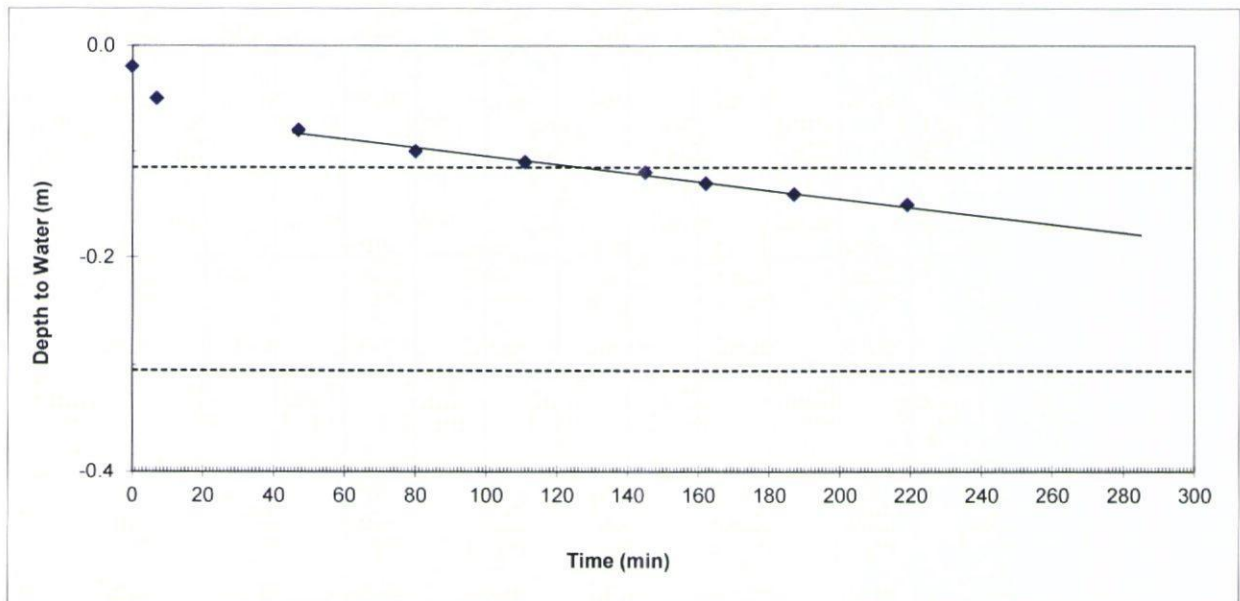
Trial Pit No. S5

Soakage Test No. 1

Pit Length (m) 0.4

Pit Width (m) 0.4

Pit Depth (m) 0.4



Design Soakage Rate

1.8E-06

m/s

(based on linear portion of graph as shown)

0.15

m/day

APPENDIX D
PRE/POST DEVELOPMENT FLOW RATES

Manor Farm (3.37ha)
Greenfield Runoff Rate

Designed by C.Pendle
Checked by



Source Control 2013.1

Input

Results 1/s

Q1 year 10.3

Q1 year	10.3
Q30 years	27.4
Q100 years	38.5

Michael A Jennings Associates		Page 1
58-62 Ock Street	Manor Farm (3.37ha)	
Abingdon	Greenfield Runoff Volume	
Oxon OX14 5BZ	100year 6hr	
Date 02.04.13	Designed by C.Pendle	
File	Checked by	
Micro Drainage	Source Control 2013.1	

Greenfield Runoff Volume

FSR Data

Return Period (years)	100
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	19.500
Ratio R	0.350
Areal Reduction Factor	1.00
Area (ha)	3.370
SAAR (mm)	732
CWI	109.129
Urban	0.000
SPR	37.000

Results

Percentage Runoff (%)	37.25
Greenfield Runoff Volume (m ³)	808.962

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Michael A Jennings Associates		Page 1
58-62 Ock Street	Copseys Nursery (4.48ha)	
Abingdon	Greenfield Runoff Rate	
Oxon OX14 5BZ		
Date 02.04.13	Designed by C.Pendle	
File	Checked by	
Micro Drainage	Source Control 2013.1	

ICP SUDS Mean Annual Flood

Input

Return Period (years)	1	Soil	0.400
Area (ha)	4.480	Urban	0.000
SAAR (mm)	732	Region Number	Region 7

Results 1/s

QBAR Rural	16.1
QBAR Urban	16.1
Q1 year	13.7
Q1 year	13.7
Q30 years	36.4
Q100 years	51.2

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Michael A Jennings Associates		Page 1
58-62 Ock Street	Copseys Nursery (4.48ha)	
Abingdon	Greenfield Runoff Volume	
Oxon OX14 5BZ	100y 6hr	
Date 02.04.13	Designed by C.Pendle	
File	Checked by	
Micro Drainage	Source Control 2013.1	

Greenfield Runoff Volume

FSR Data

Return Period (years)	100
Storm Duration (mins)	360
Region	England and Wales
M5-60 (mm)	19.500
Ratio R	0.350
Areal Reduction Factor	1.00
Area (ha)	4.480
SAAR (mm)	732
CWI	109.129
Urban	0.000
SPR	37.000

Results

Percentage Runoff (%)	37.25
Greenfield Runoff Volume (m ³)	1075.415

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	Project	Job No.	Date	Page No.	Rev.
	COPSEYS NURSERY NORTHERN SITE-	Member/Location	02-04-13	Engineer	Checked
				CP	

POST DEVELOPMENT RUNOFF

RATIONAL METHOD - $Q = 2.78 \cdot C \cdot I \cdot A$

WHERE
 C - RUNOFF COEFFICIENT (1.0)
 I - RAINFALL INTENSITY ~ TOC (30 mins)
 A - IMPERMEABLE AREA (1.81 ha)
 Q - PEAK RUNOFF (l/s)

RP	D(min)	AVE I (mm/hr)	+30%
1	30	20.2	26.2
30	30	49.5	64.3
100	30	64.7	84.1
100	360	10.4	13.5

$$1 \text{ YEAR} - Q = 2.78 \times 1 \times 26.2 \times 1.81 = 131 \text{ l/s}$$

$$30 \text{ YEAR} - Q = 2.78 \times 1 \times 64.3 \times 1.81 = 323 \text{ l/s}$$

$$100 \text{ YEAR} - Q = 2.78 \times 1 \times 84.1 \times 1.81 = 423 \text{ l/s}$$

POST DEVELOPMENT VOLUME

100 YEAR 6HR EVENT

$$V = (2.78 \times 1 \times 13.5 \times 1.81 \times 0.001) \times 21600$$

$$V = 1467 \text{ m}^3$$

	Project	Job No.	Date	Page No.	Rev.
	MANOR FARM SOUTHERN SITE	Member/Location	02.04.13	Engineer CP	Checked

POST DEVELOPMENT RUNOFF

RATIONAL METHOD - $Q = 2.78 \cdot C \cdot I \cdot A$

WHERE
 C - RUNOFF COEFFICIENT (1.0)
 I - RAINFALL INTENSITY ~ TOC (30 mins)
 A - IMPERMEABLE AREA (2.64 ha)
 Q - PEAK RUNOFF (l/s)

RP	D(min)	AVE I (mm/hr)	+30%
1	30	20.2	26.2
30	30	49.5	64.3
100	30	64.7	84.1
100	360	10.4	13.5

$$1 \text{ YEAR} - Q = 2.78 \times 1 \times 26.2 \times 2.64 = 192 \text{ l/s}$$

$$30 \text{ YEAR} - Q = 2.78 \times 1 \times 64.3 \times 2.64 = 472 \text{ l/s}$$

$$100 \text{ YEAR} - Q = 2.78 \times 1 \times 84.1 \times 2.64 = 617 \text{ l/s}$$

POST DEVELOPMENT VOLUME

100 YEAR 6HR EVENT

$$V = (2.78 \times 1 \times 13.5 \times 2.64 \times 0.001) \times 21600$$

$$V = 2140 \text{ m}^3$$