

Our Ref: 9153,SK,Ltr01,JK,RS,24-01-25,V1 - Draft

Lochailort Kentford Ltd Eagle House 101-110 Jermyn Street London SW17 6EE

24 January 2025

By Email

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INFILTRATION TESTING AT LANWADES COUNTRY PARK, NEWMARKET, CB8 7UU

1. INTRODUCTION

This letter report has been prepared on behalf of Cannon Consulting Engineers for Lochailort Kentford Ltd.

The primary objective of this ground investigation was to assess the infiltration potential of the natural soils beneath the site.

This was achieved by:

- Excavating a number of machine-dug trial pits across the site.
- Undertaking soakage testing in line with BRE Digest 365 guidance.
- Undertaking infiltration calculations to allow for an assessment of the suitability of soakaways or infiltration techniques for the future development of the site.

It is assumed that the proposed development will comprise residential housing.

The purpose of this letter report is to provide factual data only.

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2. SITE WORKS

2.1 Methodology

This ground investigation was carried out on the basis of the practices set out in BRE Digest 365, 'Soakaway Design'. 2016, which requires, in summary, a total of three infiltration tests to be undertaken in succession over a 24 hour period or tests to be undertaken on consecutive days.

The exploratory holes were positioned at Client supplied locations.

In general, where a test location showed limited or no infiltration, it was allowed to continue for circa 24 hours, the data obtained, and the test ceased. Where a test exhibited appreciable infiltration and the "75%" infiltration level was achieved, a further infiltration "run", or more was undertaken.

2.2 Scope

Site works were carried out between 8th and 9th January 2025, and comprised the following:

- Excavation of five machine excavated trial pits, (TP01 to TP05), to a maximum depth of 2.00mbgl.
- Undertaking infiltration testing in line with BRE Digest 365 guidance.
- Undertaking infiltration calculations to allow for an assessment of the suitability of soakaways for the future development of the site.

An Exploratory Hole Location Plan, Drawing ref. 9153,SK/001/Rev0, is presented at the end of this letter report in Appendix 4.

2.3 Ground Conditions Encountered

The sequence of the strata encountered during the investigation generally confirms the anticipated geology as interpreted from geological mapping.

The sequence and indicative thickness of strata are summarised in Table 1 overleaf, with the Exploratory Hole Logs provided in Appendix 2:



Table 1 – Grou	Table 1 – Ground Conditions								
Strata	Depth Encour	ntered (mgl)	Strata Thickness (m)	Logation and Composition					
Strata	From	То	Strata Thickness (m)	Location and Composition					
Topsoil	0.00	0.32 - 0.40	0.32 – 0.40	All exploratory locations: A dark brown clayey gravelly organic sand. Gravel of fine and medium sub-angular and sub- rounded flint.					
Superficial Deposits (Sand)	0.32 - 0.40	0.60 - 1.10	0.20 - 0.78	All exploratory locations: Orangish brown clayey gravelly sand. Gravel of fine and medium sub-angular and sub-rounded flint and chalk.					
Chalk	0.60 - 1.10	2.00	Unproven	All exploratory locations: White structureless chalk, recovered as a gravel of medium sub-angular and sub-rounded chalk in a clay matrix.					

2.4 Groundwater

No groundwater was encountered in any of the exploratory holes during the intrusive investigation.

2.5 Infiltration Testing Results

Soil infiltration testing was undertaken in accordance with BRE 365, 2016. The results are summarised in Table 2 below and are provided in full in Appendix 3, presented at the end of this letter report:

Table 2 – S	Table 2 – Summary of Soil Infiltration Results							
Location	Test 1 (m/s)	Test 2 (m/s)	Test 3 (m/s)	Notes				
TP01	1.91×10-04	1.31x10-04	1.97x10-04	None				
TP02	5.83x10-04	7.04x10-04	5.80x10-04	None				
TP03	4.31×10-05	3.44x10-05	2.43x10-05	None				
TP04	1.77x10-05	1.42x10-05	9.56x10-06	None				
TP05	3.26x10-04	2.28x10-04	1.78x10-04	None				



We trust the above is clear and acceptable. If you have any questions, please do not hesitate to contact us.

Yours sincerely

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Checked By:

Authorised By:

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Enclosures:

- Appendix 1 Report Limitations and Conditions Appendix 2 – Exploratory Hole Logs Appendix 3 – Infiltration Test Results
- Appendix 4 Drawings



APPENDICES



Appendix 1 – Report Limitations and Conditions

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report has been prepared for the sole use of the Client for the purposes described and no extended duty of care to any third party is implied or offered. Third parties using any information contained within this report do so at their own risk.

This report is prepared and written for the use stated herein; it should not be used for any other purposes without reference to Geosphere Environmental Limited. The report has been prepared in relation to the proposed end-use, should another end-use be intended, a further re-assessment may be required. It is likely that over time practises will improve and the relevant guidance and legislation be amended or superseded, which may necessitate a re-assessment of the site.

The accuracy of any map extracts cannot be guaranteed. It is possible that different conditions existed on site, between and subsequent to the various map surveys appended.

Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes discussed or on the possible presence of features based on visual, verbal or published evidence, this is for guidance only and no liability can be accepted for its accuracy.



Appendix 2 – Exploratory Hole Logs

Trial Pit Logs TP01 - TP05



TRIAL PIT LOG

•	•		I RIAL PH	LUG		
Project			Client			TRIAL PIT No
	wades Co	untry Park		lort Kentford Ltd		TP01
lob No		Date	Ground Level (m)	Coordinates/Grid Ref	erence ()	IPUL
	3,SK	08-01-25	39.00	TL 69705	66458	
Fieldwork			Logged By			Sheet
GEL			FW			1 of 1
Depth 0.00-0.32 0.32-1.10	 medium, g with fine a 	n slightly silty gravelly O gravel of fine and mediur ictive and inactive roots.	DESCRIPTION RGANIC SAND. Sand is fin n sub-angular and sub-ro [TOPSOIL] ly SAND. Sand is fine and nded and sub-angular flir	unded flint $-\underbrace{\cdot, \downarrow / \alpha}_{0} \cdot \underbrace{\cdot}_{0} \cdot \cdot \cdot \cdot$	Depth No	5 Remarks/Tests
	- - - -		overed as a slightly clayey			
1.10-2.00	- of chalk. - - - - -					
2.00	END OF EX - - -	PLORATORY HOLE			1	
		0.40		Shoring/S Stability:	upport: GRAV STABLE	VEL
All dimensi	ions in metr	es Method Trial Pit/t	rench Plant	Used 2.7T Mechanica		Checked By



TRIAL PIT LOG

•				I RIAL PI I	LUG				
Project				Client					TRIAL PIT No
	wades Cou	untry Park			ort Kentford				TP02
Job No		Date	Ground	l Level (m)	Coordinates/	Grid Refe	erence ()		IFUZ
915	3,SK	08-01-25		39.00	TL	69626	66433		
Fieldwork				Logged By					Sheet
GEL	-			FW					1 of 1
Depth			DESCRIPTI	ON		Legend	Depth	No	Remarks/Tests
0.00-0.36	-	n slightly silty gravelly C ravel of fine and mediu ctive and inactive roots ish brown slighty grave ne and medium sub-rou			-				
0.68-2.00	Gff-white a sandy sligh and sub-ro - - - - - - - - - - - - -	and light brown structur tly clayey putty matrix. unded flint.	eless CHAL Gravel of f	K recovered as ine and medium	a slightly				
2.00	END OF EX	PLORATORY HOLE			-				
				Direct	Sta	bility: S	upport: STABLE		
All dimensi cale 1:20.8	ions in metre 33333333333	es Method Trial Pit/1 333	rench		Ised 2.7T Mec Excavator				Checked By JK



TRIAL PIT LOG

Lanwades Country Park Lochallort Kentford Ltd TPO3 Job No Date Ground Level (m) Coordinates/Grid Reference () TPO3 9153.5X 08-01-25 41.00 TL 69301 6628 Sheet 1 of 1 Depth Depth Depth No Remarks/Tests New 1 of 1 0.00-03 End neadmedium graved of line and medium sub-angular and sub-rounded filth Sheet 1 of 1 0.00-03 End neadmedium graved of line and medium sub-angular and sub-rounded filth Sheet 1 of 1 0.00-03 End neadmedium graved of line to coarse sub-rounded and sub-angular filth and Sheet Sheet 0.00-04 End neadmedium graved of line to coarse sub-rounded and sub-angular filth and Sheet Sheet 1.00-2.00 Off-white structureless CHAIK, recovered as a fine to coarse sub-angular filth and Sheet Sheet 1.00-2.00 Off-white structureless CHAIK, recovered as a file to coarse sub-angular filth Sheet Sheet 2.00 END OF EXPLORATORY HOLE Sheet Sheet Sheet Sheet 1.00-2.00 If the istructureless CHAIK, recovered as a fine to coarse sub	•	l'olophono.		l	FRIAL PIT	LOG				
Job No Date Ground Level (m) Coordinates/Grid Reference () TPD3 Initiation of the second secon	Project				Client					TRIAL PIT No
Job No Detection (Job No) Detection (Job No) TeleSound (Job No) TeleSound (Job No) Fieldwork By Logged By Sheet 1 of 1 Depth Dark brown slightly gravely SIGNED (Job No) Loggend (Job No) No) Remarks/Tests 0.00-038 American endown, gravel of fine and medium sub-angular and sub-rounded finit Image in the structure issociation of the structure issociation o		wades Cou	untry Park							трлэ
Fieldwork By Logged By Sheet 1 of 1 Depth Depth brown slightly gravely Vision (SAND Sand is fine and medium sub-angular and sub-rounded finit with fine active and inactive roots. [TOPSOIL] No Remarks/Tests 0.00-0.38 and redum, gravel of fine and medium sub-angular sub-angular finit and chalk. No Remarks/Tests 1.00-2.00 Off-white structureless CHALK, recovered as a fine to coarse sub-angular finit and chalk. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. 2.00 END OF EXPLORATORY HOLE Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk is a clay matrix. Image: Chalk i	Job No		Date	Ground L	evel (m)	Coordinates/	Grid Refe	erence ()		1903
GEL FW 1 of 1 Depth and medium, gravel of fine and medium sub-angular and sub-rounded flint with fine active and inactive roots. [TOPSOIL] Legend Depth is and medium, gravel of fine and medium sub-angular and sub-rounded flint with fine active and inactive roots. [TOPSOIL] Image: Comparison of the active and inactive roots. [TOPSOIL] 0.38 - 1.0 Light orangish brown slightly clavey gravely SANO. Sand is fine and chalk. Image: Comparison of the active and inactive roots. [TOPSOIL] 1.00 - 2.0 Off-white structureless CHALK, recovered as a fine to coarse sub-angular and sub-rounded gravel of chalk in a day matrix. Image: Coarse sub-angular and sub-rounded gravel of chalk in a day matrix. 2.00 END OF EXPLORATORY HOLE Image: Coarse sub-angular and sub-rounded gravel of chalk in a day matrix.	915	53,SK	08-01-25	4	1.00	TL TL	69301 (66285		
Depth DesCRIPTION Legend Depth No Remarks/Tests 0.00-0.3 Dark brown slightly gravely SRANUS SAND. Sand is fine and medium, gravel of fine and medium with fine and medium with fine active roots. [TOPSOIL] Image: Comparison of the second se			1	_	Logged By	1				Sheet
0.00-0.38 Dark brown slightly gravely slightly clave ORGANIC SAND. Sand is fine and meduum, gevel of fine and meduum, gevel of fine to coarse sub-rounded fine meduum, gevel of fine to coarse sub-rounded and sub-angular files and meduum, gevel of fine to coarse sub-rounded and sub-angular files and meduum, gevel of fine to coarse sub-rounded and sub-angular files and meduum, gevel of fine to coarse sub-rounded and sub-angular files and meduum, gevel of fine to coarse sub-rounded and sub-angular files and meduum, gevel of fine to coarse sub-rounded and sub-angular files and meduum, gevel of fine to coarse sub-rounded and sub-angular files and meduum, gevel of fine to coarse sub-rounded and sub-angular files and the sub-rounded gravel of chalk in a clay matrix. 1.00-2.00 Off-white structureless CHALK, recovered as a fine to coarse sub-angular files and sub-rounded gravel of chalk in a clay matrix. 2.00 END OF EXPLORATORY HOLE Image: Shoring/Support: GRAVEL Stability: STABLE	GEL	<u>_</u>			FW					1 of 1
0.38-1.00 Interfurm, gravel of fine to coarse sub-rounded and sub-angular flint and chalk. 1.00-2.00 Off-white structureless CHALK, recovered as a fine to coarse sub-angular flint and sub-rounded gravel of chalk in a clay matrix. 2.00 END OF EXPLORATORY HOLE END OF EXPLORATORY HOLE Image: Stability: STABLE Gradue Image: Stability: STABLE	Depth						Legend	Depth	No	Remarks/Tests
 Image: Shoring/Support: GRAVEL Stability: STABLE 	0.38-1.00	- Light orang medium, gr chalk. - - - - - Off-white s	ish brown slightly claye ravel of fine to coarse s tructureless CHALK. rec	y gravelly SA ub-rounded a	ND. Sand is fir and sub-angula fine to coarse :	e and fint and -				
0.4 Shoring/Support: GRAVEL Stability: STABLE	2.00	END OF EX	PLORATORY HOLE							
Stability: STABLE		1.70				Shc	oring/Su	ipport:	GRAV	ΓEL
cale 1:20.8333333333333333333333333333333333333	All dimens	ions in metre	es Method Trial Pit/1	rench	Plant U	Sta sed2.7T Mec	bility: S	STABLE		Checked By



TRIAL PIT LOG

				TRIAL PI					
Project				Client					TRIAL PIT No
	nwades Co	untry Park			ilort Kentford				TP04
Job No		Date	Groun	d Level (m)	Coordinates,	/Grid Refe	erence ()		1604
	53,SK	08-01-25		41.00	TL	69030	66179		
Fieldwork	Ву			Logged By					Sheet
GE	L			FW					1 of 1
Depth			DESCRIPT	ION		Legend	Depth	No	Remarks/Tests
0.00-0.40	_ with fine a Dark orang	n slightly gravelly slight im, gravel of fine and m ictive and inactive roots gish brown slightly claye gravel of fine to coarse s	s. [TOPSOIL	.] gravelly SAND. S	Sand is fine and				
0.60-1.20	chalk. Off white r gravel of c	mottled light brown stri halk in a putty matrix. (ed flint gravel.	uctureless	CHALK recovered	ed as a sandy				
1.20-2.00	- White stru - and sub-ro - - - -	octureless CHALK recove	ered as a gr natrix (dm).	ravel of medium	n sub-angular				
2.00	END OF EX	PLORATORY HOLE							
4	1.60	► ∓							

22				
d U	All dimensions in metres	Method Trial Pit/trench	Plant Used 2.7T Mechanical	Checked Bv
				,
Ш	Scale 1:20.8333333333333333		Excavator	JK
G			Executator	••••



TRIAL PIT LOG

Project La Job No				TRIAL PI					
				Client					TRIAL PIT No
Joh No	nwades Co	-			lort Kentford				TP05
		Date	Groun	d Level (m)	Coordinates/				1805
	.53,SK	08-01-25		41.00	TL	68865	66121		
Fieldwor	•			Logged By				<u>_</u>	Sheet
GI	EL			FW					1 of 1
Depth			DESCRIPT			Legend	Depth	No	Remarks/Tests
0.00-0.40 0.40-0.60	with fine a	m slightly gravelly slightl um, gravel of fine and m active and inactive roots gish brown slightly claye gravel of fine to coarse s	. [TOPSOIL	.] gravelly SAND. S	and is fine and				
0.60-1.40	Off white	mottled light brown stru halk in a putty matrix. C ed flint gravel.	actureless occasional	CHALK recovere medium sub-an	ed as a sandy gular and -				
1.40-2.00	White stru - and sub-rc - - -	ictureless CHALK recove ounded chalk in a clay m	red as a gr atrix (dm)	ravel of medium	ı sub-angular				
2.00	- - - -	PLORATORY HOLE				-			

All dimensions in metres	Method Trial Pit/trench	Plant Used 2.7T Mechanical	Checked By
ਸ਼ੁਂ Scale 1:20.8333333333333333		Excavator	JK



Appendix 3 – Infiltration Test Results

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
0.5	1.68
1	1.73
1.5	1.77
2	1.81
2.5	1.84
3	1.88
3.5	1.90
4	1.91

Pit Size [m]								
Length Width Depth								
1.70	0.40	2.00						
- ~								
Parameter	ion Rate Calcu Unit	lations Result						
Parameter	••	Result						
	height	1.875						
h ₇₅	[m]							
h ₂₅	[m]	1.625						
h ₇₅ -h ₂₅	[m]	0.250						
	time							
t ₇₅	[s]	174.00						
t ₂₅	[s]	19.80						
t ₇₅ - t ₂₅	[s]	154.20						
e	ffective volume							
V ₇₅₋₂₅	[m³]	0.051						
	effective area							
ap ₅₀	[m²]	1.730						
SO	il infiltration rate	e						
f	[m/s]	1.91E-04						

GEO Date: 22/01/2025 **Trial Pit** TP01 1 of 3 Run Test Date 08/01/2025

Groundwater Encountered: N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

Checked by: RS

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
Function 1	
[min]	[mbgl]
0	1.50
0.5	1.56
1	1.65
1.5	1.72
2	1.75
2.5	1.79
3	1.82
3.5	1.84
4	1.85
4.5	1.87
5	1.90

Pit Size [m]		
Length	Width	Depth
1.70	0.40	2.00
Infiltrat	ion Rate Calcu	lations
Parameter	Unit	Result
	height	
h ₇₅	[m]	1.875
h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	276.00
t ₂₅	[s]	51.00
t ₇₅ - t ₂₅	[s]	225.00
е	ffective volume	
V ₇₅₋₂₅	[m³]	0.051
	effective area	
ap ₅₀	[m²]	1.730
soil infiltration rate		
f	[m/s]	1.31E-04

 Trial Pit
 TP01

 Run
 2 of 3

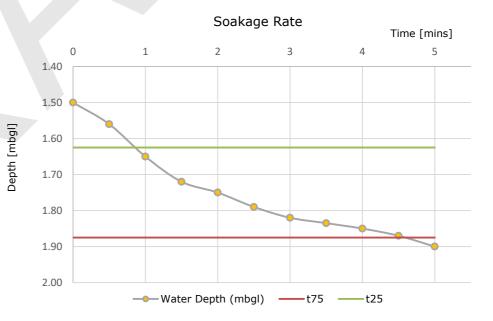
 Test Date
 08/01/2025

Groundwater Encountered: N/A

22/01/2025

Date:

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
0	1.56
1	1.65
1.5	1.71
2	1.75
2.5	1.79
3	1.84
3.5	1.89
4	1.92
4.5	1.94

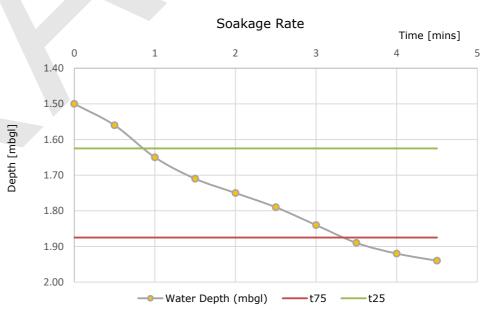
Pit Size [m] Length Width Depth 1.70 0.40 2.00 Infiltration Pate Calculations Par h₇₅ h₂₅ h₇₅.

Infiltration Rate Calculations		
Parameter	Unit	Result
	height	
h ₇₅	[m]	1.875
h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	198.00
t ₂₅	[s]	48.00
t ₇₅ - t ₂₅	[s]	150.00
e	effective volume	
V ₇₅₋₂₅	[m³]	0.051
	effective area	
ар ₅₀	[m²]	1.730
SO	il infiltration rat	e
f	[m/s]	1.97E-04

22/01/2025 Date:

Trial Pit	TP01
Run	3 of 3
Test Date	09/01/2025
Groundwater Encountered:	N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

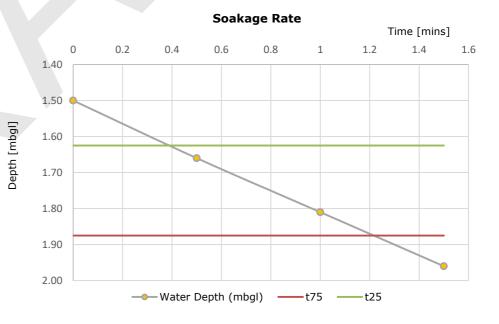
Time	Depth to Water
[min]	[mbgl]
0	1.50
0.5	1.66
1	1.81
1.5	1.96

Width	
	Depth
0.40	2.00
on Rate Calcu	lations
Unit	Result
height	
[m]	1.875
[m]	1.625
[m]	0.250
time	
[s]	73.50
[s]	22.80
[s]	50.70
[m³]	0.053
[m²]	1.775
infiltration rat	
[m/s]	5.83E-04
	0.40 on Rate Calcu Unit height [m] [m] [m] time [s] [s] [s] fective volume [m ³] effective area [m ²] infiltration rat

Date:22/01/2025Trial PitTP02Run1 of 3Test Date09/01/2025

Groundwater Encountered: N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
0.33	1.59
0.66	1.71
1	1.83
1.33	1.94

Pit Size [m]		
Length	Width	Depth
1.75	0.40	2.00
Infiltrati	on Rate Calcu	lations
Parameter	Unit	Result
	height	
h ₇₅	[m]	1.875
h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	67.20
t ₂₅	[s]	25.20
t ₇₅ - t ₂₅	[s]	42.00
ef	fective volume	
V75-25	[m³]	0.053
(effective area	
ap ₅₀	[m²]	1.775
soil infiltration rate		
f	[m/s]	7.04E-04

 Date:
 22/01/2025

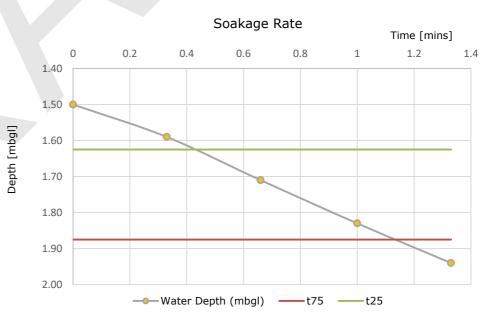
 Trial Pit
 TP02

 Run
 2 of 3

 Test Date
 09/01/2025

Groundwater Encountered: N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

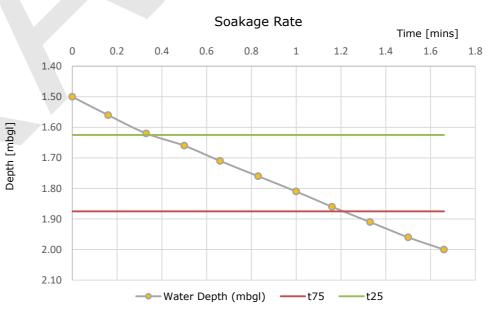
Time	Depth to Water
[min]	[mbgl]
0	1.50
0.16	1.56
0.33	1.62
0.5	1.66
0.66	1.71
0.83	1.76
1	1.81
1.16	1.86
1.33	1.91
1.5	1.96
1.66	2.00

Pit Size [m]			
Length	Width	Depth	
1.75	0.40	2.00	
Infiltrati	on Rate Calcu	llations	
Parameter	Unit	Result	
	height		
h ₇₅	[m]	1.875	
h ₂₅	[m]	1.625	
h ₇₅ -h ₂₅	[m]	0.250	
	time		
t ₇₅	[s]	72.00	
t ₂₅	[s]	21.00	
t ₇₅ - t ₂₅	[s]	51.00	
ef	fective volume		
V ₇₅₋₂₅	[m³]	0.053	
	effective area		
ap ₅₀	[m²]	1.775	
soil infiltration rate			
f	[m/s]	5.80E-04	

22/01/2025 Date:

Trial Pit	TP02
Run	3 of 3
Test Date	09/01/2025
Groundwater Encountered:	N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

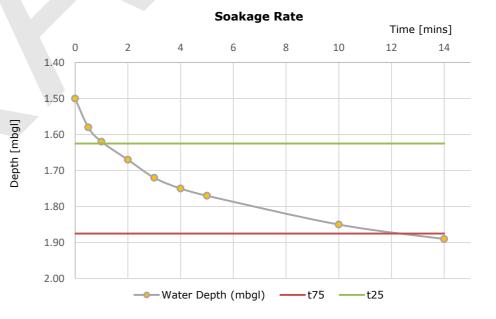
Pit Size [m]

Time	Depth to Water
[min]	[mbgl]
0	1.50
0.5	1.58
1	1.62
2	1.67
3	1.72
4	1.75
5	1.77
10	1.85
14	1.89
1	

Length	Width	Depth	
1.70	0.40	2.00	
	ion Rate Calcu		
Parameter	Unit	Result	
	height		
h ₇₅	[m]	1.875	
h ₂₅	[m]	1.625	
h ₇₅ -h ₂₅	[m]	0.250	
	time		
t ₇₅	[s]	750.00	
t ₂₅	[s]	66.00	
t ₇₅ - t ₂₅	[s]	684.00	
е	ffective volume		
V ₇₅₋₂₅	[m³]	0.051	
	effective area		
ap ₅₀	[m ²]	1.730	
soil infiltration rate			
f	[m/s]	4.31E-05	

Date: 22/01/2025 Trial Pit TP03 Run 1 of 3 Test Date 09/01/2025 Groundwater Encountered: N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
1	1.61
2	1.67
3	1.71
3 4 5	1.74
5	1.76
10	1.83
15	1.87
19	1.90

Pit Size [m]		
Length	Width	Depth
1.70	0.40	2.00
Infiltrati	on Rate Calcu	llations
Parameter	Unit	Result
	height	
h ₇₅	[m]	1.875
h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	930.00
t ₂₅	[s]	72.00
t ₇₅ - t ₂₅	[s]	858.00
e	ffective volume	
V ₇₅₋₂₅	[m³]	0.051
	effective area	
ap ₅₀	[m²]	1.730
soi	l infiltration rat	e
f	[m/s]	3.44E-05

 Date:
 22/01/2025

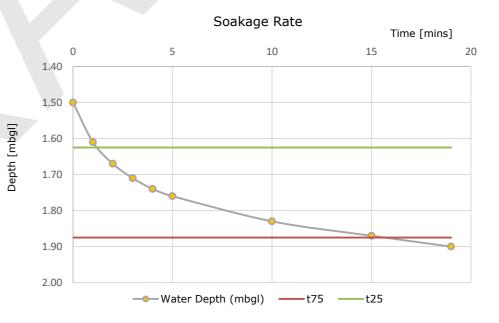
 Trial Pit
 TP03

 Run
 2 of 3

 Test Date
 09/01/2025

Groundwater Encountered: N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
1	1.58
2	1.64
3	1.67
4	1.70
5	1.73
10	1.80
15	1.84
20	1.86
25	1.90

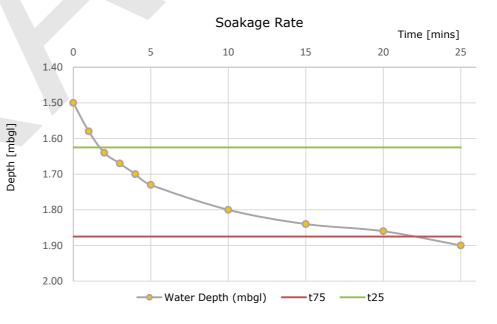
Pit Size [m] Length Width Depth 1.70 0.40 2.00 **Infiltration Rate Calculations** Parameter Unit Result height 1.875 h₇₅ [m] [m] 1 625

h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	1320.00
t ₂₅	[s]	108.00
t ₇₅ - t ₂₅	[s]	1212.00
	effective volume	
V ₇₅₋₂₅	[m³]	0.051
	effective area	
ap ₅₀	[m²]	1.730
S	oil infiltration rat	e
f	[m/s]	2.43E-05

Date: 22/01/2025

Trial Pit	ТР03
Run	3 of 3
Test Date	09/01/2025
Groundwater Encountered:	N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

Project Number:

9153,SK

Project Name:

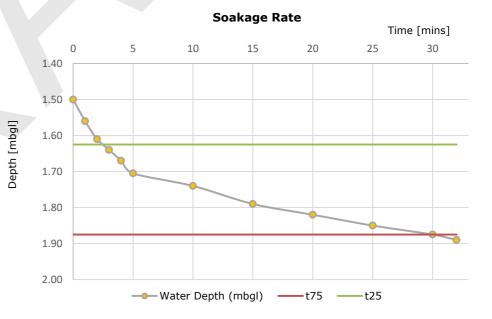
Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
1	1.56
2	1.61
3	1.64
4	1.67
5	1.71
10	1.74
15	1.79
20	1.82
25	1.85
30	1.88
32	1.89

Pit Size [m]		
Length	Width	Depth
1.60	0.40	2.00
	on Rate Calcu	
Parameter	Unit	Result
	height	
h ₇₅	[m]	1.875
h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	1800.00
t ₂₅	[s]	150.00
t ₇₅ - t ₂₅	[s]	1650.00
e	ffective volume	
V ₇₅₋₂₅	[m³]	0.048
	effective area	
ap ₅₀	[m²]	1.640
soil infiltration rate		
f	[m/s]	1.77E-05



Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
1	1.56
2	1.60
3	1.64
4	1.66
5	1.68
10	1.72
15	1.76
30	1.85
38	1.88
40	1.90
1	

Pit Size [m]		
Length	Width	Depth
1.60	0.40	2.00
Infiltrati	on Rate Calcı	lations
Parameter	Unit	Result
	height	
h ₇₅	[m]	1.875
h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	2220.00
t ₂₅	[s]	156.00
t ₇₅ - t ₂₅	[s]	2064.00
e	ffective volume	
V ₇₅₋₂₅	[m³]	0.048
	effective area	
ap ₅₀	[m²]	1.640
	l infiltration rat	
f	[m/s]	1.42E-05

 Date:
 22/01/2025

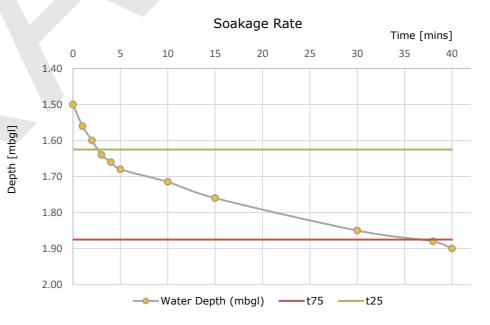
 Trial Pit
 TP04

 Run
 2 of 3

 Test Date
 09/01/2025

Groundwater Encountered: N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

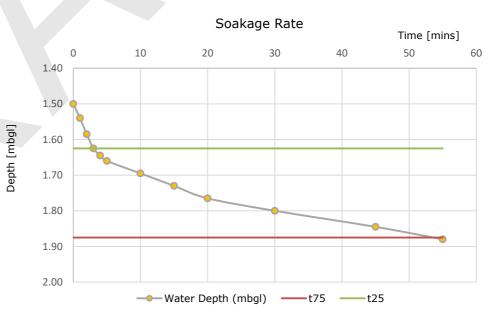
Time	Depth to
	Water
[min]	[mbgl]
0	1.50
1	1.54
2	1.59
3	1.63
4	1.65
5	1.66
10	1.70
15	1.73
20	1.77
30	1.80
45	1.85
55	1.88

Width	Depth
0.40	2.00
on Rate Calcu	
	Result
[m]	1.875
[m]	1.625
[m]	0.250
time	
1	3240.00
	180.00
[s]	3060.00
[m³]	0.048
offective area	
	1.640
	1.040
l infiltration rat	e
[m/s]	9.56E-06
	0.40 on Rate Calcu Unit height [m] [m] time [s] [s] [s] ffective volume [m ³] effective area [m ²] l infiltration rat

22/01/2025 Date: **Trial Pit TP04** 3 of 3 Run Test Date 09/01/2025

Groundwater Encountered: N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

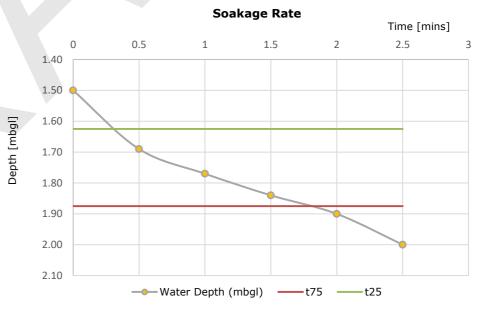
Pit Size [m]

Time	Depth to Water
[min]	[mbgl]
0	1.50
0.5	1.69
1 1.5	1.77
	1.84
2	1.90
2.5	2.00

Width	Depth		
0.40	2.00		
on Rate Calcu	lations		
Unit	Result		
height			
[m]	1.875		
[m]	1.625		
[m]	0.250		
time			
[s]	108.00		
[s]	18.00		
[s]	90.00		
fective volume			
[m³]	0.050		
effective area			
[m²]	1.685		
infiltration rat	e		
[m/s]	3.26E-04		
	0.40 on Rate Calcu Unit height [m] [m] [m] time [s] [s] [s] [s] fective volume [m ³] effective area [m ²] l infiltration rat		

GEO Date: 22/01/2025 **Trial Pit** TP05 1 of 3 Run Test Date 08/01/2025 **Groundwater Encountered:** N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

Project Number:

Project Name:

9153,SK

a

Lanwades Country Park, Newmarket, CB8 7UU

Time	Depth to Water
[min]	[mbgl]
0	1.50
0.16	1.53
0.33	1.56
0.5	1.59
0.66	1.62
0.83	1.65
1	1.69
1.16	1.71
1.33	1.73
1.5	1.75
1.66	1.76
1.83	1.78
2	1.80
2.16	1.81
2.33	1.83
2.5	1.84
2.66	1.86
2.83	1.87
3	1.89
3.16	1.90
3.33	1.91
3.5	1.93
3.66	1.94

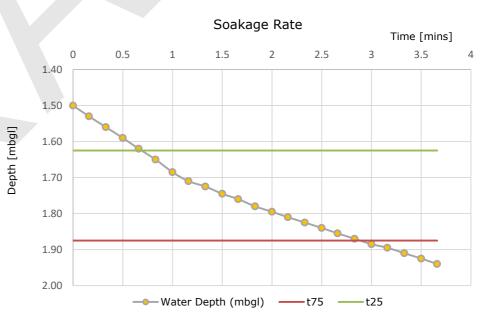
	-	-	
Pit Size [m]			
Length	Width	Depth	
1.65	0.40	2.00	
	ion Rate Calcu		
Parameter	Unit	Result	
	height		
1 ₇₅	[m]	1.875	
1 ₂₅	[m]	1.625	
1 ₇₅ -h ₂₅	[m]	0.250	
	time		
75	[s]	171.00	
25	[s]	42.00	
: ₇₅ - t ₂₅	[s]	129.00	
e	effective volume		
75-25	[m³]	0.050	
	effective area		
ap ₅₀	[m²]	1.685	
SC	il infiltration rate	e	
	[m/s]	2.28E-04	

GEO Date: 22/01/2025 **Trial Pit** TP05 2 of 3 Run Test Date 09/01/2025

Groundwater Encountered:

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).

N/A



Calculated by: JK

GEO

Project Number:

9153,SK

Project Name:

Lanwades Country Park, Newmarket, CB8 7UU

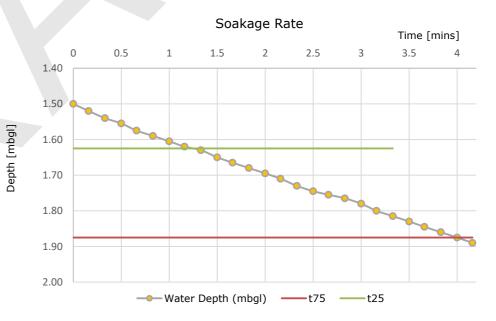
Time	Depth to
	Water
[min]	[mbgl]
0	1.50
0.16	1.52
0.33	1.54
0.5	1.56
0.66	1.58
0.83	1.59
1	1.61
1.16	1.62
1.33	1.63
1.5	1.65
1.66	1.67
1.83	1.68
2	1.70
2.16	1.71
2.33	1.73
2.5	1.75
2.66	1.76
2.83	1.77
3	1.78
3.16	1.80
3.33	1.82
3.5	1.83
3.66	1.85
3.83	1.86
4	1.88
4.16	1.89

Pit Size [m]		
Length	Width	Depth
1.65	0.40	2.00
Infiltrati	on Rate Calcu	lations
Parameter	Unit	Result
	height	
h ₇₅	[m]	1.875
h ₂₅	[m]	1.625
h ₇₅ -h ₂₅	[m]	0.250
	time	
t ₇₅	[s]	240.00
t ₂₅	[s]	74.70
t ₇₅ - t ₂₅	[s]	165.30
	fective volume	
V75-25	[m³]	0.050
	effective area	
	[m ²]	1.685
ap ₅₀	1 1	1.005
soi	l infiltration rat	e
f	[m/s]	1.78E-04
	L, + J	

22/01/2025 Date:

Trial Pit	TP05
Run	3 of 3
Test Date	09/01/2025
Groundwater Encountered:	N/A

Remarks: Backfilled with gravel. Effective volume multiplied by the voids ratio of the gravel (0.3).



Calculated by: JK

Checked by: RS



Appendix 4 – Drawings

Exploratory Hole Location Plan – Drawing ref. 9153,SK/001/Rev0



Legend

Site Boundary

Infiltration Test Locations

Lanwades Country Park, Newmarket, CB8 700

GEO

GEOSPHERE ENVIRONMENTAL

Drawing Title Exploratory Hole Location Plan

Drawing Number 9153,SK/001/Rev0

Date 22/01/2025

Author / Checked By JK / FW

Source Map data ©2025 Imagery ©2025 Airbus, Maxar Technologies