Project: SP19-462-30 June 26, 2020

Milani Group 11333 Dufferin Street Maple, ON., L6A 185 Attention: Mr. Cam Milani

Email: cam.milani@milanigroup.ca

RE: SOIL PERCOLATION TESTS – 18314 HURONTARIO STREET, TOWN OF CALEDON, ONTARIO

Dear Mr. Cam:

Sirati and Partners Consultants Ltd. (SIRATI) is pleased to provide you the results of soil percolation tests conducted at the Subject Site located at 18314 Hurontario Street, Town of Caledon, Ontario. The field percolation testing was performed at the Site on June 19, 20 and 25, 2019.

# 1.0 Introduction and Project Understanding

The percolation test is widely used to assess the suitability of the soils for the implementation of Low Impact Development (LID) measures such as infiltration galleries, bio-swales, infiltration trenches etc. at the development site. The tests usually measure the length of time required for a quantity of water to infiltrate into the soil in an open hole, and is often defined as percolation rate. It should be noted that percolation rate is not the same as the infiltration rate, although both are related. The infiltration rate is a measure of the speed at which water moves downward into the sub-soil and is expressed in terms of the volume of water that infiltrates per unit of time (mm/min or mm/hour). Percolation rate measures not only downward movement of water but also the lateral progression through the soil as well. In other words, infiltration testing would include only the bottom surface area, while percolation capacity of a soil decreases rapidly over time during the infiltration until it reaches a constant value almost equalling the saturated hydraulic conductivity of the soil.

Based on the "Porchet Method" described below, a relationship between the percolation rate and the infiltration rate is obtained using the equation:

Infiltration Rate,  $I_t = \Delta H 60 r / \Delta t (r+2Havg)$ 

Where:

 $I_t = \text{tested infiltration rate, inches/hour}$   $\Delta H = \text{change in head over the time interval, inches}$   $\Delta t = \text{time interval, minutes}$  r = effective radius of test hole, inches $_{\text{Havg}} = \text{average head over the time interval, inches}$ 

It should be noted that the infiltration tests were requested to be carried out in test pits using doublering infiltrometer or Guelph Permeameter. However, given the extensive amount of earth work required to carry out the above test pits and soil disturbance that they cause, it was proposed that the infiltration rates be measured at a depth of 1.5-2.0 m, using augured test holes equipped with perforated pipes and granular bed at the bottom. Accordingly, a total of eleven (11) test holes drilled to depths ranging from 1.5 m to 2.3 m and equipped with perforated pipes and granular bedding for infiltration testing. The locations of the test holes are shown in attached Figure 1-1.

Test Hole	Installed Depth (m)	Soils Encountered
TH1	2.0	Fill materials up to 0.8 m; Silty Sand, trace gravel $0.8 - 2.0$ m.
TH2	2.0	Fill materials up to $0.8 \text{ m}$ ; Gravelly Sand, trace gravel $0.8 - 2.0 \text{ m}$ .
TH3	2.1	Fill materials up to 2.3 m, gravel and sand, moist
TH4	2.0	Fill materials up to 1.5 m; Gravelly Sand 1.5 m - 2.0 m.
TH5	2.0	Fill materials up to 1.5 m; Silty Sand, trace gravel $1.5 - 2.0$ m.
TH6	1.9	Fill materials up to 2.3 m, Sandy Silt, trace gravel, moist.
TH7	2.3	Fill materials up to 1.5 m; Sand and Silt 1.5–2.3 m.
TH8	1.9	Fill materials up to 1.5 m; Sand and gravel 1.5 -1.9 m.
TH9	2.2	Fill materials up to 0.8 m; Silty to gravelly sand $0.8 - 2.2$ m.
TH10	2.2	Fill materials up to 1.5 m; Gravelly Sand 1.5 – 2.2 m.
TH11	2.0	Fill materials up to 1.5 m; Silty Sand and gravel $0.8 - 2.0$ m.

Table below shows the details of soils encountered at each test hole.

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The results of the above investigation will be used to design septic tanks, infiltration design and provide geotechnical recommendations regarding foundations, roads, services, etc.

# 2.0 Soil Infiltration Rates

Theoretical constant infiltration rates and percolation rates (i.e. near saturated hydraulic conductivity) for various soil types are shown in the Table 2.1 and Table 2-2, respectively.

Soil Type	Infiltration Rate* (mm/hr.)
Sand	>30
Sandy Loam	20-30
Loam	10-20
Clayey Loam	5-10
Clay	1-5

\*Bower (1986) and Ward & Robinson (1990)

Soil Type	Percolation Rate (mm/hr.)
Sand	210
Loamy sand	60
Sandy Loam	25
Loam	15

# **Table 2-2: Theoretical Minimum Soil Percolation Rates**

The general factors affecting the infiltration capacity of the soils at the surface include; soil compaction caused by equipment traffic forming surface crusting and soil texture (i.e. percentage of sand, silt and clay). Compacted or impervious soil layers have less pore space and restrict water movement through soil profile. A high groundwater level will also cause stagnation of infiltrating water and the infiltration capacity will decrease, approaching a near zero.

# 3.0 Hydrogeology of the Study Area

The Subject Property is situated within the Caledon Creek subwatershed of Credit River Watershed. The Caledon Creek subwatershed is an integral part of the headwaters area of the Credit River. The surficial geology of the Caledon Creek is characterized by Caledon Meltwater Channel which is an extensive sand and gravel outwash deposit ranging in thickness from 5 m to 25 m. This unit is highly permeable and will allow for rapid recharge of any water infiltrating into it (reference: Caledon Creek Subwatershed Study-Phase I Characterization Report, November 1999). Highly permeable sand and gravel outwash materials provide excellent areas for water to infiltrate into the ground and recharge the groundwater.

Caledon Town is situated within a significant groundwater recharge area (SGRA) with high sand and gravel deposits and the general recharge rate is considered as more than 250 mm/hr. Since, the Subject Property is situated within a SGRA, it is expected to have high rates of groundwater recharge.

# 4.0 Test Procedure

The test procedure is based on the method described in Design Handbook for Low Impact Development Best Management Practices" Riverside County, State of California, 2011.

As per the Design Handbook, a test hole should be drilled to the bottom of the proposed infiltration facility and is usually to about 3 m depth, called Shallow Percolation Test hole. The test hole dimension is usually between 6 and 12 inches (0.15 m and 0.30 m). The bottom of the test hole shall be covered with 5 cm (2 inches) of gravel. The sides of the test hole shall remain undisturbed after drilling. Test holes greater than 3 m depth are called the Deep Percolation test holes.

## 5.0 Test Methods

In <u>sandy soils</u>, when 2 consecutive measurements show that 15 cm (6 inches) of water seeps away in less than 25 minutes, the test shall be run for an additional hour with measurements taken every 10 minutes. The drop that occurs during the final 10 minutes is used to calculate the percolation rate. Field data must show the two 25-minute readings and the six 10-minute readings.

In <u>non-sandy soils</u>, obtain at least twelve (12) measurements per hole over at least six hours and from a fixed reference point, measure the drop-in water level over a 30-minute period for at least 6 hours, refilling after every 30-minute reading. The total depth of the hole must be measured at every reading to verify that collapse of the borehole has not occurred. The drop that occurs during the final reading is used to calculate the percolation rate.

The soils encountered at the Site are sandy to gravelly in nature and hence sandy soils test procedure was used in the present scenario. The test's data was tabulated and presented in the Appendix A.

## 6.0 Test Results

Percolation tests were conducted at eleven (11) locations named as TH 1 to TH 11, as shown in Figure 1-1. Based on the information provided by the client, the test holes were augured to the recommended depths of between 1.9 and 2.3 m below ground surface.

The soil samples collected from the bottom of the test hole have indicated the presence of sandy to gravelly soils at most of the test holes completed on the site, indicating the highly pervious nature of soils at the Subject Property.

Data obtained during the final 10-minute reading was converted into infiltration rate as per the relationship between percolation rate and the infiltration rate utilizing "Porchet Method" described above.

Accordingly, as depicted in the Table 1-1, below, the calculated infiltration rates ranged between 79 mm/hr and 381 mm/hr. Detailed calculations were presented in the Appendix A.

TA	BLE 1-1: SUMM	ARY OF PERCOLATIO	)N TEST RESUI	LTS	
TEST HOLE #	INSTALLATION DEPTH (M)	SOILS ENCOUNTERED	PERCOLATION RATE		TRATION RATE
	(m)		(in/hr)	(in/hr)	(mm/hr)
TH1	2.0	Silty Sand and gravel	27.4	15	375
TH2	2.0	Gravelly Sand	22.5	11	267
TH3	2.1	Gravel and Sand	23.4	10	244
TH4	2.0	Gravelly Sand	14.2	11	268
TH5	2.0	Silty Sand	18.9	7	171
TH6	1.9	Sandy Silt	14.2	6	160
TH7	2.3	Sand and Silt	28.2	5	137
TH8	1.9	Sand and gravel	30.0	15	381
TH9	2.2	Silty to sandy	10.6	3	79
TH10	2.2	Sand and gravel	19.1	6	163
TH11	2.0	Silty Sand & Gravel	22.7	12	300

### 7.0 Conclusion and Recommendations.

- Based on the infiltration tests conducted at the Subject Property, the test results have indicated infiltration rates ranging between as low as 79 mm/hr to a maximum infiltration rate of 381 mm/hr.
- Infiltration rates have demonstrated the presence of highly pervious sand and gravel deposits at most of the Site contributing to the groundwater recharge.
- The areas of active recharge into the groundwater in which septic beds are situated may create water quality problems due to more infiltration.
- Since, the soils at the Site are highly pervious in nature and therefore, the most important aspects of the development of the Subject Property may be to examine enhanced septic systems protecting the groundwater quality.

### 8.0 Limitation

This report was produced for the sole use of Milani Group (the Client), and may not be relied upon by any other person or entity without the written authorization of Sirati & Partners Consultants Limited (SIRATI). The conclusions presented in this report are professional opinions based on review of the publicly accessible data, the information provided by the Client, and the reports prepared by other consultant(s). As such, SIRATI cannot be held responsible for environmental conditions at the site that was not apparent from the available information.

Professional judgement was exercised in gathering and analyzing data and formulation of recommendations using current industry guidelines and standards. Similar to all professional persons rendering advice, SIRATI cannot act as absolute insurer of the conclusion we have reached. No additional warranty or representation, expressed or implied, is included or intended in this report other than stated herein the report.

Any use, copying or distribution of the report in whole or in part is not permitted without the express written permission of SIRATI and use of findings, conclusions and recommendations represented in this report, is at the sole risk of third parties.

In the event that during future work new information regarding the environmental condition of the site is encountered, or in the event that the outstanding responses from the regulatory agencies indicate outstanding issues on file with respect to the site, SIRATI should be notified in order that we may reevaluate the findings of this peer review and provide amendments, as required.

Should you have any questions regarding the information presented or limitation set in this report, please do not hesitate to contact our office.

Best Regards,

Sirati & Partners Consultants Limited

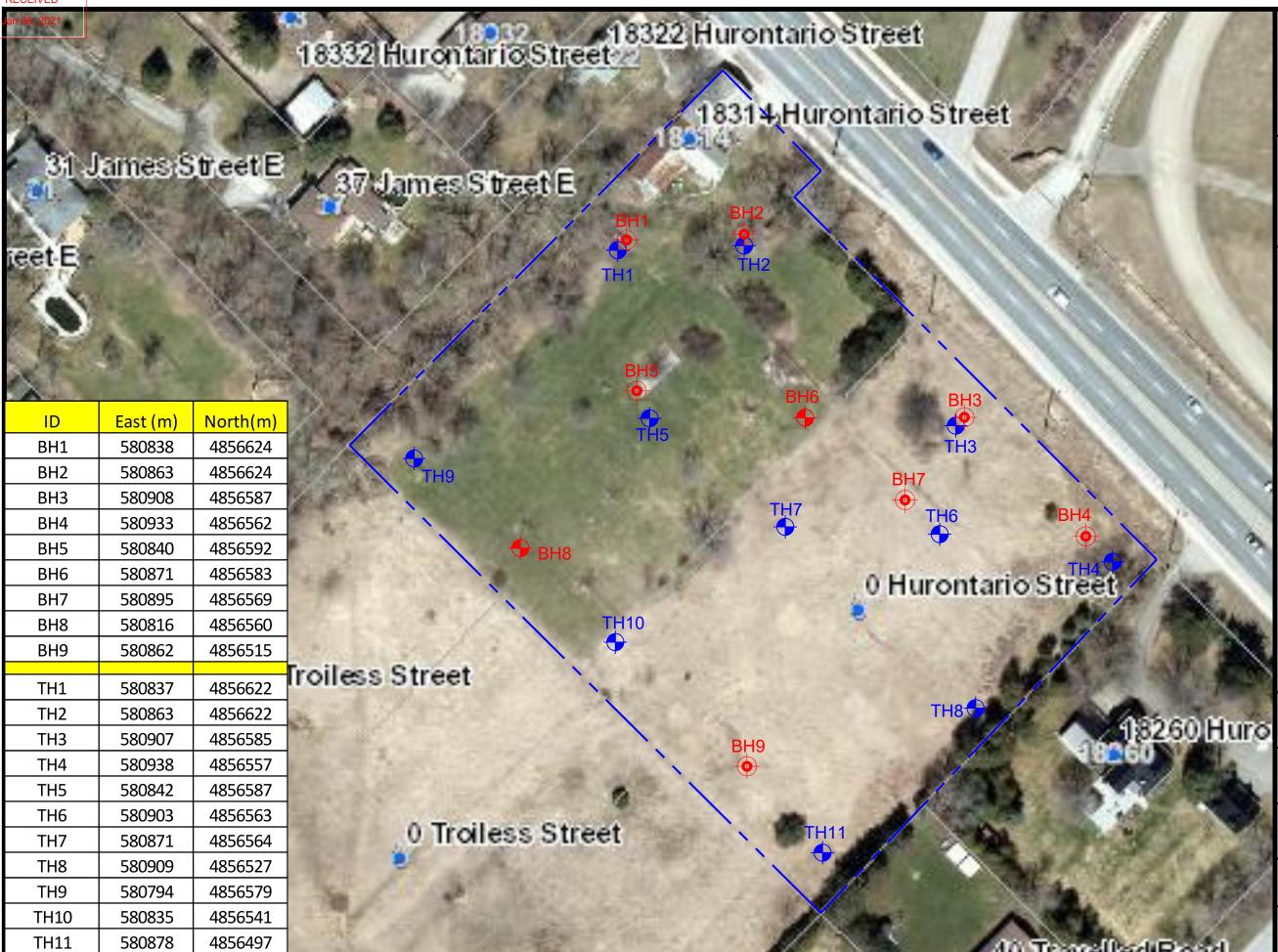
Sudhakar Kurli, M.Sc., P. Geo. Hydrogeologist/Project Manager

**Enclosures:** 

upratuan

Bujing Guan, M. A.Sc., P. Geo. Senior Hydrogeologist/Environmental Specialist

Figure 1-1: Percolation Test Location Plan Appendix A: Record for Percolation Tests at Test Locations 1 to 11 TOWN OF CALEDON PLANNING RECEIVED







# Legend:



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Property Boundary

Borehole Location

Percolation Test Location

Monitoring Well Location

# Project Title:

Percolation Tests Investigation

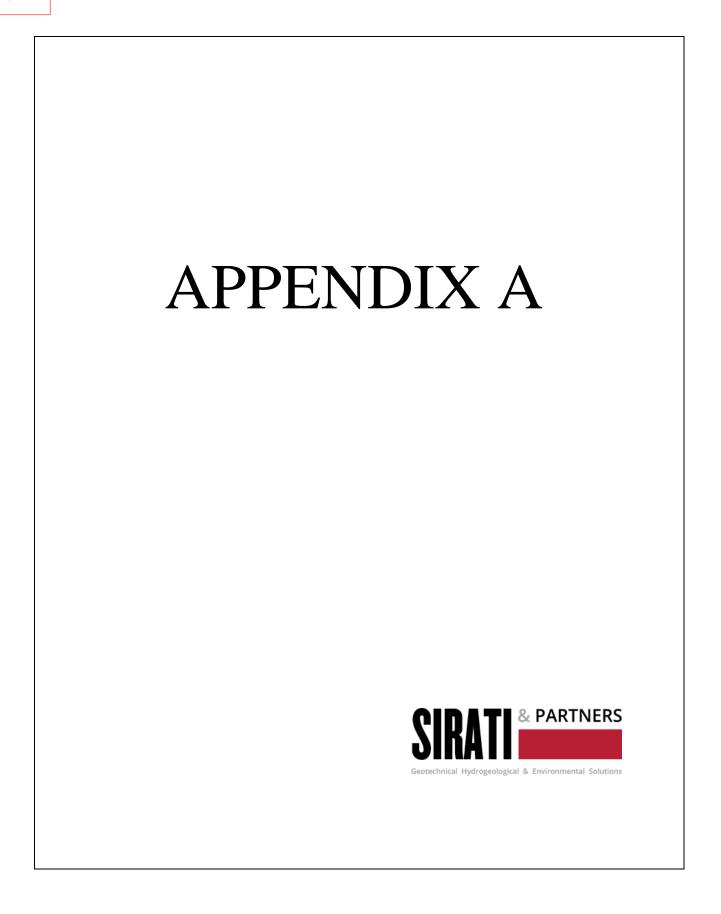
# Site Location:

18314 Hurontario Street, Caledon Village, ON,

# Figure Title:

Boreholes / Monitoring Wells/Percolation Test Location Plan

Scale:		Project Number:
U I I I I I I I I I I I I I I I I I I I	20m	SP19-462-30
Date:		Figure Number:
June 2020		1-1



			Percolation Test Dat	ta Sheet - TH1				
	1							
Project:	18309 & 18314 Hure	ontario St. Caledon	Project No: P19-462-30			Date	:	06-Jun-1
Test Hole No:		TH1	Tested By: Sudhakar Kur	li/Tecle				
Depth o	of Test Hole, DT:	2.0 m	USCS Soil Classification:	Silty Sand and Gra	avel			
	Test Hole	Dimensions (mm)			Length	Width		
Diam	eter (if round)	100	Sides (if rectangular)=					
Sandy Soil Crite	eria Test*							
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (m)	Change in Water Level (m)		nan or Equa (6")? (y/n)
1	12:42	1:07	25	0.75	1.89	1.14		Y
2	1:07	1:32	25	0.75	1.92	1.17		у
Trail No.	Start Time	Stop Times	Δt	Do Initial Depth to	Dt Final Depth to	∆D Change in	Percola (in/hr)	tion Rate (mm/hr)
			Time Interval (min.)	Water (m)	Water(m)	Water Level (m)	(,,	(,,
1	1:32	1:42	10	0.75	1.99	1.24	29.3	745
2	1:42	1:52	10	0.75	1.99	1.24	29.3	745
3	1:52	0:02	10	0.75	1.9	1.15	27.2	691
4	2:02	2:12	10	0.75	1.91	1.16	27.4	697
5	2:12	2:22	10	0.75	1.91	1.16	27.4	697
6	2:22	2:32	10	0.75	1.91	1.16	27.4	697
7								
8								
9								
10								
Comments:		Data used for calc	ulating infiltration rate					

Time Interval, Δt =	10	minutes	Initial Depth to Water, D0	29.53 incl	hes
Final Depth to Water, Df =	75.2	inches	Total Depth of Test Hole, Dt	78.74 incl	hes
Test Hole Radius, r =	3	inches			

The conversion equation used is:			
	lt = ΔH 60 r/Δt (r+2	2Havg)	
"H0" is the initial height of water at the selected time interval.			
	Ho = Dt - Do	49.21	inches
"Hf" is the final height of water at the selected time interv	al.		
	Hf = Dt - Df	3.54	inches
"ΔH" is the change in height over the time interval.			
	$\Delta H = \Delta D = Ho - Hf$	45.67	inches
"Havg" is the average head height over the time interval.			
	Havg = (Ho + Hf)/2	26.38	inches
"It" is the tested infiltration rate.			
	lt = $\Delta$ H 60 r/ $\Delta$ t (r+2Hav	14.75	inches/hr
		375	mm/hr

			Percolation Test I	Data Sheet -TH2				
roject:	18309 & 18314 Huro	ataria St. Caladon	Project No: P1	462 20		Date		06-Jun-
est Hole No: TH		itano 5t. caledon	Tested By: Sudhakar Kurli			Date	•	00-5411-
est noie No. In	2		Testeu by. Suunakar kunij					
Depth of	Test Hole, DT:	2.0 m	USCS Soil Classification:	Gravelly Sand				
	Test Hole	Dimensions (mm)	•		Length	Width		
Diamet	er (if round)	150 mm	Sides (if rectangular)=					
andy Soil Criteri	a Test*		•	-			-	
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (cm)	Change in Water Level (m)		n or Equal to 1 ;")? (y/n)
1	12:28	12:53	25	0.50	1.9	1.40		Y
2	12:53	1:18	25	0.50	1.9	1.40		У
Trail No.	Start Time	Stop Times	∆t 	Do Initial Depth to	Dt Final Depth to	∆D Change in Water Level		ation Rate (mm/hr)
				Water (m)	Water(m)	(m)		
1	1:18	1:28	10	0.75	1.95	1.20	28.4	7
2	1:28	1:38	10		1.88	1.13	26.7	6
3				0.75	1.81	1.06	25.1	6
-	1:38	1:48	10		-			
4	1:48	1:58	10	0.75	1.76	1.01	23.9	6
4	1:48 1:58	1:58 2:08	10 10	0.75	1.76 1.7	1.01 0.95	22.5	6
4 5 6	1:48	1:58	10	0.75	1.76	1.01		6
4 5 6 7	1:48 1:58	1:58 2:08	10 10	0.75	1.76 1.7	1.01 0.95	22.5	6 5 5
4 5 6 7 8	1:48 1:58	1:58 2:08	10 10	0.75	1.76 1.7	1.01 0.95	22.5	6
4 5 6 7	1:48 1:58	1:58 2:08	10 10	0.75	1.76 1.7	1.01 0.95	22.5	6
4 5 6 7 8 9	1:48 1:58	1:58 2:08 2:18	10 10	0.75	1.76 1.7	1.01 0.95	22.5	6

Time Interval, Δt =		10 minutes	Initial Depth to Water, D0 =	29.50 inches
Final Depth to Water, Df =		67 inches	Total Depth of Test Hole, Dt =	78.90 inches
Test Hole Radius, r =		3 inches		
The conversion equation used is:				
	lt = ΔH 60 r//	∆t (r+2Havg)		
"H0" is the initial height of water at the selected	d time interval. Ho = Dt - D0		49.4	
"Hf" is the final height of water at the selected				
	Hf = Dt - Df		11.9	
" $\Delta$ H" is the change in height over the time inter				
	$\Delta H = \Delta D = H0 - Hf$		37.5	
"Havg" is the average head height over the time	e interval.			
	Havg = (H0 + Hf)/2		30.65	
"It" is the tested infiltration rate.				
	lt = ΔH 60 r/Δt (r+2Ha	vg)	10.5 inches/hr 267 mm/hr	

					-			
roject:	18309 & 18314 Huro	ntario St. Caledon	Project No: SP1	.9-462-30		Date	:	07-Jun-1
est Hole No: T	H3		Tested By: Sudhakar Kur	li/Tecle				
Depth o	of Test Hole, DT:	2.12 m	USCS Soil Classification:	Sandy Soils				
	Test Hole	Dimensions (cm)			Length	Width		
Diame	eter (if round)	10 cm	Sides (if rectangular)=					
andy Soil Crite	eria Test*							
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (cm)	Change in Water Level (cm)		n or Equal to 1 5"?) (y/n)
1	10:56	11:21	25	0.65	2.12	1.47		Y
2	11:21	11:46	25	0.75	2.12	1.37		у
			nute intervals) with a prec			r hole over at le		(approximately
		30 mir				Δd		on Rate (In/hr)
Trail No.	Start Time		nute intervals) with a prec	ision of at least 0.6	cm (0.25'').		Percolatic	
	Start Time	30 mir	nute intervals) with a prec	ision of at least 0.6 Do Initial Depth to	cm (0.25"). Dt Final Depth to	∆D Change in Water Level	Percolatic	on Rate (In/hr)
Trail No.	Start Time	30 mir Stop Times	Late intervals) with a preci ∆t Time Interval (min.)	ision of at least 0.6 Do Initial Depth to Water (m)	cm (0.25"). Dt Final Depth to Water(m)	∆D Change in Water Level (m)	· Percolatic (m	on Rate (In/hr) nm/hr)
Trail No.	Start Time 11:46 11:56 12:06	30 mir Stop Times 11:56 12:06 12:16	Lute intervals) with a preci ∆t Time Interval (min.) 10 10 10 10 10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75	cm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8	Δ <b>D</b> Change in Water Level (m) 1.07 1.10 1.05	Percolatic (n 25.3 26.0 24.8	642 660 630
Trail No. 1 2 3 4	Start Time 11:46 11:56 12:06 12:16	30 mir Stop Times 11:56 12:06 12:16 12:26	At       Time Interval (min.)       10       10       10       10       10       10       10       10       10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75 0.75 0.75	rm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8 1.75	ΔD Change in Water Level (m) 1.07 1.10 1.05 1.00	Percolatic (rr 25.3 26.0 24.8 23.6	642 660 630 600
Trail No. 1 2 3 4 5	<b>Start Time</b> 11:46 11:56 12:06 12:16 12:26	30 mir Stop Times 11:56 12:06 12:16 12:26 12:36	Line intervals) with a precision       Δt       Time Interval (min.)       10       10       10       10       10       10       10       10       10       10       10       10       10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75 0.75 0.75 0.75	cm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8 1.75 1.74	ΔD Change in Water Level (m) 1.07 1.10 1.05 1.00 0.99	Percolatic (n 25.3 26.0 24.8 23.6 23.4	642 660 630 600 594
Trail No. 1 2 3 4	<b>Start Time</b> 11:46 11:56 12:06 12:16 12:26	30 mir Stop Times 11:56 12:06 12:16 12:26	At       Time Interval (min.)       10       10       10       10       10       10       10       10       10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75 0.75 0.75	rm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8 1.75	ΔD Change in Water Level (m) 1.07 1.10 1.05 1.00	Percolatic (rr 25.3 26.0 24.8 23.6	642 660 630 600
Trail No. 1 2 3 4 5 6 7	Start Time 11:46 11:56 12:06 12:16 12:26 12:36	30 mir Stop Times 11:56 12:06 12:16 12:26 12:36	Line intervals) with a precision       Δt       Time Interval (min.)       10       10       10       10       10       10       10       10       10       10       10       10       10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75 0.75 0.75 0.75	cm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8 1.75 1.74	ΔD Change in Water Level (m) 1.07 1.10 1.05 1.00 0.99	Percolatic (n 25.3 26.0 24.8 23.6 23.4	642 660 630 600 594
Trail No. 1 3 4 5 6 7 8	Start Time 11:46 11:56 12:06 12:16 12:26 12:36	30 mir Stop Times 11:56 12:06 12:16 12:26 12:36	Line intervals) with a precision       Δt       Time Interval (min.)       10       10       10       10       10       10       10       10       10       10       10       10       10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75 0.75 0.75 0.75	cm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8 1.75 1.74	ΔD Change in Water Level (m) 1.07 1.10 1.05 1.00 0.99	Percolatic (n 25.3 26.0 24.8 23.6 23.4	642 660 630 600 594
Trail No. 1 2 3 4 5 6 7	Start Time 11:46 11:56 12:06 12:16 12:26 12:36	30 mir Stop Times 11:56 12:06 12:16 12:26 12:36	Line intervals) with a precision       Δt       Time Interval (min.)       10       10       10       10       10       10       10       10       10       10       10       10       10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75 0.75 0.75 0.75	cm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8 1.75 1.74	ΔD Change in Water Level (m) 1.07 1.10 1.05 1.00 0.99	Percolatic (n 25.3 26.0 24.8 23.6 23.4	on Rate (In/hr) om/hr) 642 660 630 600 594
Trail No. 1 2 3 4 5 6 7 8 9	Start Time 11:46 11:56 12:06 12:16 12:26 12:36	30 mir Stop Times 11:56 12:06 12:16 12:26 12:36 12:46	Line intervals) with a precision       Δt       Time Interval (min.)       10       10       10       10       10       10       10       10       10       10       10       10       10	ision of at least 0.6 Do Initial Depth to Water (m) 0.75 0.75 0.75 0.75 0.75 0.75	cm (0.25"). Dt Final Depth to Water(m) 1.82 1.85 1.8 1.75 1.74	ΔD Change in Water Level (m) 1.07 1.10 1.05 1.00 0.99	Percolatic (n 25.3 26.0 24.8 23.6 23.4	642 660 630 600 594

Time Interval, Δt = Final Depth to Water, Df = Test Hole Radius, r =	10 minutes 68.5 inches 3 inches	Initial Depth to Water, D0 = Total Depth of Test Hole, Dt =	29.50 inches 84.00 inches
"H0" is the initial height of water at the selected time interval. Ho = Dt - D0	54.5		
"Hf" is the final height of water at the selected time interval. Hf = Dt - Df	15.5		
" $\Delta$ H" is the change in height over the time interval. $\Delta$ H = $\Delta$ D = H0 - Hf	39		
"Havg" is the average head height over the time interval. Havg = (H0 + Hf)/2	35		
"It" is the tested infiltration rate. It = $\Delta$ H 60 r/ $\Delta$ t (r+2Havg)	9.62 inches/hr 244 mm/hr		

Project:	18309 & 18314 Huron	taria St. Caladan	Project No: SP19-462-30			Date		07-Jun-1
fest Hole No: TH		tano st. caledon	Tested By: Sudhakar Kurl	i/Tecle		Date	•	07-3011-3
				.,				
Depth of Test Ho	le, DT:	2.03 m	USCS Soil Classification:	Gravelly sand				
	Test Hole D	Dimensions (cm)			Length	Width		
Diamete	er (if round)	10cm	Sides (if rectangular)=					
andy Soil Criteri	a Test*							
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (m)	Change in Water Level (m)	Greater than cm (0.6	or Equal to 1 5")? (y/n)
1	11:00	11:25	25	0.80	2.03	1.23		Y
- 1				0.00				
		. Other wise, pre-so	25 s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pre Δt	at least twelve mea	asurements per h		n for an additio	
* If two consecu	utive measurements s	how that six inches . Other wise, pre-so	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pre $\Delta t$	s away in less than at least twelve mea ecision of at least 0. Do	25 minutes, the f asurements per h 25". Dt	test shall be run nole over at leas ΔD Change in	n for an additio at six hours (ap <b>Percolatio</b> r	nal hour wth
* If two consect measurements ta	utive measurements s Iken every 10 minutes	how that six inches . Other wise, pre-so r	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pre	s away in less than at least twelve mea ecision of at least 0.	25 minutes, the f asurements per h .25''.	test shall be run nole over at leas Δp	n for an additio at six hours (ap <b>Percolatio</b> r	nal hour wth proximately : Rate (in/hr)
* If two consect neasurements ta	utive measurements s Iken every 10 minutes	how that six inches . Other wise, pre-so r	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pre $\Delta t$	s away in less than at least twelve mea ecision of at least 0 Do Initial Depth to	25 minutes, the t asurements per h .25". Dt Final Depth to	test shall be run nole over at leas ΔD Change in Water Level	for an additio it six hours (ap Percolation (mr 16.5	nal hour wth proximately : Rate (in/hr)
* If two consect neasurements ta	utive measurements s iken every 10 minutes Start Time 11:50 12:00	how that six inches . Other wise, pre-so r Stop Times 12:00 12:10	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pre ∆t Time Interval (min.) 10 10	s away in less than at least twelve mea ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75	25 minutes, the 4 asurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4	test shall be run ole over at leas ΔD Change in Water Level (cm.) 0.70 0.65	for an additio it six hours (ap Percolation (mr 16.5 15.4	nal hour wth proximately n Rate (in/hr n/hr) 420 390
* If two consect neasurements ta Trail No. 1	utive measurements s iken every 10 minutes Start Time 11:50 12:00 12:10	how that six inches . Other wise, pre-so r Stop Times 12:00 12:10 12:20	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pre Δt Time Interval (min.) 10 10	s away in less than at least twelve mea ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75 0.75	25 minutes, the 1 asurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4 1.38	Lest shall be run nole over at leas △D Change in Water Level (cm.) 0.70 0.65 0.63	for an additio at six hours (ap Percolation (mr 16.5 15.4 14.9	nal hour wth proximately n Rate (in/hr n/hr) 420 390 378
* If two consect reasurements ta Trail No. 1	utive measurements s iken every 10 minutes Start Time 11:50 12:00 12:10 12:20	how that six inches . Other wise, pre-so r <b>Stop Times</b> 12:00 12:10 12:20 12:30	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pro Δt Time Interval (min.) 10 10 10 10	s away in less than at least twelve mea ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75 0.75	25 minutes, the t asurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4 1.38 1.36	Lest shall be run tole over at leas Δp Change in Water Level (cm.) 0.70 0.65 0.63 0.61	for an additic tt six hours (ap Percolation (mr 16.5 15.4 14.9 14.4	A Rate (in/hr n/hr) 420 390 378 366
* If two consect neasurements ta Trail No. 1 2 3 4 5	utive measurements s ken every 10 minutes Start Time 11:50 12:00 12:10 12:20 12:30	how that six inches . Other wise, pre-so r Stop Times 12:00 12:10 12:20 12:30 12:40	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pro Δt Time Interval (min.) 10 10 10 10 10	s away in less than at least twelve mer ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75 0.75	25 minutes, the t assurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4 1.38 1.36 1.35	Lest shall be run tole over at leas Change in Water Level (cm.) 0.70 0.65 0.63 0.61 0.60	for an additio it six hours (ap Percolation (mr 16.5 15.4 14.9 14.4 14.2	nal hour wth proximately n Rate (in/hr, n/hr) 420 390 378 366 360
* If two consect reasurements ta Trail No. 1	utive measurements s iken every 10 minutes Start Time 11:50 12:00 12:10 12:20	how that six inches . Other wise, pre-so r <b>Stop Times</b> 12:00 12:10 12:20 12:30	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pro Δt Time Interval (min.) 10 10 10 10 10	s away in less than at least twelve mea ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75 0.75	25 minutes, the t asurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4 1.38 1.36	Lest shall be run tole over at leas Δp Change in Water Level (cm.) 0.70 0.65 0.63 0.61	for an additic tt six hours (ap Percolation (mr 16.5 15.4 14.9 14.4	A Rate (in/hr n/hr) 420 390 378 366
* If two consect heasurements ta Trail No. 1 2 3 4 5 6	utive measurements s ken every 10 minutes Start Time 11:50 12:00 12:10 12:20 12:30	how that six inches . Other wise, pre-so r Stop Times 12:00 12:10 12:20 12:30 12:40	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pro Δt Time Interval (min.) 10 10 10 10 10	s away in less than at least twelve mer ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75 0.75	25 minutes, the t assurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4 1.38 1.36 1.35	Lest shall be run tole over at leas Change in Water Level (cm.) 0.70 0.65 0.63 0.61 0.60	for an additio it six hours (ap Percolation (mr 16.5 15.4 14.9 14.4 14.2	nal hour wth proximately n Rate (in/hr n/hr) 420 390 378 366 360
* If two consect neasurements ta Trail No. 1 2 3 4 5 6 7	utive measurements s ken every 10 minutes Start Time 11:50 12:00 12:10 12:20 12:30	how that six inches . Other wise, pre-so r Stop Times 12:00 12:10 12:20 12:30 12:40	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pro Δt Time Interval (min.) 10 10 10 10 10	s away in less than at least twelve mer ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75 0.75	25 minutes, the t assurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4 1.38 1.36 1.35	Lest shall be run tole over at leas Change in Water Level (cm.) 0.70 0.65 0.63 0.61 0.60	for an additio it six hours (ap Percolation (mr 16.5 15.4 14.9 14.4 14.2	nal hour wth proximately n Rate (in/hr, n/hr) 420 390 378 366 360
* If two consect teasurements ta Trail No. 1 2 3 4 5 6 7 8	utive measurements s ken every 10 minutes Start Time 11:50 12:00 12:10 12:20 12:30	how that six inches . Other wise, pre-so r Stop Times 12:00 12:10 12:20 12:30 12:40	s (15.25 cm) of water seep oak (fill) overnight. Obtain ninute intervals) with a pro Δt Time Interval (min.) 10 10 10 10 10	s away in less than at least twelve mer ecision of at least 0 Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75 0.75	25 minutes, the t assurements per h 25". Dt Final Depth to Water(cm.) 1.45 1.4 1.38 1.36 1.35	Lest shall be run tole over at leas Change in Water Level (cm.) 0.70 0.65 0.63 0.61 0.60	for an additio it six hours (ap Percolation (mr 16.5 15.4 14.9 14.4 14.2	nal hour wth proximately n Rate (in/hr n/hr) 420 390 378 366 360

The bottom of a proposed infiltration basin would be at 5.0 feet below natural grade. Percolation tests are performed within the boundaries of the proposed development location with the depth of the test hole set at the infiltration surface level (bottom of the basin). The Percolation Test Data Sheet is prepared as the test is being performed. After the minimum required number of testing intervals, the test is complete.

Time Interval,  $\Delta t =$ Final Depth to Water, Df = Test Hole Radius, r =

53.15 inches 3 inches

10 minutes Initial Depth to Water, D0 = Total Depth of Test Hole, Dt = 29.53 inches 60.00 inches

The conversion equation used is:

### It = $\Delta H$ 60 r/ $\Delta t$ (r+2Havg)

- "H0" is the initial height of water at the selected time interval. 30.47 inches Ho = Dt - D0
- "Hf" is the final height of water at the selected time interval. Hf = Dt - Df 6.85 inches

" $\Delta$ H" is the change in height over the time interval.  $\Delta H = \Delta D = H0 - Hf$ 23.62 inches

"Havg" is the average head height over the time interval. Havg = (H0 + Hf)/218.66 inches

"It" is the tested infiltration rate. It =  $\Delta H$  60 r/ $\Delta t$  (r+2Havg)

10.54 inches/hr 268 mm/hr

Project:	18309 & 18314 Huror	ntario St. Caledon	Project No: SP19-462-30			Date	:	06-Jun-1
Fest Hole No: T			Tested By: Sudhakar Kur	li/Tecle				
Depth o	of Test Hole, DT:	2.04 m Dimensions (cm)	USCS Soil Classification:	Silty Sand	Longth	Width		
Diam	eter (if round)	10cm	Sides (if rectangular)=		Length	width		
Sandy Soil Crite	···· (	100111	Sides (il rectaliguiar)-					
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m.)	Final Depth to Water (cm)	Change in Water Level (cm)		n or Equal to 1 5")? (y/n)
1	1:08	1:33	25	0.60	1.97	1.37		Y
2	1:33	1:58	25	0.60	1.96	1.36		у
		es. Other wise, pre-	s (15.25 cm) of water seep soak (fill) overnight. Obta ite intervals) with a precis	in at least twelve m ion of at least 0.06	easurements per cm ( 0.25'').	r hole over at le		
		es. Other wise, pre-	soak (fill) overnight. Obta ite intervals) with a precis Δt	in at least twelve m ion of at least 0.06 Do Initial Depth to	easurements per cm ( 0.25''). Dt Final Depth to		ast six hours	
measurement	s taken every 10 minute	es. Other wise, pre- 30 minu	soak (fill) overnight. Obta ute intervals) with a precis	in at least twelve m ion of at least 0.06 Do	easurements per cm ( 0.25''). Dt	r hole over at le ∆D Change in	ast six hours	(approximatel
measurement	s taken every 10 minute Start Time 1.58	s. Other wise, pre- 30 minu Stop Times 1:55	soak (fill) overnight. Obta nte intervals) with a precis ∆t Time Interval (min.) 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55	r hole over at le <u> </u> <u> </u> <u></u>	Percolatio	(approximatel n Rate (In/hr) 57
neasurement Trail No.	s taken every 10 minute Start Time 1.58 2.08	s. Other wise, pre- 30 minu Stop Times 1:55 4:19	soak (fill) overnight. Obta nte intervals) with a precis ∆t Time Interval (min.) 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5	r hole over at le △D Change in Water Level (m) 0.95 0.90	Percolatio	(approximatel n Rate (In/hr) 57 54
measurement Trail No.	s taken every 10 minute Start Time 1.58 2.08 2.18	s. Other wise, pre- 30 minu Stop Times 1:55 4:19 6:43	soak (fill) overnight. Obta nte intervals) with a precis ∆t Time Interval (min.) 10 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5 1.48	r hole over at le △D Change in Water Level (m) 0.95 0.90 0.88	Percolatio	(approximatel n Rate (In/hr) 57 54 52
neasurement Trail No. 1 2 3 4	s taken every 10 minute Start Time 1.58 2.08 2.18 2.28	s. Other wise, pre- 30 minu Stop Times 1:55 4:19 6:43 9:07	soak (fill) overnight. Obta nte intervals) with a precis ∆t Time Interval (min.) 10 10 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5 1.48 1.45	r hole over at le △D Change in Water Level (m) 0.95 0.90 0.88 0.85	Percolatio 22.5 21.3 20.8 20.1	(approximate n Rate (In/hr) 57 54 54 52 51 51
Trail No.	s taken every 10 minute Start Time 1.58 2.08 2.18 2.28 2.38	s. Other wise, pre- 30 minu Stop Times 1:55 4:19 6:43 9:07 11:31	soak (fill) overnight. Obta nte intervals) with a precis Δt Time Interval (min.) 10 10 10 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60 0.60 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5 1.48 1.45 1.4	Change in Water Level (m) 0.95 0.90 0.88 0.85 0.80	Percolatio 22.5 21.3 20.8 20.1 18.9	(approximate n Rate (In/hr) 52 54 52 53 48
Trail No. 1 2 3 4 5 6	Start Time Start Time 1.58 2.08 2.18 2.28 2.38 2.48	s. Other wise, pre- 30 minu Stop Times 1:55 4:19 6:43 9:07 11:31	soak (fill) overnight. Obta nte intervals) with a precis ∆t Time Interval (min.) 10 10 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60 0.60 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5 1.48 1.45	r hole over at le △D Change in Water Level (m) 0.95 0.90 0.88 0.85	Percolatio 22.5 21.3 20.8 20.1	(approximate n Rate (In/hr) 52 54 52 53 48
Trail No. 1 2 3 4 5 6 7	Start Time 1.58 2.08 2.18 2.28 2.38 2.48	s. Other wise, pre- 30 minu Stop Times 1:55 4:19 6:43 9:07 11:31	soak (fill) overnight. Obta nte intervals) with a precis Δt Time Interval (min.) 10 10 10 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60 0.60 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5 1.48 1.45 1.4	Change in Water Level (m) 0.95 0.90 0.88 0.85 0.80	Percolatio 22.5 21.3 20.8 20.1 18.9	(approximatel n Rate (In/hr) 57 54 52 51 48
measurement Trail No. 1 2 3 4 5 6 7 8	Start Time 1.58 2.08 2.18 2.28 2.38 2.48	s. Other wise, pre- 30 minu Stop Times 1:55 4:19 6:43 9:07 11:31	soak (fill) overnight. Obta nte intervals) with a precis Δt Time Interval (min.) 10 10 10 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60 0.60 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5 1.48 1.45 1.4	Change in Water Level (m) 0.95 0.90 0.88 0.85 0.80	Percolatio 22.5 21.3 20.8 20.1 18.9	(approximatel
Trail No. 1 2 3 4 5 6 7	s taken every 10 minute Start Time 1.58 2.08 2.18 2.28 2.38 2.48	s. Other wise, pre- 30 minu Stop Times 1:55 4:19 6:43 9:07 11:31	soak (fill) overnight. Obta nte intervals) with a precis Δt Time Interval (min.) 10 10 10 10 10	in at least twelve m ion of at least 0.06 Do Initial Depth to Water (m) 0.60 0.60 0.60 0.60 0.60	easurements per cm ( 0.25"). Dt Final Depth to Water(m) 1.55 1.5 1.48 1.45 1.4	Change in Water Level (m) 0.95 0.90 0.88 0.85 0.80	Percolatio 22.5 21.3 20.8 20.1 18.9	(approximatel n Rate (In/hr) 57 54 52 51 48

The bottom of a proposed infiltration basin would be at 5.0 feet below natural grade. Percolation tests are performed within the boundaries of the proposed development location with the depth of the test hole set at the infiltration surface level (bottom of the basin). The Percolation Test Data Sheet is prepared as the test is being performed. After the minimum required number of testing intervals, the test is complete.

Time Interval, Δt = Final Depth to Water, Df = Test Hole Radius, r = 10 minutes 55.1 inches 3 inches Initial Depth to Water, D0 = Total Depth of Test Hole, Dt = 23.60 inches 80.00 inches

The conversion equation is used:

#### It = $\Delta H$ 60 r/ $\Delta t$ (r+2Havg)

- "H0" is the initial height of water at the selected time interval. Ho = Dt - D0 56.4 inches
- "Hf" is the final height of water at the selected time interval. Hf = Dt - Df 24.9 inches

 $^{"}\Delta H$ " is the change in height over the time interval.  $\Delta H = \Delta D = H0 - Hf$  31.5 inches

"Havg" is the average head height over the time interval. Havg = (H0 + Hf)/2 40.65 inches

"It" is the tested infiltration rate.It =  $\Delta H$  60 r/ $\Delta t$  (r+2Havg)6.

6.73 inches/hr 171 mm/hr

Project:	18309 & 18314 Huror	ntario St. Caledon	Project No: SP19-462-30			Date	e: 07	'-Jun-1
Test Hole No: T	H6		Tested By: Sudhakar Kurl	i/Tecle		-		
Depth of Test H	lole, DT:	1.87 m	USCS Soil Classification:	Sandy Silt				
	Test Hole	Dimensions (cm)			Length	Width		
	eter (if round)	10cm	Sides (if rectangular)=					
Sandy Soil Crite	eria Test*							
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m.)	Final Depth to Water (cm)	Change in Water Level (cm)	Greater than o to 6''? (y/	•
1	2:21	2:46	25	0.56	1.87	1.31	Y	
2	2:46	3:11	25	0.75	1.87	1.12	у	
wth measu		) minutes. Other w	s (15.25 cm) of water seeps ise, pre-soak (fill) overnigh ely 30 minute intervals) wi	t. Obtain at least tv	velve measureme			
	irements taken every 10	) minutes. Other w (approximat	ise, pre-soak (fill) overnigh	t. Obtain at least tv	velve measureme	ents per hole ov Δ <b>σ</b>		urs
wth measu Trail No.		) minutes. Other w	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi	t. Obtain at least tv th a precision of at	velve measureme least 0.25''.	ents per hole ov	rer at least six ho	urs Rate
	irements taken every 10	) minutes. Other w (approximat	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t	t. Obtain at least tv th a precision of at Do Initial Depth to Water (cm.)	velve measureme least 0.25". Dt Final Depth to	ents per hole ov ΔD Change in Water Level	Percolation (min./In.	urs Rate )
Trail No.	Start Time	) minutes. Other w (approximat Stop Times	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.)	t. Obtain at least tv th a precision of at Do Initial Depth to Water (cm.) 0.75	velve measureme least 0.25". Dt Final Depth to Water(cm.) 1.55	Change in Water Level (cm.)	Percolation (min./In. 18.9	urs Rate
Trail No.	Start Time 3:11 3:21 3:31	) minutes. Other w (approximat Stop Times 3:21 3:31 3:41	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.) 10 10	t. Obtain at least tw th a precision of at Do Initial Depth to Water (cm.) 0.75 0.75 0.75	velve measureme least 0.25". Dt Final Depth to Water(cm.) 1.55 1.45 1.41	Δ     Δ     Δ     Δ     Δ     Δ     Change in     Water Level     (cm.)     0.80     0.70     0.66	Percolation (min./In. 18.9 16.5 15.6	urs Rate )
Trail No. 1 2 3 4	Start Time 3:11 3:21 3:31 3:41	) minutes. Other w (approximat Stop Times 3:21 3:31 3:41 3:51	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.) 10 10 10 10	t. Obtain at least tw th a precision of at Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75	velve measureme least 0.25". Dt Final Depth to Water(cm.) 1.55 1.45 1.41 1.36	Change in Water Level (cm.) 0.80 0.70 0.66 0.61	Percolation (min./In. 18.9 16.5 15.6 14.4	urs Rate ) 39 36
Trail No. 1 2 3 4 5	Start Time 3:11 3:21 3:31 3:41 3:51	) minutes. Other w (approximat Stop Times 3:21 3:31 3:41 3:51 4:01	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.) 10 10 10 10	t. Obtain at least tw th a precision of at Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75 0.75	velve measureme least 0.25". Dt Final Depth to Water(cm.) 1.55 1.45 1.41 1.36 1.35	Change in Water Level (cm.) 0.80 0.70 0.66 0.61 0.60	Percolation (min./In. 18.9 16.5 15.6 14.4 14.2	urs Rate ) 39 36
Trail No. 1 2 3 4	Start Time 3:11 3:21 3:31 3:41 3:51 4:01	) minutes. Other w (approximat Stop Times 3:21 3:31 3:41 3:51	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.) 10 10 10 10	t. Obtain at least tw th a precision of at Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75	velve measureme least 0.25". Dt Final Depth to Water(cm.) 1.55 1.45 1.41 1.36	Change in Water Level (cm.) 0.80 0.70 0.66 0.61	Percolation (min./In. 18.9 16.5 15.6 14.4 14.2	urs Rate )
Trail No. 1 2 3 4 5 6 7	Start Time 3:11 3:21 3:31 3:41 3:51 4:01	) minutes. Other w (approximat Stop Times 3:21 3:31 3:41 3:51 4:01	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.) 10 10 10 10	t. Obtain at least tw th a precision of at Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75 0.75	velve measureme least 0.25". Dt Final Depth to Water(cm.) 1.55 1.45 1.41 1.36 1.35	Change in Water Level (cm.) 0.80 0.70 0.66 0.61 0.60	Percolation (min./In. 18.9 16.5 15.6 14.4 14.2	urs Rate ) 39 36
Trail No. 1 3 4 5 6 7 8 9	Start Time 3:11 3:21 3:31 3:41 3:51 4:01	) minutes. Other w (approximat Stop Times 3:21 3:31 3:41 3:51 4:01 4:11	ise, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.) 10 10 10 10	t. Obtain at least tv th a precision of at Do Initial Depth to Water (cm.) 0.75 0.75 0.75 0.75 0.75 0.75	velve measureme least 0.25". Dt Final Depth to Water(cm.) 1.55 1.45 1.41 1.36 1.35	Change in Water Level (cm.) 0.80 0.70 0.66 0.61 0.60	Percolation (min./In. 18.9 16.5 15.6 14.4 14.2	urs Rate )

The bottom of a proposed infiltration basin would be at 5.0 feet below natural grade. Percolation tests are performed within the boundaries of the proposed development location with the depth of the test hole set at the infiltration surface level (bottom of the basin). The Percolation Test Data Sheet is prepared as the test is being performed. After the minimum required number of testing intervals, the test is complete.

Time Interval, $\Delta t =$ Final Depth to Water, Df =	10 minutes 53.15 inches	Initial Depth to Water, D0 = Total Depth of Test Hole, Dt =	29.50 inches 73.60 inches
Test Hole Radius, r =	3 inches		
The conversion equation is used:			
lt = ΔΗ 60 r/Δt (r+2Hav	g)		
"H0" is the initial height of water at the selected tin	me interval.		
Ho = Dt - D0	44.1 inches		
"Hf" is the final height of water at the selected tim	e interval.		
Hf = Dt - Df	20.45 inches		
" $\Delta$ H" is the change in height over the time interval			
$\Delta H = \Delta D = H0 - Hf$	23.65 inches		
"Havg" is the average head height over the time in	terval.		
Havg = (H0 + Hf)/2	32.28 inches		
"It" is the tested infiltration rate.			
It = ΔH 60 r/Δt (r+2Havg)	6.30 inches/hr		

160 mm/hr

			Percolation Test Da					
Project:	18309 & 18314 Huror	ntario St. Caledon	Project No: SP19-462-30			Date	:	12-Jun-1
Test Hole No: T	Ή7		Tested By: Sudhakar Kurl	i/Tecle				
Depth of Test H	lole, Dτ:	2.30 m	USCS Soil Classification:	Sand and Silt				
		Dimensions (cm)			Length	Width		
	eter (if round)	10cm	Sides (if rectangular)=					
Sandy Soil Crite	eria Test*							
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (m)	Change in Water Level (m)		in or Equal t 6")? (y/n)
1	10:15	10:40	25	1.35	2.2	0.85		Y
2	10:40	11:05	25	1.32	2.15	0.83		у
measure	ements taken every 10 i		e, pre-soak (fill) overnight tely 30 minute intervals) w	vith a precision of a	t least 0.25".		er at least six	hours
		(approxima				Δ <b>d</b>		hours tion Rate
measure	ements taken every 10 i Start Time		tely 30 minute intervals) w	vith a precision of a	t least 0.25".			
	Start Time	(approxima Stop Times 11:15	tely 30 minute intervals) w Δt Time Interval (min.)	vith a precision of a Do Initial Depth to Water (cm.) 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85	Change in Water Level (cm.) 0.50	Percola (In/hr) 32.8	tion Rate (mm/hr) 833
Trail No.	Start Time 11:05 11:15	(approxima Stop Times 11:15 11:25	tely 30 minute intervals) w Δt Time Interval (min.) 10 10	vith a precision of a Do Initial Depth to Water (cm.) 1.35 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85 1.88	∆D Change in Water Level (cm.) 0.50 0.53	Percola (In/hr) 32.8 34.8	tion Rate (mm/hr) 833 883
Trail No.	Start Time 11:05 11:15 11:25	(approxima Stop Times 11:15 11:25 11:35	tely 30 minute intervals) w Δt Time Interval (min.) 10 10 10	vith a precision of a Do Initial Depth to Water (cm.) 1.35 1.35 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85 1.88 1.82	ΔD Change in Water Level (cm.) 0.50 0.53 0.47	Percola (In/hr) 32.8 34.8 30.9	tion Rate (mm/hr) 833 883 783
Trail No. 1 2	Start Time 11:05 11:15 11:25 11:35	(approxima Stop Times 11:15 11:25 11:35 11:45	tely 30 minute intervals) w Δt Time Interval (min.) 10 10 10 10 10 10 10 1	vith a precision of a Do Initial Depth to Water (cm.) 1.35 1.35 1.35 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85 1.88 1.82 1.79	ΔD Change in Water Level (cm.) 0.50 0.53 0.47 0.44	Percola (In/hr) 32.8 34.8 30.9 28.9	tion Rate (mm/hr) 833 883 783 733
Trail No. 1 2 3 4 5	Start Time 11:05 11:15 11:25 11:25 11:35 11:45	(approxima Stop Times 11:15 11:25 11:35 11:45 11:55	tely 30 minute intervals) w Δt Time Interval (min.) 10 10 10 10 10 10 10 10 10 10 10 10 10	ith a precision of a Do Initial Depth to Water (cm.) 1.35 1.35 1.35 1.35 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85 1.88 1.82 1.79 1.78	ΔD Change in Water Level (cm.) 0.50 0.53 0.47 0.44 0.43	Percola (In/hr) 32.8 34.8 30.9 28.9 28.9 28.2	tion Rate (mm/hr) 833 883 783 733 716
Trail No. 1 2	Start Time 11:05 11:15 11:25 11:35 11:45 11:55	(approxima Stop Times 11:15 11:25 11:35 11:45 11:55	tely 30 minute intervals) w Δt Time Interval (min.) 10 10 10 10 10 10 10 10 10 10 10 10 10	vith a precision of a Do Initial Depth to Water (cm.) 1.35 1.35 1.35 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85 1.88 1.82 1.79	ΔD Change in Water Level (cm.) 0.50 0.53 0.47 0.44	Percola (In/hr) 32.8 34.8 30.9 28.9	tion Rate (mm/hr) 833 883 783 733 716
Trail No. 1 2 3 4 5 6 6 7 8 9 9 10	Start Time 11:05 11:15 11:25 11:35 11:45 11:55	(approxima <b>Stop Times</b> 11:15 11:25 11:35 11:45 11:55 12:10	tely 30 minute intervals) w Δt Time Interval (min.) 10 10 10 10 10 10 10 10 10	vith a precision of a Do Initial Depth to Water (cm.) 1.35 1.35 1.35 1.35 1.35 1.35 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85 1.88 1.82 1.79 1.78	ΔD Change in Water Level (cm.) 0.50 0.53 0.47 0.44 0.43	Percola (In/hr) 32.8 34.8 30.9 28.9 28.9 28.2	tion Rate
Trail No. 1 2 3 4 5 6 7 8 9 9	Start Time 11:05 11:15 11:25 11:35 11:45 11:55	(approxima <b>Stop Times</b> 11:15 11:25 11:35 11:45 11:55 12:10	tely 30 minute intervals) w Δt Time Interval (min.) 10 10 10 10 10 10 10 10 10 10 10 10 10	vith a precision of a Do Initial Depth to Water (cm.) 1.35 1.35 1.35 1.35 1.35 1.35 1.35	t least 0.25". Dt Final Depth to Water(cm.) 1.85 1.88 1.82 1.79 1.78	ΔD Change in Water Level (cm.) 0.50 0.53 0.47 0.44 0.43	Percola (In/hr) 32.8 34.8 30.9 28.9 28.9 28.2	tion Rate (mm/hr) 833 883 783 733 733 716

10 minutes

3 inches

70.8 inches

Initial Depth to Water, D0 =

Total Depth of Test Hole, Dt =

53.15 inches

90.00 inches

The bottom of a proposed infiltration basin would be at 5.0 feet below natural grade. Percolation tests are performed within the boundaries of the proposed development location with the depth of the test hole set at the infiltration surface level (bottom of the basin). The Percolation Test Data Sheet is prepared as the test is being performed. After the minimum required number of testing intervals, the test is complete.

Time Interval,  $\Delta t =$ Final Depth to Water, Df = Test Hole Radius, r =

The conversion equation is used:

### It = $\Delta H$ 60 r/ $\Delta t$ (r+2Havg)

"H0" is the initial height of water at the selected time interva	al.	
Ho = Dt - D0	36.9	inches
"Hf" is the final height of water at the selected time interval		
Hf = Dt - Df	19.2	inches
" $\Delta$ H" is the change in height over the time interval.		
$\Delta H = \Delta D = H0 - Hf$	17.7	inches
"Havg" is the average head height over the time interval.		
Havg = (H0 + Hf)/2	28	inches
"It" is the tested infiltration rate.		
It = $\Delta H$ 60 r/ $\Delta t$ (r+2Havg)	5.38	inches/hr
	137	mm/hr

-	18309 & 18314 Huron	ntario St. Caledon				Date	:	07-Jun-
est Hole No: TH	8		Tested By: Sudhakar Kurl	i/Tecle				
epth of Test Ho	le, Dτ:	1.86 m	USCS Soil Classification:	Sand and Gravel				
		Dimensions (cm)			Length	Width		
	er (if round)	10cm	Sides (if rectangular)=					
andy Soil Criter	ia Test*						a	
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (m)	Change in Water Level (m)	Greater that to 15 cm (	
1	1:10	1:20	10	0.50	1.86	1.36	,	Y
		minutes. Other wi	10 5 (15.25 cm) of water seeps ise, pre-soak (fill) overnigh ) minute intervals) with a p	t. Obtain at least tv	velve measureme		for an addit	
* If two consecu	utive measurements sl	how that six inches minutes. Other wi	s (15.25 cm) of water seeps ise, pre-soak (fill) overnigh	away in less than a t. Obtain at least tv	25 minutes, the t velve measureme	est shall be run	for an addit	, ional ho
* If two consecu	utive measurements sl	how that six inches minutes. Other wi	; (15.25 cm) of water seep: ise, pre-soak (fill) overnigh ) minute intervals) with a p	away in less than to be the second seco	25 minutes, the t velve measureme 0.06 cm (0.25'').	est shall be run ents per hole ov	for an addit	ional ho x hours
* If two consect wth measure	utive measurements sl ements taken every 10	how that six inches ) minutes. Other wi (approximately 30	(15.25 cm) of water seep ise, pre-soak (fill) overnigh ) minute intervals) with a p Δt	s away in less than t. Obtain at least tw recision of at least Do Initial Depth to	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to	test shall be run ents per hole ov ∆D Change in Water Level	for an addit ver at least si Percolat (In/hr)	ional ho x hours ion Rat
* If two consect wth measure Trail No.	utive measurements sl rments taken every 10 Start Time	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55	(15.25 cm) of water seep ise, pre-soak (fill) overnigh ) minute intervals) with a p ∆t Time Interval (min.)	away in less than t. Obtain at least tv precision of at least Do Initial Depth to Water (cm.) 0.50 0.50	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84	cest shall be run ents per hole ov Δ Change in Water Level (cm.)	for an addit ver at least si Percolat (In/hr) 31.9 31.7	ional ho x hours ion Rat
* If two consect wth measure Trail No.	utive measurements sl ments taken every 10 Start Time 1:35 1:45 1:55	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55 2:05	; (15.25 cm) of water seeps ise, pre-soak (fill) overnigh 0 minute intervals) with a p Δt Time Interval (min.) 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.50 0.50 0.50	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84 1.8	Lest shall be run ents per hole ov Δp Change in Water Level (cm.) 1.35 1.34 1.30	for an addit ver at least si Percolat (In/hr) 31.9 31.7 30.7	ional ho x hours ion Rat
* If two consect wth measure Trail No. 1 2 3 4	utive measurements sl ments taken every 10 Start Time 1:35 1:45 1:55 2:05	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55 2:05 2:15	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh 0 minute intervals) with a p Δt Time Interval (min.) 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.50 0.50 0.50 0.50	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84 1.8 1.77	Change in Water Level (cm.) 1.35 1.34 1.30 1.27	for an addit ver at least si Percolat (In/hr) 31.9 31.7 30.7 30.0	ional ho x hours ion Rat
* If two consect wth measure Trail No. 1 2 3 4 5	utive measurements sl iments taken every 10 Start Time 1:35 1:45 1:55 2:05 2:15	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55 2:05 2:15 2:25	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh 0 minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.50 0.50 0.50 0.50 0.50	25 minutes, the t velve measurem 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84 1.8 1.77 1.77	Change in Water Level (cm.) 1.35 1.34 1.30 1.27 1.27	for an addit ver at least si Percolat (In/hr) 31.9 31.7 30.7 30.0 30.0	ional ho x hours ion Rat
* If two consect wth measure Trail No. 1 2 3 4 5 6	utive measurements sl ments taken every 10 Start Time 1:35 1:45 1:55 2:05	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55 2:05 2:15 2:15 2:25	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh 0 minute intervals) with a p Δt Time Interval (min.) 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.50 0.50 0.50 0.50	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84 1.8 1.77	Change in Water Level (cm.) 1.35 1.34 1.30 1.27	for an addit ver at least si Percolat (In/hr) 31.9 31.7 30.7 30.0	ional ho x hours ion Rat
* If two consect wth measure Trail No. 1 2 3 4 5 6 7	utive measurements sl iments taken every 10 Start Time 1:35 1:45 1:55 2:05 2:15	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55 2:05 2:15 2:25	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh 0 minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.50 0.50 0.50 0.50 0.50	25 minutes, the t velve measurem 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84 1.8 1.77 1.77	Change in Water Level (cm.) 1.35 1.34 1.30 1.27 1.27	for an addit ver at least si Percolat (In/hr) 31.9 31.7 30.7 30.0 30.0	ional ho x hours ion Rat
* If two consect wth measure Trail No. 1 2 3 4 5 6 7 8	utive measurements sl iments taken every 10 Start Time 1:35 1:45 1:55 2:05 2:15	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55 2:05 2:15 2:25	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh 0 minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.50 0.50 0.50 0.50 0.50	25 minutes, the t velve measurem 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84 1.8 1.77 1.77	Change in Water Level (cm.) 1.35 1.34 1.30 1.27 1.27	for an addit ver at least si Percolat (In/hr) 31.9 31.7 30.7 30.0 30.0	ional ho x hours ion Rat
* If two consect wth measure Trail No. 1 2 3 4 5 6 7	utive measurements sl iments taken every 10 Start Time 1:35 1:45 1:55 2:05 2:15	how that six inchess minutes. Other wi (approximately 30 Stop Times 1:45 1:55 2:05 2:15 2:25	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh 0 minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.50 0.50 0.50 0.50 0.50	25 minutes, the t velve measurem 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.85 1.84 1.8 1.77 1.77	Change in Water Level (cm.) 1.35 1.34 1.30 1.27 1.27	for an addit ver at least si Percolat (In/hr) 31.9 31.7 30.7 30.0 30.0	ional ho x hours ion Rat

Time Interval, $\Delta t =$	10 minutes	Initial Depth to Water, Do =	20.00 inches
Final Depth to Water, Df =	69.7 inches	Total Depth of Test Hole, Dt =	73.20 inches
Test Hole Radius, r =	3 inches		
The conversion equation used is:			
	lt = ΔH 60 r/Δt (r+2Ha	vg)	
"H0" is the initial height of water at the selected	time interval.		
Ho = Dt - Do	53.2 inches		
"Hf" is the final height of water at the selected tir Hf = Dt - Df	ne interval. 3.5 inches		
	5.5 mones		
" $\Delta$ H" is the change in height over the time interva	al.		
$\Delta H = \Delta D = Ho - Hf$	49.7 inches		
"Havg" is the average head height over the time i	nterval.		
Havg = (Ho + Hf)/2	28.35 inches		
"It" is the tested infiltration rate.			
lt = ΔH 60 r/Δt (r+2Havg)	14.98 inches/hr		
	381 mm/hr		

Project:	18309 & 18314 Huron	tario St. Caledon	Project No: SP19-462-30			Date	:	07-Jun-:
Fest Hole No: TH	19		Tested By: Sudhakar Kurl	i/Tecle				
Depth of Test Ho	ole, DT:	2.23 m	USCS Soil Classification:	Silty tro Sandy				
	Test Hole I	Dimensions (cm)			Length	Width		
	ter (if round)	10cm	Sides (if rectangular)=					
Sandy Soil Criter	ria Test*							
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (m)	Change in Water Level (m)		1an or Equ (6'')? (y/n
1	2:35	3:00	25	0.75	1.55	0.80		Y
-	2.00	3:30	25	0.75	1.52	0.77		V
		how that six inches minutes. Other wi	; (15.25 cm) of water seeps ise, pre-soak (fill) overnigh ely 30 minute intervals) wi	s away in less than t. Obtain at least tw th a precision of at	25 minutes, the t welve measureme least 0.25''.	est shall be run ents per hole ov		, itional hou
* If two consec	utive measurements sl	how that six inches minutes. Other wi	(15.25 cm) of water seeps se, pre-soak (fill) overnigh	s away in less than t. Obtain at least tw	25 minutes, the t welve measureme	est shall be run ents per hole ov ∆D Change in Water Level	er at least s Percola	, itional hou
* If two consec wth measure Trail No.	utive measurements sl ements taken every 10 Start Time	now that six inches minutes. Other wi (approximate Stop Times	(15.25 cm) of water seeps se, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.)	s away in less than t. Obtain at least tu th a precision of at Do Initial Depth to Water (m.)	25 minutes, the t welve measureme least 0.25''. Dt Final Depth to Water(m.)	est shall be run ents per hole ov Δ Change in Water Level (m.)	ver at least s Percola (In/hr)	tional hou six hours tion Rate (mm/hr)
* If two consec wth measure	utive measurements sl ements taken every 10 Start Time 3:30	now that six inches minutes. Other wi (approximate Stop Times 3:40	(15.25 cm) of water seeps se, pre-soak (fill) overnigh ely 30 minute intervals) wi Δt Time Interval (min.) 10	s away in less than t. Obtain at least tu th a precision of at Do Initial Depth to Water (m.) 0.75	25 minutes, the t welve measureme least 0.25''. Dt Final Depth to Water(m.) 1.29	est shall be run ents per hole ov Δ Change in Water Level (m.) 0.54	Percola (In/hr) 12.8	itional hou six hours tion Rate (mm/hr) 324.0
* If two consec wth measure Trail No.	utive measurements sl ements taken every 10 Start Time	now that six inches minutes. Other wi (approximate Stop Times	(15.25 cm) of water seeps se, pre-soak (fill) overnigh ely 30 minute intervals) wi ∆t Time Interval (min.)	s away in less than t. Obtain at least tu th a precision of at Do Initial Depth to Water (m.)	25 minutes, the t welve measureme least 0.25". Dt Final Depth to Water(m.) 1.29 1.25	est shall be run ents per hole ov Δ Change in Water Level (m.)	Percola (In/hr) 12.8 11.8	tional hours six hours tion Rate (mm/hr) 324.0 300.0
* If two consec wth measure Trail No. 1 2	utive measurements sl ements taken every 10 Start Time 3:30 3:40	now that six inchess minutes. Other wi (approximate Stop Times 3:40 3:50	(15.25 cm) of water seeps se, pre-soak (fill) overnigh ely 30 minute intervals) wi Δt Time Interval (min.) 10 10	s away in less than t. Obtain at least tu th a precision of at Do Initial Depth to Water (m.) 0.75 0.75	25 minutes, the t welve measureme least 0.25". Dt Final Depth to Water(m.) 1.29 1.25 1.22	est shall be run ents per hole ov Δp Change in Water Level (m.) 0.54 0.50	Percola (in/hr) 12.8 11.8 11.1	tional housix hours tion Rate (mm/hr) 324.0 300.0 282.0
* If two consec wth measure Trail No.	utive measurements sl ements taken every 10 Start Time 3:30 3:40 3:50	now that six inchess minutes. Other wi (approximate Stop Times 3:40 3:50 4:00	(15.25 cm) of water seeps se, pre-soak (fill) overnigh ely 30 minute intervals) wi Δt Time Interval (min.) 10 10	s away in less than t. Obtain at least tw th a precision of at Do Initial Depth to Water (m.) 0.75 0.75 0.75	25 minutes, the t welve measureme least 0.25". Dt Final Depth to Water(m.) 1.29 1.25 1.22 1.2	est shall be run ents per hole ov Δp Change in Water Level (m.) 0.54 0.50 0.47	Percola (In/hr) 12.8 11.8 11.1 10.6	itional hou six hours tion Rate (mm/hr)
* If two consec wth measure Trail No. 1 2 3 4	utive measurements sl ements taken every 10 Start Time 3:30 3:40 3:50 4:00	now that six inchess minutes. Other wi (approximate Stop Times 3:40 3:50 4:00 4:10	(15.25 cm) of water seeps se, pre-soak (fill) overnigh ely 30 minute intervals) wi Δt Time Interval (min.) 10 10 10	s away in less than t. Obtain at least tw th a precision of at Do Initial Depth to Water (m.) 0.75 0.75 0.75 0.75	25 minutes, the t welve measureme least 0.25". Dt Final Depth to Water(m.) 1.29 1.25 1.22 1.2 1.2	Lest shall be run ents per hole ov Change in Water Level (m.) 0.54 0.50 0.47 0.45	Percola (In/hr) 12.8 11.8 11.1 10.6	tional housisk hours tion Rate (mm/hr) 324.0 300.0 282.0 270.0

Time Interval, $\Delta t$ = Final Depth to Water, Df = Test Hole Radius, r =	10 minutes 47.2 inches 3 inches	Initial Depth to Water, D0 = Total Depth of Test Hole, Dt =	29.50 inches 88.00 inches
The conversion equation is used:			
It = ΔH 60 r/Δt (r+2Havg)			
"H0" is the initial height of water at the selected time interva Ho = Dt - D0	I. 58.5 inches		
"Hf" is the final height of water at the selected time interval. Hf = Dt - Df	40.8 inches		
" $\Delta$ H" is the change in height over the time interval. $\Delta$ H = $\Delta$ D = H0 - Hf	17.7 inches		
"Havg" is the average head height over the time interval. Havg = (H0 + Hf)/2	49.65 inches		
"It" is the tested infiltration rate. It = $\Delta H$ 60 r/ $\Delta t$ (r+2Havg)	3.11 inches/hr 79 mm/hr		

roject:	18309 & 18314 Huror	ntario St. Caledon	Project No: SP19-462-30				Date:	07-Jun
est Hole No: T	H10		Tested By: Sudhakar Kurl	i/Tecle				
Depth o	f Test Hole, DT:	2.20 m	USCS Soil Classification:	Sand and Gravel				
		Dimensions (cm)			Length	Width		
	eter (if round)	100 mm	Sides (if rectangular)=					
andy Soil Crite	eria Test*	-					-	
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m.)	Final Depth to Water (cm)	Change in Water Level (cm)	Greater th to 15 cm	
1	2:57	3:27	25	1.00	2.1	1.10		Y
2	3:27	3:53	25	1.00	2.1	1.10		y
	cutive measurements s	how that six inches ) minutes. Other w	; (15.25 cm) of water seep: ise, pre-soak (fill) overnigh minute intervals) with a p	s away in less than t. Obtain at least tw	25 minutes, the t velve measureme	est shall be run ents per hole ov	for an addi	tional ho
	cutive measurements s	how that six inches ) minutes. Other w	s (15.25 cm) of water seep ise, pre-soak (fill) overnigh	s away in less than t. Obtain at least tw	25 minutes, the t velve measureme	est shall be run ents per hole ov	for an addii er at least s	ional ho
	cutive measurements s	how that six inches ) minutes. Other w	; (15.25 cm) of water seep: ise, pre-soak (fill) overnigh minute intervals) with a p	s away in less than t. Obtain at least tv precision of at least	25 minutes, the t velve measureme 0.06 cm ( 0.25'').	est shall be run ents per hole ov	for an addi	tional hours
wth measu	cutive measurements s rements taken every 10	how that six inchess 0 minutes. Other w (approximately 30 Stop Times	(15.25 cm) of water seep ise, pre-soak (fill) overnigh minute intervals) with a p Δt	s away in less than t. Obtain at least tw recision of at least Do Initial Depth to	25 minutes, the t velve measureme 0.06 cm ( 0.25''). Dt Final Depth to Water(m)	test shall be run ents per hole ov ∆D Change in Water Level	for an addi er at least s Percola (In/hr) 22.5	tional h ix hours
wth measu Trail No. 1 2	cutive measurements s rements taken every 10 Start Time 3:53 4:03	how that six inchess 0 minutes. Other w (approximately 30 Stop Times 4:03 4:13	; (15.25 cm) of water seep; ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10	s away in less than t. Obtain at least tu recision of at least Do Initial Depth to Water (m) 0.70 0.70	25 minutes, the t velve measureme 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62	est shall be run ents per hole ov Δp Change in Water Level (m) 0.95 0.92	for an addii er at least s Percola (In/hr) 22.5 21.7	tional h ix hours
wth measu Trail No. 1 2 3	start Time 3:53 4:03 4:13	how that six inchess 0 minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23	i (15.25 cm) of water seep ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60	est shall be run ents per hole ov Δp Change in Water Level (m) 0.95 0.92 0.90	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3	tional h ix hours
wth measu Trail No. 1 2 3 4	start Time 3:53 4:03 4:13 4:23	how that six inchess o minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23 4:33	i (15.25 cm) of water seep: ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60 1.55	est shall be run ents per hole ov Δ <b>D</b> Change in Water Level (m) 0.95 0.92 0.90 0.85	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3 20.1	tional h ix hours
wth measu Trail No. 1 2 3 4 5	start Time 3:53 4:03 4:13 4:33	how that six inchess o minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23 4:33 4:33 4:43	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60 1.55 1.51	est shall be run ents per hole ov Δp Change in Water Level (m) 0.95 0.92 0.90 0.85 0.81	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3 20.1 19.1	tional h ix hours
wth measu Trail No. 1 2 3 4 5 6	start Time 3:53 4:03 4:13 4:23	how that six inchess o minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23 4:33 4:43	i (15.25 cm) of water seep: ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60 1.55	est shall be run ents per hole ov Δ <b>D</b> Change in Water Level (m) 0.95 0.92 0.90 0.85	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3 20.1	tional hours
wth measu Trail No. 1 2 3 4 5 6 7	start Time 3:53 4:03 4:13 4:33	how that six inchess o minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23 4:33 4:33 4:43	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60 1.55 1.51	est shall be run ents per hole ov Δp Change in Water Level (m) 0.95 0.92 0.90 0.85 0.81	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3 20.1 19.1	tional hours
wth measu Trail No. 1 2 3 4 5 6	start Time 3:53 4:03 4:13 4:33	how that six inchess o minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23 4:33 4:33 4:43	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60 1.55 1.51	est shall be run ents per hole ov Δp Change in Water Level (m) 0.95 0.92 0.90 0.85 0.81	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3 20.1 19.1	tional h ix hours
wth measu Trail No. 1 2 3 4 5 6 7 8	start Time 3:53 4:03 4:13 4:33	how that six inchess o minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23 4:33 4:33 4:43	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60 1.55 1.51	est shall be run ents per hole ov Δp Change in Water Level (m) 0.95 0.92 0.90 0.85 0.81	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3 20.1 19.1	tional h ix hours
wth measu Trail No. 1 2 3 4 5 6 7 8 9	start Time 3:53 4:03 4:13 4:33	how that six inchess o minutes. Other w (approximately 30 Stop Times 4:03 4:13 4:23 4:33 4:33 4:43	i (15.25 cm) of water seeps ise, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	s away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (m) 0.70 0.70 0.70 0.70 0.70 0.70	25 minutes, the t velve measurem 0.06 cm ( 0.25''). Dt Final Depth to Water(m) 1.65 1.62 1.60 1.55 1.51	est shall be run ents per hole ov Δp Change in Water Level (m) 0.95 0.92 0.90 0.85 0.81	for an addii er at least s Percola (In/hr) 22.5 21.7 21.3 20.1 19.1	tional h ix hours

The bottom of a proposed infiltration basin would be at 5.0 feet below natural grade. Percolation tests are performed within the boundaries of the proposed development location with the depth of the test hole set at the infiltration surface level (bottom of the basin). The Percolation Test Data Sheet is prepared as the test is being performed. After the minimum required number of testing intervals, the test is complete.

Time Interval,  $\Delta t =$ Final Depth to Water, Df = Test Hole Radius, r =

59.45 inches 3 inches

163 mm/hr

10 minutesInitial Depth to Water, D0 =.45 inchesTotal Depth of Test Hole, Dt =

27.60 inches 86.60 inches

The conversion equation is used:

#### It = $\Delta H$ 60 r/ $\Delta t$ (r+2Havg)

"H0" is the initial height of water at the selected time interval.						
Ho = Dt - D0	59 inches					
"Hf" is the final height of water at the selected time interval.						
Hf = Dt - Df	27.15 inches					
" $\Delta$ H" is the change in height over the time interval.						
$\Delta H = \Delta D = H0 - Hf$	31.85 inches					
"Havg" is the average head height over the time interval.						
Havg = (H0 + Hf)/2	43.08 inches					
"It" is the tested infiltration rate.						
It = $\Delta H$ 60 r/ $\Delta t$ (r+2Havg)	6.43 inches/hr					

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roject:	18309 & 18314 Huron	tario St. Caledon	Project No: SP19-462-30 Date: 07-Jun-					
est Hole No: TH	111		Tested By: Sudhakar Kurl					
epth of Test Ho	ole, Dт:	1.96 m	USCS Soil Classification:	Silty Sand a	nd Gravel			
	Test Hole I	Dimensions (cm)			Length	Width		
	ter (if round)	100 mm	Sides (if rectangular)=					
andy Soil Criter	ia Test*						a	
Trial No.	Start Time	Stop Time	Time Interval, (min.)	Initial Depth to Water (m)	Final Depth to Water (m)	Change in Water Level (m)	Greater that to 15.25 cm	•
1	1:20	1:50	20	0.50	1.95	1.45		Y
		minutes. Other wi	25 (15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt	t. Obtain at least tw	velve measureme		for an addit	
* If two consec	utive measurements sl	how that six inches minutes. Other wi	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p $\Delta t$	away in less than t. Obtain at least tw precision of at least	25 minutes, the t velve measureme 0.06 cm (0.25'').	Lest shall be run ents per hole ov ΔD Change in	for an addit ver at least si	, ional hou ix hours
* If two consect wth measure	utive measurements sl ements taken every 10	how that six inches minutes. Other wi (approximately 30	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p	s away in less than t. Obtain at least tw precision of at least <b>Do</b>	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt	eest shall be run ents per hole ov Δp	for an addit ver at least si	; ional ho
* If two consect wth measure	utive measurements sl ements taken every 10	how that six inches minutes. Other wi (approximately 30	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p $\Delta t$	away in less than t. Obtain at least tw recision of at least Do Initial Depth to	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to	Lest shall be run ents per hole ov ΔD Change in Water Level	for an addit ver at least si Percolat (In/h)	ional hours ix hours
* If two consect wth measure Trail No.	utive measurements sl ements taken every 10 Start Time 2:20 2:30	now that six inches minutes. Other wi (approximately 30 Stop Times 2:30 2:40	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.83 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90	Lest shall be run ents per hole ov ΔD Change in Water Level (cm.) 1.13 1.10	for an addit ver at least si Percolat (In/h) 26.7 26.0	, ional ho ix hours cion Rate (mm/h
* If two consect wth measure Trail No. 1	utive measurements sl ements taken every 10 Start Time 2:20 2:30 2:40	now that six inches minutes. Other wi (approximately 30 Stop Times 2:30 2:40 2:50	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.83 0.80 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90 1.86	Lest shall be run ents per hole ov ΔD Change in Water Level (cm.) 1.13 1.10 1.06	for an addit ver at least si Percolat (In/h) 26.7 26.0 25.1	; ional ho ix hours cion Rate (mm/h
* If two consect wth measure Trail No. 1 2	utive measurements sl ements taken every 10 Start Time 2:20 2:30 2:40 2:50	now that six inches minutes. Other wi (approximately 30 Stop Times 2:30 2:40 2:50 3:00	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.83 0.80 0.80 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90 1.86 1.80	Change in Water Level (cm.) 1.13 1.10 1.06 1.00	for an addit ver at least si Percolat (In/h) 26.7 26.0 25.1 23.6	; ional ho ix hours tion Rate (mm/h
* If two consect wth measure Trail No.	utive measurements st ements taken every 10 Start Time 2:20 2:30 2:40 2:50 3:00	Stop Times 2:30 2:40 2:50 3:00 3:10	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tw recision of at least Do Initial Depth to Water (cm.) 0.83 0.80 0.80 0.80 0.80 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90 1.86 1.80 1.76	Lest shall be run ents per hole ov Change in Water Level (cm.) 1.13 1.10 1.06 1.00 0.96	for an addit ver at least si Percolat (In/h) 26.7 26.0 25.1 23.6 22.7	; ional ho ix hours cion Rate (mm/h
* If two consect wth measure Trail No. 1 2	utive measurements sl ements taken every 10 Start Time 2:20 2:30 2:40 2:50	now that six inches minutes. Other wi (approximately 30 Stop Times 2:30 2:40 2:50 3:00	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10	away in less than t. Obtain at least tv recision of at least Do Initial Depth to Water (cm.) 0.83 0.80 0.80 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90 1.86 1.80	Change in Water Level (cm.) 1.13 1.10 1.06 1.00	for an addit ver at least si Percolat (In/h) 26.7 26.0 25.1 23.6 22.7	; ional ho ix hours cion Rate (mm/h
* If two consect wth measure Trail No. 1 2 3 4 5 6 7	utive measurements st ements taken every 10 Start Time 2:20 2:30 2:40 2:50 3:00	Stop Times 2:30 2:40 2:50 3:00 3:10	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tw recision of at least Do Initial Depth to Water (cm.) 0.83 0.80 0.80 0.80 0.80 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90 1.86 1.80 1.76	Lest shall be run ents per hole ov Change in Water Level (cm.) 1.13 1.10 1.06 1.00 0.96	for an addit ver at least si Percolat (In/h) 26.7 26.0 25.1 23.6 22.7	; ional ho ix hours cion Rate (mm/h
* If two consect wth measure Trail No. 1 2 3 4 5	utive measurements st ements taken every 10 Start Time 2:20 2:30 2:40 2:50 3:00	Stop Times 2:30 2:40 2:50 3:00 3:10	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tw recision of at least Do Initial Depth to Water (cm.) 0.83 0.80 0.80 0.80 0.80 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90 1.86 1.80 1.76	Lest shall be run ents per hole ov Change in Water Level (cm.) 1.13 1.10 1.06 1.00 0.96	for an addit ver at least si Percolat (In/h) 26.7 26.0 25.1 23.6 22.7	ional ho ix hours ion Rate (mm/h
* If two consect wth measure Trail No. 1 2 3 4 5 6 7 8	utive measurements st ements taken every 10 Start Time 2:20 2:30 2:40 2:50 3:00	Stop Times 2:30 2:40 2:50 3:00 3:10	(15.25 cm) of water seeps se, pre-soak (fill) overnigh minute intervals) with a p Δt Time Interval (min.) 10 10 10 10 10	away in less than t. Obtain at least tw recision of at least Do Initial Depth to Water (cm.) 0.83 0.80 0.80 0.80 0.80 0.80	25 minutes, the t velve measureme 0.06 cm (0.25''). Dt Final Depth to Water(cm.) 1.96 1.90 1.86 1.80 1.76	Lest shall be run ents per hole ov Change in Water Level (cm.) 1.13 1.10 1.06 1.00 0.96	for an addit ver at least si Percolat (In/h) 26.7 26.0 25.1 23.6 22.7	; ional hc ix hours tion Rate (mm/h

Time Interval, $\Delta t =$ Final Depth to Water, Df = Test Hole Radius, r =	10 minutes 68.9 inches 3 inches	Initial Depth to Water, D0 = Total Depth of Test Hole, Dt =	31.50 inches 77.20 inches
The conversion equation used is:			
lt = ΔH 60 r/Δt (r+2Havg)			
"H0" is the initial height of water at the selected time interval. Ho = Dt - Do	45.7 inches		
"Hf" is the final height of water at the selected time interval. Hf = Dt - Df	8.3 inches		
" $\Delta$ H" is the change in height over the time interval. $\Delta$ H = $\Delta$ D = Ho - Hf	37.4 inches		
"Havg" is the average head height over the time interval. Havg = (Ho + Hf)/2	27 inches		
"It" is the tested infiltration rate. It = $\Delta$ H 60 r/ $\Delta$ t (r+2Havg)	11.81 inches/hr 300 mm/hr		