

Pouderoyen Compagnons BV
t.a.v. de heer M. Koopman
Postbus 156
6500 AD NIJMEGEN

Datum:
17 maart 2014

Onze referentie:
P14-0079-015

Vestiging:
Elst

Uw referentie:

Betreft:

Riel - Alphenseweg 1a

Behandeld door:

Onderwerp:

Briefrapport geohydrologisch onderzoek

ing. E. Janssen

milieukundige

Geachte heer Koopman,

Op uw verzoek heeft BOOT organiserend ingenieursburo doorlatendsmetingen uitgevoerd ter plaatse van een toekomstige woningbouwlocatie aan de Alphenseweg 1a te Riel.

Doel van het onderzoek is het bepalen van enkele geohydrologische parameters om zodoende de mogelijkheden voor hemelwaterinfiltratie te kunnen bepalen. Op moment van uitvoering van de veldwerkzaamheden is niet bekend welk soort infiltratievoorziening zal worden toegepast. Ook de locaties waar het infiltreren zal plaatsvinden zijn niet bekend.

Voor het uitvoeren van geohydrologisch onderzoek zijn vooralsnog geen wettelijke richtlijnen vastgesteld. Derhalve wordt ten behoeve van de veldwerkzaamheden aangesloten op het VKB-protocol 2001 "Plaatsen van handboringen en peilbuizen, maken van boorbeschrijvingen, nemen van grondmonsters en waterpassen". De K-waarde is bepaald met behulp van de constant-head permeameter.

In tabel 1 zijn de uitgevoerde werkzaamheden weergegeven. Een overzicht van de onderzoekslocatie en locatie van de infiltratiemetingen zijn weergegeven in bijlage A.

Tabel 1 Uitgevoerde werkzaamheden

DATUM ONDERZOEK	BORINGEN	DOORLATENDHEIDSMETINGEN
7 maart 2014	GH01: 3,20 m-mv	3x (onverzadigde zone)
	GH02: 3,20 m-mv	3x (onverzadigde zone)
	GH03: 3,20 m-mv	3x (onverzadigde zone)
	GH04: 3,20 m-mv	3x (onverzadigde zone)

Plesmanstraat 5
Veenendaal
Postbus 509
3900 AM Veenendaal
T (0318) 527600
F (0318) 510560

Bemmelseweg 57
Elst (Gld)
Postbus 154
6660 AD Elst (Gld)
T (0481) 377165
F (0481) 377242

Blad 1 van 3

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info@buroboot.nl

De locatie is verhard met klinkers en beton. De metingen zijn uitgevoerd ter plaatse van de klinkerverharding. Onder de klinkerverharding en cunetlaag bestaat de bodem tot circa 0,6 m-mv uit matig fijn, matig humeus en zwak siltig zand. Deze laag behoort tot het voormalige maaiveld. In de humeuze laag zijn geen infiltratiemetingen uitgevoerd omdat de aanwezigheid van humus de infiltratiecapaciteit sterk vermindert. In de onderliggende bodemlagen zijn op diverse dieptes, leembrokjes aangetoond. Met uitzondering van boring GH01 zijn geen duidelijk waarneembare leemlagen aangetroffen. Het grondwater is aangetroffen op een diepte van circa 2,80 m-mv.

In tabel 2 is een overzicht gegeven van de bodemlagen waarin een doorlatendheidsproef is uitgevoerd en het resultaat van de doorlatendheidsproef.

Tabel 2 Overzicht bodemlagen, bodemsamenstelling en resultaat doorlatendheid

MEETPUNT	DIEPTE METING CM-MV	BODEMSAMENSTELLING	K-WAARDE (M/DAG) ¹
GH01a	80	Zand, matig fijn, zwak siltig, zwak grindig	2,28 – 5,61
GH01b	130	Zand, matig fijn, zwak siltig	2,99 – 7,38
GH01c	175	Zand, matig grof, zwak siltig	10,13 – 24,98
GH02a	85	Zand, matig fijn, zwak siltig	0,62 – 3,03
GH02b	120	Zand, matig fijn, zwak siltig	2,36 – 5,81
GH02c	175	Zand, matig grof, zwak siltig	5,58 – 13,76
GH03a	80	Zand, matig fijn, zwak siltig, zwak grindig	1,02 – 2,52
GH03b	125	Zand, matig fijn, zwak siltig, zwak grindig	2,45 – 6,05
GH03c	180	Zand, matig grof, zwak siltig. Kleine leembrokjes aanwezig.	3,04 – 7,51
GH04a	85	Zand, matig fijn, zwak siltig, zwak humeus	1,73 – 4,27
GH04b	140	Zand, matig fijn, zwak siltig, zwak grindig. Kleine leembrokjes aanwezig.	7,01 – 17,28
GH04c	185	Zand, matig grof, zwak siltig	5,82 – 14,34

1)

Onderstaande classificatie van doorlatendheid (in m/dag) is afkomstig uit Cultuurtechnisch Vademecum, 2000.

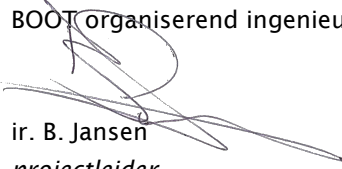
< 0,01	zeer slecht doorlatend
0,01 – 0,10	slecht doorlatend
0,10 – 0,50	matig doorlatend
0,50 – 1,0	vrij goed doorlatend
1,0 – 10	goed doorlatend
> 10	zeer goed doorlatend

De bodem blijkt vrij goed tot zeer goed doorlatend te zijn waarbij de grootste infiltratiecapaciteit wordt bereikt in de diepere bodemlagen.



Heeft u nog vragen of opmerkingen naar aanleiding van de rapportage of de uitkomst van het onderzoek, dan verzoeken wij u contact met ons op te nemen.

Met vriendelijke groet,
BOOT organiserend ingenieursburo

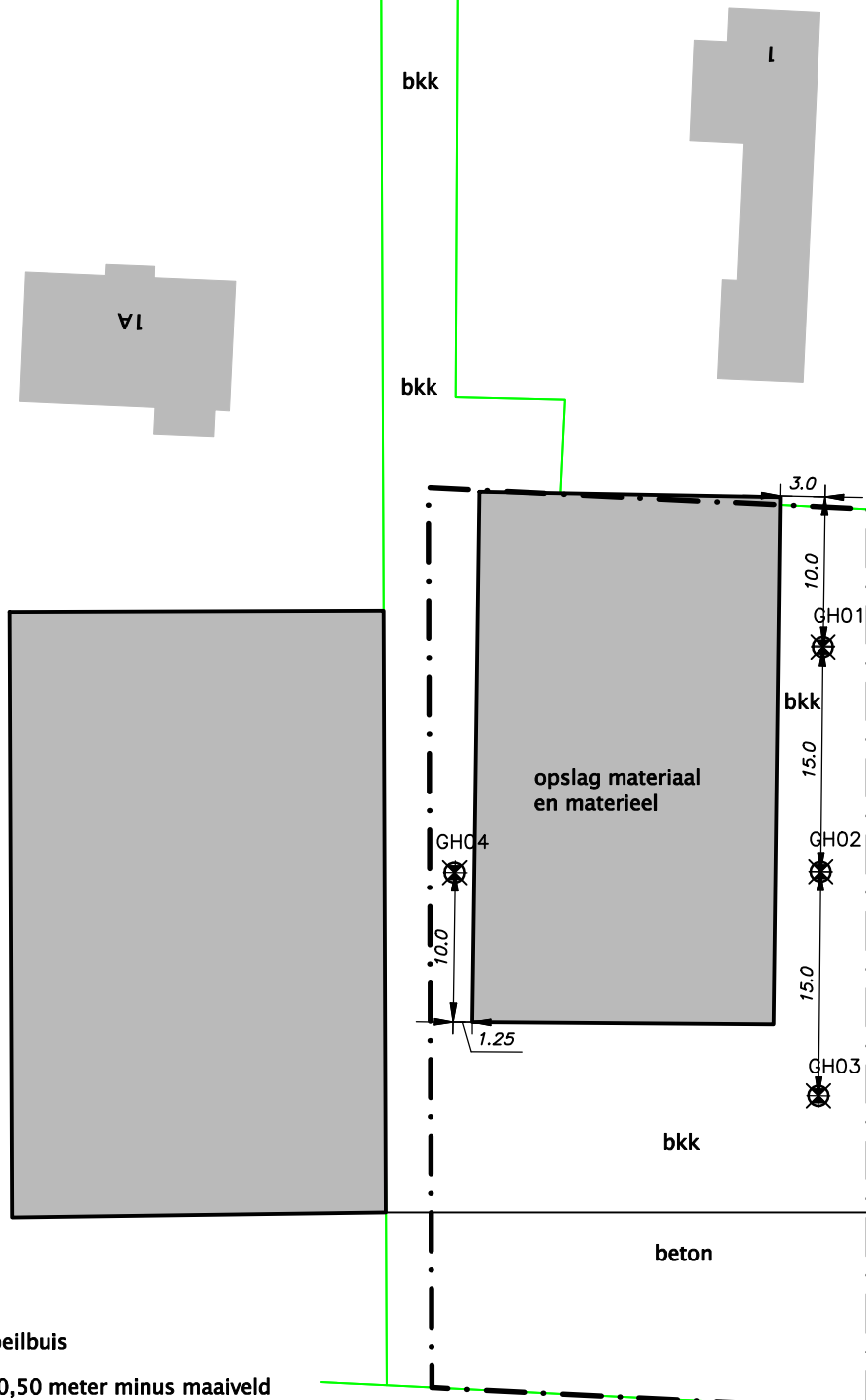


ir. B. Jansen
projectleider





Bijlagen:

- A.1: Situatietekening nieuwe situatie
- A.2: Situatietekening huidige situatie
- B.1: Boorprofielen
- C.1: Resultaten Aardvark Permeameter

Alphenseweg

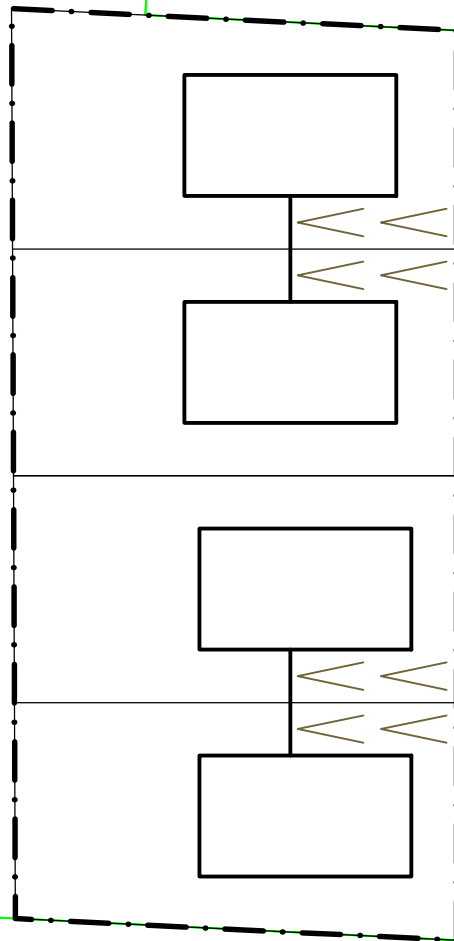
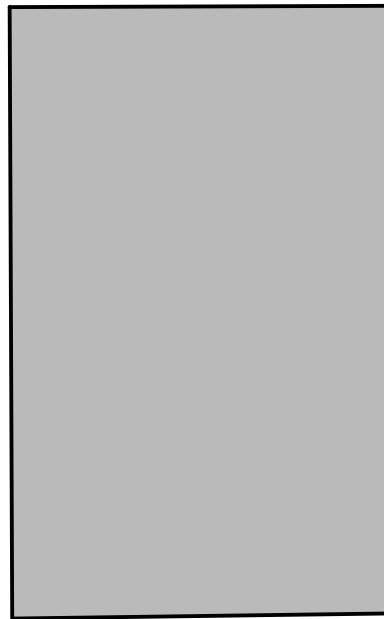
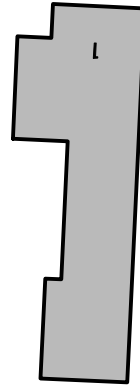
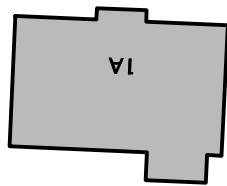


LEGENDA





-  01 diepe boring met peilbuis
-  02 boring dieper dan 0,50 meter minus maaiveld
-  03 boring tot 0,5 meter minus maaiveld
-  grens onderzoekslokatie



Alphenseweg



LEGENDA

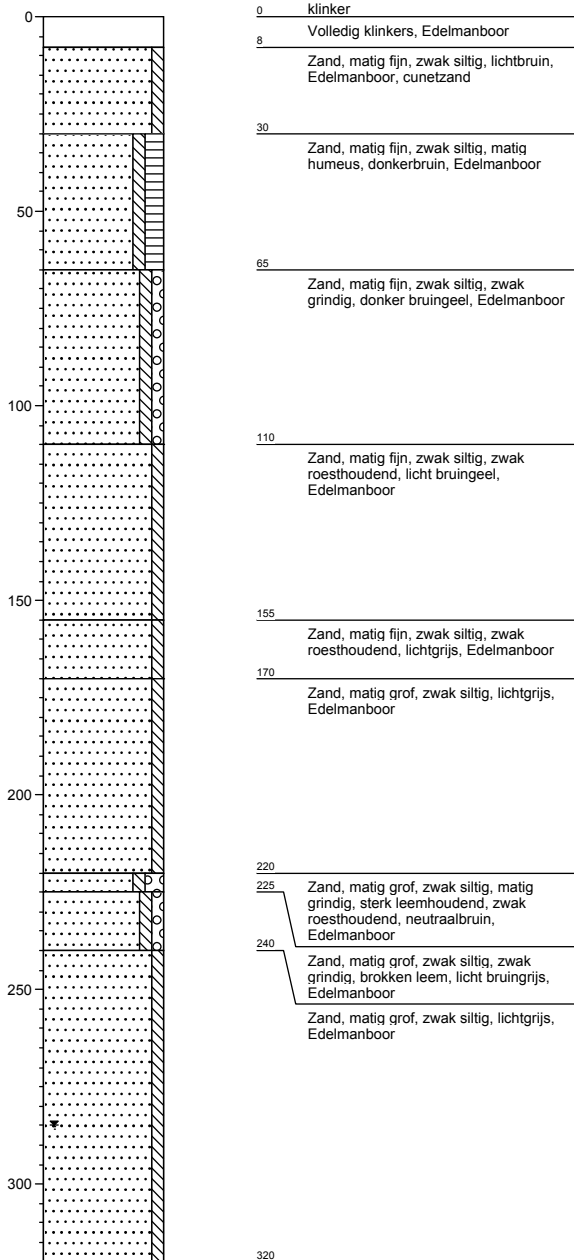
-  01 diepe boring met peilbuis
-  02 boring dieper dan 0,50 meter minus maaiveld
-  03 boring tot 0,5 meter minus maaiveld
-  grens onderzoekslokatie



Boring: GH01

Datum: 7-3-2014

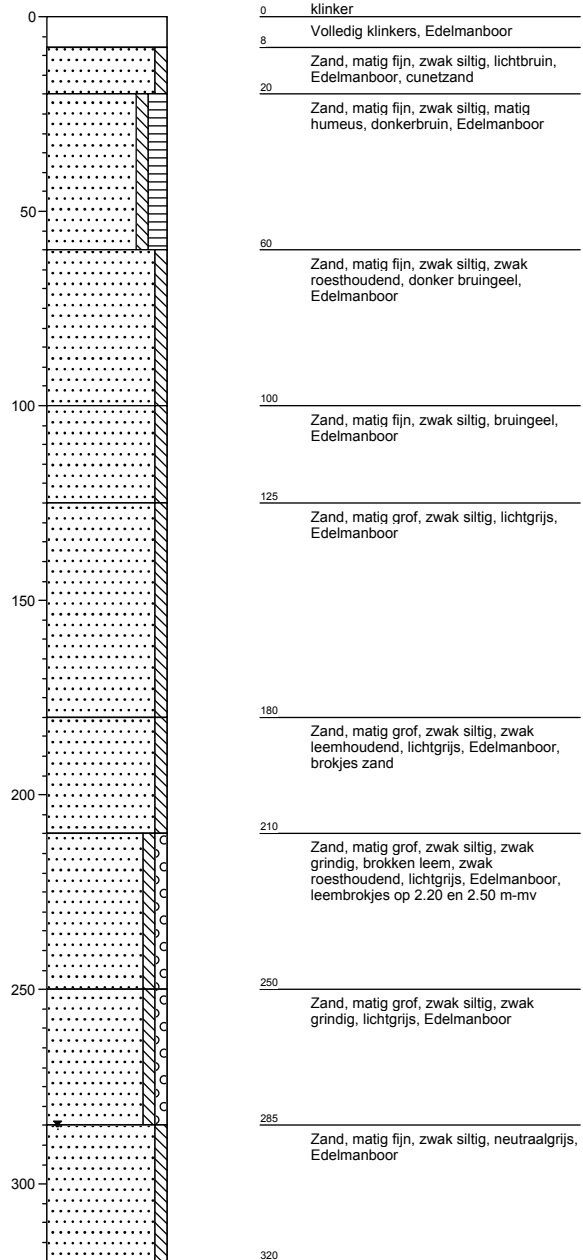
Opmerking:



Boring: GH02

Datum: 7-3-2014

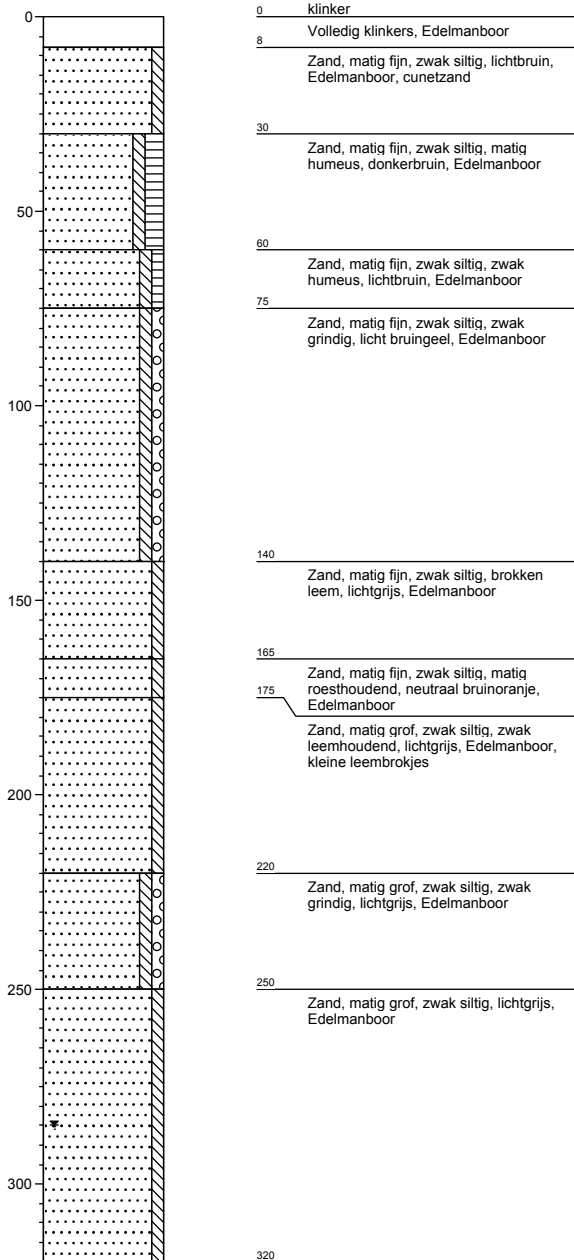
Opmerking:



Boring: GH03

Datum: 7-3-2014

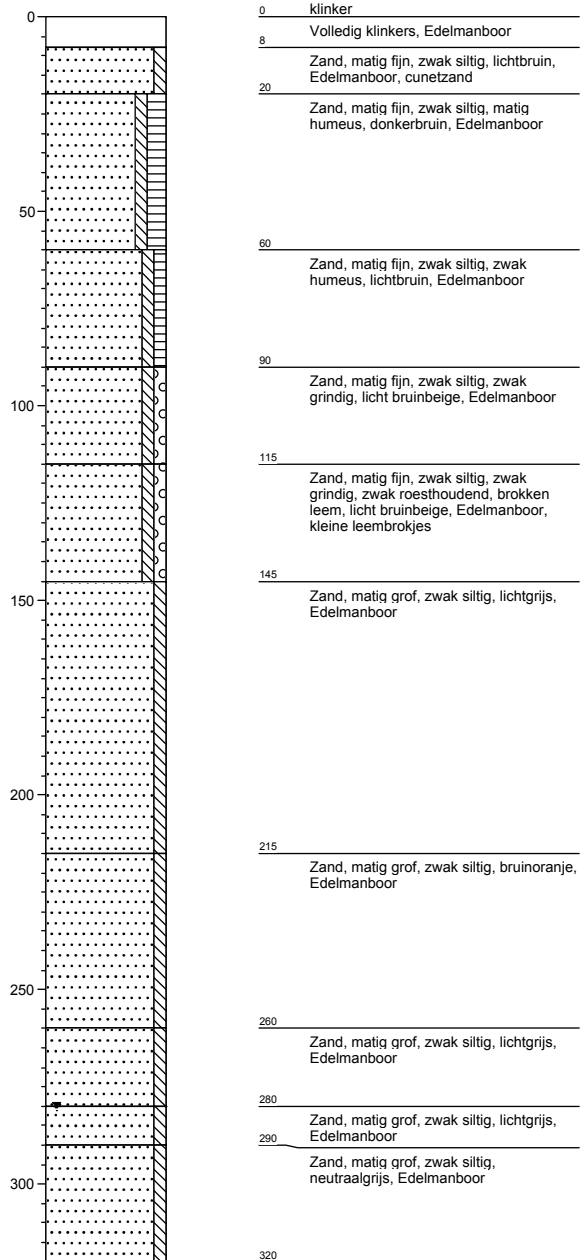
Opmerking:



Boring: GH04

Datum: 7-3-2014

Opmerking:



Location:
 Site:
 Date of Readings:

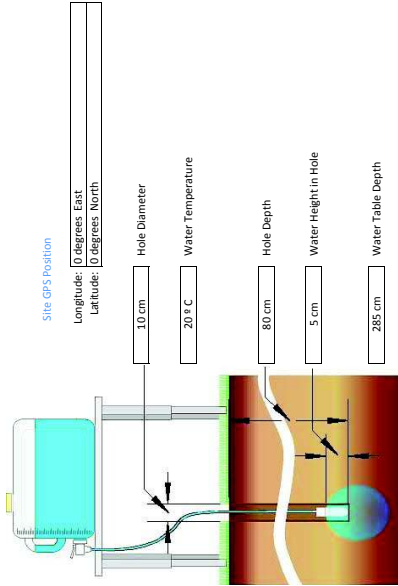
Time Interval: minutes
 Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than
 Ksat: Meters / day

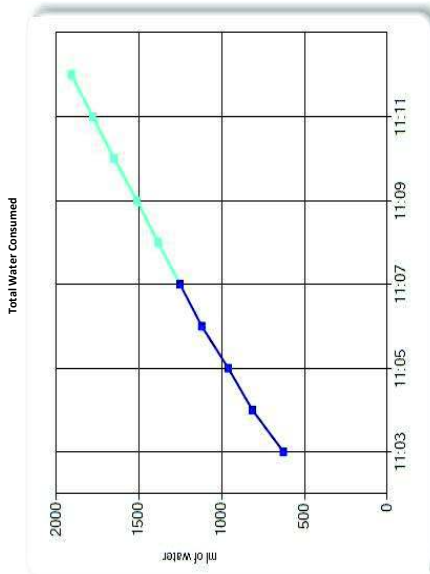
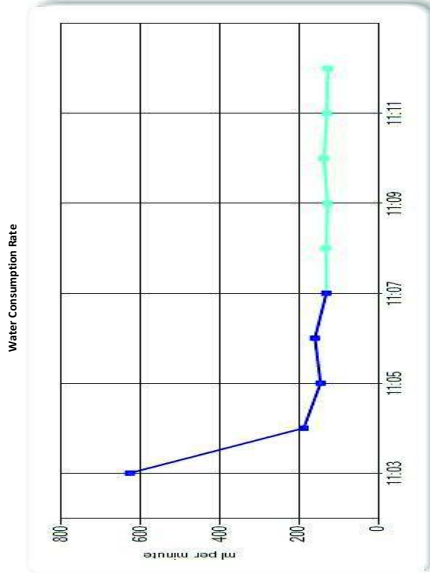
Steady Flow Rate: 130.84 ml/min
 Trnp Adj Flow Rate: 131.07 ml/min
 Percolation Rate: 0.60 min/cm

Site Details:

Notes:



Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.



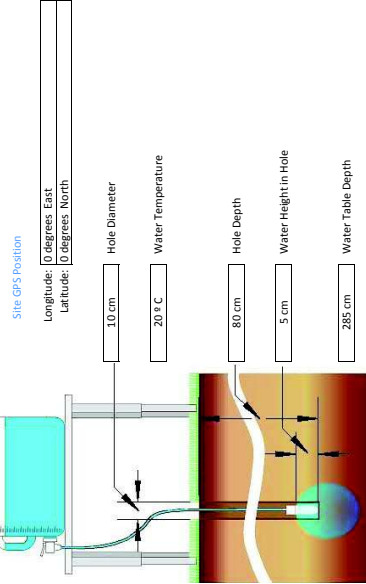
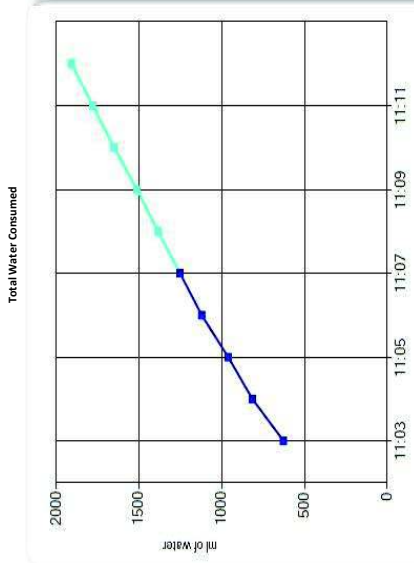
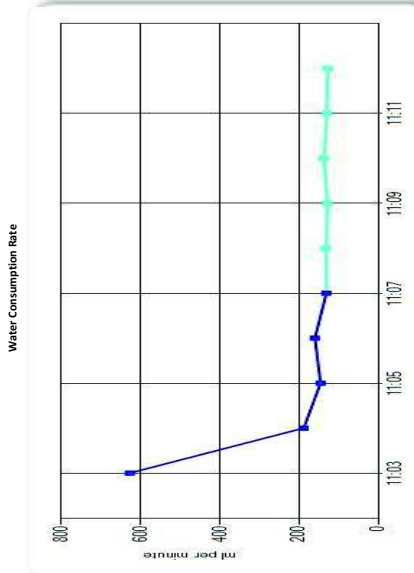
Location:
 Site:
 Date of Readings:

Time Interval: minutes
 Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than
 Ksat: Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
11:02:48	4113.4	0				
11:03:48	3486.2	1	627.2	627.2	627.2	
11:04:48	3298	1	188.2	815.4	188.2	
11:05:48	3152.2	1	145.8	961.2	145.8	
11:06:48	2952.2	1	160	1121.2	160	
11:07:48	2861.2	1	131	1252.2	131	
11:08:48	2729.4	1	131.8	1384	131.8	
11:09:48	2601.4	1	128	1512	128	
11:10:48	2464.2	1	137.2	1649.2	137.2	
11:11:48	2334.4	1	129.8	1779	129.8	
11:12:48	2207	1	127.4	1906.4	127.4	
11:13:48	2074.6	1				Yes

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location:
 Site:
 Date of Readings:

Time Interval: minutes

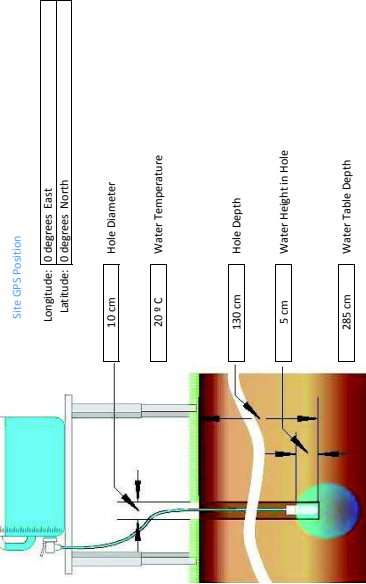
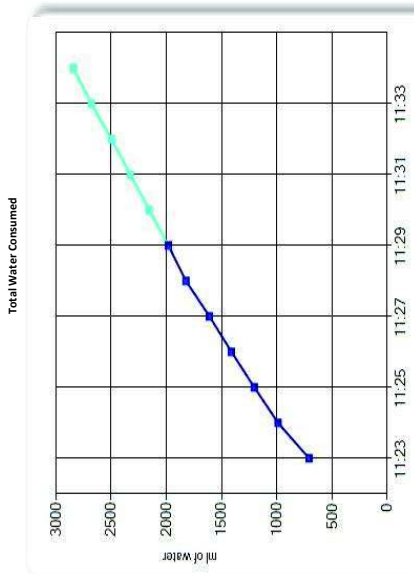
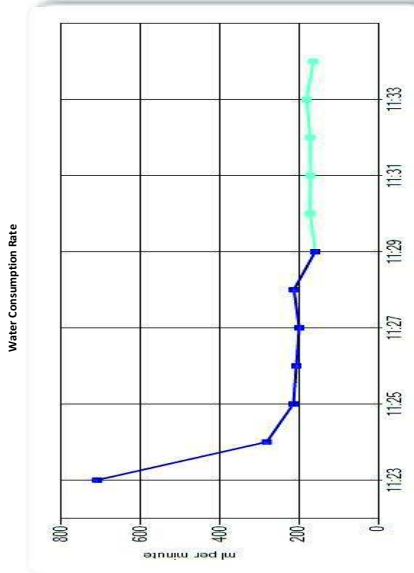
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate: 172.00 ml/min
 Temp Adj Flow Rate: 172.30 ml/min
 Percolation Rate: 0.46 mly/cm
Ksat: 7.38 Meters / day

Site Details:

 Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
11:22:37	8948.2	0	709	709	709	
11:23:37	8239.2	1	281.6	990.6	281.6	
11:24:37	7957.6	1	214.2	1204.8	214.2	
11:25:37	7743.4	1	206.8	1411.6	206.8	
11:26:37	7536.6	1	199.6	1611.2	199.6	
11:27:37	7337	1	213	1824.2	213	
11:28:37	7124	1	159.2	1983.4	159.2	
11:29:37	6948.8	1	172	2155.4	172	
11:30:37	6792.8	1	171.6	2327	171.6	
11:31:37	6621.2	1	171.4	2498.4	171.4	
11:32:37	6449.8	1	180.8	2679.2	180.8	
11:33:37	6269	1	164.2	2843.4	164.2	
11:34:37	6104.8	1				

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

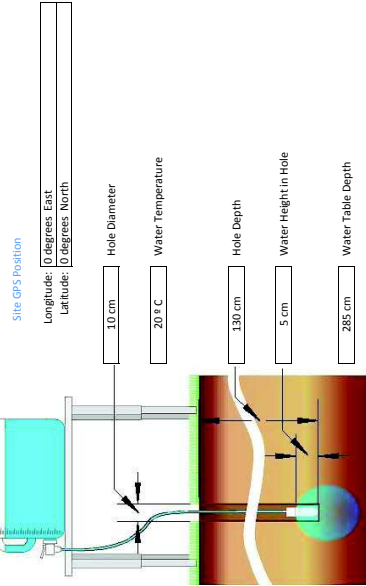
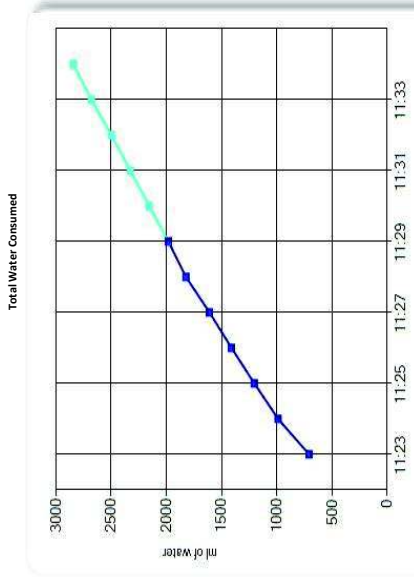
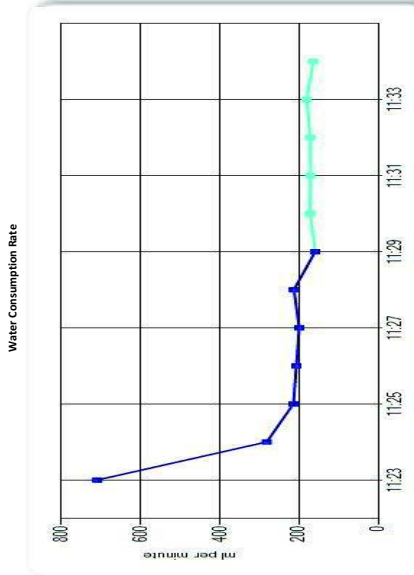
Location:
 Site:
 Date of Readings:

Time Interval: minutes
 Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than
 Ksat: Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
11:22:37	8948.2	0	709	709	709	
11:23:37	8239.2	1	281.6	990.6	281.6	
11:24:37	7957.6	1	214.2	1204.8	214.2	
11:25:37	7743.4	1	206.8	1411.6	206.8	
11:26:37	7536.6	1	199.6	1611.2	199.6	
11:27:37	7337	1	213	1824.2	213	
11:28:37	7124	1	159.2	1983.4	159.2	
11:29:37	6948.8	1	172	2155.4	172	
11:30:37	6792.8	1	171.6	2327	171.6	
11:31:37	6621.2	1	171.4	2498.4	171.4	
11:32:37	6449.8	1	180.8	2679.2	180.8	
11:33:37	6269	1	164.2	2843.4	164.2	

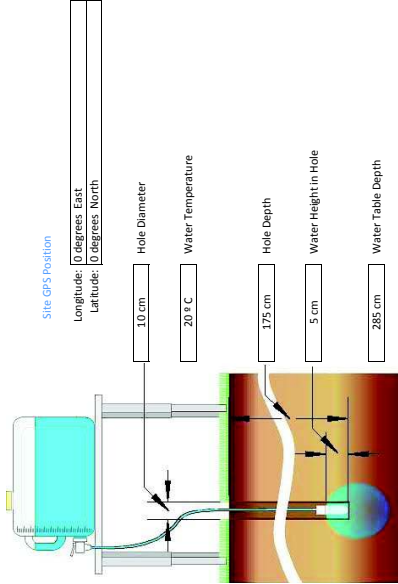
Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location:
 Site:
 Date of Readings:
 Time Interval: minutes
 Ksat Method:

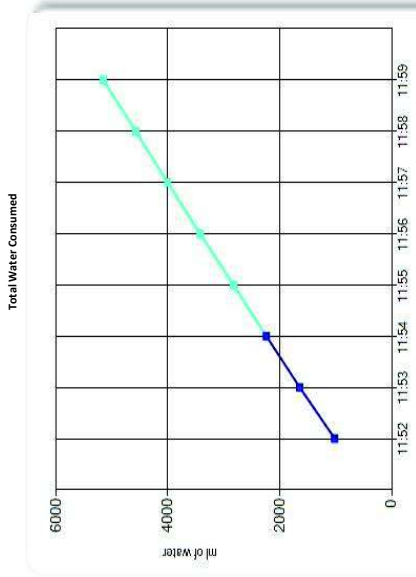
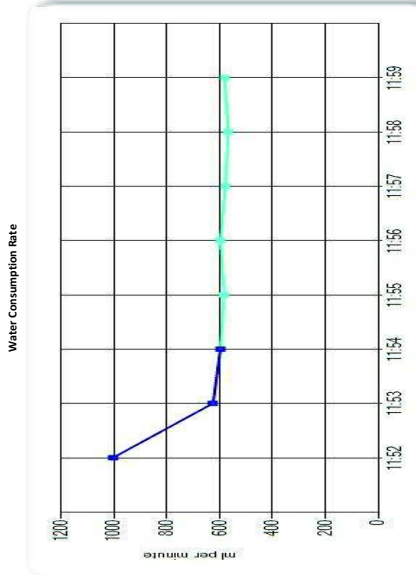
Steady Flow Rate achieved when Water Consumption Rate changes less than
 Steady Flow Rate:
 Trnp Adj Flow Rate:
 Percolation Rate:
Ksat: Meters / day

Site Details:

 Notes:



Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.



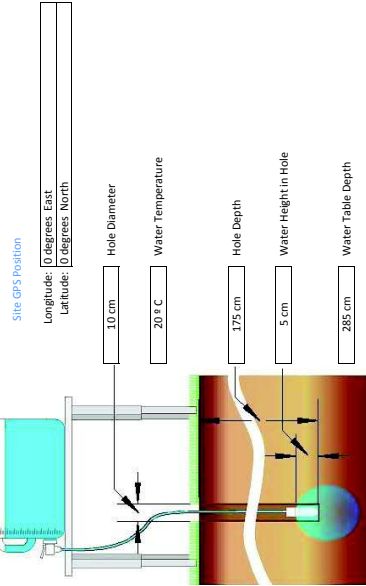
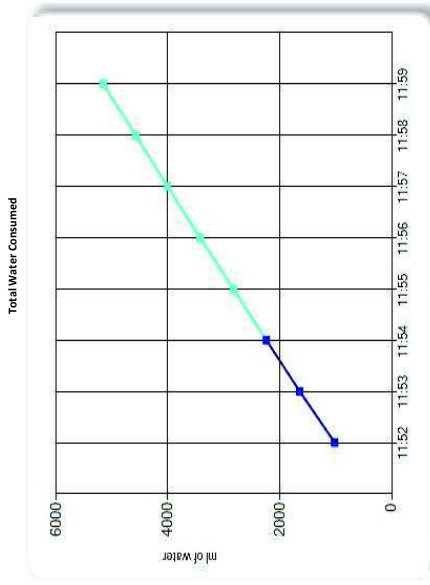
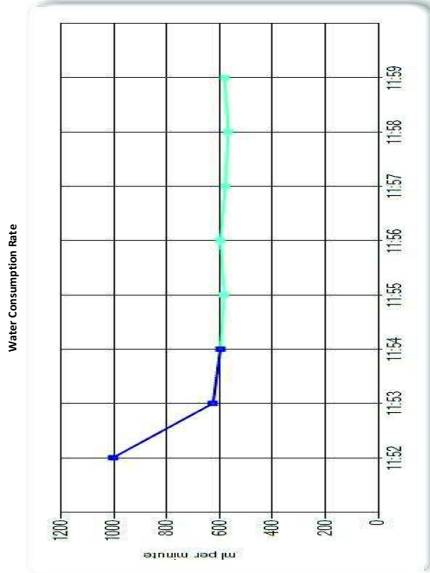
Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml/min)	Ignore this Reading?
11:51:05	8797	0	0	0	0	
11:52:06	7776.2	1	1020.8	1020.8	1004.07	
11:53:06	7150.4	1	625.8	1646.6	625.8	
11:54:06	6524.6	1	597.8	2244.4	597.8	
11:55:06	5968.8	1	583.8	2828.2	583.8	
11:56:06	5370.8	1	598	3426.2	598	
11:57:06	4794.2	1	579.6	4005.8	579.6	
11:58:06	4222.8	1	568.4	4574.2	568.4	
11:59:06	3641	1	581.8	5156	581.8	

Location: Date of Readings:
 Site:
 Time Interval: minutes
 Ksat Method:
 Steady Flow Rate achieved when Water Consumption Rate changes less than Meters / day
Ksat:

Site Details:

 Notes:

Steady Flow Rate: 582.32 ml/min
 Trnp Adj Flow Rate: 583.35 ml/min
 Percolation Rate: 0.13 mly/cm



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
11:51:05	8797	0				
11:52:06	7776.2	1	1020.8	1020.8	1004.07	
11:53:06	7150.4	1	625.8	1646.6	625.8	
11:54:06	6524.6	1	597.8	2244.4	597.8	
11:55:06	5968.8	1	583.8	2828.2	583.8	
11:56:06	5370.8	1	598	3426.2	598	
11:57:06	4794.2	1	579.6	4005.8	579.6	
11:58:06	4222.8	1	568.4	4574.2	568.4	
11:59:06	3641	1	581.8	5156	581.8	

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

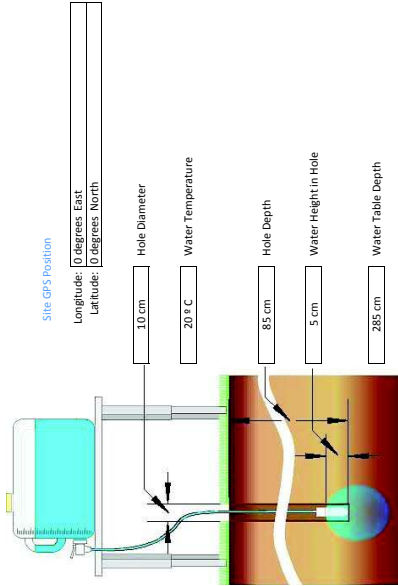
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

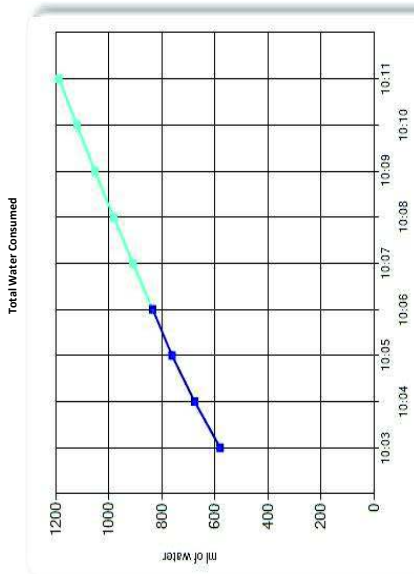
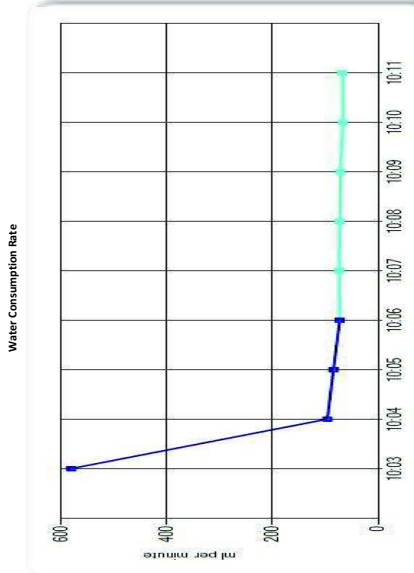
Steady Flow Rate: 70.64 ml/min
 Trnp Adj Flow Rate: 70.76 ml/min
 Percolation Rate: 1.11 mty/cm
Ksat: 3.03
 Meters / day

Site Details:

 Notes:



Soil Texture Structure Category:
 Soils which are both fine textured (clayey or silty) and unstructured; may also include some fine sands.



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
10:02:42	8517.2	0				
10:03:42	7936	1	581.2	581.2	581.2	
10:04:42	7839.6	1	96.4	677.6	96.4	
10:05:42	7754.6	1	85	762.6	85	
10:06:42	7681.6	1	73	835.6	73	
10:07:42	7607.6	1	74	909.6	74	
10:08:42	7534.8	1	72.8	982.4	72.8	
10:09:42	7463.2	1	71.6	1054	71.6	
10:10:42	7396.4	1	66.8	1120.8	66.8	
10:11:42	7328.4	1	68	1188.8	68	
10:12:42	7258.2	1				Yes
10:13:42	7182.8	1				Yes
10:14:42	7111.4	1				Yes
10:15:42	7041.6	1				Yes

Location: Date of Readings:

Site:

Time Interval: minutes

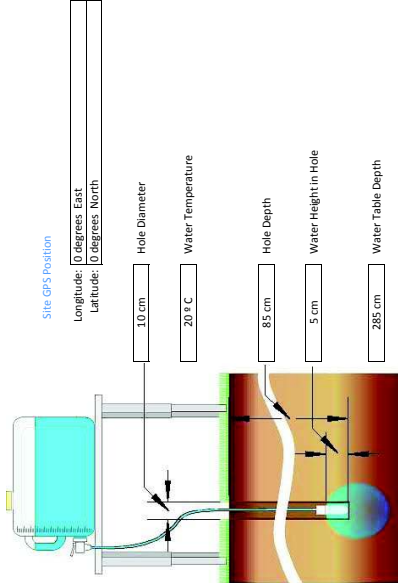
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate: 70.64 ml/min
 Trnp Adj Flow Rate: 70.76 ml/min
 Percolation Rate: 1.11 mty/cm
Ksat: 0.62
 Meters / day

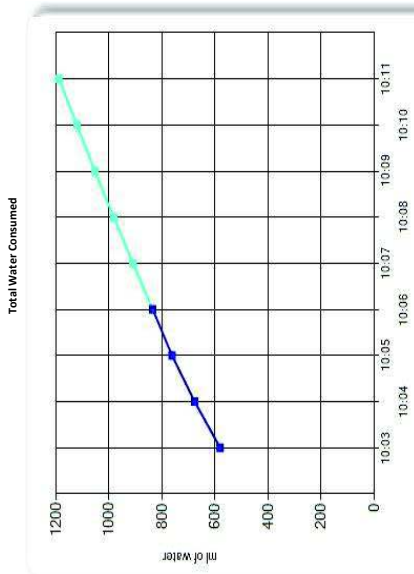
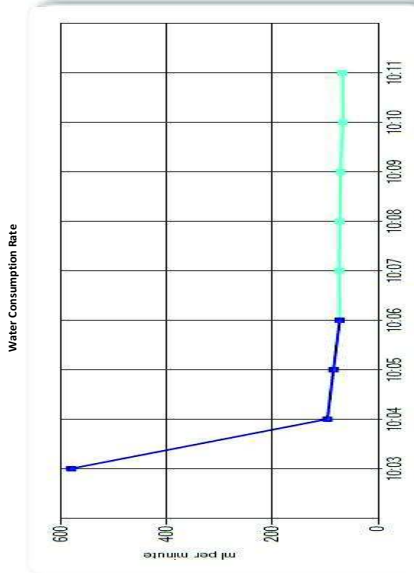
Site Details:

Notes:



Soil Texture Structure Category:

Soils which are both fine textured (clayey or silty) and unstructured, may also include some fine sands.



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
10:02:42	8517.2	0				
10:03:42	7936	1	581.2	581.2	581.2	
10:04:42	7839.6	1	96.4	677.6	96.4	
10:05:42	7754.6	1	85	762.6	85	
10:06:42	7681.6	1	73	835.6	73	
10:07:42	7607.6	1	74	909.6	74	
10:08:42	7534.8	1	72.8	982.4	72.8	
10:09:42	7463.2	1	71.6	1054	71.6	
10:10:42	7396.4	1	66.8	1120.8	66.8	
10:11:42	7328.4	1	68	1188.8	68	
10:12:42	7258.2	1				Yes
10:13:42	7182.8	1				Yes
10:14:42	7111.4	1				Yes
10:15:42	7041.6	1				Yes

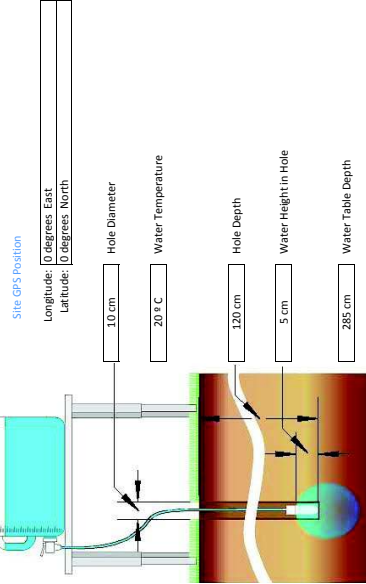
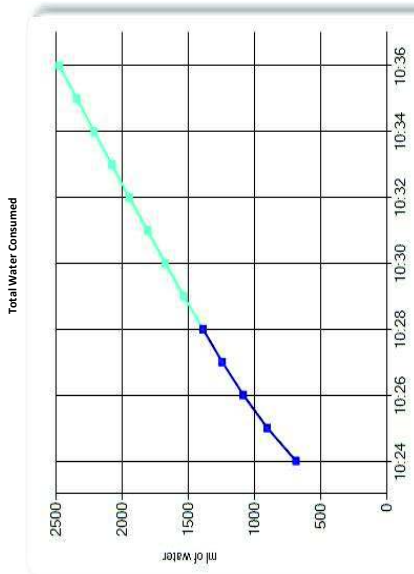
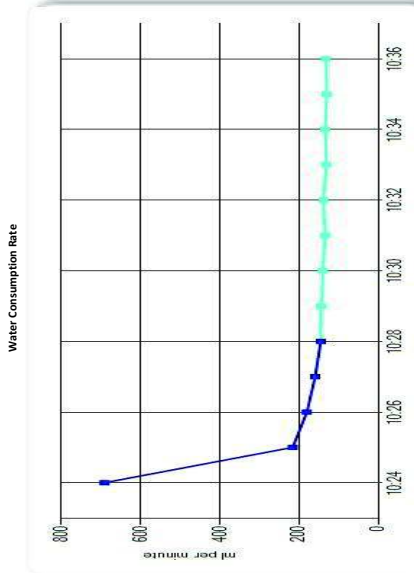
Location:
 Site:
 Date of Readings:

Time Interval: minutes
 Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than
 Steady Flow Rate: 135.42 ml/min
 Temp Adj Flow Rate: 135.66 ml/min
 Percolation Rate: 0.58 mm/cm
 Ksat: 5.81 Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
10:23:31	6973	0				
10:24:31	6282.2	1	690.8	690.8	690.8	
10:25:31	6066.2	1	216	906.8	216	
10:26:31	5886	1	180.2	1087	180.2	
10:27:31	5726.6	1	159.4	1246.4	159.4	
10:28:31	5581.4	1	145.2	1391.6	145.2	
10:29:31	5437.8	1	143.6	1535.2	143.6	
10:30:31	5297.8	1	140	1675.2	140	
10:31:31	5163.8	1	134	1809.2	134	
10:32:31	5055.2	1	138.6	1947.8	138.6	
10:33:31	4893.8	1	131.4	2079.2	131.4	
10:34:31	4760.2	1	133.6	2212.8	133.6	
10:35:31	4630	1	130.2	2343	130.2	
10:36:31	4498	1	132	2475	132	
10:37:31	4354.6	1				Yes
10:38:31	4214.2	1				Yes

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

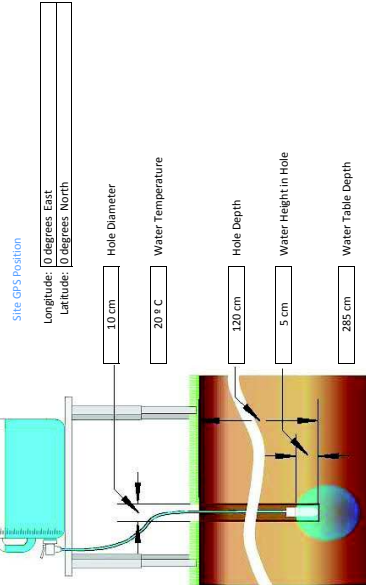
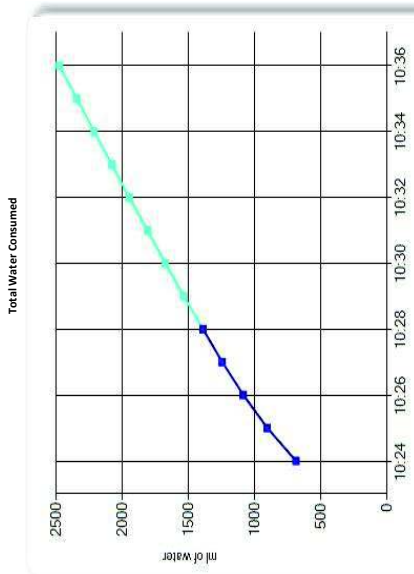
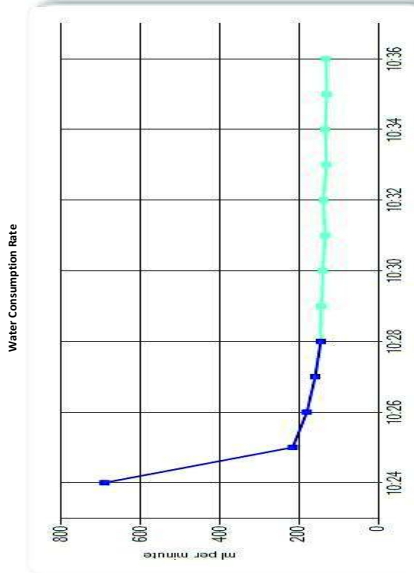
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate:
 Temp Adj Flow Rate:
 Percolation Rate:
Ksat: Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
10:23:31	6973	0				
10:24:31	6282.2	1	690.8	690.8	690.8	
10:25:31	6066.2	1	216	906.8	216	
10:26:31	5886	1	180.2	1087	180.2	
10:27:31	5726.6	1	159.4	1246.4	159.4	
10:28:31	5581.4	1	145.2	1391.6	145.2	
10:29:31	5437.8	1	143.6	1535.2	143.6	
10:30:31	5297.8	1	140	1675.2	140	
10:31:31	5163.8	1	134	1809.2	134	
10:32:31	5055.2	1	138.6	1947.8	138.6	
10:33:31	4893.8	1	131.4	2079.2	131.4	
10:34:31	4760.2	1	133.6	2212.8	133.6	
10:35:31	4630	1	130.2	2343	130.2	
10:36:31	4498	1	132	2475	132	
10:37:31	4354.6	1				Yes
10:38:31	4244.2	1				Yes

Soil Texture Structure Category:

Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location:
 Site:

Date of Readings:

Time Interval: minutes

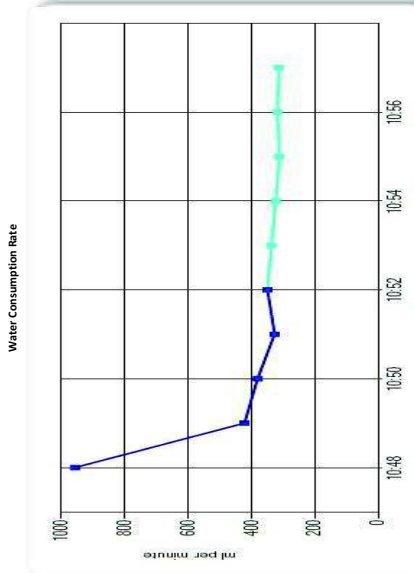
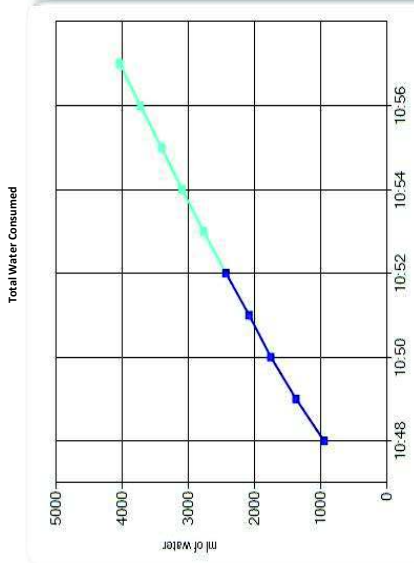
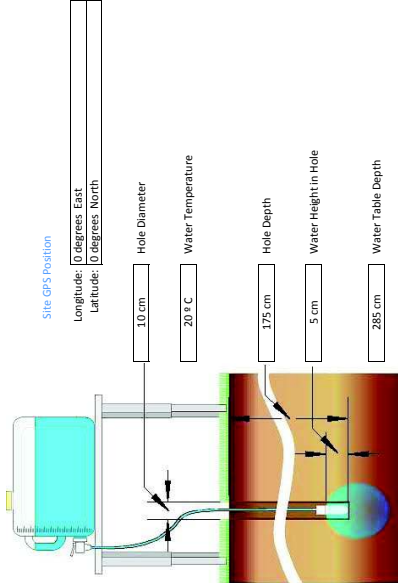
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate:
 Temp Adj Flow Rate:
 Percolation Rate:
Ksat:
 Meters / day

Site Details:

 Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
10:47:16	8883.6	0				
10:48:16	7926.8	1	956.8	956.8	956.8	
10:49:16	7504.6	1	422.2	1379	422.2	
10:50:16	7123.6	1	381	1760	381	
10:51:16	6796.4	1	327.2	2087.2	327.2	
10:52:16	6446.6	1	349.8	2437	349.8	
10:53:16	6109.2	1	337.4	2774.4	337.4	
10:54:16	5786	1	323.2	3097.6	323.2	
10:55:16	5474	1	312	3409.6	312	
10:56:16	5156.2	1	317.8	3727.4	317.8	
10:57:16	4843	1	313.2	4040.6	313.2	

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

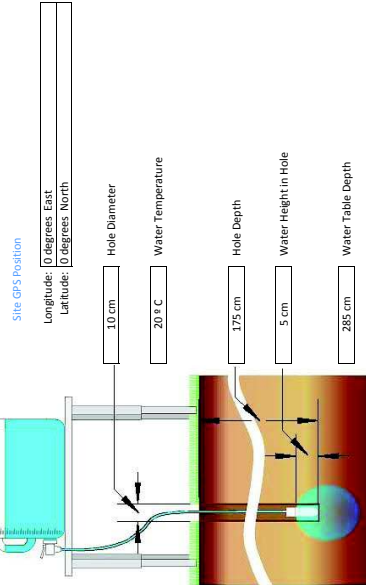
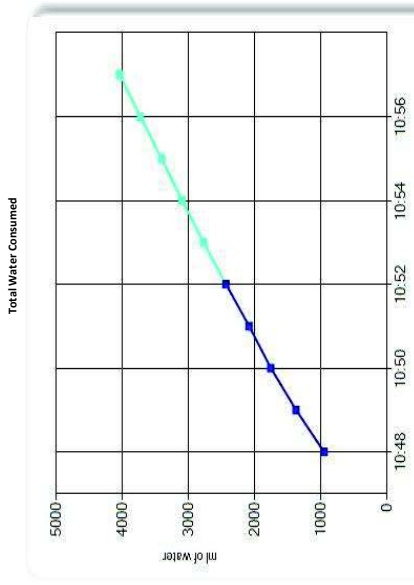
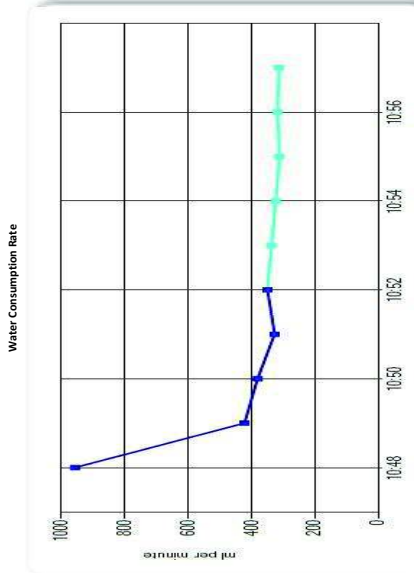
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate:
 Temp Adj Flow Rate:
 Percolation Rate:
Ksat: Meters / day

Site Details:

 Notes:



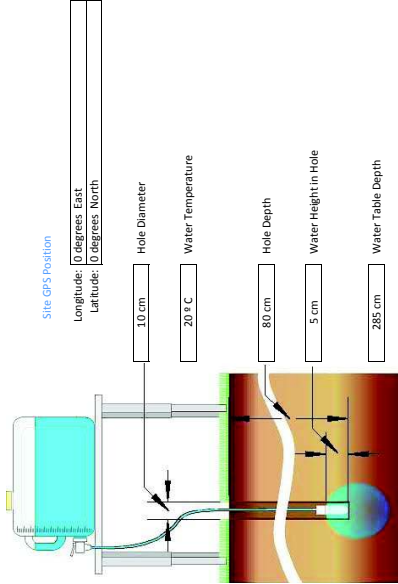
Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
10:47:16	8883.6	0				
10:48:16	7926.8	1	956.8	956.8	956.8	
10:49:16	7504.6	1	422.2	1379	422.2	
10:50:16	7123.6	1	381	1760	381	
10:51:16	6796.4	1	327.2	2087.2	327.2	
10:52:16	6446.6	1	349.8	2437	349.8	
10:53:16	6109.2	1	337.4	2774.4	337.4	
10:54:16	5786	1	323.2	3097.6	323.2	
10:55:16	5474	1	312	3409.6	312	
10:56:16	5156.2	1	317.8	3727.4	317.8	
10:57:16	4843	1	313.2	4040.6	313.2	

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

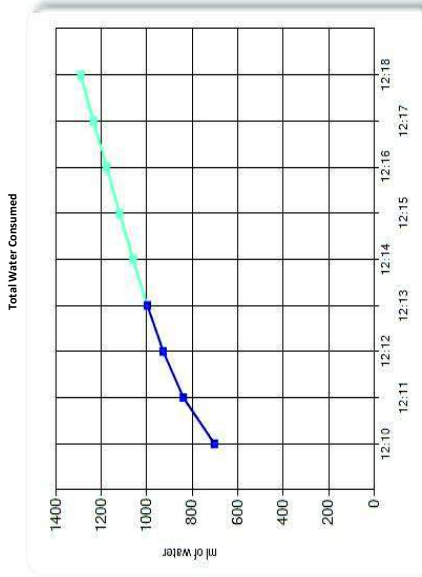
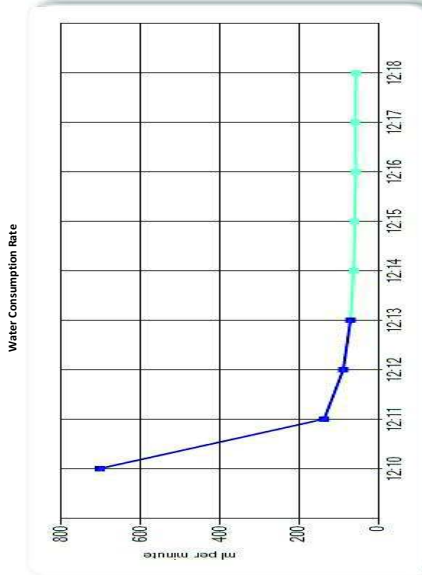
Location: Date of Readings:
 Site:
 Time Interval: minutes
 Ksat Method:
 Steady Flow Rate achieved when Water Consumption Rate changes less than
 Steady Flow Rate: 58.64 ml/min
 Temp Adj Flow Rate: 58.74 ml/min
 Percolation Rate: 1.34 mly/cm
Ksat: Meters / day

Site Details:

 Notes:



Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml/min)	Ignore this Reading?
12:09:50	8700.6	0	0	0	0	
12:10:50	7997.4	1	703.2	703.2	703.2	
12:11:50	7860.6	1	136.8	840	136.8	
12:12:50	7772.2	1	88.4	928.4	88.4	
12:13:50	7702	1	70.2	998.6	70.2	
12:14:50	7639.8	1	62.2	1060.8	62.2	
12:15:50	7580	1	59.8	1120.6	59.8	
12:16:50	7523.4	1	56.6	1177.2	56.6	
12:17:50	7465.4	1	58	1235.2	58	
12:18:50	7408.8	1	56.6	1291.8	56.6	
12:19:50	7352.4	1	56.6	1291.8	56.6	Yes

Location: Date of Readings:

Site:

Time Interval: minutes

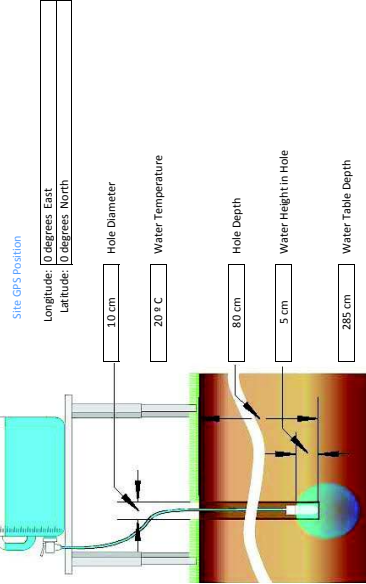
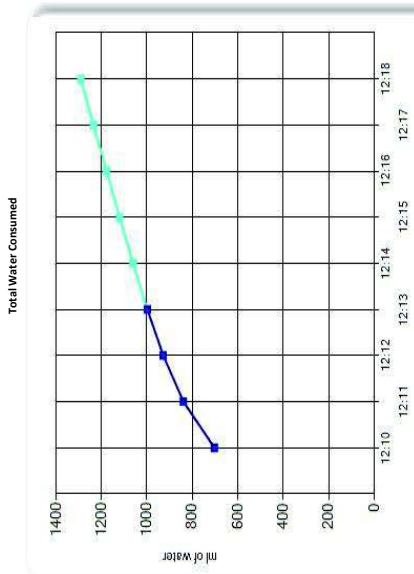
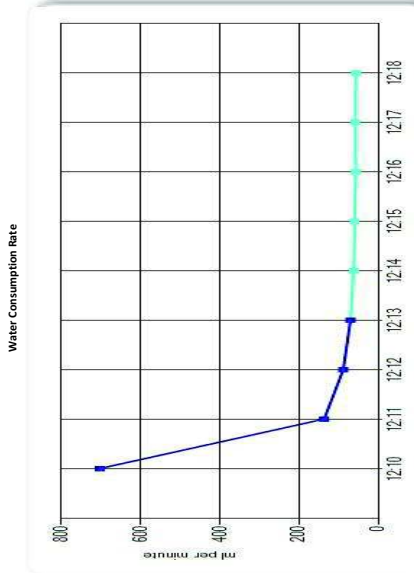
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate: 58.64 ml/min
 Temp Adj Flow Rate: 58.74 ml/min
 Percolation Rate: 1.34 mly/cm
Ksat: 1.02 Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
12:09:50	8700.6	0				
12:10:50	7997.4	1	703.2	703.2	703.2	
12:11:50	7860.6	1	136.8	840	136.8	
12:12:50	7772.2	1	88.4	928.4	88.4	
12:13:50	7702	1	70.2	998.6	70.2	
12:14:50	7639.8	1	62.2	1060.8	62.2	
12:15:50	7580	1	59.8	1120.6	59.8	
12:16:50	7523.4	1	56.6	1177.2	56.6	
12:17:50	7465.4	1	58	1235.2	58	
12:18:50	7408.8	1	56.6	1291.8	56.6	
12:19:50	7352.4	1				Yes

Soil Texture Structure Category: Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

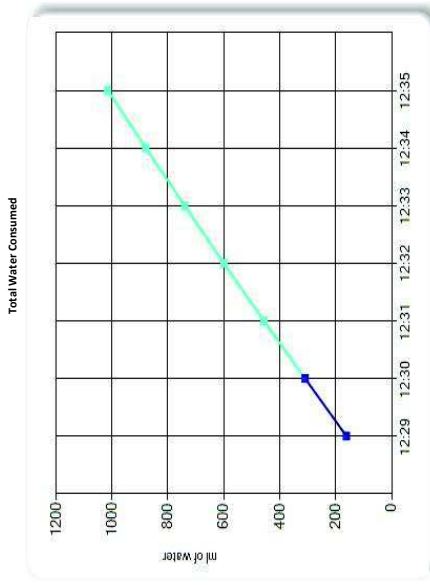
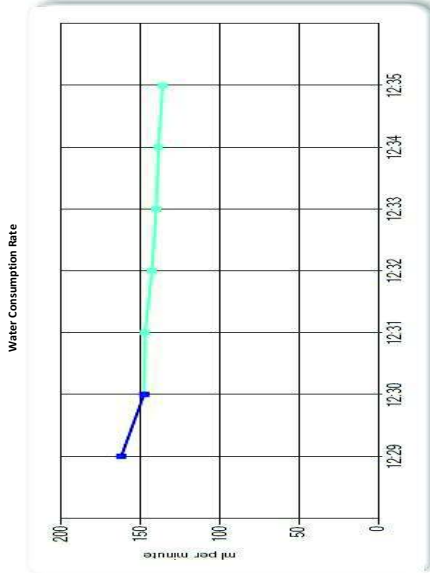
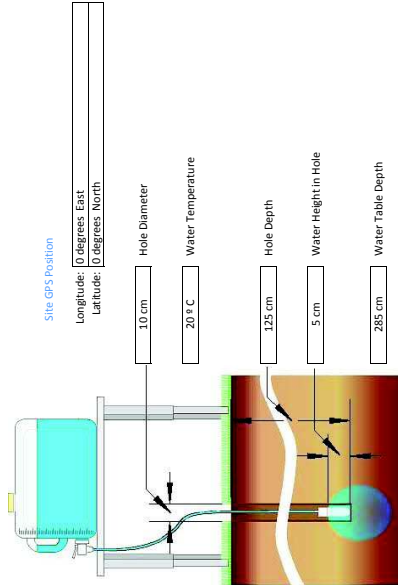
Ksat Method:

Steady Flow Rate: 141.00 ml/min
 Trnp Adj Flow Rate: 141.25 ml/min
 Percolation Rate: 0.56 mly/cm
Ksat: 6.05
 Meters / day

Steady Flow Rate achieved when Water Consumption Rate changes less than +/- 10 ml for 5 consecutive readings

Site Details:

 Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml/min)	Ignore this Reading?
12:28:32	6173.2	0				
12:29:32	6011	1	162.2	162.2	162.2	
12:30:32	5863.2	1	147.8	310	147.8	
12:31:32	5716	1	147.2	457.2	147.2	
12:32:32	5573.2	1	142.8	600	142.8	
12:33:32	5433	1	140.2	740.2	140.2	
12:34:32	5294.2	1	136.8	879	136.8	
12:35:32	5158.2	1	136	1015	136	

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

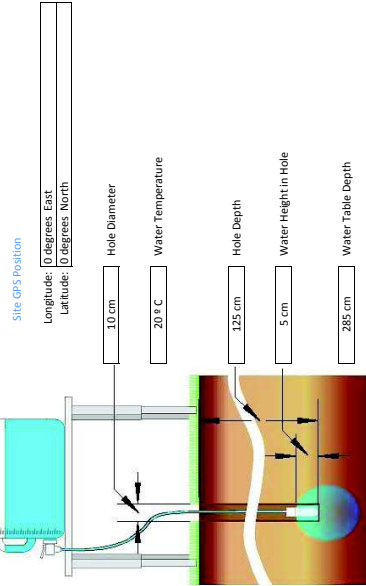
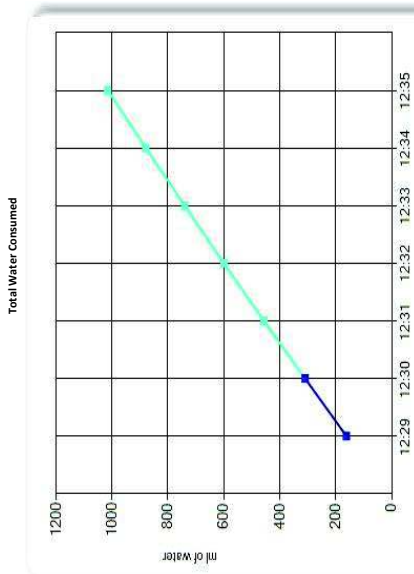
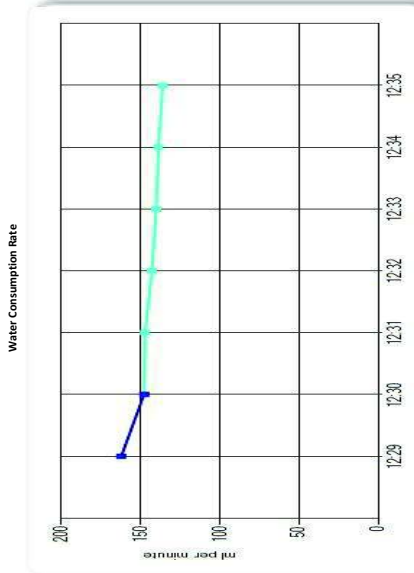
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate: 141.00 ml/min
 Temp Adj Flow Rate: 141.25 ml/min
 Percolation Rate: 0.56 mly/cm
Ksat: 2.45
 Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
12:28:32	6173.2	0				
12:29:32	6011	1	162.2	162.2	162.2	
12:30:32	5863.2	1	147.8	310	147.8	
12:31:32	5716	1	147.2	457.2	147.2	
12:32:32	5573.2	1	142.8	600	142.8	
12:33:32	5433	1	140.2	740.2	140.2	
12:34:32	5294.2	1	138.8	879	138.8	
12:35:32	5158.2	1	136	1015	136	

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

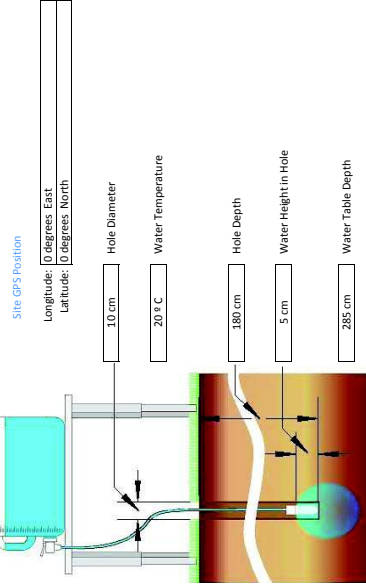
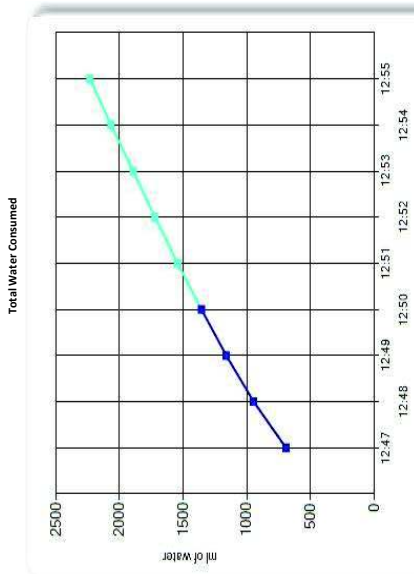
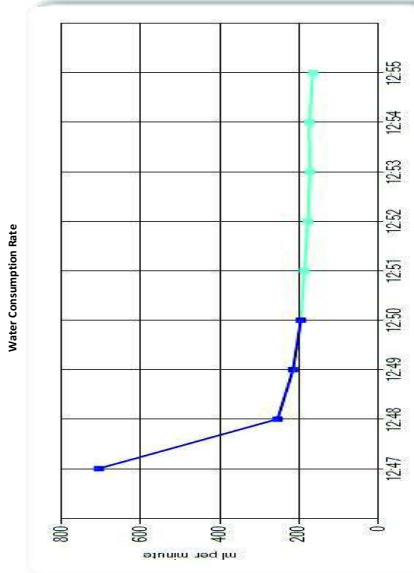
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate:
 Temp Adj Flow Rate:
 Percolation Rate:
Ksat: Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
12:46:20	8829.6	0	694.2	694.2	705.97	
12:47:19	8135.4	1	254	948.2	254	
12:48:19	7666.4	1	215	1163.2	215	
12:50:19	7471.2	1	195.2	1358.4	195.2	
12:51:19	7285	1	186.2	1544.6	186.2	
12:52:19	7107.4	1	177.6	1722.2	177.6	
12:53:19	6952.2	1	174	1896.4	174	
12:54:19	6761.2	1	164.8	2061.2	164.8	
12:55:19	6596.4	1	164.8	2226.0	164.8	

Soil Texture Structure Category:

Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

Ksat Method:

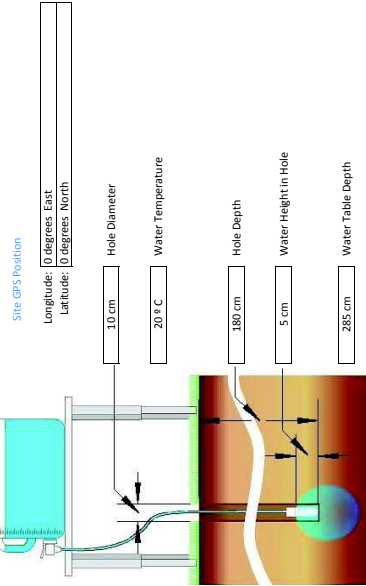
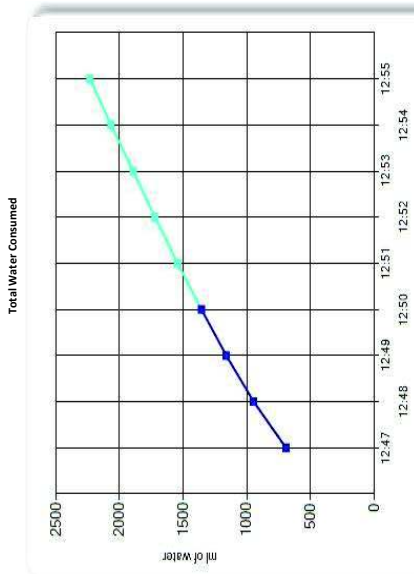
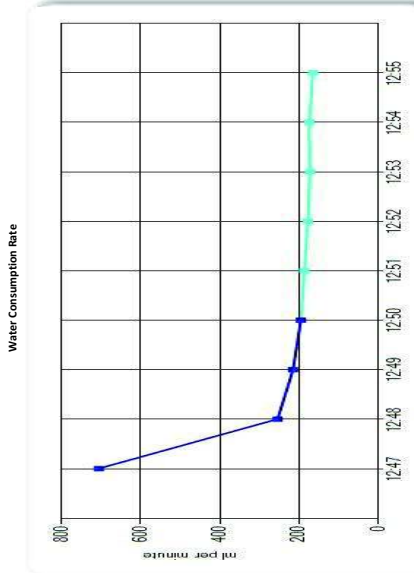
Steady Flow Rate achieved when Water Consumption Rate changes less than

Temp Adj Flow Rate: Meters / day
 Percolation Rate:

Ksat:

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
12:46:20	8829.6	0	694.2	694.2	705.97	
12:47:19	8135.4	1	254	948.2	254	
12:48:19	7666.4	1	215	1163.2	215	
12:50:19	7471.2	1	195.2	1358.4	195.2	
12:51:19	7285	1	186.2	1544.6	186.2	
12:52:19	7107.4	1	177.6	1722.2	177.6	
12:53:19	6955.2	1	174	1896.4	174	
12:54:19	6761.2	1	164.8	2061.2	164.8	
12:55:19	6596.4	1	164.8	2226.0	164.8	

Soil Texture Structure Category: Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location:
 Site:
 Date of Readings:

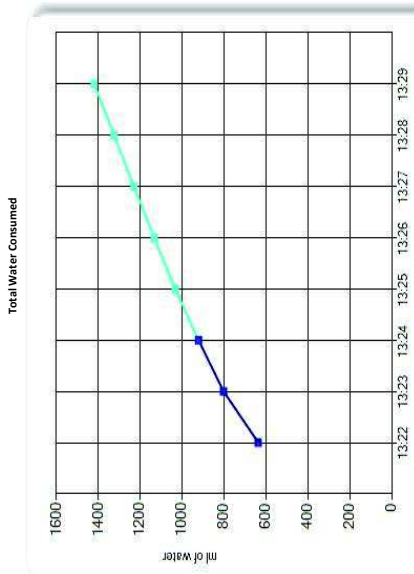
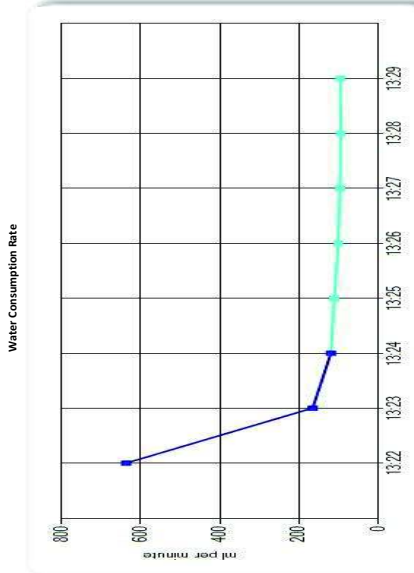
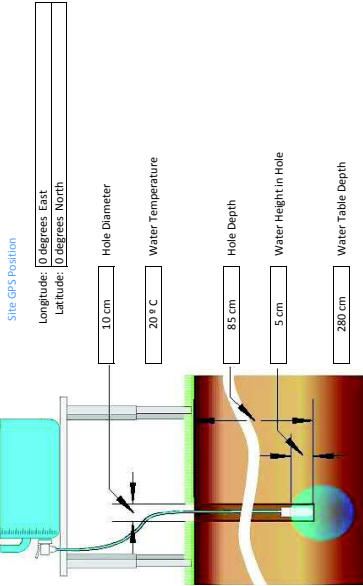
Time Interval: minutes
 Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than
 Ksat: Meters / day

Steady Flow Rate: 99.44 ml/min
 Temp Adj Flow Rate: 99.62 ml/min
 Percolation Rate: 0.79 mly/cm

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml/min)	Ignore this Reading?
13:22:11	6503	0				
13:22:11	5866.4	1	636.6	636.6	636.6	
13:23:11	5701	1	165.4	802	165.4	
13:24:11	5584.8	1	119.2	921.2	119.2	
13:25:11	5471.2	1	110.6	1031.8	110.6	
13:26:11	5370.4	1	100.8	1132.6	100.8	
13:27:11	5274.2	1	96.2	1228.8	96.2	
13:28:11	5179.6	1	94.6	1323.4	94.6	
13:29:11	5084.6	1	95	1418.4	95	

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate:
 Temp Adj Flow Rate:
 Percolation Rate:
Ksat: Meters / day

Site Details:

Notes:

Site GPS Position

Longitude:

Latitude:

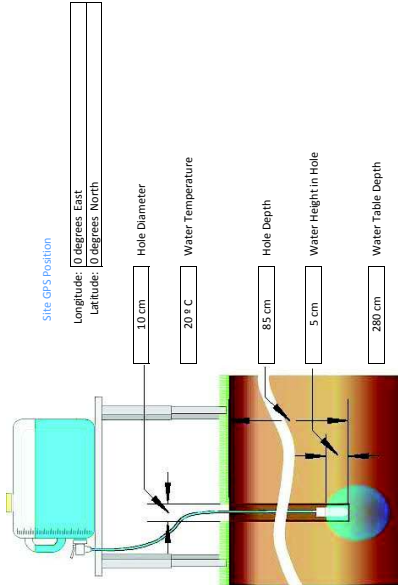
Hole Diameter:

Water Temperature:

Hole Depth:

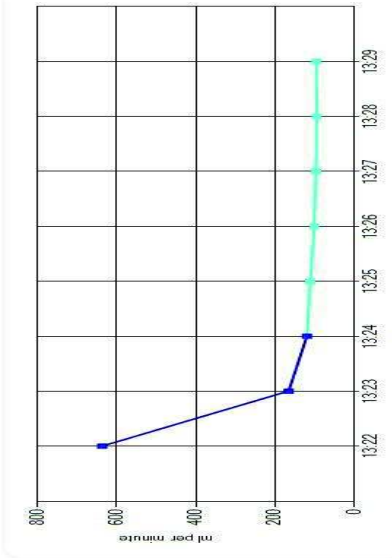
Water Height in Hole:

Water Table Depth:

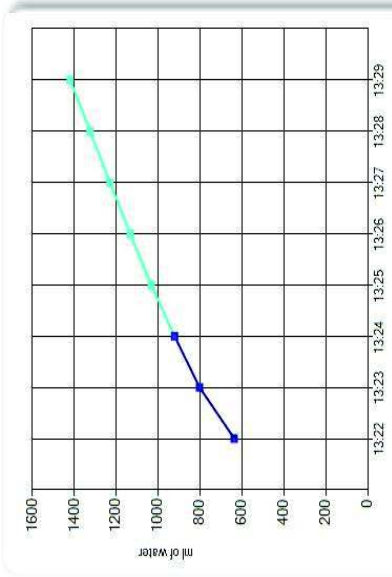


Soil Texture Structure Category:

Water Consumption Rate



Total Water Consumed



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
13:21:11	6503	0				
13:22:11	5866.4	1	636.6	636.6	636.6	
13:23:11	5701	1	165.4	802	165.4	
13:24:11	5584.8	1	119.2	921.2	119.2	
13:25:11	5471.2	1	110.6	1031.8	110.6	
13:26:11	5370.4	1	100.8	1132.6	100.8	
13:27:11	5274.2	1	96.2	1228.8	96.2	
13:28:11	5179.6	1	94.6	1323.4	94.6	
13:29:11	5084.6	1	95	1418.4	95	

Location:
 Site:
 Date of Readings:

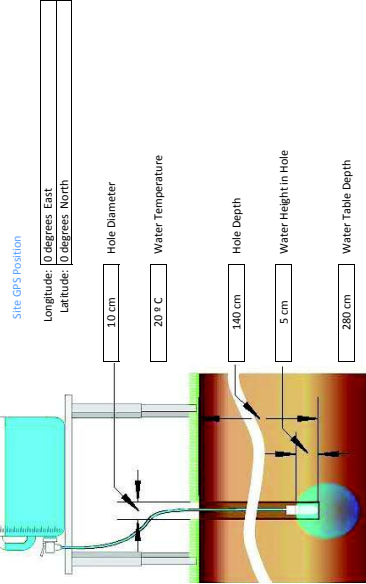
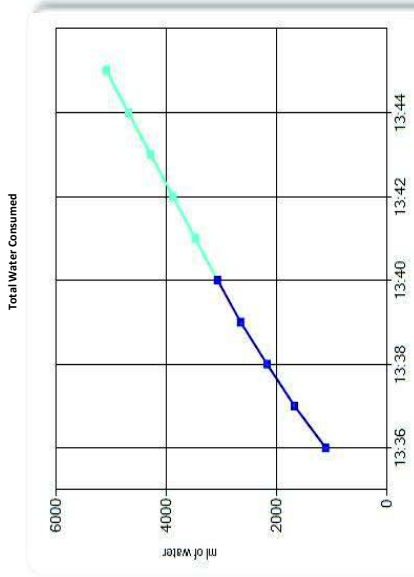
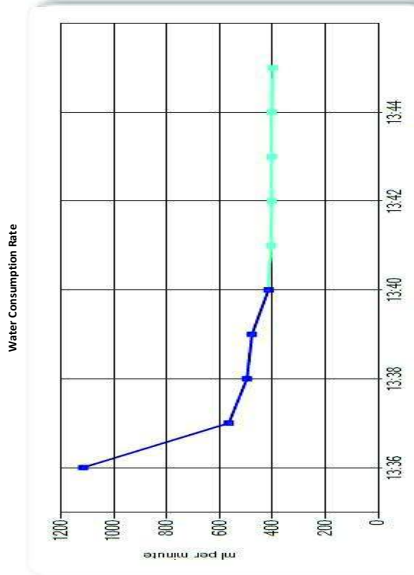
Time Interval: minutes
 Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than
 Ksat: Meters / day

Steady Flow Rate: 402.88 ml/min
 Trnp Adj Flow Rate: 403.59 ml/min
 Percolation Rate: 0.19 mm/cm

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml/min)	Ignore this Reading?
13:35:50	8973.2	0	1117.4	1117.4	1117.4	
13:36:50	7855.8	1	566	1683.4	566	
13:37:50	7289.8	1	497.4	2180.8	497.4	
13:38:50	6792.4	1	476.2	2659	476.2	
13:39:50	6314.2	1	416	3075	416	
13:40:50	5898.2	1	405.6	3480.6	405.6	
13:41:50	5492.6	1	402.8	3883.4	402.8	
13:42:50	5089.8	1	403.8	4287.2	403.8	
13:43:50	4686	1	403.2	4690.4	403.2	
13:44:50	4282.8	1	399	5089.4	399	
13:45:50	3883.8	1				Yes
13:46:50	3469.4	1				Yes

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:

Site:

Time Interval: minutes

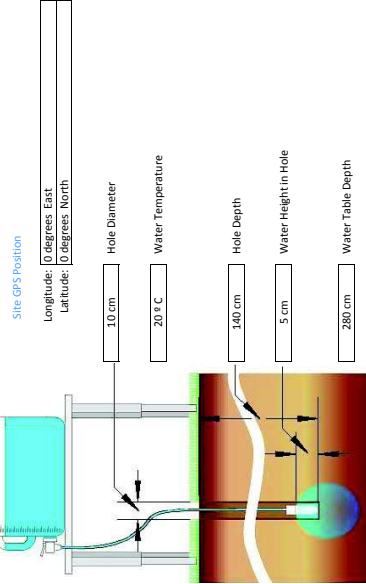
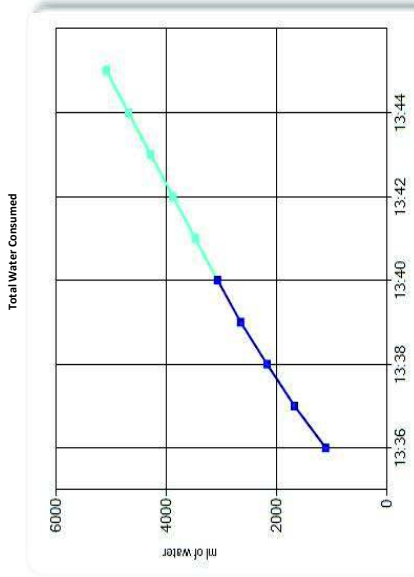
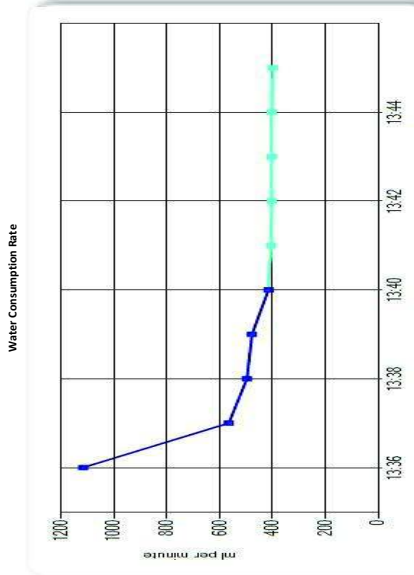
Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than

Steady Flow Rate: 402.88 ml/min
 Trnp Adj Flow Rate: 403.59 ml/min
 Percolation Rate: 0.19 mly/cm
Ksat: 7.01 Meters / day

Site Details:

Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
13:35:50	8973.2	0	1117.4	1117.4	1117.4	
13:36:50	7855.8	1	566	1683.4	566	
13:37:50	7289.8	1	497.4	2180.8	497.4	
13:38:50	6792.4	1	476.2	2659	476.2	
13:39:50	6314.2	1	416	3075	416	
13:40:50	5898.2	1	405.6	3480.6	405.6	
13:41:50	5492.6	1	402.8	3883.4	402.8	
13:42:50	5089.8	1	403.8	4287.2	403.8	
13:43:50	4686	1	403.2	4690.4	403.2	
13:44:50	4282.8	1	399	5089.4	399	
13:45:50	3883.8	1				Yes
13:46:50	3469.4	1				Yes

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location:
 Site:
 Date of Readings:

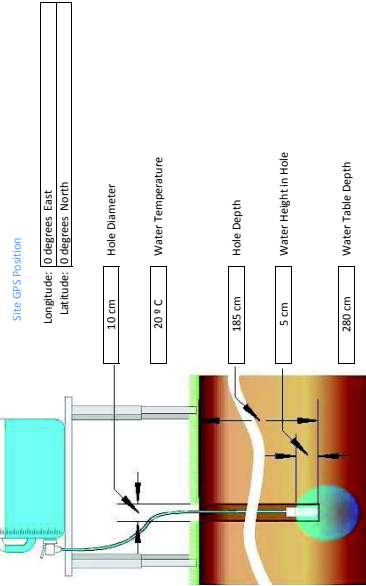
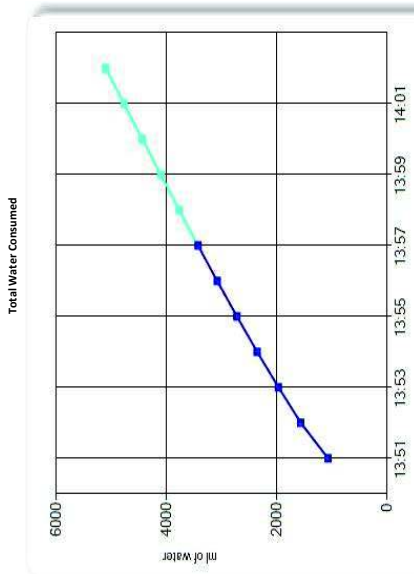
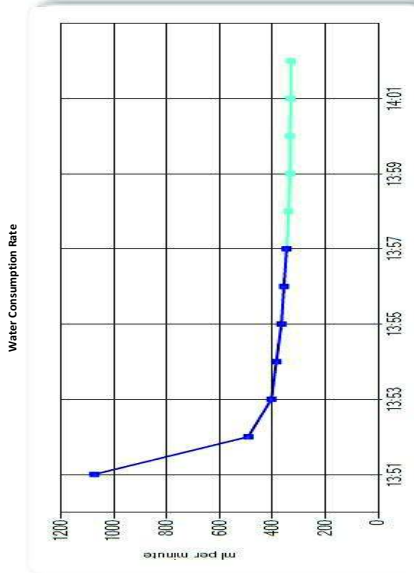
Time Interval: minutes
 Ksat Method:

Steady Flow Rate achieved when Water Consumption Rate changes less than
 Ksat: Meters / day

Steady Flow Rate: 334.28 ml/min
 Trnp Adj Flow Rate: 334.87 ml/min
 Percolation Rate: 0.23 mly/cm

Site Details:

Notes:



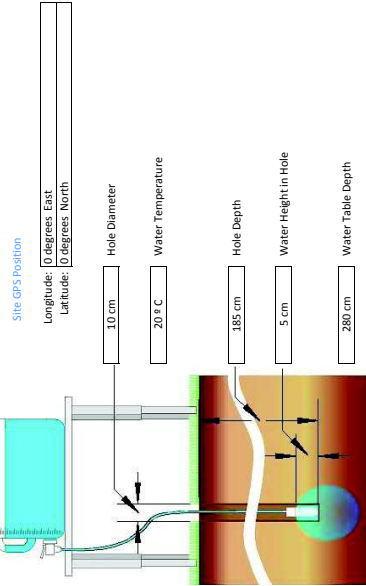
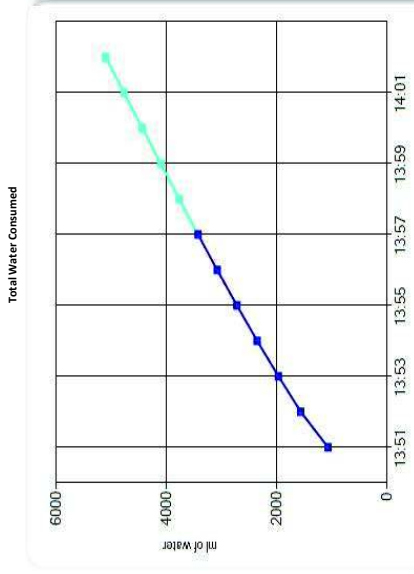
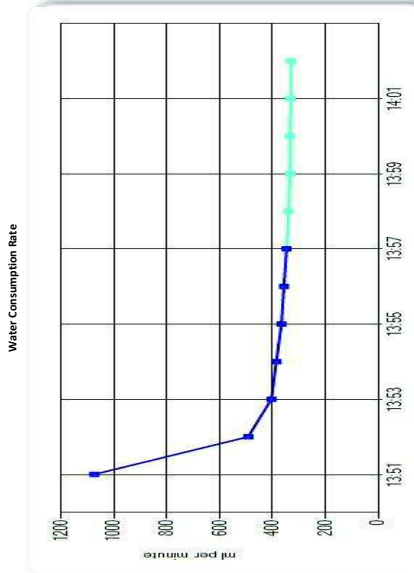
Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml / min)	Ignore this Reading?
13:50:49	8986.8	0	1075	1075	1075	
13:51:49	7911.8	1	492.8	1567.8	492.8	
13:52:49	7419	1	404.8	1972.6	404.8	
13:53:49	7042.2	1	386	2358.6	386	
13:54:49	6628.2	1	366.8	2725.4	366.8	
13:55:49	6261.4	1	357.4	3082.8	357.4	
13:56:49	5904	1	347	3429.8	347	
13:57:49	5557	1	340	3769.8	340	
13:58:49	5217	1	334	4103.8	334	
13:59:49	4883	1	334.4	4438.2	334.4	
14:00:49	4548.6	1	331.6	4769.8	331.6	
14:01:49	4217	1	331.4	5101.2	331.4	
14:02:49	3885.6	1				

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.

Location: Date of Readings:
 Site:
 Time Interval: minutes
 Ksat Method:
 Steady Flow Rate achieved when Water Consumption Rate changes less than
 Ksat: Meters / day

Site Details:

 Notes:



Time	Reservoir Water Level (ml)	Elapsed Time Interval (minutes)	Interval Water Consumed (ml)	Total Water Consumed (ml)	Water Consumption Rate (ml/min)	Ignore this Reading?
13:50:49	8986.8	0	1075	1075	1075	
13:51:49	7911.8	1	492.8	1567.8	492.8	
13:52:49	7419	1	404.8	1972.6	404.8	
13:53:49	7042.2	1	386	2358.6	386	
13:54:49	6628.2	1	366.8	2725.4	366.8	
13:55:49	6261.4	1	357.4	3082.8	357.4	
13:56:49	5904	1	347	3429.8	347	
13:57:49	5557	1	340	3769.8	340	
13:58:49	5217	1	334	4103.8	334	
13:59:49	4883	1	334.4	4438.2	334.4	
14:00:49	4548.6	1	331.6	4769.8	331.6	
14:01:49	4217	1	331.4	5101.2	331.4	
14:02:49	3885.6	1				

Soil Texture Structure Category:
 Most structured soils from clays through loams; also includes unstructured medium and fine sands. The category most frequently applicable for agricultural soils.