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ENGINEERING REPORT

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WQ Hydrographs

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA1 Imp	WQ	1	1,473.000	1.050	1.18
DA10 Imp	WQ	1	570.000	1.050	0.46
DA11 Imp	WQ	1	565.000	1.050	0.45
DA12A Imp	WQ	1	1,351.000	1.100	1.07
DA13 Imp	WQ	1	343.000	1.050	0.27
DA14 Imp	WQ	1	380.000	1.050	0.30
DA15 Imp	WQ	1	910.000	1.050	0.73
DA16 Imp	WQ	1	2,042.000	1.050	1.64
DA17 Imp	WQ	1	648.000	1.050	0.52
DA18 Imp	WQ	1	976.000	1.100	0.72
DA19 Imp	WQ	1	413.000	1.100	0.32
DA2 Imp	WQ	1	1,067.000	1.050	0.85
DA20 Imp	WQ	1	267.000	1.050	0.21
DA21 Imp	WQ	1	601.000	1.100	0.47
DA22 Imp	WQ	1	647.000	1.050	0.52
DA25 Imp	WQ	1	4,655.000	1.100	3.63
DA26 Imp	WQ	1	1,952.000	1.100	1.54
DA27	WQ	1	2,925.000	1.050	2.36
DA28 Imp	WQ	1	1,442.000	1.050	1.16
DA29 Imp	WQ	1	910.000	1.050	0.73
DA30 Imp	WQ	1	1,752.000	1.050	1.40
DA31 Imp	WQ	1	943.000	1.050	0.76
DA32 Imp	WQ	1	2,667.000	1.050	2.13
DA33 Imp	WQ	1	342.000	1.050	0.27
DA34 Imp	WQ	1	379.000	1.050	0.30
DA35 Imp	WQ	1	377.000	1.050	0.30
DA36 Imp	WQ	1	496.000	1.050	0.40
DA37 Imp	WQ	1	381.000	1.050	0.30
DA4 Imp	WQ	1	1,254.000	1.050	1.01
DA41 Imp	WQ	1	190.000	1.050	0.15
DA42 Imp	WQ	1	305.000	1.050	0.24
DA44 Imp	WQ	1	164.000	1.050	0.15
DA45 Imp	WQ	1	2,628.000	1.100	2.07
DA46 Imp	WQ	1	534.000	1.050	0.43
DA47 Imp	WQ	1	1,015.000	1.050	0.81
DA48 Imp	WQ	1	225.000	1.100	0.18
DA49 Imp	WQ	1	340.000	1.050	0.27
DA5 Imp	WQ	1	418.000	1.050	0.34
DA50 Imp	WQ	1	759.000	1.050	0.61
DA51 Imp	WQ	1	1,091.000	1.050	0.87
DA52 Imp	WQ	1	686.000	1.050	0.55
DA53 Imp	WQ	1	343.000	1.050	0.27
DA54 Imp	WQ	1	380.000	1.050	0.30

WQ Hydrographs

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA55 Imp	WQ	1	1,026.000	1.050	0.83
DA56 Imp	WQ	1	3,547.000	1.050	2.84
DA57 Imp	WQ	1	1,672.000	1.050	1.35
DA58 Imp	WQ	1	4,034.000	1.050	3.23
DA59 Imp	WQ	1	1,317.000	1.050	1.05
DA6 Imp	WQ	1	601.000	1.100	0.48
DA60 Imp	WQ	1	1,900.000	1.050	1.53
DA61 Imp	WQ	1	1,981.000	1.050	1.59
DA62 Imp	WQ	1	4,842.000	1.050	3.87
DA63 Imp	WQ	1	1,257.000	1.050	1.01
DA7 Imp	WQ	1	866.000	1.050	0.69
DA9 Imp	WQ	1	801.000	1.050	0.64
EDA3 Perv	WQ	1	1.000	2.000	0.00
Future Imp Road-Basin 6 (S Brunswick)	WQ	1	1,144.000	1.050	0.92
PDA-6 Imp (Plainsboro)	WQ	1	18,174.000	1.150	10.50
PDA8 Imp	WQ	1	1,449.000	1.050	1.16

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
J 24	WQ	1	0.000	0.000	0.00
POI-1 Ex FE Barclay Square	WQ	1	0.000	0.000	0.00
POI-2 (Harry's Brook)	WQ	1	0.000	0.000	0.00
POI-3 Barclay Square Ex	WQ	1	1.000	2.000	0.00

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
BIO29 (IN)	WQ	1	910.000	1.050	0.73	(N/A)	(N/A)
BIO29 (OUT)	WQ	1	477.000	1.150	0.40	94.20	525.000
Bio1 (IN)	WQ	1	2,119.000	1.050	1.26	(N/A)	(N/A)
Bio1 (OUT)	WQ	1	0.000	0.000	0.00	77.31	1,479.000
Bio12 (IN)	WQ	1	2,003.000	1.100	1.19	(N/A)	(N/A)
Bio12 (OUT)	WQ	1	0.000	0.000	0.00	85.48	1,198.000

WQ Hydrographs

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Bio25 (IN)	WQ	1	4,655.000	1.100	3.63	(N/A)	(N/A)
Bio25 (OUT)	WQ	1	0.000	0.000	0.00	100.30	4,062.000
Bio26 (IN)	WQ	1	3,672.000	1.100	2.12	(N/A)	(N/A)
Bio26 (OUT)	WQ	1	0.000	0.000	0.00	97.64	3,231.000
Bio28 (IN)	WQ	1	1,919.000	1.100	1.39	(N/A)	(N/A)
Bio28 (OUT)	WQ	1	0.000	0.000	0.00	91.07	285.000
Bio35 (IN)	WQ	1	380.000	1.050	0.30	(N/A)	(N/A)
Bio35 (OUT)	WQ	1	0.000	0.000	0.00	103.48	329.000
Bio36 (IN)	WQ	1	496.000	1.050	0.40	(N/A)	(N/A)
Bio36 (OUT)	WQ	1	0.000	0.000	0.00	98.58	493.000
Bio45 (IN)	WQ	1	7,455.000	1.100	2.77	(N/A)	(N/A)
Bio45 (OUT)	WQ	1	16.000	33.300	0.00	97.08	7,428.000
Bio51 (IN)	WQ	1	1,091.000	1.050	0.87	(N/A)	(N/A)
Bio51 (OUT)	WQ	1	0.000	0.000	0.00	102.33	900.000
Bio52 (IN)	WQ	1	686.000	1.050	0.55	(N/A)	(N/A)
Bio52 (OUT)	WQ	1	0.000	0.000	0.00	100.55	615.000
Bio53 (IN)	WQ	1	343.000	1.050	0.27	(N/A)	(N/A)
Bio53 (OUT)	WQ	1	0.000	0.000	0.00	104.91	335.000
Bio58 (IN)	WQ	1	4,062.000	1.050	3.20	(N/A)	(N/A)
Bio58 (OUT)	WQ	1	0.000	0.000	0.00	106.98	4,039.000
EX. BASIN 6 (IN)	WQ	1	19,318.000	1.150	10.84	(N/A)	(N/A)
EX. BASIN 6 (OUT)	WQ	1	0.000	0.000	0.00	89.34	19,281.000
Infil30 (IN)	WQ	1	2,044.000	1.050	1.38	(N/A)	(N/A)
Infil30 (OUT)	WQ	1	0.000	0.000	0.00	91.43	728.000
Infil8 (IN)	WQ	1	1,449.000	1.050	1.16	(N/A)	(N/A)
Infil8 (OUT)	WQ	1	604.000	1.250	0.15	109.72	896.000
UGB10 (IN)	WQ	1	570.000	1.050	0.46	(N/A)	(N/A)
UGB10 (OUT)	WQ	1	0.000	0.000	0.00	106.46	570.000
UGB11 (IN)	WQ	1	565.000	1.050	0.45	(N/A)	(N/A)
UGB11 (OUT)	WQ	1	42.000	1.500	0.03	85.00	418.000
UGB13 (IN)	WQ	1	342.000	1.050	0.27	(N/A)	(N/A)
UGB13 (OUT)	WQ	1	0.000	0.000	0.00	86.87	343.000
UGB14 (IN)	WQ	1	381.000	1.050	0.30	(N/A)	(N/A)
UGB14 (OUT)	WQ	1	0.000	0.000	0.00	87.19	380.000
UGB15 (IN)	WQ	1	914.000	1.050	0.72	(N/A)	(N/A)

WQ Hydrographs

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB15 (OUT)	WQ	1	0.000	0.000	0.00	92.33	911.000
UGB16 (IN)	WQ	1	2,053.000	1.050	1.62	(N/A)	(N/A)
UGB16 (OUT)	WQ	1	0.000	0.000	0.00	94.51	2,044.000
UGB17 (IN)	WQ	1	648.000	1.050	0.52	(N/A)	(N/A)
UGB17 (OUT)	WQ	1	0.000	0.000	0.00	110.64	647.000
UGB18 (IN)	WQ	1	1,026.000	1.100	0.72	(N/A)	(N/A)
UGB18 (OUT)	WQ	1	370.000	1.400	0.14	95.09	742.000
UGB19 (IN)	WQ	1	414.000	1.100	0.32	(N/A)	(N/A)
UGB19 (OUT)	WQ	1	50.000	1.650	0.04	95.09	293.000
UGB2 (IN)	WQ	1	1,066.000	1.050	0.84	(N/A)	(N/A)
UGB2 (OUT)	WQ	1	0.000	0.000	0.00	85.86	1,067.000
UGB20 (IN)	WQ	1	1,126.000	1.100	0.70	(N/A)	(N/A)
UGB20 (OUT)	WQ	1	0.000	0.000	0.00	97.40	641.000
UGB21 (IN)	WQ	1	601.000	1.100	0.47	(N/A)	(N/A)
UGB21 (OUT)	WQ	1	588.000	1.100	0.46	98.84	29.000
UGB22 (IN)	WQ	1	647.000	1.050	0.52	(N/A)	(N/A)
UGB22 (OUT)	WQ	1	0.000	0.000	0.00	107.16	647.000
UGB27 (IN)	WQ	1	2,925.000	1.050	2.36	(N/A)	(N/A)
UGB27 (OUT)	WQ	1	1,720.000	1.150	0.70	100.22	1,836.000
UGB3 (IN)	WQ	1	0.000	0.000	0.00	(N/A)	(N/A)
UGB3 (OUT)	WQ	1	0.000	0.000	0.00	85.50	0.000
UGB31 (IN)	WQ	1	943.000	1.050	0.76	(N/A)	(N/A)
UGB31 (OUT)	WQ	1	276.000	1.800	0.05	93.16	843.000
UGB32 (IN)	WQ	1	2,667.000	1.050	2.13	(N/A)	(N/A)
UGB32 (OUT)	WQ	1	0.000	0.000	0.00	110.32	2,668.000
UGB33 (IN)	WQ	1	342.000	1.050	0.27	(N/A)	(N/A)
UGB33 (OUT)	WQ	1	0.000	0.000	0.00	106.19	342.000
UGB34 (IN)	WQ	1	379.000	1.050	0.30	(N/A)	(N/A)
UGB34 (OUT)	WQ	1	0.000	0.000	0.00	109.74	379.000
UGB37 (IN)	WQ	1	381.000	1.050	0.30	(N/A)	(N/A)

WQ Hydrographs

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB37 (OUT)	WQ	1	0.000	0.000	0.00	103.92	380.000
UGB4 (IN)	WQ	1	1,254.000	1.050	1.01	(N/A)	(N/A)
UGB4 (OUT)	WQ	1	0.000	0.000	0.00	85.67	1,065.000
UGB41 (IN)	WQ	1	190.000	1.050	0.15	(N/A)	(N/A)
UGB41 (OUT)	WQ	1	26.000	1.750	0.01	104.82	171.000
UGB42 (IN)	WQ	1	305.000	1.050	0.24	(N/A)	(N/A)
UGB42 (OUT)	WQ	1	0.000	0.000	0.00	95.38	304.000
UGB43 (IN)	WQ	1	0.000	0.000	0.00	(N/A)	(N/A)
UGB43 (OUT)	WQ	1	0.000	0.000	0.00	98.00	0.000
UGB44 (IN)	WQ	1	164.000	1.050	0.15	(N/A)	(N/A)
UGB44 (OUT)	WQ	1	0.000	0.000	0.00	101.14	122.000
UGB46 (IN)	WQ	1	534.000	1.050	0.43	(N/A)	(N/A)
UGB46 (OUT)	WQ	1	413.000	1.100	0.27	103.79	263.000
UGB47 (IN)	WQ	1	1,015.000	1.050	0.81	(N/A)	(N/A)
UGB47 (OUT)	WQ	1	585.000	1.300	0.13	108.67	737.000
UGB48 (IN)	WQ	1	225.000	1.100	0.18	(N/A)	(N/A)
UGB48 (OUT)	WQ	1	84.000	1.300	0.03	101.56	166.000
UGB49 (IN)	WQ	1	340.000	1.050	0.27	(N/A)	(N/A)
UGB49 (OUT)	WQ	1	186.000	1.150	0.12	103.49	217.000
UGB5 (IN)	WQ	1	414.000	1.000	0.33	(N/A)	(N/A)
UGB5 (OUT)	WQ	1	0.000	0.000	0.00	94.66	362.000
UGB50 (IN)	WQ	1	759.000	1.050	0.61	(N/A)	(N/A)
UGB50 (OUT)	WQ	1	397.000	1.150	0.22	102.27	494.000
UGB54 (IN)	WQ	1	380.000	1.050	0.30	(N/A)	(N/A)
UGB54 (OUT)	WQ	1	255.000	1.150	0.15	99.71	227.000
UGB55 (IN)	WQ	1	1,026.000	1.050	0.83	(N/A)	(N/A)
UGB55 (OUT)	WQ	1	0.000	0.000	0.00	106.18	1,025.000
UGB56 (IN)	WQ	1	3,547.000	1.050	2.84	(N/A)	(N/A)
UGB56 (OUT)	WQ	1	0.000	0.000	0.00	110.41	3,545.000
UGB57 (IN)	WQ	1	1,672.000	1.050	1.35	(N/A)	(N/A)

WQ Hydrographs

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB57 (OUT)	WQ	1	0.000	0.000	0.00	111.45	1,670.000
UGB59 (IN)	WQ	1	1,327.000	1.050	1.04	(N/A)	(N/A)
UGB59 (OUT)	WQ	1	0.000	0.000	0.00	104.18	1,319.000
UGB6 (IN)	WQ	1	605.000	1.100	0.48	(N/A)	(N/A)
UGB6 (OUT)	WQ	1	0.000	0.000	0.00	94.85	540.000
UGB60 (IN)	WQ	1	1,900.000	1.050	1.53	(N/A)	(N/A)
UGB60 (OUT)	WQ	1	0.000	0.000	0.00	111.50	1,898.000
UGB61 (IN)	WQ	1	1,981.000	1.050	1.59	(N/A)	(N/A)
UGB61 (OUT)	WQ	1	1,432.000	1.250	0.34	108.61	1,364.000
UGB62 (IN)	WQ	1	4,842.000	1.050	3.87	(N/A)	(N/A)
UGB62 (OUT)	WQ	1	1,978.000	2.000	0.09	108.64	4,600.000
UGB63 (IN)	WQ	1	1,257.000	1.050	1.01	(N/A)	(N/A)
UGB63 (OUT)	WQ	1	0.000	0.000	0.00	104.45	1,256.000
UGB7 (IN)	WQ	1	866.000	1.050	0.69	(N/A)	(N/A)
UGB7 (OUT)	WQ	1	0.000	0.000	0.00	99.69	749.000
UGB9 (IN)	WQ	1	801.000	1.050	0.64	(N/A)	(N/A)
UGB9 (OUT)	WQ	1	0.000	0.000	0.00	101.25	801.000

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA1 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.045 hours
Area (User Defined)	0.390 acres

Computational Time Increment	0.006 hours
Time to Peak (Computed)	1.085 hours
Flow (Peak, Computed)	1.20 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.18 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.390 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,464.644 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,473.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.045 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA1 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	9.83 ft³/s
Unit peak time, Tp	0.030 hours
Unit receding limb, Tr	0.120 hours
Total unit time, Tb	0.150 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA10 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.035 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.46 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.46 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	563.325 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	570.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.035 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA10 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.88 ft³/s
Unit peak time, Tp	0.023 hours
Unit receding limb, Tr	0.093 hours
Total unit time, Tb	0.116 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA11 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.150 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.46 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.45 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.150 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	563.325 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	565.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA11 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.22 ft³/s
Unit peak time, Tp	0.035 hours
Unit receding limb, Tr	0.141 hours
Total unit time, Tb	0.176 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA12A Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.072 hours
Area (User Defined)	0.360 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	1.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	1.07 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.360 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,351.979 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,351.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.072 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA12A Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.68 ft³/s
Unit peak time, Tp	0.048 hours
Unit receding limb, Tr	0.192 hours
Total unit time, Tb	0.239 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA13 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.029 hours
Area (User Defined)	0.090 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.27 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.090 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	337.995 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	343.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.029 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA13 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.48 ft³/s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.078 hours
Total unit time, Tb	0.098 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA14 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.036 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.084 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	375.550 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	380.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.036 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA14 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.15 ft³/s
Unit peak time, Tp	0.024 hours
Unit receding limb, Tr	0.096 hours
Total unit time, Tb	0.120 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA15 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.040 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.084 hours
Flow (Peak, Computed)	0.74 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.73 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	901.319 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	910.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.040 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA15 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.82 ft³/s
Unit peak time, Tp	0.027 hours
Unit receding limb, Tr	0.106 hours
Total unit time, Tb	0.133 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA16 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.044 hours
Area (User Defined)	0.540 acres

Computational Time Increment	0.006 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	1.66 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.64 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.540 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	2,027.968 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,042.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.044 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA16 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.96 ft³/s
Unit peak time, Tp	0.029 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.146 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA17 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.029 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.52 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.52 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	638.435 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	648.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.029 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA17 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.64 ft³/s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.077 hours
Total unit time, Tb	0.097 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA18 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.134 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	1.112 hours
Flow (Peak, Computed)	0.72 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.72 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	976.429 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	976.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.134 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA18 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.19 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.359 hours
Total unit time, Tb	0.448 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA19 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.105 hours
Area (User Defined)	0.110 acres

Computational Time Increment	0.014 hours
Time to Peak (Computed)	1.103 hours
Flow (Peak, Computed)	0.32 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.32 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.110 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	413.105 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	413.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.105 hours
Computational Time Increment	0.014 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA19 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.19 ft³/s
Unit peak time, Tp	0.070 hours
Unit receding limb, Tr	0.279 hours
Total unit time, Tb	0.349 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA2 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.032 hours
Area (User Defined)	0.280 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.86 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.85 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.280 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,051.539 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,067.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.032 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA2 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.02 ft³/s
Unit peak time, Tp	0.021 hours
Unit receding limb, Tr	0.084 hours
Total unit time, Tb	0.106 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA20 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.033 hours
Area (User Defined)	0.070 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.22 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.21 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.070 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	262.885 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	267.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.033 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA20 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.38 ft³/s
Unit peak time, Tp	0.022 hours
Unit receding limb, Tr	0.089 hours
Total unit time, Tb	0.111 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA21 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.087 hours
Area (User Defined)	0.160 acres

Computational Time Increment	0.012 hours
Time to Peak (Computed)	1.093 hours
Flow (Peak, Computed)	0.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.47 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.160 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	600.880 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	601.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.087 hours
Computational Time Increment	0.012 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA21 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.08 ft³/s
Unit peak time, Tp	0.058 hours
Unit receding limb, Tr	0.233 hours
Total unit time, Tb	0.291 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA22 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.023 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.53 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.52 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	638.434 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	647.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.023 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA22 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.38 ft³/s
Unit peak time, Tp	0.015 hours
Unit receding limb, Tr	0.061 hours
Total unit time, Tb	0.077 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA25 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.098 hours
Area (User Defined)	1.240 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	1.096 hours
Flow (Peak, Computed)	3.65 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	3.63 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.240 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	4,656.817 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,655.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.098 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA25 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	14.36 ft³/s
Unit peak time, Tp	0.065 hours
Unit receding limb, Tr	0.261 hours
Total unit time, Tb	0.326 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA26 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.074 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	1.086 hours
Flow (Peak, Computed)	1.57 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	1.54 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,952.859 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,952.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.074 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA26 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.96 ft³/s
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.197 hours
Total unit time, Tb	0.247 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA27
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.770 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	2.38 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	2.36 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.770 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	2,891.731 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,925.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA27
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	43.62 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA28 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.038 hours
Area (User Defined)	0.380 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	1.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.16 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.380 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,427.089 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,442.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.038 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA28 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.37 ft³/s
Unit peak time, Tp	0.025 hours
Unit receding limb, Tr	0.101 hours
Total unit time, Tb	0.126 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA29 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.040 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.74 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.73 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	901.319 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	910.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.040 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA29 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.80 ft³/s
Unit peak time, Tp	0.027 hours
Unit receding limb, Tr	0.107 hours
Total unit time, Tb	0.133 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA30 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.033 hours
Area (User Defined)	0.460 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	1.42 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.40 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.460 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,727.529 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,752.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.033 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA30 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.93 ft³/s
Unit peak time, Tp	0.022 hours
Unit receding limb, Tr	0.087 hours
Total unit time, Tb	0.109 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA31 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	0.250 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	1.080 hours
Flow (Peak, Computed)	0.77 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.76 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.250 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	938.874 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	943.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA31 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.81 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.130 hours
Total unit time, Tb	0.163 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA32 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.031 hours
Area (User Defined)	0.700 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	2.16 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	2.13 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.700 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	2,628.848 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,667.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.031 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA32 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	25.44 ft³/s
Unit peak time, Tp	0.021 hours
Unit receding limb, Tr	0.083 hours
Total unit time, Tb	0.104 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA33 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.034 hours
Area (User Defined)	0.090 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.27 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.090 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	337.995 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	342.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.034 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA33 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.99 ft³/s
Unit peak time, Tp	0.023 hours
Unit receding limb, Tr	0.091 hours
Total unit time, Tb	0.114 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA34 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.039 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.084 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	375.550 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	379.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.039 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA34 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.90 ft³/s
Unit peak time, Tp	0.026 hours
Unit receding limb, Tr	0.104 hours
Total unit time, Tb	0.130 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA35 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.047 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.006 hours
Time to Peak (Computed)	1.084 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	375.550 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	377.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.047 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA35 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.41 ft³/s
Unit peak time, Tp	0.031 hours
Unit receding limb, Tr	0.125 hours
Total unit time, Tb	0.157 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA36 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	0.130 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	0.40 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.40 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.130 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	488.215 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	496.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA36 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.61 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.070 hours
Total unit time, Tb	0.088 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA37 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.033 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	375.549 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	381.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.033 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA37 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.48 ft³/s
Unit peak time, Tp	0.022 hours
Unit receding limb, Tr	0.087 hours
Total unit time, Tb	0.109 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA4 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.330 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	1.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.01 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.330 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,239.313 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,254.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA4 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.70 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA41 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.050 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.15 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.15 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.050 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	187.775 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	190.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA41 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.83 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA42 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.029 hours
Area (User Defined)	0.080 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.25 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.24 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.080 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	300.440 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	305.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.029 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA42 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.08 ft³/s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.078 hours
Total unit time, Tb	0.098 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA44 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.022 hours
Area (User Defined)	0.090 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.084 hours
Flow (Peak, Computed)	0.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.15 ft³/s

Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	0.090 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	161.346 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	164.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.022 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA44 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.59 ft³/s
Unit peak time, Tp	0.015 hours
Unit receding limb, Tr	0.059 hours
Total unit time, Tb	0.074 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA45 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.075 hours
Area (User Defined)	0.700 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	1.086 hours
Flow (Peak, Computed)	2.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	2.07 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.700 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	2,628.848 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,628.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.075 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA45 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.61 ft³/s
Unit peak time, Tp	0.050 hours
Unit receding limb, Tr	0.199 hours
Total unit time, Tb	0.249 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA46 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.031 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.084 hours
Flow (Peak, Computed)	0.43 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.43 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	525.770 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	534.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.031 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA46 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.13 ft³/s
Unit peak time, Tp	0.021 hours
Unit receding limb, Tr	0.082 hours
Total unit time, Tb	0.103 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA47 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.060 hours
Area (User Defined)	0.270 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	0.82 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.81 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.270 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,013.984 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,015.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.060 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA47 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.09 ft³/s
Unit peak time, Tp	0.040 hours
Unit receding limb, Tr	0.160 hours
Total unit time, Tb	0.200 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA48 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.078 hours
Area (User Defined)	0.060 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	1.089 hours
Flow (Peak, Computed)	0.18 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.18 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.060 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	225.330 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	225.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.078 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA48 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.87 ft³/s
Unit peak time, Tp	0.052 hours
Unit receding limb, Tr	0.207 hours
Total unit time, Tb	0.259 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA49 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.047 hours
Area (User Defined)	0.090 acres

Computational Time Increment	0.006 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.27 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.090 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	337.995 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	340.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.047 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA49 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.19 ft³/s
Unit peak time, Tp	0.031 hours
Unit receding limb, Tr	0.124 hours
Total unit time, Tb	0.155 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA5 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.110 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.34 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.34 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.110 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	413.104 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	418.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA5 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.23 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA50 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.038 hours
Area (User Defined)	0.200 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.080 hours
Flow (Peak, Computed)	0.62 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.61 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.200 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	751.099 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	759.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.038 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA50 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.02 ft³/s
Unit peak time, Tp	0.025 hours
Unit receding limb, Tr	0.100 hours
Total unit time, Tb	0.126 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA51 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.057 hours
Area (User Defined)	0.290 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.89 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.87 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.290 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,089.094 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,091.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.057 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA51 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.78 ft³/s
Unit peak time, Tp	0.038 hours
Unit receding limb, Tr	0.151 hours
Total unit time, Tb	0.189 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA52 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.032 hours
Area (User Defined)	0.180 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.56 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.55 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.180 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	675.989 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	686.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.032 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA52 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.35 ft³/s
Unit peak time, Tp	0.021 hours
Unit receding limb, Tr	0.086 hours
Total unit time, Tb	0.107 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA53 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.032 hours
Area (User Defined)	0.090 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.27 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.090 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	337.995 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	343.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.032 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA53 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.14 ft³/s
Unit peak time, Tp	0.022 hours
Unit receding limb, Tr	0.087 hours
Total unit time, Tb	0.108 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA54 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.036 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.30 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	375.550 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	380.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.036 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA54 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.18 ft³/s
Unit peak time, Tp	0.024 hours
Unit receding limb, Tr	0.095 hours
Total unit time, Tb	0.119 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA55 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.270 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.84 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.83 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.270 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,013.984 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,026.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA55 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.30 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA56 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.029 hours
Area (User Defined)	0.930 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.080 hours
Flow (Peak, Computed)	2.87 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	2.84 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.930 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	3,492.613 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,547.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.029 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA56 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	36.80 ft³/s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.076 hours
Total unit time, Tb	0.095 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA57 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.440 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	1.36 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.35 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.440 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,652.418 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,672.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA57 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	24.93 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA58 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1.070 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	3.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	3.23 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.070 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	4,018.382 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,034.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA58 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	24.80 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.130 hours
Total unit time, Tb	0.163 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA59 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.350 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	1.085 hours
Flow (Peak, Computed)	1.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.05 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.350 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,314.424 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,317.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA59 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.07 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.150 hours
Total unit time, Tb	0.187 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA6 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.079 hours
Area (User Defined)	0.160 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	1.090 hours
Flow (Peak, Computed)	0.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.48 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.160 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	600.879 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	601.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.079 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA6 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.31 ft³/s
Unit peak time, Tp	0.052 hours
Unit receding limb, Tr	0.210 hours
Total unit time, Tb	0.262 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA60 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.500 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	1.55 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.53 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.500 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,877.747 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,900.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA60 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	28.33 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA61 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.032 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	1.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.59 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,952.859 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,981.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.032 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA61 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.67 ft³/s
Unit peak time, Tp	0.021 hours
Unit receding limb, Tr	0.084 hours
Total unit time, Tb	0.105 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA62 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.030 hours
Area (User Defined)	1.270 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.080 hours
Flow (Peak, Computed)	3.92 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	3.87 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.270 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	4,769.482 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,842.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.030 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA62 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	47.25 ft³/s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.081 hours
Total unit time, Tb	0.102 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA63 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.032 hours
Area (User Defined)	0.330 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	1.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.01 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.330 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,239.314 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,257.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.032 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA63 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.71 ft³/s
Unit peak time, Tp	0.021 hours
Unit receding limb, Tr	0.085 hours
Total unit time, Tb	0.106 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA7 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.052 hours
Area (User Defined)	0.230 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.70 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.69 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.230 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	863.764 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	866.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.052 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA7 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.04 ft³/s
Unit peak time, Tp	0.034 hours
Unit receding limb, Tr	0.138 hours
Total unit time, Tb	0.172 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA9 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.027 hours
Area (User Defined)	0.210 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	0.65 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.64 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.210 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	788.654 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	801.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.027 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: DA9 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.92 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.071 hours
Total unit time, Tb	0.089 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: EDA3 Perv
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.094 hours
Area (User Defined)	3.890 acres

Computational Time Increment	0.013 hours
Time to Peak (Computed)	2.014 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	2.000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	62.000
Area (User Defined)	3.890 acres
Maximum Retention (Pervious)	6.1 in
Maximum Retention (Pervious, 20 percent)	1.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	1.335 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.094 hours
Computational Time Increment	0.013 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: EDA3 Perv
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	46.97 ft³/s
Unit peak time, Tp	0.063 hours
Unit receding limb, Tr	0.250 hours
Total unit time, Tb	0.313 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: Future Imp Road-Basin 6 (S Brunswick)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.029 hours
Area (User Defined)	0.300 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	0.93 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.92 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.300 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,126.649 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,144.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.029 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: Future Imp Road-Basin 6 (S Brunswick)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.90 ft³/s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.076 hours
Total unit time, Tb	0.095 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-6 Imp (Plainsboro)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.251 hours
Area (User Defined)	4.840 acres

Computational Time Increment	0.033 hours
Time to Peak (Computed)	1.171 hours
Flow (Peak, Computed)	10.77 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.150 hours
Flow (Peak Interpolated Output)	10.50 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	4.840 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	18,176.608 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	18,174.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.251 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA-6 Imp (Plainsboro)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	21.85 ft³/s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	0.669 hours
Total unit time, Tb	0.837 hours

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA8 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	0.380 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	1.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.16 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.380 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,427.089 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,449.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs

Subsection: Unit Hydrograph Summary
Label: PDA8 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	16.66 ft³/s
Unit peak time, Tp	0.017 hours
Unit receding limb, Tr	0.069 hours
Total unit time, Tb	0.086 hours

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WQ Basin Routings

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA1 Imp	WQ	1	1,473.000	1.050	1.18
DA10 Imp	WQ	1	570.000	1.050	0.46
DA11 Imp	WQ	1	565.000	1.050	0.45
DA12A Imp	WQ	1	1,351.000	1.100	1.07
DA13 Imp	WQ	1	343.000	1.050	0.27
DA14 Imp	WQ	1	380.000	1.050	0.30
DA15 Imp	WQ	1	910.000	1.050	0.73
DA16 Imp	WQ	1	2,042.000	1.050	1.64
DA17 Imp	WQ	1	648.000	1.050	0.52
DA18 Imp	WQ	1	976.000	1.100	0.72
DA19 Imp	WQ	1	413.000	1.100	0.32
DA2 Imp	WQ	1	1,067.000	1.050	0.85
DA20 Imp	WQ	1	267.000	1.050	0.21
DA21 Imp	WQ	1	601.000	1.100	0.47
DA22 Imp	WQ	1	647.000	1.050	0.52
DA25 Imp	WQ	1	4,655.000	1.100	3.63
DA26 Imp	WQ	1	1,952.000	1.100	1.54
DA27	WQ	1	2,925.000	1.050	2.36
DA28 Imp	WQ	1	1,442.000	1.050	1.16
DA29 Imp	WQ	1	910.000	1.050	0.73
DA30 Imp	WQ	1	1,752.000	1.050	1.40
DA31 Imp	WQ	1	943.000	1.050	0.76
DA32 Imp	WQ	1	2,667.000	1.050	2.13
DA33 Imp	WQ	1	342.000	1.050	0.27
DA34 Imp	WQ	1	379.000	1.050	0.30
DA35 Imp	WQ	1	377.000	1.050	0.30
DA36 Imp	WQ	1	496.000	1.050	0.40
DA37 Imp	WQ	1	381.000	1.050	0.30
DA4 Imp	WQ	1	1,254.000	1.050	1.01
DA41 Imp	WQ	1	190.000	1.050	0.15
DA42 Imp	WQ	1	305.000	1.050	0.24
DA44 Imp	WQ	1	164.000	1.050	0.15
DA45 Imp	WQ	1	2,628.000	1.100	2.07
DA46 Imp	WQ	1	534.000	1.050	0.43
DA47 Imp	WQ	1	1,015.000	1.050	0.81
DA48 Imp	WQ	1	225.000	1.100	0.18
DA49 Imp	WQ	1	340.000	1.050	0.27
DA5 Imp	WQ	1	418.000	1.050	0.34
DA50 Imp	WQ	1	759.000	1.050	0.61
DA51 Imp	WQ	1	1,091.000	1.050	0.87
DA52 Imp	WQ	1	686.000	1.050	0.55
DA53 Imp	WQ	1	343.000	1.050	0.27
DA54 Imp	WQ	1	380.000	1.050	0.30

WQ Basin Routings

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA55 Imp	WQ	1	1,026.000	1.050	0.83
DA56 Imp	WQ	1	3,547.000	1.050	2.84
DA57 Imp	WQ	1	1,672.000	1.050	1.35
DA58 Imp	WQ	1	4,034.000	1.050	3.23
DA59 Imp	WQ	1	1,317.000	1.050	1.05
DA6 Imp	WQ	1	601.000	1.100	0.48
DA60 Imp	WQ	1	1,900.000	1.050	1.53
DA61 Imp	WQ	1	1,981.000	1.050	1.59
DA62 Imp	WQ	1	4,842.000	1.050	3.87
DA63 Imp	WQ	1	1,257.000	1.050	1.01
DA7 Imp	WQ	1	866.000	1.050	0.69
DA9 Imp	WQ	1	801.000	1.050	0.64
EDA3 Perv	WQ	1	1.000	2.000	0.00
Future Imp Road-Basin 6 (S Brunswick)	WQ	1	1,144.000	1.050	0.92
PDA-6 Imp (Plainsboro)	WQ	1	18,174.000	1.150	10.50
PDA8 Imp	WQ	1	1,449.000	1.050	1.16

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
J 24	WQ	1	0.000	0.000	0.00
POI-1 Ex FE Barclay Square	WQ	1	0.000	0.000	0.00
POI-2 (Harry's Brook)	WQ	1	0.000	0.000	0.00
POI-3 Barclay Square Ex	WQ	1	1.000	2.000	0.00

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
BIO29 (IN)	WQ	1	910.000	1.050	0.73	(N/A)	(N/A)
BIO29 (OUT)	WQ	1	477.000	1.150	0.40	94.20	525.000
Bio1 (IN)	WQ	1	2,119.000	1.050	1.26	(N/A)	(N/A)
Bio1 (OUT)	WQ	1	0.000	0.000	0.00	77.31	1,479.000
Bio12 (IN)	WQ	1	2,003.000	1.100	1.19	(N/A)	(N/A)
Bio12 (OUT)	WQ	1	0.000	0.000	0.00	85.48	1,198.000

WQ Basin Routings

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Bio25 (IN)	WQ	1	4,655.000	1.100	3.63	(N/A)	(N/A)
Bio25 (OUT)	WQ	1	0.000	0.000	0.00	100.30	4,062.000
Bio26 (IN)	WQ	1	3,672.000	1.100	2.12	(N/A)	(N/A)
Bio26 (OUT)	WQ	1	0.000	0.000	0.00	97.64	3,231.000
Bio28 (IN)	WQ	1	1,919.000	1.100	1.39	(N/A)	(N/A)
Bio28 (OUT)	WQ	1	0.000	0.000	0.00	91.07	285.000
Bio35 (IN)	WQ	1	380.000	1.050	0.30	(N/A)	(N/A)
Bio35 (OUT)	WQ	1	0.000	0.000	0.00	103.48	329.000
Bio36 (IN)	WQ	1	496.000	1.050	0.40	(N/A)	(N/A)
Bio36 (OUT)	WQ	1	0.000	0.000	0.00	98.58	493.000
Bio45 (IN)	WQ	1	7,455.000	1.100	2.77	(N/A)	(N/A)
Bio45 (OUT)	WQ	1	16.000	33.300	0.00	97.08	7,428.000
Bio51 (IN)	WQ	1	1,091.000	1.050	0.87	(N/A)	(N/A)
Bio51 (OUT)	WQ	1	0.000	0.000	0.00	102.33	900.000
Bio52 (IN)	WQ	1	686.000	1.050	0.55	(N/A)	(N/A)
Bio52 (OUT)	WQ	1	0.000	0.000	0.00	100.55	615.000
Bio53 (IN)	WQ	1	343.000	1.050	0.27	(N/A)	(N/A)
Bio53 (OUT)	WQ	1	0.000	0.000	0.00	104.91	335.000
Bio58 (IN)	WQ	1	4,062.000	1.050	3.20	(N/A)	(N/A)
Bio58 (OUT)	WQ	1	0.000	0.000	0.00	106.98	4,039.000
EX. BASIN 6 (IN)	WQ	1	19,318.000	1.150	10.84	(N/A)	(N/A)
EX. BASIN 6 (OUT)	WQ	1	0.000	0.000	0.00	89.34	19,281.000
Infil30 (IN)	WQ	1	2,044.000	1.050	1.38	(N/A)	(N/A)
Infil30 (OUT)	WQ	1	0.000	0.000	0.00	91.43	728.000
Infil8 (IN)	WQ	1	1,449.000	1.050	1.16	(N/A)	(N/A)
Infil8 (OUT)	WQ	1	604.000	1.250	0.15	109.72	896.000
UGB10 (IN)	WQ	1	570.000	1.050	0.46	(N/A)	(N/A)
UGB10 (OUT)	WQ	1	0.000	0.000	0.00	106.46	570.000
UGB11 (IN)	WQ	1	565.000	1.050	0.45	(N/A)	(N/A)
UGB11 (OUT)	WQ	1	42.000	1.500	0.03	85.00	418.000
UGB13 (IN)	WQ	1	342.000	1.050	0.27	(N/A)	(N/A)
UGB13 (OUT)	WQ	1	0.000	0.000	0.00	86.87	343.000
UGB14 (IN)	WQ	1	381.000	1.050	0.30	(N/A)	(N/A)
UGB14 (OUT)	WQ	1	0.000	0.000	0.00	87.19	380.000
UGB15 (IN)	WQ	1	914.000	1.050	0.72	(N/A)	(N/A)

WQ Basin Routings

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB15 (OUT)	WQ	1	0.000	0.000	0.00	92.33	911.000
UGB16 (IN)	WQ	1	2,053.000	1.050	1.62	(N/A)	(N/A)
UGB16 (OUT)	WQ	1	0.000	0.000	0.00	94.51	2,044.000
UGB17 (IN)	WQ	1	648.000	1.050	0.52	(N/A)	(N/A)
UGB17 (OUT)	WQ	1	0.000	0.000	0.00	110.64	647.000
UGB18 (IN)	WQ	1	1,026.000	1.100	0.72	(N/A)	(N/A)
UGB18 (OUT)	WQ	1	370.000	1.400	0.14	95.09	742.000
UGB19 (IN)	WQ	1	414.000	1.100	0.32	(N/A)	(N/A)
UGB19 (OUT)	WQ	1	50.000	1.650	0.04	95.09	293.000
UGB2 (IN)	WQ	1	1,066.000	1.050	0.84	(N/A)	(N/A)
UGB2 (OUT)	WQ	1	0.000	0.000	0.00	85.86	1,067.000
UGB20 (IN)	WQ	1	1,126.000	1.100	0.70	(N/A)	(N/A)
UGB20 (OUT)	WQ	1	0.000	0.000	0.00	97.40	641.000
UGB21 (IN)	WQ	1	601.000	1.100	0.47	(N/A)	(N/A)
UGB21 (OUT)	WQ	1	588.000	1.100	0.46	98.84	29.000
UGB22 (IN)	WQ	1	647.000	1.050	0.52	(N/A)	(N/A)
UGB22 (OUT)	WQ	1	0.000	0.000	0.00	107.16	647.000
UGB27 (IN)	WQ	1	2,925.000	1.050	2.36	(N/A)	(N/A)
UGB27 (OUT)	WQ	1	1,720.000	1.150	0.70	100.22	1,836.000
UGB3 (IN)	WQ	1	0.000	0.000	0.00	(N/A)	(N/A)
UGB3 (OUT)	WQ	1	0.000	0.000	0.00	85.50	0.000
UGB31 (IN)	WQ	1	943.000	1.050	0.76	(N/A)	(N/A)
UGB31 (OUT)	WQ	1	276.000	1.800	0.05	93.16	843.000
UGB32 (IN)	WQ	1	2,667.000	1.050	2.13	(N/A)	(N/A)
UGB32 (OUT)	WQ	1	0.000	0.000	0.00	110.32	2,668.000
UGB33 (IN)	WQ	1	342.000	1.050	0.27	(N/A)	(N/A)
UGB33 (OUT)	WQ	1	0.000	0.000	0.00	106.19	342.000
UGB34 (IN)	WQ	1	379.000	1.050	0.30	(N/A)	(N/A)
UGB34 (OUT)	WQ	1	0.000	0.000	0.00	109.74	379.000
UGB37 (IN)	WQ	1	381.000	1.050	0.30	(N/A)	(N/A)

WQ Basin Routings

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB37 (OUT)	WQ	1	0.000	0.000	0.00	103.92	380.000
UGB4 (IN)	WQ	1	1,254.000	1.050	1.01	(N/A)	(N/A)
UGB4 (OUT)	WQ	1	0.000	0.000	0.00	85.67	1,065.000
UGB41 (IN)	WQ	1	190.000	1.050	0.15	(N/A)	(N/A)
UGB41 (OUT)	WQ	1	26.000	1.750	0.01	104.82	171.000
UGB42 (IN)	WQ	1	305.000	1.050	0.24	(N/A)	(N/A)
UGB42 (OUT)	WQ	1	0.000	0.000	0.00	95.38	304.000
UGB43 (IN)	WQ	1	0.000	0.000	0.00	(N/A)	(N/A)
UGB43 (OUT)	WQ	1	0.000	0.000	0.00	98.00	0.000
UGB44 (IN)	WQ	1	164.000	1.050	0.15	(N/A)	(N/A)
UGB44 (OUT)	WQ	1	0.000	0.000	0.00	101.14	122.000
UGB46 (IN)	WQ	1	534.000	1.050	0.43	(N/A)	(N/A)
UGB46 (OUT)	WQ	1	413.000	1.100	0.27	103.79	263.000
UGB47 (IN)	WQ	1	1,015.000	1.050	0.81	(N/A)	(N/A)
UGB47 (OUT)	WQ	1	585.000	1.300	0.13	108.67	737.000
UGB48 (IN)	WQ	1	225.000	1.100	0.18	(N/A)	(N/A)
UGB48 (OUT)	WQ	1	84.000	1.300	0.03	101.56	166.000
UGB49 (IN)	WQ	1	340.000	1.050	0.27	(N/A)	(N/A)
UGB49 (OUT)	WQ	1	186.000	1.150	0.12	103.49	217.000
UGB5 (IN)	WQ	1	414.000	1.000	0.33	(N/A)	(N/A)
UGB5 (OUT)	WQ	1	0.000	0.000	0.00	94.66	362.000
UGB50 (IN)	WQ	1	759.000	1.050	0.61	(N/A)	(N/A)
UGB50 (OUT)	WQ	1	397.000	1.150	0.22	102.27	494.000
UGB54 (IN)	WQ	1	380.000	1.050	0.30	(N/A)	(N/A)
UGB54 (OUT)	WQ	1	255.000	1.150	0.15	99.71	227.000
UGB55 (IN)	WQ	1	1,026.000	1.050	0.83	(N/A)	(N/A)
UGB55 (OUT)	WQ	1	0.000	0.000	0.00	106.18	1,025.000
UGB56 (IN)	WQ	1	3,547.000	1.050	2.84	(N/A)	(N/A)
UGB56 (OUT)	WQ	1	0.000	0.000	0.00	110.41	3,545.000
UGB57 (IN)	WQ	1	1,672.000	1.050	1.35	(N/A)	(N/A)

WQ Basin Routings

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB57 (OUT)	WQ	1	0.000	0.000	0.00	111.45	1,670.000
UGB59 (IN)	WQ	1	1,327.000	1.050	1.04	(N/A)	(N/A)
UGB59 (OUT)	WQ	1	0.000	0.000	0.00	104.18	1,319.000
UGB6 (IN)	WQ	1	605.000	1.100	0.48	(N/A)	(N/A)
UGB6 (OUT)	WQ	1	0.000	0.000	0.00	94.85	540.000
UGB60 (IN)	WQ	1	1,900.000	1.050	1.53	(N/A)	(N/A)
UGB60 (OUT)	WQ	1	0.000	0.000	0.00	111.50	1,898.000
UGB61 (IN)	WQ	1	1,981.000	1.050	1.59	(N/A)	(N/A)
UGB61 (OUT)	WQ	1	1,432.000	1.250	0.34	108.61	1,364.000
UGB62 (IN)	WQ	1	4,842.000	1.050	3.87	(N/A)	(N/A)
UGB62 (OUT)	WQ	1	1,978.000	2.000	0.09	108.64	4,600.000
UGB63 (IN)	WQ	1	1,257.000	1.050	1.01	(N/A)	(N/A)
UGB63 (OUT)	WQ	1	0.000	0.000	0.00	104.45	1,256.000
UGB7 (IN)	WQ	1	866.000	1.050	0.69	(N/A)	(N/A)
UGB7 (OUT)	WQ	1	0.000	0.000	0.00	99.69	749.000
UGB9 (IN)	WQ	1	801.000	1.050	0.64	(N/A)	(N/A)
UGB9 (OUT)	WQ	1	0.000	0.000	0.00	101.25	801.000

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio1
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	77.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
77.00	0.00	0.000	0.110	0.00	0.00	0.00
77.10	0.00	480.991	0.111	0.11	0.11	5.46
77.20	0.00	965.654	0.112	0.11	0.11	10.84
77.30	0.00	1,454.003	0.113	0.11	0.11	16.27
77.40	0.00	1,946.052	0.113	0.11	0.11	21.74
77.50	0.00	2,441.815	0.114	0.12	0.12	27.25
77.52	0.00	2,541.414	0.114	0.12	0.12	28.35
77.60	0.03	2,941.305	0.115	0.12	0.15	32.83
77.70	0.17	3,444.537	0.116	0.12	0.28	38.56
77.80	0.39	3,951.524	0.117	0.12	0.50	44.41
77.90	0.68	4,462.281	0.118	0.12	0.80	50.38
78.00	1.03	4,976.822	0.119	0.12	1.14	56.44
78.10	1.41	5,495.160	0.119	0.12	1.53	62.59
78.20	1.79	6,017.309	0.120	0.12	1.91	68.77
78.30	2.02	6,543.284	0.121	0.12	2.14	74.84
78.40	2.22	7,073.099	0.122	0.12	2.35	80.94
78.50	2.41	7,606.767	0.123	0.12	2.54	87.06
78.60	2.59	8,144.302	0.124	0.12	2.71	93.20
78.70	2.75	8,685.718	0.125	0.13	2.88	99.38
78.80	2.90	9,231.030	0.126	0.13	3.03	105.60
78.90	3.05	9,780.251	0.127	0.13	3.18	111.85
79.00	3.19	10,333.395	0.127	0.13	3.32	118.13
79.10	3.32	10,890.476	0.128	0.13	3.45	124.46
79.20	3.45	11,451.508	0.129	0.13	3.58	130.82
79.30	3.58	12,016.506	0.130	0.13	3.71	137.23
79.40	3.70	12,585.482	0.131	0.13	3.83	143.67
79.50	3.81	13,158.451	0.132	0.13	3.95	150.15
79.60	3.93	13,735.428	0.133	0.13	4.06	156.68

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio1
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
79.70	4.04	14,316.425	0.134	0.13	4.17	163.24
79.80	4.14	14,901.457	0.135	0.14	4.28	169.85
79.90	4.25	15,490.538	0.136	0.14	4.38	176.50
80.00	4.35	16,083.682	0.137	0.14	4.49	183.19
80.10	4.45	16,680.902	0.138	0.14	4.59	189.93
80.20	4.54	17,282.213	0.139	0.14	4.68	196.71
80.30	4.64	17,887.629	0.139	0.14	4.78	203.53
80.40	4.73	18,497.164	0.140	0.14	4.87	210.40
80.50	4.82	19,110.831	0.141	0.14	4.97	217.31
80.60	4.91	19,728.645	0.142	0.14	5.06	224.26
80.70	5.00	20,350.619	0.143	0.14	5.15	231.26
80.80	5.09	20,976.768	0.144	0.15	5.23	238.31
80.90	5.17	21,607.105	0.145	0.15	5.32	245.40
81.00	5.26	22,241.644	0.146	0.15	5.40	252.53
81.10	5.34	22,880.400	0.147	0.15	5.49	259.71
81.20	5.42	23,523.387	0.148	0.15	5.57	266.94
81.30	5.50	24,170.617	0.149	0.15	5.65	274.21
81.40	5.58	24,822.106	0.150	0.15	5.73	281.53
81.50	5.66	25,477.867	0.151	0.15	5.81	288.90
81.60	5.73	26,137.914	0.152	0.15	5.89	296.31
81.70	5.81	26,802.262	0.153	0.15	5.96	303.77
81.80	5.88	27,470.923	0.154	0.16	6.04	311.27
81.90	5.96	28,143.913	0.155	0.16	6.11	318.82
82.00	6.03	28,821.245	0.156	0.16	6.19	326.42
82.10	6.10	29,502.932	0.157	0.16	6.26	334.07
82.20	6.17	30,188.990	0.158	0.16	6.33	341.76
82.30	6.24	30,879.432	0.159	0.16	6.40	349.51
82.40	6.31	31,574.271	0.160	0.16	6.47	357.30
82.50	6.38	32,273.522	0.161	0.16	6.54	365.14
82.60	6.45	32,977.199	0.162	0.16	6.61	373.03
82.70	6.52	33,685.316	0.163	0.16	6.68	380.96
82.80	6.58	34,397.887	0.164	0.17	6.75	388.95
82.90	6.65	35,114.925	0.165	0.17	6.81	396.98
83.00	6.71	35,836.445	0.166	0.17	6.88	405.06
83.10	6.78	36,562.461	0.167	0.17	6.95	413.20
83.20	6.84	37,292.986	0.168	0.17	7.01	421.38
83.30	6.91	38,028.035	0.169	0.17	7.08	429.61
83.40	6.97	38,767.621	0.170	0.17	7.14	437.89
83.50	7.03	39,511.759	0.171	0.17	7.20	446.22
83.60	7.09	40,260.462	0.172	0.17	7.27	454.60
83.70	7.15	41,013.744	0.173	0.17	7.33	463.04
83.80	7.21	41,771.620	0.175	0.18	7.39	471.52
83.90	7.27	42,534.103	0.176	0.18	7.45	480.05

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio1
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
84.00	7.33	43,301.208	0.177	0.18	7.51	488.64
84.10	7.77	44,072.947	0.178	0.18	7.95	497.65
84.20	8.53	44,849.336	0.179	0.18	8.71	507.03
84.30	9.48	45,630.388	0.180	0.18	9.66	516.67
84.40	10.60	46,416.118	0.181	0.18	10.79	526.52
84.50	11.87	47,206.538	0.182	0.18	12.05	536.57
84.60	13.26	48,001.663	0.183	0.18	13.44	546.80
84.70	14.77	48,801.508	0.184	0.19	14.95	557.19
84.75	15.56	49,203.204	0.185	0.19	15.75	562.45
84.80	16.55	49,606.085	0.185	0.19	16.74	567.92
84.90	18.97	50,415.409	0.186	0.19	19.16	579.33
85.00	21.78	51,229.495	0.187	0.19	21.97	591.19
85.10	24.91	52,048.355	0.189	0.19	25.10	603.42
85.20	28.32	52,872.003	0.190	0.19	28.51	615.98
85.30	31.98	53,700.455	0.191	0.19	32.17	628.84
85.40	35.86	54,533.724	0.192	0.19	36.06	641.99
85.50	39.97	55,371.823	0.193	0.19	40.16	655.40
85.60	44.27	56,214.766	0.194	0.20	44.47	669.08
85.70	48.77	57,062.569	0.195	0.20	48.97	683.00
85.80	53.45	57,915.244	0.196	0.20	53.65	697.16
85.90	58.31	58,772.806	0.197	0.20	58.51	711.54
86.00	63.34	59,635.268	0.199	0.20	63.54	726.16
86.10	72.44	60,502.644	0.200	0.20	72.64	744.89
86.20	81.69	61,374.949	0.201	0.20	81.89	763.84
86.30	89.80	62,252.197	0.202	0.20	90.00	781.69
86.40	96.75	63,134.401	0.203	0.20	96.96	798.45
86.50	103.85	64,021.575	0.204	0.21	104.06	815.41
86.60	110.00	64,913.733	0.205	0.21	110.20	831.47
86.70	116.28	65,810.890	0.207	0.21	116.49	847.72
86.80	122.69	66,713.059	0.208	0.21	122.90	864.16
86.90	129.24	67,620.254	0.209	0.21	129.45	880.79
87.00	135.92	68,532.489	0.210	0.21	136.13	897.60

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio1 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
77.00	4,791.6	0.00
77.10	4,828.2	0.11
77.20	4,865.0	0.11
77.30	4,902.0	0.11
77.40	4,939.0	0.11
77.50	4,976.2	0.12
77.52	4,983.7	0.12
77.60	5,013.6	0.12
77.70	5,051.1	0.12
77.80	5,088.7	0.12
77.90	5,126.5	0.12
78.00	5,164.4	0.12
78.10	5,202.4	0.12
78.20	5,240.6	0.12
78.30	5,278.9	0.12
78.40	5,317.4	0.12
78.50	5,356.0	0.12
78.60	5,394.7	0.12
78.70	5,433.6	0.13
78.80	5,472.6	0.13
78.90	5,511.8	0.13
79.00	5,551.1	0.13
79.10	5,590.5	0.13
79.20	5,630.1	0.13
79.30	5,669.8	0.13
79.40	5,709.7	0.13
79.50	5,749.7	0.13
79.60	5,789.8	0.13
79.70	5,830.1	0.13
79.80	5,870.5	0.14
79.90	5,911.1	0.14
80.00	5,951.8	0.14
80.10	5,992.6	0.14
80.20	6,033.6	0.14
80.30	6,074.7	0.14
80.40	6,116.0	0.14
80.50	6,157.4	0.14
80.60	6,198.9	0.14
80.70	6,240.6	0.14
80.80	6,282.4	0.15
80.90	6,324.4	0.15
81.00	6,366.5	0.15

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio1 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
81.10	6,408.7	0.15
81.20	6,451.1	0.15
81.30	6,493.6	0.15
81.40	6,536.2	0.15
81.50	6,579.0	0.15
81.60	6,622.0	0.15
81.70	6,665.0	0.15
81.80	6,708.2	0.16
81.90	6,751.6	0.16
82.00	6,795.1	0.16
82.10	6,838.7	0.16
82.20	6,882.5	0.16
82.30	6,926.4	0.16
82.40	6,970.4	0.16
82.50	7,014.6	0.16
82.60	7,058.9	0.16
82.70	7,103.4	0.16
82.80	7,148.0	0.17
82.90	7,192.8	0.17
83.00	7,237.7	0.17
83.10	7,282.7	0.17
83.20	7,327.8	0.17
83.30	7,373.2	0.17
83.40	7,418.6	0.17
83.50	7,464.2	0.17
83.60	7,509.9	0.17
83.70	7,555.8	0.17
83.80	7,601.8	0.18
83.90	7,647.9	0.18
84.00	7,694.2	0.18
84.10	7,740.6	0.18
84.20	7,787.2	0.18
84.30	7,833.9	0.18
84.40	7,880.7	0.18
84.50	7,927.7	0.18
84.60	7,974.8	0.18
84.70	8,022.1	0.19
84.75	8,045.8	0.19
84.80	8,069.5	0.19
84.90	8,117.0	0.19
85.00	8,164.7	0.19
85.10	8,212.5	0.19

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio1 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
85.20	8,260.5	0.19
85.30	8,308.6	0.19
85.40	8,356.8	0.19
85.50	8,405.2	0.19
85.60	8,453.7	0.20
85.70	8,502.4	0.20
85.80	8,551.2	0.20
85.90	8,600.1	0.20
86.00	8,649.2	0.20
86.10	8,698.4	0.20
86.20	8,747.7	0.20
86.30	8,797.2	0.20
86.40	8,846.9	0.20
86.50	8,896.6	0.21
86.60	8,946.6	0.21
86.70	8,996.6	0.21
86.80	9,046.8	0.21
86.90	9,097.1	0.21
87.00	9,147.6	0.21

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio1 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	77.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.26 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.11 ft³/s	Time to Peak (Infiltration)	2.000 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	77.31 ft
Volume (Peak)	1,479.163 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	2,119.000 ft³
Volume (Total Infiltration)	2,119.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio12
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	2.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	85.25 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
85.25	0.00	0.000	0.120	0.00	0.00	0.00
85.50	0.00	1,324.668	0.123	0.25	0.25	14.97
85.75	0.00	2,685.393	0.127	0.26	0.26	30.09
86.00	0.00	4,082.661	0.130	0.26	0.26	45.63
86.15	0.00	4,936.899	0.131	0.27	0.27	55.12
86.25	0.14	5,511.763	0.132	0.27	0.41	61.65
86.50	0.93	6,967.838	0.135	0.27	1.20	78.62
86.75	2.09	8,451.138	0.137	0.28	2.37	96.27
87.00	3.53	9,961.916	0.140	0.28	3.81	114.50
87.25	6.69	11,512.984	0.145	0.29	6.98	134.91
87.50	11.30	13,117.593	0.150	0.30	11.60	157.35
87.75	18.50	14,776.652	0.155	0.31	18.81	182.99
88.00	27.66	16,491.070	0.160	0.32	27.98	211.21
88.25	37.72	18,260.027	0.165	0.33	38.05	240.94
88.50	49.99	20,082.633	0.170	0.34	50.34	273.48
88.75	63.46	21,959.689	0.175	0.35	63.81	307.81
89.00	78.02	23,891.996	0.180	0.36	78.38	343.84
89.25	93.58	25,878.824	0.185	0.37	93.96	381.50
89.50	110.10	27,919.384	0.190	0.38	110.48	420.69
89.75	127.50	30,014.395	0.195	0.39	127.90	461.39
90.00	145.76	32,164.572	0.200	0.40	146.16	503.55

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio12 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
85.25	5,227.2	0.00
85.50	5,370.5	0.25
85.75	5,515.7	0.26
86.00	5,662.8	0.26
86.15	5,727.1	0.27
86.25	5,770.2	0.27
86.50	5,878.6	0.27
86.75	5,988.0	0.28
87.00	6,098.4	0.28
87.25	6,310.7	0.29
87.50	6,526.7	0.30
87.75	6,746.3	0.31
88.00	6,969.6	0.32
88.25	7,182.6	0.33
88.50	7,398.8	0.34
88.75	7,618.2	0.35
89.00	7,840.8	0.36
89.25	8,054.3	0.37
89.50	8,270.7	0.38
89.75	8,489.9	0.39
90.00	8,712.0	0.40

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio12 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	2.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	85.25 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.19 ft³/s	Time to Peak (Flow, In)	1.100 hours
Infiltration (Peak)	0.23 ft³/s	Time to Peak (Infiltration)	1.800 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	85.48 ft
Volume (Peak)	1,197.630 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	2,003.000 ft³
Volume (Total Infiltration)	2,003.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio25
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	100.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
100.00	0.00	0.000	0.310	0.00	0.00	0.00
100.25	0.00	3,428.974	0.320	0.16	0.16	38.26
100.50	0.00	6,965.196	0.330	0.17	0.17	77.56
100.75	0.00	10,610.318	0.340	0.17	0.17	118.06
101.00	0.00	14,365.992	0.350	0.18	0.18	159.80
101.25	0.00	18,230.715	0.360	0.18	0.18	202.74
101.35	0.00	19,806.601	0.364	0.18	0.18	220.26
101.50	0.03	22,202.865	0.370	0.19	0.22	246.92
101.75	0.12	26,283.915	0.380	0.19	0.32	292.36
102.00	0.17	30,475.338	0.390	0.20	0.37	338.98
102.25	0.77	34,775.780	0.400	0.20	0.97	387.37
102.50	1.83	39,183.794	0.410	0.21	2.04	437.41
102.75	3.19	43,700.708	0.420	0.21	3.40	488.96
103.00	4.79	48,327.850	0.430	0.22	5.01	541.98
103.25	6.60	53,077.054	0.442	0.22	6.83	596.57
103.50	8.60	57,960.510	0.455	0.23	8.83	652.84
103.75	10.77	62,980.092	0.467	0.24	11.01	710.79
104.00	13.10	68,137.670	0.480	0.24	13.35	770.43

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio25 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
100.00	13,503.6	0.00
100.25	13,929.3	0.16
100.50	14,361.6	0.17
100.75	14,800.5	0.17
101.00	15,246.0	0.18
101.25	15,672.8	0.18
101.35	15,845.1	0.18
101.50	16,105.4	0.19
101.75	16,544.0	0.19
102.00	16,988.4	0.20
102.25	17,416.0	0.20
102.50	17,849.0	0.21
102.75	18,287.2	0.21
103.00	18,730.8	0.22
103.25	19,264.1	0.22
103.50	19,804.8	0.23
103.75	20,353.1	0.24
104.00	20,908.8	0.24

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio25 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	100.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	3.63 ft³/s	Time to Peak (Flow, In)	1.100 hours
Infiltration (Peak)	0.16 ft³/s	Time to Peak (Infiltration)	1.850 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	100.30 ft
Volume (Peak)	4,061.773 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	4,655.000 ft³
Volume (Total Infiltration)	4,653.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	2.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio26
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	97.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
97.00	0.00	0.000	0.100	0.00	0.00	0.00
97.25	0.00	1,151.333	0.112	0.06	0.06	12.85
97.50	0.00	2,431.915	0.124	0.06	0.06	27.08
97.75	0.00	3,848.622	0.137	0.07	0.07	42.83
97.80	0.00	4,148.903	0.139	0.07	0.07	46.17
98.00	0.27	5,408.330	0.150	0.08	0.34	60.44
98.25	0.91	7,093.601	0.160	0.08	0.99	79.80
98.50	1.76	8,884.559	0.169	0.09	1.84	100.56
98.75	3.34	10,784.416	0.180	0.09	3.43	123.26
99.00	5.53	12,796.388	0.190	0.10	5.63	147.81
99.25	8.16	14,905.078	0.197	0.10	8.26	173.87
99.50	11.15	17,093.948	0.205	0.10	11.25	201.19
99.75	14.46	19,364.493	0.212	0.11	14.57	229.73
100.00	18.06	21,718.209	0.220	0.11	18.17	259.48

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio26 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
97.00	4,356.0	0.00
97.25	4,859.2	0.06
97.50	5,390.0	0.06
97.75	5,948.2	0.07
97.80	6,063.2	0.07
98.00	6,534.0	0.08
98.25	6,950.3	0.08
98.50	7,379.5	0.09
98.75	7,821.5	0.09
99.00	8,276.4	0.10
99.25	8,594.1	0.10
99.50	8,917.8	0.10
99.75	9,247.5	0.11
100.00	9,583.2	0.11

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio26 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	97.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.12 ft³/s	Time to Peak (Flow, In)	1.100 hours
Infiltration (Peak)	0.07 ft³/s	Time to Peak (Infiltration)	2.500 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	97.64 ft
Volume (Peak)	3,231.299 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	3,672.000 ft³
Volume (Total Infiltration)	3,670.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	2.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio28
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	1.00 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	91.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
91.00	0.00	0.000	0.095	0.00	0.00	0.00
91.05	0.00	207.698	0.096	1.00	1.00	3.31
91.10	0.00	416.975	0.096	1.00	1.00	5.63
91.15	0.00	627.838	0.097	1.00	1.00	7.98
91.20	0.00	840.293	0.098	1.00	1.00	10.34
91.25	0.00	1,054.345	0.099	1.00	1.00	12.71
91.30	0.00	1,270.001	0.099	1.00	1.00	15.11
91.35	0.00	1,487.267	0.100	1.00	1.00	17.53
91.40	0.00	1,706.148	0.101	1.00	1.00	19.96
91.45	0.00	1,926.650	0.102	1.00	1.00	22.41
91.50	0.00	2,148.780	0.102	1.00	1.00	24.88
91.55	0.04	2,372.544	0.103	1.00	1.04	27.40
91.60	0.12	2,597.947	0.104	1.00	1.12	29.98
91.65	0.22	2,824.995	0.105	1.00	1.22	32.61
91.70	0.34	3,053.695	0.105	1.00	1.34	35.27
91.75	0.47	3,284.053	0.106	1.00	1.47	37.96
91.80	0.62	3,516.073	0.107	1.00	1.62	40.68
91.85	0.78	3,749.764	0.108	1.00	1.78	43.44
91.90	0.95	3,985.129	0.108	1.00	1.95	46.23
91.95	1.13	4,222.176	0.109	1.00	2.13	49.05
92.00	1.33	4,460.911	0.110	1.00	2.33	51.89
92.05	1.53	4,701.282	0.111	1.00	2.53	54.77
92.10	1.74	4,943.240	0.111	1.00	2.74	57.67
92.15	1.97	5,186.790	0.112	1.00	2.97	60.60
92.20	2.20	5,431.937	0.113	1.00	3.20	63.55
92.25	2.44	5,678.686	0.114	1.00	3.44	66.53
92.30	2.68	5,927.042	0.114	1.00	3.68	69.54
92.35	2.93	6,177.011	0.115	1.00	3.93	72.56

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio28
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
92.40	3.18	6,428.598	0.116	1.00	4.18	75.61
92.45	3.44	6,681.808	0.117	1.00	4.44	78.68
92.50	3.70	6,936.646	0.117	1.00	4.70	81.77
92.55	3.97	7,193.118	0.118	1.00	4.97	84.89
92.60	4.24	7,451.228	0.119	1.00	5.24	88.03
92.65	4.52	7,710.982	0.120	1.00	5.52	91.20
92.70	4.80	7,972.386	0.120	1.00	5.80	94.38
92.75	5.09	8,235.444	0.121	1.00	6.09	97.60
92.80	5.39	8,500.161	0.122	1.00	6.39	100.83
92.85	5.68	8,766.544	0.123	1.00	6.68	104.09
92.90	5.99	9,034.596	0.123	1.00	6.99	107.37
92.95	6.30	9,304.323	0.124	1.00	7.30	110.68
93.00	6.61	9,575.731	0.125	1.00	7.61	114.01
93.05	6.93	9,848.879	0.126	1.00	7.93	117.36
93.10	7.25	10,123.824	0.127	1.00	8.25	120.74
93.15	7.58	10,400.573	0.127	1.00	8.58	124.14
93.20	7.91	10,679.133	0.128	1.00	8.91	127.57
93.25	8.25	10,959.508	0.129	1.00	9.25	131.02
93.30	8.59	11,241.705	0.130	1.00	9.59	134.50
93.35	8.94	11,525.730	0.131	1.00	9.94	138.00
93.40	9.32	11,811.589	0.132	1.00	10.32	141.56
93.45	9.64	12,099.287	0.133	1.00	10.64	145.07
93.50	10.00	12,388.830	0.133	1.00	11.00	148.65
93.55	10.36	12,680.225	0.134	1.00	11.36	152.25
93.60	10.72	12,973.476	0.135	1.00	11.72	155.87
93.65	11.09	13,268.591	0.136	1.00	12.09	159.52
93.70	11.46	13,565.575	0.137	1.00	12.46	163.19
93.75	11.84	13,864.434	0.138	1.00	12.84	166.89
93.80	12.22	14,165.174	0.139	1.00	13.22	170.61
93.85	12.60	14,467.800	0.139	1.00	13.60	174.35
93.90	12.98	14,772.319	0.140	1.00	13.98	178.12
93.95	13.37	15,078.737	0.141	1.00	14.37	181.91
94.00	13.76	15,387.058	0.142	1.00	14.76	185.73
94.05	14.15	15,697.286	0.143	1.00	15.15	189.57
94.10	14.55	16,009.422	0.144	1.00	15.55	193.43
94.15	14.95	16,323.470	0.145	1.00	15.95	197.32
94.20	15.35	16,639.439	0.146	1.00	16.35	201.23
94.25	15.75	16,957.332	0.146	1.00	16.75	205.16
94.30	16.15	17,277.156	0.147	1.00	17.15	209.12
94.35	16.56	17,598.917	0.148	1.00	17.56	213.10
94.40	16.96	17,922.621	0.149	1.00	17.96	217.10
94.45	17.36	18,248.273	0.150	1.00	18.36	221.12
94.50	17.77	18,575.879	0.151	1.00	18.77	225.16

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio28
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
94.55	18.16	18,905.446	0.152	1.00	19.16	229.22
94.60	18.59	19,236.979	0.153	1.00	19.59	233.33
94.65	18.98	19,570.484	0.154	1.00	19.98	237.43
94.70	19.37	19,905.966	0.154	1.00	20.37	241.55
94.75	19.72	20,243.432	0.155	1.00	20.72	245.65
94.80	19.92	20,582.887	0.156	1.00	20.92	249.62
94.85	20.44	20,924.338	0.157	1.00	21.44	253.93
94.90	20.96	21,267.790	0.158	1.00	21.96	258.27
94.95	21.49	21,613.249	0.159	1.00	22.49	262.64
95.00	22.02	21,960.720	0.160	1.00	23.02	267.03

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio28 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Constant
Infiltration Rate (Constant)	1.00 ft³/s

Initial Conditions	
Elevation (Water Surface, Initial)	91.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.39 ft³/s	Time to Peak (Flow, In)	1.100 hours
Infiltration (Peak)	1.00 ft³/s	Time to Peak (Infiltration)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	91.07 ft
Volume (Peak)	285.455 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,919.000 ft³
Volume (Total Infiltration)	1,919.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO29
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	93.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
93.00	0.00	0.000	0.005	0.00	0.00	0.00
93.20	0.00	49.689	0.006	0.00	0.00	0.56
93.40	0.00	112.690	0.008	0.00	0.00	1.26
93.60	0.00	190.583	0.010	0.00	0.00	2.12
93.80	0.00	284.947	0.012	0.01	0.01	3.17
94.00	0.00	397.363	0.014	0.01	0.01	4.42
94.20	0.40	527.032	0.016	0.01	0.41	6.27
94.40	1.14	672.724	0.018	0.01	1.15	8.62
94.60	2.09	835.374	0.020	0.01	2.10	11.38
94.80	3.22	1,015.914	0.022	0.01	3.23	14.52
95.00	4.50	1,215.279	0.024	0.01	4.51	18.02
95.20	5.92	1,433.906	0.026	0.01	5.93	21.86
95.40	7.45	1,672.175	0.029	0.01	7.47	26.05
95.60	9.11	1,930.930	0.031	0.02	9.12	30.58
95.80	10.87	2,211.016	0.033	0.02	10.88	35.45
95.90	11.79	2,359.322	0.035	0.02	11.80	38.02
96.00	13.23	2,513.278	0.036	0.02	13.25	41.17

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: BIO29 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
93.00	217.8	0.00
93.20	280.4	0.00
93.40	350.9	0.00
93.60	429.3	0.00
93.80	515.6	0.01
94.00	609.8	0.01
94.20	687.6	0.01
94.40	770.1	0.01
94.60	857.2	0.01
94.80	949.0	0.01
95.00	1,045.4	0.01
95.20	1,141.5	0.01
95.40	1,241.9	0.01
95.60	1,346.4	0.02
95.80	1,455.2	0.02
95.90	1,511.1	0.02
96.00	1,568.2	0.02

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: BIO29 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	93.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.73 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.01 ft³/s	Time to Peak (Infiltration)	1.150 hours
Flow (Peak Outlet)	0.40 ft³/s	Time to Peak (Flow, Outlet)	1.150 hours

Elevation (Water Surface, Peak)	94.20 ft
Volume (Peak)	525.022 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	910.000 ft³
Volume (Total Infiltration)	433.000 ft³
Volume (Total Outlet Outflow)	477.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio35 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
103.40	3,920.4	0.00
103.65	4,272.8	0.05
103.90	4,640.3	0.05
104.15	4,917.6	0.06
104.40	5,131.4	0.06
104.65	5,349.6	0.06
104.90	5,572.4	0.06
105.15	5,850.2	0.07
105.40	6,169.3	0.07
105.65	6,496.8	0.08
105.75	6,630.2	0.08
105.90	6,832.8	0.08
106.15	7,158.5	0.08
106.40	7,478.9	0.09
106.65	7,806.3	0.09
106.90	8,140.7	0.09
107.15	8,466.3	0.10
107.40	8,787.6	0.10
107.65	9,114.9	0.11
107.90	9,448.2	0.11
108.00	9,583.2	0.11

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: Bio35
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	103.40	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.020	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	1.800	103.48	329.000

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	1.050	0.30	0.000	0.00
Infiltration...	1.800	0.00	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	380.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	378.000	Forward
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	380.000 ft³
Volume (Total Out ICPM)	378.000 ft³
Volume (Ending)	0.000 ft³
Elevation (Ending)	103.40 ft
Difference	2.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.5 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio36
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	98.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
98.00	0.00	0.000	0.017	0.00	0.00	0.00
98.25	0.00	196.301	0.019	0.00	0.00	2.18
98.50	0.00	415.808	0.021	0.00	0.00	4.62
98.75	0.00	659.817	0.024	0.00	0.00	7.33
99.00	0.38	929.626	0.026	0.00	0.38	10.70
99.25	1.06	1,224.259	0.028	0.00	1.06	14.66
99.50	1.95	1,542.487	0.030	0.00	1.95	19.09
99.75	3.00	1,885.217	0.033	0.00	3.00	23.95
100.00	4.19	2,253.359	0.035	0.00	4.19	29.23
100.25	5.51	2,648.631	0.038	0.00	5.51	34.94
100.50	6.95	3,072.830	0.040	0.00	6.95	41.09
100.75	8.49	3,526.976	0.043	0.00	8.49	47.67
101.00	10.13	4,012.091	0.046	0.00	10.13	54.70
101.25	11.86	4,532.251	0.050	0.00	11.86	62.22
101.50	13.68	5,091.810	0.053	0.00	13.68	70.26
101.75	15.59	5,692.207	0.057	0.00	15.59	78.84
102.00	17.58	6,334.880	0.061	0.00	17.58	87.96

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio36 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	98.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.40 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	98.58 ft
Volume (Peak)	492.974 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	496.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	493.000 ft³
Volume (Unrouted)	-3.000 ft³
Error (Mass Balance)	0.6 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: Bio45
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	96.50	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	32.500	97.08	7,428.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.100	2.77	0.000	0.00
Pond Outflow...	33.300	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	7,455.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	16.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	7,455.000 ft³
Volume (Total Out ICPM)	16.000 ft³
Volume (Ending)	7,422.000 ft³
Elevation (Ending)	97.08 ft
Difference	16.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.2 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio51
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.8000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	102.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
102.00	0.00	0.000	0.060	0.00	0.00	0.00
102.25	0.00	678.996	0.065	0.05	0.05	7.60
102.50	0.00	1,410.488	0.070	0.06	0.06	15.73
102.75	0.00	2,196.429	0.075	0.06	0.06	24.47
103.00	0.00	3,038.775	0.080	0.06	0.06	33.83
103.25	0.56	3,928.393	0.083	0.07	0.63	44.28
103.50	1.59	4,855.357	0.087	0.07	1.66	55.61
103.75	2.92	5,820.437	0.090	0.07	3.00	67.67
104.00	4.50	6,824.400	0.094	0.08	4.58	80.40
104.25	6.29	7,869.127	0.098	0.08	6.37	93.80
104.50	8.27	8,956.558	0.102	0.08	8.35	107.87
104.75	10.42	10,087.550	0.106	0.09	10.50	122.59
105.00	12.73	11,262.957	0.110	0.09	12.82	137.96
105.25	15.19	12,499.645	0.117	0.09	15.28	154.17
105.50	17.79	13,815.549	0.125	0.10	17.89	171.39
105.75	20.52	15,213.129	0.132	0.11	20.63	189.66
106.00	23.38	16,694.842	0.140	0.11	23.50	208.99
106.25	26.37	18,246.354	0.145	0.12	26.48	229.22
106.50	29.47	19,852.316	0.150	0.12	29.59	250.17

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio51 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
102.00	2,613.6	0.00
102.25	2,819.7	0.05
102.50	3,033.6	0.06
102.75	3,255.3	0.06
103.00	3,484.8	0.06
103.25	3,632.7	0.07
103.50	3,783.6	0.07
103.75	3,937.6	0.07
104.00	4,094.6	0.08
104.25	4,263.7	0.08
104.50	4,436.3	0.08
104.75	4,612.2	0.09
105.00	4,791.6	0.09
105.25	5,103.5	0.09
105.50	5,425.3	0.10
105.75	5,756.9	0.11
106.00	6,098.4	0.11
106.25	6,314.3	0.12
106.50	6,534.0	0.12

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio51 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.8000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	102.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.87 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.05 ft³/s	Time to Peak (Infiltration)	1.800 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	102.33 ft
Volume (Peak)	899.779 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,091.000 ft³
Volume (Total Infiltration)	1,091.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio52
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	100.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
100.10	0.00	0.000	0.029	0.00	0.00	0.00
100.35	0.00	331.360	0.032	0.02	0.02	3.70
100.60	0.00	694.809	0.035	0.02	0.02	7.74
100.62	0.00	725.315	0.035	0.02	0.02	8.08
100.85	0.33	1,091.829	0.038	0.02	0.35	12.48
101.10	1.00	1,524.037	0.041	0.02	1.02	17.95
101.35	1.87	1,994.195	0.045	0.02	1.89	24.05
101.60	2.91	2,504.218	0.049	0.02	2.94	30.76
101.85	4.09	3,055.727	0.053	0.03	4.12	38.07
102.10	5.40	3,649.884	0.056	0.03	5.43	45.98
102.35	6.83	4,283.924	0.060	0.03	6.86	54.46
102.60	8.36	4,958.063	0.064	0.03	8.39	63.48
102.85	9.99	5,673.532	0.068	0.03	10.02	73.06
103.10	11.72	6,431.400	0.072	0.04	11.75	83.21
103.35	13.53	7,231.389	0.075	0.04	13.57	93.92
103.60	15.43	8,074.265	0.079	0.04	15.47	105.19
103.85	17.42	8,961.150	0.083	0.04	17.46	117.03
104.10	19.48	9,894.413	0.088	0.04	19.52	129.46
104.35	21.61	10,887.042	0.094	0.05	21.66	142.63
104.60	23.82	11,943.806	0.100	0.05	23.87	156.58
104.85	26.10	13,066.714	0.106	0.05	26.15	171.34
105.00	27.50	13,773.042	0.110	0.06	27.56	180.59

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Bio52 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
100.10	1,263.2	0.00
100.35	1,388.6	0.02
100.60	1,519.9	0.02
100.62	1,530.7	0.02
100.85	1,657.2	0.02
101.10	1,803.1	0.02
101.35	1,959.3	0.02
101.60	2,122.0	0.02
101.85	2,291.2	0.03
102.10	2,457.6	0.03
102.35	2,615.5	0.03
102.60	2,778.4	0.03
102.85	2,946.2	0.03
103.10	3,115.7	0.04
103.35	3,285.0	0.04
103.60	3,458.8	0.04
103.85	3,637.0	0.04
104.10	3,844.9	0.04
104.35	4,097.4	0.05
104.60	4,358.0	0.05
104.85	4,626.6	0.05
105.00	4,791.6	0.06

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio52 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	100.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.55 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.02 ft³/s	Time to Peak (Infiltration)	2.000 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	100.55 ft
Volume (Peak)	615.273 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	686.000 ft³
Volume (Total Infiltration)	686.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Bio53
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	104.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
104.50	0.00	0.000	0.014	0.00	0.00	0.00
104.75	0.00	181.786	0.020	0.00	0.00	2.02
105.00	0.00	428.912	0.026	0.00	0.00	4.77
105.25	0.00	729.406	0.029	0.00	0.00	8.10
105.45	0.00	995.673	0.032	0.00	0.00	11.06
105.50	0.03	1,065.970	0.033	0.00	0.03	11.88
105.75	0.49	1,440.649	0.036	0.00	0.49	16.50
106.00	1.22	1,855.488	0.040	0.00	1.22	21.84
106.25	2.15	2,316.021	0.045	0.00	2.15	27.88
106.50	3.23	2,828.254	0.049	0.00	3.23	34.65
106.75	4.45	3,394.937	0.055	0.00	4.45	42.17
107.00	5.79	4,018.820	0.060	0.00	5.79	50.44
107.25	7.24	4,691.690	0.064	0.00	7.24	59.37
107.50	8.81	5,404.260	0.067	0.00	8.81	68.85
107.75	10.46	6,157.668	0.071	0.00	10.46	78.88
108.00	12.22	6,953.051	0.075	0.00	12.22	89.47
108.25	14.06	7,786.908	0.078	0.00	14.06	100.58
108.50	15.98	8,655.451	0.081	0.00	15.98	112.15
108.75	17.98	9,559.387	0.085	0.00	17.98	124.20
109.00	20.07	10,499.421	0.088	0.00	20.07	136.73

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Bio53 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	104.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.27 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	104.91 ft
Volume (Peak)	334.741 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	343.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	335.000 ft³
Volume (Unrouted)	-8.000 ft³
Error (Mass Balance)	2.3 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: Bio58
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	106.40	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	2.150	106.98	4,039.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	3.20	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	4,062.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	4,062.000 ft³
Volume (Total Out ICPM)	0.000 ft³
Volume (Ending)	4,039.000 ft³
Elevation (Ending)	106.98 ft
Difference	22.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.6 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: EX. BASIN 6
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	89.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
89.00	0.00	0.000	1.300	0.00	0.00	0.00
89.25	0.00	14,319.122	1.330	0.00	0.00	159.10
89.50	0.00	28,964.943	1.360	0.00	0.00	321.83
89.75	0.00	43,937.518	1.390	0.00	0.00	488.19
90.00	0.00	59,236.793	1.420	0.00	0.00	658.19
90.25	0.08	74,889.639	1.455	0.00	0.08	832.19
90.50	0.14	90,923.636	1.490	0.00	0.14	1,010.41
90.75	0.19	107,312.011	1.520	0.00	0.19	1,192.54
91.00	0.22	124,027.087	1.550	0.00	0.22	1,378.30
91.25	0.25	141,100.242	1.586	0.00	0.25	1,568.03
91.35	0.26	148,038.528	1.600	0.00	0.26	1,645.13
91.50	0.74	158,558.201	1.620	0.00	0.74	1,762.50
91.75	2.33	176,362.360	1.650	0.00	2.33	1,961.91
92.00	4.52	194,493.220	1.680	0.00	4.52	2,165.55
92.25	7.17	212,977.699	1.715	0.00	7.17	2,373.59
92.50	10.23	231,843.327	1.750	0.00	10.23	2,586.27
92.75	13.63	251,090.157	1.785	0.00	13.63	2,803.53
93.00	17.36	270,718.136	1.820	0.00	17.36	3,025.34
93.25	21.37	290,727.312	1.855	0.00	21.37	3,251.67
93.50	25.65	311,117.638	1.890	0.00	25.65	3,482.52
93.75	30.19	331,916.034	1.930	0.00	30.19	3,718.15
94.00	34.98	353,150.029	1.970	0.00	34.98	3,958.87
94.25	39.99	374,792.795	2.005	0.00	39.99	4,204.35
94.50	45.22	396,816.711	2.040	0.00	45.22	4,454.29
94.75	50.66	419,221.814	2.075	0.00	50.66	4,708.68
95.00	56.31	442,008.068	2.110	0.00	56.31	4,967.51

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: EX. BASIN 6 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	89.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	10.84 ft³/s	Time to Peak (Flow, In)	1.150 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	89.34 ft
Volume (Peak)	19,281.207 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	19,318.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	19,281.000 ft³
Volume (Unrouted)	-37.000 ft³
Error (Mass Balance)	0.2 %

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
91.40	19,602.0	0.00
91.41	19,769.7	0.46
91.42	19,938.1	0.46
91.43	20,107.2	0.47
91.44	20,277.0	0.47
91.45	20,447.6	0.47
91.46	20,618.9	0.48
91.47	20,790.8	0.48
91.48	20,963.5	0.49
91.49	21,136.9	0.49
91.50	21,311.0	0.49
91.51	21,485.9	0.50
91.52	21,661.4	0.50
91.53	21,837.7	0.51
91.54	22,014.7	0.51
91.55	22,192.3	0.51
91.56	22,370.8	0.52
91.57	22,549.9	0.52
91.58	22,729.7	0.53
91.59	22,910.2	0.53
91.60	23,091.5	0.53
91.61	23,273.5	0.54
91.62	23,456.2	0.54
91.63	23,639.6	0.55
91.64	23,823.7	0.55
91.65	24,008.5	0.56
91.66	24,194.1	0.56
91.67	24,380.3	0.56
91.68	24,567.3	0.57
91.69	24,755.0	0.57
91.70	24,943.4	0.58
91.71	25,132.5	0.58
91.72	25,322.3	0.59
91.73	25,512.9	0.59
91.74	25,704.2	0.60
91.75	25,896.1	0.60
91.76	26,088.8	0.60
91.77	26,282.2	0.61
91.78	26,476.3	0.61
91.79	26,671.2	0.62
91.80	26,866.7	0.62
91.81	27,063.0	0.63

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
91.82	27,259.9	0.63
91.83	27,457.6	0.64
91.84	27,656.0	0.64
91.85	27,855.1	0.64
91.86	28,055.0	0.65
91.87	28,255.5	0.65
91.88	28,456.8	0.66
91.89	28,658.8	0.66
91.90	28,861.4	0.67
91.91	29,064.8	0.67
91.92	29,269.0	0.68
91.93	29,473.8	0.68
91.94	29,679.3	0.69
91.95	29,885.6	0.69
91.96	30,092.6	0.70
91.97	30,300.3	0.70
91.98	30,508.7	0.71
91.99	30,717.8	0.71
92.00	30,927.6	0.72
92.01	30,949.0	0.72
92.02	30,970.4	0.72
92.03	30,991.9	0.72
92.04	31,013.3	0.72
92.05	31,034.7	0.72
92.06	31,056.2	0.72
92.07	31,077.6	0.72
92.08	31,099.1	0.72
92.09	31,120.6	0.72
92.10	31,142.1	0.72
92.11	31,163.6	0.72
92.12	31,185.0	0.72
92.13	31,206.5	0.72
92.14	31,228.1	0.72
92.15	31,249.6	0.72
92.16	31,271.1	0.72
92.17	31,292.6	0.72
92.18	31,314.2	0.72
92.19	31,335.7	0.73
92.20	31,357.3	0.73
92.21	31,378.8	0.73
92.22	31,400.4	0.73
92.23	31,422.0	0.73

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
92.24	31,443.6	0.73
92.25	31,465.2	0.73
92.26	31,486.8	0.73
92.27	31,508.4	0.73
92.28	31,530.0	0.73
92.29	31,551.6	0.73
92.30	31,573.2	0.73
92.31	31,594.9	0.73
92.32	31,616.5	0.73
92.33	31,638.1	0.73
92.34	31,659.8	0.73
92.35	31,681.5	0.73
92.36	31,703.1	0.73
92.37	31,724.8	0.73
92.38	31,746.5	0.73
92.39	31,768.2	0.74
92.40	31,789.9	0.74
92.41	31,811.6	0.74
92.42	31,833.3	0.74
92.43	31,855.1	0.74
92.44	31,876.8	0.74
92.45	31,898.5	0.74
92.46	31,920.3	0.74
92.47	31,942.0	0.74
92.48	31,963.8	0.74
92.49	31,985.6	0.74
92.50	32,007.3	0.74
92.51	32,029.1	0.74
92.52	32,050.9	0.74
92.53	32,072.7	0.74
92.54	32,094.5	0.74
92.55	32,116.3	0.74
92.56	32,138.2	0.74
92.57	32,160.0	0.74
92.58	32,181.8	0.74
92.59	32,203.7	0.75
92.60	32,225.5	0.75
92.61	32,247.4	0.75
92.62	32,269.2	0.75
92.63	32,291.1	0.75
92.64	32,313.0	0.75
92.65	32,334.9	0.75

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
92.66	32,356.8	0.75
92.67	32,378.7	0.75
92.68	32,400.6	0.75
92.69	32,422.5	0.75
92.70	32,444.4	0.75
92.71	32,466.4	0.75
92.72	32,488.3	0.75
92.73	32,510.2	0.75
92.74	32,532.2	0.75
92.75	32,554.2	0.75
92.76	32,576.1	0.75
92.77	32,598.1	0.75
92.78	32,620.1	0.76
92.79	32,642.1	0.76
92.80	32,664.1	0.76
92.81	32,686.1	0.76
92.82	32,708.1	0.76
92.83	32,730.1	0.76
92.84	32,752.1	0.76
92.85	32,774.2	0.76
92.86	32,796.2	0.76
92.87	32,818.3	0.76
92.88	32,840.3	0.76
92.89	32,862.4	0.76
92.90	32,884.5	0.76
92.91	32,906.5	0.76
92.92	32,928.6	0.76
92.93	32,950.7	0.76
92.94	32,972.8	0.76
92.95	32,994.9	0.76
92.96	33,017.1	0.76
92.97	33,039.2	0.76
92.98	33,061.3	0.77
92.99	33,083.5	0.77
93.00	33,105.6	0.77
93.01	33,127.0	0.77
93.02	33,148.5	0.77
93.03	33,169.9	0.77
93.04	33,191.4	0.77
93.05	33,212.9	0.77
93.06	33,234.3	0.77
93.07	33,255.8	0.77

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
93.08	33,277.3	0.77
93.09	33,298.8	0.77
93.10	33,320.3	0.77
93.11	33,341.8	0.77
93.12	33,363.3	0.77
93.13	33,384.8	0.77
93.14	33,406.3	0.77
93.15	33,427.9	0.77
93.16	33,449.4	0.77
93.17	33,471.0	0.77
93.18	33,492.5	0.78
93.19	33,514.1	0.78
93.20	33,535.6	0.78
93.21	33,557.2	0.78
93.22	33,578.8	0.78
93.23	33,600.4	0.78
93.24	33,622.0	0.78
93.25	33,643.6	0.78
93.26	33,665.2	0.78
93.27	33,686.8	0.78
93.28	33,708.4	0.78
93.29	33,730.1	0.78
93.30	33,751.7	0.78
93.31	33,773.4	0.78
93.32	33,795.0	0.78
93.33	33,816.7	0.78
93.34	33,838.3	0.78
93.35	33,860.0	0.78
93.36	33,881.7	0.78
93.37	33,903.4	0.78
93.38	33,925.1	0.79
93.39	33,946.8	0.79
93.40	33,968.5	0.79
93.41	33,990.2	0.79
93.42	34,011.9	0.79
93.43	34,033.6	0.79
93.44	34,055.4	0.79
93.45	34,077.1	0.79
93.46	34,098.9	0.79
93.47	34,120.6	0.79
93.48	34,142.4	0.79
93.49	34,164.2	0.79

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
93.50	34,185.9	0.79
93.51	34,207.7	0.79
93.52	34,229.5	0.79
93.53	34,251.3	0.79
93.54	34,273.1	0.79
93.55	34,294.9	0.79
93.56	34,316.7	0.79
93.57	34,338.6	0.79
93.58	34,360.4	0.80
93.59	34,382.2	0.80
93.60	34,404.1	0.80
93.61	34,425.9	0.80
93.62	34,447.8	0.80
93.63	34,469.7	0.80
93.64	34,491.5	0.80
93.65	34,513.4	0.80
93.66	34,535.3	0.80
93.67	34,557.2	0.80
93.68	34,579.1	0.80
93.69	34,601.0	0.80
93.70	34,622.9	0.80
93.71	34,644.8	0.80
93.72	34,666.8	0.80
93.73	34,688.7	0.80
93.74	34,710.6	0.80
93.75	34,732.6	0.80
93.76	34,754.6	0.80
93.77	34,776.5	0.81
93.78	34,798.5	0.81
93.79	34,820.5	0.81
93.80	34,842.4	0.81
93.81	34,864.4	0.81
93.82	34,886.4	0.81
93.83	34,908.4	0.81
93.84	34,930.5	0.81
93.85	34,952.5	0.81
93.86	34,974.5	0.81
93.87	34,996.5	0.81
93.88	35,018.6	0.81
93.89	35,040.6	0.81
93.90	35,062.7	0.81
93.91	35,084.7	0.81

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
93.92	35,106.8	0.81
93.93	35,128.9	0.81
93.94	35,151.0	0.81
93.95	35,173.1	0.81
93.96	35,195.1	0.81
93.97	35,217.3	0.82
93.98	35,239.4	0.82
93.99	35,261.5	0.82
94.00	35,283.6	0.82
94.01	35,305.1	0.82
94.02	35,326.5	0.82
94.03	35,348.0	0.82
94.04	35,369.5	0.82
94.05	35,391.0	0.82
94.06	35,412.4	0.82
94.07	35,433.9	0.82
94.08	35,455.4	0.82
94.09	35,476.9	0.82
94.10	35,498.5	0.82
94.11	35,520.0	0.82
94.12	35,541.5	0.82
94.13	35,563.1	0.82
94.14	35,584.6	0.82
94.15	35,606.1	0.82
94.16	35,627.7	0.82
94.17	35,649.3	0.83
94.18	35,670.8	0.83
94.19	35,692.4	0.83
94.20	35,714.0	0.83
94.21	35,735.6	0.83
94.22	35,757.2	0.83
94.23	35,778.8	0.83
94.24	35,800.4	0.83
94.25	35,822.0	0.83
94.26	35,843.6	0.83
94.27	35,865.2	0.83
94.28	35,886.9	0.83
94.29	35,908.5	0.83
94.30	35,930.2	0.83
94.31	35,951.8	0.83
94.32	35,973.5	0.83
94.33	35,995.1	0.83

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
94.34	36,016.8	0.83
94.35	36,038.5	0.83
94.36	36,060.2	0.83
94.37	36,081.9	0.84
94.38	36,103.6	0.84
94.39	36,125.3	0.84
94.40	36,147.0	0.84
94.41	36,168.7	0.84
94.42	36,190.4	0.84
94.43	36,212.1	0.84
94.44	36,233.9	0.84
94.45	36,255.6	0.84
94.46	36,277.4	0.84
94.47	36,299.1	0.84
94.48	36,320.9	0.84
94.49	36,342.7	0.84
94.50	36,364.4	0.84
94.51	36,386.2	0.84
94.52	36,408.0	0.84
94.53	36,429.8	0.84
94.54	36,451.6	0.84
94.55	36,473.4	0.84
94.56	36,495.2	0.84
94.57	36,517.1	0.85
94.58	36,538.9	0.85
94.59	36,560.7	0.85
94.60	36,582.6	0.85
94.61	36,604.4	0.85
94.62	36,626.3	0.85
94.63	36,648.1	0.85
94.64	36,670.0	0.85
94.65	36,691.9	0.85
94.66	36,713.8	0.85
94.67	36,735.6	0.85
94.68	36,757.5	0.85
94.69	36,779.4	0.85
94.70	36,801.4	0.85
94.71	36,823.3	0.85
94.72	36,845.2	0.85
94.73	36,867.1	0.85
94.74	36,889.0	0.85
94.75	36,911.0	0.85

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
94.76	36,932.9	0.85
94.77	36,954.9	0.86
94.78	36,976.8	0.86
94.79	36,998.8	0.86
94.80	37,020.8	0.86
94.81	37,042.8	0.86
94.82	37,064.7	0.86
94.83	37,086.7	0.86
94.84	37,108.7	0.86
94.85	37,130.7	0.86
94.86	37,152.8	0.86
94.87	37,174.8	0.86
94.88	37,196.8	0.86
94.89	37,218.8	0.86
94.90	37,240.9	0.86
94.91	37,262.9	0.86
94.92	37,285.0	0.86
94.93	37,307.0	0.86
94.94	37,329.1	0.86
94.95	37,351.2	0.86
94.96	37,373.2	0.87
94.97	37,395.3	0.87
94.98	37,417.4	0.87
94.99	37,439.5	0.87
95.00	37,461.6	0.87
95.01	37,483.1	0.87
95.02	37,504.6	0.87
95.03	37,526.0	0.87
95.04	37,547.5	0.87
95.05	37,569.0	0.87
95.06	37,590.5	0.87
95.07	37,612.1	0.87
95.08	37,633.6	0.87
95.09	37,655.1	0.87
95.10	37,676.6	0.87
95.11	37,698.2	0.87
95.12	37,719.7	0.87
95.13	37,741.3	0.87
95.14	37,762.8	0.87
95.15	37,784.4	0.87
95.16	37,805.9	0.88
95.17	37,827.5	0.88

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
95.18	37,849.1	0.88
95.19	37,870.7	0.88
95.20	37,892.3	0.88
95.21	37,913.9	0.88
95.22	37,935.5	0.88
95.23	37,957.1	0.88
95.24	37,978.7	0.88
95.25	38,000.3	0.88
95.26	38,022.0	0.88
95.27	38,043.6	0.88
95.28	38,065.2	0.88
95.29	38,086.9	0.88
95.30	38,108.5	0.88
95.31	38,130.2	0.88
95.32	38,151.9	0.88
95.33	38,173.5	0.88
95.34	38,195.2	0.88
95.35	38,216.9	0.88
95.36	38,238.6	0.89
95.37	38,260.3	0.89
95.38	38,282.0	0.89
95.39	38,303.7	0.89
95.40	38,325.4	0.89
95.41	38,347.1	0.89
95.42	38,368.9	0.89
95.43	38,390.6	0.89
95.44	38,412.3	0.89
95.45	38,434.1	0.89
95.46	38,455.8	0.89
95.47	38,477.6	0.89
95.48	38,499.4	0.89
95.49	38,521.1	0.89
95.50	38,542.9	0.89
95.51	38,564.7	0.89
95.52	38,586.5	0.89
95.53	38,608.3	0.89
95.54	38,630.1	0.89
95.55	38,651.9	0.89
95.56	38,673.7	0.90
95.57	38,695.5	0.90
95.58	38,717.3	0.90
95.59	38,739.2	0.90

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
95.60	38,761.0	0.90
95.61	38,782.9	0.90
95.62	38,804.7	0.90
95.63	38,826.6	0.90
95.64	38,848.4	0.90
95.65	38,870.3	0.90
95.66	38,892.2	0.90
95.67	38,914.1	0.90
95.68	38,935.9	0.90
95.69	38,957.8	0.90
95.70	38,979.7	0.90
95.71	39,001.6	0.90
95.72	39,023.6	0.90
95.73	39,045.5	0.90
95.74	39,067.4	0.90
95.75	39,089.3	0.90
95.76	39,111.3	0.91
95.77	39,133.2	0.91
95.78	39,155.2	0.91
95.79	39,177.1	0.91
95.80	39,199.1	0.91
95.81	39,221.0	0.91
95.82	39,243.0	0.91
95.83	39,265.0	0.91
95.84	39,287.0	0.91
95.85	39,309.0	0.91
95.86	39,331.0	0.91
95.87	39,353.0	0.91
95.88	39,375.0	0.91
95.89	39,397.0	0.91
95.90	39,419.0	0.91
95.91	39,441.1	0.91
95.92	39,463.1	0.91
95.93	39,485.1	0.91
95.94	39,507.2	0.91
95.95	39,529.2	0.92
95.96	39,551.3	0.92
95.97	39,573.4	0.92
95.98	39,595.4	0.92
95.99	39,617.5	0.92
96.00	39,639.6	0.92
96.01	39,665.5	0.92

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
96.02	39,691.5	0.92
96.03	39,717.4	0.92
96.04	39,743.4	0.92
96.05	39,769.3	0.92
96.06	39,795.3	0.92
96.07	39,821.3	0.92
96.08	39,847.3	0.92
96.09	39,873.3	0.92
96.10	39,899.3	0.92
96.11	39,925.3	0.92
96.12	39,951.3	0.92
96.13	39,977.3	0.93
96.14	40,003.4	0.93
96.15	40,029.4	0.93
96.16	40,055.5	0.93
96.17	40,081.5	0.93
96.18	40,107.6	0.93
96.19	40,133.7	0.93
96.20	40,159.8	0.93
96.21	40,185.9	0.93
96.22	40,212.0	0.93
96.23	40,238.1	0.93
96.24	40,264.2	0.93
96.25	40,290.4	0.93
96.26	40,316.5	0.93
96.27	40,342.6	0.93
96.28	40,368.8	0.93
96.29	40,395.0	0.94
96.30	40,421.1	0.94
96.31	40,447.3	0.94
96.32	40,473.5	0.94
96.33	40,499.7	0.94
96.34	40,525.9	0.94
96.35	40,552.1	0.94
96.36	40,578.4	0.94
96.37	40,604.6	0.94
96.38	40,630.8	0.94
96.39	40,657.1	0.94
96.40	40,683.3	0.94
96.41	40,709.6	0.94
96.42	40,735.9	0.94
96.43	40,762.2	0.94

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil30 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
96.44	40,788.5	0.94
96.45	40,814.8	0.94
96.46	40,841.1	0.95
96.47	40,867.4	0.95
96.48	40,893.7	0.95
96.49	40,920.1	0.95
96.50	40,946.4	0.95

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: Infil30
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	91.40	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.020	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	1.200	91.43	728.000

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	1.050	1.38	0.000	0.00
Infiltration...	1.200	0.00	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	2,044.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	2,044.000	Forward
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	2,044.000 ft³
Volume (Total Out ICPM)	2,044.000 ft³
Volume (Ending)	0.000 ft³
Elevation (Ending)	91.40 ft
Difference	1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Infil8
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	109.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
109.50	0.00	0.000	0.090	0.00	0.00	0.00
109.60	0.03	400.374	0.094	0.09	0.13	4.57
109.70	0.12	817.647	0.098	0.10	0.22	9.30
109.80	0.26	1,252.170	0.102	0.10	0.36	14.28
109.90	0.45	1,704.291	0.106	0.11	0.56	19.49
110.00	0.68	2,174.361	0.110	0.11	0.79	24.95
110.10	0.94	2,657.707	0.112	0.11	1.05	30.58
110.20	1.22	3,149.475	0.114	0.11	1.34	36.33
110.30	1.53	3,649.736	0.116	0.12	1.65	42.20
110.40	1.83	4,158.564	0.118	0.12	1.94	48.15
110.50	2.00	4,676.031	0.120	0.12	2.13	54.08
110.60	2.17	5,202.210	0.122	0.12	2.29	60.10
110.70	2.32	5,737.173	0.124	0.12	2.45	66.19
110.75	2.40	6,007.972	0.125	0.13	2.52	69.28
110.80	2.52	6,280.995	0.126	0.13	2.64	72.43
110.90	2.86	6,833.746	0.128	0.13	2.99	78.92
111.00	3.29	7,395.500	0.130	0.13	3.43	85.60
111.10	3.79	7,967.998	0.133	0.13	3.92	92.45
111.20	4.33	8,553.022	0.136	0.14	4.47	99.50
111.30	4.92	9,150.706	0.139	0.14	5.06	106.74
111.40	5.56	9,761.188	0.142	0.14	5.70	114.16
111.48	6.09	10,258.878	0.144	0.15	6.23	120.22
111.50	6.29	10,384.602	0.145	0.15	6.43	121.82
111.60	7.80	11,021.085	0.148	0.15	7.95	130.41
111.70	9.83	11,670.770	0.151	0.15	9.98	139.65
111.80	12.22	12,333.795	0.154	0.16	12.38	149.42
111.90	14.93	13,010.295	0.157	0.16	15.09	159.65
112.00	17.91	13,700.405	0.160	0.16	18.07	170.30

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Infil8
Scenario: WQ

Return Event: 1 years
Storm Event: wq

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: Infil8 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
109.50	3,920.4	0.00
109.60	4,087.7	0.09
109.70	4,258.4	0.10
109.80	4,432.6	0.10
109.90	4,610.4	0.11
110.00	4,791.6	0.11
110.10	4,875.4	0.11
110.20	4,960.0	0.11
110.30	5,045.3	0.12
110.40	5,131.4	0.12
110.50	5,218.1	0.12
110.60	5,305.6	0.12
110.70	5,393.8	0.12
110.75	5,438.2	0.13
110.80	5,482.7	0.13
110.90	5,572.4	0.13
111.00	5,662.8	0.13
111.10	5,787.4	0.13
111.20	5,913.3	0.14
111.30	6,040.6	0.14
111.40	6,169.3	0.14
111.48	6,273.1	0.15
111.50	6,299.3	0.15
111.60	6,430.6	0.15
111.70	6,563.3	0.15
111.80	6,697.4	0.16
111.90	6,832.8	0.16
112.00	6,969.6	0.16

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: Infil8 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	109.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.16 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.10 ft³/s	Time to Peak (Infiltration)	1.250 hours
Flow (Peak Outlet)	0.15 ft³/s	Time to Peak (Flow, Outlet)	1.250 hours

Elevation (Water Surface, Peak)	109.72 ft
Volume (Peak)	896.218 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,449.000 ft³
Volume (Total Infiltration)	845.000 ft³
Volume (Total Outlet Outflow)	604.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB10
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	106.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
106.00	0.00	0.000	0.000	0.00	0.00	0.00
106.25	0.00	308.473	0.000	0.00	0.00	3.43
106.50	0.00	623.315	0.000	0.00	0.00	6.93
106.75	0.00	1,276.719	0.000	0.00	0.00	14.19
107.00	0.00	1,927.904	0.000	0.00	0.00	21.42
107.25	0.56	2,571.755	0.000	0.00	0.56	29.14
107.50	1.59	3,206.879	0.000	0.00	1.59	37.22
107.75	2.92	3,827.883	0.000	0.00	2.92	45.45
108.00	4.50	4,432.649	0.000	0.00	4.50	53.75
108.25	6.29	5,012.490	0.000	0.00	6.29	61.98
108.50	8.27	5,561.117	0.000	0.00	8.27	70.06
108.75	10.42	6,052.483	0.000	0.00	10.42	77.67
109.00	12.73	6,466.727	0.000	0.00	12.73	84.58
109.25	15.19	6,858.120	0.000	0.00	15.19	91.39
109.50	17.79	7,256.458	0.000	0.00	17.79	98.42

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB10 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	106.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.46 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	106.46 ft
Volume (Peak)	570.058 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	570.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	570.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.1 %

WQ Basin Routings

Subsection: Pond Inflow Summary
Label: UGB10 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Summary for Hydrograph Addition at 'UGB10'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA10 Imp

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	DA10 Imp	570.415	1.050	0.46
Flow (In)	UGB10	570.415	1.050	0.46

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB11
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	84.08 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
84.08	0.00	0.000	0.025	0.00	0.00	0.00
84.33	0.00	109.027	0.025	0.03	0.03	1.24
84.58	0.00	221.802	0.026	0.03	0.03	2.49
84.83	0.00	338.692	0.027	0.03	0.03	3.79
84.98	0.00	410.617	0.028	0.03	0.03	4.59
85.08	0.19	459.427	0.028	0.03	0.22	5.32
85.25	0.84	613.252	0.029	0.03	0.87	7.68
85.33	1.51	685.062	0.029	0.03	1.54	9.16
85.58	5.06	905.855	0.030	0.03	5.09	15.16
85.83	10.00	1,116.838	0.031	0.03	10.03	22.44
86.08	16.00	1,313.711	0.032	0.03	16.03	30.63
86.33	22.88	1,477.912	0.033	0.03	22.91	39.33
86.58	30.55	1,625.808	0.034	0.03	30.58	48.65
86.83	38.93	1,776.150	0.035	0.04	38.97	58.70
86.91	41.87	1,827.123	0.035	0.04	41.91	62.21

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB11 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
84.08	1,070.1	0.00
84.33	1,108.9	0.03
84.58	1,148.2	0.03
84.83	1,188.0	0.03
84.98	1,212.2	0.03
85.08	1,228.3	0.03
85.25	1,256.0	0.03
85.33	1,269.1	0.03
85.58	1,310.5	0.03
85.83	1,352.3	0.03
86.08	1,394.6	0.03
86.33	1,437.4	0.03
86.58	1,480.7	0.03
86.83	1,524.5	0.04
86.91	1,539.2	0.04

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB11 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	84.08 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.45 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.03 ft³/s	Time to Peak (Infiltration)	1.500 hours
Flow (Peak Outlet)	0.03 ft³/s	Time to Peak (Flow, Outlet)	1.500 hours

Elevation (Water Surface, Peak)	85.00 ft
Volume (Peak)	418.238 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	565.000 ft³
Volume (Total Infiltration)	523.000 ft³
Volume (Total Outlet Outflow)	42.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB13
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	86.00	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

Maximum Storage		
Time to Peak (hours)	Elevation (ft)	Volume (ft³)
2.100	86.87	343.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	0.27	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	342.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	342.000 ft³
Volume (Total Out ICPM)	0.000 ft³
Volume (Ending)	343.000 ft³
Elevation (Ending)	86.87 ft
Difference	-1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.2 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB14
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	86.25	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

Maximum Storage		
Time to Peak (hours)	Elevation (ft)	Volume (ft³)
2.150	87.19	380.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	0.30	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	381.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	381.000 ft³
Volume (Total Out ICPM)	0.000 ft³
Volume (Ending)	380.000 ft³
Elevation (Ending)	87.19 ft
Difference	1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.2 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB15
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	92.00	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

Maximum Storage		
Time to Peak (hours)	Elevation (ft)	Volume (ft³)
2.150	92.33	911.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	0.72	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	914.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	914.000 ft³
Volume (Total Out ICPM)	0.000 ft³
Volume (Ending)	911.000 ft³
Elevation (Ending)	92.33 ft
Difference	3.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.3 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB16
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	94.00	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

Maximum Storage		
Time to Peak (hours)	Elevation (ft)	Volume (ft³)
2.150	94.51	2,044.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	1.62	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	2,053.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	2,053.000 ft³
Volume (Total Out ICPM)	0.000 ft³
Volume (Ending)	2,044.000 ft³
Elevation (Ending)	94.51 ft
Difference	9.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.4 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB17
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	110.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
110.50	0.00	0.000	0.000	0.00	0.00	0.00
110.75	0.00	1,168.548	0.000	0.00	0.00	12.98
111.00	0.00	2,350.871	0.000	0.00	0.00	26.12
111.25	0.00	4,850.926	0.000	0.00	0.00	53.90
111.50	0.00	7,330.736	0.000	0.00	0.00	81.45
111.75	0.38	9,769.092	0.000	0.00	0.38	108.92
112.00	1.06	12,161.358	0.000	0.00	1.06	136.19
112.25	1.95	14,485.207	0.000	0.00	1.95	162.90
112.50	3.00	16,733.176	0.000	0.00	3.00	188.92
112.75	4.19	18,869.975	0.000	0.00	4.19	213.86
113.00	5.51	20,871.780	0.000	0.00	5.51	237.42
113.25	6.95	22,635.077	0.000	0.00	6.95	258.45
113.50	8.49	24,082.744	0.000	0.00	8.49	276.07
113.75	10.13	25,426.780	0.000	0.00	10.13	292.64
114.00	11.86	26,785.167	0.000	0.00	11.86	309.47

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB17 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	110.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.52 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	110.64 ft
Volume (Peak)	646.565 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	648.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	647.000 ft³
Volume (Unrouted)	-2.000 ft³
Error (Mass Balance)	0.3 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB18
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	94.00	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	1.400	95.09	742.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.100	0.72	0.000	0.00
Pond Outflow...	1.400	0.14	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	1,026.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	370.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	1,026.000 ft³
Volume (Total Out ICPM)	370.000 ft³
Volume (Ending)	660.000 ft³
Elevation (Ending)	95.00 ft
Difference	-4.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.4 %

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB19 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
94.50	1,040.8	0.00
94.75	1,081.9	0.03
95.00	1,123.6	0.03
95.03	1,128.6	0.03
95.25	1,165.7	0.03
95.50	1,208.4	0.03
95.75	1,251.6	0.03
96.00	1,295.3	0.03
96.25	1,339.4	0.03
96.50	1,384.1	0.03
96.75	1,429.2	0.03
97.00	1,474.9	0.03
97.25	1,521.1	0.04
97.50	1,567.7	0.04
97.75	1,614.9	0.04
98.00	1,662.6	0.04

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB19
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	94.50	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.020	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	1.500	95.09	293.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.100	0.32	0.000	0.00
Infiltration...	1.500	0.00	0.000	0.00
Pond Outflow...	1.650	0.04	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	414.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	365.000	Forward
Pond Outflow...	0.000	Reverse	50.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	414.000 ft³
Volume (Total Out ICPM)	415.000 ft³
Volume (Ending)	0.000 ft³
Elevation (Ending)	94.50 ft
Difference	-1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.3 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB2
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	85.25	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	2.150	85.86	1,067.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	0.84	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	1,066.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	1,066.000 ft³
Volume (Total Out ICPM)	0.000 ft³
Volume (Ending)	1,067.000 ft³
Elevation (Ending)	85.86 ft
Difference	-1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.1 %

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB20 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
97.10	5,264.1	0.00
97.20	5,310.9	0.12
97.25	5,334.3	0.12
97.30	5,357.8	0.12
97.40	5,404.7	0.13
97.50	5,451.7	0.13
97.60	5,498.9	0.13
97.70	5,546.0	0.13
97.72	5,555.5	0.13
97.75	5,569.6	0.13
97.80	5,593.3	0.13
97.90	5,640.6	0.13
98.00	5,688.1	0.13
98.10	5,735.6	0.13
98.20	5,783.2	0.13
98.30	5,830.8	0.13
98.40	5,878.6	0.14
98.50	5,926.4	0.14
98.60	5,974.3	0.14
98.70	6,022.3	0.14
98.80	6,070.4	0.14
98.90	6,118.5	0.14
99.00	6,166.7	0.14
99.10	6,215.0	0.14
99.20	6,263.4	0.14
99.30	6,311.9	0.15
99.40	6,360.4	0.15
99.50	6,409.1	0.15
99.60	6,457.8	0.15
99.70	6,506.6	0.15
99.80	6,555.4	0.15
99.90	6,604.4	0.15
100.00	6,653.4	0.15
100.10	6,702.5	0.16
100.20	6,751.7	0.16
100.30	6,801.0	0.16
100.40	6,850.3	0.16
100.50	6,899.7	0.16
100.60	6,949.2	0.16

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB20
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	1.0000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	97.10	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.020	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	1.700	97.40	641.000

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	1.100	0.70	0.000	0.00
Infiltration...	1.700	0.00	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	1,126.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	1,125.000	Forward
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	1,126.000 ft³
Volume (Total Out ICPM)	1,125.000 ft³
Volume (Ending)	0.000 ft³
Elevation (Ending)	97.10 ft
Difference	1.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.1 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB21
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	98.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
98.00	0.00	0.000	0.000	0.00	0.00	0.00
98.25	0.00	6.109	0.000	0.00	0.00	0.07
98.50	0.00	13.004	0.000	0.00	0.00	0.14
98.75	0.28	24.749	0.000	0.00	0.28	0.56
99.00	0.80	37.273	0.000	0.00	0.80	1.21
99.25	1.46	50.633	0.000	0.00	1.46	2.02
99.50	2.25	64.789	0.000	0.00	2.25	2.97
99.75	3.14	79.803	0.000	0.00	3.14	4.03
100.00	4.13	95.618	0.000	0.00	4.13	5.20
100.25	5.21	112.265	0.000	0.00	5.21	6.46
100.50	6.36	129.630	0.000	0.00	6.36	7.80
100.75	7.59	147.544	0.000	0.00	7.59	9.23
101.00	8.89	165.725	0.000	0.00	8.89	10.74
101.25	10.26	184.968	0.000	0.00	10.26	12.32
101.50	11.69	205.573	0.000	0.00	11.69	13.98

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB21 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	98.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.47 ft³/s	Time to Peak (Flow, In)	1.100 hours
Flow (Peak Outlet)	0.46 ft³/s	Time to Peak (Flow, Outlet)	1.100 hours

Elevation (Water Surface, Peak)	98.84 ft
Volume (Peak)	29.097 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	601.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	588.000 ft³
Volume (Retained)	13.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB22
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	107.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
107.00	0.00	0.000	0.000	0.00	0.00	0.00
107.25	0.00	1,021.552	0.000	0.00	0.00	11.35
107.50	0.00	2,043.104	0.000	0.00	0.00	22.70
107.75	0.00	4,209.505	0.000	0.00	0.00	46.77
108.00	0.00	6,345.925	0.000	0.00	0.00	70.51
108.25	0.56	8,432.666	0.000	0.00	0.56	94.26
108.50	1.59	10,466.631	0.000	0.00	1.59	117.89
108.75	2.92	12,427.130	0.000	0.00	2.92	141.00
109.00	4.50	14,308.589	0.000	0.00	4.50	163.48
109.25	6.29	16,078.920	0.000	0.00	6.29	184.94
109.50	8.27	17,718.177	0.000	0.00	8.27	205.14
109.75	10.42	19,134.313	0.000	0.00	10.42	223.02
110.00	12.73	20,260.550	0.000	0.00	12.73	237.85
110.25	15.19	21,282.102	0.000	0.00	15.19	251.66
110.50	17.79	22,303.654	0.000	0.00	17.79	265.61

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB22 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	107.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.52 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	107.16 ft
Volume (Peak)	647.488 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	647.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	647.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB27
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	99.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
99.00	0.00	0.000	0.051	0.00	0.00	0.00
99.25	0.00	226.411	0.053	0.03	0.03	2.54
99.50	0.00	459.077	0.054	0.03	0.03	5.13
99.75	0.00	935.435	0.056	0.03	0.03	10.42
100.00	0.20	1,411.941	0.057	0.03	0.23	15.92
100.25	0.76	1,885.100	0.059	0.03	0.79	21.74
100.50	1.59	2,353.786	0.060	0.03	1.62	27.77
100.75	2.67	2,814.308	0.062	0.03	2.70	33.97
101.00	3.27	3,265.020	0.063	0.03	3.31	39.58
101.25	3.78	3,699.879	0.065	0.03	3.81	44.92
101.50	4.23	4,114.257	0.067	0.03	4.26	49.97
101.75	4.63	4,489.716	0.068	0.03	4.66	54.55
102.00	5.00	4,811.931	0.070	0.04	5.04	58.50
102.25	5.35	5,119.834	0.071	0.04	5.38	62.27
102.50	5.67	5,434.568	0.073	0.04	5.71	66.09

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB27 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
99.00	2,230.4	0.00
99.25	2,295.3	0.03
99.50	2,360.7	0.03
99.75	2,426.6	0.03
100.00	2,493.0	0.03
100.25	2,559.9	0.03
100.50	2,627.3	0.03
100.75	2,695.2	0.03
101.00	2,763.6	0.03
101.25	2,832.5	0.03
101.50	2,901.9	0.03
101.75	2,971.8	0.03
102.00	3,042.2	0.04
102.25	3,113.1	0.04
102.50	3,184.5	0.04

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB27 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	99.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.36 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.03 ft³/s	Time to Peak (Infiltration)	1.150 hours
Flow (Peak Outlet)	0.70 ft³/s	Time to Peak (Flow, Outlet)	1.150 hours

Elevation (Water Surface, Peak)	100.22 ft
Volume (Peak)	1,835.700 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	2,925.000 ft³
Volume (Total Infiltration)	1,206.000 ft³
Volume (Total Outlet Outflow)	1,720.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB3
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	85.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
85.50	0.00	0.000	0.000	0.00	0.00	0.00
85.51	0.00	5.649	0.000	0.00	0.00	0.06
85.60	0.06	56.492	0.020	0.01	0.07	0.70
85.70	0.19	158.560	0.028	0.01	0.20	1.96
85.80	0.37	289.024	0.034	0.02	0.38	3.60
85.90	0.59	441.453	0.040	0.02	0.61	5.51
86.00	0.84	611.971	0.045	0.02	0.86	7.66
86.10	1.11	797.847	0.049	0.02	1.14	10.00
86.20	1.43	996.988	0.054	0.03	1.46	12.53
86.30	1.77	1,207.697	0.057	0.03	1.80	15.22
86.40	2.19	1,428.547	0.061	0.03	2.22	18.09
86.50	2.58	1,658.299	0.065	0.03	2.61	21.04
86.60	2.93	1,895.854	0.068	0.03	2.97	24.03
86.70	3.36	2,140.218	0.072	0.04	3.40	27.18
86.80	3.81	2,390.480	0.075	0.04	3.85	30.41
86.90	4.27	2,645.789	0.078	0.04	4.31	33.71
87.00	4.76	2,905.347	0.082	0.04	4.80	37.08
87.10	5.26	3,168.394	0.085	0.04	5.30	40.51
87.20	5.78	3,434.198	0.088	0.04	5.82	43.98
87.30	6.31	3,702.051	0.091	0.05	6.36	47.49
87.40	6.86	3,971.263	0.094	0.05	6.91	51.04
87.50	7.43	4,241.150	0.097	0.05	7.48	54.60
87.60	8.01	4,511.038	0.100	0.05	8.06	58.18
87.70	8.60	4,780.249	0.104	0.05	8.65	61.77
87.80	9.21	5,048.102	0.107	0.05	9.26	65.35
87.90	9.90	5,313.906	0.110	0.06	9.96	69.00
88.00	10.45	5,576.953	0.113	0.06	10.51	72.48
88.10	11.10	5,836.511	0.116	0.06	11.16	76.01

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB3
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
88.20	11.75	6,091.821	0.120	0.06	11.81	79.50
88.30	12.42	6,342.082	0.123	0.06	12.48	82.95
88.40	13.09	6,586.446	0.126	0.06	13.16	86.34
88.50	13.78	6,824.001	0.130	0.07	13.85	89.67
88.60	14.47	7,053.753	0.133	0.07	14.54	92.92
88.70	15.18	7,274.603	0.137	0.07	15.25	96.08
88.80	15.89	7,485.313	0.141	0.07	15.96	99.13
88.90	16.60	7,684.453	0.145	0.07	16.68	102.06
89.00	17.32	7,870.329	0.150	0.08	17.40	104.85
89.10	18.05	8,040.847	0.155	0.08	18.12	107.47
89.20	18.80	8,193.277	0.160	0.08	18.88	109.91
89.30	19.52	8,323.740	0.167	0.08	19.60	112.09
89.40	20.23	8,425.808	0.175	0.09	20.32	113.94
89.50	20.87	8,482.300	0.195	0.10	20.97	115.22

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB3 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
85.50	0.0	0.00
85.51	8.6	0.00
85.60	857.4	0.01
85.70	1,217.8	0.01
85.80	1,498.0	0.02
85.90	1,737.5	0.02
86.00	1,951.4	0.02
86.10	2,147.6	0.02
86.20	2,330.7	0.03
86.30	2,503.7	0.03
86.40	2,668.8	0.03
86.50	2,827.4	0.03
86.60	2,980.9	0.03
86.70	3,130.1	0.04
86.80	3,275.7	0.04
86.90	3,418.5	0.04
87.00	3,558.9	0.04
87.10	3,697.5	0.04
87.20	3,834.6	0.04
87.30	3,970.7	0.05
87.40	4,106.1	0.05
87.50	4,241.2	0.05
87.60	4,376.2	0.05
87.70	4,511.6	0.05
87.80	4,647.7	0.05
87.90	4,784.8	0.06
88.00	4,923.4	0.06
88.10	5,063.8	0.06
88.20	5,206.6	0.06
88.30	5,352.2	0.06
88.40	5,501.4	0.06
88.50	5,654.9	0.07
88.60	5,813.5	0.07
88.70	5,978.6	0.07
88.80	6,151.6	0.07
88.90	6,334.7	0.07
89.00	6,530.9	0.08
89.10	6,744.8	0.08
89.20	6,984.3	0.08
89.30	7,264.5	0.08
89.40	7,624.9	0.09
89.50	8,482.3	0.10

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB3 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	85.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.00 ft³/s	Time to Peak (Flow, In)	0.000 hours
Infiltration (Peak)	0.00 ft³/s	Time to Peak (Infiltration)	0.000 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	85.50 ft
Volume (Peak)	0.000 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	0.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB31
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	92.60 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
92.60	0.00	0.000	0.000	0.00	0.00	0.00
92.85	0.00	330.018	0.000	0.00	0.00	3.67
93.10	0.00	666.747	0.000	0.00	0.00	7.41
93.35	0.19	1,366.095	0.000	0.00	0.19	15.36
93.60	0.68	2,062.945	0.000	0.00	0.68	23.60
93.85	1.38	2,751.803	0.000	0.00	1.38	31.95
94.10	2.00	3,431.184	0.000	0.00	2.00	40.13
94.35	2.40	4,095.296	0.000	0.00	2.40	47.90
94.60	2.73	4,741.876	0.000	0.00	2.73	55.42
94.85	3.03	5,361.602	0.000	0.00	3.03	62.60
95.10	3.30	5,947.744	0.000	0.00	3.30	69.39
95.35	3.55	6,472.379	0.000	0.00	3.55	75.47
95.60	3.79	6,914.236	0.000	0.00	3.79	80.61
95.85	4.01	7,331.446	0.000	0.00	4.01	85.47
96.10	4.22	7,755.943	0.000	0.00	4.22	90.40

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB31 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	92.60 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.76 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.05 ft³/s	Time to Peak (Flow, Outlet)	1.800 hours

Elevation (Water Surface, Peak)	93.16 ft
Volume (Peak)	843.178 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	943.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	276.000 ft³
Volume (Retained)	667.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB32
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	109.75 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
109.75	0.00	0.000	0.000	0.00	0.00	0.00
110.00	0.00	1,028.256	0.000	0.00	0.00	11.43
110.25	0.00	2,068.919	0.000	0.00	0.00	22.99
110.50	0.00	4,267.923	0.000	0.00	0.00	47.42
110.75	0.56	6,449.450	0.000	0.00	0.56	72.22
111.00	1.59	8,594.895	0.000	0.00	1.59	97.09
111.25	2.92	10,700.163	0.000	0.00	2.92	121.81
111.50	4.50	12,745.666	0.000	0.00	4.50	146.12
111.75	6.29	14,724.823	0.000	0.00	6.29	169.90
112.00	8.27	16,606.658	0.000	0.00	8.27	192.79
112.25	10.42	18,370.211	0.000	0.00	10.42	214.53
112.50	12.73	19,924.550	0.000	0.00	12.73	234.11
112.75	15.19	21,201.878	0.000	0.00	15.19	250.76
113.00	17.79	22,388.534	0.000	0.00	17.79	266.55
113.25	20.52	23,588.173	0.000	0.00	20.52	282.61

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB32 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	109.75 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.13 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	110.32 ft
Volume (Peak)	2,667.527 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	2,667.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	2,668.000 ft³
Volume (Unrouted)	1.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB33
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	105.82 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
105.82	0.00	0.000	0.000	0.00	0.00	0.00
106.07	0.00	226.411	0.000	0.00	0.00	2.52
106.32	0.00	459.077	0.000	0.00	0.00	5.10
106.40	0.00	611.279	0.000	0.00	0.00	6.79
106.57	0.32	935.435	0.000	0.00	0.32	10.71
106.82	1.22	1,411.941	0.000	0.00	1.22	16.91
107.07	2.47	1,885.100	0.000	0.00	2.47	23.41
107.32	3.97	2,353.786	0.000	0.00	3.97	30.12
107.57	5.69	2,814.308	0.000	0.00	5.69	36.97
107.82	7.61	3,265.020	0.000	0.00	7.61	43.89
108.07	9.71	3,699.879	0.000	0.00	9.71	50.82
108.32	11.97	4,114.257	0.000	0.00	11.97	57.69
108.57	14.38	4,489.716	0.000	0.00	14.38	64.27
108.82	16.94	4,811.931	0.000	0.00	16.94	70.41
109.07	19.63	5,119.834	0.000	0.00	19.63	76.52
109.32	22.45	5,434.568	0.000	0.00	22.45	82.84

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB33 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	105.82 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.27 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	106.19 ft
Volume (Peak)	341.641 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	342.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	342.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.2 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB34
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	109.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
109.50	0.00	0.000	0.000	0.00	0.00	0.00
109.75	0.00	391.888	0.000	0.00	0.00	4.35
110.00	0.00	793.495	0.000	0.00	0.00	8.82
110.25	0.16	1,583.242	0.000	0.00	0.16	17.75
110.50	0.58	2,349.867	0.000	0.00	0.58	26.69
110.75	1.08	3,074.183	0.000	0.00	1.08	35.24
111.00	1.37	3,740.357	0.000	0.00	1.37	42.93
111.25	1.61	4,278.202	0.000	0.00	1.61	49.14
111.50	1.81	4,749.415	0.000	0.00	1.81	54.59
111.75	2.00	5,223.702	0.000	0.00	2.00	60.04
111.83	2.06	5,383.854	0.000	0.00	2.06	61.88

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB34 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	109.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.30 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	109.74 ft
Volume (Peak)	379.222 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	379.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	379.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB37
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	103.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
103.50	0.00	0.000	0.000	0.00	0.00	0.00
103.75	0.00	226.411	0.000	0.00	0.00	2.52
104.00	0.00	459.077	0.000	0.00	0.00	5.10
104.25	0.00	935.435	0.000	0.00	0.00	10.39
104.50	0.00	1,411.941	0.000	0.00	0.00	15.69
104.75	0.38	1,885.100	0.000	0.00	0.38	21.32
105.00	1.06	2,353.786	0.000	0.00	1.06	27.21
105.25	1.95	2,814.308	0.000	0.00	1.95	33.22
105.50	3.00	3,265.020	0.000	0.00	3.00	39.28
105.75	4.19	3,699.879	0.000	0.00	4.19	45.30
106.00	5.51	4,114.257	0.000	0.00	5.51	51.23
106.25	6.95	4,489.716	0.000	0.00	6.95	56.83
106.50	8.49	4,811.931	0.000	0.00	8.49	61.95
106.75	10.13	5,119.834	0.000	0.00	10.13	67.01
107.00	11.86	5,434.568	0.000	0.00	11.86	72.24

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB37 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	103.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.30 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	103.92 ft
Volume (Peak)	380.158 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	381.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	380.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.2 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB4
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	85.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
85.10	0.00	0.000	0.092	0.00	0.00	0.00
85.35	0.00	405.316	0.094	0.05	0.05	4.55
85.60	0.00	817.457	0.095	0.05	0.05	9.13
85.85	0.00	1,679.191	0.097	0.05	0.05	18.71
86.10	0.00	2,536.268	0.099	0.05	0.05	28.23
86.35	0.38	3,381.707	0.100	0.05	0.43	38.00
86.60	1.06	4,213.780	0.102	0.05	1.11	47.93
86.85	1.95	5,025.134	0.104	0.05	2.00	57.84
87.10	3.00	5,813.075	0.106	0.05	3.05	67.64
87.35	4.19	6,565.855	0.107	0.05	4.25	77.20
87.60	5.51	7,275.221	0.109	0.05	5.57	86.40
87.85	6.95	7,906.278	0.111	0.06	7.00	94.85
88.10	8.49	8,432.679	0.112	0.06	8.54	102.24
88.35	10.13	8,926.615	0.114	0.06	10.18	109.37
88.60	11.86	9,427.952	0.116	0.06	11.92	116.67

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB4 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
85.10	4,016.4	0.00
85.35	4,087.2	0.05
85.60	4,158.5	0.05
85.85	4,230.4	0.05
86.10	4,302.7	0.05
86.35	4,375.6	0.05
86.60	4,448.9	0.05
86.85	4,522.7	0.05
87.10	4,597.1	0.05
87.35	4,671.9	0.05
87.60	4,747.3	0.05
87.85	4,823.1	0.06
88.10	4,899.4	0.06
88.35	4,976.3	0.06
88.60	5,053.6	0.06

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB4 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	85.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.01 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.05 ft³/s	Time to Peak (Infiltration)	1.800 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	85.67 ft
Volume (Peak)	1,064.503 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,254.000 ft³
Volume (Total Infiltration)	1,254.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB41
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	104.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
104.00	0.00	0.000	0.000	0.00	0.00	0.00
104.50	0.00	78.338	0.000	0.00	0.00	0.87
104.79	0.00	163.653	0.000	0.00	0.00	1.82
105.00	0.12	225.426	0.000	0.00	0.12	2.62
105.50	1.03	367.332	0.000	0.00	1.03	5.11
106.00	1.57	487.180	0.000	0.00	1.57	6.99
106.33	1.85	568.897	0.000	0.00	1.85	8.17

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB41 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	104.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.15 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.01 ft³/s	Time to Peak (Flow, Outlet)	1.750 hours

Elevation (Water Surface, Peak)	104.82 ft
Volume (Peak)	171.135 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	190.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	26.000 ft³
Volume (Retained)	164.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB42
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	95.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
95.00	0.00	0.000	0.000	0.00	0.00	0.00
95.25	0.00	196.849	0.000	0.00	0.00	2.19
95.50	0.00	399.269	0.000	0.00	0.00	4.44
95.75	0.00	813.059	0.000	0.00	0.00	9.03
96.00	0.00	1,227.140	0.000	0.00	0.00	13.63
96.25	0.28	1,638.504	0.000	0.00	0.28	18.49
96.50	0.80	2,046.168	0.000	0.00	0.80	23.53
96.75	1.46	2,446.954	0.000	0.00	1.46	28.65
97.00	2.25	2,839.426	0.000	0.00	2.25	33.80
97.25	3.14	3,218.371	0.000	0.00	3.14	38.90
97.50	4.13	3,579.767	0.000	0.00	4.13	43.91
97.75	5.21	3,907.659	0.000	0.00	5.21	48.63
98.00	6.36	4,189.620	0.000	0.00	6.36	52.92
98.25	7.59	4,459.417	0.000	0.00	7.59	57.14
98.50	8.89	4,735.361	0.000	0.00	8.89	61.51

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB42 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	95.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.24 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	95.38 ft
Volume (Peak)	304.276 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	305.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	304.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.2 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB43
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	98.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
98.00	0.00	0.000	0.048	0.00	0.00	0.00
98.25	0.00	211.630	0.049	0.02	0.02	2.38
98.50	0.00	429.173	0.051	0.03	0.03	4.79
98.75	0.00	874.247	0.052	0.03	0.03	9.74
99.00	0.00	1,319.541	0.054	0.03	0.03	14.69
99.25	0.38	1,761.802	0.055	0.03	0.40	19.98
99.50	1.06	2,199.977	0.056	0.03	1.09	25.53
99.75	1.95	2,630.631	0.058	0.03	1.98	31.21
100.00	3.00	3,052.223	0.059	0.03	3.03	36.94
100.25	4.19	3,459.125	0.061	0.03	4.22	42.66
100.50	5.51	3,847.012	0.062	0.03	5.54	48.29
100.75	6.95	4,198.688	0.064	0.03	6.98	53.63
101.00	8.49	4,500.775	0.066	0.03	8.52	58.53
101.25	10.13	4,789.626	0.067	0.03	10.16	63.38
101.50	11.86	5,084.964	0.069	0.03	11.89	68.39

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB43 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
98.00	2,084.4	0.00
98.25	2,145.8	0.02
98.50	2,207.6	0.03
98.75	2,270.0	0.03
99.00	2,332.8	0.03
99.25	2,396.1	0.03
99.50	2,460.0	0.03
99.75	2,524.3	0.03
100.00	2,589.2	0.03
100.25	2,654.5	0.03
100.50	2,720.3	0.03
100.75	2,786.7	0.03
101.00	2,853.5	0.03
101.25	2,920.9	0.03
101.50	2,988.7	0.03

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB43 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	98.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.00 ft³/s	Time to Peak (Flow, In)	0.000 hours
Infiltration (Peak)	0.00 ft³/s	Time to Peak (Infiltration)	0.000 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	98.00 ft
Volume (Peak)	0.000 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	0.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB44
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	101.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
101.00	0.00	0.000	0.048	0.00	0.00	0.00
101.25	0.00	211.630	0.049	0.02	0.02	2.38
101.50	0.00	429.173	0.051	0.03	0.03	4.79
101.75	0.00	874.247	0.052	0.03	0.03	9.74
102.00	0.00	1,319.541	0.054	0.03	0.03	14.69
102.25	0.38	1,761.802	0.055	0.03	0.40	19.98
102.50	1.06	2,199.977	0.056	0.03	1.09	25.53
102.75	1.95	2,630.631	0.058	0.03	1.98	31.21
103.00	3.00	3,052.223	0.059	0.03	3.03	36.94
103.25	4.19	3,459.125	0.061	0.03	4.22	42.66
103.50	5.51	3,847.012	0.062	0.03	5.54	48.29
103.75	6.95	4,198.688	0.064	0.03	6.98	53.63
104.00	8.49	4,500.775	0.066	0.03	8.52	58.53
104.25	10.13	4,789.626	0.067	0.03	10.16	63.38
104.50	11.86	5,084.964	0.069	0.03	11.89	68.39

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB44 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
101.00	2,084.4	0.00
101.25	2,145.8	0.02
101.50	2,207.6	0.03
101.75	2,270.0	0.03
102.00	2,332.8	0.03
102.25	2,396.1	0.03
102.50	2,460.0	0.03
102.75	2,524.3	0.03
103.00	2,589.2	0.03
103.25	2,654.5	0.03
103.50	2,720.3	0.03
103.75	2,786.7	0.03
104.00	2,853.5	0.03
104.25	2,920.9	0.03
104.50	2,988.7	0.03

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB44 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	101.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.15 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.01 ft³/s	Time to Peak (Infiltration)	1.750 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	101.14 ft
Volume (Peak)	121.929 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	164.000 ft³
Volume (Total Infiltration)	164.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB46
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	103.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
103.00	0.00	0.000	0.000	0.00	0.00	0.00
103.25	0.00	58.667	0.000	0.00	0.00	0.65
103.50	0.00	120.399	0.000	0.00	0.00	1.34
103.75	0.19	240.770	0.000	0.00	0.19	2.86
104.00	0.68	362.855	0.000	0.00	0.68	4.71
104.25	1.38	486.017	0.000	0.00	1.38	6.78
104.50	2.00	609.888	0.000	0.00	2.00	8.78
104.75	2.40	733.791	0.000	0.00	2.40	10.55
105.00	2.73	857.232	0.000	0.00	2.73	12.26
105.25	3.03	978.991	0.000	0.00	3.03	13.91
105.50	3.30	1,097.871	0.000	0.00	3.30	15.50
105.75	3.55	1,209.767	0.000	0.00	3.55	17.00
106.00	3.79	1,311.212	0.000	0.00	3.79	18.36
106.25	4.01	1,411.495	0.000	0.00	4.01	19.69
106.50	4.22	1,515.419	0.000	0.00	4.22	21.06

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB46 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	103.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.43 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.27 ft³/s	Time to Peak (Flow, Outlet)	1.100 hours

Elevation (Water Surface, Peak)	103.79 ft
Volume (Peak)	262.581 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	534.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	413.000 ft³
Volume (Retained)	120.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB47
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	108.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
108.00	0.00	0.000	0.000	0.00	0.00	0.00
108.25	0.00	211.630	0.000	0.00	0.00	2.35
108.50	0.00	429.173	0.000	0.00	0.00	4.77
108.75	0.19	874.247	0.000	0.00	0.19	9.90
109.00	0.68	1,319.541	0.000	0.00	0.68	15.34
109.25	1.38	1,761.802	0.000	0.00	1.38	20.95
109.50	2.00	2,199.977	0.000	0.00	2.00	26.45
109.75	2.40	2,630.631	0.000	0.00	2.40	31.63
110.00	2.73	3,052.223	0.000	0.00	2.73	36.65
110.25	3.03	3,459.125	0.000	0.00	3.03	41.47
110.50	3.30	3,847.012	0.000	0.00	3.30	46.05
110.75	3.55	4,198.688	0.000	0.00	3.55	50.21
111.00	3.79	4,500.775	0.000	0.00	3.79	53.80
111.25	4.01	4,789.626	0.000	0.00	4.01	57.23
111.50	4.22	5,084.964	0.000	0.00	4.22	60.72

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB47 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	108.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.81 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.13 ft³/s	Time to Peak (Flow, Outlet)	1.300 hours

Elevation (Water Surface, Peak)	108.67 ft
Volume (Peak)	737.252 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,015.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	585.000 ft³
Volume (Retained)	429.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB48
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	100.90 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
100.90	0.00	0.000	0.000	0.00	0.00	0.00
101.15	0.00	49.217	0.000	0.00	0.00	0.55
101.40	0.00	100.702	0.000	0.00	0.00	1.12
101.50	0.00	141.047	0.000	0.00	0.00	1.57
101.65	0.08	202.067	0.000	0.00	0.08	2.33
101.90	0.57	304.555	0.000	0.00	0.57	3.96
102.15	1.44	407.599	0.000	0.00	1.44	5.97
102.40	2.59	510.918	0.000	0.00	2.59	8.27
102.65	3.94	613.914	0.000	0.00	3.94	10.76
102.90	5.20	716.193	0.000	0.00	5.20	13.16
103.15	5.98	816.695	0.000	0.00	5.98	15.05
103.40	6.67	914.423	0.000	0.00	6.67	16.83
103.65	7.29	1,005.843	0.000	0.00	7.29	18.47
103.90	7.87	1,088.014	0.000	0.00	7.87	19.96
104.15	8.41	1,168.881	0.000	0.00	8.41	21.39
104.40	8.91	1,252.592	0.000	0.00	8.91	22.83

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB48 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	100.90 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.18 ft³/s	Time to Peak (Flow, In)	1.100 hours
Flow (Peak Outlet)	0.03 ft³/s	Time to Peak (Flow, Outlet)	1.300 hours

Elevation (Water Surface, Peak)	101.56 ft
Volume (Peak)	165.968 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	225.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	84.000 ft³
Volume (Retained)	141.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB49
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	102.70 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
102.70	0.00	0.000	0.000	0.00	0.00	0.00
102.95	0.00	50.351	0.000	0.00	0.00	0.56
103.20	0.00	100.702	0.000	0.00	0.00	1.12
103.33	0.00	153.703	0.000	0.00	0.00	1.71
103.45	0.05	202.628	0.000	0.00	0.05	2.31
103.70	0.49	304.555	0.000	0.00	0.49	3.88
103.95	1.31	407.737	0.000	0.00	1.31	5.84
104.20	2.44	510.918	0.000	0.00	2.44	8.11
104.45	3.77	613.556	0.000	0.00	3.77	10.58
104.70	5.10	716.193	0.000	0.00	5.10	13.06
104.95	5.89	815.308	0.000	0.00	5.89	14.95
105.20	6.59	914.423	0.000	0.00	6.59	16.75
105.45	7.22	1,001.219	0.000	0.00	7.22	18.35
105.70	7.80	1,088.014	0.000	0.00	7.80	19.89
105.95	8.34	1,170.303	0.000	0.00	8.34	21.35
106.20	8.85	1,252.592	0.000	0.00	8.85	22.77

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB49 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	102.70 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.27 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.12 ft³/s	Time to Peak (Flow, Outlet)	1.150 hours

Elevation (Water Surface, Peak)	103.49 ft
Volume (Peak)	216.955 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	340.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	186.000 ft³
Volume (Retained)	154.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB5 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
94.00	1,062.7	0.00
94.25	1,099.1	0.01
94.50	1,136.1	0.01
94.75	1,173.5	0.01
95.00	1,211.4	0.01
95.25	1,249.8	0.01
95.50	1,288.7	0.01
95.75	1,328.2	0.02
96.00	1,368.1	0.02
96.25	1,408.5	0.02
96.50	1,449.4	0.02
96.75	1,490.8	0.02
96.90	1,515.9	0.02
97.00	1,532.8	0.02
97.25	1,575.2	0.02
97.50	1,618.1	0.02

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB5
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	94.00	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.020	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	1.800	94.66	362.000

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	1.000	0.33	0.000	0.00
Infiltration...	1.800	0.00	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	414.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	417.000	Forward
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	414.000 ft³
Volume (Total Out ICPM)	417.000 ft³
Volume (Ending)	0.000 ft³
Elevation (Ending)	94.00 ft
Difference	-3.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.8 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB50
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	101.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
101.00	0.00	0.000	0.000	0.00	0.00	0.00
101.25	0.00	58.667	0.000	0.00	0.00	0.65
101.50	0.00	120.399	0.000	0.00	0.00	1.34
101.75	0.00	240.770	0.000	0.00	0.00	2.68
102.00	0.00	362.855	0.000	0.00	0.00	4.03
102.25	0.19	486.017	0.000	0.00	0.19	5.59
102.50	0.68	609.888	0.000	0.00	0.68	7.45
102.75	1.38	733.791	0.000	0.00	1.38	9.53
103.00	2.00	857.232	0.000	0.00	2.00	11.53
103.25	2.40	978.991	0.000	0.00	2.40	13.27
103.50	2.73	1,097.871	0.000	0.00	2.73	14.93
103.75	3.03	1,209.767	0.000	0.00	3.03	16.47
104.00	3.30	1,311.212	0.000	0.00	3.30	17.87
104.25	3.55	1,411.495	0.000	0.00	3.55	19.24
104.50	3.79	1,515.419	0.000	0.00	3.79	20.63

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB50 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	101.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.61 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.22 ft³/s	Time to Peak (Flow, Outlet)	1.150 hours

Elevation (Water Surface, Peak)	102.27 ft
Volume (Peak)	493.838 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	759.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	397.000 ft³
Volume (Retained)	363.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB54
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	99.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
99.00	0.00	0.000	0.000	0.00	0.00	0.00
99.10	0.00	24.080	0.000	0.00	0.00	0.27
99.20	0.00	48.669	0.000	0.00	0.00	0.54
99.30	0.00	73.771	0.000	0.00	0.00	0.82
99.40	0.00	99.390	0.000	0.00	0.00	1.10
99.50	0.00	125.528	0.000	0.00	0.00	1.39
99.60	0.03	173.845	0.000	0.00	0.03	1.97
99.70	0.13	222.060	0.000	0.00	0.13	2.60
99.80	0.29	270.123	0.000	0.00	0.29	3.29
99.90	0.50	317.892	0.000	0.00	0.50	4.03
100.00	0.76	365.227	0.000	0.00	0.76	4.82
100.10	1.07	411.846	0.000	0.00	1.07	5.65
100.20	1.41	457.894	0.000	0.00	1.41	6.50
100.30	1.78	502.997	0.000	0.00	1.78	7.37
100.40	2.17	546.945	0.000	0.00	2.17	8.25
100.50	2.67	589.416	0.000	0.00	2.67	9.22
100.60	2.93	629.051	0.000	0.00	2.93	9.92
100.70	3.16	665.117	0.000	0.00	3.16	10.55
100.80	3.38	699.913	0.000	0.00	3.38	11.16
100.90	3.59	733.947	0.000	0.00	3.59	11.74
101.00	3.78	768.260	0.000	0.00	3.78	12.32
101.10	3.96	803.145	0.000	0.00	3.96	12.89
101.20	4.14	838.603	0.000	0.00	4.14	13.46
101.30	4.31	874.638	0.000	0.00	4.31	14.03
101.33	4.36	886.779	0.000	0.00	4.36	14.22

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB54 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	99.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.30 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.15 ft³/s	Time to Peak (Flow, Outlet)	1.150 hours

Elevation (Water Surface, Peak)	99.71 ft
Volume (Peak)	226.769 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	380.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	255.000 ft³
Volume (Retained)	126.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Pond Inflow Summary
Label: UGB54 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Summary for Hydrograph Addition at 'UGB54'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA54 Imp

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	DA54 Imp	380.135	1.050	0.30
Flow (In)	UGB54	380.135	1.050	0.30

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB55
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	106.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
106.00	0.00	0.000	0.000	0.00	0.00	0.00
106.25	0.00	1,399.733	0.000	0.00	0.00	15.55
106.50	0.00	2,811.077	0.000	0.00	0.00	31.23
106.75	0.00	5,814.153	0.000	0.00	0.00	64.60
106.79	0.00	6,292.683	0.000	0.00	0.00	69.92
107.00	0.29	8,787.585	0.000	0.00	0.29	97.93
107.25	0.94	11,705.228	0.000	0.00	0.94	130.99
107.50	1.79	14,561.879	0.000	0.00	1.79	163.59
107.75	3.57	17,330.037	0.000	0.00	3.57	196.13
108.00	6.11	20,001.073	0.000	0.00	6.11	228.35
108.25	9.19	22,531.773	0.000	0.00	9.19	259.54
108.50	12.71	24,893.676	0.000	0.00	12.71	289.30
108.75	16.62	26,960.872	0.000	0.00	16.62	316.18
109.00	20.88	28,640.299	0.000	0.00	20.88	339.10
109.25	25.47	30,188.484	0.000	0.00	25.47	360.89
109.50	30.35	31,748.856	0.000	0.00	30.35	383.12

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB55 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	106.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.83 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	106.18 ft
Volume (Peak)	1,024.545 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,026.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	1,025.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.1 %

WQ Basin Routings

Subsection: Pond Inflow Summary
Label: UGB55 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Summary for Hydrograph Addition at 'UGB55'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA55 Imp

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	DA55 Imp	1,025.769	1.050	0.83
Flow (In)	UGB55	1,025.769	1.050	0.83

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB56
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	110.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
110.00	0.00	0.000	0.000	0.00	0.00	0.00
110.25	0.00	2,158.429	0.000	0.00	0.00	23.98
110.50	0.00	4,331.090	0.000	0.00	0.00	48.12
110.75	0.00	8,970.777	0.000	0.00	0.00	99.68
111.00	0.00	13,560.593	0.000	0.00	0.00	150.67
111.25	0.38	18,059.601	0.000	0.00	0.38	201.04
111.50	1.06	22,460.020	0.000	0.00	1.06	250.62
111.75	1.95	26,718.800	0.000	0.00	1.95	298.82
112.00	3.00	30,822.844	0.000	0.00	3.00	345.48
112.25	4.19	34,704.704	0.000	0.00	4.19	389.80
112.50	5.51	38,320.503	0.000	0.00	5.51	431.29
112.75	7.70	41,474.399	0.000	0.00	7.70	468.52
113.00	10.61	44,022.227	0.000	0.00	10.61	499.74
113.25	14.02	46,361.873	0.000	0.00	14.02	529.15
113.50	17.86	48,716.328	0.000	0.00	17.86	559.15

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB56 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	110.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.84 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	110.41 ft
Volume (Peak)	3,544.972 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	3,547.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	3,545.000 ft³
Volume (Unrouted)	-2.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Pond Inflow Summary
Label: UGB56 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Summary for Hydrograph Addition at 'UGB56'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA56 Imp

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	DA56 Imp	3,546.688	1.050	2.84
Flow (In)	UGB56	3,546.688	1.050	2.84

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB57
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	111.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
111.10	0.00	0.000	0.000	0.00	0.00	0.00
111.35	0.00	1,184.722	0.000	0.00	0.00	13.16
111.60	0.00	2,381.965	0.000	0.00	0.00	26.47
111.85	0.00	4,919.270	0.000	0.00	0.00	54.66
112.10	0.00	7,434.456	0.000	0.00	0.00	82.61
112.35	0.00	9,905.804	0.000	0.00	0.00	110.06
112.50	0.00	11,367.155	0.000	0.00	0.00	126.30
112.60	0.07	12,328.717	0.000	0.00	0.07	137.06
112.85	0.47	14,680.337	0.000	0.00	0.47	163.58
113.10	1.05	16,953.187	0.000	0.00	1.05	189.41
113.35	1.76	19,111.212	0.000	0.00	1.76	214.11
113.60	2.60	21,130.277	0.000	0.00	2.60	237.38
113.85	3.53	22,904.861	0.000	0.00	3.53	258.03
114.10	4.55	24,356.565	0.000	0.00	4.55	275.18
114.35	5.66	25,701.115	0.000	0.00	5.66	291.23
114.60	6.85	27,058.762	0.000	0.00	6.85	307.50

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB57 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	111.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.35 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	111.45 ft
Volume (Peak)	1,670.154 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,672.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	1,670.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.1 %

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB59
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	104.00	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft³/s	ICPM Time Step	0.020	hours

	Maximum Storage		
	Time to Peak (hours)	Elevation (ft)	Volume (ft³)
	2.150	104.18	1,319.000

	Forward Flow Peaks		Reverse Flow Peaks	
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	1.04	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In		Total Volume Out	
	Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	1,327.000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	1,327.000 ft³
Volume (Total Out ICPM)	0.000 ft³
Volume (Ending)	1,319.000 ft³
Elevation (Ending)	104.18 ft
Difference	8.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.6 %

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB6 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
94.00	1,062.7	0.00
94.25	1,099.1	0.01
94.50	1,136.1	0.01
94.75	1,173.5	0.01
95.00	1,211.4	0.01
95.25	1,249.8	0.01
95.50	1,288.7	0.01
95.75	1,328.2	0.02
96.00	1,368.1	0.02
96.25	1,408.5	0.02
96.50	1,449.4	0.02
96.75	1,490.8	0.02
97.00	1,532.8	0.02
97.25	1,575.2	0.02
97.45	1,609.5	0.02
97.50	1,618.1	0.02

WQ Basin Routings

Subsection: Interconnected Pond Routing Summary
Label: UGB6
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions			Calculation Tolerances		
Elevation (Starting Water Surface Computed)	94.00	ft	Flow Tolerance (Minimum)	0.000	ft³/s
Volume (Starting)	0.000	ft³	Maximum Iterations	35	
Infiltration (Starting ICPM)	0.00	ft³/s	ICPM Time Step	0.020	hours
Outflow (Starting)	0.00	ft³/s	Output Increment	0.050	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Maximum Storage Volume (ft³)
	2.000	94.85	540.000

	Forward Flow Peaks Time to Peak (hours)	Forward Flow Peaks Flow (Peak) (ft³/s)	Reverse Flow Peaks Time to Peak (hours)	Reverse Flow Peaks Flow (Peak) (ft³/s)
Pond Inflow....	1.100	0.48	0.000	0.00
Infiltration...	2.000	0.00	0.000	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Total Volume In Volume (ft³)	Total Volume In Direction	Total Volume Out Volume (ft³)	Total Volume Out Direction
Pond Inflow....	605.000	Forward	0.000	Reverse
Infiltration...	0.000	Reverse	602.000	Forward
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	605.000 ft³
Volume (Total Out ICPM)	602.000 ft³
Volume (Ending)	0.000 ft³
Elevation (Ending)	94.00 ft
Difference	3.000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.5 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB60
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	111.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
111.10	0.00	0.000	0.000	0.00	0.00	0.00
111.35	0.00	1,184.722	0.000	0.00	0.00	13.16
111.60	0.00	2,381.965	0.000	0.00	0.00	26.47
111.85	0.00	4,919.270	0.000	0.00	0.00	54.66
112.10	0.00	7,434.456	0.000	0.00	0.00	82.61
112.35	0.38	9,905.804	0.000	0.00	0.38	110.44
112.60	1.06	12,328.717	0.000	0.00	1.06	138.05
112.85	1.95	14,680.337	0.000	0.00	1.95	165.06
113.10	3.00	16,953.187	0.000	0.00	3.00	191.37
113.35	4.19	19,111.212	0.000	0.00	4.19	216.54
113.60	5.51	21,130.277	0.000	0.00	5.51	240.29
113.85	6.95	22,904.861	0.000	0.00	6.95	261.44
114.10	8.49	24,356.565	0.000	0.00	8.49	279.11
114.35	10.13	25,701.115	0.000	0.00	10.13	295.69
114.60	11.86	27,058.762	0.000	0.00	11.86	312.51

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB60 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	111.10 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.53 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	111.50 ft
Volume (Peak)	1,897.903 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,900.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	1,898.000 ft³
Volume (Unrouted)	-2.000 ft³
Error (Mass Balance)	0.1 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB61
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	107.75 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
107.75	0.00	0.000	0.000	0.00	0.00	0.00
108.00	0.00	270.754	0.000	0.00	0.00	3.01
108.25	0.00	548.789	0.000	0.00	0.00	6.10
108.50	0.16	1,119.000	0.000	0.00	0.16	12.59
108.75	0.58	1,689.143	0.000	0.00	0.58	19.34
109.00	1.08	2,254.994	0.000	0.00	1.08	26.14
109.25	1.37	2,815.214	0.000	0.00	1.37	32.65
109.50	1.61	3,365.340	0.000	0.00	1.61	39.00
109.75	1.81	3,903.410	0.000	0.00	1.81	45.19
110.00	2.00	4,422.140	0.000	0.00	2.00	51.13
110.25	2.17	4,915.992	0.000	0.00	2.17	56.79
110.50	2.33	5,362.802	0.000	0.00	2.33	61.91
110.75	2.47	5,745.397	0.000	0.00	2.47	66.31
111.00	2.61	6,110.460	0.000	0.00	2.61	70.51
111.25	2.74	6,483.378	0.000	0.00	2.74	74.78

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB61 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	107.75 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.59 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.34 ft³/s	Time to Peak (Flow, Outlet)	1.250 hours

Elevation (Water Surface, Peak)	108.61 ft
Volume (Peak)	1,364.318 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,981.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	1,432.000 ft³
Volume (Retained)	549.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB62
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	108.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
108.00	0.00	0.000	0.000	0.00	0.00	0.00
108.25	0.00	1,424.862	0.000	0.00	0.00	15.83
108.50	0.00	2,863.043	0.000	0.00	0.00	31.81
108.75	0.16	5,918.493	0.000	0.00	0.16	65.92
109.00	0.58	8,945.385	0.000	0.00	0.58	99.97
109.25	1.08	11,917.312	0.000	0.00	1.08	133.50
109.50	1.37	14,828.862	0.000	0.00	1.37	166.14
109.75	1.61	17,652.250	0.000	0.00	1.61	197.74
110.00	1.81	20,378.588	0.000	0.00	1.81	228.24
110.25	2.37	22,964.141	0.000	0.00	2.37	257.53
110.50	3.23	25,379.894	0.000	0.00	3.23	285.23
110.75	4.27	27,498.172	0.000	0.00	4.27	309.81
111.00	5.47	29,224.392	0.000	0.00	5.47	330.19
111.25	6.80	30,819.054	0.000	0.00	6.80	349.24
111.50	8.25	32,427.611	0.000	0.00	8.25	368.56

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB62 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	108.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	3.87 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.09 ft³/s	Time to Peak (Flow, Outlet)	2.000 hours

Elevation (Water Surface, Peak)	108.64 ft
Volume (Peak)	4,600.027 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	4,842.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	1,978.000 ft³
Volume (Retained)	2,863.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB63
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	104.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
104.00	0.00	0.000	0.000	0.00	0.00	0.00
104.25	0.00	695.845	0.000	0.00	0.00	7.73
104.50	0.00	1,399.883	0.000	0.00	0.00	15.55
104.75	0.00	2,886.608	0.000	0.00	0.00	32.07
105.00	0.00	4,361.358	0.000	0.00	0.00	48.46
105.25	0.31	5,811.564	0.000	0.00	0.31	64.88
105.50	0.88	7,234.485	0.000	0.00	0.88	81.26
105.75	1.62	8,616.889	0.000	0.00	1.62	97.36
106.00	2.49	9,954.353	0.000	0.00	2.49	113.09
106.25	4.14	11,225.949	0.000	0.00	4.14	128.87
106.50	6.43	12,417.535	0.000	0.00	6.43	144.40
106.75	9.17	13,467.664	0.000	0.00	9.17	158.82
107.00	12.29	14,330.534	0.000	0.00	12.29	171.52
107.25	15.74	15,132.099	0.000	0.00	15.74	183.88
107.50	19.49	15,942.433	0.000	0.00	19.49	196.63

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB63 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	104.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.01 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	104.45 ft
Volume (Peak)	1,256.328 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,257.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	1,256.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB7
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	99.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
99.00	0.00	0.000	0.047	0.00	0.00	0.00
99.10	0.00	82.273	0.047	0.02	0.02	0.94
99.20	0.00	165.280	0.048	0.02	0.02	1.86
99.30	0.00	249.024	0.048	0.02	0.02	2.79
99.40	0.00	333.509	0.049	0.02	0.02	3.73
99.50	0.00	418.737	0.049	0.02	0.02	4.68
99.60	0.00	593.658	0.050	0.02	0.02	6.62
99.70	0.00	768.803	0.050	0.03	0.03	8.57
99.80	0.00	943.696	0.050	0.03	0.03	10.51
99.90	0.00	1,118.340	0.051	0.03	0.03	12.45
100.00	0.00	1,292.501	0.051	0.03	0.03	14.39
100.10	0.00	1,465.844	0.052	0.03	0.03	16.31
100.20	0.00	1,638.280	0.052	0.03	0.03	18.23
100.30	0.00	1,809.953	0.053	0.03	0.03	20.14
100.40	0.00	1,980.676	0.053	0.03	0.03	22.03
100.50	0.00	2,150.165	0.054	0.03	0.03	23.92
100.60	0.00	2,318.328	0.054	0.03	0.03	25.79
100.70	0.00	2,484.689	0.054	0.03	0.03	27.64
100.80	0.00	2,649.490	0.055	0.03	0.03	29.47
100.90	0.00	2,812.544	0.055	0.03	0.03	31.28
101.00	0.00	2,973.471	0.056	0.03	0.03	33.07
101.10	0.00	3,131.987	0.056	0.03	0.03	34.83
101.20	0.00	3,287.568	0.057	0.03	0.03	36.56
101.30	0.00	3,439.549	0.057	0.03	0.03	38.25
101.40	0.00	3,588.315	0.058	0.03	0.03	39.90
101.50	0.00	3,733.152	0.058	0.03	0.03	41.51
101.60	0.03	3,872.197	0.059	0.03	0.06	43.08
101.70	0.11	4,004.353	0.059	0.03	0.14	44.63

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB7
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
101.80	0.23	4,125.507	0.059	0.03	0.26	46.10
101.82	0.26	4,147.960	0.060	0.03	0.29	46.38
101.90	0.45	4,237.769	0.060	0.03	0.48	47.57
102.00	0.81	4,345.639	0.060	0.03	0.84	49.12
102.10	1.23	4,451.322	0.061	0.03	1.26	50.72
102.20	1.72	4,557.835	0.061	0.03	1.75	52.39
102.30	2.15	4,665.181	0.062	0.03	2.18	54.01
102.40	2.59	4,773.363	0.062	0.03	2.62	55.66
102.50	3.05	4,882.384	0.063	0.03	3.09	57.33

WQ Basin Routings

Subsection: Pond Infiltration Calculations
Label: UGB7 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Average Infiltration Rating Table

Elevation (Water Surface) (ft)	Area (Total) (ft²)	Flow (Infiltration) (ft³/s)
99.00	2,047.7	0.00
99.10	2,066.0	0.02
99.20	2,084.4	0.02
99.30	2,102.8	0.02
99.40	2,121.4	0.02
99.50	2,140.0	0.02
99.60	2,158.7	0.02
99.70	2,177.5	0.03
99.80	2,196.4	0.03
99.90	2,215.3	0.03
100.00	2,234.4	0.03
100.10	2,253.5	0.03
100.20	2,272.7	0.03
100.30	2,291.9	0.03
100.40	2,311.3	0.03
100.50	2,330.7	0.03
100.60	2,350.2	0.03
100.70	2,369.8	0.03
100.80	2,389.5	0.03
100.90	2,409.2	0.03
101.00	2,429.0	0.03
101.10	2,448.9	0.03
101.20	2,468.9	0.03
101.30	2,489.0	0.03
101.40	2,509.2	0.03
101.50	2,529.4	0.03
101.60	2,549.7	0.03
101.70	2,570.1	0.03
101.80	2,590.5	0.03
101.82	2,594.6	0.03
101.90	2,611.1	0.03
102.00	2,631.7	0.03
102.10	2,652.4	0.03
102.20	2,673.2	0.03
102.30	2,694.1	0.03
102.40	2,715.0	0.03
102.50	2,736.1	0.03

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB7 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	Average Infiltration Rate
Infiltration Rate (Average)	0.5000 in/h

Initial Conditions	
Elevation (Water Surface, Initial)	99.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.69 ft³/s	Time to Peak (Flow, In)	1.050 hours
Infiltration (Peak)	0.03 ft³/s	Time to Peak (Infiltration)	1.850 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	99.69 ft
Volume (Peak)	748.718 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	866.000 ft³
Volume (Total Infiltration)	866.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WQ Basin Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: UGB9
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	100.30 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
100.30	0.00	0.000	0.000	0.00	0.00	0.00
100.55	0.00	137.724	0.000	0.00	0.00	1.53
100.80	0.00	279.653	0.000	0.00	0.00	3.11
101.05	0.00	568.306	0.000	0.00	0.00	6.31
101.30	0.00	857.538	0.000	0.00	0.00	9.53
101.55	0.56	1,145.313	0.000	0.00	0.56	13.29
101.80	1.59	1,430.932	0.000	0.00	1.59	17.49
102.05	2.92	1,712.245	0.000	0.00	2.92	21.95
102.30	4.50	1,988.238	0.000	0.00	4.50	26.59
102.55	6.29	2,255.355	0.000	0.00	6.29	31.35
102.80	8.27	2,510.788	0.000	0.00	8.27	36.16
103.05	10.42	2,743.545	0.000	0.00	10.42	40.90
103.30	12.73	2,944.999	0.000	0.00	12.73	45.45
103.55	15.19	3,138.583	0.000	0.00	15.19	50.06
103.80	17.79	3,336.947	0.000	0.00	17.79	54.87

WQ Basin Routings

Subsection: Level Pool Pond Routing Summary
Label: UGB9 (IN)
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	100.30 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.64 ft³/s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	101.25 ft
Volume (Peak)	800.890 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	801.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	801.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

WATER QUALITY MTD
SIZING CALCULATIONS

Pennoni
PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

PRINCETON NURSERIES UGB PRETREATMENT

PROJECT NAME: PRINCETON NURSERIES **DATE:** 1/15/2025
PROJECT NUMBER: WRNUL21003

LOCATION	TOTAL MV AREA TO BASIN	MIN POROUS ASPHALT	TOTAL POROUS ASPHALT	MTD	MTD TREATMENT AREA	WQ FLOW MTD (CFS)	BYPASS FLOW (CFS)	TP #	INFILTRATION (IN/HR)	TOTAL TREATED AREA	OK
UGB2	16825	4206.25	4341							17364	OK
UGB3	0	0	0							0	OK
UGB4A/B	9795	2448.75	3659	I-300	1492	0.10	0.86	TP33	1.45	16128	OK
UGB5	7470	1867.5	2466							9864	OK
UGB6	6178	1544.5	1650	I-87	1587	0.11	1.08	TP4	0.64	8187	OK
UGB7	17135	4283.75	4284								OK
UGB9	2224	556	0	I-71/I-74	2224	0.16	0.14	TP37	0.26	2224	OK
UGB10	5110	1277.5	0	I-304	5110	0.36	0.77	TP37	0.26	5110	OK
UGB11	5786	1446.5	1493							5972	OK
UGB13	3801	950.25	1364							5456	OK
UGB14	3026	756.5	759							3036	OK
UGB15	11253	2813.25	900	MH-52	9269	0.65	4.57	TP40	0.58	12869	OK
UGB16	25809	6452.25	2285	I-368	16669	1.16	6.12	TP7	0.59	25809	OK
UGB17	16933	4233.25	9382							37528	OK
UGB18	13348	3337	1979	I-309	7838	0.50	4.37	TP42	0.58	15754	OK
UGB19	3745	936.25	940							3760	OK
UGB20	3009	752.25	0	MH-15	3009	0.21	6.82	TP10	0.63	3009	OK
UGB21	7823	1955.75	932	I-545	5427	0.37	2.03	TP46	0.72	9155	OK
UGB22	18526	4631.5	9570							38280	OK
UGB27	0	0								0	OK
UGB31	10931	2732.75	2323	I-235	1639	0.11	3.28	TP46	0.72	10931	OK
UGB32	32577	8144.25	12961							51844	OK
UGB33	6231	1557.75	2540							10160	OK
UGB34	6849	1712.25	2342							9368	OK
UGB37	6167	1541.75	1948							7792	OK
UGB41	1888	472	0	MH-22	1888	0.13	0.79	TP46	0.72	1888	OK
UGB42	6030	1507.5	0	I-214	6030	0.42	3.77	TP24	0.36	6030	OK
UGB43	0	0	0		0					0	OK
UGB44	946	236.5	0	I-219	946	0.07	4.43	TP66	0.26	946	OK
UGB46	5460	1365	1414							5656	OK
UGB47	13934	3483.5	2574	I-470	3638	0.25	3.08	TP65	0	13934	OK
UGB48	2967	741.75	411	I-28	331	0.02	0.5	TP47	0.3	1975	OK
UGB49	5249	1312.25	1127	I-24	1530	0.11	0.62	TP13	0.46	6038	OK
UGB50	11684	2921	2475	I-227	1784	0.12	0.96	TP66	0.26	11684	OK
UGB54	26651	6662.75	10379							41516	OK
UGB55	48725	12181.25	13407							53628	OK
UGB56	36626	9156.5	19440							77760	OK
UGB57	34149	8537.25	14910							59640	OK
UGB59	16607	4151.75	1288	I-131	13411	0.92	4.03	TP51	0.09	18563	OK
UGB60	31284	7821	11309							45236	OK
UGB61	21002	5250.5	9665							38660	OK
UGB62	59029	14757.25	25193							100772	OK
UGB63	12766	3191.5	0	1	12766	0.89	5.83	TP60	0.26	12766	OK

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA10 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.015 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.26 ft/s
Segment Time of Concentration	0.022 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	149.00 ft
Is Paved?	True
Slope	0.025 ft/ft
Average Velocity	3.21 ft/s
Segment Time of Concentration	0.013 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.035 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA10 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA15 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	24.00 ft
Manning's n	0.011
Slope	0.033 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.30 ft/s
Segment Time of Concentration	0.005 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	286.00 ft
Is Paved?	True
Slope	0.024 ft/ft
Average Velocity	3.15 ft/s
Segment Time of Concentration	0.025 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	104.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.04 ft/s
Segment Time of Concentration	0.010 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.040 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA15 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA16 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.011
Slope	0.030 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.21 ft/s
Segment Time of Concentration	0.005 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	235.00 ft
Is Paved?	True
Slope	0.013 ft/ft
Average Velocity	2.32 ft/s
Segment Time of Concentration	0.028 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	156.00 ft
Manning's n	0.015
Slope	0.008 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.92 ft/s
Segment Time of Concentration	0.011 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.044 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA16 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA18 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	50.00 ft
Manning's n	0.240
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.14 ft/s
Segment Time of Concentration	0.100 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	149.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.020 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	292.00 ft
Manning's n	0.015
Slope	0.027 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	7.44 ft/s
Segment Time of Concentration	0.011 hours

Segment #4: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	32.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.003 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.134 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA18 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA20 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.011
Slope	0.025 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.12 ft/s
Segment Time of Concentration	0.005 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	208.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.026 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	85.00 ft
Manning's n	0.015
Slope	0.047 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	9.81 ft/s
Segment Time of Concentration	0.002 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.033 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA20 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA21 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	58.00 ft
Manning's n	0.240
Slope	0.170 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.25 ft/s
Segment Time of Concentration	0.063 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	149.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.020 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	40.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.003 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.087 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA21 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA31 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.022 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.47 ft/s
Segment Time of Concentration	0.019 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	295.00 ft
Is Paved?	True
Slope	0.034 ft/ft
Average Velocity	3.75 ft/s
Segment Time of Concentration	0.022 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	93.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.008 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.049 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA31 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA4 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.055 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	2.13 ft/s
Segment Time of Concentration	0.013 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	50.00 ft
Is Paved?	True
Slope	0.055 ft/ft
Average Velocity	4.77 ft/s
Segment Time of Concentration	0.003 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.020 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA4 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA41 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	88.00 ft
Manning's n	0.011
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.82 ft/s
Segment Time of Concentration	0.013 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.020 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA41 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA42 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.033 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.73 ft/s
Segment Time of Concentration	0.016 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	150.00 ft
Is Paved?	True
Slope	0.033 ft/ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.011 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	46.00 ft
Manning's n	0.015
Slope	0.018 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	6.07 ft/s
Segment Time of Concentration	0.002 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.029 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA42 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA44 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	60.00 ft
Manning's n	0.011
Slope	0.012 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.04 ft/s
Segment Time of Concentration	0.016 hours

Segment #2: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	72.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.006 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.022 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA44 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA47 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.019 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.39 ft/s
Segment Time of Concentration	0.020 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	189.00 ft
Is Paved?	True
Slope	0.014 ft/ft
Average Velocity	2.41 ft/s
Segment Time of Concentration	0.022 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	211.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.018 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.060 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA47 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA48 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	25.00 ft
Manning's n	0.240
Slope	0.030 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.065 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	117.00 ft
Is Paved?	True
Slope	0.015 ft/ft
Average Velocity	2.49 ft/s
Segment Time of Concentration	0.013 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.078 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA48 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA49 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.013 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.19 ft/s
Segment Time of Concentration	0.023 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	175.00 ft
Is Paved?	True
Slope	0.013 ft/ft
Average Velocity	2.32 ft/s
Segment Time of Concentration	0.021 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	27.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.002 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.047 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA49 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA50 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.040 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.87 ft/s
Segment Time of Concentration	0.015 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	121.00 ft
Is Paved?	True
Slope	0.024 ft/ft
Average Velocity	3.15 ft/s
Segment Time of Concentration	0.011 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	140.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.012 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.038 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA50 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA59 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.014 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.24 ft/s
Segment Time of Concentration	0.022 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	250.00 ft
Is Paved?	True
Slope	0.014 ft/ft
Average Velocity	2.41 ft/s
Segment Time of Concentration	0.029 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	55.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.005 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.056 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA59 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA6 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	35.00 ft
Manning's n	0.240
Slope	0.050 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.14 ft/s
Segment Time of Concentration	0.069 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	68.00 ft
Is Paved?	True
Slope	0.045 ft/ft
Average Velocity	4.31 ft/s
Segment Time of Concentration	0.004 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	60.00 ft
Manning's n	0.015
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.20 ft/s
Segment Time of Concentration	0.005 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.079 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA6 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc = R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc = Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc = (0.007 * ((n * Lf)**0.8)) / ((P**0.5) * (Sf**0.4))

Where:
Tc= Time of concentration, hours
n= Manning's n
Lf= Flow length, feet
P= 2yr, 24hr Rain depth, inches
Sf= Slope, %

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA63 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.013 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.17 ft/s
Segment Time of Concentration	0.024 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	115.00 ft
Is Paved?	True
Slope	0.036 ft/ft
Average Velocity	3.86 ft/s
Segment Time of Concentration	0.008 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.032 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA63 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA9 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	22.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	1.05 ft/s
Segment Time of Concentration	0.006 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	174.00 ft
Is Paved?	True
Slope	0.013 ft/ft
Average Velocity	2.32 ft/s
Segment Time of Concentration	0.021 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.027 hours

Tc for MTD Sizing

Subsection: Time of Concentration Calculations
Label: DA9 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

==== SCS Channel Flow

Tc =
R = Qa / Wp
V = (1.49 * (R**(2/3)) * (Sf**-0.5)) / n

(Lf / V) / 3600

Where:
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved Surface:
V = 20.3282 * (Sf**0.5)

(Lf / V) / 3600

Where:
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

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WQ HYDROGRAPHS FOR MTD SIZING

WQ Hydrographs for MTD Sizing

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA1 Imp	WQ	1	1,473.000	1.050	1.18
DA10 Imp	WQ	1	445.000	1.050	0.36
DA11 Imp	WQ	1	565.000	1.050	0.45
DA12A Imp	WQ	1	1,351.000	1.100	1.07
DA13 Imp	WQ	1	343.000	1.050	0.27
DA14 Imp	WQ	1	380.000	1.050	0.30
DA15 Imp	WQ	1	808.000	1.050	0.65
DA16 Imp	WQ	1	1,448.000	1.050	1.16
DA17 Imp	WQ	1	648.000	1.050	0.52
DA18 Imp	WQ	1	676.000	1.100	0.50
DA19 Imp	WQ	1	413.000	1.100	0.32
DA2 Imp	WQ	1	1,067.000	1.050	0.85
DA20 Imp	WQ	1	263.000	1.050	0.21
DA21 Imp	WQ	1	469.000	1.100	0.37
DA22 Imp	WQ	1	647.000	1.050	0.52
DA25 Imp	WQ	1	4,655.000	1.100	3.63
DA26 Imp	WQ	1	1,952.000	1.100	1.54
DA27	WQ	1	2,925.000	1.050	2.36
DA28 Imp	WQ	1	1,442.000	1.050	1.16
DA29 Imp	WQ	1	910.000	1.050	0.73
DA30 Imp	WQ	1	1,752.000	1.050	1.40
DA31 Imp	WQ	1	143.000	1.050	0.11
DA32 Imp	WQ	1	815.000	1.050	0.65
DA33 Imp	WQ	1	342.000	1.050	0.27
DA34 Imp	WQ	1	379.000	1.050	0.30
DA35 Imp	WQ	1	377.000	1.050	0.30
DA36 Imp	WQ	1	496.000	1.050	0.40
DA37 Imp	WQ	1	381.000	1.050	0.30
DA4 Imp	WQ	1	129.000	1.050	0.10
DA41 Imp	WQ	1	163.000	1.050	0.13
DA42 Imp	WQ	1	526.000	1.050	0.42
DA44 Imp	WQ	1	84.000	1.050	0.07
DA45 Imp	WQ	1	2,628.000	1.100	2.07
DA46 Imp	WQ	1	534.000	1.050	0.43
DA47 Imp	WQ	1	316.000	1.050	0.25
DA48 Imp	WQ	1	30.000	1.100	0.02
DA49 Imp	WQ	1	132.000	1.050	0.11
DA5 Imp	WQ	1	418.000	1.050	0.34
DA50 Imp	WQ	1	156.000	1.050	0.12
DA51 Imp	WQ	1	1,091.000	1.050	0.87
DA52 Imp	WQ	1	686.000	1.050	0.55
DA53 Imp	WQ	1	343.000	1.050	0.27
DA54 Imp	WQ	1	380.000	1.050	0.30

WQ Hydrographs for MTD Sizing

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA55 Imp	WQ	1	1,026.000	1.050	0.83
DA56 Imp	WQ	1	3,547.000	1.050	2.84
DA57 Imp	WQ	1	1,672.000	1.050	1.35
DA58 Imp	WQ	1	4,034.000	1.050	3.23
DA59 Imp	WQ	1	1,159.000	1.050	0.92
DA6 Imp	WQ	1	135.000	1.100	0.11
DA60 Imp	WQ	1	1,900.000	1.050	1.53
DA61 Imp	WQ	1	1,981.000	1.050	1.59
DA62 Imp	WQ	1	4,842.000	1.050	3.87
DA63 Imp	WQ	1	1,116.000	1.050	0.89
DA7 Imp	WQ	1	233.000	1.050	0.19
DA9 Imp	WQ	1	194.000	1.050	0.16
EDA3 Perv	WQ	1	1.000	2.000	0.00
Future Imp Road-Basin 6 (S Brunswick)	WQ	1	1,144.000	1.050	0.92
PDA-6 Imp (Plainsboro)	WQ	1	18,174.000	1.150	10.50
PDA8 Imp	WQ	1	1,449.000	1.050	1.16

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
J 24	WQ	1	0.000	0.000	0.00
POI-1 Ex FE Barclay Square	WQ	1	0.000	0.000	0.00
POI-2 (Harry's Brook)	WQ	1	0.000	0.000	0.00
POI-3 Barclay Square Ex	WQ	1	1.000	2.000	0.00

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
BIO29 (IN)	WQ	1	910.000	1.050	0.73	(N/A)	(N/A)
BIO29 (OUT)	WQ	1	477.000	1.150	0.40	94.20	525.000
Bio1 (IN)	WQ	1	2,119.000	1.050	1.26	(N/A)	(N/A)
Bio1 (OUT)	WQ	1	0.000	0.000	0.00	77.31	1,479.000
Bio12 (IN)	WQ	1	1,684.000	1.100	1.19	(N/A)	(N/A)
Bio12 (OUT)	WQ	1	0.000	0.000	0.00	85.44	1,025.000

WQ Hydrographs for MTD Sizing

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Bio25 (IN)	WQ	1	4,655.000	1.100	3.63	(N/A)	(N/A)
Bio25 (OUT)	WQ	1	0.000	0.000	0.00	100.30	4,062.000
Bio26 (IN)	WQ	1	3,672.000	1.100	2.12	(N/A)	(N/A)
Bio26 (OUT)	WQ	1	0.000	0.000	0.00	97.64	3,231.000
Bio28 (IN)	WQ	1	1,919.000	1.100	1.39	(N/A)	(N/A)
Bio28 (OUT)	WQ	1	0.000	0.000	0.00	91.07	285.000
Bio35 (IN)	WQ	1	380.000	1.050	0.30	(N/A)	(N/A)
Bio35 (OUT)	WQ	1	0.000	0.000	0.00	103.48	329.000
Bio36 (IN)	WQ	1	496.000	1.050	0.40	(N/A)	(N/A)
Bio36 (OUT)	WQ	1	0.000	0.000	0.00	98.58	493.000
Bio45 (IN)	WQ	1	6,471.000	1.100	2.57	(N/A)	(N/A)
Bio45 (OUT)	WQ	1	0.000	0.000	0.00	97.01	6,456.000
Bio51 (IN)	WQ	1	1,091.000	1.050	0.87	(N/A)	(N/A)
Bio51 (OUT)	WQ	1	0.000	0.000	0.00	102.33	900.000
Bio52 (IN)	WQ	1	686.000	1.050	0.55	(N/A)	(N/A)
Bio52 (OUT)	WQ	1	0.000	0.000	0.00	100.55	615.000
Bio53 (IN)	WQ	1	343.000	1.050	0.27	(N/A)	(N/A)
Bio53 (OUT)	WQ	1	0.000	0.000	0.00	104.91	335.000
Bio58 (IN)	WQ	1	4,062.000	1.050	3.20	(N/A)	(N/A)
Bio58 (OUT)	WQ	1	0.000	0.000	0.00	106.98	4,039.000
EX. BASIN 6 (IN)	WQ	1	19,318.000	1.150	10.84	(N/A)	(N/A)
EX. BASIN 6 (OUT)	WQ	1	0.000	0.000	0.00	89.34	19,281.000
Infil30 (IN)	WQ	1	1,752.000	1.050	1.38	(N/A)	(N/A)
Infil30 (OUT)	WQ	1	0.000	0.000	0.00	91.43	727.000
Infil8 (IN)	WQ	1	1,449.000	1.050	1.16	(N/A)	(N/A)
Infil8 (OUT)	WQ	1	604.000	1.250	0.15	109.72	896.000
UGB10 (IN)	WQ	1	445.000	1.050	0.36	(N/A)	(N/A)
UGB10 (OUT)	WQ	1	0.000	0.000	0.00	106.36	444.000
UGB11 (IN)	WQ	1	565.000	1.050	0.45	(N/A)	(N/A)
UGB11 (OUT)	WQ	1	42.000	1.500	0.03	85.00	418.000
UGB13 (IN)	WQ	1	342.000	1.050	0.27	(N/A)	(N/A)
UGB13 (OUT)	WQ	1	0.000	0.000	0.00	86.87	343.000
UGB14 (IN)	WQ	1	381.000	1.050	0.30	(N/A)	(N/A)
UGB14 (OUT)	WQ	1	0.000	0.000	0.00	87.19	380.000
UGB15 (IN)	WQ	1	811.000	1.050	0.64	(N/A)	(N/A)

WQ Hydrographs for MTD Sizing

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB15 (OUT)	WQ	1	0.000	0.000	0.00	92.29	808.000
UGB16 (IN)	WQ	1	1,456.000	1.050	1.15	(N/A)	(N/A)
UGB16 (OUT)	WQ	1	0.000	0.000	0.00	94.37	1,450.000
UGB17 (IN)	WQ	1	648.000	1.050	0.52	(N/A)	(N/A)
UGB17 (OUT)	WQ	1	0.000	0.000	0.00	110.64	647.000
UGB18 (IN)	WQ	1	739.000	1.100	0.50	(N/A)	(N/A)
UGB18 (OUT)	WQ	1	78.000	1.850	0.05	95.03	688.000
UGB19 (IN)	WQ	1	414.000	1.100	0.32	(N/A)	(N/A)
UGB19 (OUT)	WQ	1	63.000	1.350	0.04	95.07	275.000
UGB2 (IN)	WQ	1	1,066.000	1.050	0.84	(N/A)	(N/A)
UGB2 (OUT)	WQ	1	0.000	0.000	0.00	85.86	1,067.000
UGB20 (IN)	WQ	1	721.000	1.100	0.55	(N/A)	(N/A)
UGB20 (OUT)	WQ	1	0.000	0.000	0.00	97.29	403.000
UGB21 (IN)	WQ	1	469.000	1.100	0.37	(N/A)	(N/A)
UGB21 (OUT)	WQ	1	456.000	1.100	0.36	98.79	27.000
UGB22 (IN)	WQ	1	647.000	1.050	0.52	(N/A)	(N/A)
UGB22 (OUT)	WQ	1	0.000	0.000	0.00	107.16	647.000
UGB27 (IN)	WQ	1	2,925.000	1.050	2.36	(N/A)	(N/A)
UGB27 (OUT)	WQ	1	1,720.000	1.150	0.70	100.22	1,836.000
UGB3 (IN)	WQ	1	0.000	0.000	0.00	(N/A)	(N/A)
UGB3 (OUT)	WQ	1	0.000	0.000	0.00	85.50	0.000
UGB31 (IN)	WQ	1	143.000	1.050	0.11	(N/A)	(N/A)
UGB31 (OUT)	WQ	1	0.000	0.000	0.00	92.71	142.000
UGB32 (IN)	WQ	1	815.000	1.050	0.65	(N/A)	(N/A)
UGB32 (OUT)	WQ	1	0.000	0.000	0.00	109.95	814.000
UGB33 (IN)	WQ	1	342.000	1.050	0.27	(N/A)	(N/A)
UGB33 (OUT)	WQ	1	0.000	0.000	0.00	106.19	342.000
UGB34 (IN)	WQ	1	379.000	1.050	0.30	(N/A)	(N/A)
UGB34 (OUT)	WQ	1	0.000	0.000	0.00	109.74	379.000
UGB37 (IN)	WQ	1	381.000	1.050	0.30	(N/A)	(N/A)

WQ Hydrographs for MTD Sizing

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB37 (OUT)	WQ	1	0.000	0.000	0.00	103.92	380.000
UGB4 (IN)	WQ	1	129.000	1.050	0.10	(N/A)	(N/A)
UGB4 (OUT)	WQ	1	0.000	0.000	0.00	85.16	95.000
UGB41 (IN)	WQ	1	163.000	1.050	0.13	(N/A)	(N/A)
UGB41 (OUT)	WQ	1	0.000	0.000	0.00	104.79	163.000
UGB42 (IN)	WQ	1	526.000	1.050	0.42	(N/A)	(N/A)
UGB42 (OUT)	WQ	1	0.000	0.000	0.00	95.58	526.000
UGB43 (IN)	WQ	1	0.000	0.000	0.00	(N/A)	(N/A)
UGB43 (OUT)	WQ	1	0.000	0.000	0.00	98.00	0.000
UGB44 (IN)	WQ	1	84.000	1.050	0.07	(N/A)	(N/A)
UGB44 (OUT)	WQ	1	0.000	0.000	0.00	101.07	61.000
UGB46 (IN)	WQ	1	534.000	1.050	0.43	(N/A)	(N/A)
UGB46 (OUT)	WQ	1	413.000	1.100	0.27	103.79	263.000
UGB47 (IN)	WQ	1	316.000	1.050	0.25	(N/A)	(N/A)
UGB47 (OUT)	WQ	1	0.000	0.000	0.00	108.37	315.000
UGB48 (IN)	WQ	1	30.000	1.100	0.02	(N/A)	(N/A)
UGB48 (OUT)	WQ	1	0.000	0.000	0.00	101.05	30.000
UGB49 (IN)	WQ	1	132.000	1.050	0.11	(N/A)	(N/A)
UGB49 (OUT)	WQ	1	0.000	0.000	0.00	103.28	132.000
UGB5 (IN)	WQ	1	414.000	1.000	0.33	(N/A)	(N/A)
UGB5 (OUT)	WQ	1	0.000	0.000	0.00	94.66	362.000
UGB50 (IN)	WQ	1	156.000	1.050	0.12	(N/A)	(N/A)
UGB50 (OUT)	WQ	1	0.000	0.000	0.00	101.57	155.000
UGB54 (IN)	WQ	1	380.000	1.050	0.30	(N/A)	(N/A)
UGB54 (OUT)	WQ	1	255.000	1.150	0.15	99.71	227.000
UGB55 (IN)	WQ	1	1,026.000	1.050	0.83	(N/A)	(N/A)
UGB55 (OUT)	WQ	1	0.000	0.000	0.00	106.18	1,025.000
UGB56 (IN)	WQ	1	3,547.000	1.050	2.84	(N/A)	(N/A)
UGB56 (OUT)	WQ	1	0.000	0.000	0.00	110.41	3,545.000
UGB57 (IN)	WQ	1	1,672.000	1.050	1.35	(N/A)	(N/A)

WQ Hydrographs for MTD Sizing

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
UGB57 (OUT)	WQ	1	0.000	0.000	0.00	111.45	1,670.000
UGB59 (IN)	WQ	1	1,168.000	1.050	0.91	(N/A)	(N/A)
UGB59 (OUT)	WQ	1	0.000	0.000	0.00	104.16	1,160.000
UGB6 (IN)	WQ	1	136.000	1.100	0.11	(N/A)	(N/A)
UGB6 (OUT)	WQ	1	0.000	0.000	0.00	94.23	100.000
UGB60 (IN)	WQ	1	1,900.000	1.050	1.53	(N/A)	(N/A)
UGB60 (OUT)	WQ	1	0.000	0.000	0.00	111.50	1,898.000
UGB61 (IN)	WQ	1	1,981.000	1.050	1.59	(N/A)	(N/A)
UGB61 (OUT)	WQ	1	1,432.000	1.250	0.34	108.61	1,364.000
UGB62 (IN)	WQ	1	4,842.000	1.050	3.87	(N/A)	(N/A)
UGB62 (OUT)	WQ	1	1,978.000	2.000	0.09	108.64	4,600.000
UGB63 (IN)	WQ	1	1,116.000	1.050	0.89	(N/A)	(N/A)
UGB63 (OUT)	WQ	1	0.000	0.000	0.00	104.40	1,115.000
UGB7 (IN)	WQ	1	233.000	1.050	0.19	(N/A)	(N/A)
UGB7 (OUT)	WQ	1	0.000	0.000	0.00	99.19	156.000
UGB9 (IN)	WQ	1	194.000	1.050	0.16	(N/A)	(N/A)
UGB9 (OUT)	WQ	1	0.000	0.000	0.00	100.65	194.000

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA10 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.035 hours
Area (User Defined)	0.117 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.36 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.36 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.117 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	439.393 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	445.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.035 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA10 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.80 ft³/s
Unit peak time, Tp	0.023 hours
Unit receding limb, Tr	0.093 hours
Total unit time, Tb	0.116 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA15 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.040 hours
Area (User Defined)	0.213 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.084 hours
Flow (Peak, Computed)	0.66 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.65 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.213 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	799.921 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	808.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.040 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA15 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.05 ft³/s
Unit peak time, Tp	0.027 hours
Unit receding limb, Tr	0.106 hours
Total unit time, Tb	0.133 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA16 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.044 hours
Area (User Defined)	0.383 acres

Computational Time Increment	0.006 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	1.18 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	1.16 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.383 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,438.355 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,448.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.044 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA16 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	9.90 ft³/s
Unit peak time, Tp	0.029 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.146 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA18 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.134 hours
Area (User Defined)	0.180 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	1.112 hours
Flow (Peak, Computed)	0.50 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.50 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.180 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	675.990 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	676.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.134 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA18 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.52 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.359 hours
Total unit time, Tb	0.448 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA20 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.033 hours
Area (User Defined)	0.069 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.21 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.069 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	259.129 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	263.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.033 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA20 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.35 ft³/s
Unit peak time, Tp	0.022 hours
Unit receding limb, Tr	0.089 hours
Total unit time, Tb	0.111 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA21 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.087 hours
Area (User Defined)	0.125 acres

Computational Time Increment	0.012 hours
Time to Peak (Computed)	1.093 hours
Flow (Peak, Computed)	0.37 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.37 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.125 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	469.437 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	469.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.087 hours
Computational Time Increment	0.012 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA21 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.62 ft³/s
Unit peak time, Tp	0.058 hours
Unit receding limb, Tr	0.233 hours
Total unit time, Tb	0.291 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA31 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	0.038 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	1.080 hours
Flow (Peak, Computed)	0.12 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.11 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.038 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	142.709 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	143.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA31 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.88 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.130 hours
Total unit time, Tb	0.163 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA4 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.034 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.10 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.034 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	127.687 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	129.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA4 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.93 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA41 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.043 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.13 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.13 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.043 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	161.486 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	163.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA41 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.44 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.053 hours
Total unit time, Tb	0.067 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA42 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.029 hours
Area (User Defined)	0.138 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.083 hours
Flow (Peak, Computed)	0.43 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.42 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.138 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	518.259 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	526.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.029 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA42 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	5.31 ft³/s
Unit peak time, Tp	0.020 hours
Unit receding limb, Tr	0.078 hours
Total unit time, Tb	0.098 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA44 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.022 hours
Area (User Defined)	0.022 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.07 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.022 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	82.621 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	84.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.022 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA44 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.12 ft³/s
Unit peak time, Tp	0.015 hours
Unit receding limb, Tr	0.059 hours
Total unit time, Tb	0.074 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA47 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.060 hours
Area (User Defined)	0.084 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	0.26 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.25 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.084 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	315.462 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	316.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.060 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA47 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.58 ft³/s
Unit peak time, Tp	0.040 hours
Unit receding limb, Tr	0.160 hours
Total unit time, Tb	0.200 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA48 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.078 hours
Area (User Defined)	0.008 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	1.089 hours
Flow (Peak, Computed)	0.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.02 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.008 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	30.044 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	30.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.078 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA48 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.12 ft³/s
Unit peak time, Tp	0.052 hours
Unit receding limb, Tr	0.207 hours
Total unit time, Tb	0.259 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA49 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.047 hours
Area (User Defined)	0.035 acres

Computational Time Increment	0.006 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.11 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.035 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	131.442 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	132.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.047 hours
Computational Time Increment	0.006 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA49 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.85 ft³/s
Unit peak time, Tp	0.031 hours
Unit receding limb, Tr	0.124 hours
Total unit time, Tb	0.155 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA50 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.038 hours
Area (User Defined)	0.041 acres

Computational Time Increment	0.005 hours
Time to Peak (Computed)	1.080 hours
Flow (Peak, Computed)	0.13 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.12 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.041 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	153.975 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	156.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.038 hours
Computational Time Increment	0.005 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA50 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.23 ft³/s
Unit peak time, Tp	0.025 hours
Unit receding limb, Tr	0.100 hours
Total unit time, Tb	0.126 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA59 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.308 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	1.085 hours
Flow (Peak, Computed)	0.94 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.92 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.308 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,156.693 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,159.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA59 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.22 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.150 hours
Total unit time, Tb	0.187 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA6 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.079 hours
Area (User Defined)	0.036 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	1.090 hours
Flow (Peak, Computed)	0.11 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.100 hours
Flow (Peak Interpolated Output)	0.11 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.036 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	135.198 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	135.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.079 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA6 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.52 ft³/s
Unit peak time, Tp	0.052 hours
Unit receding limb, Tr	0.210 hours
Total unit time, Tb	0.262 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA63 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.032 hours
Area (User Defined)	0.293 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.081 hours
Flow (Peak, Computed)	0.90 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.89 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.293 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	1,100.361 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,116.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.032 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA63 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.40 ft³/s
Unit peak time, Tp	0.021 hours
Unit receding limb, Tr	0.085 hours
Total unit time, Tb	0.106 hours

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA9 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

Storm Event	wq
Return Event	1 years
Duration	48.000 hours
Depth	1.3 in
Time of Concentration (Composite)	0.027 hours
Area (User Defined)	0.051 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	1.082 hours
Flow (Peak, Computed)	0.16 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	1.050 hours
Flow (Peak Interpolated Output)	0.16 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.051 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	191.530 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	194.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.027 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

WQ Hydrographs for MTD Sizing

Subsection: Unit Hydrograph Summary
Label: DA9 Imp
Scenario: WQ

Return Event: 1 years
Storm Event: wq

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.17 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.071 hours
Total unit time, Tb	0.089 hours

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER QUALITY
Bureau of Stormwater Permitting
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www.nj.gov/dep/dwq/bnpc_home.htm

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

SHAWN M. LATOURETTE
Acting Commissioner

February 12, 2021

Derek M. Berg
Director – Stormwater Regulatory Management - East
Contech Engineered Solutions LLC
71 US Route 1, Suite F
Scarborough, ME 04074

Re: MTD Lab Certification
Filterra® HC Bioretention System
Off-line Installation Approved

TSS Removal Rate 80%

Dear Mr. Berg:

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7(c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Contech Engineered Solutions LLC has requested a Laboratory Certification for the Filterra® HC Bioretention System (Filterra® HC.)

The project falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Department of Environmental Protection Laboratory Protocol to Assess Total Suspended Solids Removal by a Filtration Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated January 2021) for this device is published online at http://www.njcat.org/uploads/newDocs/NJCATFilterraTechnologyVerificationReportFinal._.pdf.

The NJDEP certifies the use of the Filterra® HC stormwater treatment unit by Contech Engineered Solutions LLC at a TSS removal rate of 80% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5. The MTFR is calculated based on a verified loading rate of 3.12 gpm/ft^2 of effective filtration treatment area.

2. The Filterra® HC stormwater treatment unit shall be installed using the same configuration reviewed by NJCAT, and sized in accordance with the criteria specified in item 7 below.

3. This device cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual, which can be found online at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the Filterra® HC. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at https://www.conteches.com/Portals/0/Documents/Maintenance%20Guides/Filterra%20HC%20OM%20Packet.pdf for any changes to the maintenance requirements.

6. For an MTD to be considered "green infrastructure" (GI) in accordance with the March 2, 2020 amendments to the Stormwater Management rules at N.J.A.C. 7:8, the MTD must meet the GI definition noted at amended N.J.A.C. 7:8-1.2. Specifically, the MTD shall (1) treat stormwater runoff through infiltration into subsoil; and/or (2) treat stormwater runoff through filtration by vegetation or soil; or (3) store stormwater runoff for reuse.

   The Filterra® HC filters stormwater runoff through an engineered biofiltration soil media and, thus, meets the definition of GI. Filterra® HC can be configured with or without a precast vault. Installations that will not include a precast vault will additionally need to comply the NJDEP Stormwater BMP Manual conditions regarding separation from the seasonal high water table and, if infiltration is proposed as an outlet, minimum vertical saturated hydraulic conductivity of the subsoil. Installations without a precast vault that do not rely on infiltration are required to maintain at least a one-foot separation from the seasonal high water table measured from the lowest point of the system. Installations without a precast vault that utilize infiltration are required to have the most hydraulically restrictive soil layer below the MTD meet the minimum tested vertical saturated hydraulic conductivity of one inch per hour and have at least two feet of separation from the seasonal high water table measured from the lowest point of the system.

7. Sizing Requirement:

The example below demonstrates the sizing procedure for the Filterra® HC:

Example: A 0.25-acre impervious site is to be treated to 80% TSS removal using the Filterra® HC. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

The selection of the appropriate model of Filterra® HC is based upon both the maximum inflow drainage area and the MTFR. It is necessary to calculate the required model using both methods and to use the largest model determined by the two methods.

Inflow Drainage Area Evaluation:

The drainage area to the Filterra® HC in this example is 0.25 acres. Included in Table 1 below, all of the Filterra® HC models are designed with a maximum allowable drainage area greater than 0.25 acres. Specifically, the Filterra® HC with a 4'x4' media bay and a maximum allowable drainage area of 0.40 acres would be the smallest model able to treat runoff without exceeding the maximum allowable drainage area.

Maximum Treatment Flow Rate (MTFR) Evaluation:

The site runoff (Q) was based on the following:
time of concentration = 10 minutes
i = 3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)
c = 0.99 (runoff coefficient for impervious)
Q = ciA = 0.99 x 3.2 x 0.25 = 0.79 cfs

Given the site runoff is 0.79 cfs and based on the MTFR's listed in Table 1 below, the Filterra® HC with a 16'x8' media bay and an MTFR of 0.889 cfs would be the smallest model that could be used to treat the impervious area without exceeding the MTFR. If using more than one unit for treating runoff, the units should be configured such that the flowrate to each unit does not exceed the design MTFR for each unit and ensuring the entire 0.25 acre area is treated.

The MTFR evaluation results will be used since that method results in the highest minimum configuration determined by the two methods.

The sizing table corresponding to the available system models is noted below:

Table 1. Filterra® HC MTFRs and Maximum Allowable Drainage Areas

	Available Filterra® Media Bay Sizes (feet)	Effective Filtration Treatment Area (ft^2)	Treatment Flow Rate (cfs)	Maximum Allowable Drainage Area (ac)
Standard Configuration Filterra and Filterra Biosape Vaults	4x4	16	0.111	0.40
	4x6 or 6x4	24	0.167	0.60
	4.5x7.83 or 7.83x4.5 (Nominal 4x8/8x4)	35.24	0.245	0.89
	6x6	36	0.250	0.91
	6x8 or 8x6	48	0.333	1.21
	6x10 or 10x6	60	0.417	1.51
	6x12 or 12x6	72	0.500	1.81
	7x13 or 13x7	91	0.632	2.29
	14x8	112	0.778	2.82
	16x8	128	0.889	3.22
	18x8	144	1.000	3.62
	20x8	160	1.111	4.03
	22x8	176	1.222	4.43
Peak Diversion Filterra Vaults	4x4	16	0.111	0.40
	4.5x5.83 (Nominal 4x6)	26.24	0.182	0.66
	6x4	24	0.167	0.60
	6x6	36	0.250	0.91
	6x8	48	0.333	1.21
	6x10 or 10x6	60	0.417	1.51
	7x10	70	0.486	1.76
	8x10.5	84	0.583	2.11
	8x12.5	100	0.694	2.52
	Custom and/or Filterra Bioscape	Media Area in ft^2	0.00694 * (Media Area in ft^2)	0.0252 * (Media Area in ft^2)

Be advised a detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact me at (609) 633-7021.

Sincerely,

Gabriel Mahon, Chief
Bureau of Stormwater Permitting

Attachment: Maintenance Plan
cc: Chron File
Richard Magee, NJCAT
Vince Mazzei, NJDEP – Water & Land Management
Nancy Kempel, NJDEP– BSTP
Keith Stampfel, NJDEP – DLRP
Dennis Contois, NJDEP – DLRP

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
PHILIP D. MURPHY
Governor
SHEILA Y. OLIVER
Lt. Governor
DIVISION OF WATERSHED PROTECTION AND RESTORATION
BUREAU OF NJPDES STORMWATER PERMITTING & WATER QUALITY MANAGEMENT
P.O. Box 420 Mail Code 501-02A
Trenton, New Jersey 08625-0420
609-633-7021 / Fax: 609-777-0432
www.njstormwater.org
SHAWN M. LATOURETTE
Commissioner

June 1, 2022

Zachariha J. Kent
Vice President of Product Management
Bio Clean Environmental Services, Inc., a Forterra Company
398 Via El Centro
Oceanside, CA 92058

Re: MTD Lab Certification
Bio Clean Modular Wetlands Linear Stormwater Treatment Device
Online Installation

TSS Removal Rate 80%

Dear Mr. Kent:

The Stormwater Management rules under N.J.A.C. 7:8-5.2(f) and 5.2(j) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Bio Clean Environmental Services, Inc., a Forterra company, has requested a Laboratory Certification for the Bio Clean Modular Wetlands Linear Stormwater Treatment Device (Bio Clean MW-L).

The project falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Department of Environmental Protection Laboratory Protocol to Assess Total Suspended Solids Removal by a Filtration Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated May 2022) for this device is published online at http://www.njcat.org/verification-process/technology-verification-database.html.

The State of New Jersey is an equal-opportunity employer. Printed on recycled and recyclable paper.

The NJDEP certifies the use of the Bio Clean MW-L by Bio Clean Environmental Services, Inc. at a TSS removal rate of 80% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5. The MTFR is calculated based on a verified loading rate of 2.91 gpm/ft^2 of effective wetland media surface area and 4.88 gpm/ft of effective pre-filter media surface area.

2. The Bio Clean MW-L shall be installed using the same configuration reviewed by NJCAT, and sized in accordance with the criteria specified in item 8 below.

3. This device cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in Chapter 9.5 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual, which can be found online at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the Bio Clean MW-L. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at https://biocleanenvironmental.com/wp-content/uploads/2022/04/Modular-Wetlands-Operation-Maintenance-Manual_4-20-22.pdf for any changes to the maintenance requirements.

6. For an MTD to be considered "green infrastructure" in accordance with the March 2, 2020 amendments to the Stormwater Management rules at N.J.A.C. 7:8, the MTD must meet the GI definition noted at amended N.J.A.C. 7:8-1.2. Specifically, the MTD shall (1) infiltrate into the subsoil; and/or (2) treat stormwater runoff through filtration by vegetation or soil. Any configuration that uses a bio-filtration media and can be configured "above ground" and incorporate a tree box, planter box, or shrubs, etc., would meet the GI definition. Any MTD with bio-filtration media that would be placed "below ground" as a vault without any vegetation can be considered GI (for NJ purposes) only if the device infiltrates the entire Water Quality Design Storm into the subsoil. Further, the below ground device (vault) would need to meet the NJDEP Stormwater BMP Manual conditions of having the soil below the MTD meet the minimum tested infiltration rate of one inch per hour, have at least two feet of separation from the seasonal high water table, and infiltrate into the subsoil.

7. Sizing Requirement:

   The example below demonstrates the sizing procedure for the Bio Clean MW-L:

   Example: A 0.25-acre impervious site is to be treated to 80% TSS removal using a Bio Clean MW-L. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs or 354.58 gpm.

   The selection of the appropriate model of a Bio Clean MW-L is based upon both the maximum inflow drainage area and the MTFR. It is necessary to calculate the required model using both methods and to use the largest model determined by the two methods.

Inflow Drainage Area Evaluation:

The drainage area to the Bio Clean MW-L in this example is 0.25 acres. Based upon the information in Table 1 below, all of the Bio Clean MW-L models would be able to treat runoff without exceeding the maximum allowable drainage area.

Maximum Treatment Flow Rate (MTFR) Evaluation:

The site runoff (Q) was based on the following:

time of concentration = 10 minutes
i = 3.2 in/hr (page 21, Fig. 5-10 of Chapter 5 of the NJ Stormwater BMP Manual)
c = 0.99 (runoff coefficient for impervious)
Q = ciA = 0.99 x 3.2 x 0.25 = 0.79 cfs (354.58 gpm)
(Note: 1 cfs = 448.83 gpm)

Given the site runoff is 0.79 cfs and based on Table 1 below, the Bio Clean MW-L-8-12 model would be the smallest model able to treat the impervious area without exceeding the MTFR of the individual model.

The MTFR evaluation results will be used since that method results in the highest minimum configuration determined by the two methods.

The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the NJCAT Verification Report in the Verification Appendix under Table A-1.

Table 1. Bio Clean Modular Wetlands Linear Stormwater Treatment Device Model MTFRs and Maximum Allowable Drainage Area.

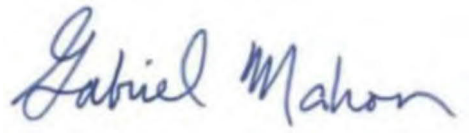
Model #	Maximum Treatment Flow Rate (MTFR) (cfs)	Maximum Allowable Drainage Area (acres)	Number of Pre-Filter Cartridges
MW-L-4-4	0.13	0.47	0.5
MW-L-4-6.5	0.17	0.65	1
MW-L-4-8	0.28	1.04	1
MW-L-6-8	0.35	1.32	1.5
MW-L-8-8	0.56	2.07	2
MW-L-8-12	0.83	3.11	3
MW-L-8-16	1.11	4.15	4
MW-L-8-20	1.39	5.19	5

Be advised a detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of

inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Lisa Schaefer of my office at lisa.schaefer@dep.nj.gov.

Sincerely,



Gabriel Mahon, Chief
Bureau of NJPDES Stormwater Permitting & Water Quality Management
Division of Watershed Protection and Restoration
New Jersey Department of Environmental Protection

Attachment: Maintenance Plan

cc: Richard Magee, NJCAT

Appendix E

SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

April 4, 2024 ***via email: ahamad@visionrep.com***

Principals:
Anthony Castillo, PE
Fuad Dahan, PhD, PE, LSRP
Franz W. Laki, PE
John M. Nederfield, PE
Justin M. Protasiewicz, PE
Michael St. Pierre, PE
Jose M. Rodriguez, PE

Amer Hamad
WRV Nurseries LLC
100 Passaic Avenue
Fairfield, NJ 07004

RE: Proposed Mixed-Use Development
Infiltration Testing Data Letter
Seminary Drive
Plainsboro, New Jersey
SESI Project No. 12506

Dear Mr. Hamad:

In accordance with our Addendum #4 dated February 26, 2024, SESI has completed our investigation and in-situ testing program for the proposed mixed-use development which is to be located along Seminary Drive in Plainsboro, New Jersey. Our investigation consisted of the excavation of thirty (30) soil profile pits and the performance of thirty (30) in-situ single ring infiltration tests, at the approximate locations indicated on the attached *Figure 1 - Exploration Location Plan*. At five (5) of the test locations SESI performed an additional near surface test to aid in the assessment of the hydraulic soil group and these test results are labeled with an "A" after them. Soil profile pits were advanced up to 12 feet below existing grades. Infiltration testing was performed in accordance with the NJ Best Management Practices (NJBMP) manual, dated April 2022. While performing the soil profile pits, SESI also evaluated the subsurface conditions for indications of seasonal high groundwater (SHGW), water seepage, and static groundwater. It should be noted that mottling was observed in several test pits at depths indicated on the attached logs and in *Table 1 – Infiltration Testing Summary Table*; however, it is our opinion that the observed mottling is due to trapped/perched water and is not indicative of seasonal high groundwater. A summary of our test results and observations are presented in Table 1, attached, and the soil profile pit logs are also attached to the end of this letter. Based on the test results, a majority of the tests resulted in hydraulic conductivity values less than 1.0 inch/hour, with only seven (7) test results exceeding a hydraulic conductivity of greater than 1.0 inch/hour. Hydraulic conductivity results presented are field rates and a standard factor of safety should be applied for design purposes.

Sincerely,

SESI CONSULTING ENGINEERS

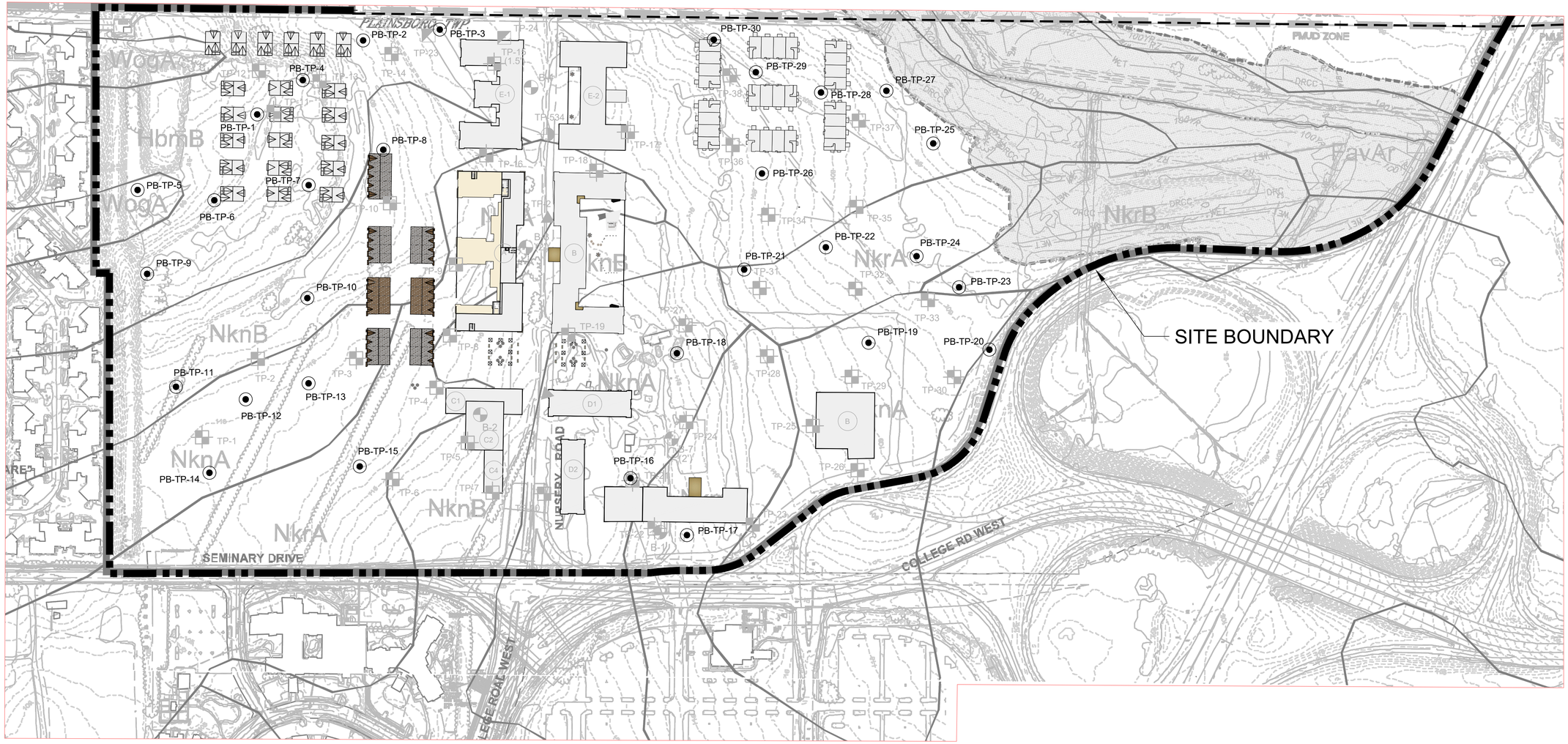
Michael St. Pierre, P.E.
President

Michael A. Felicetta
Assistant Project Engineer II

Attachments:

1. **Figure 1 – Exploration Location Plan**
2. **Table 1 – Infiltration Testing Summary Table**
3. **Soil Profile Pit Logs**

N:\PROJECTS\12506 - Plainsboro, NJ (Vision-Woodmont-Russo)\Letters & Memos\SB Data Center & Roadway TPs & Inf. Test Ltr\12506.Data Ctr & Roadway Testing Summary Letter.docx



NOTE:
THIS PLAN IS FOR LOCATING TEST PITS AND BORINGS ONLY.
OTHER SITE WORK SHOWN HERE IS NOT INTENDED FOR CONSTRUCTION.

REFERENCE:
1. AERIAL PHOTOGRAPHY WERE TAKEN FROM2022 MICROSOFT CORP. 2022 MAXAR, CNES (2022) DISTRIBUTION AIRBUS DS AERIAL IMAGING.
2. PREVIOUSLY INSTALLED TEST PITS PROVIDED BY "PRINCETON NURSERIES "TOPO AND SOILS PLAN" PREPARED BY VAN NOTE-HARVEY ASSOCIATES, INC. PRINCETON N.J. DATED JANUARY 10, 2018

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LEGEND:

- PB-TP-1 - APPROXIMATE LOCATION AND NUMBER OF TEST PIT (SOUTHERN AREA)
- SB-TP-1 - APPROXIMATE LOCATION AND NUMBER OF TEST PIT
- SB-TP-101 - APPROXIMATE LOCATION AND NUMBER OF TEST PIT
- TP-1 - APPROXIMATE LOCATION AND NUMBER OF TEST PIT
- B-3 - APPROXIMATE LOCATION AND NUMBER OF BORING
- (2') - APPROXIMATE DEPTH TO BOTTOM OF FILL
- TP-523 - SOR TESTING LABS, INC. TEST PITS, APRIL 2004
- (7') - APPROXIMATE DEPTH TO BOTTOM OF FILL, APRIL 2004
- TP-1 - MELLICK TULLEY, ASSOCIATES TEST PITS, NOVEMBER 2007
- TP-4 - MELLICK TULLEY, ASSOCIATES TEST PITS, AUGUST 2008
- (4') - APPROXIMATE DEPTH TO BOTTOM OF FILL, AUGUST 2008
- TP-28 - TEST PITS, BY OTHERS
- (E) - BUILDING NUMBERS

Scale: 1"= 150'
0 75 150 300 450 600

rev	date	description	by

dwg by: AG
chk by: MF
scale: AS NOTED
date: 08/16/2022

SESI CONSULTING ENGINEERS
Cert of Auth #24GA27934700
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL
959 route 46e, 3rd floor, parsippany, nj 07054 ph: 973.808.9050

PROPOSED MIXED-USE DEVELOPMENT
ROUTE 1
PLAINSBORO, NEW JERSEY

title:
EXPLORATION LOCATION PLAN
PLAINSBORO

job no. 12506
drawing no.
FIG-1

N:\CAD\12506\CAD\12506 DWG EXPLORATION_LOCATION_PLAN.DWG 04/01/24 12:55:58PM acm xref: LAYOUT-TP1-1 EXPLORATION (PLAINSBORO)

Project Number: 12506
Location: South Brunswick, NJ
Date: March 25, 2024

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Table 1 - Infiltration Testing Summary Table - Plainsboro, NJ

SESI Test Pit No.:	Approx. Surface Elevation	Approx. Depth of Excavation (feet)	Approx. Depth to Groundwater (feet)	Approx. Groundwater Elevation	Infiltration Test Type	Approx. Infiltration Test Depth (feet)	Approx. Elevation of Infiltration Test	Hydraulic Conductivity (in/hr)	Notes
PB-TP-1	95.5	10	NE	NE	Single Ring	4.0	91.5	12.66	
PB-TP-2	106.2	12	NE	NE	Single Ring	7.0	99.2	0.43	
PB-TP-2A	106.2	0	NE	NE	Single Ring	0.0	106.2	0.02	
PB-TP-3	113	12	NE	NE	Single Ring	4.0	109.0	0.79	Mottling noted at +/-6' (EL 107)
PB-TP-4	95.5	12	NE	NE	Single Ring	4.0	91.5	0.64	Mottling noted at +/-11' (EL 84.5)
PB-TP-5	87.3	10	8	79.3	Single Ring	6.0	81.3	1.70	
PB-TP-6	94	12	NE	NE	Single Ring	1.0	93.0	0.04	Mottling noted at +/-3' (EL 91)
PB-TP-7	98.3	10	NE	NE	Single Ring	6.0	92.3	0.59	
PB-TP-8	105	10	NE	NE	Single Ring	2.0	103.0	0.02	Mottling noted at +/-4' (EL 101)
PB-TP-9	97	10	NE	NE	Single Ring	6.0	91.0	10.35	
PB-TP-10	107	12	NE	NE	Single Ring	6.0	101.0	0.63	
PB-TP-10A	107	0	NE	NE	Single Ring	0.0	107.0	0.30	
PB-TP-11	108	6	NE	NE	Single Ring	6.0	102.0	1.70	Bucket Refusal at +/-6' (EL 102)
PB-TP-12	109.6	12	NE	NE	Single Ring	7.0	102.6	3.43	
PB-TP-13	110.5	12	NE	NE	Single Ring	7.0	103.5	0.46	
PB-TP-14	109.8	12	NE	NE	Single Ring	7.0	102.8	0.26	
PB-TP-15	113	10	NE	NE	Single Ring	5.0	108.0	0.26	
PB-TP-16	120	12	NE	NE	Single Ring	4.0	116.0	0.09	Mottling noted at +/-6' (EL 114)
PB-TP-17	115	12	NE	NE	Single Ring	5.0	110.0	0.17	
PB-TP-18	112	12	NE	NE	Single Ring	4.0	108.0	0.13	Mottling noted at +/-6' (EL 106)
PB-TP-19	103.7	12	10	93.7	Single Ring	7.0	96.7	0.02	
PB-TP-20	99.9	10	8	91.9	Single Ring	6.0	93.9	0.02	Bucket Refusal at +/- 10' (EL 89.9)
PB-TP-20A	99.9	0	NE	NE	Single Ring	0.0	99.9	0.04	
PB-TP-21	106	11	NE	NE	Single Ring	6.0	100.0	0.17	
PB-TP-22	101	12	9	92	Single Ring	6.0	95.0	0.05	
PB-TP-23	99.5	9	6	93.5	Single Ring	4.0	95.5	1.08	Bucket Refusal at +/- 9' (EL 90.5)
PB-TP-24	94.7	11	6	88.7	Single Ring	3.0	91.7	0.36	Mottling noted at +/-5' (EL 89.7)
PB-TP-25	95.2	11	6	89.2	Single Ring	3.0	92.2	0.63	Mottling noted at +/-5' (EL 90.2)
PB-TP-26	105	11	NE	NE	Single Ring	6.0	99.0	0.87	
PB-TP-26A	105	0	NE	NE	Single Ring	0.0	105.0	0.09	
PB-TP-27	94	10	9	85	Single Ring	1.0	93.0	6.36	Mottling noted at +/-5' (EL 90.2), Bucket Refusal at +/-10' (EL 84)
PB-TP-28	100	11	NE	NE	Single Ring	1.0	99.0	0.17	Mottling noted at +/-3' (EL 97)
PB-TP-29	99.5	10	NE	NE	Single Ring	4.0	95.5	0.52	Mottling noted at +/-7' (EL 92.5)
PB-TP-29A	99.5	0	NE	NE	Single Ring	0.0	99.5	0.00	
PB-TP-30	103	10	NE	NE	Single Ring	2.0	101.0	0.02	Mottling noted at +/-4' (EL 99)

Note: NE = Not Encountered

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TEST PIT NUMBER: PB-TP-01

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±95.5-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 12.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.362792 **LONGITUDE** -74.615720

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		12-in Topsoil: Light brown coarse to fine SAND, some Clayey Silt, little medium to fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	91	Tan/brown/gray coarse to fine SAND, some coarse to fine Gravel, little Clayey Silt, with Cobbles (Decomposed Rock) (Sand/Loamy Sand)	5	Dry to Moist	Dense	Infiltration Test performed at 4-ft
	86	Gray/tan/brown coarse to fine GRAVEL, some coarse to fine Sand, trace Clayey Silt, with Cobbles (Decomposed Rock) (Sand/Loamy Sand)	10	Dry to Moist	Dense to Very Dense	
		TEST PIT COMPLETED AT 10± FEET				
	81		15			
	76		20			

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TEST PIT NUMBER: PB-TP-02

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±106.2-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.362717 **LONGITUDE** -74.614390

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Tilled soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	Infiltration test pit performed at 0-ft
		Tan/brown medium to fine SAND, some Clayey Silt (Sand/Loamy Sand)		Dry to Moist	Loose	
	102	Tan/brown coarse to fine SAND, some medium to fine Gravel, little Clayey Silt, with Cobbles (Sand)	5	Dry to Moist	Loose to Medium Dense	Infiltration Test performed at 7-ft
	97	Gray/dark brown Clayey SILT, little medium to fine Sand, little medium to fine Gravel	10	Dry to Moist	Medium Stiff	
		TEST PIT COMPLETED AT 12± FEET				
	92		15			
	87		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-03

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±113.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.362772 **LONGITUDE** -74.613558

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil:		Dry to Moist	Loose	
		Light brown coarse to fine SAND, some Clayey Silt, little medium to fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown coarse to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)				
		Red-brown/orange-brown coarse to fine SAND, and coarse to fine Gravel, little Clayey Silt (Sand)				Infiltration Test performed at 4-ft
	108		5			Mottling observed at 6-ft
				Dry to Moist	Loose to Dense	
	103		10			
		TEST PIT COMPLETED AT 12± FEET				
	98		15			
	93		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-04

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation
EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.362537 **LONGITUDE** -74.615092

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±95.5-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 13.0-ft
FINAL DEPTH 12.0-ft

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil: Tan/brown coarse to fine SAND, some Silty Clay, trace medium to fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/orange-brown coarse to fine SAND, some Clayey Silt, little medium to fine Gravel (Loamy Sand/Sandy Loam)		Dry to Moist	Loose to Medium Dense	
	91	Gray/Tan-brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)	5	Dry to Moist	Medium Dense	Infiltration Test performed at 4-ft
	86	Gray/dark brown coarse to fine GRAVEL, some coarse to fine Sand, little Clayey Silt (Decomposed Rock) (Sand)	10	Dry to Moist	Dense	Mottling observed at 11-ft
		TEST PIT COMPLETED AT 12± FEET				
	81		15			
	76		20			

SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-05

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation
EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.362082 **LONGITUDE** -74.617060

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±87.3-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 12.0-ft
FINAL DEPTH 10.0-ft

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 8.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil:		Dry to Moist	Loose	
		Tan/brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)				
		Tan/brown coarse to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	83		5			
		Gray/tan brown coarse to fine GRAVEL, little coarse to fine Sand, little Clayey Silt (Decomposed Rock) (Sand/Loamy Sand)		Moist	Dense	Infiltration Test performed at 6-ft
				Wet		Slight Seepage observed at 8-ft
	78				Very Dense	
		TEST PIT COMPLETED AT 10± FEET	10			
	73		15			
	68		20			

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TEST PIT NUMBER: PB-TP-06

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±94.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.361893 **LONGITUDE** -74.617967

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil: Brown/tan brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown coarse to fine SAND, some Clayey Silt, trace medium to fine Gravel (Loamy Sand/Sandy Loam)				Infiltration Test performed at 1-ft Mottling observed at 3-ft
	89		5	Dry to Moist	Loose	
		Gray/tan/brown coarse to fine GRAVEL, some coarse to fine Sand, little Clayey Silt, with decomposed rock (Sand)				
	84		10	Moist	Dense to Very Dense	
		TEST PIT COMPLETED AT 12± FEET				
	79		15			
	74		20			

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TEST PIT NUMBER: PB-TP-07

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±98.3-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.361817 **LONGITUDE** -74.615287

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Tilled soil) Loamy Sand/Sandy Loam		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	94	Gray/tan/brown coarse to fine GRAVEL, and coarse to fine Sand, little Clayey Silt (Decomposed Rock) (Sand)	5	Dry to Moist	Dense to Very Dense	Infiltration Test performed at 6-ft
	89	TEST PIT COMPLETED AT 10± FEET	10			
	84		15			
	79		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-08

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±105.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 10.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.361986 **LONGITUDE** -74.614459

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	Infiltration Test performed at 2-ft Mottling observed at 4-ft
	100	Orange-brown coarse to fine SAND, some coarse to fine Gravel, little Clayey Silt (Sand/Loamy Sand)	5	Dry to Moist	Medium Dense	
		Gray-brown/orange-brown Clayey SILT, little medium to fine Gravel, little coarse to fine Sand (Silt Loam)		Dry to Moist	Medium Stiff	
	95	TEST PIT COMPLETED AT 10± FEET	10			
	90		15			
	85		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-09

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±97.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 12.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.362147 **LONGITUDE** -74.617788

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil: Tan/brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	92	Gray/tan/brown coarse to fine GRAVEL, some coarse to fine Sand, little Clayey Silt, with Cobbles (Decomposed Rock) (Sand)	5	Dry to Moist	Very Dense	Infiltration Test performed at 6-ft
	87	TEST PIT COMPLETED AT 10± FEET	10			
	82		15			
	77		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-10

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±107.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.360762 **LONGITUDE** -74.615878

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		12-in Topsoil: Tan/brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown coarse to fine SAND, some coarse to fine Gravel, little Clayey Silt (Sand/Loamy Sand)		Dry to Moist	Loose to Dense	Infiltration Test performed at 3-ft
	102		5			Infiltration Test performed at 6-ft
		Gray/dark brown coarse to fine Gravel, some coarse to fine Sand, little Clayey Silt, with Cobbles (Decomposed Rock) (Sand)		Dry to Moist	Very Dense	
	97		10			
		TEST PIT COMPLETED AT 12± FEET				
	92		15			
	87		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-11

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±108.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 10.0-ft
FINAL DEPTH 6.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.360545 **LONGITUDE** -74.617036

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Brown medium to fine SAND, some Silty Clay, trace fine Gravel, with grass and roots (Tilled soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt, trace fine Gravel (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	103	Dark brown/red-brown Clayey Silt, little coarse to fine Sand, little fine Gravel (Silt Loam)	5	Dry to Moist	Medium Stiff	Infiltration Test performed at 6-ft Bucket refusal on bedrock
	98	TEST PIT COMPLETED AT 6± FEET DUE TO BUCKET REFUSAL	10			
	93		15			
	88		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-12

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±109.6-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.360312 **LONGITUDE** -74.616463

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with grass and roots (Tilled soil) (Loamy Sandy/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sandy/Sandy Loam)		Dry to Moist	Loose	
	105	Dark brown/red-brown, coarse to fine GRAVEL, and coarse to fine Sand, little Clayey Silt, with Cobbles (Decomposed Rock) (Sand/Loamy Sand)	5	Dry to Moist	Dense to Very Dense	Infiltration Test performed at 7-ft
	100		10			
		TEST PIT COMPLETED AT 12± FEET				
	95		15			
	90		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-13

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±110.5-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 12.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.358588 **LONGITUDE** -74.617167

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Tilled soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt, trace medium to fine Gravel (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	106	Dark brown/red-brown coarse to fine Gravel, some coarse to fine Sand, little Clayey Silt, with Cobbles (Decomposed Rock) (Sand)	5	Dry to Moist	Dense	Infiltration Test performed at 7-ft
	101		10			
		TEST PIT COMPLETED AT 12± FEET				
	96		15			
	91		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-14

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation
EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.360407 **LONGITUDE** -74.618534

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±109.8-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 12.0-ft
FINAL DEPTH 12.0-ft

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	105	Tan/brown coarse to fine GRAVEL, and coarse to fine Sand, little Clayey Silt, with Cobbles (Decomposed Rock) (Sand)	5	Dry to Moist	Dense to Very Dense	Infiltration Test performed at 7-ft
	100		10			
		TEST PIT COMPLETED AT 12± FEET				
	95		15			
	90		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-15

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-14-2024 **COMPLETED** 03-14-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±113.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 12.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.359675 **LONGITUDE** -74.615413

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Brown coarse to fine SAND, little coarse to fine Gravel, little Silty Clay, with Roots (Tilled soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Red-brown coarse to fine SAND, some coarse to fine Gravel, little Silty Clay (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	108	Tan/brown/red-brown coarse to fine Sand, and Clayey Silt, little medium to fine Gravel (Loamy Sand/Sandy Loam)	5	Dry to Moist	Loose to Medium Dense	Infiltration Test performed at 5-ft
		Tan/brown Clayey SILT, and medium to fine Sand (Silt Loam)		Moist	Medium Stiff to Stiff	
	103	TEST PIT COMPLETED AT 10± FEET	10			
	98		15			
	93		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-16

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±120.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.359892 **LONGITUDE** -74.612151

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		18-in Topsoil: Brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	115	Red-brown/orange-brown coarse to fine SAND, little coarse to fine Gravel, little Clayey Silt (Loamy Sand/Sandy Loam)	5	Dry to Moist	Loose to Medium Dense	Infiltration Test performed at 4-ft Mottling observed at 6-ft
	110	Tan/brown/gray Clayey SILT, some coarse to fine Gravel, trace coarse to fine Sand (Silt Loam)	10	Dry to Moist	Medium Stiff	
		TEST PIT COMPLETED AT 12± FEET				
	105		15			
	100		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-17

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±115.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.358155 **LONGITUDE** -74.612930

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		18-in Topsoil: Brown/dark brown coarse to fine SAND, some coarse to fine Gravel, trace Silty Clay, with Roots and 3/4" stone (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	110	Orange-brown coarse to fine SAND, some Clayey Silt, trace medium to fine Gravel (Loamy Sand/Sandy Loam)	5	Dry to Moist	Loose to Medium Dense	Infiltration Test performed at 5-ft
	105	Gray/brown coarse to fine SAND, and Clayey Silt, trace medium to fine Gravel (Loamy Sand/Sandy Loam)	10	Dry to Moist	Loose to Medium Dense	
		TEST PIT COMPLETED AT 12± FEET				
	100		15			
	95		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-18

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±115.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321 Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.359705 **LONGITUDE** -74.611890

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		12-in Topsoil: Brown coarse to fine SAND, some Silty Clay, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown/gray medium to fine SAND, some Clayey Silt, trace medium to fine Gravel (Loamy Sand/Sandy Loam)				
	110		5			Infiltration Test performed at 4-ft
				Dry to Moist	Loose to Medium Dense	Mottling observed at 6-ft
	105		10			
		TEST PIT COMPLETED AT 12± FEET				
	100		15			
	95		20			

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TEST PIT NUMBER: PB-TP-19

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±103.7-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.359420 **LONGITUDE** -74.610310

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 10.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Clayey Silt (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	99	Tan/brown coarse to fine SAND, some Clayey Silt, trace medium to fine Gravel (Loamy Sand/Sandy Loam)	5	Dry to Moist	Loose to Medium Dense	Infiltration Test performed at 7-ft
	94		10			Seepage observed at 10-ft
		Gray coarse to fine GRAVEL, little coarse to fine Sand, little Clayey Silt (Decomposed Rock) (Sand/Loamy Sand)		Wet	Dense	
		TEST PIT COMPLETED AT 12± FEET				
	89		15			
	84		20			

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TEST PIT NUMBER: PB-TP-20

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±99.9-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.359186 **LONGITUDE** -74.609123

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 8.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, little Clayey Silt, trace fine Gravel, with Roots (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	~~Infiltration Test performed at 0-ft~~
	95	Tan/brown medium to fine SAND, some Clayey Silt, trace coarse to fine Gravel, with Cobbles Loamy Sand/Sandy Loam	5	Dry to Moist	Loose to Medium Dense	Infiltration Test performed at 6-ft
	90	Gray/tan/brown coarse to fine GRAVEL, little coarse to fine Sand, trace Clayey Silt (Decomposed Rock) (Sand/Loamy Sand)	10	Moist to Wet	Dense to Very Dense	Seepage observed at 8-ft
		TEST PIT COMPLETED AT 10± FEET DUE TO BUCKET REFUSAL				Bucket refusal on possible rock
	85		15			
	80		20			

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TEST PIT NUMBER: PB-TP-21

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±106.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 11.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.360265 **LONGITUDE** -74.611290

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Silty Clay, with Roots (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	101	Tan/gray/brown coarse to fine SAND, some Clayey Silt, little medium to fine Gravel (Loamy Sand/Sandy Loam)	5	Dry to Moist	Loose to Medium Dense	Infiltration Test performed at 6-ft
	96		10			
		TEST PIT COMPLETED AT 11± FEET				
	91		15			
	86		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-22

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±101.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 12.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.360412 **LONGITUDE** -74.610372

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 9.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Clayey Silt, with Roots (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Red-brown coarse to fine SAND, and coarse to fine Gravel, trace Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Dense	
	96	Tan/brown medium to fine SAND, some Clayey Silt, trace medium to fine Gravel (Loamy Sand/Sandy Loam)	5	Dry to Moist	Medium Dense	Infiltration Test performed at 6-ft
	91	Gray/tan/brown coarse to fine GRAVEL, little coarse to fine Sand, little Clayey Silt (Decomposed Rock) (Sand/Loamy Sand)	10	Wet	Dense	Slight Seepage observed at 9-ft
		TEST PIT COMPLETED AT 12± FEET				
	86		15			
	81		20			

SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-23

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±99.5-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 13.0-ft
FINAL DEPTH 9.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.360119 **LONGITUDE** -74.610099

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 4.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Clayey Silt, with Roots (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown coarse to fine SAND, and coarse to fine Gravel, little Clayey Silt (Decomposed Rock) (Loamy Sand/Sandy Loam)		Dry to Moist	Medium Dense to Dense	
	95	Gray/tan/brown coarse to fine GRAVEL, some coarse to fine SAND, trace Clayey Silt, with Cobbles (Decomposed Rock) (Sand/Loamy Sand)	5	Dry to Wet	Dense to Very Dense	Infiltration Test performed at 4-ft Seepage observed at 6-ft
	90	TEST PIT COMPLETED AT 9± FEET DUE TO BUCKET REFUSAL	10			Bucket refusal on possible rock
	85		15			
	80		20			

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TEST PIT NUMBER: PB-TP-24

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±94.7-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 15.0-ft
FINAL DEPTH 11.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.360037 **LONGITUDE** -74.609661

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 6.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		12-in Topsoil: Brown coarse to fine SAND, little Silty Clay, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	90	Gray/red-brown coarse to fine SAND, and coarse to fine Gravel, trace Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Dense	Infiltration Test performed at 3-ft
		Gray/tan/brown coarse to fine SAND, some Clayey Silt, little coarse to fine Gravel (Loamy Sand/Sandy Loam)	5	Moist to Wet	Medium Dense	Mottling observed at 5-ft Seepage observed at 6-ft
	85	Gray/tan/brown coarse to fine GRAVEL, some coarse to fine Sand, little Clayey Silt (Decomposed Rock) (Sand/Loamy Sand)	10	Wet	Dense	
		TEST PIT COMPLETED AT 11± FEET				
	80		15			
	75		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-25

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±95.2-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 11.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.360907 **LONGITUDE** -74.609410

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 6.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil: Tan/brown coarse to fine SAND, some Clayey Silt, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
	91	Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	Infiltration Test performed at 3-ft
		Gray/brown medium to fine SAND, some Clayey Silt, little medium to fine Gravel (Loamy Sand/Sandy Loam	5	Wet	Medium Dense	Mottling observed at 5-ft Slight Seepage observed at 6-ft
	86	Gray/tan/brown coarse to fine GRAVEL, little coarse to fine Sand, trace Clayey Silt (Decomposed Rock) (Sand/Loamy Sand)	10	Wet	Dense	
		TEST PIT COMPLETED AT 11± FEET				
	81		15			
	76		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-26

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-18-2024 **COMPLETED** 03-18-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±105.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 13.0-ft
FINAL DEPTH 11.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY**
LATITUDE 40.360794 **LONGITUDE** -74.610924

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		Tan/brown coarse to fine SAND, some Clayey Silt, with Roots (Tilled Soil) (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	~~Infiltration Test performed at 0-ft~~
		Red-brown/dark brown Clayey SILT, some coarse to fine Sand, trace fine Gravel (Silt Loam)		Dry to Moist	Loose to Medium Dense	
	100		5			Infiltration Test performed at 6-ft
		Gray/red-brown/dark brown, coarse to fine Gravel, and coarse to fine Sand, some Clayey Silt (Decomposed Rock) (Loamy Sand/Sandy Loam)		Dry to Moist	Dense to Very Dense	
	95		10			
		TEST PIT COMPLETED AT 11± FEET				
	90		15			
	85		20			

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TEST PIT NUMBER: PB-TP-27

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation
EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.361766 **LONGITUDE** -74.610321

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±94.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 10.0-ft

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION 9.00 ft
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil: Tan/brown coarse to fine SAND, some Clayey Silt, trace fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown medium to fine SAND, some Clayey Silt (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	Infiltration Test performed at 1-ft
	89	Gray/tan/brown/red-brown coarse to fine SAND, and coarse to fine Gravel, trace Clayey Silt (Decomposed Rock) (Loamy Sand/Sandy Loam)	5	Moist to Wet	Dense to Very Dense	Mottling observed at 3-ft
	84	TEST PIT COMPLETED AT 10± FEET DUE TO BUCKET REFUSAL	10			Bucket refusal on probable rock
	79		15			
	74		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-28

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation
PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±100.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 11.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.361794 **LONGITUDE** -74.610605

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil: Tan/brown coarse to fine SAND, little Clayey Silt, little medium to fine Gravel, with Roots (Loamy Sand/Sandy Loam)		Dry to Moist	Loose	
		Tan/brown/gray medium to fine SAND, some Clayey Silt Loamy Sand/Sandy Loam		Dry to Moist	Loose	Infiltration Test performed at 1-ft Mottling observed at 3-ft
	95	Dark brown/red-brown/gray coarse to fine Sand, and coarse to fine Gravel, little Clayey Silt, with Cobbles and Boulders (Decomposed Rock) (Loamy Sand/Sandy Loam)	5	Dry to Moist	Dense	
	90		10			
		TEST PIT COMPLETED AT 11± FEET				
	85		15			
	80		20			

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GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-29

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±99.5-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 12.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.361747 **LONGITUDE** -74.610829

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		6-in Topsoil: Brown medium to fine SAND, and Clayey Silt, trace coarse to fine Gravel, with Roots (Loam/Sandy Loam)		Dry to Moist	Loose	Infiltration Test performed at 0-ft
		Tan/brown medium to fine SAND, and Clayey Silt, trace coarse to fine Gravel (Loam/Sandy Loam)		Dry to Moist	Loose	Infiltration Test performed at 4-ft
	95	Brown coarse to fine SAND, some coarse to fine Gravel, little Clayey Silt, with cobbles, mottled (Loamy Sand/Sandy Loam)	5	Dry to Moist	Dense	Mottling oberved at 7-ft
	90	Dark gray/dark brown/orange-brown coarse to fine Sand, some coarse to fine Gravel, some Clayey Silt, with Cobbles (Loamy Sand/Sandy Loam)		Dry to Moist	Dense	
		TEST PIT COMPLETED AT 10± FEET	10			
	85		15			
	80		20			

SESI CONSULTING ENGINEERS
GEOTECHNICAL | ENVIRONMENTAL | SITE CIVIL

TEST PIT NUMBER: PB-TP-30

PROJECT NAME Proposed Mixed-Use Development
PROJECT NO. 12506
DATE STARTED 03-15-2024 **COMPLETED** 03-15-2024
EXCAVATION CONTRACTOR KP Excavation

PROJECT LOCATION Seminary Drive, South Brunswick, NJ
ELEVATION DATUM **GROUND ELEVATION** ±103.0-ft
EXPLORATION WIDTH 3.0-ft **EXPLORATION LENGTH** 14.0-ft
FINAL DEPTH 10.0-ft

EQUIPMENT CAT 321D Excavator
EXCAVATION FOREMAN Mike
LOGGED BY GM **CHECKED BY** NO
LATITUDE 40.361926 **LONGITUDE** -74.610980

GROUNDWATER LEVELS:
AT TIME OF EXCAVATION Not Encountered
AT END OF EXCAVATION
AFTER EXCAVATION

Material Symbol	EL (ft)	Soil Description	Depth Scale (ft)	Moisture	Relative Density	Remarks
		12-in Topsoil: Tan/brown coarse to fine SAND, some Silty Clay, little medium to fine Gravel (Loamy Sand/Sandy Loam		Dry to Moist	Loose	
		Tan/brown medium to fine Sand, and Clayey Silt, little coarse to fine Gravel, with Cobbles (Loam/Sandy Loam)		Dry to Moist	Loose	Infiltration Test performed at 2-ft
	98	Red-brown coarse to fine SAND, some Clayey Silt, little coarse to fine Gravel, with Cobbles (Loam/Sandy Loam)	5	Dry to Moist	Medium Dense	Mottling observed at 4-ft
	93	TEST PIT COMPLETED AT 10± FEET	10			
	88		15			
	83		20			

SURFACE BASIN
GROUNDWATER MOUNDING

ESTIMATED DRAIN TIME CALCULATIONS AND INTERACTIVE GW MOUNDING EVALUATION

Name of Faciltiy: Princeton Nurseries
Location: Township of Plainsboro, Middlesex Co

Duration of Infiltration Period, t = volume of runoff to be infiltrated (cf)
Infiltration area (sf) x in/hr x 1

Basin	Input Variables			Output Drain Time	Adjusted Rate	Mound Height by Hantush Spreadsheet	Estimated Seasonal High Water	Groundwater Mound	Bottom of Basin	Interactive Groundwater Mound Height*
Basin	**Volume (CF)**	**Infiltration area (SF)**	**Permeability rate (in/hr)**	**Drain Time (hr)**	**Y/N**	**Ft.**	**ESHW (Elev)**	**GWM (ELEV)**	**Bottom of Basin (Elev)**	**Int. GWM (ELEV)**
BIO 1	4792	4356	6.67	1.98	N	7.26	67.50	74.76	77.00	
BIO 1**	4792	4356	1.00	13.20	Y	5.98	67.50	73.48	77.00	
INFIL 8	392	4135	4.39	0.26	N	0.63	107.00	107.63	109.50	
BIO 12	4922	5706	9.09	1.14	N	5.66	79.50	85.16	85.25	85.18
BIO 12**	4922	5706	1.50	6.90	Y	4.34	79.50	83.84	85.25	83.86
BIO 25	19819	13504	3.88	4.54	N	9.69	93.50	103.19	100.00	
BIO 25**	19819	13504	0.25	69.34	Y	5.86	93.50	99.36	100.00	
BIO 26	4138	4356	15.00	0.76	N	5.27	87.30	92.57	97.00	
BIO 28	2134	4138	15.00	0.41	N	3.32	89.00	92.32	91.00	92.95
BIO 28**	2134	4138	0.20	30.94	Y	0.93	89.00	89.93	91.00	90.56
BIO 29	392	218	15.00	1.44	N	9.23	90.10	99.33	93.00	
BIO 29**	392	218	0.30	71.93	Y	0.40	90.10	90.50	93.00	
INFIL 30	2047	19602	2.28	0.55	N	0.70	90.20	90.90	91.40	91.01
BIO 35	2613	3920	1.64	4.88	N	4.08	94.70	98.78	103.40	
BIO 36	653	740	3.00	3.53	N	6.45	87.30	93.75	98.00	
BIO 45	6316	12197	2.31	2.69	N	6.25	93.00	99.25	96.50	
BIO 45**	6316	12197	0.50	12.43	Y	3.44	93.00	96.44	96.50	
BIO 51	3049	2613	1.64	8.54	N	6.70	97.80	104.50	102.00	
BIO 51**	3049	2613	0.25	56.01	Y	3.87	97.80	101.67	102.00	
BIO 52	740	1263	7.83	0.90	N	3.58	97.60	101.18	100.10	
BIO 52**	740	1263	1.00	7.03	Y	1.48	97.60	99.08	100.10	
BIO 53	436	610	1.54	5.57	N	2.65	98.70	101.35	104.50	
BIO 58	4356	6534	1.00	8.00	N	4.43	102.80	107.23	106.40	
BIO 58**	4356	6534	0.13	61.54	Y	3.57	102.80	106.37	106.40	

* The interactive groundwater mound was calculated by adding the adjacent basin mound height at the boundary of the basin to the mound height at the center of the basin.
** Adjusted recharge rate

NOTE:
Adjustment of the recharge rate to a lower value allows slower infiltration of runoff and more time for the infiltrated runoff to dissipate into the saturated zone.
A reduced recharge rate will have a smaller mounding height but result in a longer duration of infiltration period.
Several trials of different reduced recharge rates may be needed to find which recharge rate works.
The duration of infiltration period based on the reduced recharge rate may not exceed 72 hours.

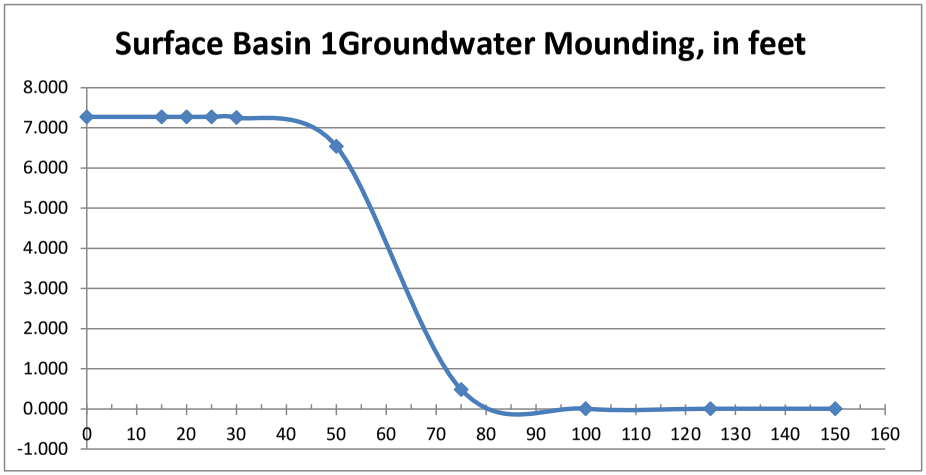
Input Values

6.67	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
6.67	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
62.000	x	1/2 length of basin (x direction, in feet)
34.000	y	1/2 width of basin (y direction, in feet)
1.97	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

17.276	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
7.276	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
7.276	0
7.276	15
7.275	20
7.271	25
7.258	30
6.541	50
0.479	75
0.003	100
0.002	125
0.002	150

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

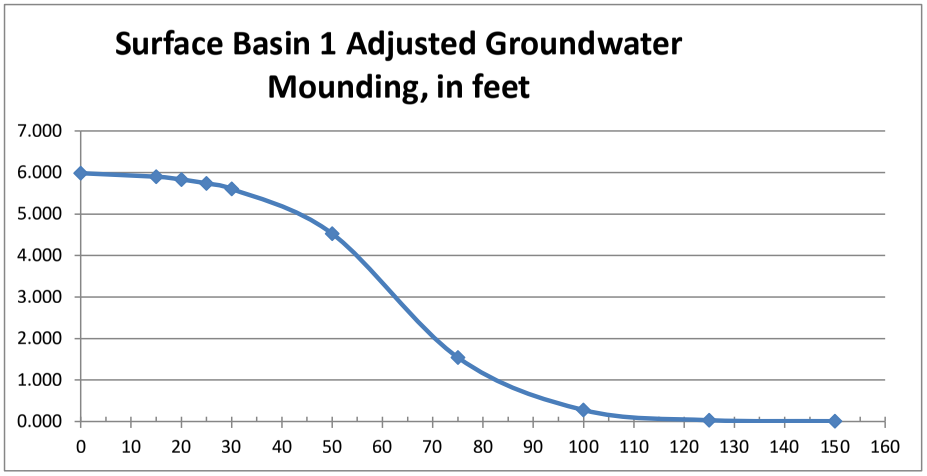
Input Values

1.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
6.67	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
62.000	x	1/2 length of basin (x direction, in feet)
34.000	y	1/2 width of basin (y direction, in feet)
13.20	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

15.982	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
5.982	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
5.982	0
5.902	15
5.833	20
5.737	25
5.605	30
4.526	50
1.543	75
0.278	100
0.034	125
0.005	150

Re-Calculate Now



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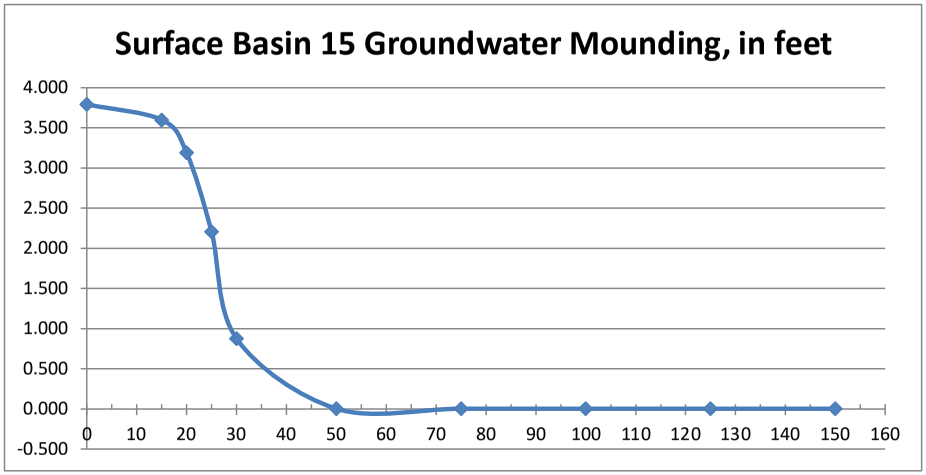
Input Values

2.23	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.23	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
26.000	x	1/2 length of basin (x direction, in feet)
42.000	y	1/2 width of basin (y direction, in feet)
3.07	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.793	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.793	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.793	0
3.599	15
3.189	20
2.207	25
0.877	30
0.003	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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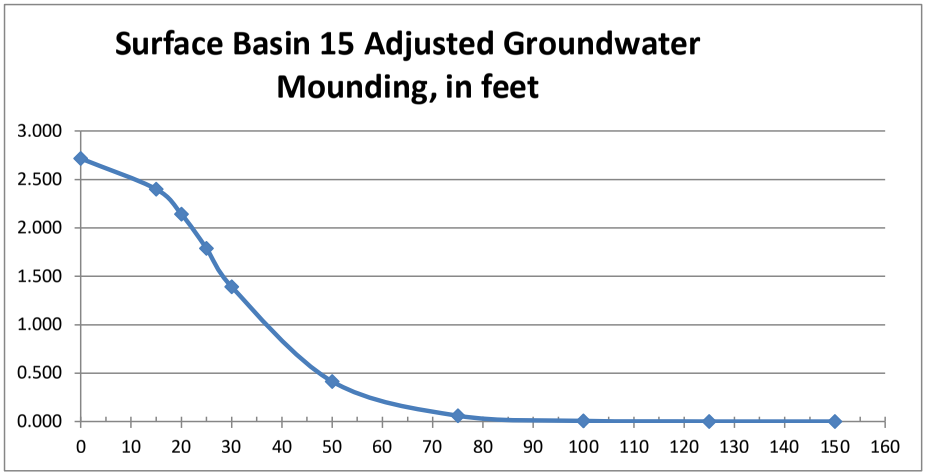
Input Values

0.18	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.23	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
26.000	x	1/2 length of basin (x direction, in feet)
42.000	y	1/2 width of basin (y direction, in feet)
37.97	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.716	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.716	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.716	0
2.400	15
2.141	20
1.789	25
1.391	30
0.415	50
0.061	75
0.007	100
0.002	125
0.001	150

Re-Calculate Now



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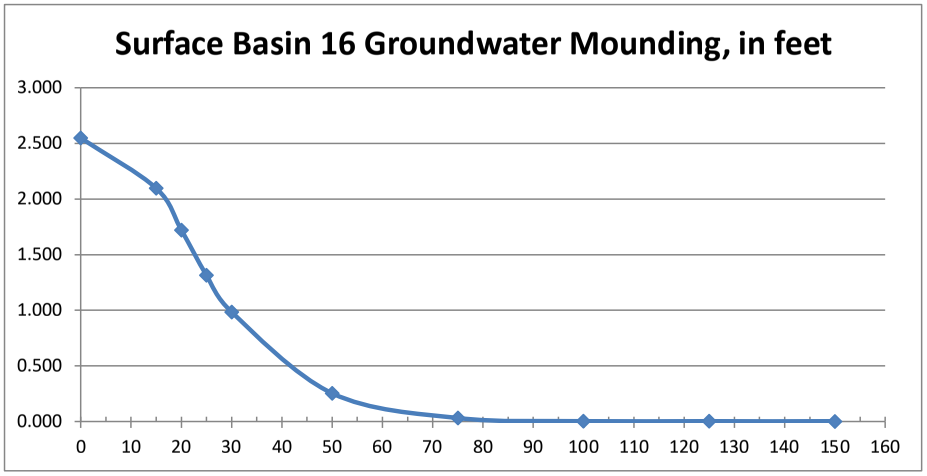
Input Values

1.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
11.15	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
20.000	x	1/2 length of basin (x direction, in feet)
30.000	y	1/2 width of basin (y direction, in feet)
7.23	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.549	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.549	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.549	0
2.096	15
1.719	20
1.314	25
0.984	30
0.254	50
0.031	75
0.004	100
0.002	125
0.001	150

Re-Calculate Now



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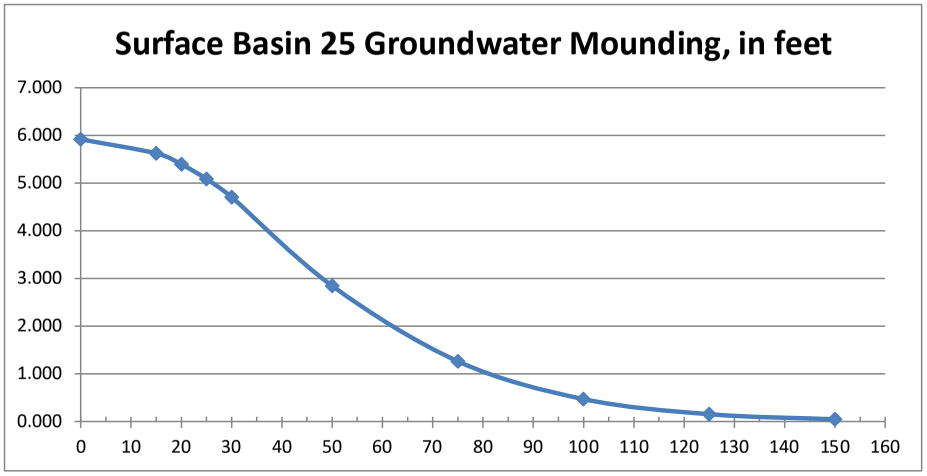
Input Values

0.25	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
3.88	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
35.000	x	1/2 length of basin (x direction, in feet)
97.000	y	1/2 width of basin (y direction, in feet)
70.45	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

15.919	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
5.919	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
5.919	0
5.625	15
5.392	20
5.086	25
4.702	30
2.844	50
1.263	75
0.473	100
0.153	125
0.044	150

Re-Calculate Now



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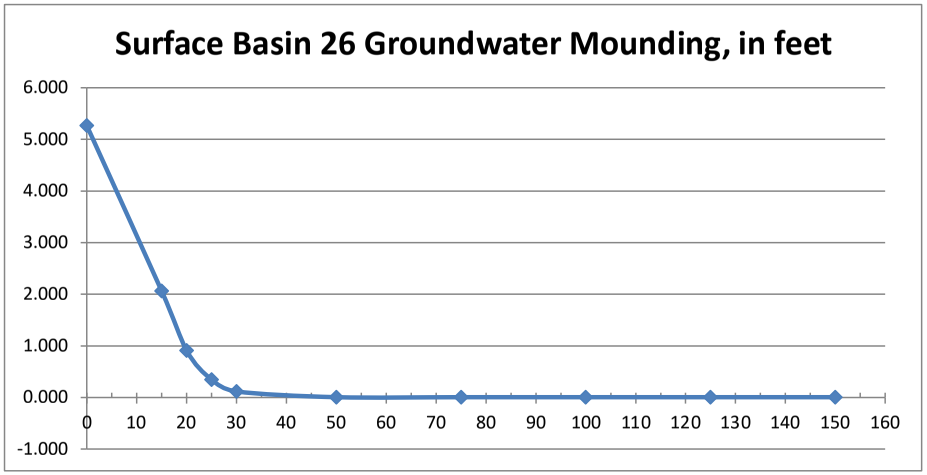
Input Values

15.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
15.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
12.000	x	1/2 length of basin (x direction, in feet)
76.000	y	1/2 width of basin (y direction, in feet)
0.76	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

15.265	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
5.265	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
5.265	0
2.061	15
0.907	20
0.345	25
0.115	30
0.002	50
0.002	75
0.002	100
0.002	125
0.002	150

Re-Calculate Now



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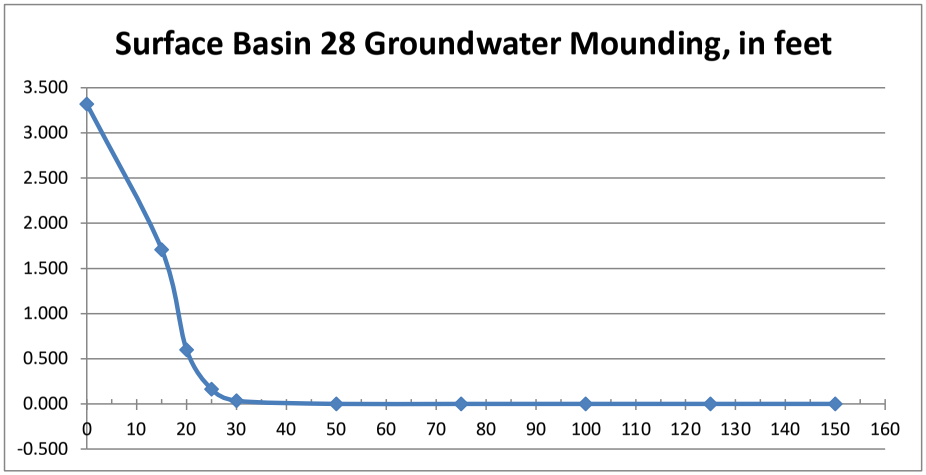
Input Values

15.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
15.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
15.000	x	1/2 length of basin (x direction, in feet)
95.000	y	1/2 width of basin (y direction, in feet)
0.41	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.320	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.320	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.320	0
1.709	15
0.597	20
0.162	25
0.035	30
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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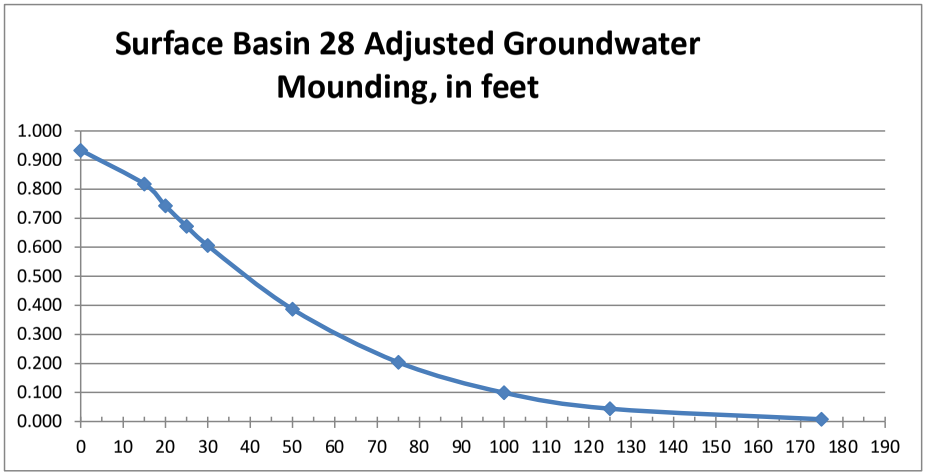
Input Values

0.20	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
15.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
15.000	x	1/2 length of basin (x direction, in feet)
95.000	y	1/2 width of basin (y direction, in feet)
30.94	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.934	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.934	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.934	0
0.818	15
0.743	20
0.672	25
0.605	30
0.387	50
0.204	75
0.099	100
0.044	125
0.008	175

Re-Calculate Now



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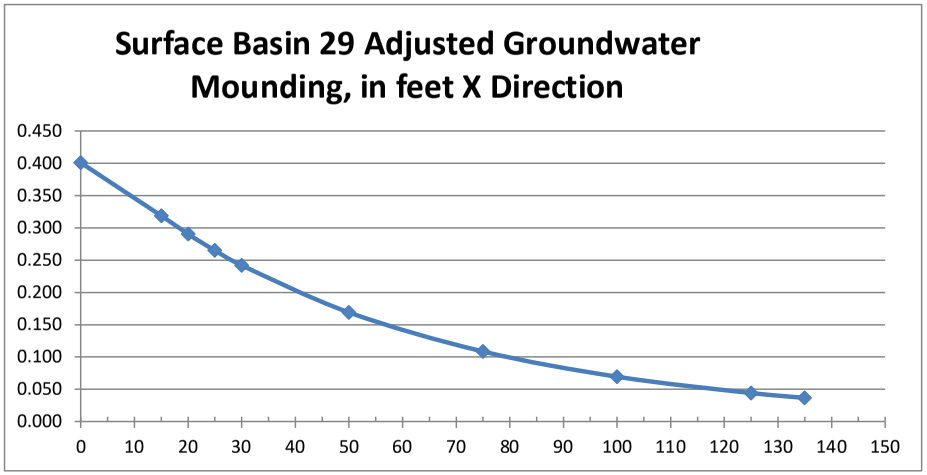
Input Values

0.30	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
15.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
4.000	x	1/2 length of basin (x direction, in feet)
40.000	y	1/2 width of basin (y direction, in feet)
71.90	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.401	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.401	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.401	0
0.319	15
0.291	20
0.265	25
0.242	30
0.169	50
0.108	75
0.069	100
0.044	125
0.037	135

Re-Calculate Now



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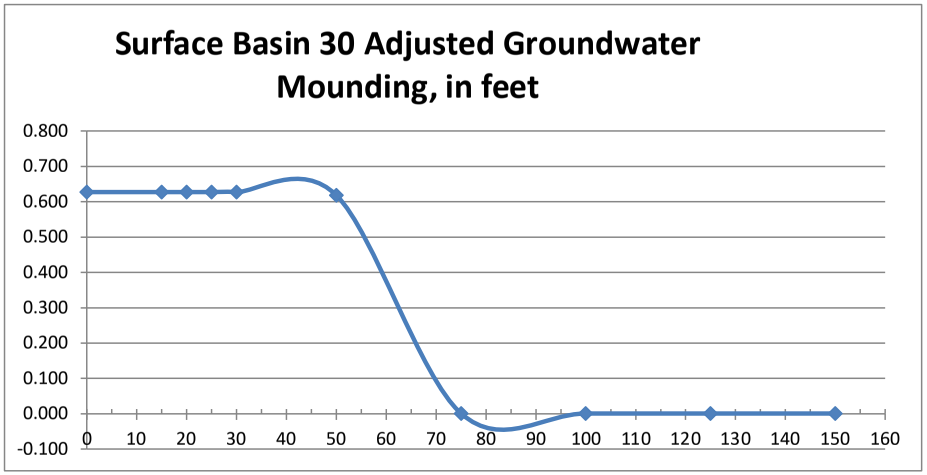
Input Values

1.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.28	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
59.000	x	1/2 length of basin (x direction, in feet)
207.000	y	1/2 width of basin (y direction, in feet)
1.13	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.628	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.628	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.628	0
0.628	15
0.628	20
0.628	25
0.628	30
0.618	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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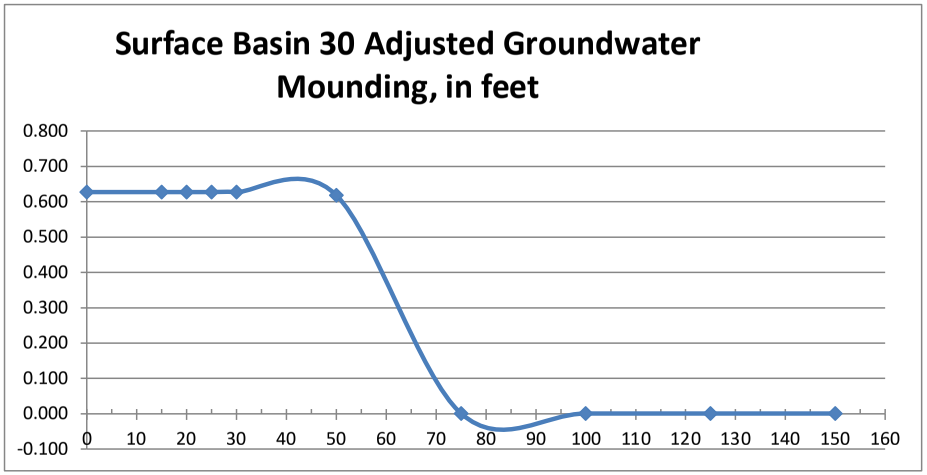
Input Values

1.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.28	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
59.000	x	1/2 length of basin (x direction, in feet)
82.000	y	1/2 width of basin (y direction, in feet)
1.13	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.628	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.628	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.628	0
0.628	15
0.628	20
0.628	25
0.628	30
0.618	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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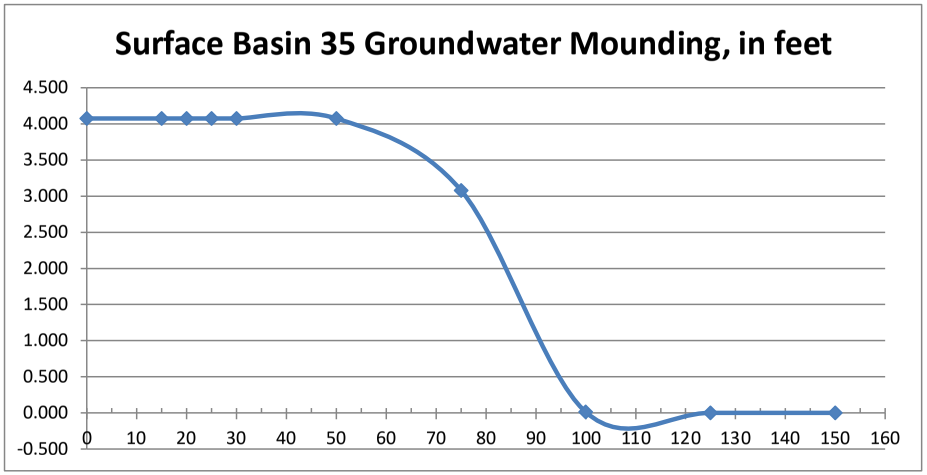
Input Values

1.64	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.64	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
79.000	x	1/2 length of basin (x direction, in feet)
13.000	y	1/2 width of basin (y direction, in feet)
4.88	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.075	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.075	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.075	0
4.075	15
4.075	20
4.075	25
4.075	30
4.073	50
3.076	75
0.013	100
0.001	125
0.001	150

Re-Calculate Now



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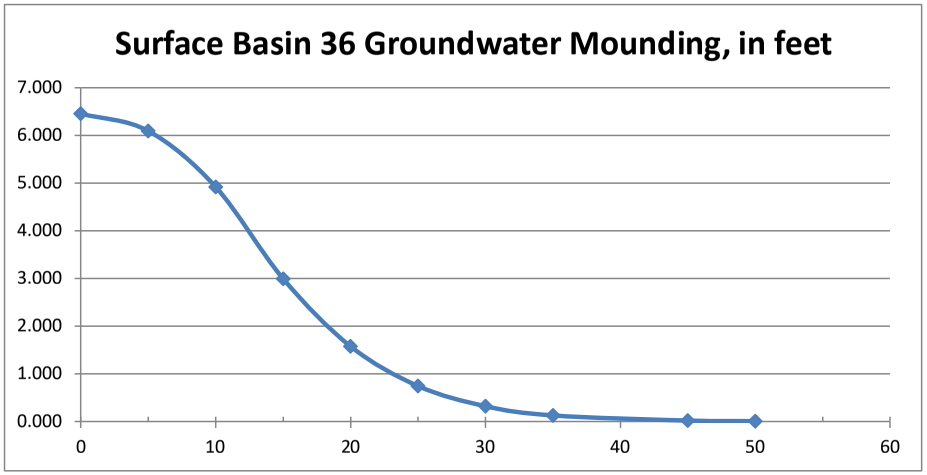
Input Values

3.53	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
3.53	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
12.000	x	1/2 length of basin (x direction, in feet)
18.000	y	1/2 width of basin (y direction, in feet)
4.88	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

16.453	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
6.453	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
6.453	0
6.093	5
4.921	10
2.995	15
1.577	20
0.746	25
0.321	30
0.127	35
0.017	45
0.007	50

Re-Calculate Now



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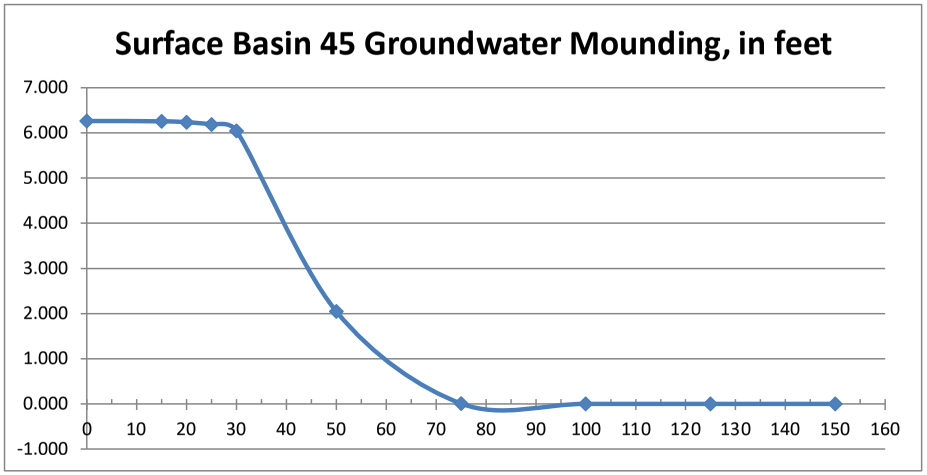
Input Values

2.31	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
47.000	x	1/2 length of basin (x direction, in feet)
71.000	y	1/2 width of basin (y direction, in feet)
4.88	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

16.262	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
6.262	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
6.262	0
6.255	15
6.236	20
6.182	25
6.044	30
2.048	50
0.010	75
0.002	100
0.002	125
0.002	150

Re-Calculate Now



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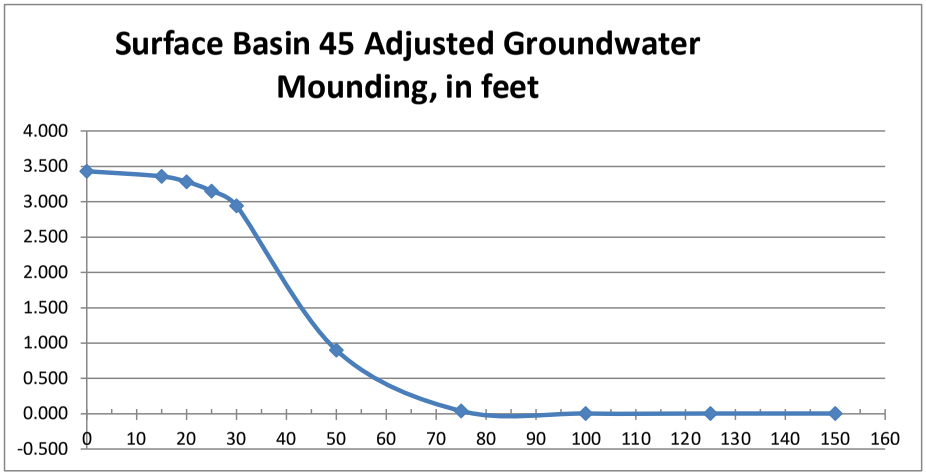
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
43.000	x	1/2 length of basin (x direction, in feet)
56.000	y	1/2 width of basin (y direction, in feet)
12.43	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.431	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.431	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.431	0
3.361	15
3.283	20
3.152	25
2.941	30
0.899	50
0.037	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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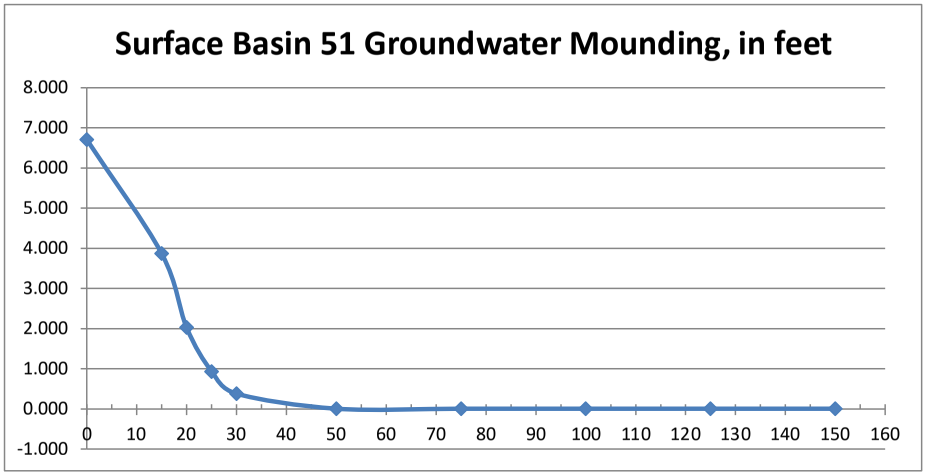
Input Values

1.64	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.64	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
15.000	x	1/2 length of basin (x direction, in feet)
48.000	y	1/2 width of basin (y direction, in feet)
8.54	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

16.709	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
6.709	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
6.709	0
3.867	15
2.027	20
0.933	25
0.382	30
0.006	50
0.003	75
0.003	100
0.003	125
0.003	150

Re-Calculate Now



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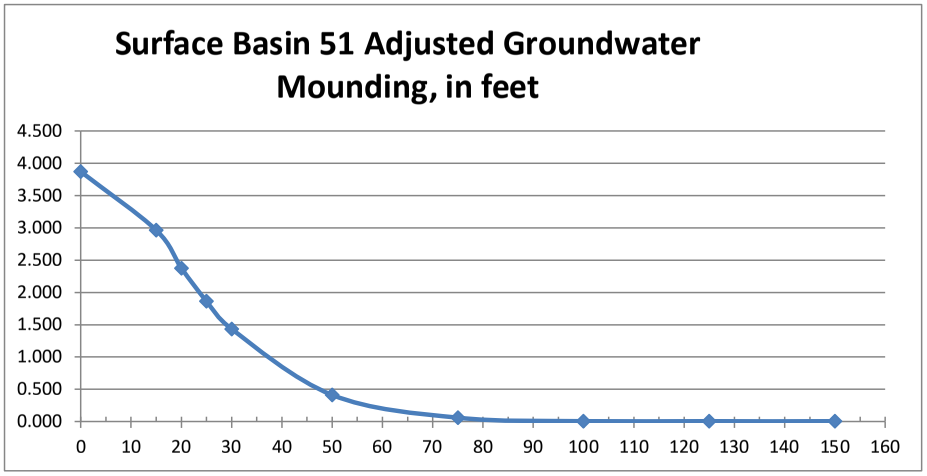
Input Values

0.25	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.64	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
15.000	x	1/2 length of basin (x direction, in feet)
48.000	y	1/2 width of basin (y direction, in feet)
56.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.871	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.871	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.871	0
2.966	15
2.376	20
1.865	25
1.433	30
0.410	50
0.058	75
0.007	100
0.003	125
0.003	150

Re-Calculate Now



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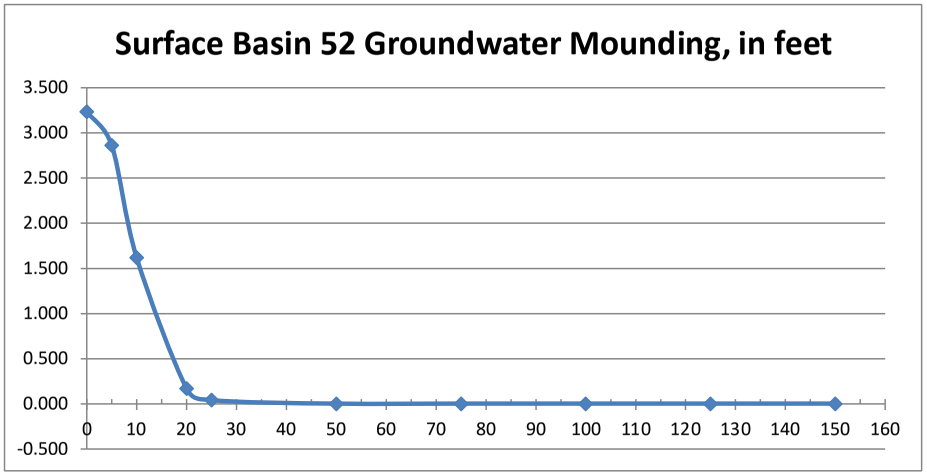
Input Values

7.83	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
7.83	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
9.000	x	1/2 length of basin (x direction, in feet)
22.000	y	1/2 width of basin (y direction, in feet)
0.90	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.235	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.235	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.235	0
2.863	5
1.617	10
0.171	20
0.040	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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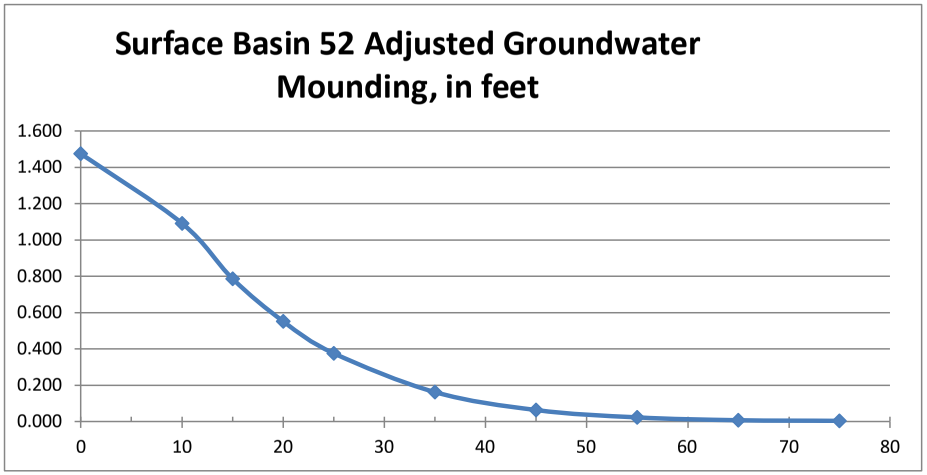
Input Values

1.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
7.83	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
9.000	x	1/2 length of basin (x direction, in feet)
22.000	y	1/2 width of basin (y direction, in feet)
7.03	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.476	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.476	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.476	0
1.092	10
0.786	15
0.551	20
0.376	25
0.162	35
0.063	45
0.022	55
0.008	65
0.003	75

Re-Calculate Now



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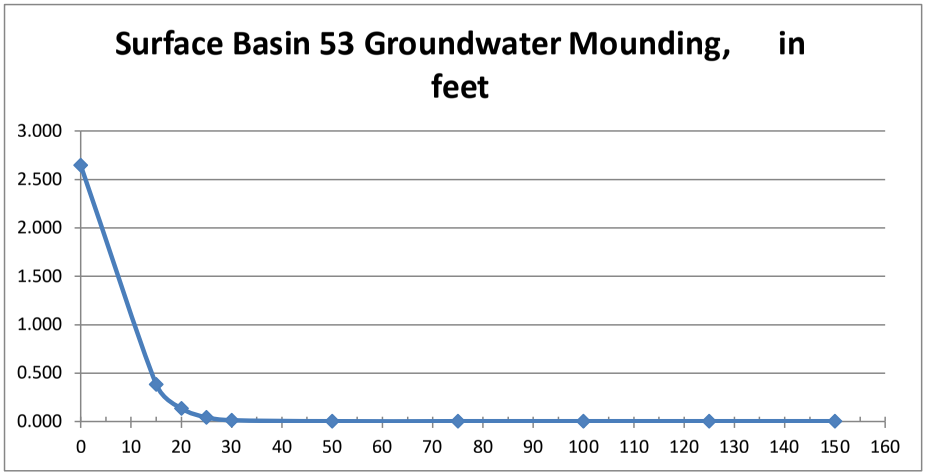
Input Values

1.54	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.54	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
4.000	x	1/2 length of basin (x direction, in feet)
39.000	y	1/2 width of basin (y direction, in feet)
7.03	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.647	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.647	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.647	0
0.384	15
0.136	20
0.042	25
0.012	30
0.002	50
0.002	75
0.002	100
0.002	125
0.002	150

Re-Calculate Now



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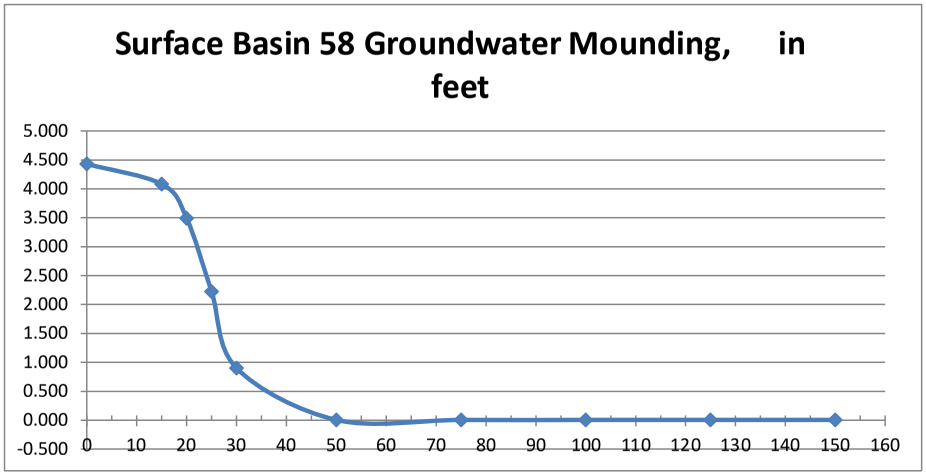
Input Values

1.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
25.000	x	1/2 length of basin (x direction, in feet)
84.000	y	1/2 width of basin (y direction, in feet)
8.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.430	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.430	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.430	0
4.084	15
3.494	20
2.223	25
0.901	30
0.005	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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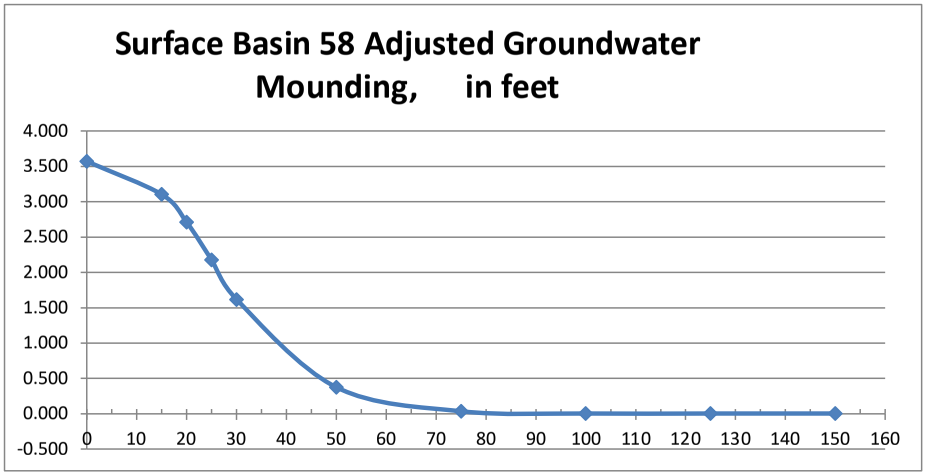
Input Values

0.13	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
25.000	x	1/2 length of basin (x direction, in feet)
84.000	y	1/2 width of basin (y direction, in feet)
61.50	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.573	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.573	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.573	0
3.103	15
2.713	20
2.177	25
1.617	30
0.375	50
0.035	75
0.003	100
0.002	125
0.001	150

Re-Calculate Now



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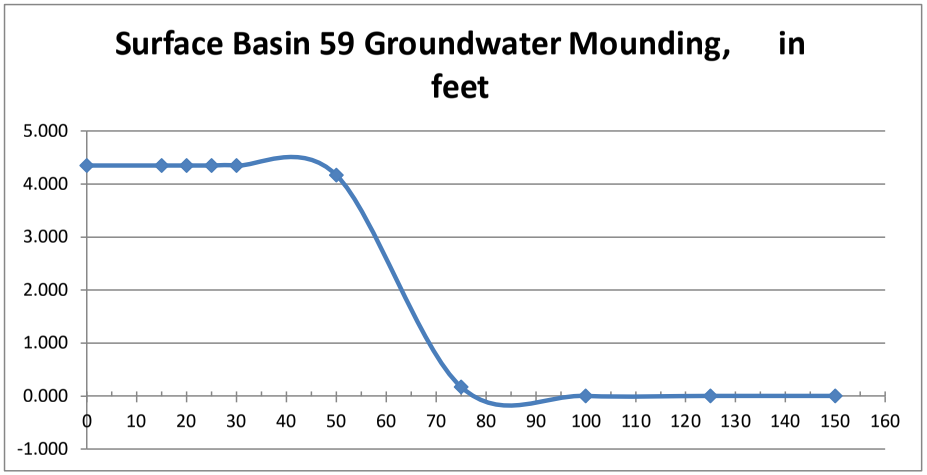
Input Values

1.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
63.000	x	1/2 length of basin (x direction, in feet)
31.000	y	1/2 width of basin (y direction, in feet)
7.83	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.348	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.348	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.348	0
4.348	15
4.348	20
4.348	25
4.348	30
4.172	50
0.173	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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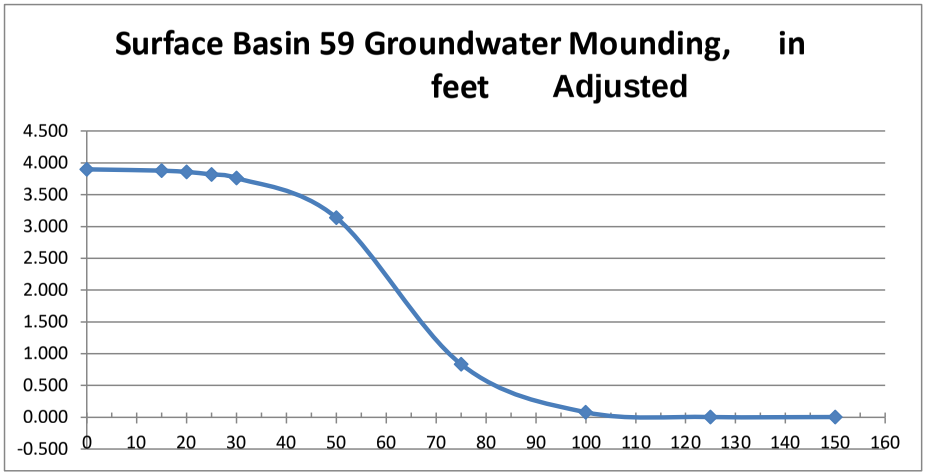
Input Values

0.15	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
63.000	x	1/2 length of basin (x direction, in feet)
31.000	y	1/2 width of basin (y direction, in feet)
52.20	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.900	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.900	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.900	0
3.878	15
3.856	20
3.820	25
3.764	30
3.137	50
0.833	75
0.080	100
0.005	125
0.002	150

Re-Calculate Now



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SUBSURFACE BASIN
GROUNDWATER MOUNDING

ESTIMATED DRAIN TIME CALCULATIONS AND INTERACTIVE GROUNDWATER MOUNDING EVALUATION

Name of Faciltiy: Princeton Nurseries
Location: Township of Plainsboro, Middlesex Co

Duration of Infiltration Period, t = volume of runoff to be infiltrated (cf)
Infiltration area (sf) x in/hr x 1

Basin	Input Variables			Output Drain Time	Adjusted Rate	Mound Height by Hantush Spreadsheet	Estimated Seasonal High Water	Groundwater Mound	Bottom of Basin	Interactive Groundwater Mound Height*
Basin	**Volume (CF)**	**Infiltration area (SF)**	**Permeability rate (in/hr)**	**Drain Time (hr)**	**Y/N**	**Ft.**	**ESHW (Elev)**	**GWM (ELEV)**	**Bottom of Basin (Elev)**	**Int. GWM (ELEV)**
UGB2	1306	4014	6.67	0.59	N	1.95	67.50	69.45	85.25	69.80
UGB 3	500	1680	1.50	13.20	Y	2.88	79.50	82.38	85.50	82.54
UGB4	1263	2050	4.39	1.68	N	3.50	67.50	71.00	85.10	
UGB5	436	1154	1.94	2.34	N	2.37	86.00	88.37	94.00	
UGB6	653	1154	1.94	3.50	Y	3.28	86.00	89.28	94.00	
UGB6**	653	1154	0.50	13.58	Y	2.27	86.00	88.27	94.00	
UGB7	871	2128	1.33	3.69	N	2.72	94.30	97.02	99.00	
UGB7**	871	2128	0.50	9.82	Y	2.58	94.30	96.88	99.00	
UGB9	784	1180	1.33	5.99	N	3.72	94.30	98.02	100.30	
UGB10	566	2068	1.33	2.47	N	1.78	94.30	96.08	106.00	
UGB11	566	1260	6.67	0.81	N	2.72	67.50	70.22	84.08	
UGB13	697	881	0.14	67.81	N	1.57	67.50	69.07	86.00	69.09
UGB14	392	739	0.10	63.65	N	1.01	80.50	81.51	86.25	81.58
UGB 15**	4263	7560	0.09	71.99	Y	3.58	87.10	90.68	92.00	90.78
UGB 16	6077	10505	0.59	3.53	N	3.85	88.30	92.15	94.00	92.87
UGB17	653	12660	0.50	1.24	N	0.34	101.50	101.84	110.50	
UGB18	1132	1187	1.00	11.44	N	4.85	87.30	92.15	94.00	
UGB19	392	1112	2.30	1.84	N	2.21	87.30	89.51	94.50	
UGB20	1132	5582	2.30	1.06	N	1.35	95.10	96.45	97.10	
UGB21	610	1220	2.30	2.61	N	2.97	95.10	98.07	98.00	
UGB21**	610	1220	1.50	4.00	Y	2.74	95.10	97.84	98.00	
UGB22	653	11316	2.30	0.30	N	0.38	95.10	95.48	107.00	
UGB27	2918	2218	3.00	5.26	N	6.67	90.10	96.77	99.00	
UGB31	1002	2769	1.00	4.34	N	2.19	87.30	89.49	92.60	
UGB32	2657	11552	0.50	5.52	N	1.53	107.00	108.53	109.75	
UGB33	348	2146	0.50	3.89	N	1.03	94.70	95.73	105.82	
UGB34	392	3706	0.50	2.54	N	0.69	107.50	108.19	109.50	
UGB37	392	2218	7.83	0.27	N	1.17	87.30	88.47	103.50	
UGB41	175	552	0.06	63.41	N	0.81	95.10	95.91	104.00	
UGB42	305	2043	2.31	0.78	N	1.00	93.00	94.00	95.00	94.01
UGB43	392	2218	2.31	0.92	N	1.17	93.00	94.17	98.00	94.29
UGB44	392	2387	0.06	32.84	N	1.14	95.10	96.24	101.00	96.28
UGB46	523	412	0.22	69.24	N	1.50	94.7	96.20	103.00	
UGB47	1002	2016	1.64	3.64	N	3.16	94.7	97.86	108.00	
UGB48	218	708	7.83	0.47	N	1.95	97.60	99.55	100.90	
UGB49	348	671	1.54	4.04	N	3.03	98.70	101.73	102.70	
UGB50	740	412	1.54	14.00	N	3.79	98.70	102.49	101.00	
UGB50**	740	412	0.50	43.11	Y	2.14	98.70	100.84	101.00	
UGB54	392	927	7.83	0.65	N	2.51	98.70	101.21	99.00	
UGB54**	392	927	0.50	10.15	Y	1.09	97.60	98.69	99.00	
UGB55	4007	13200	0.75	4.86	N	2.03	102.80	104.83	106.00	
UGB56	3528	21359	0.75	2.64	N	0.97	101.95	102.92	110.00	
UGB57	1655	11405	0.75	2.32	N	1.21	102.80	104.01	111.10	
UGB59	12451	17576	0.20	42.50	N	4.70	98.00	102.70	104.00	
UGB60	1916	11405	0.75	2.69	N	1.21	108.00	109.21	111.10	
UGB61	1960	2128	0.26	42.51	N	2.02	103.70	105.72	107.75	
UGB62	4835	16292	0.10	35.61	N	1.78	100.30	102.08	108.00	
UGB63	1263	8253	0.63	2.91	N	1.02	92.50	93.52	104.00	

* The interactive groundwater mound was calculated by adding the adjacent basin mound height at the boundary of the basin to the mound height at the center of the basin.
** Adjusted recharge rate
NOTE:
Adjustment of the recharge rate to a lower value allows slower infiltration of runoff and more time for the infiltrated runoff to dissipate into the saturated zone.
A reduced recharge rate will have a smaller mounding height but result in a longer duration of infiltration period.
Several trials of different reduced recharge rates may be needed to find which recharge rate works.
The duration of infiltration period based on the reduced recharge rate may not exceed 72 hours.

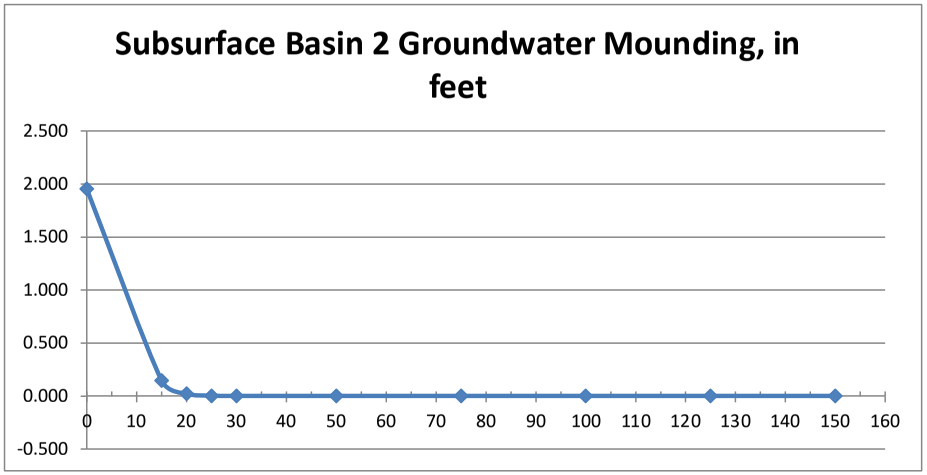
Input Values

6.67	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
6.67	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
8.000	x	1/2 length of basin (x direction, in feet)
100.000	y	1/2 width of basin (y direction, in feet)
0.59	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.954	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.954	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.954	0
0.146	15
0.022	20
0.003	25
0.001	30
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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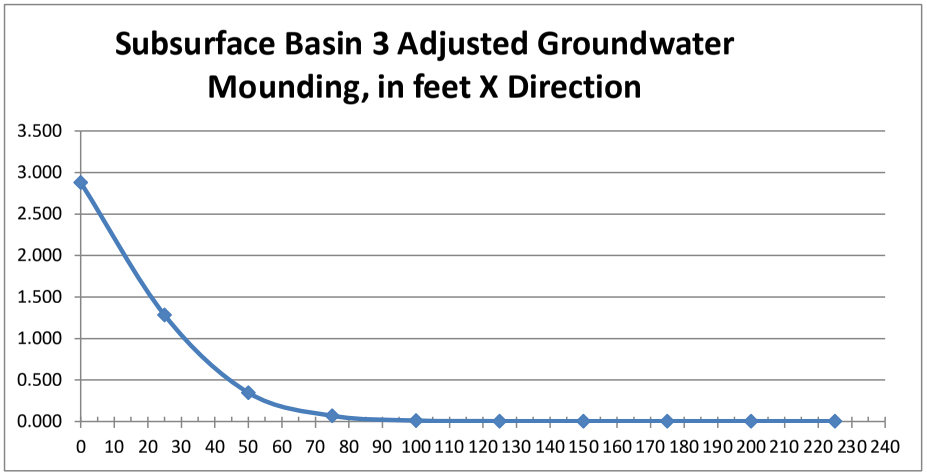
Input Values

1.50	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
9.09	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
7.500	x	1/2 length of basin (x direction, in feet)
56.000	y	1/2 width of basin (y direction, in feet)
13.20	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.880	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.880	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.880	0
1.282	25
0.348	50
0.068	75
0.012	100
0.004	125
0.004	150
0.004	175
0.004	200
0.004	225

Re-Calculate Now



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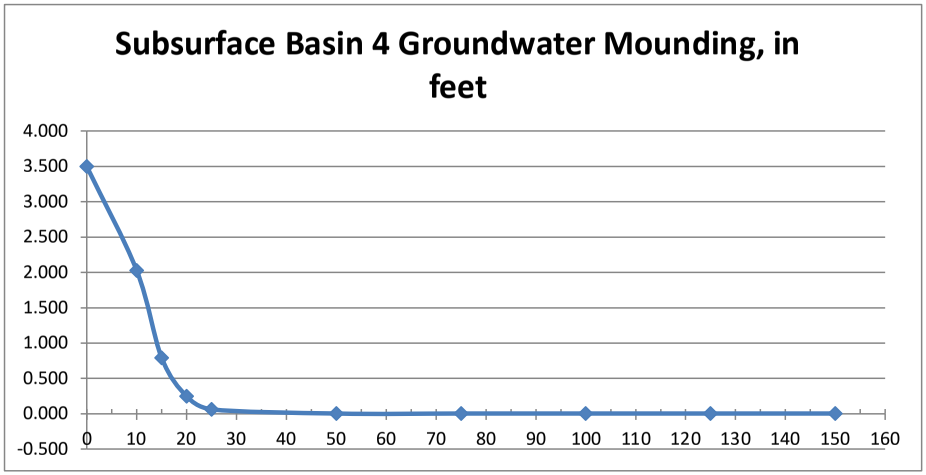
Input Values

4.39	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
4.39	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
25.000	y	1/2 width of basin (y direction, in feet)
1.68	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.499	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.499	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.499	0
2.029	10
0.791	15
0.248	20
0.064	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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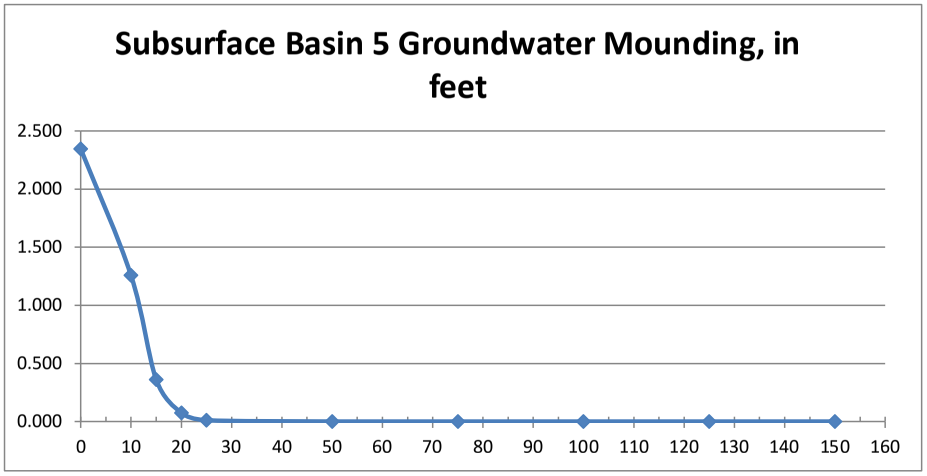
Input Values

1.94	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.94	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
28.000	y	1/2 width of basin (y direction, in feet)
2.34	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.346	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.346	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.346	0
1.260	10
0.360	15
0.074	20
0.011	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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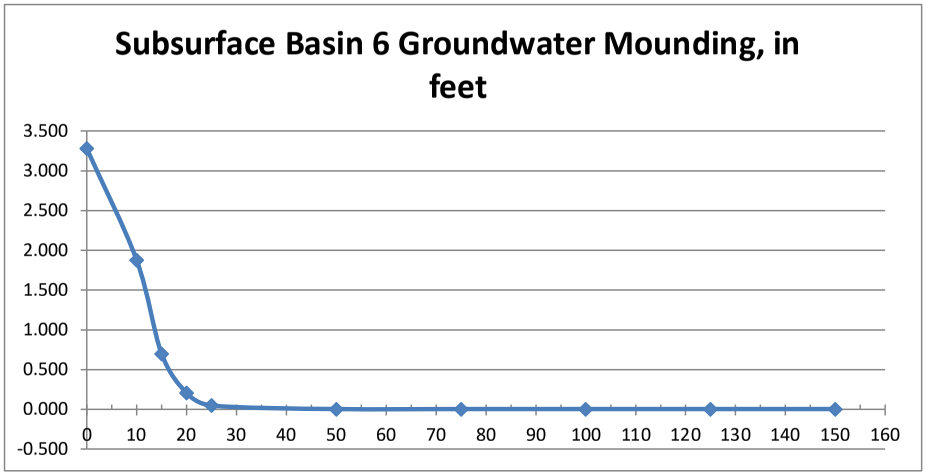
Input Values

1.94	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.94	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
28.000	y	1/2 width of basin (y direction, in feet)
3.50	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.282	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.282	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.282	0
1.874	10
0.697	15
0.206	20
0.049	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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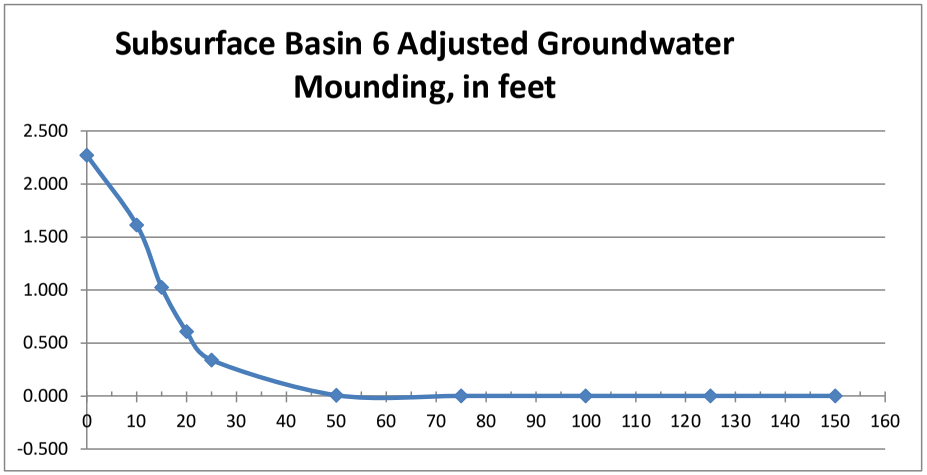
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.94	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
28.000	y	1/2 width of basin (y direction, in feet)
13.58	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.272	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.272	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.272	0
1.615	10
1.024	15
0.609	20
0.340	25
0.008	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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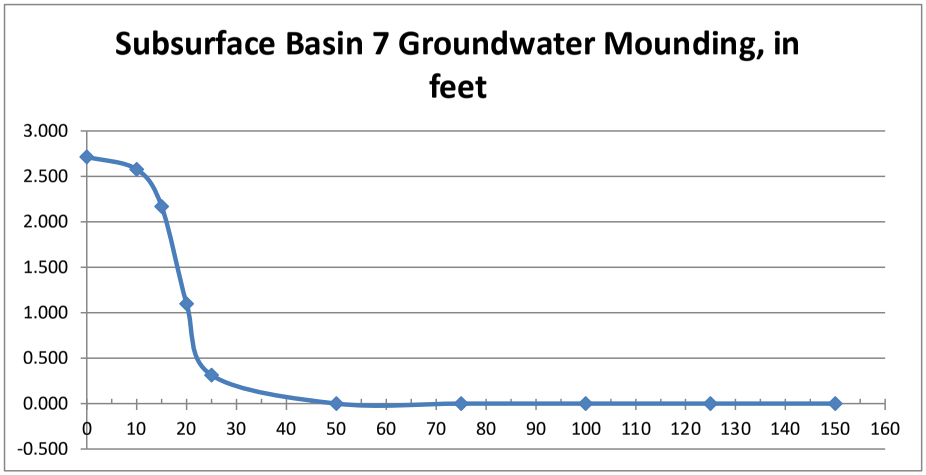
Input Values

1.33	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.33	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
19.000	x	1/2 length of basin (x direction, in feet)
29.000	y	1/2 width of basin (y direction, in feet)
3.69	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.718	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.718	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.718	0
2.579	10
2.170	15
1.100	20
0.312	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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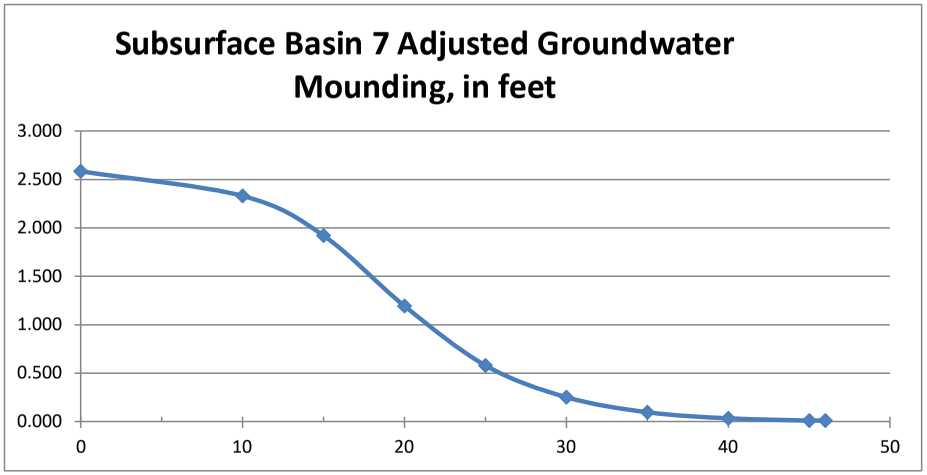
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.33	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
19.000	x	1/2 length of basin (x direction, in feet)
29.000	y	1/2 width of basin (y direction, in feet)
9.82	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)
12.585	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.585	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.585	0
2.329	10
1.919	15
1.192	20
0.580	25
0.251	30
0.097	35
0.033	40
0.011	45
0.008	46

Re-Calculate Now



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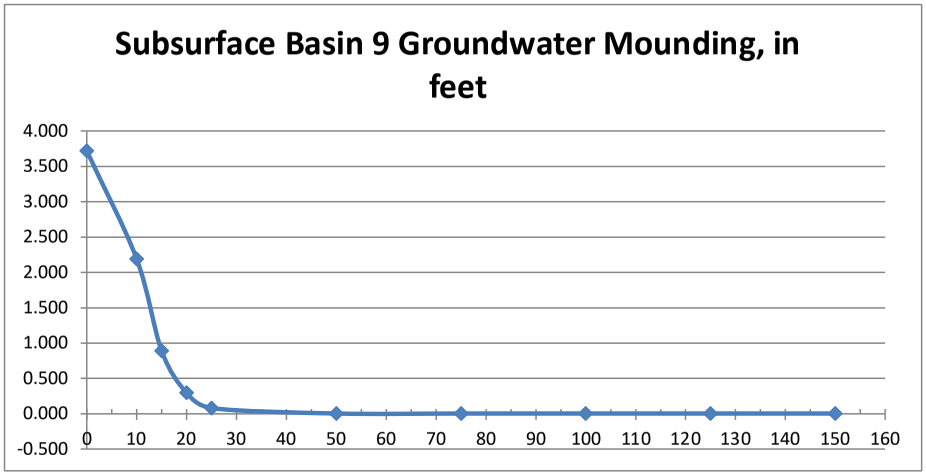
Input Values

1.33	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.33	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
29.000	y	1/2 width of basin (y direction, in feet)
5.99	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.720	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.720	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.720	0
2.188	10
0.891	15
0.296	20
0.081	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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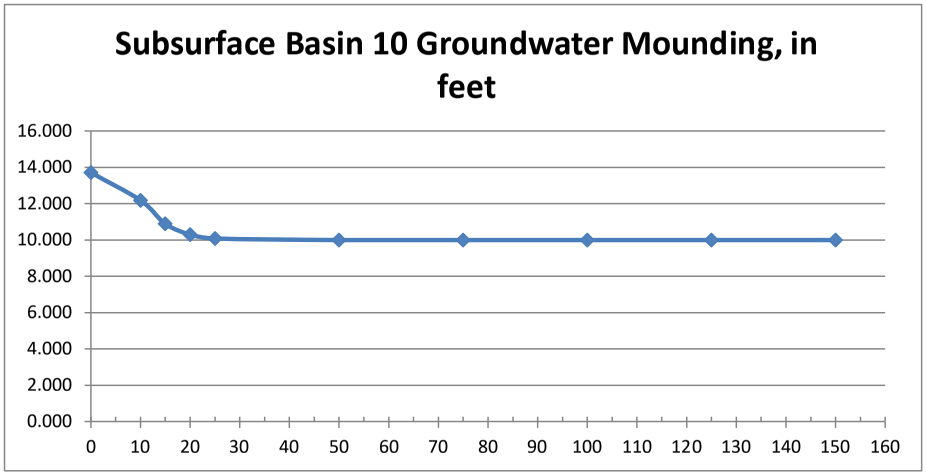
Input Values

1.33	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.33	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
29.000	y	1/2 width of basin (y direction, in feet)
5.99	t	Duration of infiltration period (hours)
0.00	hi(0)	Initial thickness of saturated zone (feet)

13.720	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
13.720	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
13.720	0
12.188	10
10.891	15
10.296	20
10.081	25
10.001	50
10.001	75
10.001	100
10.001	125
10.001	150

Re-Calculate Now



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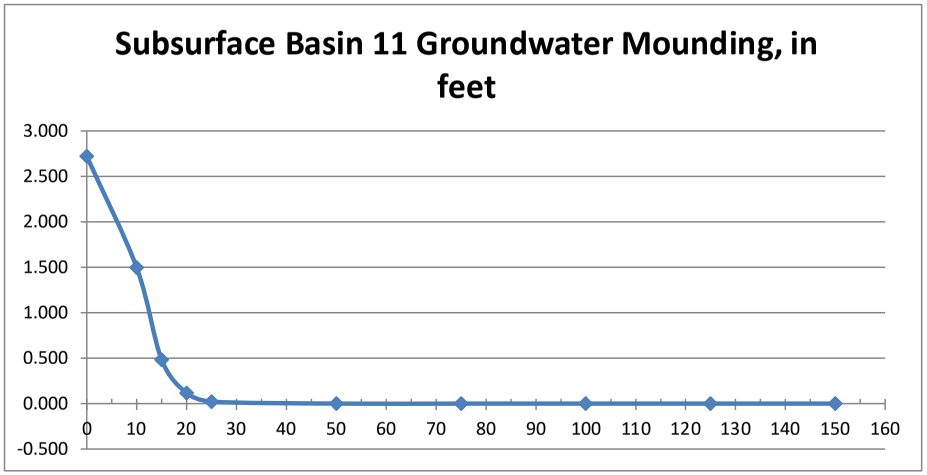
Input Values

6.67	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
6.67	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
35.000	y	1/2 width of basin (y direction, in feet)
0.81	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.722	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.722	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.722	0
1.498	10
0.483	15
0.118	20
0.022	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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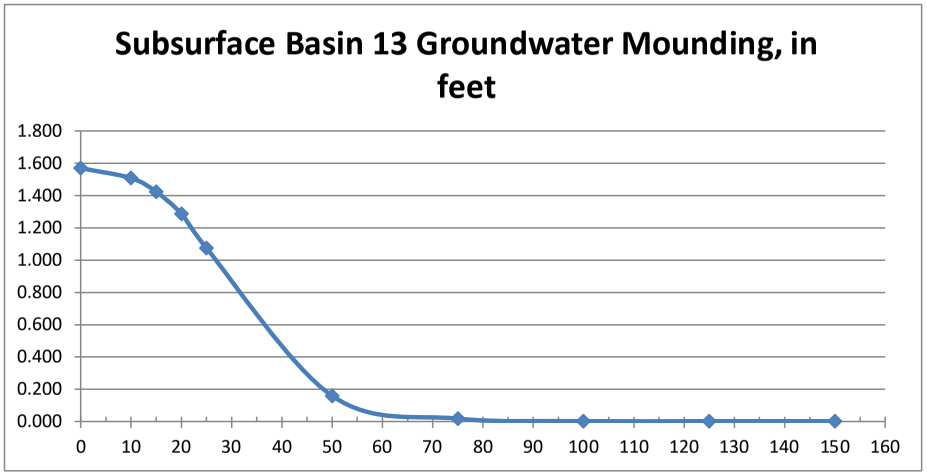
Input Values

0.14	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
28.000	x	1/2 length of basin (x direction, in feet)
7.000	y	1/2 width of basin (y direction, in feet)
67.80	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.570	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.570	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.570	0
1.508	10
1.423	15
1.287	20
1.075	25
0.159	50
0.018	75
0.003	100
0.002	125
0.002	150

Re-Calculate Now



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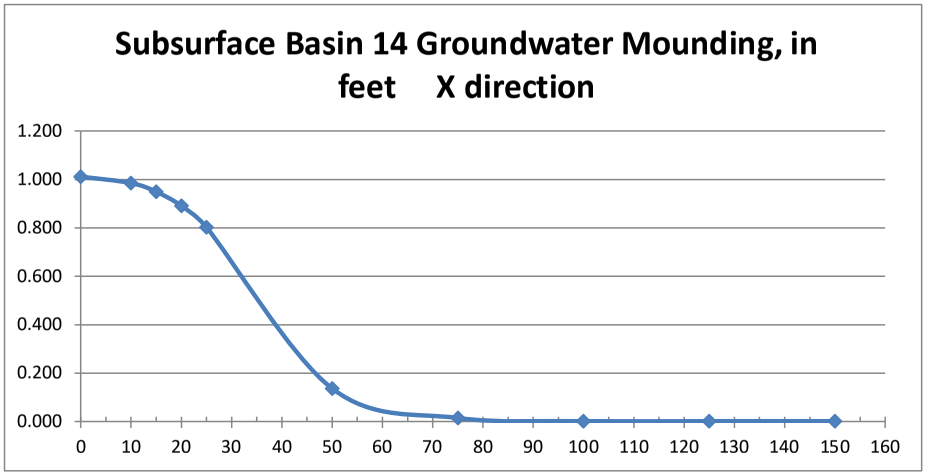
Input Values

0.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
33.000	x	1/2 length of basin (x direction, in feet)
6.000	y	1/2 width of basin (y direction, in feet)
63.65	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.012	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.012	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.012	0
0.985	10
0.949	15
0.891	20
0.803	25
0.136	50
0.015	75
0.002	100
0.001	125
0.001	150

Re-Calculate Now



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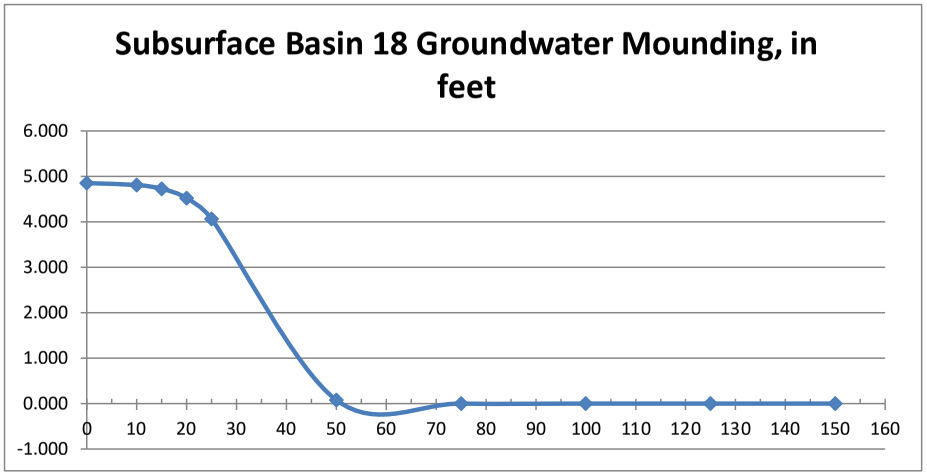
Input Values

1.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
32.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
11.40	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.851	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.851	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.851	0
4.814	10
4.730	15
4.525	20
4.067	25
0.080	50
0.002	75
0.002	100
0.002	125
0.002	150

Re-Calculate Now



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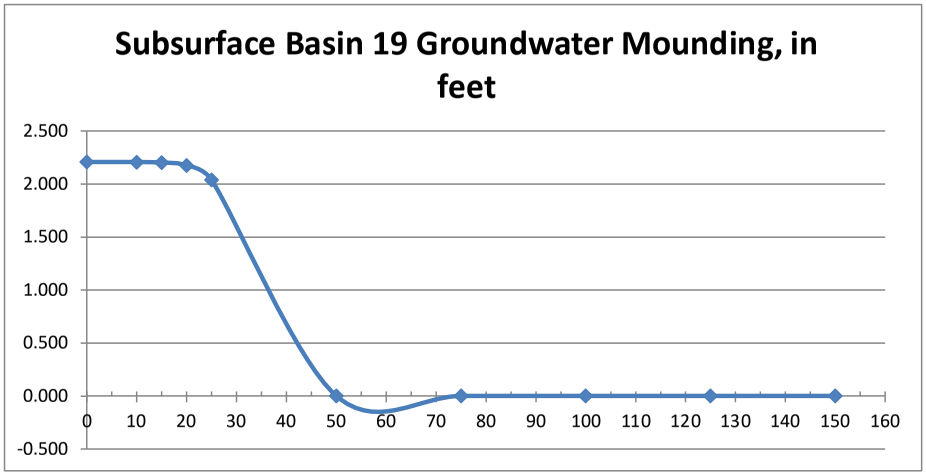
Input Values

2.30	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
32.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
1.84	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.207	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.207	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.207	0
2.207	10
2.203	15
2.176	20
2.039	25
0.002	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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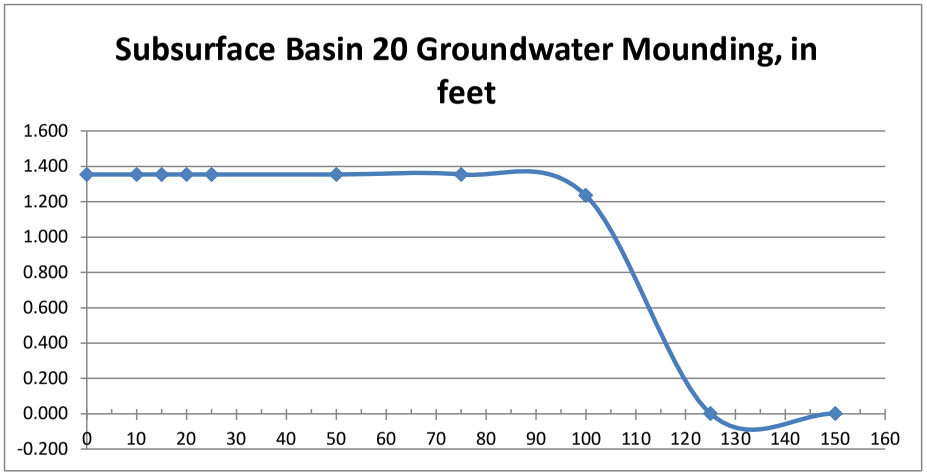
Input Values

2.30	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
105.000	x	1/2 length of basin (x direction, in feet)
18.000	y	1/2 width of basin (y direction, in feet)
1.06	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.354	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.354	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.354	0
1.354	10
1.354	15
1.354	20
1.354	25
1.354	50
1.354	75
1.236	100
0.000	125
0.000	150

Re-Calculate Now



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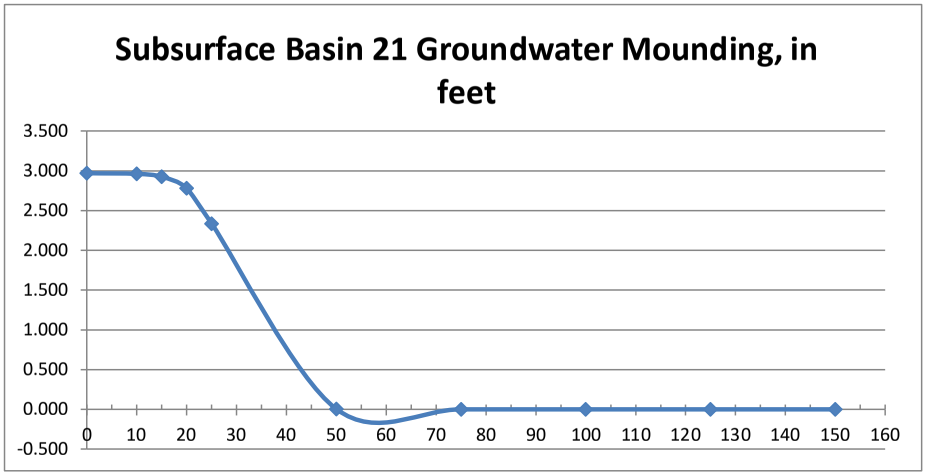
Input Values

2.30	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
29.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
2.61	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.971	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.971	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.971	0
2.962	10
2.925	15
2.780	20
2.336	25
0.004	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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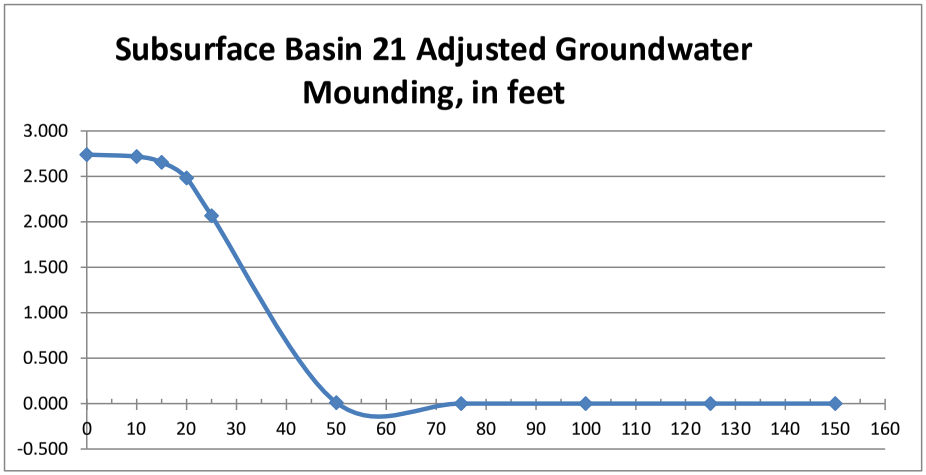
Input Values

1.50	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
29.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
4.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.742	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.742	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.742	0
2.719	10
2.656	15
2.484	20
2.066	25
0.012	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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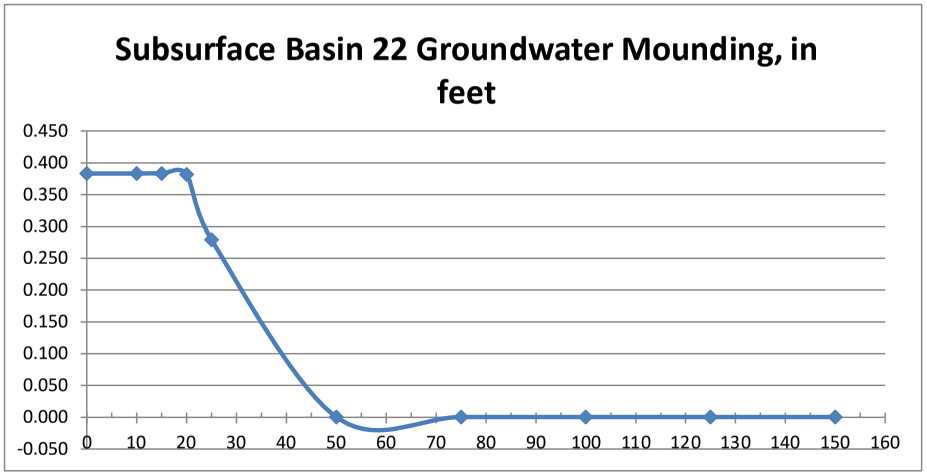
Input Values

2.30	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
26.000	x	1/2 length of basin (x direction, in feet)
109.000	y	1/2 width of basin (y direction, in feet)
0.30	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.383	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.383	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.383	0
0.383	10
0.383	15
0.382	20
0.279	25
0.000	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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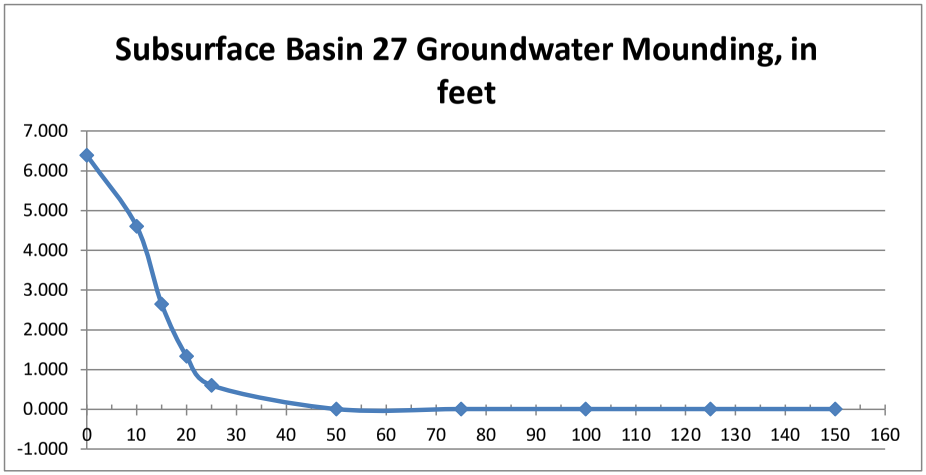
Input Values

3.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
3.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
11.000	x	1/2 length of basin (x direction, in feet)
109.000	y	1/2 width of basin (y direction, in feet)
5.26	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

16.392	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
6.392	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
6.392	0
4.600	10
2.648	15
1.334	20
0.599	25
0.005	50
0.003	75
0.003	100
0.003	125
0.003	150

Re-Calculate Now



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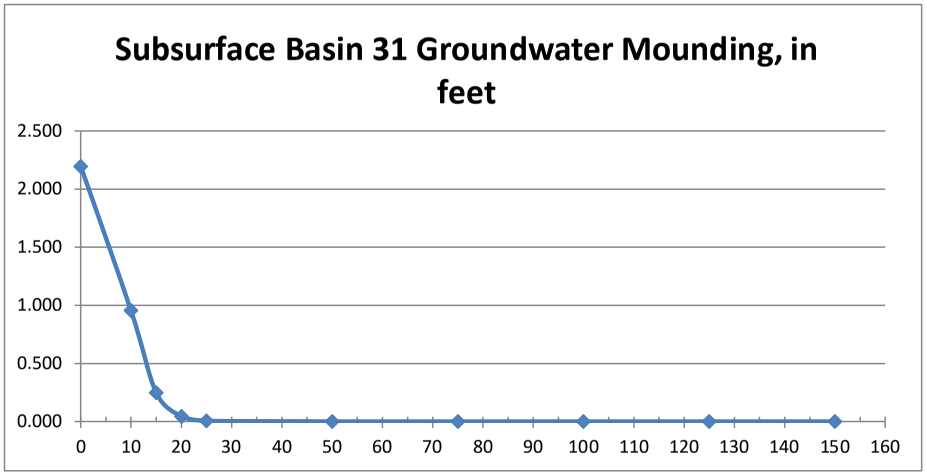
Input Values

1.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
9.000	x	1/2 length of basin (x direction, in feet)
58.000	y	1/2 width of basin (y direction, in feet)
4.34	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.197	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.197	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.197	0
0.957	10
0.247	15
0.045	20
0.006	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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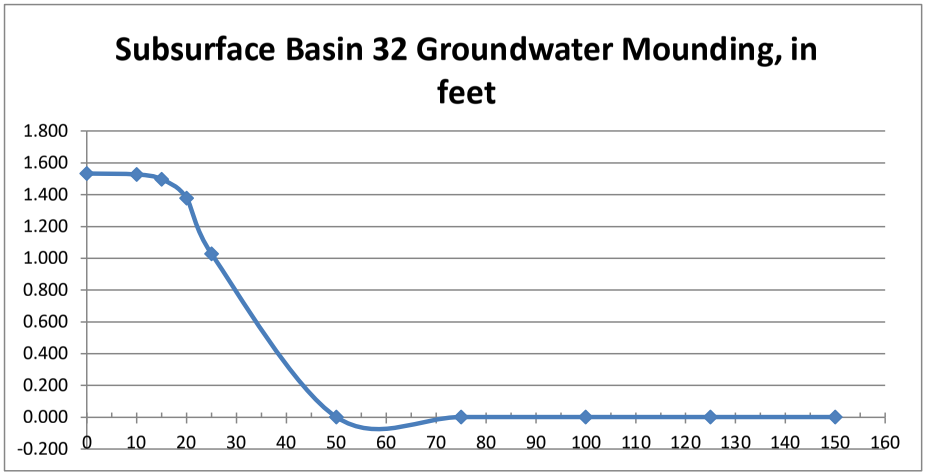
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
27.000	x	1/2 length of basin (x direction, in feet)
109.000	y	1/2 width of basin (y direction, in feet)
5.52	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.533	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.533	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.533	0
1.527	10
1.496	15
1.378	20
1.027	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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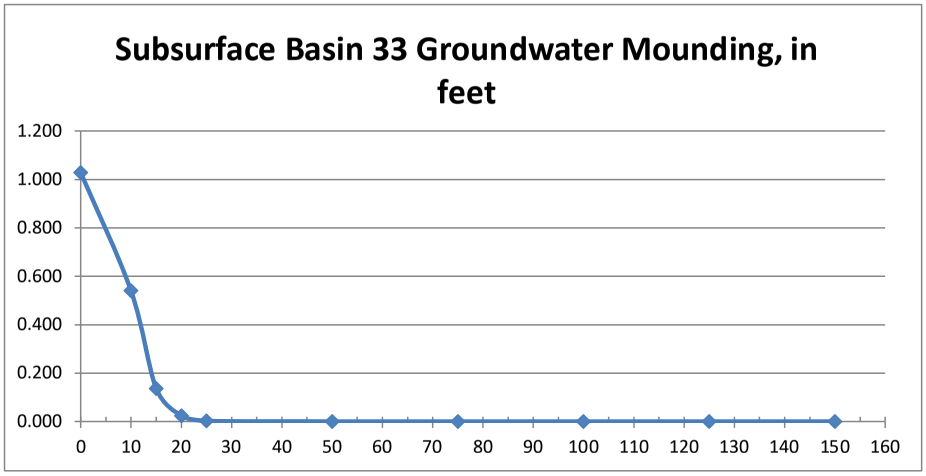
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
54.000	y	1/2 width of basin (y direction, in feet)
3.89	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.029	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.029	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.029	0
0.540	10
0.137	15
0.024	20
0.003	25
0.000	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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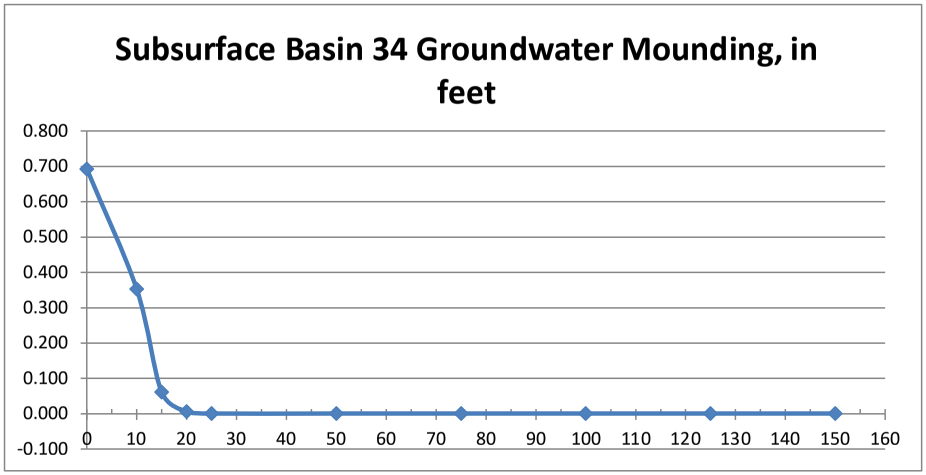
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
90.000	y	1/2 width of basin (y direction, in feet)
2.54	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.693	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.693	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.693	0
0.353	10
0.061	15
0.006	20
0.001	25
0.000	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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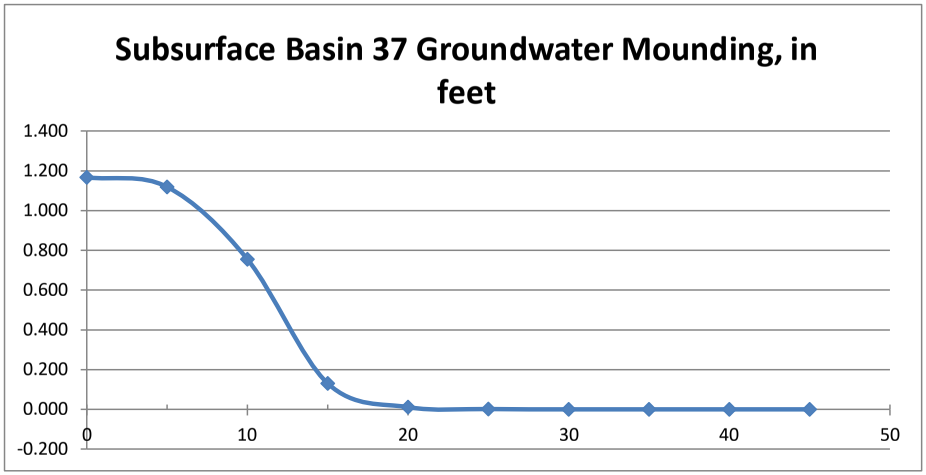
Input Values

7.83	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
7.83	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
11.000	x	1/2 length of basin (x direction, in feet)
51.000	y	1/2 width of basin (y direction, in feet)
0.27	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.167	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.167	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.167	0
1.119	5
0.754	10
0.130	15
0.011	20
0.001	25
0.000	30
0.000	35
0.000	40
0.000	45

Re-Calculate Now



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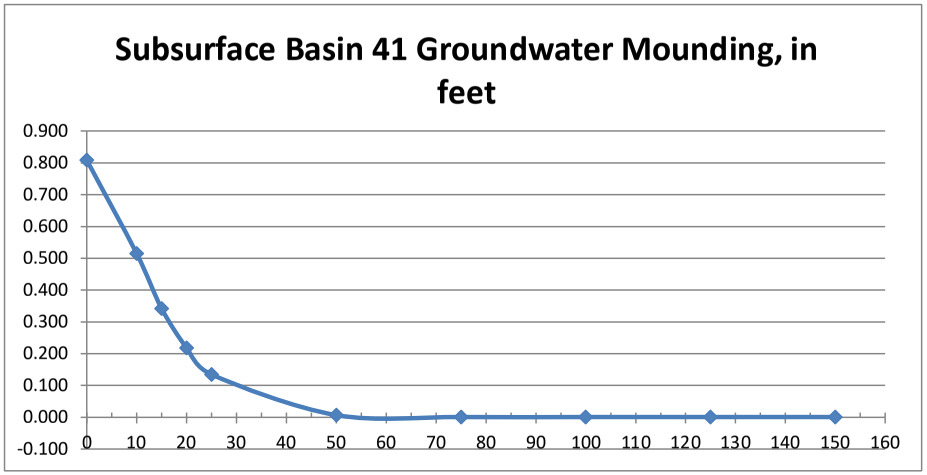
Input Values

0.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
7.000	x	1/2 length of basin (x direction, in feet)
21.000	y	1/2 width of basin (y direction, in feet)
38.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.809	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.809	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.809	0
0.515	10
0.342	15
0.218	20
0.134	25
0.007	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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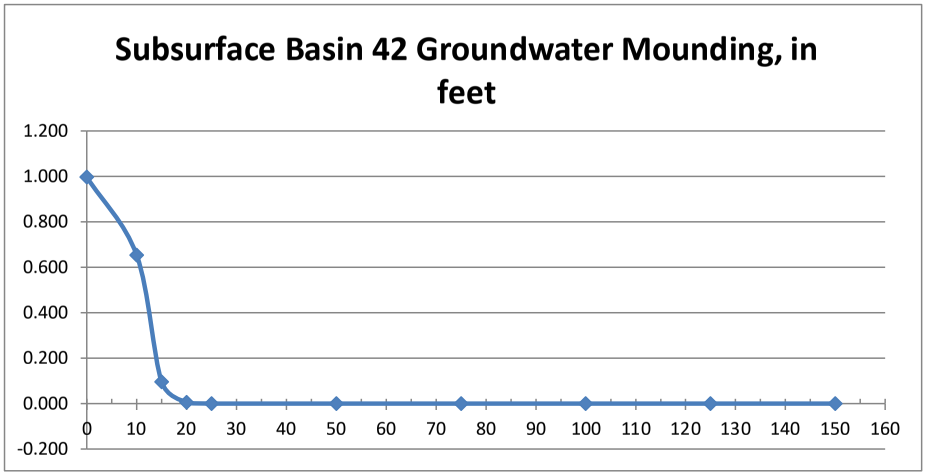
Input Values

2.31	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
11.000	x	1/2 length of basin (x direction, in feet)
47.000	y	1/2 width of basin (y direction, in feet)
0.78	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.998	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.998	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.998	0
0.653	10
0.096	15
0.006	20
0.000	25
0.000	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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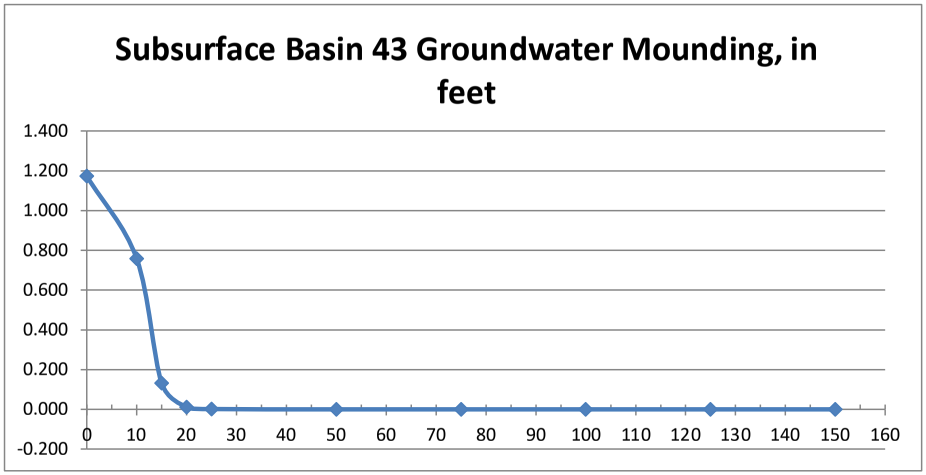
Input Values

2.31	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
11.000	x	1/2 length of basin (x direction, in feet)
51.000	y	1/2 width of basin (y direction, in feet)
0.92	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.173	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.173	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.173	0
0.758	10
0.131	15
0.011	20
0.001	25
0.000	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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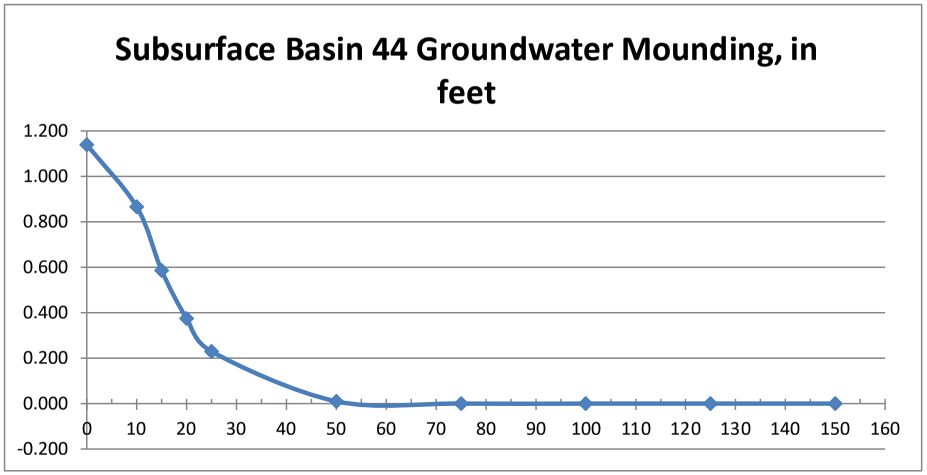
Input Values

0.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
11.000	x	1/2 length of basin (x direction, in feet)
55.000	y	1/2 width of basin (y direction, in feet)
32.80	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.141	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.141	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.141	0
0.867	10
0.586	15
0.375	20
0.229	25
0.010	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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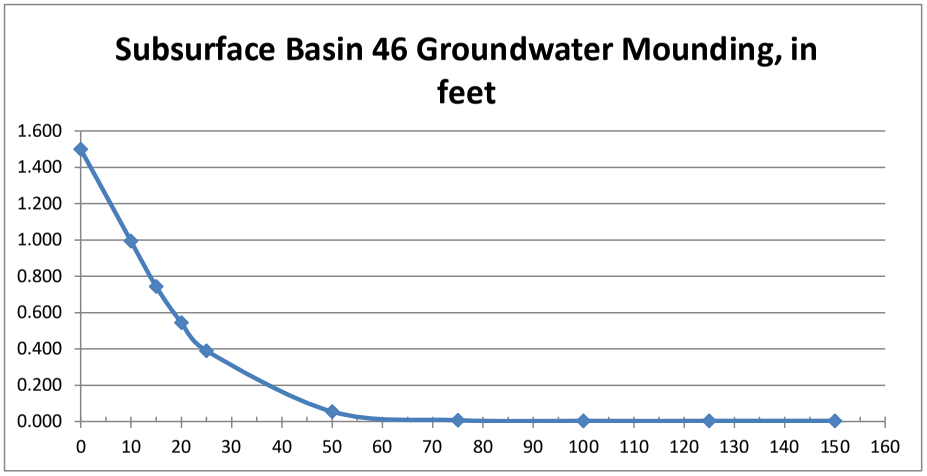
Input Values

0.22	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
4.000	x	1/2 length of basin (x direction, in feet)
26.000	y	1/2 width of basin (y direction, in feet)
69.24	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)
11.501	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.501	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.501	0
0.994	10
0.743	15
0.544	20
0.390	25
0.054	50
0.006	75
0.003	100
0.003	125
0.003	150

Re-Calculate Now



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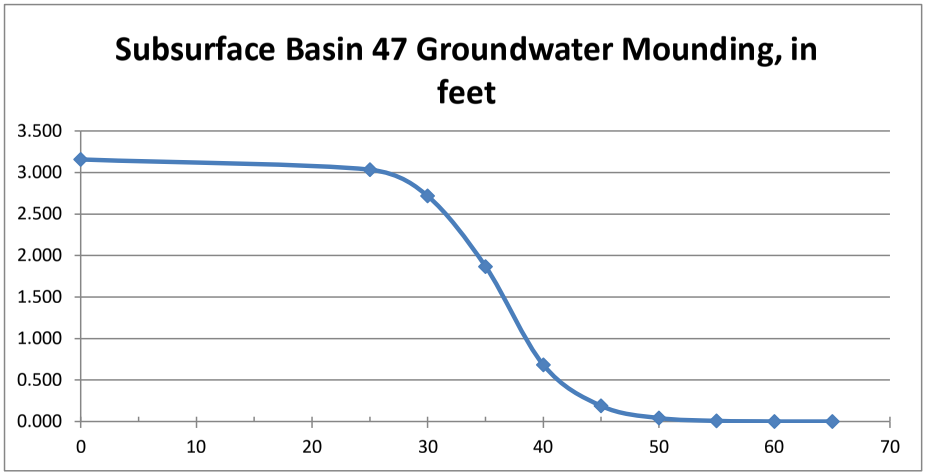
Input Values

1.64	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.64	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
36.000	x	1/2 length of basin (x direction, in feet)
13.000	y	1/2 width of basin (y direction, in feet)
3.64	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.158	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.158	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.158	0
3.034	25
2.717	30
1.868	35
0.683	40
0.188	45
0.041	50
0.007	55
0.002	60
0.001	65

Re-Calculate Now



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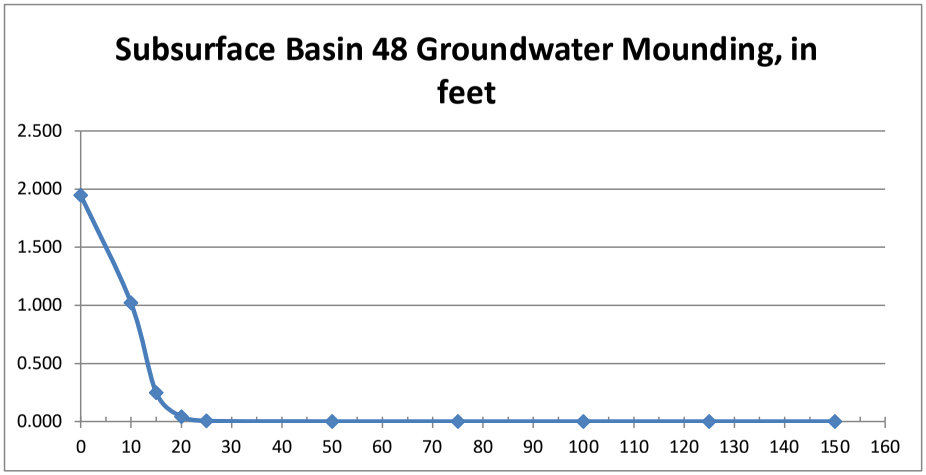
Input Values

7.83	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
7.83	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
18.000	y	1/2 width of basin (y direction, in feet)
0.47	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.947	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.947	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.947	0
1.021	10
0.248	15
0.040	20
0.005	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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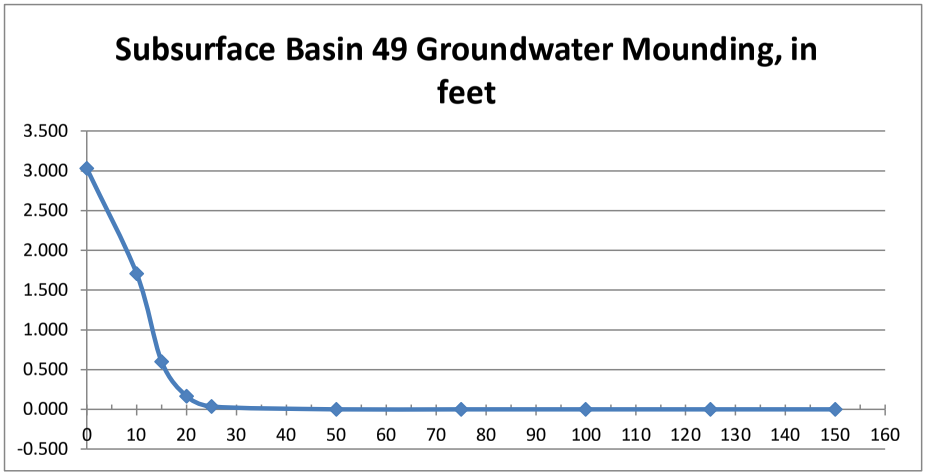
Input Values

1.54	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.54	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
18.000	y	1/2 width of basin (y direction, in feet)
4.04	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.030	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.030	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.030	0
1.705	10
0.600	15
0.165	20
0.036	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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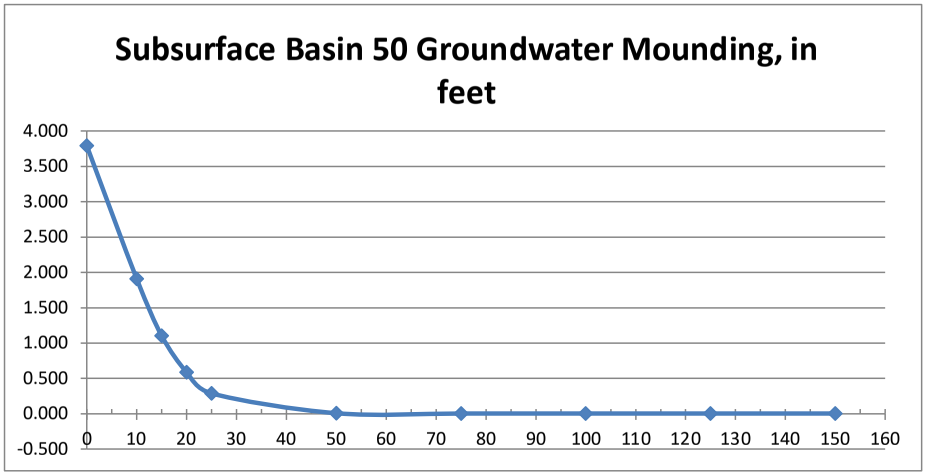
Input Values

1.54	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.54	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
4.000	x	1/2 length of basin (x direction, in feet)
26.000	y	1/2 width of basin (y direction, in feet)
14.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.792	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.792	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.792	0
1.911	10
1.105	15
0.586	20
0.286	25
0.006	50
0.004	75
0.004	100
0.004	125
0.004	150

Re-Calculate Now



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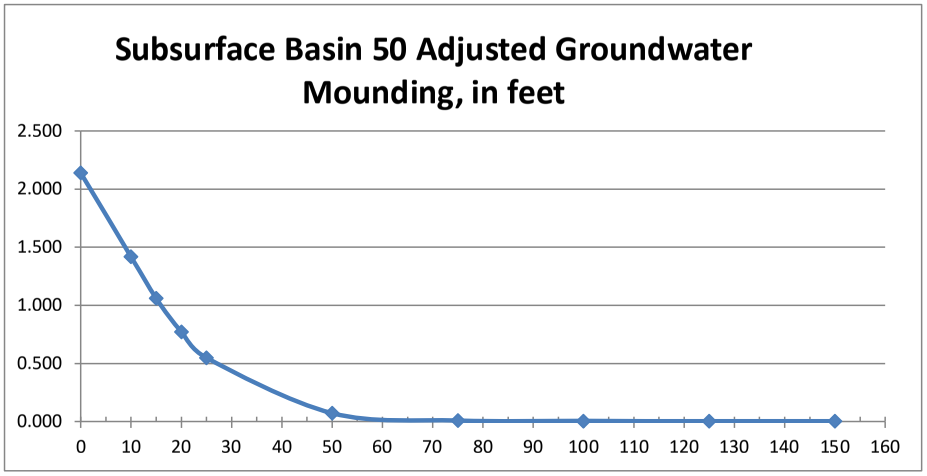
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.54	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
4.000	x	1/2 length of basin (x direction, in feet)
26.000	y	1/2 width of basin (y direction, in feet)
43.10	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.140	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.140	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.140	0
1.419	10
1.059	15
0.772	20
0.549	25
0.072	50
0.008	75
0.004	100
0.004	125
0.004	150

Re-Calculate Now



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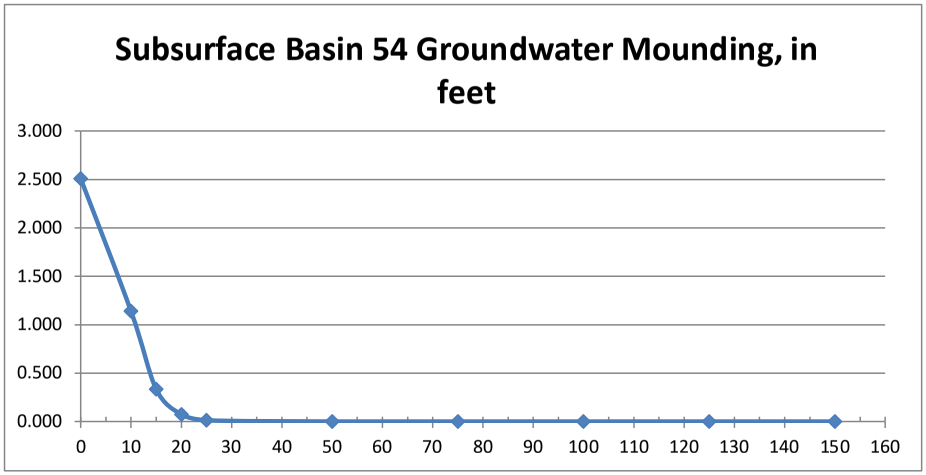
Input Values

7.83	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
7.83	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
9.000	x	1/2 length of basin (x direction, in feet)
59.000	y	1/2 width of basin (y direction, in feet)
0.65	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.508	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.508	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.508	0
1.142	10
0.334	15
0.072	20
0.012	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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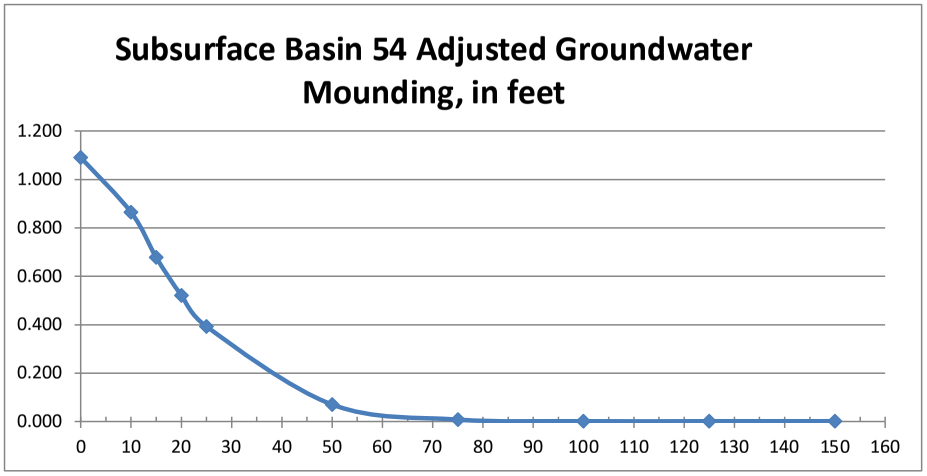
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
7.83	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
9.000	x	1/2 length of basin (x direction, in feet)
59.000	y	1/2 width of basin (y direction, in feet)
10.15	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.091	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.091	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.091	0
0.865	10
0.678	15
0.521	20
0.392	25
0.070	50
0.008	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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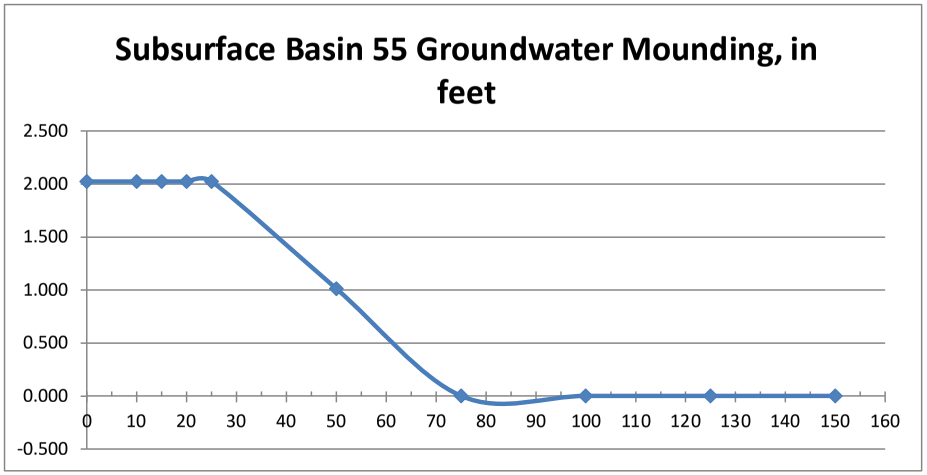
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
50.000	x	1/2 length of basin (x direction, in feet)
65.000	y	1/2 width of basin (y direction, in feet)
4.86	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.025	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.025	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.025	0
2.025	10
2.025	15
2.025	20
2.025	25
1.013	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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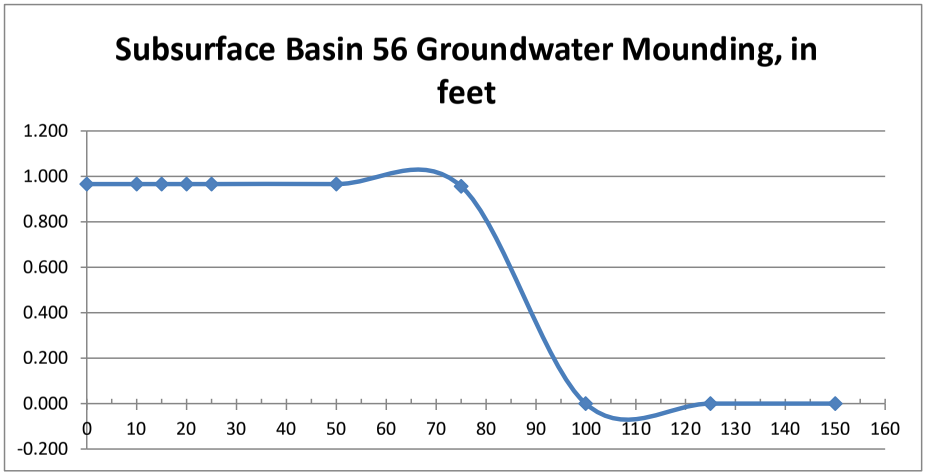
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
83.000	x	1/2 length of basin (x direction, in feet)
64.000	y	1/2 width of basin (y direction, in feet)
2.32	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.967	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.967	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.967	0
0.967	10
0.967	15
0.967	20
0.967	25
0.967	50
0.956	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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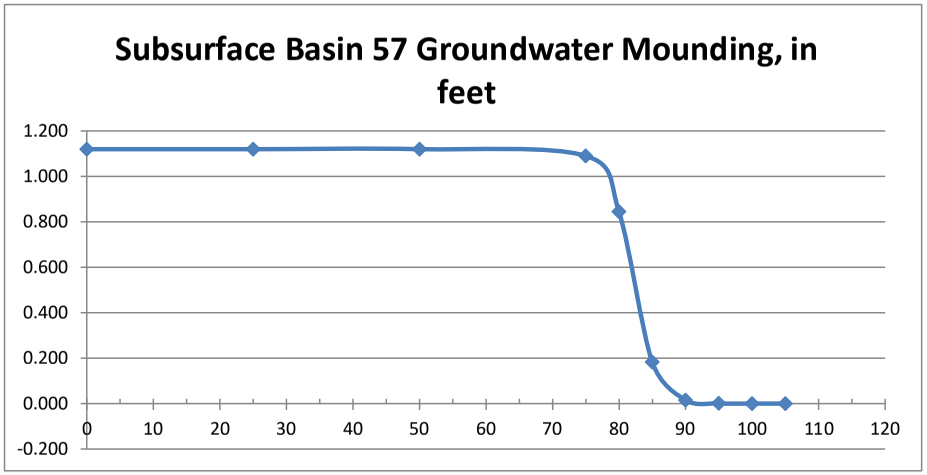
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
82.000	x	1/2 length of basin (x direction, in feet)
25.000	y	1/2 width of basin (y direction, in feet)
2.69	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.121	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.121	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.121	0
1.121	25
1.121	50
1.091	75
0.845	80
0.183	85
0.016	90
0.001	95
0.000	100
0.000	105

Re-Calculate Now



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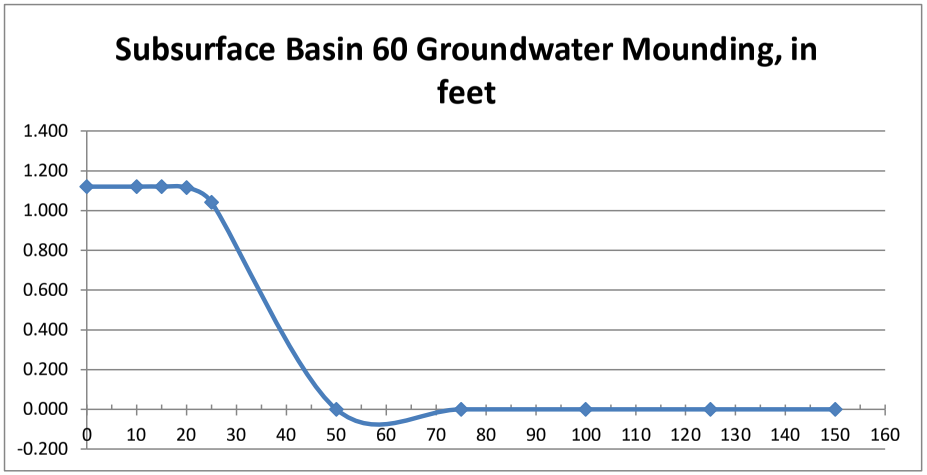
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
95.000	y	1/2 width of basin (y direction, in feet)
2.69	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.121	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.121	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.121	0
1.121	10
1.121	15
1.115	20
1.042	25
0.000	50
0.000	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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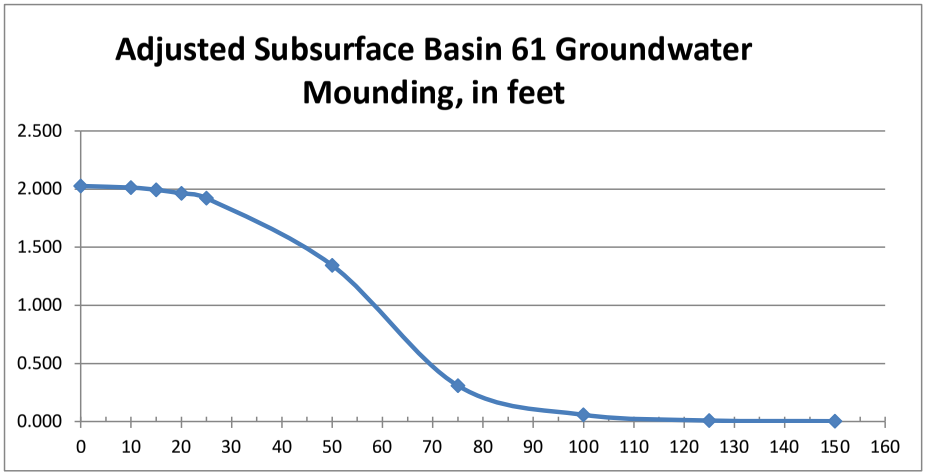
Input Values

0.26	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.50	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
55.000	x	1/2 length of basin (x direction, in feet)
9.000	y	1/2 width of basin (y direction, in feet)
42.51	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.028	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.028	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.028	0
2.013	10
1.994	15
1.964	20
1.922	25
1.344	50
0.308	75
0.058	100
0.009	125
0.003	150

Re-Calculate Now



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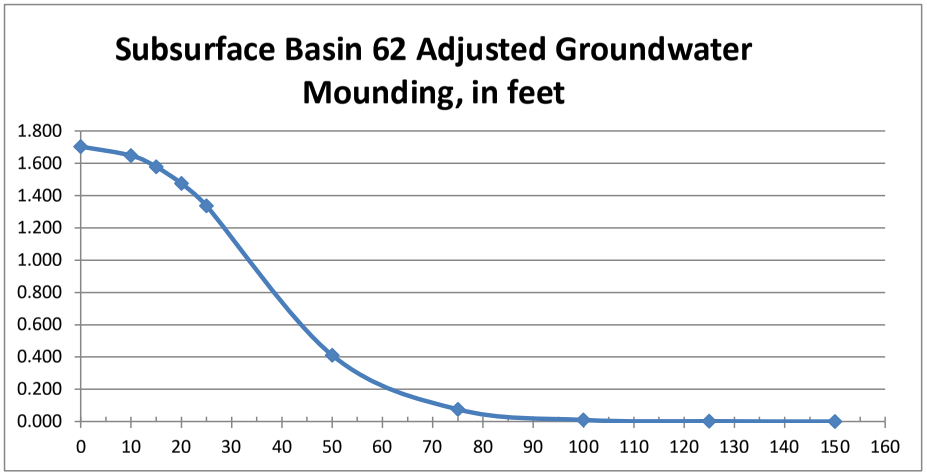
Input Values

0.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.50	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
34.000	x	1/2 length of basin (x direction, in feet)
106.000	y	1/2 width of basin (y direction, in feet)
35.60	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.704	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.704	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.704	0
1.649	10
1.578	15
1.475	20
1.336	25
0.411	50
0.075	75
0.009	100
0.001	125
0.001	150

Re-Calculate Now



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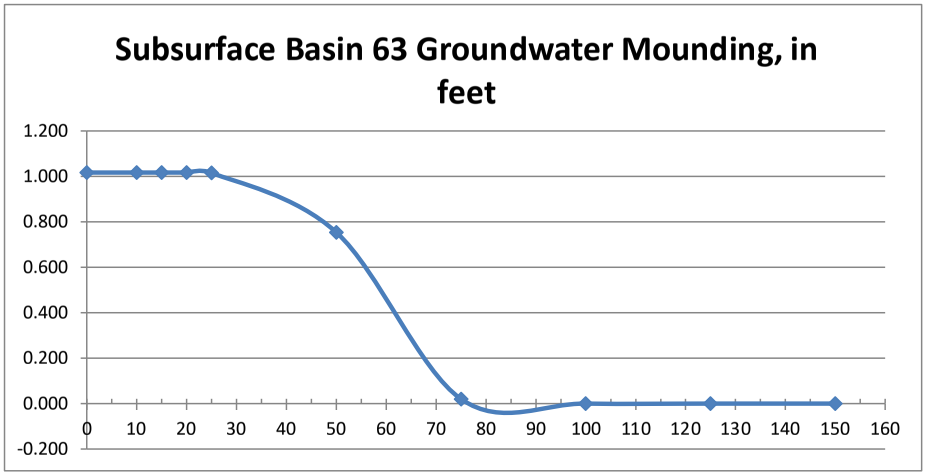
Input Values

0.63	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
5.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
55.000	x	1/2 length of basin (x direction, in feet)
37.000	y	1/2 width of basin (y direction, in feet)
2.91	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.018	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.018	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.018	0
1.018	10
1.018	15
1.017	20
1.015	25
0.754	50
0.020	75
0.000	100
0.000	125
0.000	150

Re-Calculate Now



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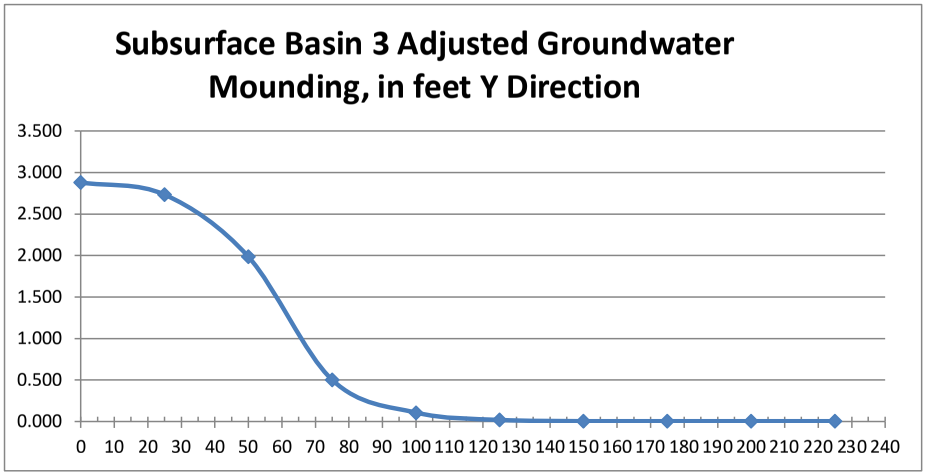
Input Values

1.50	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
9.09	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
56.000	x	1/2 length of basin (x direction, in feet)
7.500	y	1/2 width of basin (y direction, in feet)
13.20	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.880	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.880	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.880	0
2.734	25
1.984	50
0.501	75
0.106	100
0.020	125
0.005	150
0.004	175
0.004	200
0.004	225

Re-Calculate Now



Y DIRECTION

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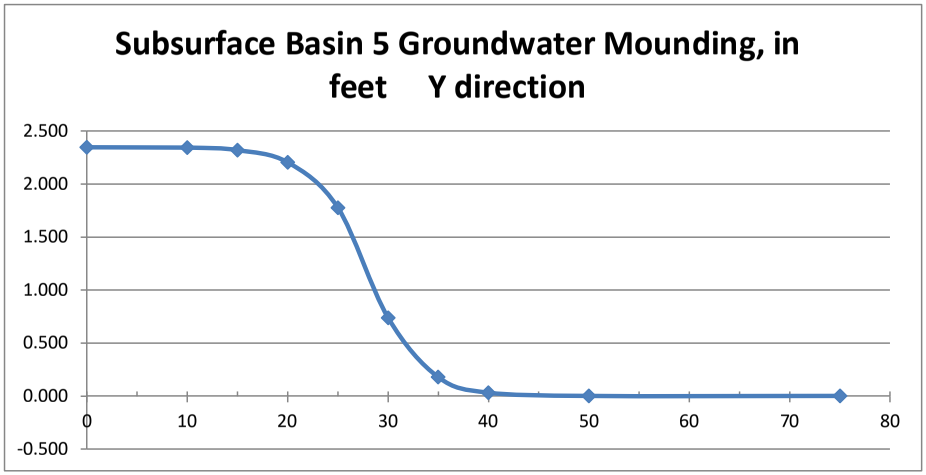
Input Values

1.94	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.94	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
28.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
2.34	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.346	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.346	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.346	0
2.343	10
2.320	15
2.204	20
1.776	25
0.737	30
0.180	35
0.032	40
0.001	50
0.001	75

Re-Calculate Now



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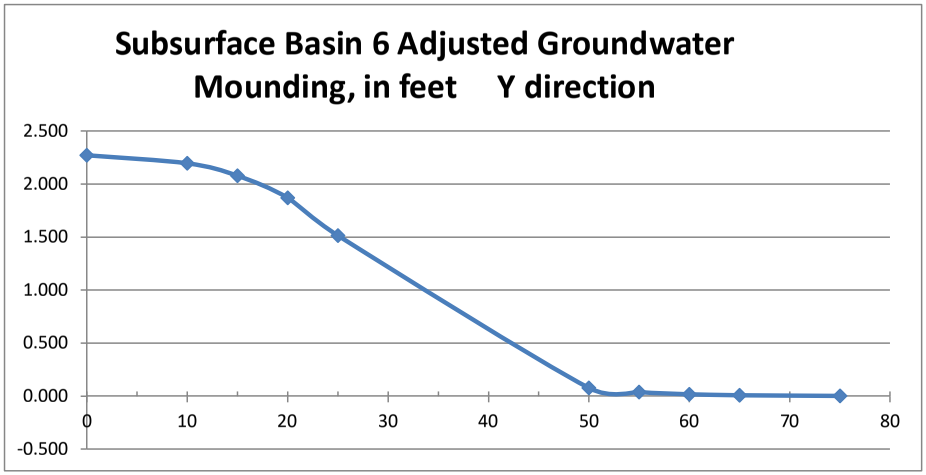
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.94	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
28.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
13.58	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.272	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.272	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.272	0
2.196	10
2.079	15
1.871	20
1.514	25
0.077	50
0.037	55
0.017	60
0.008	65
0.002	75

Re-Calculate Now



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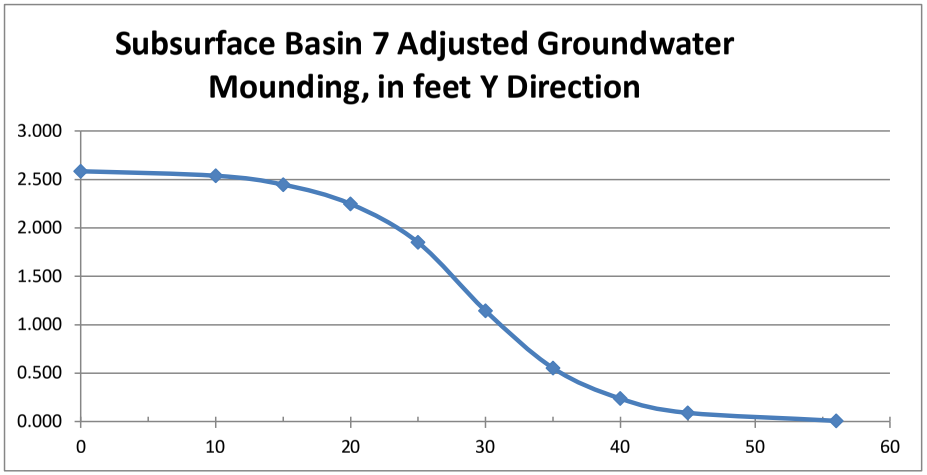
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.33	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
29.000	x	1/2 length of basin (x direction, in feet)
19.000	y	1/2 width of basin (y direction, in feet)
9.82	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.585	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.585	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.585	0
2.539	10
2.447	15
2.247	20
1.851	25
1.145	30
0.551	35
0.237	40
0.091	45
0.008	56

Re-Calculate Now



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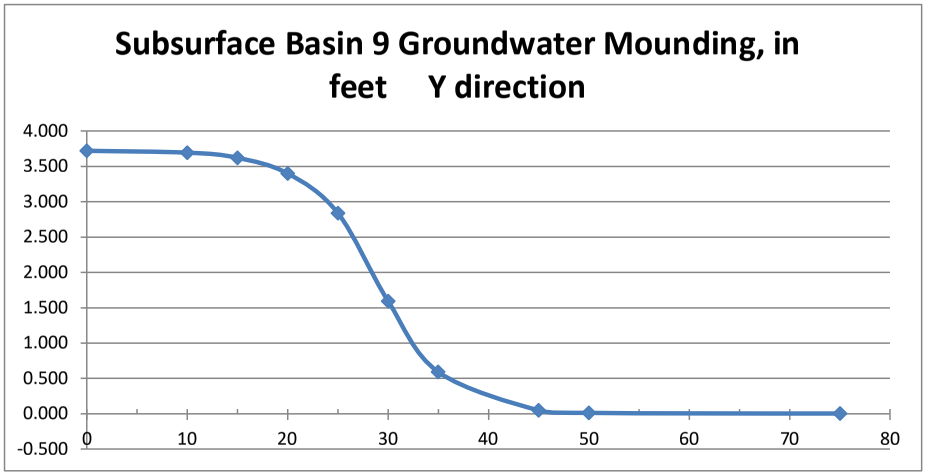
Input Values

1.33	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.33	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
29.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
5.99	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.720	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.720	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.720	0
3.695	10
3.621	15
3.401	20
2.839	25
1.591	30
0.593	35
0.048	45
0.011	50
0.001	75

Re-Calculate Now



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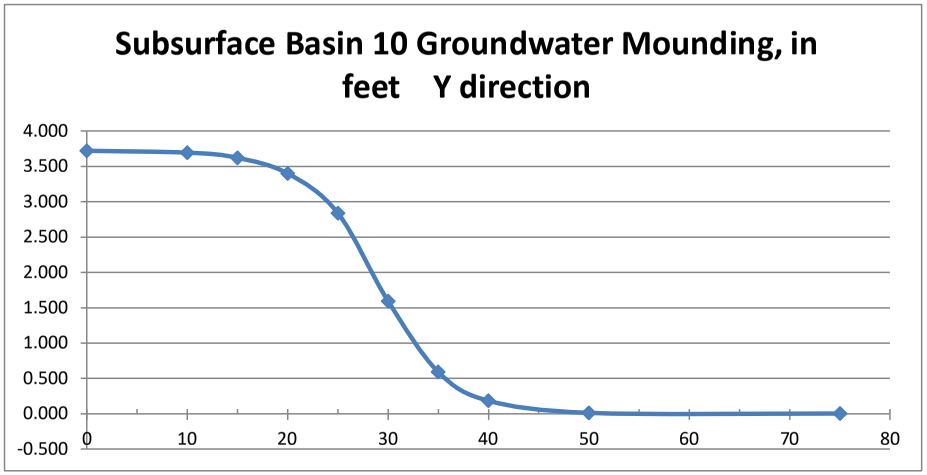
Input Values

1.33	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.33	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
29.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
5.99	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.720	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.720	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.720	0
3.695	10
3.621	15
3.401	20
2.839	25
1.591	30
0.593	35
0.183	40
0.011	50
0.001	75

Re-Calculate Now



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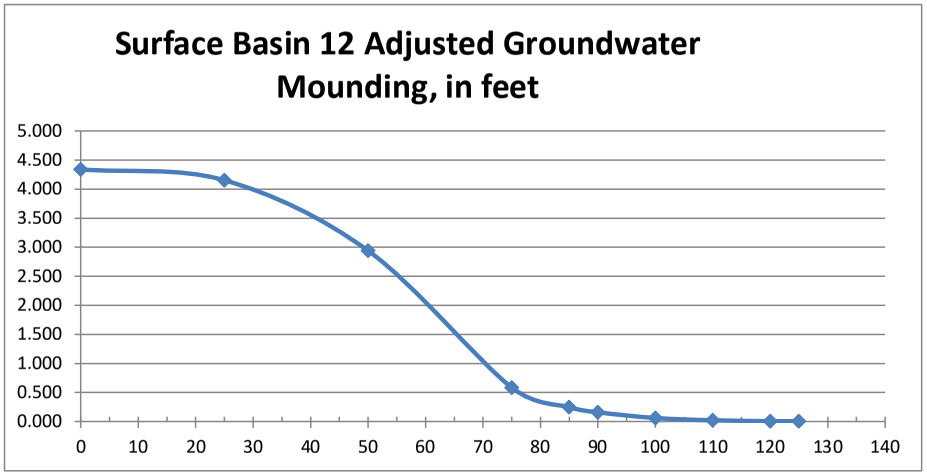
Input Values

1.50	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
9.09	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
56.000	x	1/2 length of basin (x direction, in feet)
23.000	y	1/2 width of basin (y direction, in feet)
6.90	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.340	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.340	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.340	0
4.152	25
2.941	50
0.583	75
0.250	85
0.159	90
0.060	100
0.021	110
0.008	120
0.005	125

Re-Calculate Now



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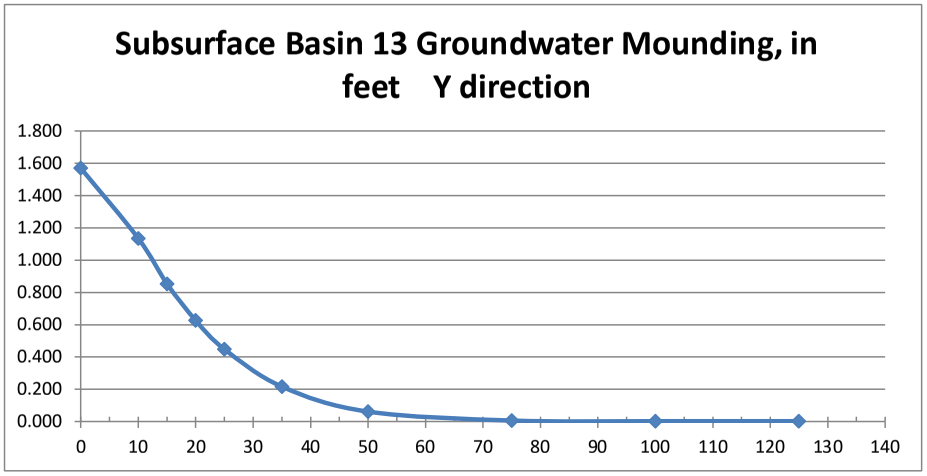
Input Values

0.14	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
7.000	x	1/2 length of basin (x direction, in feet)
28.000	y	1/2 width of basin (y direction, in feet)
67.80	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.570	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.570	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.570	0
1.135	10
0.853	15
0.626	20
0.449	25
0.216	35
0.061	50
0.006	75
0.002	100
0.002	125

Re-Calculate Now



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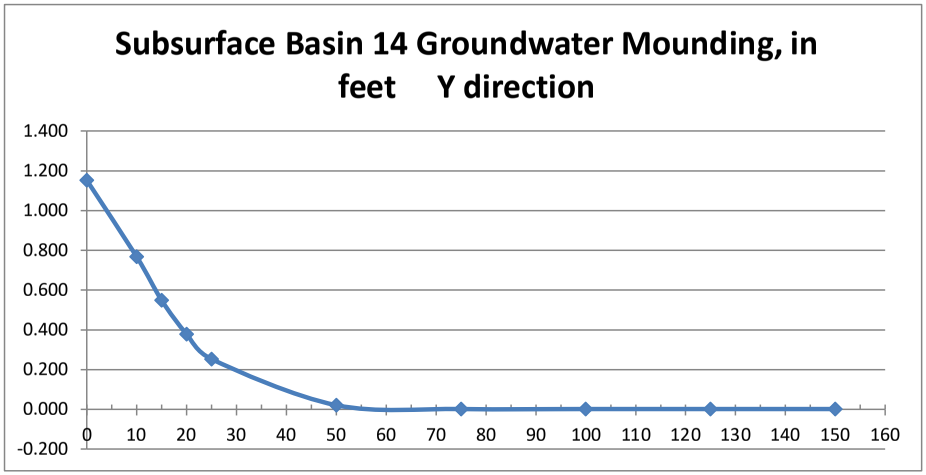
Input Values

0.13	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
6.000	x	1/2 length of basin (x direction, in feet)
33.000	y	1/2 width of basin (y direction, in feet)
48.90	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.153	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.153	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.153	0
0.768	10
0.548	15
0.379	20
0.253	25
0.021	50
0.002	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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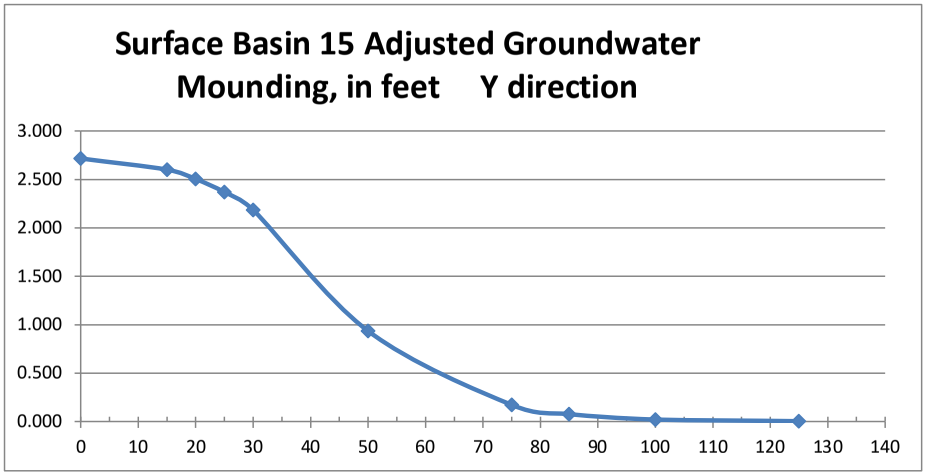
Input Values

0.18	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.23	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
42.000	x	1/2 length of basin (x direction, in feet)
26.000	y	1/2 width of basin (y direction, in feet)
37.97	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.716	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.716	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.716	0
2.602	15
2.505	20
2.370	25
2.186	30
0.934	50
0.170	75
0.077	85
0.021	100
0.003	125

Re-Calculate Now



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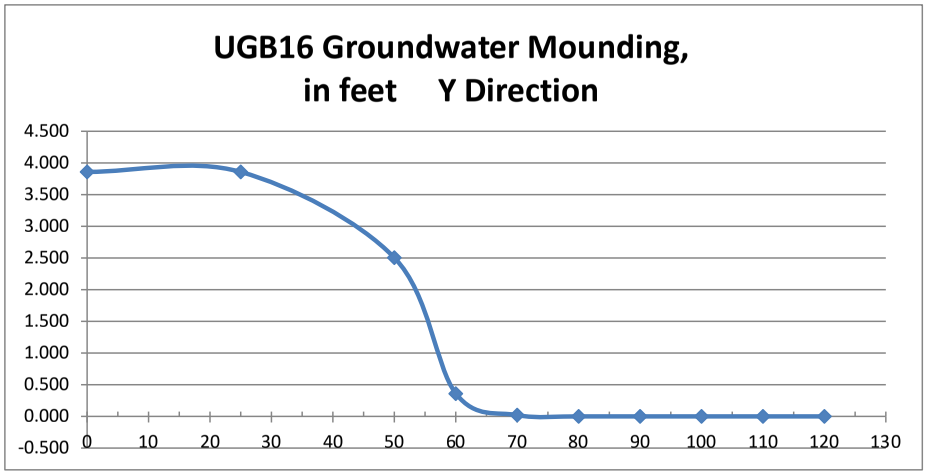
Input Values

0.59	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.59	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
52.000	x	1/2 length of basin (x direction, in feet)
49.000	y	1/2 width of basin (y direction, in feet)
11.77	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.858	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.858	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.858	0
3.856	25
2.506	50
0.361	60
0.021	70
0.002	80
0.001	90
0.001	100
0.001	110
0.001	120

Re-Calculate Now



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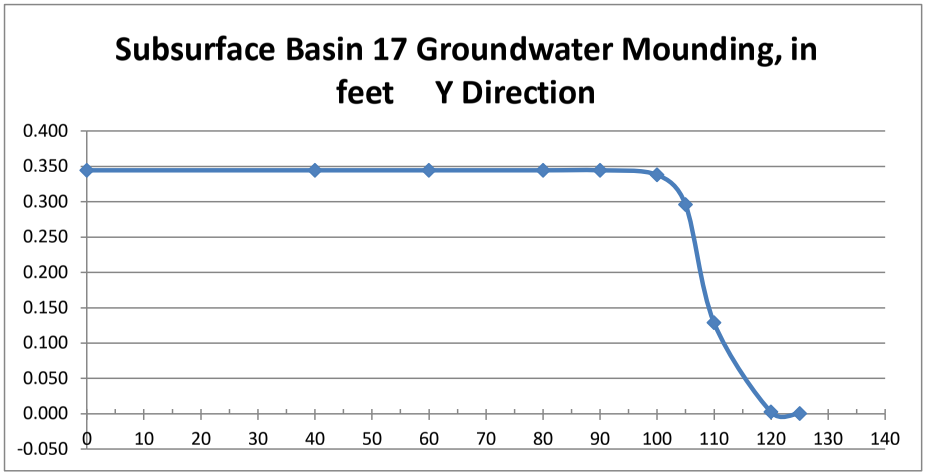
Input Values

0.50	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
109.000	x	1/2 length of basin (x direction, in feet)
26.000	y	1/2 width of basin (y direction, in feet)
1.24	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.344	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.344	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.344	0
0.344	40
0.344	60
0.344	80
0.344	90
0.338	100
0.296	105
0.129	110
0.002	120
0.000	125

Re-Calculate Now



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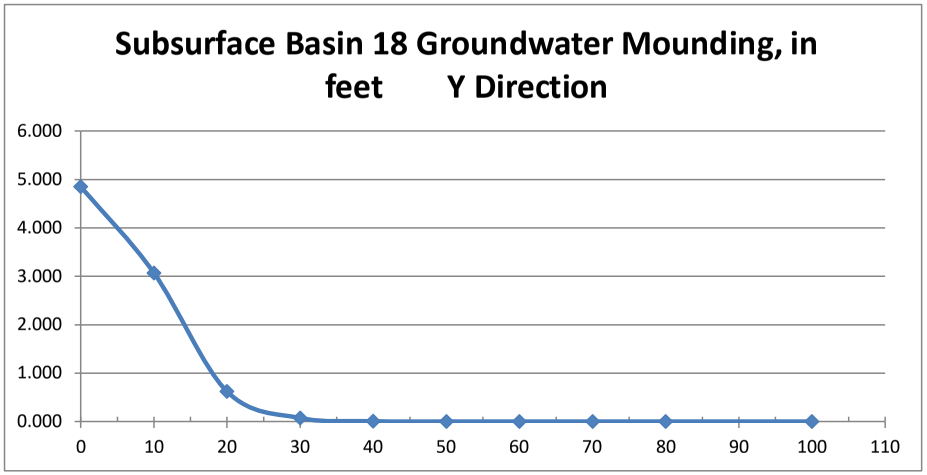
Input Values

1.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
32.000	y	1/2 width of basin (y direction, in feet)
11.40	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.851	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.851	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.851	0
3.067	10
0.622	20
0.072	30
0.006	40
0.002	50
0.002	60
0.002	70
0.002	80
0.002	100

Re-Calculate Now



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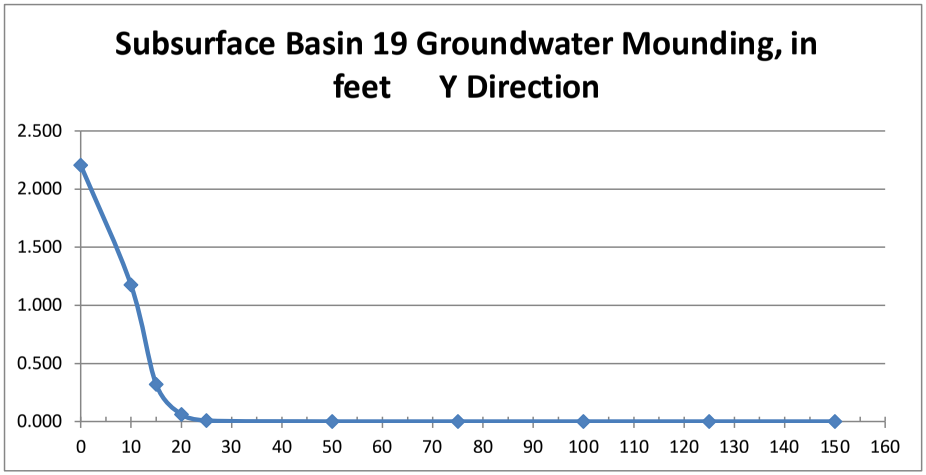
Input Values

2.30	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
32.000	y	1/2 width of basin (y direction, in feet)
1.84	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.207	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.207	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.207	0
1.175	10
0.319	15
0.061	20
0.008	25
0.001	50
0.001	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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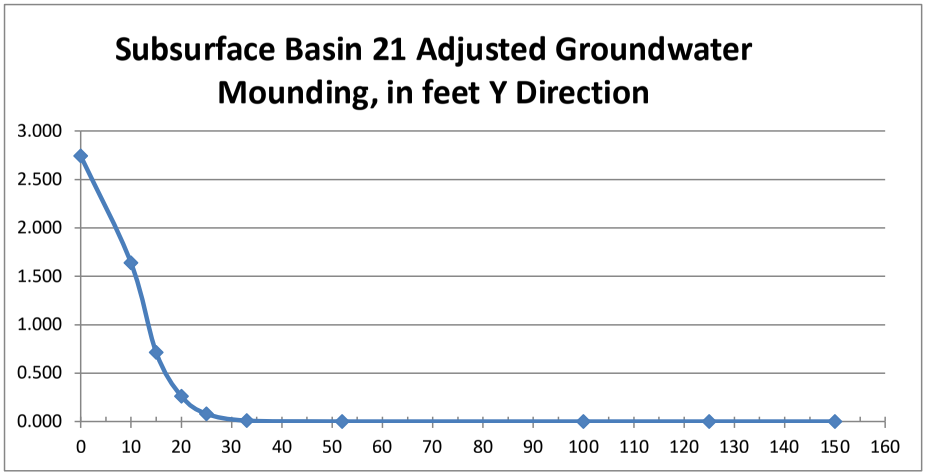
Input Values

1.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
10.000	x	1/2 length of basin (x direction, in feet)
29.000	y	1/2 width of basin (y direction, in feet)
4.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.742	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.742	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.742	0
1.640	10
0.713	15
0.261	20
0.081	25
0.009	33
0.001	52
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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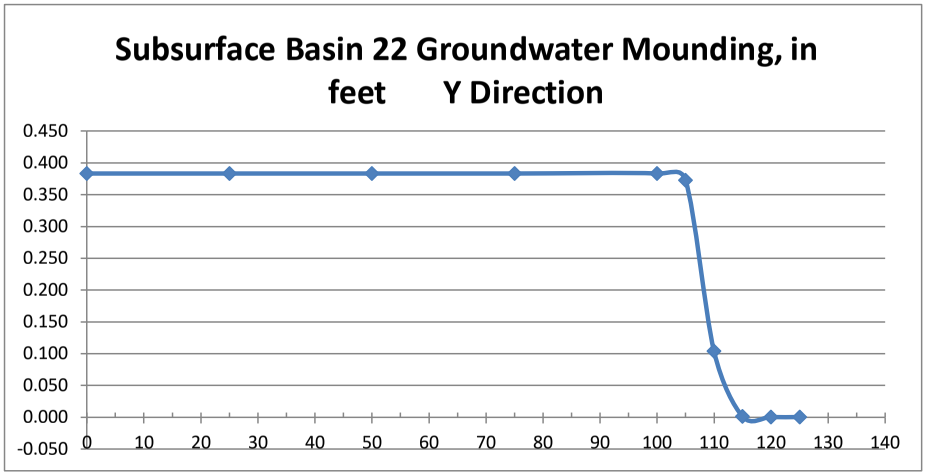
Input Values

2.30	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.30	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
109.000	x	1/2 length of basin (x direction, in feet)
26.000	y	1/2 width of basin (y direction, in feet)
0.30	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.383	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.383	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.383	0
0.383	25
0.383	50
0.383	75
0.383	100
0.373	105
0.104	110
0.001	115
0.000	120
0.000	125

Re-Calculate Now



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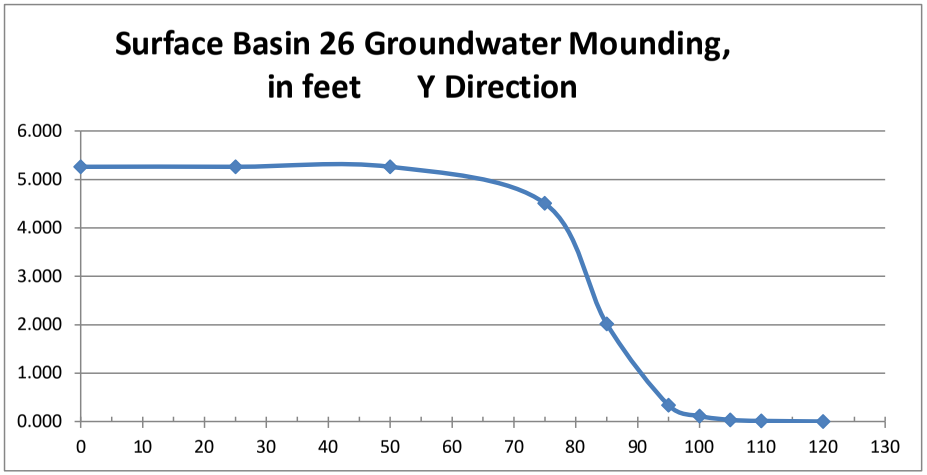
Input Values

15.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
15.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
83.000	x	1/2 length of basin (x direction, in feet)
12.000	y	1/2 width of basin (y direction, in feet)
0.76	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

15.265	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
5.265	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
5.265	0
5.265	25
5.262	50
4.510	75
2.016	85
0.336	95
0.113	100
0.034	105
0.010	110
0.002	120

Re-Calculate Now



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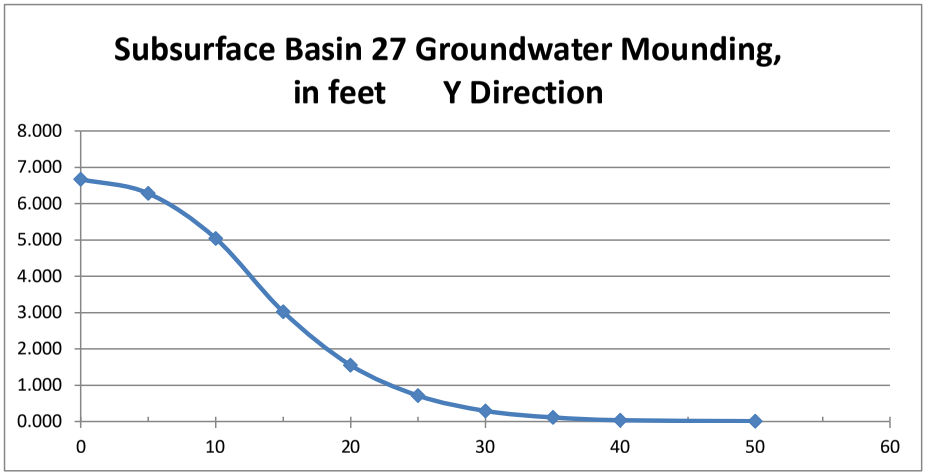
Input Values

3.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
3.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
12.000	x	1/2 length of basin (x direction, in feet)
51.000	y	1/2 width of basin (y direction, in feet)
5.26	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

16.673	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
6.673	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
6.673	0
6.285	5
5.042	10
3.026	15
1.556	20
0.712	25
0.294	30
0.111	35
0.039	40
0.006	50

Re-Calculate Now



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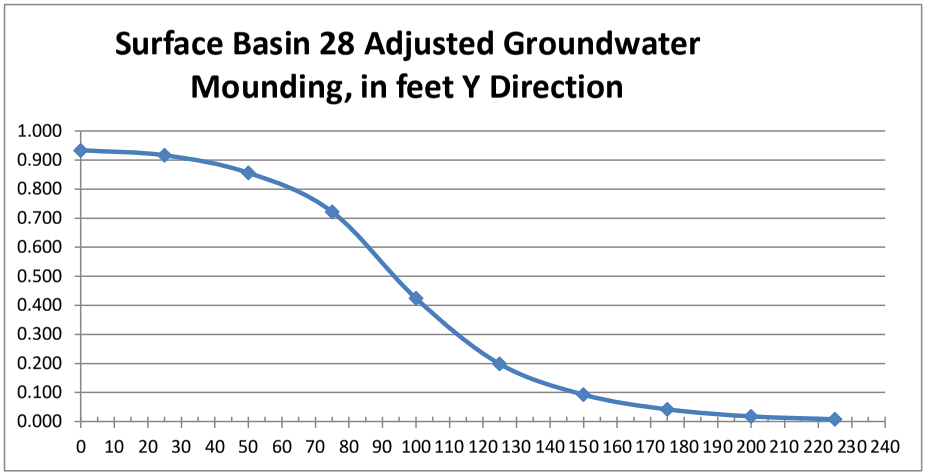
Input Values

0.20	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
15.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
95.000	x	1/2 length of basin (x direction, in feet)
15.000	y	1/2 width of basin (y direction, in feet)
30.94	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.934	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.934	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.934	0
0.916	25
0.856	50
0.722	75
0.424	100
0.198	125
0.093	150
0.042	175
0.018	200
0.008	225

Re-Calculate Now



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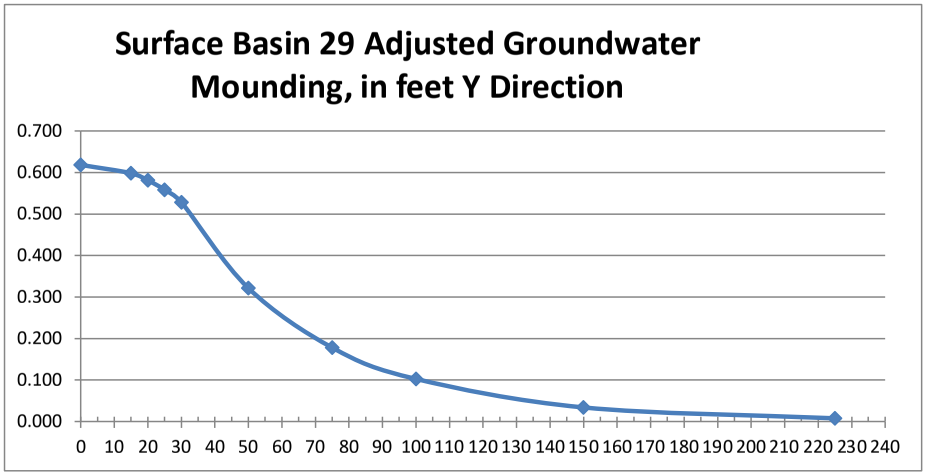
Input Values

0.40	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
15.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
41.000	x	1/2 length of basin (x direction, in feet)
5.000	y	1/2 width of basin (y direction, in feet)
53.94	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.619	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.619	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.619	0
0.598	15
0.581	20
0.559	25
0.528	30
0.321	50
0.178	75
0.103	100
0.034	150
0.008	225

Re-Calculate Now



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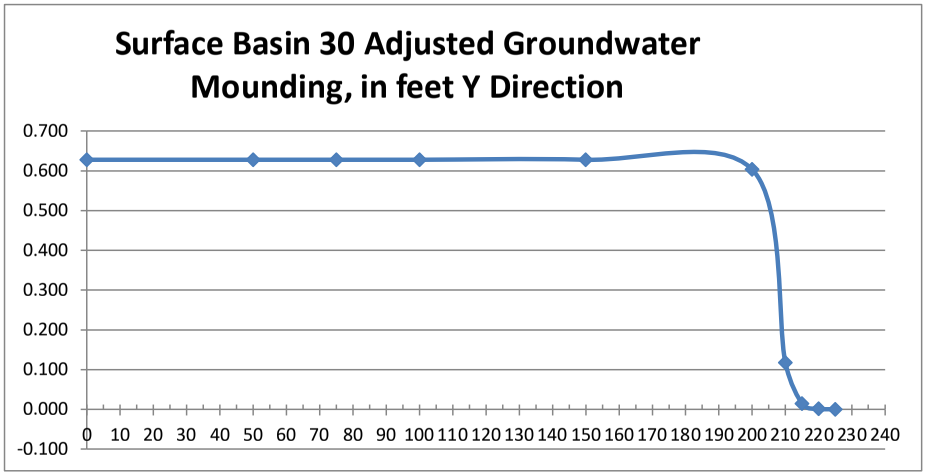
Input Values

1.00	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.28	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
207.000	x	1/2 length of basin (x direction, in feet)
59.000	y	1/2 width of basin (y direction, in feet)
1.13	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.628	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.628	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.628	0
0.628	50
0.628	75
0.628	100
0.628	150
0.604	200
0.118	210
0.015	215
0.001	220
0.000	225

Re-Calculate Now



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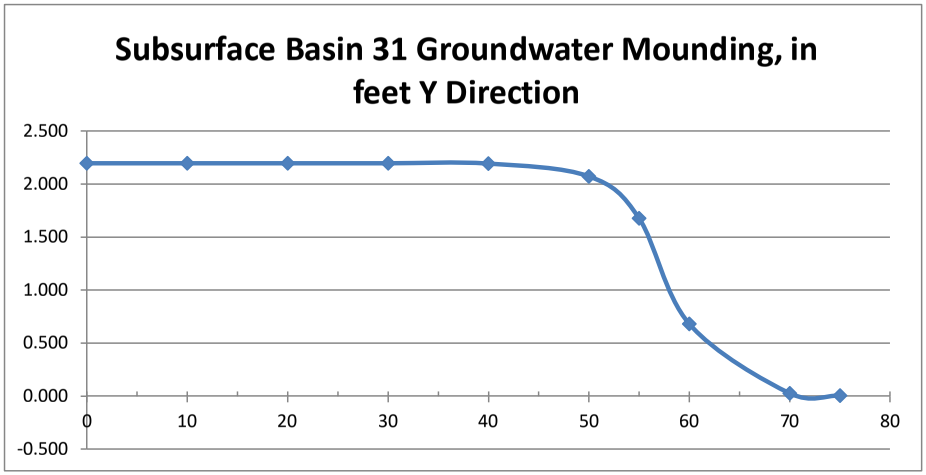
Input Values

1.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
58.000	x	1/2 length of basin (x direction, in feet)
9.000	y	1/2 width of basin (y direction, in feet)
4.34	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.197	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.197	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.197	0
2.197	10
2.197	20
2.197	30
2.194	40
2.073	50
1.676	55
0.680	60
0.027	70
0.004	75

Re-Calculate Now



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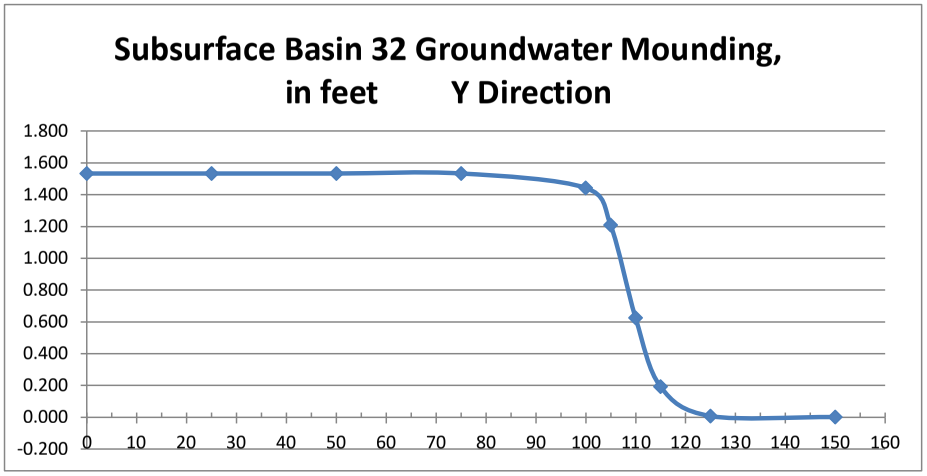
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
109.000	x	1/2 length of basin (x direction, in feet)
27.000	y	1/2 width of basin (y direction, in feet)
5.52	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.533	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.533	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.533	0
1.533	25
1.533	50
1.533	75
1.443	100
1.209	105
0.625	110
0.192	115
0.008	125
0.001	150

Re-Calculate Now



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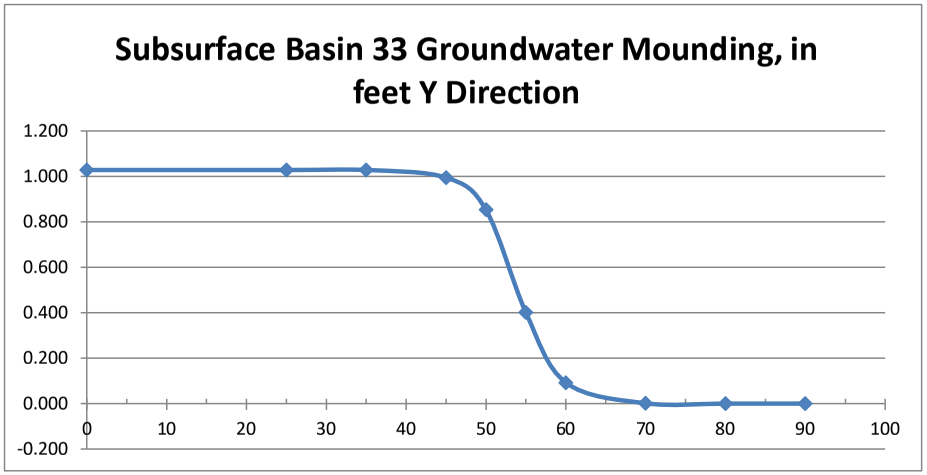
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
54.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
3.89	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.029	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.029	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.029	0
1.029	25
1.029	35
0.995	45
0.854	50
0.402	55
0.092	60
0.002	70
0.000	80
0.000	90

Re-Calculate Now



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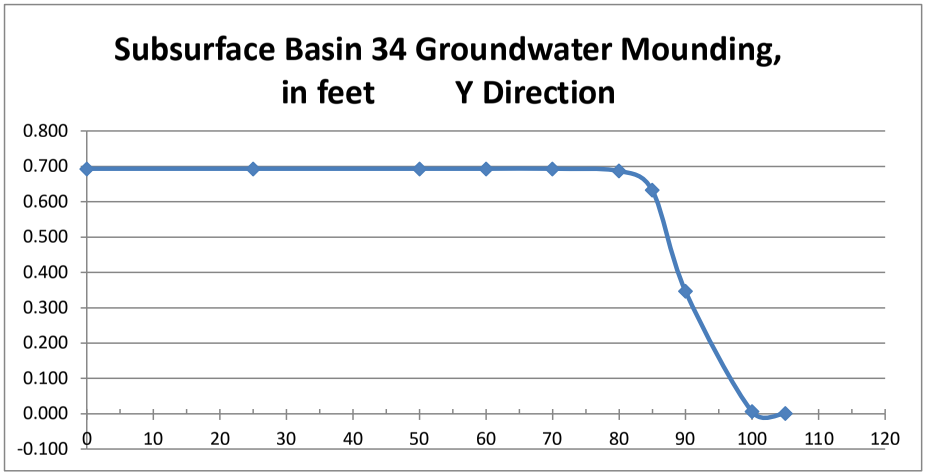
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
90.000	x	1/2 length of basin (x direction, in feet)
10.000	y	1/2 width of basin (y direction, in feet)
2.54	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.693	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.693	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.693	0
0.693	25
0.693	50
0.693	60
0.693	70
0.687	80
0.633	85
0.347	90
0.006	100
0.000	105

Re-Calculate Now



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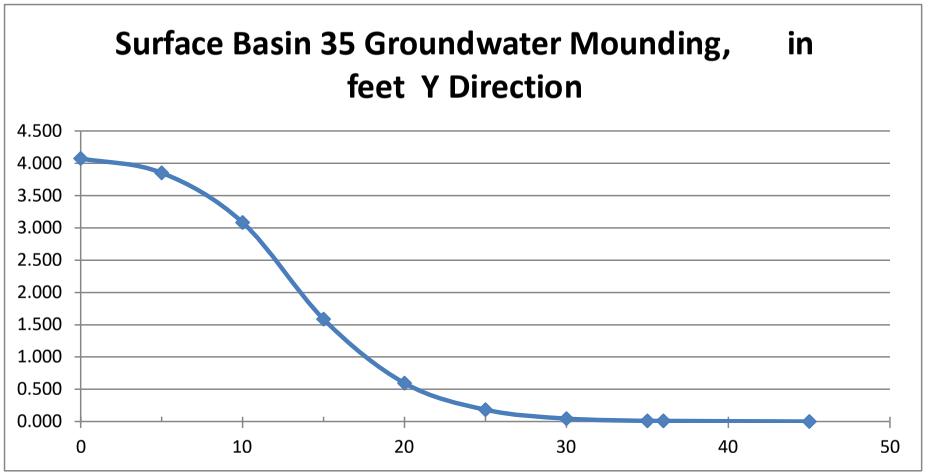
Input Values

1.64	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.64	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
13.000	x	1/2 length of basin (x direction, in feet)
79.000	y	1/2 width of basin (y direction, in feet)
4.88	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.075	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.075	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.075	0
3.854	5
3.083	10
1.586	15
0.593	20
0.183	25
0.047	30
0.011	35
0.008	36
0.002	45

Re-Calculate Now



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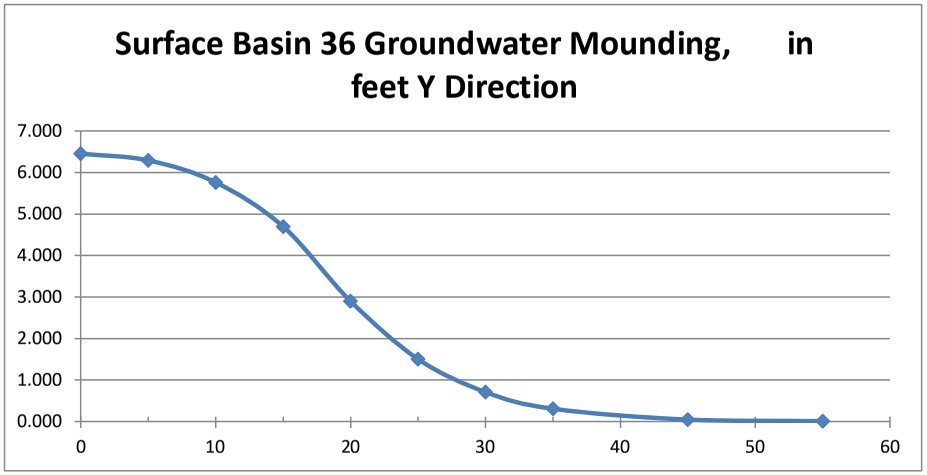
Input Values

3.53	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
3.53	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
18.000	x	1/2 length of basin (x direction, in feet)
12.000	y	1/2 width of basin (y direction, in feet)
4.88	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

16.453	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
6.453	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
6.453	0
6.293	5
5.763	10
4.698	15
2.902	20
1.505	25
0.709	30
0.306	35
0.046	45
0.007	55

Re-Calculate Now



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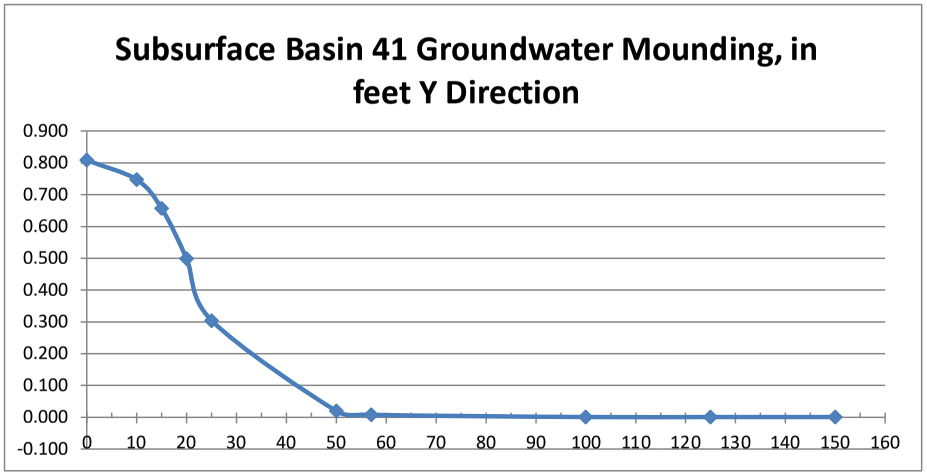
Input Values

0.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
21.000	x	1/2 length of basin (x direction, in feet)
7.000	y	1/2 width of basin (y direction, in feet)
38.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.809	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.809	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.809	0
0.747	10
0.657	15
0.499	20
0.304	25
0.020	50
0.008	57
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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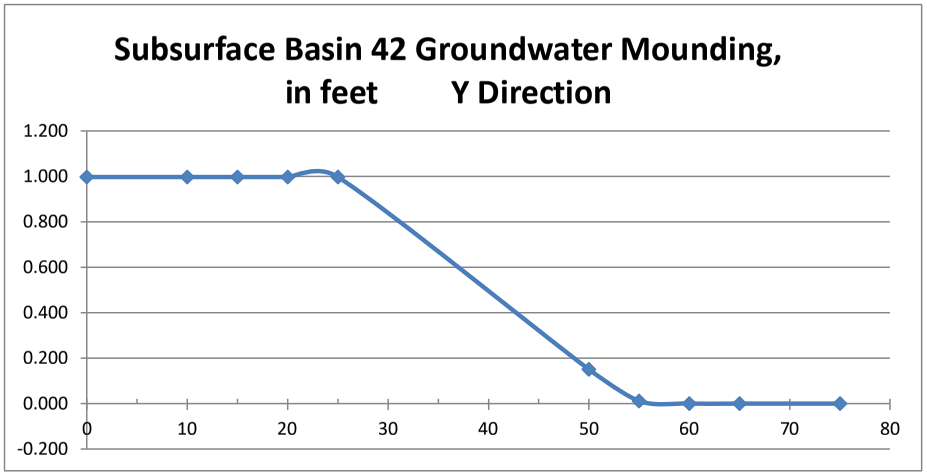
Input Values

2.31	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
47.000	x	1/2 length of basin (x direction, in feet)
11.000	y	1/2 width of basin (y direction, in feet)
0.78	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.998	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.998	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.998	0
0.998	10
0.998	15
0.998	20
0.998	25
0.151	50
0.011	55
0.001	60
0.000	65
0.000	75

Re-Calculate Now



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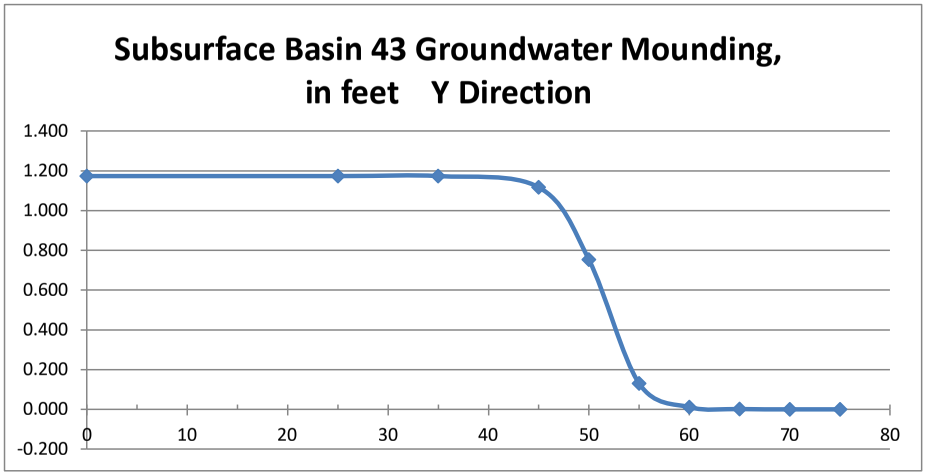
Input Values

2.31	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
51.000	x	1/2 length of basin (x direction, in feet)
11.000	y	1/2 width of basin (y direction, in feet)
0.92	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.173	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.173	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.173	0
1.173	25
1.173	35
1.118	45
0.754	50
0.130	55
0.011	60
0.001	65
0.000	70
0.000	75

Re-Calculate Now



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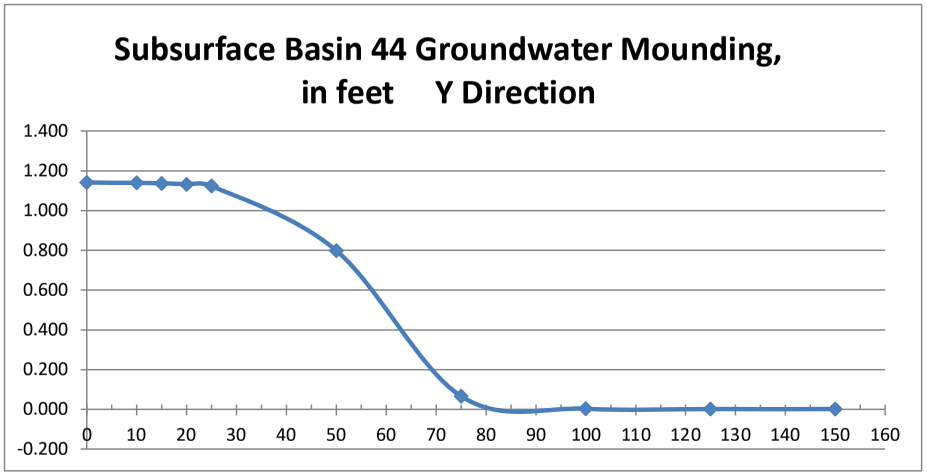
Input Values

0.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
55.000	x	1/2 length of basin (x direction, in feet)
11.000	y	1/2 width of basin (y direction, in feet)
32.80	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.141	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.141	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.141	0
1.139	10
1.137	15
1.132	20
1.123	25
0.799	50
0.065	75
0.002	100
0.001	125
0.001	150

Re-Calculate Now



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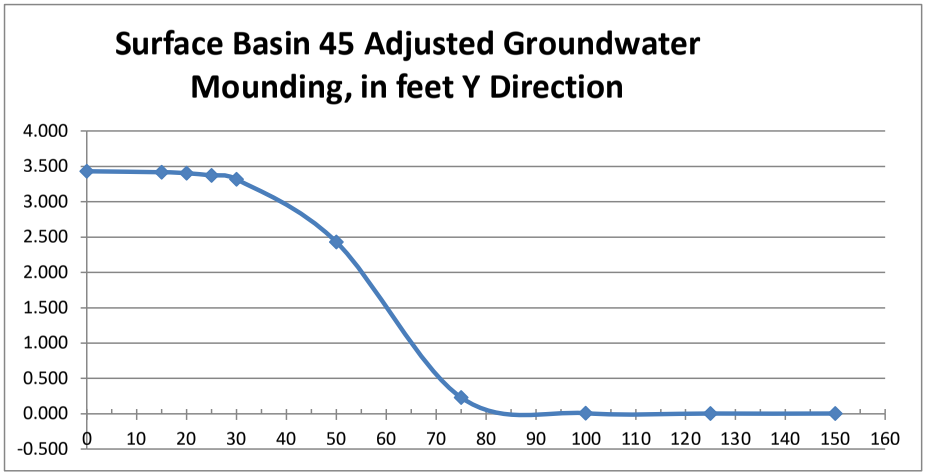
Input Values

0.50	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
56.000	x	1/2 length of basin (x direction, in feet)
43.000	y	1/2 width of basin (y direction, in feet)
12.43	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.431	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.431	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.431	0
3.419	15
3.403	20
3.374	25
3.319	30
2.430	50
0.228	75
0.006	100
0.001	125
0.001	150

Re-Calculate Now



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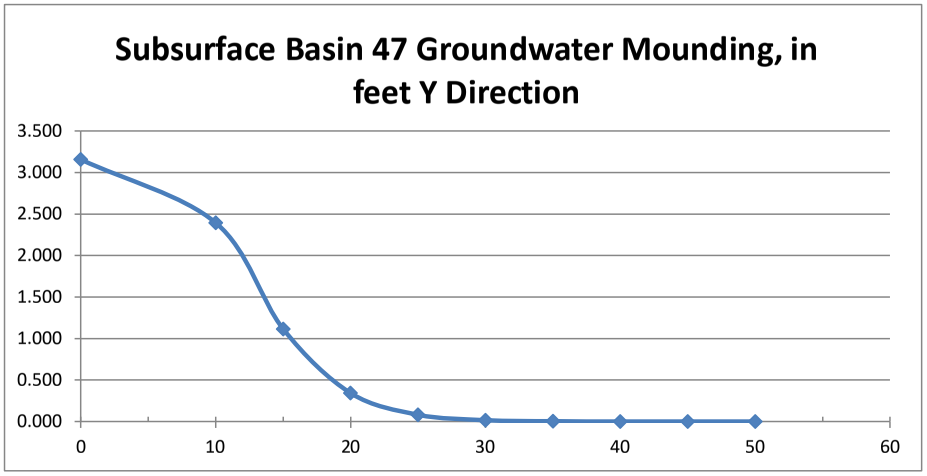
Input Values

1.64	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.64	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
13.000	x	1/2 length of basin (x direction, in feet)
39.000	y	1/2 width of basin (y direction, in feet)
3.64	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.158	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.158	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.158	0
2.395	10
1.115	15
0.345	20
0.083	25
0.016	30
0.003	35
0.001	40
0.001	45
0.001	50

Re-Calculate Now



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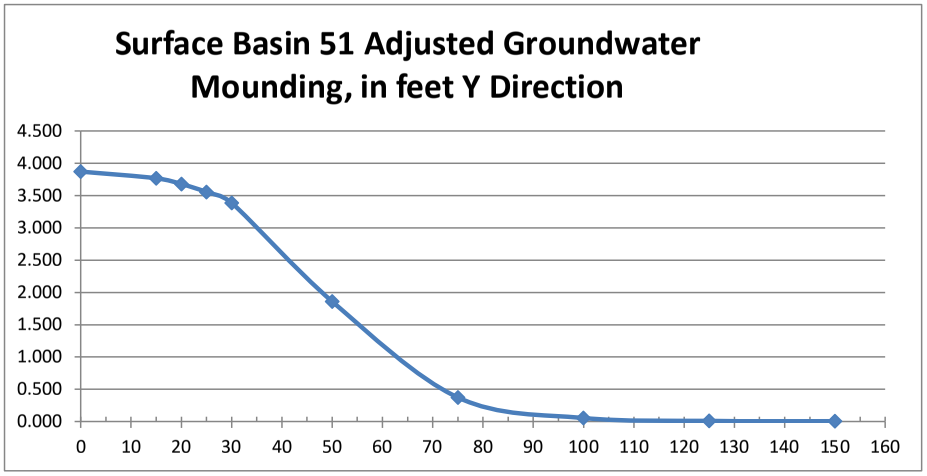
Input Values

0.25	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.64	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
48.000	x	1/2 length of basin (x direction, in feet)
15.000	y	1/2 width of basin (y direction, in feet)
56.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.871	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.871	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.871	0
3.768	15
3.680	20
3.555	25
3.384	30
1.861	50
0.374	75
0.055	100
0.008	125
0.003	150

Re-Calculate Now



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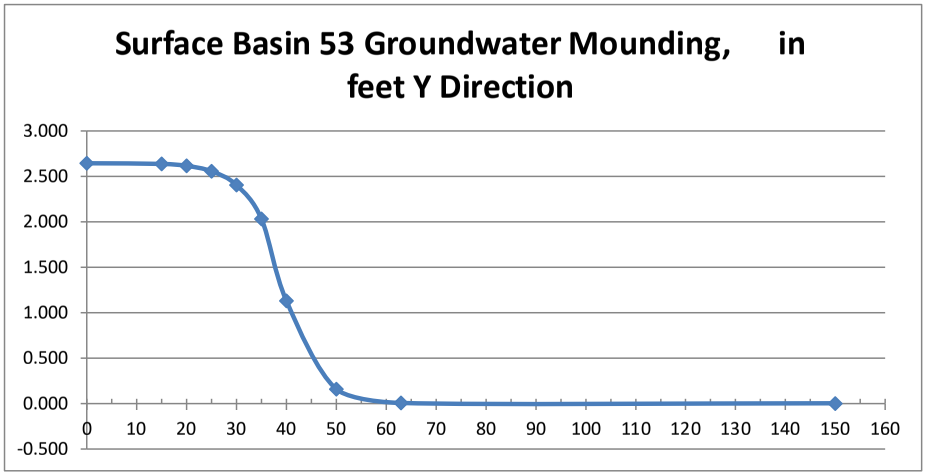
Input Values

1.54	*R*	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.54	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
39.000	x	1/2 length of basin (x direction, in feet)
4.000	y	1/2 width of basin (y direction, in feet)
7.03	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.647	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.647	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.647	0
2.639	15
2.618	20
2.559	25
2.406	30
2.033	35
1.130	40
0.160	50
0.008	63
0.002	150

Re-Calculate Now



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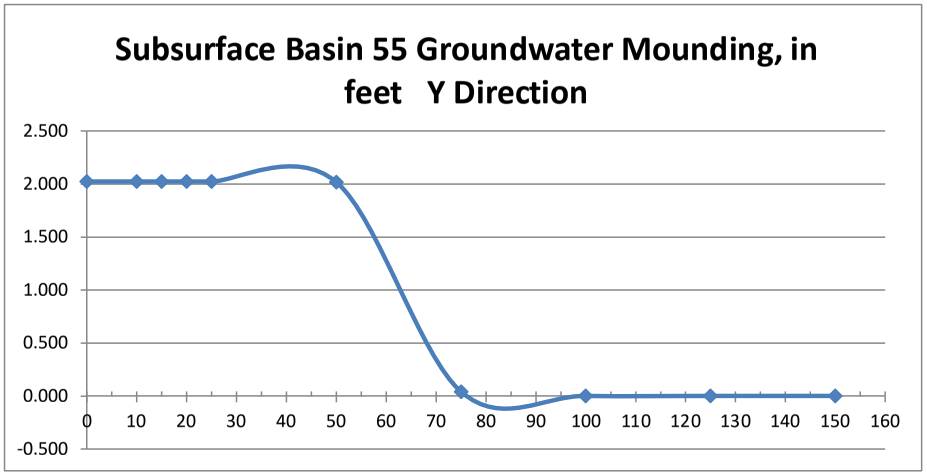
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
65.000	x	1/2 length of basin (x direction, in feet)
50.000	y	1/2 width of basin (y direction, in feet)
4.86	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.025	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.025	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.025	0
2.025	10
2.025	15
2.025	20
2.025	25
2.020	50
0.039	75
0.001	100
0.001	125
0.001	150

Re-Calculate Now



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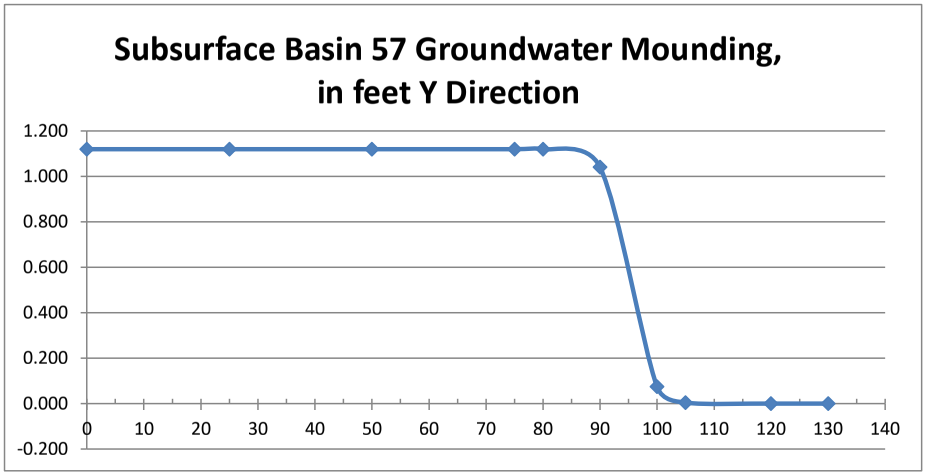
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
95.000	x	1/2 length of basin (x direction, in feet)
30.000	y	1/2 width of basin (y direction, in feet)
2.69	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.121	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.121	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.121	0
1.121	25
1.121	50
1.121	75
1.121	80
1.042	90
0.075	100
0.005	105
0.000	120
0.000	130

Re-Calculate Now



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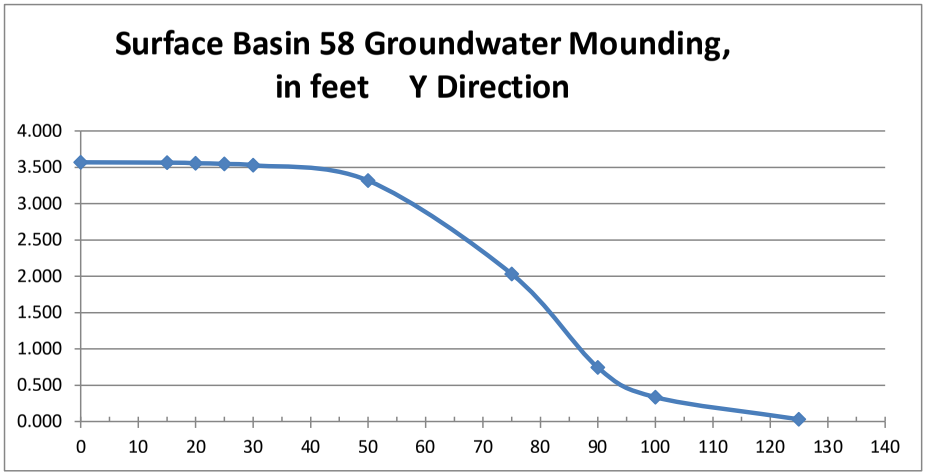
Input Values

0.13	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
77.000	x	1/2 length of basin (x direction, in feet)
25.000	y	1/2 width of basin (y direction, in feet)
61.50	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.572	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.572	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.572	0
3.565	15
3.558	20
3.548	25
3.530	30
3.318	50
2.032	75
0.746	90
0.336	100
0.031	125

Re-Calculate Now



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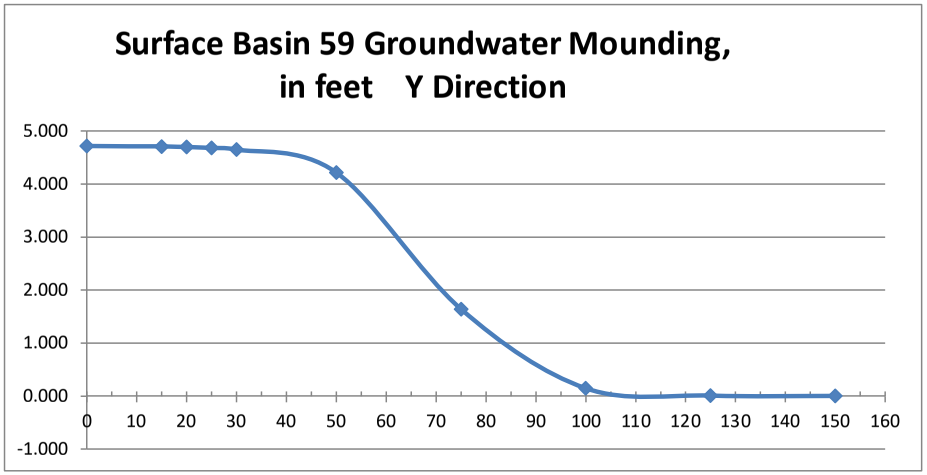
Input Values

0.20	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
1.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
70.000	x	1/2 length of basin (x direction, in feet)
77.000	y	1/2 width of basin (y direction, in feet)
42.50	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.718	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.718	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.718	0
4.709	15
4.699	20
4.681	25
4.650	30
4.215	50
1.638	75
0.149	100
0.007	125
0.002	150

Re-Calculate Now



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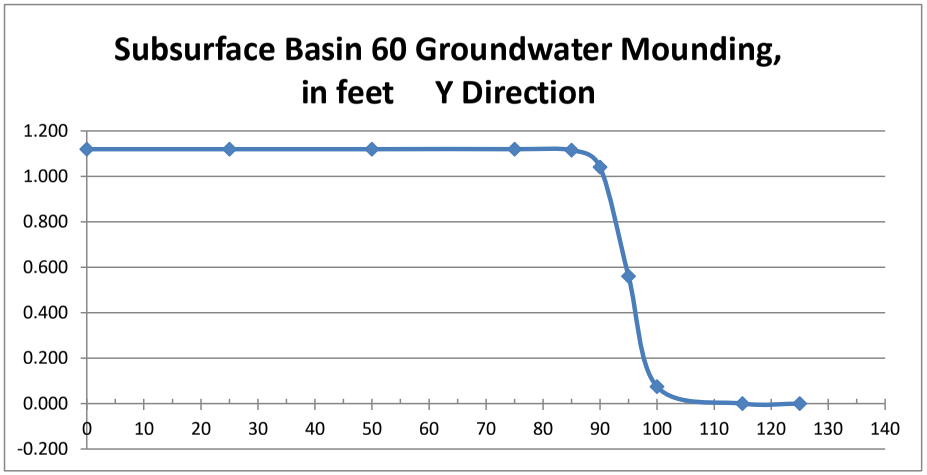
Input Values

0.75	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.75	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
95.000	x	1/2 length of basin (x direction, in feet)
30.000	y	1/2 width of basin (y direction, in feet)
2.69	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.121	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.121	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.121	0
1.121	25
1.121	50
1.121	75
1.115	85
1.042	90
0.561	95
0.075	100
0.000	115
0.000	125

Re-Calculate Now



Disclaimer

This spreadsheet solving the Hantush (1967) equation for ground-water mounding beneath an infiltration basin is made available to the general public as a convenience for those wishing to replicate values documented in the USGS Scientific Investigations Report 2010-5102 "Groundwater mounding beneath hypothetical stormwater infiltration basins" or to calculate values based on user-specified site conditions. Any changes made to the spreadsheet (other than values identified as user-specified) after transmission from the USGS could have unintended, undesirable consequences. These consequences could include, but may not be limited to: erroneous output, numerical instabilities, and violations of underlying assumptions that are inherent in results presented in the accompanying USGS published report. The USGS assumes no responsibility for the consequences of any changes made to the spreadsheet. If changes are made to the spreadsheet, the user is responsible for documenting the changes and justifying the results and conclusions.

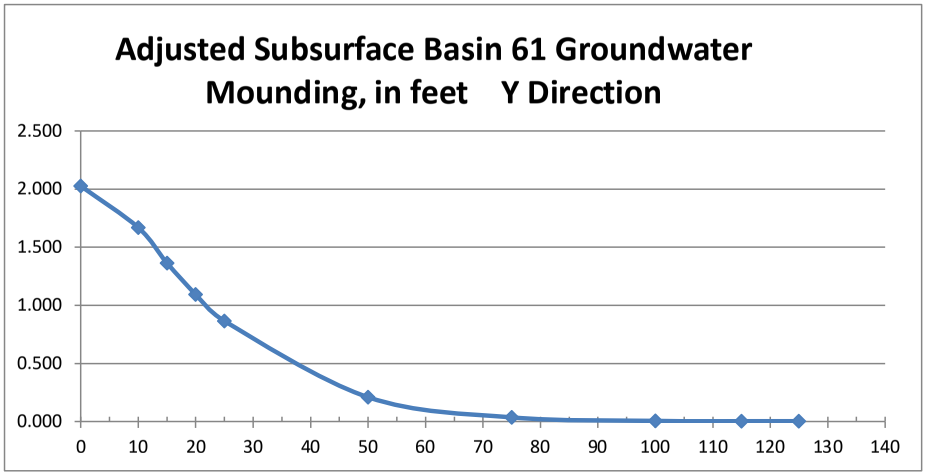
Input Values

0.26	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.50	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
9.000	x	1/2 length of basin (x direction, in feet)
55.000	y	1/2 width of basin (y direction, in feet)
42.51	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.028	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.028	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.028	0
1.669	10
1.363	15
1.095	20
0.866	25
0.210	50
0.035	75
0.006	100
0.003	115
0.002	125

Re-Calculate Now



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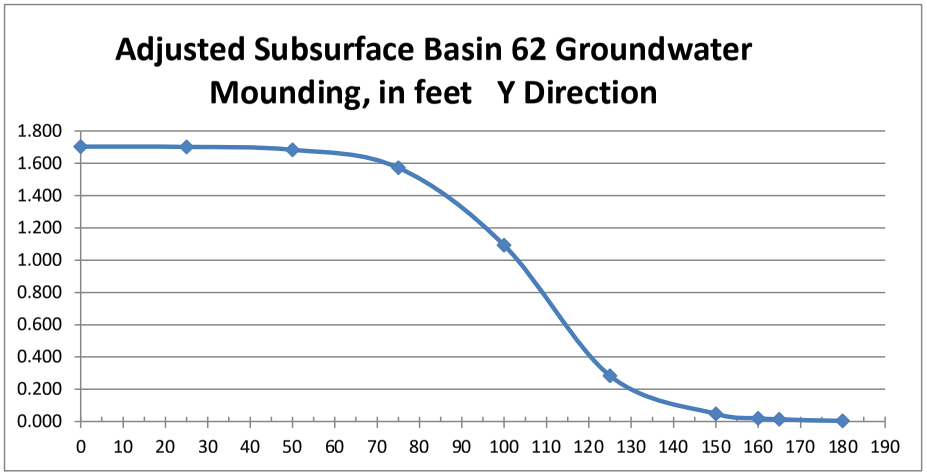
Input Values

0.10	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
2.50	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
106.000	x	1/2 length of basin (x direction, in feet)
34.000	y	1/2 width of basin (y direction, in feet)
35.60	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.704	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.704	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.704	0
1.702	25
1.684	50
1.573	75
1.093	100
0.284	125
0.047	150
0.021	160
0.013	165
0.004	180

Re-Calculate Now



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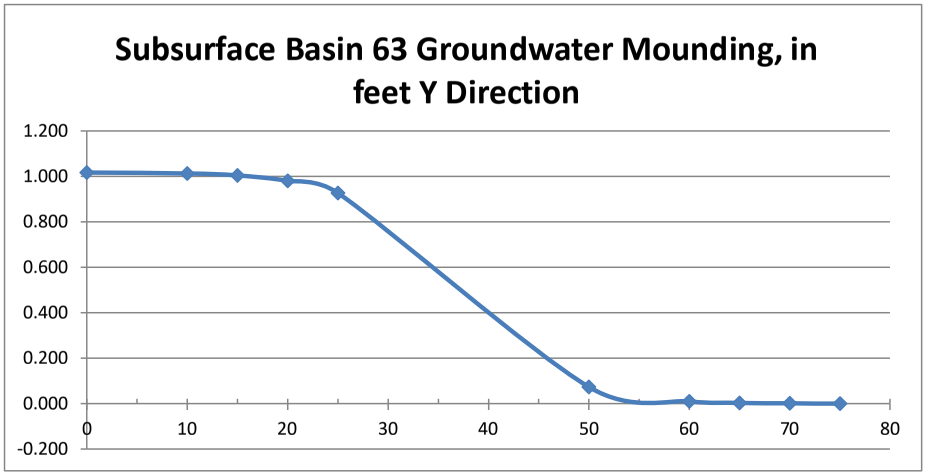
Input Values

0.63	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
5.00	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
37.000	x	1/2 length of basin (x direction, in feet)
55.000	y	1/2 width of basin (y direction, in feet)
2.91	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.018	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.018	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.018	0
1.014	10
1.004	15
0.981	20
0.928	25
0.074	50
0.011	60
0.004	65
0.001	70
0.001	75

Re-Calculate Now



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New Jersey Groundwater Recharge Spreadsheet Version 2.0 November 2003

Annual Groundwater Recharge Analysis (based on GSR-32)

Select Township ↓	Average Annual P (in)	Climatic Factor
MIDDLESEX CO., PLAINSBORO TWP	44.9	1.43

Project Name:	Princeton Nurseries
Description:	
Analysis Date:	09/25/24

Pre-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	1.5	Open space	Woodstown	11.3	61,497
2	0.3	Woods	Woodstown	11.0	11,948
3	43.9	Meadow, Pasture, Grassland or range	Nixon	13.5	2,153,662
4	12.1	Woods	Nixon	13.6	597,959
5	20.7	Meadow, Pasture, Grassland or range	Hammonton	13.8	1,033,279
6	8.6	Woods	Hammonton	13.4	417,741
7	1	Impervious areas	Nixon	0.0	-
8	2	Woods-grass combination	Hammonton	13.7	99,715
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	90.1			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				13.4	4,375,801

Post-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	56.7	Impervious areas	Nixon	0.0	-
2	19.9	Open space	Hammonton	13.9	1,002,917
3	11.7	Open space	Nixon	13.7	581,216
4	0.3	Woods	Woodstown	11.0	11,948
5	1.5	Open space	Woodstown	11.3	61,497
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	90.1			Total Annual Recharge (in)	Total Annual Recharge (cu.ft)
				5.1	1,657,577

Annual Recharge Requirements Calculation ↓

% of Pre-Developed Annual Recharge to Preserve =	100%	Total Impervious Area (sq.ft) 2,469,852
Post-Development Annual Recharge Deficit=	*2,718,223*	(cubic feet)

Recharge Efficiency Parameters Calculations (area averages)

RWC=	3.70	(in)	DRWC=	3.70	(in)
ERWC =	1.05	(in)	EDRWC=	1.05	(in)

Procedure to fill the Pre-Development and Post-Development Conditions Tables

For each land segment, first enter the area, then select TR-55 Land Cover, then select Soil. Start from the top of the table and proceed downward. Don't leave blank rows (with A=0) in between your segment entries. Rows with A=0 will not be displayed or used in calculations. For impervious areas outside of standard lots select "Impervious Areas" as the Land Cover. Soil type for impervious areas are only required if an infiltration facility will be built within these areas.

Princeton Nurseries
Blk. 102, Lots 5 6; Blk. 106, Lot 1
Plainsboro Twp., Middlesex Co., NJ

Groundwater Recharge BMP Summary	
Basin	Recharge Volume (cf)
1	39,935
4	18,900
5	35,000
6	47,000
7	46,750
11	60,000
12	25,296
15	100,000
16	165,000
19	27,500
20	80,500
25	175,000
26	126,000
27	71,000
29	15,750
30	60,112
35	11,275
42	61,750
43	79,000
44	79,000
45	145,000
51	57,725
52	25,500
53	29,750
55	225,000
56	225,000
57	93,000
58	125,000
59	125,000
60	152,000
61	65,000
62	150,000
Provided Recharge Volume	2,742,743
Required Recharge Volume	2,718,223

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	09/25/24	Bioretention Basin 1

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	4356.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	6.1	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-6.2	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	1.05	in
ERWC Modified to consider dEXC	EDRWC	1.05	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.87	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.19	in
Inches of Rainfall to capture	Pdesign	1.41	in
Recharge Provided Avg. over Imp. Area		20.4	in
Runoff Captured Avg. over imp. Area		31.3	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.19	unitless
BMP Volume	VBMP	2,227	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	40,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	23,522	sq.ft
Root Zone Water Capacity	RWC	3.70	in
RWC Modified to consider dEXC	DRWC	3.70	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.2	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		40,000	cu.ft
Avg BMP Recharge Efficiency		65.1%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		89.8%	%
%Runoff Recharged		0.6%	%
%Rainfall Recharged		0.4%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 4

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	4240.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	4.2	in
Upper level of the BMP surface (negative if above ground)	dBMPu	43.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	76.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	2.77	in
Inches of Rainfall to capture	Pdesign	3.00	in
Recharge Provided Avg. over Imp. Area		34.7	in
Runoff Captured Avg. over imp. Area		34.9	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.65	unitless
BMP Volume	VBMP	1,486	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	18,900	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	6,534	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.01	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		18,900	cu.ft
Avg BMP Recharge Efficiency		99.6%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		99.9%	%
%Runoff Recharged		0.3%	%
%Rainfall Recharged		0.2%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

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To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 5

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	1200.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	8.3	in
Upper level of the BMP surface (negative if above ground)	dBMPu	12.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	76.8	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.01	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.01	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.61	in
Inches of Rainfall to capture	Pdesign	0.75	in
Recharge Provided Avg. over Imp. Area		25.4	in
Runoff Captured Avg. over imp. Area		25.4	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.07	unitless
BMP Volume	VBMP	829	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	35,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	16,552	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.02	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.2	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		35,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		72.8%	%
%Runoff Recharged		0.5%	%
%Rainfall Recharged		0.4%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

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To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 6

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2000.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	11.7	in
Upper level of the BMP surface (negative if above ground)	dBMPu	40.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	66.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.46	in
Inches of Rainfall to capture	Pdesign	1.68	in
Recharge Provided Avg. over Imp. Area		32.4	in
Runoff Captured Avg. over imp. Area		32.4	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.11	unitless
BMP Volume	VBMP	1,957	cu.ft

Parameters from Annual Recharge Worksheet

Parameter	Symbol	Value	Unit
Post-D Deficit Recharge (or desired recharge volume)	Vdef	47,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	17,424	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.02	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.2	in

System Performance Calculated Parameters

Parameter		Value	Unit
Annual BMP Recharge Volume		47,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		92.8%	%
%Runoff Recharged		0.6%	%
%Rainfall Recharged		0.5%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 7

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2000.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	11.6	in
Upper level of the BMP surface (negative if above ground)	dBMPu	12.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	66.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.02	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.02	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.46	in
Inches of Rainfall to capture	Pdesign	1.68	in
Recharge Provided Avg. over Imp. Area		32.2	in
Runoff Captured Avg. over imp. Area		32.3	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.11	unitless
BMP Volume	VBMP	1,932	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	46,750	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	17,424	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.07	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.2	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		46,750	cu.ft
Avg BMP Recharge Efficiency		99.6%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		92.6%	%
%Runoff Recharged		0.6%	%
%Rainfall Recharged		0.5%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 11

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	1632.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	12.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	12.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	48.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.13	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.10	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.75	in
Inches of Rainfall to capture	Pdesign	0.92	in
Recharge Provided Avg. over Imp. Area		27.1	in
Runoff Captured Avg. over imp. Area		27.6	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.06	unitless
BMP Volume	VBMP	1,628	cu.ft

Parameters from Annual Recharge Worksheet

Parameter	Symbol	Value	Unit
Post-D Deficit Recharge (or desired recharge volume)	Vdef	60,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	26,571	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.45	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.3	in

System Performance Calculated Parameters

Parameter		Value	Unit
Annual BMP Recharge Volume		60,000	cu.ft
Avg BMP Recharge Efficiency		98.2%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		79.0%	%
%Runoff Recharged		0.8%	%
%Rainfall Recharged		0.6%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Bioretention Basin 12

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	5227.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	8.3	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-10.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.77	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	2.77	in
Inches of Rainfall to capture	Pdesign	3.00	in
Recharge Provided Avg. over Imp. Area		19.4	in
Runoff Captured Avg. over imp. Area		34.9	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.33	unitless
BMP Volume	VBMP	3,624	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	25,296	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	15,681	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	3.22	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		25,296	cu.ft
Avg BMP Recharge Efficiency		55.5%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		100.0%	%
%Runoff Recharged		0.3%	%
%Rainfall Recharged		0.3%	%

OTHER NOTES

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 15

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	7488.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	7.1	in
Upper level of the BMP surface (negative if above ground)	dBMPu	36.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	80.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.67	in
Inches of Rainfall to capture	Pdesign	1.90	in
Recharge Provided Avg. over Imp. Area		32.8	in
Runoff Captured Avg. over imp. Area		32.8	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.20	unitless
BMP Volume	VBMP	4,448	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	100,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	36,590	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.01	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.5	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		100,000	cu.ft
Avg BMP Recharge Efficiency		99.8%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		94.1%	%
%Runoff Recharged		1.4%	%
%Rainfall Recharged		1.1%	%

OTHER NOTES

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 16

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	9595.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	7.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	36.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	80.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.10	in
Inches of Rainfall to capture	Pdesign	1.31	in
Recharge Provided Avg. over Imp. Area		30.7	in
Runoff Captured Avg. over imp. Area		30.7	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.15	unitless
BMP Volume	VBMP	5,628	cu.ft

Parameters from Annual Recharge Worksheet

Parameter	Symbol	Value	Unit
Post-D Deficit Recharge (or desired recharge volume)	Vdef	165,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	64,469	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.01	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.8	in

System Performance Calculated Parameters

Parameter		Value	Unit
Annual BMP Recharge Volume		165,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		88.1%	%
%Runoff Recharged		2.3%	%
%Rainfall Recharged		1.8%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

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How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 19

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	1056.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	6.3	in
Upper level of the BMP surface (negative if above ground)	dBMPu	27.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	54.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.01	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.01	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.45	in
Inches of Rainfall to capture	Pdesign	0.57	in
Recharge Provided Avg. over Imp. Area		21.6	in
Runoff Captured Avg. over imp. Area		21.7	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.07	unitless
BMP Volume	VBMP	556	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	27,500	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	15,246	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.03	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		27,500	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		62.1%	%
%Runoff Recharged		0.4%	%
%Rainfall Recharged		0.3%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 20

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	5670.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	7.3	in
Upper level of the BMP surface (negative if above ground)	dBMPu	16.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	58.8	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.03	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.03	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.46	in
Inches of Rainfall to capture	Pdesign	1.68	in
Recharge Provided Avg. over Imp. Area		32.1	in
Runoff Captured Avg. over imp. Area		32.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.19	unitless
BMP Volume	VBMP	3,460	cu.ft

Parameters from Annual Recharge Worksheet

Parameter	Symbol	Value	Unit
Post-D Deficit Recharge (or desired recharge volume)	Vdef	80,500	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	30,056	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.12	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.4	in

System Performance Calculated Parameters

Parameter		Value	Unit
Annual BMP Recharge Volume		80,500	cu.ft
Avg BMP Recharge Efficiency		98.8%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		93.2%	%
%Runoff Recharged		1.1%	%
%Rainfall Recharged		0.9%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 25

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	13322.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	10.5	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-24.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.74	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.67	in
Inches of Rainfall to capture	Pdesign	1.90	in
Recharge Provided Avg. over Imp. Area		25.0	in
Runoff Captured Avg. over imp. Area		33.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.16	unitless
BMP Volume	VBMP	11,671	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	175,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	84,070	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	3.22	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.8	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		175,000	cu.ft
Avg BMP Recharge Efficiency		74.6%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		95.9%	%
%Runoff Recharged		2.4%	%
%Rainfall Recharged		1.9%	%

OTHER NOTES

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 26

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	4356.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	9.6	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-33.5	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.72	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.61	in
Inches of Rainfall to capture	Pdesign	0.75	in
Recharge Provided Avg. over Imp. Area		21.8	in
Runoff Captured Avg. over imp. Area		25.4	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.06	unitless
BMP Volume	VBMP	3,468	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	126,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	69,260	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	3.22	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.6	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		126,000	cu.ft
Avg BMP Recharge Efficiency		85.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		72.8%	%
%Runoff Recharged		1.7%	%
%Rainfall Recharged		1.4%	%

OTHER NOTES

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 27

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2244.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	9.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	39.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	81.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.61	in
Inches of Rainfall to capture	Pdesign	0.75	in
Recharge Provided Avg. over Imp. Area		25.4	in
Runoff Captured Avg. over imp. Area		25.4	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.07	unitless
BMP Volume	VBMP	1,682	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	71,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	33,541	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.01	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.3	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		71,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		72.8%	%
%Runoff Recharged		1.0%	%
%Rainfall Recharged		0.8%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 29

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	218.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	12.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-35.4	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.72	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.07	in
Inches of Rainfall to capture	Pdesign	0.12	in
Recharge Provided Avg. over Imp. Area		4.8	in
Runoff Captured Avg. over imp. Area		5.1	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.01	unitless
BMP Volume	VBMP	217	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	15,750	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	39,204	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	3.22	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		15,750	cu.ft
Avg BMP Recharge Efficiency		93.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		14.7%	%
%Runoff Recharged		0.2%	%
%Rainfall Recharged		0.2%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 30

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	19602.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	0.6	in
Upper level of the BMP surface (negative if above ground)	dBMPu	60.6	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	61.2	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.19	in
Inches of Rainfall to capture	Pdesign	0.26	in
Recharge Provided Avg. over Imp. Area		12.1	in
Runoff Captured Avg. over imp. Area		12.1	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.33	unitless
BMP Volume	VBMP	920	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	60,500	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	60,112	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.01	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.3	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		60,500	cu.ft
Avg BMP Recharge Efficiency		99.4%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		34.8%	%
%Runoff Recharged		0.8%	%
%Rainfall Recharged		0.7%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 35

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	3920.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	5.8	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-6.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.79	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	2.77	in
Inches of Rainfall to capture	Pdesign	3.00	in
Recharge Provided Avg. over Imp. Area		15.5	in
Runoff Captured Avg. over imp. Area		34.8	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.45	unitless
BMP Volume	VBMP	1,903	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Parameter	Symbol	Value	Unit
Post-D Deficit Recharge (or desired recharge volume)	Vdef	11,275	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	8,712	sq.ft
Root Zone Water Capacity	RWC	3.23	in
RWC Modified to consider dEXC	DRWC	3.23	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.1	in

System Performance Calculated Parameters

Parameter		Value	Unit
Annual BMP Recharge Volume		11,275	cu.ft
Avg BMP Recharge Efficiency		44.7%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		99.6%	%
%Runoff Recharged		0.2%	%
%Rainfall Recharged		0.1%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	09/27/24	UGB 42

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2043.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	12.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	24.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	66.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.01	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.02	in
Inches of Rainfall to capture	Pdesign	1.24	in
Recharge Provided Avg. over Imp. Area		30.4	in
Runoff Captured Avg. over imp. Area		30.4	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.08	unitless
BMP Volume	VBMP	2,037	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	61,750	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	24,393	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.02	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.3	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		61,750	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		87.1%	%
%Runoff Recharged		0.9%	%
%Rainfall Recharged		0.7%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	UGB 43

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2218.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	11.9	in
Upper level of the BMP surface (negative if above ground)	dBMPu	39.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	81.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.82	in
Inches of Rainfall to capture	Pdesign	1.00	in
Recharge Provided Avg. over Imp. Area		28.3	in
Runoff Captured Avg. over imp. Area		28.3	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.07	unitless
BMP Volume	VBMP	2,201	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	79,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	33,541	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.01	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.4	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		79,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		81.0%	%
%Runoff Recharged		1.1%	%
%Rainfall Recharged		0.8%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	09/27/24	UGB 44

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2218.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	11.9	in
Upper level of the BMP surface (negative if above ground)	dBMPu	39.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	81.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.82	in
Inches of Rainfall to capture	Pdesign	1.00	in
Recharge Provided Avg. over Imp. Area		28.3	in
Runoff Captured Avg. over imp. Area		28.3	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.07	unitless
BMP Volume	VBMP	2,201	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	79,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	33,541	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.01	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.4	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		79,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		81.0%	%
%Runoff Recharged		1.1%	%
%Rainfall Recharged		0.8%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 45

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	12197.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	6.5	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-7.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.74	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.02	in
Inches of Rainfall to capture	Pdesign	1.24	in
Recharge Provided Avg. over Imp. Area		22.1	in
Runoff Captured Avg. over imp. Area		30.4	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.15	unitless
BMP Volume	VBMP	6,559	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	145,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	78,844	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	3.22	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.7	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		145,000	cu.ft
Avg BMP Recharge Efficiency		72.6%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		87.0%	%
%Runoff Recharged		2.0%	%
%Rainfall Recharged		1.6%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

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Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 51

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2614.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	12.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-12.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.73	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.19	in
Inches of Rainfall to capture	Pdesign	1.41	in
Recharge Provided Avg. over Imp. Area		26.1	in
Runoff Captured Avg. over imp. Area		31.6	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.10	unitless
BMP Volume	VBMP	2,612	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	57,725	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	26,571	sq.ft
Root Zone Water Capacity	RWC	3.23	in
RWC Modified to consider dEXC	DRWC	3.23	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.3	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		57,725	cu.ft
Avg BMP Recharge Efficiency		82.5%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		90.5%	%
%Runoff Recharged		0.8%	%
%Rainfall Recharged		0.6%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 52

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	1263.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	6.2	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-6.2	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.73	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.47	in
Inches of Rainfall to capture	Pdesign	0.59	in
Recharge Provided Avg. over Imp. Area		18.0	in
Runoff Captured Avg. over imp. Area		22.2	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.07	unitless
BMP Volume	VBMP	650	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	25,500	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	16,988	sq.ft
Root Zone Water Capacity	RWC	3.23	in
RWC Modified to consider dEXC	DRWC	3.23	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		25,500	cu.ft
Avg BMP Recharge Efficiency		81.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		63.7%	%
%Runoff Recharged		0.4%	%
%Rainfall Recharged		0.3%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Infiltration Basin 53

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	1263.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	8.6	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-11.4	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.73	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.78	in
Inches of Rainfall to capture	Pdesign	0.96	in
Recharge Provided Avg. over Imp. Area		23.0	in
Runoff Captured Avg. over imp. Area		28.1	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.09	unitless
BMP Volume	VBMP	902	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	26,750	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	13,939	sq.ft
Root Zone Water Capacity	RWC	3.23	in
RWC Modified to consider dEXC	DRWC	3.23	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		26,750	cu.ft
Avg BMP Recharge Efficiency		81.8%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		80.6%	%
%Runoff Recharged		0.4%	%
%Rainfall Recharged		0.3%	%

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	12/18/24	UGB 55

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	11738.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	7.1	in
Upper level of the BMP surface (negative if above ground)	dBMPu	31.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	67.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.01	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.96	in
Inches of Rainfall to capture	Pdesign	1.17	in
Recharge Provided Avg. over Imp. Area		29.7	in
Runoff Captured Avg. over imp. Area		29.7	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.13	unitless
BMP Volume	VBMP	6,972	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	225,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	91,040	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.02	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	1.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		225,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		85.1%	%
%Runoff Recharged		3.1%	%
%Rainfall Recharged		2.4%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	12/18/24	UGB 56

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	20295.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	4.2	in
Upper level of the BMP surface (negative if above ground)	dBMPu	18.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	62.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.01	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.01	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.96	in
Inches of Rainfall to capture	Pdesign	1.17	in
Recharge Provided Avg. over Imp. Area		29.8	in
Runoff Captured Avg. over imp. Area		29.9	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.22	unitless
BMP Volume	VBMP	7,106	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	225,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	90,604	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.03	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	1.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		225,000	cu.ft
Avg BMP Recharge Efficiency		99.7%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		85.7%	%
%Runoff Recharged		3.1%	%
%Rainfall Recharged		2.4%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	12/18/24	UGB 57

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	18703.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	5.3	in
Upper level of the BMP surface (negative if above ground)	dBMPu	8.4	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	50.4	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.14	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.11	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	2.77	in
Inches of Rainfall to capture	Pdesign	3.00	in
Recharge Provided Avg. over Imp. Area		30.5	in
Runoff Captured Avg. over imp. Area		34.8	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.51	unitless
BMP Volume	VBMP	8,200	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	93,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	36,590	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.48	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.4	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		93,000	cu.ft
Avg BMP Recharge Efficiency		87.6%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		99.8%	%
%Runoff Recharged		1.3%	%
%Rainfall Recharged		1.0%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	06/11/24	Bioretention Basin 58

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	6534.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	7.5	in
Upper level of the BMP surface (negative if above ground)	dBMPu	-9.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	0.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.92	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.73	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.72	in
Inches of Rainfall to capture	Pdesign	0.88	in
Recharge Provided Avg. over Imp. Area		21.9	in
Runoff Captured Avg. over imp. Area		27.3	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.10	unitless
BMP Volume	VBMP	4,068	cu.ft

Parameters from Annual Recharge Worksheet

Parameter	Symbol	Value	Unit
Post-D Deficit Recharge (or desired recharge volume)	Vdef	125,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	68,389	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	3.22	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.6	in

System Performance Calculated Parameters

Parameter		Value	Unit
Annual BMP Recharge Volume		125,000	cu.ft
Avg BMP Recharge Efficiency		80.4%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		78.2%	%
%Runoff Recharged		1.7%	%
%Rainfall Recharged		1.3%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	12/18/24	UGB 59

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	18703.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	6.4	in
Upper level of the BMP surface (negative if above ground)	dBMPu	16.5	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	60.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.03	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.02	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	2.77	in
Inches of Rainfall to capture	Pdesign	3.00	in
Recharge Provided Avg. over Imp. Area		34.1	in
Runoff Captured Avg. over imp. Area		34.8	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.42	unitless
BMP Volume	VBMP	10,047	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	126,250	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	44,431	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.10	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.6	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		126,250	cu.ft
Avg BMP Recharge Efficiency		97.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		99.8%	%
%Runoff Recharged		1.7%	%
%Rainfall Recharged		1.4%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	12/18/24	UGB 60

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	18703.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	7.4	in
Upper level of the BMP surface (negative if above ground)	dBMPu	8.4	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	50.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.14	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.11	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	2.77	in
Inches of Rainfall to capture	Pdesign	3.00	in
Recharge Provided Avg. over Imp. Area		31.7	in
Runoff Captured Avg. over imp. Area		34.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.33	unitless
BMP Volume	VBMP	11,492	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	152,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	57,499	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.49	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.7	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		152,000	cu.ft
Avg BMP Recharge Efficiency		91.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		98.9%	%
%Runoff Recharged		2.1%	%
%Rainfall Recharged		1.6%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	12/18/24	UGB 61

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2127.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	5.8	in
Upper level of the BMP surface (negative if above ground)	dBMPu	33.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	75.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.22	in
Inches of Rainfall to capture	Pdesign	0.29	in
Recharge Provided Avg. over Imp. Area		13.6	in
Runoff Captured Avg. over imp. Area		13.6	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.04	unitless
BMP Volume	VBMP	1,021	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	65,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	57,499	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.02	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.3	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		65,000	cu.ft
Avg BMP Recharge Efficiency		99.9%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		38.9%	%
%Runoff Recharged		0.9%	%
%Rainfall Recharged		0.7%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
Princeton Nurseries	0	12/18/24	UGB 62

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	16302.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	4.5	in
Upper level of the BMP surface (negative if above ground)	dBMPu	12.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	48.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.92	in
ERWC Modified to consider dEXC	EDRWC	0.13	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.10	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.19	in
Inches of Rainfall to capture	Pdesign	1.41	in
Recharge Provided Avg. over Imp. Area		29.5	in
Runoff Captured Avg. over imp. Area		31.7	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.27	unitless
BMP Volume	VBMP	6,053	cu.ft

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	150,000	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	60,984	sq.ft
Root Zone Water Capacity	RWC	3.22	in
RWC Modified to consider dEXC	DRWC	0.45	in
Climatic Factor	C-factor	1.43	no units
Average Annual P	Pavg	44.9	in
Recharge Requirement over Imp. Area	dr	0.7	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		150,000	cu.ft
Avg BMP Recharge Efficiency		93.2%	Represents % Infiltration Recharged
%Rainfall became Runoff		77.7%	%
%Runoff Infiltrated		90.7%	%
%Runoff Recharged		2.1%	%
%Rainfall Recharged		1.6%	%

CALCULATION CHECK MESSAGES

Volume Balance-> OK
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensetive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP.
To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration clik the "Default Vdef & Aimp" button.

NJDEP Nonstructural Strategies Points System (NSPS)

Version: January 31, 2006

Note: Input Values in Yellow Cells Only

Project:	Princeton Nurseries
Date:	October 2, 2024
User:	BM
Notes:	

Step 1 - Provide Basic Major Development Site Information

A. Specify Total Area in Acres of Development Site Described in Steps 2 and 3 = 91.9 **Acres**

B. Specify by Percent the Various Planning Areas Located within the Development Site:

State Plan Planning Area:	PA-1	PA-2	PA-3	PA-4	PA-4B	PA-5	Total % Area
Percent of Each Planning Area within Site:		100.0%					100.0%

Note: See User's Guide for Equivalent Zones within Designated Centers and the NJ Meadowlands, Pinelands, and Highlands Districts

Step 2 - Describe Existing or Pre-Developed Site Conditions

A. Specify Existing Land Use/Land Cover Descriptions and Areas:

Site Segment	Land Use/Land Cover Description	Specify Land Use/Land Cover in Acres for Each HSG				Use/Cover Subtotals	Points
		HSG A	HSG B	HSG C	HSG D		
1	Wetlands and Undisturbed Stream Buffers					0.0	0
2	Lawn and Open Space		4.5	0.8		5.3	18
3	Brush and Shrub					0.0	0
4	Meadow, Pasture, Grassland, or Range		61.4	4.1		65.5	301
5	Row Crop					0.0	0
6	Small Grain and Legumes					0.0	0
7	Woods - Indigenous		16.2	3.0		19.2	92
8	Woods - Planted					0.0	0
9	Woods and Grass Combination					0.0	0
10	Ponds, Lakes, and Other Open Water					0.0	0
11	Gravel and Dirt					0.0	0
12	Porous and Permeable Paving					0.0	0
13	Directly Connected Impervious		1.9			1.9	0
14	Unconnected Impervious with Small D/S Pervious					0.0	0
15	Unconnected Impervious with Large D/S Pervious					0.0	0
	HSG Subtotals (Acres):	0.0	84.0	7.9	0.0	**Total Area:**	91.9
	HSG Subtotals (%):	0.0%	91.4%	8.6%	0.0%	**Total % Area:**	100.0%

Points Subtotal: **411**

Total Existing Site Points: **411**

Step 3 - Describe Proposed or Post-Developed Site Conditions

A. Specify Proposed Land Use/Land Cover Descriptions and Areas:

Site Segment	Land Use/Land Cover Description	Specify Land Use/Land Cover in Acres for Each HSG				Use/Cover Subtotals	Points
		HSG A	HSG B	HSG C	HSG D		
1	Wetlands and Undisturbed Stream Buffers					0.0	0
2	Lawn and Open Space		27.1	5.8		32.9	112
3	Brush and Shrub					0.0	0
4	Meadow, Pasture, Grassland, or Range					0.0	0
5	Row Crop					0.0	0
6	Small Grain and Legumes					0.0	0
7	Woods - Indigenous		2.2			2.2	11
8	Woods - Planted					0.0	0
9	Woods and Grass Combination					0.0	0
10	Ponds, Lakes, and Other Open Water					0.0	0
11	Gravel and Dirt					0.0	0
12	Porous and Permeable Paving					0.0	0
13	Directly Connected Impervious		54.7	2.1		56.8	0
14	Unconnected Impervious with Small D/S Pervious					0.0	0
15	Unconnected Impervious with Large D/S Pervious					0.0	0
	HSG Subtotals (Acres):	0.0	84.0	7.9	0.0	**Total Area:**	91.9
	HSG Subtotals (%):	0.0%	91.4%	8.6%	0.0%	**Total % Area:**	100.0%

Points Subtotal: **123**

B. Compare Proposed Impervious Coverage with Maximum Allowable Impervious Coverage:

Total Directly Connected Impervious Coverage =	62%	% of Site
Total Unconnected Impervious Coverage with Small D/S Pervious =	0%	% of Site
Total Unconnected Impervious Coverage with Large D/S Pervious =	0%	% of Site
Total Site Impervious Coverage =	62%	% of Site
Effective Site Impervious Coverage =	62%	% of Site
Specify Source of Maximum Allowable Impervious Coverage:	Table	(None or Table)
Allowable Site Impervious Cover from Maximum Impervious Cover Table:	66%	

Note: See Maximum Impervious Cover Table Worksheet for Details

Points Subtotal: 5

C. Compare Proposed Site Disturbance with Maximum Allowable Site Disturbance:

Total Proposed Site Disturbance =	96%	% of Site
Maximum Allowable Site Disturbance by Municipal Ordinance =	100%	% of Site

Points Subtotal: 3

D. Describe Proposed Runoff Conveyance System:

Total Length of Runoff Conveyance System =		Feet
Length of Vegetated Runoff Conveyance System =	0	Feet
% of Total Runoff Conveyance System That is Vegetated =	0%	

Points Subtotal: 0

E. Residential Lot Clustering:

Percent of Total Site Area that will be Clustered =		% of Site
Minimum Standard Lot Size as Per Zoning (Note: 1/2 Acre or Greater) =		Acres
Maximum Proposed Cluster Lot Size (Note:1/4 Acre or Less) =		Acres
Percent of Clustered Portion of Site to be Preserved as Vegetated Open Space =		% of Clustered Site Portion

Points Subtotal: 0

F. Will the Following be Utilized to Minimize Soil Compaction?

Proposed Lawn Areas will be Graded with Lightweight Construction Equipment:	Yes	(Yes or No)
Percent of Proposed Lawn Areas to be Graded with Such Equipment:	100%	% of Lawn Areas

Points Subtotal: 32

G. Are Any of the Following Stormwater Management Standards Met Using Only Nonstructural Strategies and Measures?

Groundwater Recharge Standards (NJAC 7:8-5.4-a-2):	Yes	(Yes or No)
Stormwater Runoff Quality Standards (NJAC 7:8-5.5):	Yes	(Yes or No)
Stormwater Runoff Quantity Standards (NJAC 7:8-5.4-a-3):	Yes	(Yes or No)

Points Subtotal: 391

Note: If the Answers to All Three Questions at G Above are "Yes", Adequate Nonstructural Measures have been Utilized.

Total Proposed Site Points: 553

Ratio of Proposed to Existing Site Points: 135%

Required Site Points Ratio: 95%

Nonstructural Point System Results: Proposed Nonstructural Measures are Adequate

Appendix F

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA												DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																	
I-393	I-394	0.13	0.47	0.06	0.06	10.0	10.0	25	5.74	0.36	0.36	RCP	0.015	15	15	15	0.50	4.0	3.2	9	2.0	3.0	0.7	10.7	80	117.10	114.08	113.68	3.0	19.0
I-394	I-395	0.32	0.73	0.24	0.30	10.0	10.0	25	5.74	1.36	1.72	RCP	0.015	15	15	15	0.50	4.0	3.2	43	3.1	6.8	0.1	10.1	10	116.60	113.68	113.63	2.9	17.8
I-395	I-396	0.24	0.57	0.13	0.43	10.0	10.0	25	5.74	0.78	2.49	RCP	0.015	15	15	15	0.50	4.0	3.2	63	3.4	8.6	0.6	10.6	130	116.60	113.63	112.98	3.0	18.4
I-396	I-397	0.24	0.71	0.17	0.60	10.0	10.0	25	5.74	0.97	3.46	RCP	0.015	15	15	15	0.50	4.0	3.2	88	3.6	10.8	0.0	10.0	10	116.60	112.98	112.93	3.6	26.2
I-397	UGB 60	0.56	0.89	0.50	1.10	10.0	10.0	25	5.74	2.87	6.34	RCP	0.015	18	18	18	1.00	9.1	5.2	70	5.5	11.0	0.0	10.0	5	116.30	112.68	112.63	3.6	22.9
I-398	I-399	0.17	0.64	0.11	0.11	10.0	10.0	25	5.74	0.65	0.65	RCP	0.015	15	15	15	0.50	4.0	3.2	24	2.6	4.9	0.1	10.1	21	116.60	113.68	113.58	2.9	17.8
I-399	I-400	0.17	0.65	0.11	0.22	10.0	10.0	25	5.74	0.65	1.30	RCP	0.015	15	15	15	0.50	4.0	3.2	88	3.6	10.8	0.6	10.6	130	116.60	113.58	112.93	3.0	19.0
I-400	I-401	0.18	0.63	0.11	0.34	10.0	10.0	25	5.74	0.64	1.94	RCP	0.015	15	15	15	0.50	4.0	3.2	49	3.2	7.4	0.1	10.1	10	116.60	112.93	112.88	3.7	26.8
I-401	UGB 54	0.41	0.82	0.34	0.67	10.0	10.0	25	5.74	1.94	3.88	RCP	0.015	15	15	15	0.50	4.0	3.2	98	3.7	12.0	0.0	10.0	5	116.10	112.88	112.86	3.2	21.4
I-313	I-406	0.45	0.81	0.36	0.36	10.0	10.0	25	5.74	2.10	2.10	RCP	0.015	15	15	15	0.50	4.0	3.2	53	3.3	7.8	0.5	10.5	105	117.10	113.58	113.06	3.5	25.0
I-406	I-405	0.30	0.56	0.17	0.53	10.0	10.0	25	5.74	0.96	3.06	RCP	0.015	15	15	15	0.50	4.0	3.2	77	3.5	9.8	0.0	10.0	10	117.23	113.06	113.01	4.2	32.8
I-405	I-404	0.32	0.54	0.17	0.70	10.0	10.0	25	5.74	0.99	4.05	RCP	0.015	18	18	18	0.50	6.4	3.6	63	3.8	10.3	0.6	10.6	130	117.40	112.76	112.11	4.6	35.2
I-404	UGB 56	0.29	0.56	0.16	0.86	10.0	10.0	25	5.74	0.95	5.00	RCP	0.015	18	18	18	0.50	6.4	3.6	78	4.0	11.9	0.1	10.1	13	117.40	112.11	112.05	5.3	43.0
I-533	UGB 57	0.36	0.82	0.06	0.06	10.0	10.0	25	5.74	0.35	0.35	RCP	0.015	15	15	15	0.50	4.0	3.2	9	2.0	3.0	0.2	10.2	30	115.51	111.25	111.10	4.3	33.9
I-402	MH-530	0.53	0.78	0.41	0.47	10.0	10.0	25	5.74	2.37	2.72	RCP	0.015	15	15	15	0.50	4.0	3.2	69	3.5	9.1	0.1	10.1	31	115.50	111.70	111.54	3.8	28.4
MH-530	UGB 57	0.00	0.00	0.41	0.47	10.0	10.0	25	5.74	2.37	2.72	RCP	0.015	15	15	15	0.50	4.0	3.2	69	3.5	9.1	0.1	10.1	12	116.29	111.54	111.10	4.8	39.8
I-285	UGB62	0.54	0.92	0.50	0.50	10.0	10.0	25	5.74	2.88	2.88	HDPE	0.012	15	15	15	0.50	4.9	4.0	58	4.2	8.2	0.1	10.1	25	113.10	108.45	108.00	4.6	38.5
I-286	I-287	0.22	0.95	0.21	0.71	10.0	10.0	25	5.74	1.24	4.12	RCP	0.015	18	18	18	0.50	6.4	3.6	64	3.8	10.4	0.3	10.3	60	113.00	109.59	109.29	3.4	20.4
I-287	I-407	0.46	0.92	0.43	1.14	10.0	10.0	25	5.74	2.47	6.58	RCP	0.015	24	24	24	0.50	13.9	4.4	47	4.3	11.6	0.3	10.3	65	113.00	108.79	108.47	4.2	23.5
I-407	UGB 62	0.33	0.83	0.28	1.42	10.0	10.0	25	5.74	1.61	8.19	RCP	0.015	24	24	24	0.50	13.9	4.4	59	4.6	13.2	0.0	10.0	7	113.50	108.47	108.44	5.0	33.4
I-288	UGB 61	0.58	0.89	0.52	0.52	10.0	10.0	25	5.74	2.99	2.99	RCP	0.015	15	15	15	0.50	4.0	3.2	24	2.6	4.9	0.1	10.1	14	113.75	108.32	108.25	5.4	47.9
I-292	UGB 63	1.03	0.98	1.01	1.01	10.0	10.0	25	5.74	5.83	5.83	RCP	0.015	15	15	15	0.50	4.0	3.2	147	3.7	12.3	0.0	10.0	7	109.07	104.54	104.50	4.5	37.1
OCS-526	MH-527	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	7.14	7.14	RCP	0.015	24	24	24	0.75	17.0	5.4	42	5.1	10.8	0.0	10.0	14	117.70	111.50	111.40	6.2	47.4
MH-527	MH-331	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	2.14	9.28	RCP	0.015	24	24	24	0.50	13.9	4.4	67	4.7	14.3	0.1	10.1	35	117.91	111.40	111.23	6.5	51.1
OCS-528	MH-331	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	4.08	4.08	RCP	0.015	15	15	15	0.50	4.0	3.2	103	3.7	12.3	0.1	10.1	12	117.48	111.60	111.54	5.9	53.3

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
MH-331	MH-332	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	11.22	11.22	RCP	0.015	24	24	24	0.50	13.9	4.4	81	4.9	16.2	0.9	10.9	271	117.67	110.79	109.44	6.9	55.6
OCS-529	MH-332	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	2.18	2.18	RCP	0.015	18	18	18	0.50	6.4	3.6	34	3.3	7.2	0.0	10.0	8	118.04	110.50	110.25	7.5	70.0
OCS-534	MH-332	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	8.61	8.61	RCP	0.015	24	24	24	0.50	13.9	4.4	62	4.6	13.6	0.2	10.2	49	119.01	110.50	110.25	8.5	75.1
MH-322	MH-333	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	22.01	22.01	RCP	0.015	30	30	30	0.50	25.1	5.1	88	5.8	21.7	0.5	10.5	160	118.04	108.94	108.14	9.1	75.7
MH-333	MH-487	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	22.01	22.01	RCP	0.015	30	30	30	0.50	25.1	5.1	88	5.8	21.7	0.3	10.3	114	116.57	108.14	107.57	8.4	67.7
OCS-486	MH-487	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	2.31	4.49	RCP	0.015	30	30	30	0.50	25.1	5.1	18	3.8	8.5	0.0	10.0	10	114.26	108.25	108.25	6.0	38.6
OCS-532	MH-334	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	3.60	8.09	RCP	0.015	30	30	30	0.50	25.1	5.1	32	4.5	11.6	0.1	10.1	17	114.00	111.08	110.99	2.9	1.5
MH-487	MH-334	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	24.32	24.32	RCP	0.015	30	30	30	0.50	25.1	5.1	97	5.9	23.8	0.1	10.1	22	114.64	107.57	107.46	7.1	51.3
MH-334	MH-335	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	27.92	27.92	RCP	0.015	30	30	30	0.62	28.0	5.7	100	6.5	24.6	0.4	10.4	171	114.93	107.46	106.40	7.5	56.1
MH-335	MH-336	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	27.92	27.92	RCP	0.015	30	30	30	0.62	28.0	5.7	100	6.5	24.6	0.4	10.4	150	111.96	106.40	105.47	5.6	33.2
OCS-535	MH-336	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	7.63	7.63	RCP	0.015	18	18	18	0.50	6.4	3.6	119	4.2	14.8	0.1	10.1	25	110.62	104.50	104.37	6.1	52.9
MH-336	MH-338	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	35.55	35.55	RCP	0.015	36	36	36	0.90	54.8	7.8	65	8.2	21.0	0.3	10.3	158	110.53	99.64	98.06	10.9	90.7
MH-338	MH-212	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	35.55	35.55	RCP	0.015	36	36	36	1.13	61.4	8.7	58	9.0	19.6	0.3	10.3	165	103.06	98.06	96.19	5.0	20.0
MH-212	FES-213	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	51.31	51.31	RCP	0.015	42	34	53	0.35	51.6	5.4	99	6.2	34.0	0.4	10.4	162	101.64	96.19	95.62	5.5	27.6
I-193	I-537	0.27	0.69	0.19	0.19	10.0	10.0	25	5.74	1.09	1.09	RCP	0.015	18	14	23	0.30	5.0	2.8	22	2.2	5.7	0.2	10.2	27	94.14	91.50	91.42	2.6	15.5
I-537	I-178	0.63	0.67	0.42	0.61	10.0	10.0	25	5.74	2.41	3.50	RCP	0.015	18	14	23	0.30	5.0	2.8	70	3.0	11.0	0.4	10.4	80	94.23	91.42	91.18	2.8	17.6
I-178	I-194	0.33	0.65	0.22	0.82	10.0	10.0	25	5.74	1.25	4.75	RCP	0.015	18	14	23	0.30	5.0	2.8	95	3.2	14.0	0.1	10.1	24	94.59	91.18	91.11	3.4	24.8
I-194	FES-195	0.18	0.62	0.11	0.93	10.0	10.0	25	5.74	0.63	5.38	RCP	0.015	18	14	23	0.35	5.4	3.0	100	3.5	14.8	0.0	10.0	9	94.63	91.11	91.08	3.5	26.1
I-189	I-190	0.59	0.65	0.38	0.38	10.0	10.0	25	5.74	2.22	2.22	RCP	0.015	15	15	15	0.50	4.0	3.2	56	3.3	8.0	0.1	10.1	24	96.89	93.89	93.29	3.0	18.8
I-190	MH-191	0.23	0.66	0.15	0.54	10.0	10.0	25	5.74	0.87	3.12	RCP	0.015	15	15	15	0.50	4.0	3.2	79	3.6	10.0	0.6	10.6	120	96.90	93.29	93.23	3.6	26.1
MH-191	FES-192	0.00	0.00	0.00	0.54	10.0	10.0	25	5.74	0.00	3.12	RCP	0.015	15	15	15	0.50	4.0	3.2	79	3.6	10.0	0.1	10.1	21	97.07	93.89	93.23	3.2	20.9
I-327	I-326	0.43	0.68	0.29	0.29	10.0	10.0	25	5.74	1.70	1.70	RCP	0.015	15	15	15	0.50	4.0	3.2	43	3.1	6.8	0.2	10.2	32	98.18	95.26	95.10	2.9	17.8
I-326	FES-329	0.11	0.52	0.06	0.35	10.0	10.0	25	5.74	0.34	2.05	RCP	0.015	15	15	15	0.50	4.0	3.2	52	3.3	7.7	0.2	10.2	37	98.19	95.10	94.91	3.1	19.8
OCS-538	FES-541	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	12.59	RCP	0.015	24	24	24	0.59	15.1	4.8	84	5.4	16.7	0.4	10.4	132	95.96	92.26	91.48	3.7	17.4
I-267	I-266	0.43	0.88	0.38	0.38	10.0	10.0	25	5.74	2.20	2.20	RCP	0.015	15	15	15	0.50	4.0	3.2	55	3.3	7.9	0.3	10.3	51	115.33	111.36	111.11	4.0	30.4

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
I-266	MH-269	0.43	0.88	0.38	0.38	10.0	10.0	25	5.74	2.20	2.20	RCP	0.015	15	15	15	0.50	4.0	3.2	55	3.3	7.9	0.4	10.4	77	114.93	111.11	110.72	3.8	28.6
MH-269	UGB 32	0.22	0.74	0.16	0.54	10.0	10.0	25	5.74	0.93	3.13	RCP	0.015	15	15	15	0.50	4.0	3.2	79	3.6	10.0	0.2	10.2	38	115.72	110.72	110.53	5.0	42.8
I-278	UGB 32	0.23	0.62	0.14	0.14	10.0	10.0	25	5.74	0.84	0.84	RCP	0.015	15	15	15	0.83	5.1	4.2	16	3.0	4.0	0.1	10.1	10	113.90	110.98	110.90	2.9	17.8
I-502	UGB 32	0.21	0.63	0.13	0.13	10.0	10.0	25	5.74	0.77	0.77	RCP	0.015	15	15	15	0.50	4.0	3.2	20	2.5	4.5	0.1	10.1	8	117.55	110.29	110.25	7.3	69.9
I-277	MH-419	0.08	0.92	0.07	0.07	10.0	10.0	25	5.74	0.43	0.43	RCP	0.015	15	15	15	0.50	4.0	3.2	11	2.1	3.3	1.0	11.0	126	115.66	112.33	111.53	3.3	22.7
MH-419	UGB 32	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.43	0.43	RCP	0.015	15	15	15	0.50	4.0	3.2	11	2.1	3.3	0.1	10.1	15	118.31	111.53	111.38	6.8	64.1
I-256	UGB 34	0.31	0.78	0.24	0.24	10.0	10.0	25	6.60	1.62	1.62	RCP	0.015	15	15	15	0.50	4.0	3.2	41	3.0	6.7	0.0	10.0	9	114.67	110.04	110.00	4.6	38.3
I-258	UGB 34	0.17	0.85	0.15	0.15	10.0	10.0	25	5.74	0.85	0.85	RCP	0.015	15	15	15	0.50	4.0	3.2	21	2.5	4.6	0.1	10.1	11	114.67	110.05	110.00	4.6	38.2
I-260	UGB 33	0.29	0.81	0.23	0.23	10.0	10.0	25	5.74	1.34	1.34	RCP	0.015	15	15	15	0.50	4.0	3.2	34	2.9	6.0	0.0	10.0	6	110.85	107.90	107.87	2.9	18.1
I-262	UGB 33	0.16	0.84	0.13	0.13	10.0	10.0	25	5.74	0.77	0.77	RCP	0.015	15	15	15	0.50	4.0	3.2	20	2.5	4.5	0.1	10.1	8	110.99	107.90	107.86	3.1	19.8
I-325	I-182	0.16	0.58	0.09	0.09	10.0	10.1	25	5.74	0.53	0.53	RCP	0.015	15	15	15	0.50	4.0	3.2	13	2.2	3.5	0.2	10.3	27	111.00	103.50	103.37	7.5	72.8
I-182	I-184	0.35	0.73	0.25	0.34	10.0	10.3	25	5.74	1.46	1.99	RCP	0.015	15	15	15	2.12	8.2	6.6	24	5.4	4.9	0.3	10.6	106	111.00	103.37	101.11	7.6	74.3
I-184	FES-183	0.07	0.72	0.05	0.39	10.0	10.0	25	5.74	0.28	2.27	RCP	0.015	15	15	15	2.00	7.9	6.5	29	5.5	5.5	0.1	10.1	48	104.03	97.96	97.00	6.1	55.6
I-242	I-243	0.52	0.66	0.34	0.34	10.0	10.0	25	5.74	1.98	1.98	RCP	0.015	15	15	15	0.50	4.0	3.2	50	3.2	7.5	0.1	10.1	20	108.46	102.45	102.35	6.0	54.9
I-243	I-238	0.43	0.63	0.27	0.61	10.0	10.0	25	5.74	1.56	3.54	RCP	0.015	15	15	15	0.50	4.0	3.2	89	3.6	11.0	0.2	10.2	48	108.33	102.35	102.11	6.0	54.5
I-238	I-180	0.30	0.61	0.18	0.79	10.0	10.0	25	5.74	1.05	4.59	RCP	0.015	15	15	15	0.50	4.0	3.2	116	3.7	12.3	0.1	10.1	22	107.83	102.11	102.00	5.7	51.4
I-180	FES-181	0.43	0.56	0.24	1.03	10.0	10.0	25	5.74	1.39	5.98	RCP	0.015	15	15	15	0.65	4.5	3.7	132	4.2	12.3	0.5	10.5	114	107.83	102.00	101.26	5.8	52.7
I-252	UGB 35	0.44	0.76	0.34	0.34	10.0	10.0	25	5.74	1.94	1.94	RCP	0.015	15	15	15	0.50	4.0	3.2	49	3.2	7.4	0.0	10.0	9	108.80	105.89	105.85	2.9	17.7
I-254	UGB 35	0.10	0.69	0.07	0.07	10.0	10.0	25	5.74	0.41	0.41	RCP	0.015	15	15	15	0.50	4.0	3.2	10	2.0	3.1	0.1	10.1	10	110.18	105.09	105.04	5.1	43.8
I-239	I-240	0.18	0.67	0.12	0.19	10.0	10.0	25	5.74	0.68	1.09	RCP	0.015	15	15	15	0.50	4.0	3.2	27	2.7	5.3	0.1	10.1	21	101.99	99.07	98.97	2.9	17.8
I-240	FES-237	0.23	0.67	0.16	0.34	10.0	10.0	25	5.74	0.90	xref	RCP	0.015	15	15	15	0.61	4.4	3.6	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	25	101.97	98.97	98.81	3.0	18.8
I-236	I-235	0.22	0.70	0.16	0.16	10.0	10.0	25	5.74	0.90	0.90	RCP	0.015	15	15	15	0.50	4.0	3.2	23	2.6	4.8	0.1	10.1	22	101.01	98.09	97.98	2.9	17.8
I-235	I-477	0.55	0.75	0.41	0.57	10.0	10.0	25	5.74	2.37	3.28	RCP	0.015	15	15	15	1.12	5.9	4.8	55	4.9	7.9	0.2	10.2	45	101.01	97.98	97.47	3.0	19.1
I-477	MH-478	0.05	0.54	0.02	0.59	10.0	10.0	25	5.74	0.14	3.42	RCP	0.015	15	15	15	0.50	4.0	3.2	86	3.6	10.6	0.1	10.1	26	100.39	97.47	97.34	2.9	17.8
MH-478	UGB 31	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.42	RCP	0.015	15	15	15	1.00	5.6	4.6	61	4.8	8.4	0.0	10.0	14	102.79	93.65	93.10	9.1	92.4

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
I-221	I-219	0.07	0.68	0.05	0.64	10.0	10.0	25	5.74	0.28	3.70	RCP	0.015	15	15	15	0.50	4.0	3.2	94	3.7	11.5	0.1	10.1	20	107.18	104.28	104.18	2.9	17.6
I-219	UGB 44	0.17	0.72	0.12	0.77	10.0	10.0	25	5.74	0.72	4.43	RCP	0.015	15	15	15	0.65	4.5	3.7	98	4.2	12.0	0.3	10.3	72	107.18	104.18	103.71	3.0	18.8
I-431	I-432	0.15	0.44	0.07	0.07	10.0	10.0	25	5.74	0.39	0.39	RCP	0.015	15	15	15	2.92	9.6	7.8	4	3.6	1.9	0.4	10.4	94	105.84	101.58	98.84	4.3	33.9
I-432	UGB 43	0.14	0.60	0.08	0.15	10.0	10.0	25	5.74	0.49	0.88	RCP	0.015	15	15	15	0.50	4.0	3.2	22	2.5	4.7	0.0	10.0	5	102.95	98.83	98.81	4.1	32.2
I-215	I-214	0.31	0.65	0.20	0.36	10.0	10.0	25	5.74	1.18	2.06	RCP	0.015	15	15	15	0.50	4.0	3.2	52	3.3	7.7	0.1	10.1	20	100.76	97.44	97.34	3.3	22.6
I-214	UGB 42	0.45	0.66	0.30	0.65	10.0	10.0	25	5.74	1.71	3.77	RCP	0.015	15	15	15	1.50	6.9	5.6	55	5.7	7.9	0.1	10.1	46	100.26	97.34	96.65	2.9	17.8
I-205	I-206	0.72	0.66	0.48	0.48	10.0	10.0	25	5.74	2.79	2.79	RCP	0.015	15	15	15	0.50	4.0	3.2	70	3.5	9.2	0.1	10.1	22	96.07	93.15	93.04	2.9	17.8
OCS-504	MH-421	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	18.02	RCP	0.015	24	24	24	1.00	19.6	6.2	92	7.1	18.1	0.1	10.1	50	117.81	109.20	108.70	8.6	76.3
OCS-505	MH-421	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.88	RCP	0.015	15	15	15	0.50	4.0	3.2	47	3.2	7.2	0.1	10.1	10	113.03	110.00	109.95	3.0	19.1
MH-421	UGB 33	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	19.90	RCP	0.015	24	24	24	2.09	28.3	9.0	70	9.7	14.7	0.1	10.1	64	113.20	109.20	107.86	4.0	21.0
OCS-426	MH-427	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	22.34	RCP	0.015	24	24	24	2.00	27.7	8.8	81	9.8	16.2	0.1	10.1	52	110.94	106.08	95.71	4.9	31.3
MH-427	MH-378	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	22.34	RCP	0.015	24	24	24	4.58	42.0	13.4	53	13.5	12.4	0.3	10.3	204	110.70	105.05	95.71	5.7	40.8
OCS-377	MH-378	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	15.23	RCP	0.015	30	30	30	0.30	19.5	4.0	78	4.4	19.8	0.4	10.4	115	99.80	95.55	95.21	4.3	17.5
MH-378	MH-379	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	37.57	RCP	0.015	36	36	36	0.45	38.8	5.5	97	6.3	28.5	0.1	10.1	42	108.68	94.71	94.52	14.0	127.6
OCS-506	MH-379	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	18.64	RCP	0.015	24	24	24	2.00	27.7	8.8	67	9.4	14.3	0.1	10.1	46	108.59	104.00	103.08	4.6	28.1
MH-379	MH-380	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	56.21	RCP	0.015	42	42	42	0.45	58.5	6.1	96	7.0	33.0	0.4	10.4	165	108.77	94.26	93.51	14.5	127.6
OCS-382	MH-380	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	10.43	RCP	0.015	18	18	18	2.00	12.9	7.3	81	8.1	12.2	0.1	10.1	53	101.04	97.00	95.94	4.0	28.0
MH-380	MH-481	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	66.64	RCP	0.015	48	48	48	0.30	68.2	5.4	98	6.2	38.4	0.3	10.3	103	103.08	93.01	92.70	10.1	67.8
OCS-480	MH-481	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	4.01	RCP	0.015	15	15	15	0.60	4.3	3.5	92	4.0	11.3	0.1	10.1	20	100.38	93.10	92.93	7.3	70.1
MH-481	MH-384	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	70.65	RCP	0.015	48	48	48	0.35	73.6	5.9	96	6.7	37.7	0.4	10.4	156	100.42	92.70	92.16	7.7	39.6
OCS-521	MH-384	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.76	RCP	0.015	15	15	15	1.50	6.9	5.6	99	6.4	12.2	0.1	10.1	46	98.94	95.50	94.81	3.4	24.0
MH-384	MH-381	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	77.41	RCP	0.015	48	38	60	0.40	78.7	6.3	98	7.2	38.4	0.4	10.4	152	98.48	92.16	91.55	6.3	33.7
I-206	MH-381	0.22	0.60	0.13	0.61	10.0	10.0	25	5.74	0.75	3.54	RCP	0.015	15	15	15	0.45	3.8	3.1	94	3.5	11.5	0.0	10.0	6	96.07	93.04	93.01	3.0	19.1
MH-381	HW 207	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	80.95	RCP	0.015	48	38	60	0.69	103.4	8.2	78	9.0	31.6	0.0	10.0	21	96.68	91.55	91.41	5.1	19.4
OCS-522	UGB 43	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.79	RCP	0.015	15	15	15	1.00	5.6	4.6	32	4.0	5.8	0.1	10.1	19	106.12	101.50	101.31	4.6	38.2

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA												DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																	
OCS-523	I-200	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.46	RCP	0.015	18	18	18	1.27	10.3	5.8	34	5.2	7.2	0.2	10.2	69	103.03	98.50	97.62	4.5	33.9
I-200	I-199	0.24	0.65	0.16	0.16	10.0	10.0	25	5.74	0.90	4.36	RCP	0.015	18	18	18	0.50	6.4	3.6	68	3.9	10.8	0.1	10.1	20	100.56	97.62	97.52	2.9	14.8
I-199	I-224	0.20	0.56	0.11	0.11	10.0	10.0	25	5.74	0.64	5.01	RCP	0.015	18	18	18	0.50	6.4	3.6	78	4.0	11.9	0.3	10.3	78	101.10	97.52	97.13	3.6	22.5
I-224	I-225	0.24	0.61	0.15	0.15	10.0	10.0	25	5.74	0.84	5.85	RCP	0.015	18	18	18	0.50	6.4	3.6	91	4.1	13.4	0.1	10.1	32	99.62	97.13	96.97	2.5	9.4
I-225	I-413	0.04	0.52	0.02	0.02	10.0	10.0	25	5.74	0.11	5.96	RCP	0.015	18	18	18	0.50	6.4	3.6	93	4.1	13.7	0.2	10.2	62	99.62	96.97	96.66	2.7	11.3
I-413	FES-226	0.07	0.49	0.03	0.03	10.0	10.0	25	5.74	0.18	6.14	RCP	0.015	18	18	18	0.50	6.4	3.6	95	4.2	14.0	0.1	10.1	33	101.36	96.66	96.50	4.7	35.9
I-318	I-247	0.04	0.36	0.01	0.05	10.0	10.0	25	5.74	0.08	0.27	RCP	0.015	15	15	15	0.51	4.0	3.3	7	1.8	2.6	1.3	11.3	140	115.89	109.96	109.24	5.9	53.9
I-244	I-245	0.27	0.74	0.20	0.20	10.0	10.0	25	5.74	1.16	1.16	RCP	0.015	15	15	15	0.50	4.0	3.2	29	2.8	5.5	0.2	10.2	32	112.95	110.03	109.87	2.9	17.8
I-245	I-247	0.13	0.63	0.08	0.28	10.0	10.0	25	5.74	0.46	1.63	RCP	0.015	15	15	15	0.67	4.6	3.7	35	3.4	6.1	0.5	10.5	93	112.81	109.87	109.24	2.9	18.0
I-247	I-470	0.16	0.77	0.12	0.45	10.0	10.0	25	5.74	0.70	2.60	RCP	0.015	15	15	15	0.79	5.0	4.1	52	4.1	7.7	0.3	10.3	74	114.04	109.24	108.66	4.8	40.4
I-470	I-471	0.10	0.85	0.08	0.53	10.0	10.0	25	5.74	0.49	3.08	RCP	0.015	15	15	15	0.50	4.0	3.2	78	3.5	9.9	0.1	10.1	20	113.03	108.66	108.56	4.4	35.2
I-471	UGB 47	0.11	0.64	0.07	0.60	10.0	10.0	25	5.74	0.40	3.48	RCP	0.015	15	15	15	0.50	4.0	3.2	88	3.6	10.8	0.1	10.1	12	113.03	108.56	108.50	4.5	36.4
I-249	I-248	0.04	0.72	0.03	0.03	10.0	10.0	25	5.74	0.14	0.14	RCP	0.015	15	15	15	0.50	4.0	3.2	4	1.5	1.9	0.4	10.4	32	111.39	108.47	108.31	2.9	17.8
I-248	MH-476	0.04	0.63	0.02	0.05	10.0	10.0	25	5.74	0.13	0.27	RCP	0.015	15	15	15	0.50	4.0	3.2	7	1.8	2.6	0.4	10.4	45	111.38	108.31	108.09	3.1	19.6
I-322	I-320	0.22	0.66	0.15	0.15	10.0	10.0	25	5.74	0.86	0.86	RCP	0.015	15	15	15	0.50	4.0	3.2	22	2.5	4.7	0.2	10.2	38	108.36	104.85	104.66	3.5	24.9
I-320	UGB 46	0.21	0.80	0.17	0.32	10.0	10.0	25	5.74	0.99	1.85	RCP	0.015	15	15	15	0.50	4.0	3.2	47	3.2	7.2	0.1	10.1	20	108.85	104.66	104.56	4.2	33.0
I-319	MH-323	0.05	0.80	0.04	0.04	10.0	10.0	25	5.74	0.24	0.24	RCP	0.015	15	15	15	3.28	10.1	8.3	2	3.3	1.5	0.1	10.1	22	107.51	104.59	103.87	2.9	17.8
I-227	I-228	0.21	0.80	0.17	0.17	10.0	10.0	25	5.74	0.96	0.96	RCP	0.015	15	15	15	0.50	4.0	3.2	24	2.6	4.9	0.2	10.2	32	104.10	100.30	100.14	3.8	28.4
I-228	MH-323	0.20	0.77	0.16	0.32	10.0	10.0	25	5.74	0.90	1.87	RCP	0.015	15	15	15	0.50	4.0	3.2	47	3.2	7.2	0.5	10.5	87	104.09	100.14	99.71	4.0	30.2
MH-323	UGB 50	0.00	0.00	0.00	0.36	10.0	10.0	25	5.74	0.00	2.10	RCP	0.015	15	15	15	0.50	4.0	3.2	53	3.3	7.8	0.1	10.1	21	106.80	99.71	99.61	7.1	67.8
I-229	OCS-230	0.38	0.70	0.27	0.27	10.0	10.0	25	5.74	1.56	1.56	RCP	0.015	15	15	15	0.75	4.8	4.0	32	3.5	5.8	0.1	10.1	20	108.54	105.58	105.43	3.0	18.3
I-232	MH-375	0.19	0.74	0.14	0.14	10.0	10.0	25	5.74	0.80	0.80	RCP	0.015	15	15	15	2.00	7.9	6.5	10	4.1	3.1	0.1	10.1	21	103.95	100.62	100.20	3.3	22.7
OCS-507	MH-474	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.81	RCP	0.015	15	15	15	0.50	4.0	3.2	96	3.7	11.8	0.1	10.1	23	113.49	108.50	108.39	5.0	42.6
MH-474	MH-475	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.81	RCP	0.015	15	15	15	0.50	4.0	3.2	96	3.7	11.8	0.1	10.1	28	113.21	108.39	108.25	4.8	40.6
MH-475	MH-476	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.81	RCP	0.015	15	15	15	0.50	4.0	3.2	96	3.7	11.8	0.5	10.5	116	112.99	108.25	107.67	4.7	39.6

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
MH-476	OCS-230	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	4.08	RCP	0.015	15	15	15	1.58	7.0	5.7	58	5.9	8.2	0.4	10.4	159	111.34	106.25	103.75	5.1	43.8
OCS-230	OCS-524	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	9.04	RCP	0.015	18	18	18	1.10	9.5	5.4	95	6.2	14.0	0.3	10.3	114	108.35	103.50	102.24	4.8	37.7
OCS-524	MH-375	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	12.80	RCP	0.015	24	24	24	2.11	28.5	9.1	45	8.8	11.3	0.2	10.2	109	106.27	101.74	99.45	4.5	27.4
MH-375	I-233	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	13.61	RCP	0.015	24	24	24	0.50	13.9	4.4	98	5.1	19.2	0.0	10.0	10	104.65	99.45	99.40	5.2	35.4
I-233	I-208	0.11	0.89	0.09	0.09	10.0	10.0	25	5.74	0.54	14.15	RCP	0.015	24	24	24	0.55	14.5	4.6	97	5.3	19.0	0.2	10.2	49	103.44	99.40	99.13	4.0	21.5
I-208	I-209	0.03	0.58	0.02	0.02	10.0	10.0	25	5.74	0.10	14.25	RCP	0.015	24	24	24	0.55	14.5	4.6	98	5.3	19.2	0.1	10.1	20	103.30	99.13	99.02	4.2	23.0
I-209	I-210	0.10	0.59	0.06	0.06	10.0	10.0	25	5.74	0.35	14.60	RCP	0.015	24	24	24	1.99	27.7	8.8	53	8.9	12.4	0.2	10.2	82	102.77	99.02	97.38	3.8	18.0
I-210	I-211	0.25	0.80	0.20	0.20	10.0	10.0	25	5.74	1.16	15.76	RCP	0.015	24	24	24	0.70	16.4	5.2	96	6.0	18.8	0.1	10.1	22	101.13	97.38	97.23	3.8	18.0
I-211	MH-212	0.19	0.72	0.14	0.14	10.0	10.0	25	5.74	0.80	16.57	RCP	0.015	24	24	24	0.75	17.0	5.4	98	6.2	19.2	0.0	10.0	5	101.04	97.23	97.19	3.8	18.7
MH-212	FES 213	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	24.20	RCP	0.015	42	34	53	0.35	51.6	5.4	47	5.3	20.2	0.5	10.5	162	102.06	96.19	95.62	5.9	32.6
BASIN 45	FES 418	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	49.82	RCP	0.015	36	36	36	1.00	57.8	8.2	86	9.2	25.5	0.3	10.3	138	99.00	95.81	94.43	3.2	-1.7
BASIN 30	EXIST	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	87.41	RCP	0.015	42	42	42	1.18	94.7	9.8	92	11.2	31.7	0.2	10.2	134	95.00	91.40	89.82	3.6	-3.3
BASIN 28	EXIST	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	15.48	RCP	0.015	24	24	24	0.82	17.8	5.7	87	6.4	17.2	0.1	10.1	31	95.00	91.00	90.75	4.0	21.0
I-304	UGB 10	0.18	0.74	0.13	0.13	10.0	10.0	25	5.74	0.77	0.77	RCP	0.015	15	15	15	0.50	4.0	3.2	19	2.4	4.4	0.0	10.0	6	111.37	106.53	106.50	4.8	40.8
I-70	UGB 10	0.60	0.84	0.50	0.50	10.0	10.0	25	5.74	2.90	2.90	RCP	0.015	15	15	15	0.50	4.0	3.2	73	3.5	9.4	0.0	10.0	7	111.30	106.53	106.50	4.8	40.0
I-75	I-76	0.24	0.51	0.12	0.12	10.0	10.0	25	5.74	0.71	0.71	RCP	0.015	15	15	15	0.50	4.0	3.2	18	2.4	4.2	0.2	10.2	32	105.13	102.21	102.05	2.9	17.8
I-76	UGB 7	0.74	0.66	0.48	0.61	10.0	10.0	25	5.74	2.79	3.50	RCP	0.015	15	15	15	0.50	4.0	3.2	88	3.6	10.8	0.1	10.1	21	105.13	102.05	101.95	3.1	19.7
I-575	I-572	0.08	0.50	0.04	0.04	10.0	10.0	25	5.74	0.23	0.23	RCP	0.015	15	15	15	0.50	4.0	3.2	6	1.7	2.4	0.2	10.2	20	103.61	99.68	99.58	3.9	29.9
I-572	UGB 7	0.13	0.67	0.09	0.13	10.0	10.0	25	5.74	0.51	0.74	RCP	0.015	15	15	15	0.50	4.0	3.2	19	2.4	4.4	0.1	10.1	17	103.61	99.58	99.50	4.0	31.1
I-71	UGB 9	0.03	0.71	0.02	0.02	10.0	10.0	25	5.74	0.14	0.14	RCP	0.015	15	15	15	0.50	4.0	3.2	4	1.5	1.9	0.1	10.1	5	106.59	100.82	100.80	5.8	52.0
I-74	UGB 9	0.05	0.71	0.03	0.03	10.0	10.0	25	5.74	0.20	0.20	RCP	0.015	15	15	15	0.50	4.0	3.2	5	1.6	2.1	0.1	10.1	6	106.60	100.83	100.80	5.8	52.0
I-72	UGB 9	0.38	0.69	0.26	0.26	10.0	10.0	25	5.74	1.50	1.50	RCP	0.015	15	15	15	0.50	4.0	3.2	38	3.0	6.4	0.2	10.2	43	103.92	101.02	100.80	2.9	17.6
I-89	I-85	0.22	0.74	0.16	0.16	10.0	10.0	25	5.74	0.93	0.93	RCP	0.015	15	15	15	0.50	4.0	3.2	23	2.6	4.8	0.2	10.2	33	98.62	95.75	95.59	2.9	17.2
UGB 9	I-85	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.36	RCP	0.015	18	18	18	2.56	14.6	8.2	44	7.9	8.3	0.4	10.4	213	105.42	100.80	95.34	4.6	34.9
I-85	UGB 6	0.24	0.74	0.18	0.34	10.0	10.0	25	5.74	1.03	8.31	RCP	0.015	18	18	18	0.85	8.4	4.7	99	5.5	14.6	0.0	10.0	11	98.32	95.34	95.25	3.0	15.3

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA												DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																	
I-87	UGB 6	0.30	0.63	0.19	0.19	10.0	10.0	25	5.74	1.08	1.08	RCP	0.015	15	15	15	0.50	4.0	3.2	27	2.7	5.3	0.1	10.1	13	99.43	95.32	95.26	4.1	32.1
I-79	I-80	0.10	0.54	0.05	0.05	10.0	10.0	25	5.74	0.31	0.31	RCP	0.015	15	15	15	0.50	4.0	3.2	8	1.9	2.8	0.3	10.3	32	99.66	94.76	94.60	4.9	41.5
I-80	MH-81	0.23	0.70	0.16	0.21	10.0	10.0	25	5.74	0.92	1.23	RCP	0.015	15	15	15	0.50	4.0	3.2	31	2.8	5.7	0.1	10.1	13	99.66	94.60	94.54	5.1	43.5
MH-81	UGB 5	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.23	RCP	0.015	15	15	15	0.50	4.0	3.2	31	2.8	5.7	0.0	10.0	7	100.48	94.54	94.50	5.9	54.0
I-83	UGB 5	0.21	0.68	0.14	0.14	10.0	10.0	25	5.74	0.81	0.81	RCP	0.015	15	15	15	1.51	6.9	5.6	12	3.7	3.4	0.0	10.0	8	98.83	94.62	94.50	4.2	33.3
I-94	MH-461	0.13	0.56	0.07	0.07	10.0	10.0	25	5.74	0.42	0.42	RCP	0.015	15	15	15	0.50	4.0	3.2	11	2.1	3.3	0.1	10.1	11	91.59	88.68	88.63	2.9	17.7
I-95	MH-461	0.26	0.75	0.19	0.19	10.0	10.0	25	5.74	1.13	1.13	RCP	0.015	15	15	15	0.50	4.0	3.2	28	2.7	5.4	0.1	10.1	11	91.60	88.68	88.63	2.9	17.8
UGB 10	MH-459	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	9.10	RCP	0.015	18	18	18	1.60	11.5	6.5	79	7.2	12.0	0.4	10.4	177	111.91	106.50	103.67	5.4	44.4
MH-459	MH-520	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	9.10	RCP	0.015	18	18	18	3.04	15.9	9.0	57	9.2	9.7	0.2	10.2	114	109.08	103.67	100.21	5.4	44.4
UGB 7	MH-520	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.14	RCP	0.015	15	15	15	1.68	7.3	5.9	85	6.6	10.5	0.1	10.1	27	106.51	99.50	99.05	7.0	66.9
MH-520	MH-460	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	15.24	RCP	0.015	24	24	24	1.69	25.5	8.1	60	8.4	13.3	0.4	10.4	192	106.16	98.30	95.06	7.9	67.3
UGB 5	MH-460	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	2.47	RCP	0.015	15	15	15	0.50	4.0	3.2	62	3.4	8.5	0.2	10.2	42	100.81	94.50	94.29	6.3	58.5
MH-460	MH-461	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	18.93	RCP	0.015	24	24	24	1.92	27.2	8.6	70	9.3	14.7	0.5	10.5	259	100.75	92.83	87.86	7.9	68.0
MH-461	MH-462	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	20.48	RCP	0.015	24	24	24	2.00	27.7	8.8	74	9.6	15.2	0.2	10.2	126	91.81	87.87	85.35	3.9	20.3
MH-462	FES 463	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	30.70	RCP	0.015	30	30	30	2.60	57.3	11.7	54	11.9	15.7	0.0	10.0	30	87.77	77.80	77.00	10.0	86.1
I-300	UGB 4	0.22	0.68	0.15	0.15	10.0	10.0	25	5.74	0.86	0.86	RCP	0.015	15	15	15	0.50	4.0	3.2	22	2.5	4.7	0.1	10.1	14	92.00	85.67	85.60	6.3	58.7
I-99	I-96	0.08	0.82	0.06	0.06	10.0	10.0	25	5.74	0.36	0.36	RCP	0.015	15	15	15	0.50	4.0	3.2	9	2.0	3.0	0.3	10.3	32	95.52	92.59	92.43	2.9	17.9
I-96	I-97	0.06	0.76	0.05	0.11	10.0	10.0	25	5.74	0.26	0.62	RCP	0.015	15	15	15	3.78	10.9	8.9	6	4.7	2.4	0.4	10.4	111	95.51	92.43	88.23	3.1	19.7
I-569	I-97	0.23	0.69	0.16	0.16	10.0	10.0	25	5.74	0.93	0.93	RCP	0.015	15	15	15	0.50	4.0	3.2	24	2.6	4.9	0.4	10.4	67	89.40	86.48	86.15	2.9	17.8
I-97	UGB 4B	0.15	0.81	0.12	0.39	10.0	10.0	25	5.74	0.70	2.26	RCP	0.015	15	15	15	2.03	8.0	6.5	28	5.5	5.4	0.1	10.1	27	91.16	86.15	85.60	5.0	42.9
I-567	UGB 4B	0.23	0.35	0.08	0.08	10.0	10.0	25	5.74	0.46	0.46	RCP	0.015	15	15	15	0.50	4.0	3.2	12	2.1	3.4	0.1	10.1	7	89.96	85.63	85.60	4.3	34.7
I-302	UGB 4B	0.18	0.67	0.12	0.12	10.0	10.0	25	5.74	0.71	0.71	RCP	0.015	15	15	15	0.50	4.0	3.2	18	2.4	4.2	0.1	10.1	13	92.00	85.66	85.60	6.3	58.8
I-57	I-58	0.25	0.67	0.16	0.16	10.0	10.0	25	5.74	0.95	0.95	RCP	0.015	15	15	15	2.00	7.9	6.5	12	4.3	3.4	0.3	10.3	88	111.88	104.37	102.61	7.5	72.9
I-61	I-58	0.21	0.70	0.15	0.15	10.0	10.0	25	5.74	0.86	0.86	RCP	0.015	15	15	15	1.50	6.9	5.6	12	3.7	3.4	0.1	10.1	22	106.29	102.94	102.61	3.4	23.0
I-58	I-59	0.28	0.69	0.19	0.51	10.0	10.0	25	5.74	1.12	2.93	RCP	0.015	15	15	15	2.12	8.2	6.6	36	6.1	6.2	0.3	10.3	101	106.15	102.61	100.47	3.5	25.2

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
I-62	I-59	0.37	0.71	0.26	0.26	10.0	10.0	25	5.74	1.53	1.53	RCP	0.015	15	15	15	0.50	4.0	3.2	39	3.0	6.5	0.1	10.1	22	103.50	100.58	100.47	2.9	17.8
I-59	I-368	0.40	0.72	0.29	1.06	10.0	10.0	25	5.74	1.67	6.12	RCP	0.015	15	15	15	2.93	9.6	7.8	64	8.2	8.7	0.2	10.2	122	103.50	100.47	96.90	3.0	19.1
I-364	I-368	0.19	0.67	0.13	0.13	10.0	10.0	25	5.74	0.74	0.74	RCP	0.015	15	15	15	0.50	4.0	3.2	19	2.4	4.4	0.2	10.2	32	99.98	97.06	96.90	2.9	17.8
I-368	BASIN 16	0.08	0.64	0.05	1.24	10.0	10.0	25	5.74	0.29	7.15	RCP	0.015	18	18	18	1.00	9.1	5.2	79	5.7	12.0	0.1	10.1	34	99.98	96.65	96.31	3.3	19.5
I-50	I-51	0.20	0.63	0.13	0.13	10.0	10.0	25	5.74	0.74	0.74	RCP	0.015	15	15	15	0.50	4.0	3.2	19	2.4	4.4	0.1	10.1	20	95.63	92.71	92.61	2.9	17.8
I-51	MH-52	0.54	0.71	0.38	0.51	10.0	10.0	25	5.74	2.20	2.94	RCP	0.015	15	15	15	0.50	4.0	3.2	74	3.5	9.5	0.3	10.3	67	95.63	92.61	92.28	3.0	19.0
I-54	I-55	0.30	0.73	0.22	0.22	10.0	10.0	25	5.74	1.27	1.27	RCP	0.015	15	15	15	0.30	3.1	2.5	42	2.4	6.8	0.2	10.2	22	95.32	92.46	92.39	2.9	17.1
I-55	MH-52	0.10	0.60	0.06	0.28	10.0	10.0	25	5.74	0.36	1.63	RCP	0.015	15	15	15	0.30	3.1	2.5	53	2.5	7.8	0.3	10.3	38	95.32	92.39	92.28	2.9	17.9
MH-52	BASIN 15	0.00	0.00	0.00	0.79	10.0	10.0	25	5.74	0.00	4.57	RCP	0.015	15	15	15	0.70	4.7	3.8	98	4.4	12.0	0.2	10.2	40	96.62	92.28	92.00	4.3	34.8
BASIN 16	BASIN 15	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	12.37	RCP	0.015	18	18	18	3.07	16.0	9.0	78	9.9	11.9	0.1	10.1	49	98.36	94.00	92.50	4.4	31.8
BASIN 15	MH-374	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	11.79	RCP	0.015	18	18	18	1.72	11.9	6.8	99	7.8	14.6	0.4	10.4	172	96.69	92.00	89.04	4.7	35.8
MH-374	I-68	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	11.79	RCP	0.015	18	18	18	1.76	12.1	6.8	98	7.9	14.4	0.3	10.3	144	94.34	91.52	88.99	2.8	13.3
I-66	I-68	0.23	0.70	0.16	0.16	10.0	10.0	25	5.74	0.94	0.94	RCP	0.015	15	15	15	2.80	9.4	7.6	10	4.8	3.1	0.1	10.1	20	92.71	89.79	89.23	2.9	17.8
I-68	MH-311	0.23	0.70	0.16	0.16	10.0	10.0	25	5.74	0.94	13.31	RCP	0.015	18	18	18	3.11	16.1	9.1	83	10.1	12.4	0.1	10.1	44	92.71	88.98	87.62	3.7	24.3
MH-311	UGB 11	0.00	0.00	0.00	0.16	10.0	10.0	25	5.74	0.00	12.73	RCP	0.015	18	18	18	3.05	15.9	9.0	80	9.9	12.1	0.2	10.2	100	92.71	88.98	85.93	3.7	24.3
UGB 11	MH-492	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	10.60	RCP	0.015	24	24	24	0.50	13.9	4.4	76	4.8	15.5	0.2	10.2	44	89.31	84.58	84.36	4.7	29.8
MH-492	MH-490	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	10.60	RCP	0.015	24	24	24	0.50	13.9	4.4	76	4.8	15.5	0.1	10.1	29	89.24	84.36	84.21	4.9	31.6
UGB 4A	MH-488	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.90	RCP	0.015	24	24	24	0.50	13.9	4.4	28	3.7	8.6	0.1	10.1	21	92.27	85.60	85.49	6.7	53.0
MH-488	MH-566	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.90	RCP	0.015	24	24	24	0.50	13.9	4.4	28	3.7	8.6	0.2	10.2	49	91.39	85.49	85.25	5.9	43.8
MH-566	MH-489	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	7.72	RCP	0.015	24	24	24	0.50	13.9	4.4	56	4.5	12.8	0.2	10.2	67	90.63	85.25	84.91	5.4	37.6
MH-489	MH-490	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	7.72	RCP	0.015	24	24	24	0.50	13.9	4.4	56	4.5	12.8	0.5	10.5	122	89.94	84.91	84.21	5.0	33.4
MH-490	I-104	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	14.50	RCP	0.015	30	30	30	0.50	25.1	5.1	58	5.3	16.3	0.1	10.1	22	88.79	83.71	83.60	5.1	27.5
I-102	I-104	0.70	0.72	0.50	0.50	10.0	10.0	25	5.74	2.89	2.89	RCP	0.015	15	15	15	0.50	4.0	3.2	73	3.5	9.4	0.2	10.2	32	88.51	85.60	85.44	2.9	17.7
I-104	MH-108	0.25	0.47	0.12	0.62	10.0	10.0	25	5.74	0.69	18.08	RCP	0.015	30	30	30	0.50	25.1	5.1	72	5.5	18.7	0.3	10.3	91	88.52	83.60	83.15	4.9	25.5
MH-108	BASIN 1	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	18.08	RCP	0.015	30	30	30	0.50	25.1	5.1	72	5.5	18.7	0.1	10.1	43	90.46	83.15	82.94	7.3	54.2

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
I-120	I-118	0.60	0.30	0.18	0.18	10.0	10.0	25	5.74	1.06	1.06	RCP	0.015	15	15	15	0.30	3.1	2.5	35	2.3	6.1	0.2	10.2	32	89.17	86.35	86.25	2.8	16.6
I-118	UGB 2	0.31	0.67	0.21	0.39	10.0	10.0	25	5.74	1.19	2.25	RCP	0.015	15	15	15	0.50	4.0	3.2	57	3.3	8.1	0.0	10.0	1	89.17	86.25	86.25	2.9	17.8
I-122	I-409	0.45	0.59	0.27	0.27	10.0	10.0	25	5.74	1.55	1.55	RCP	0.015	15	15	15	0.50	4.0	3.2	39	3.0	6.5	0.2	10.2	32	91.47	86.41	86.25	5.1	43.5
I-409	UGB 2	0.38	0.60	0.23	0.50	10.0	10.0	25	5.74	1.32	2.88	RCP	0.015	15	15	15	0.50	4.0	3.2	73	3.5	9.4	0.0	10.0	1	91.46	86.25	86.25	5.2	45.3
I-46	I-110	0.19	0.69	0.13	0.13	10.0	10.0	25	5.74	0.75	0.75	RCP	0.015	15	15	15	2.18	8.3	6.7	9	4.2	3.0	0.9	10.9	214	94.50	91.48	86.81	3.0	19.0
I-110	UGB 14	0.22	0.70	0.16	0.29	10.0	10.0	25	5.74	0.90	1.65	RCP	0.015	15	15	15	1.00	5.6	4.6	30	3.9	5.6	0.0	10.0	7	92.00	86.82	86.75	5.2	44.9
I-47	I-112	0.19	0.71	0.14	0.14	10.0	10.0	25	5.74	0.79	0.79	RCP	0.015	15	15	15	2.18	8.3	6.7	10	4.3	3.1	0.8	10.8	196	93.79	90.92	86.66	2.9	17.2
I-112	UGB 13	0.18	0.68	0.13	0.26	10.0	10.0	25	5.74	0.72	1.52	RCP	0.015	15	15	15	0.50	4.0	3.2	38	3.0	6.4	0.0	10.0	7	92.00	86.66	86.63	5.3	46.8
UGB 14	UGB 2	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.42	RCP	0.015	15	15	15	0.70	4.7	3.8	30	3.3	5.6	0.2	10.2	36	92.74	86.75	86.50	6.0	54.6
UGB 13	UGB 2	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	4.05	RCP	0.015	15	15	15	1.57	7.0	5.7	58	5.9	8.2	0.0	10.0	16	92.78	86.50	86.25	6.3	58.1
I-410	I-411	0.17	0.95	0.16	0.16	10.0	10.0	25	5.74	0.93	0.93	RCP	0.015	15	15	15	0.50	4.0	3.2	23	2.6	4.8	0.3	10.3	50	116.87	114.27	114.02	2.6	14.0
I-411	I-412	0.07	0.82	0.05	0.21	10.0	10.0	25	5.74	0.31	1.24	RCP	0.015	15	15	15	1.43	6.7	5.5	19	4.1	4.4	0.5	10.5	133	116.93	113.70	111.80	3.2	21.5
I-412	I-17	0.21	0.68	0.14	0.36	10.0	10.0	25	5.74	0.81	2.06	RCP	0.015	15	15	15	2.52	8.9	7.2	23	5.8	4.8	0.5	10.5	174	114.72	111.80	107.42	2.9	17.8
I-17	I-18	0.23	0.73	0.17	0.52	10.0	10.0	25	5.74	0.97	3.03	RCP	0.015	15	15	15	0.86	5.2	4.2	58	4.4	8.2	0.1	10.1	22	110.34	107.41	107.22	2.9	17.9
I-18	UGB 55	0.50	0.84	0.42	0.95	10.0	10.0	25	5.74	2.44	5.47	RCP	0.015	15	15	15	2.00	7.9	6.5	69	6.9	9.1	0.1	10.1	36	110.34	107.22	106.50	3.1	20.2
I-387	I-388	0.29	0.79	0.23	0.23	10.0	10.0	25	5.74	1.31	1.31	RCP	0.015	15	15	15	0.50	4.0	3.2	33	2.9	5.9	0.6	10.6	99	115.70	112.73	112.24	3.0	18.4
I-388	UGB 55	0.21	0.83	0.18	0.40	10.0	10.0	25	5.74	1.02	2.32	RCP	0.015	15	15	15	3.00	9.7	7.9	24	6.4	4.9	0.1	10.1	29	115.74	107.38	106.51	8.4	83.1
I-389	UGB 55	0.44	0.65	0.29	0.69	10.0	10.0	25	5.74	1.65	3.97	RCP	0.015	15	15	15	3.00	9.7	7.9	41	7.5	6.7	0.0	10.0	1	112.67	109.73	109.70	2.9	18.0
I-19	UGB 55	0.55	0.66	0.36	0.36	10.0	10.0	25	5.74	2.08	2.08	RCP	0.015	15	15	15	0.50	4.0	3.2	53	3.3	7.8	0.1	10.1	10	111.03	106.55	106.50	4.5	36.5
I-560	MH-561	0.24	0.51	0.12	0.12	10.0	10.0	25	5.74	0.72	0.72	RCP	0.015	15	15	15	0.50	4.0	3.2	18	2.4	4.2	0.6	10.6	85	118.14	113.79	113.37	4.3	34.9
MH-561	I-390	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.72	0.72	RCP	0.015	15	15	15	0.50	4.0	3.2	18	2.4	4.2	0.5	10.5	77	118.83	113.37	112.98	5.5	48.3
I-390	I-391	0.57	0.58	0.33	0.46	10.0	10.0	25	5.74	1.94	2.65	RCP	0.015	15	15	15	0.50	4.0	3.2	67	3.4	8.9	0.3	10.3	71	116.00	112.98	112.63	3.0	19.0
I-391	I-392	0.38	0.59	0.22	0.68	10.0	10.0	25	5.74	1.29	3.94	RCP	0.015	15	15	15	0.50	4.0	3.2	100	3.7	12.3	0.3	10.3	75	115.80	112.63	112.26	3.2	20.8
I-392	I-290	0.39	0.52	0.20	0.88	10.0	10.0	25	5.74	1.17	5.11	RCP	0.015	18	18	18	1.58	11.4	6.5	45	6.3	8.4	0.2	10.2	71	115.26	112.01	110.89	3.3	18.5
I-290	FES-551	0.36	0.53	0.19	1.08	10.0	10.0	25	5.74	1.11	6.22	RCP	0.015	18	18	18	0.50	6.4	3.6	97	4.2	14.3	0.3	10.3	68	114.06	110.89	110.55	3.2	17.5

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
I-576	I-2	0.08	0.50	0.04	0.04	10.0	10.0	25	5.74	0.23	0.23	RCP	0.015	15	15	15	1.42	6.7	5.4	3	2.3	1.7	0.4	10.4	63	116.46	113.54	112.65	2.9	17.8
I-2	MH-6	0.23	0.80	0.19	0.23	10.0	10.0	25	5.74	1.08	1.31	RCP	0.015	15	15	15	0.99	5.6	4.5	24	3.7	4.9	0.2	10.2	41	115.56	112.64	112.23	2.9	17.8
I-5	MH-6	0.27	0.54	0.15	0.15	10.0	10.0	25	5.74	0.85	0.85	RCP	0.015	18	18	18	0.50	6.4	3.6	13	2.5	4.3	0.1	10.1	11	112.23	108.08	108.03	4.2	29.3
I-1	MH-6	0.21	0.53	0.11	0.11	10.0	10.0	25	5.74	0.65	0.65	RCP	0.015	18	18	18	0.50	6.4	3.6	10	2.3	3.8	0.7	10.7	103	112.01	109.17	108.65	2.8	13.6
MH-6	UGB 22	0.06	0.00	0.00	0.49	10.0	10.0	25	5.74	0.00	2.82	RCP	0.015	15	15	15	2.00	7.9	6.5	36	5.9	6.2	0.0	10.0	8	115.68	107.66	107.50	8.0	79.0
I-10	UGB 21	0.06	0.57	0.04	0.04	10.0	10.0	25	5.74	0.21	0.21	RCP	0.015	15	15	15	4.00	11.2	9.1	2	3.6	1.5	0.1	10.1	21	112.62	99.33	98.49	13.3	142.2
I-9	I-8	0.24	0.70	0.17	0.17	10.0	10.0	25	5.74	0.96	0.96	RCP	0.015	15	15	15	2.00	7.9	6.5	12	4.3	3.4	0.1	10.1	20	104.99	100.05	99.65	4.9	42.0
I-8	I-545	0.18	0.69	0.12	0.29	10.0	10.0	25	5.74	0.71	1.67	RCP	0.015	15	15	15	2.00	7.9	6.5	21	5.0	4.6	0.2	10.2	46	104.98	99.64	98.72	5.3	46.8
I-545	UGB 21	0.10	0.63	0.06	0.35	10.0	10.0	25	5.74	0.36	2.03	RCP	0.015	15	15	15	2.00	7.9	6.5	26	5.3	5.1	0.0	10.0	11	106.10	98.73	98.51	7.4	71.2
I-21	MH-22	0.19	0.71	0.14	0.14	10.0	10.0	25	5.74	0.79	0.79	RCP	0.015	15	15	15	1.33	6.5	5.3	12	3.5	3.4	0.3	10.3	70	108.54	105.62	104.69	2.9	17.8
MH-22	UGB 41	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	0.79	RCP	0.015	15	15	15	1.33	6.5	5.3	12	3.5	3.4	0.1	10.1	14	111.41	104.69	104.50	6.7	63.4
I-24	UGB 49	0.18	0.60	0.11	0.11	10.0	10.0	25	5.74	0.62	0.62	RCP	0.015	15	15	15	4.27	11.6	9.4	5	4.7	2.1	0.1	10.1	22	107.05	104.13	103.19	2.9	17.8
I-26	UGB 49	0.33	0.70	0.23	0.23	10.0	10.0	25	5.74	1.31	1.31	RCP	0.015	15	15	15	2.81	9.4	7.6	14	5.3	3.7	0.1	10.1	37	106.89	103.97	102.93	2.9	17.8
I-28	UGB 48	0.13	0.66	0.09	0.09	10.0	10.0	25	5.74	0.50	0.50	RCP	0.015	15	15	15	3.26	10.1	8.2	5	4.1	2.1	0.1	10.1	23	105.07	102.15	101.40	2.9	17.8
I-30	UGB 48	0.16	0.71	0.11	0.11	10.0	10.0	25	5.74	0.66	0.66	RCP	0.015	15	15	15	3.94	11.1	9.1	6	4.8	2.4	0.1	10.1	19	105.14	102.16	101.41	3.0	18.5
I-32	UGB 54	0.17	0.48	0.08	0.08	10.0	10.0	25	5.74	0.48	0.48	RCP	0.015	15	15	15	2.22	8.3	6.8	6	3.6	2.4	0.0	10.0	8	102.69	99.68	99.50	3.0	18.9
I-34	UGB 54	0.57	0.68	0.39	0.39	10.0	10.0	25	5.74	2.24	2.24	DIP	0.013	12	12	12	0.50	2.5	3.2	89	3.6	8.8	0.0	10.0	9	102.10	99.54	99.50	2.6	16.7
UGB 21	MH-12	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.82	RCP	0.015	24	24	24	0.50	13.9	4.4	49	4.4	11.9	0.4	10.4	103	107.75	98.50	98.98	9.3	84.0
MH-12	UGB 20	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.82	RCP	0.015	24	24	24	0.48	13.6	4.3	50	4.3	12.0	0.3	10.3	80	108.77	98.98	98.60	9.8	90.5
UGB 49	UGB 20	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	4.93	RCP	0.015	15	15	15	4.33	11.6	9.5	42	9.0	6.8	0.2	10.2	132	108.33	103.33	97.61	5.0	42.8
UGB 48	MH-438	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	2.84	RCP	0.015	15	15	15	0.50	4.0	3.2	72	3.5	9.4	0.1	10.1	20	106.72	102.15	102.05	4.6	37.6
MH-438	I-14	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	2.84	RCP	0.015	15	15	15	0.50	4.0	3.2	72	3.5	9.4	0.1	10.1	26	106.16	102.05	101.92	4.1	32.1
I-14	UGB 20	1.13	0.58	0.65	0.65	10.0	10.0	25	5.74	3.78	6.62	RCP	0.015	15	15	15	4.54	11.9	9.7	55	9.9	7.9	0.1	10.1	85	105.76	101.92	98.06	3.8	28.8
UGB 20	MH-440	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	2.99	HDPE	0.012	10	10	10	3.16	4.2	7.7	71	8.3	6.2	0.0	10.0	8	101.76	97.72	97.48	4.0	36.6
MH-440	MH-441	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	2.99	HDPE	0.012	10	10	10	3.16	4.2	7.7	71	8.3	6.2	0.1	10.1	69	101.45	97.48	95.28	4.0	35.8

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA											DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																
MH-441	UGB 19	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	2.99	HDPE	0.012	10	10	10	3.16	4.2	7.7	71	8.3	6.2	0.0	10.0	9	98.47	95.28	95.00	3.2	26.4
I-42	I-44	0.21	0.68	0.14	0.14	10.0	10.0	25	5.74	0.83	0.83	RCP	0.015	15	15	15	0.50	4.0	3.2	21	2.5	4.6	0.1	10.1	20	98.66	95.13	95.03	3.5	25.1
I-44	UGB 19	0.24	0.56	0.13	0.28	10.0	10.0	25	5.74	0.78	1.61	RCP	0.015	15	15	15	0.50	4.0	3.2	41	3.0	6.7	0.0	10.0	6	98.66	95.03	95.00	3.6	26.3
UGB 19	UGB 18	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	2.37	HDPE	0.012	10	10	10	1.73	3.1	5.7	76	6.3	6.5	0.1	10.1	31	99.58	95.03	94.49	4.6	42.8
I-142	I-38	0.31	0.67	0.21	0.21	10.0	10.0	25	5.74	1.19	1.19	RCP	0.015	15	15	15	1.74	7.4	6.0	16	4.3	4.0	1.2	11.2	316	103.11	100.19	94.71	2.9	17.8
I-38	I-309	0.58	0.71	0.41	0.62	10.0	10.0	25	5.74	2.37	3.57	DIP	0.013	15	15	15	0.50	4.6	3.7	78	4.1	9.9	0.1	10.1	32	97.36	94.71	94.55	2.7	14.6
I-309	UGB 18	0.26	0.53	0.14	0.75	10.0	10.0	25	5.74	0.80	4.37	DIP	0.013	18	18	18	0.30	5.8	3.3	76	3.6	11.6	0.1	10.1	15	97.38	94.55	94.51	2.8	13.5
UGB 22	MH-511	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.58	RCP	0.015	15	15	15	1.50	6.9	5.6	96	6.4	11.8	0.1	10.1	27	113.17	108.16	107.75	5.0	42.9
MH-511	MH-544	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.58	RCP	0.015	15	15	15	1.50	6.9	5.6	96	6.4	11.8	0.2	10.2	89	112.32	107.75	106.42	4.6	37.6
UGB 41	MH-544	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.85	RCP	0.015	15	15	15	0.50	4.0	3.2	47	3.2	7.2	0.1	10.1	17	110.93	104.50	104.42	6.4	59.9
MH-544	MH-341	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	8.43	RCP	0.015	24	24	24	0.50	13.9	4.4	61	4.6	13.5	0.1	10.1	29	110.80	103.66	103.52	7.1	58.7
UGB 55	MH-341	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	17.82	RCP	0.015	24	24	24	0.90	18.6	5.9	96	6.8	18.8	0.1	10.1	37	111.38	106.50	106.17	4.9	31.6
MH-341	MH-342	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	26.25	RCP	0.015	36	36	36	0.50	40.9	5.8	64	6.1	20.8	0.2	10.2	86	110.25	102.51	102.08	7.7	52.9
OCS-347 (B53	MH-342	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	4.85	RCP	0.015	15	15	15	1.77	7.4	6.1	65	6.4	8.8	0.1	10.1	35	108.22	104.50	103.88	3.7	27.4
MH-342	MH-434	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	31.10	RCP	0.015	36	36	36	0.55	42.9	6.1	73	6.6	22.7	0.8	10.8	310	109.26	102.13	100.36	7.1	45.6
BASIN 52	MH-434	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	5.03	RCP	0.015	15	15	15	1.00	5.6	4.6	90	5.2	11.1	0.1	10.1	27	102.03	100.15	99.88	1.9	5.3
MH-434	MH-343	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	36.13	RCP	0.015	36	36	36	0.50	40.9	5.8	88	6.5	26.0	0.5	10.5	184	105.19	98.09	97.16	7.1	45.2
MH-343	MH-513	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	36.13	RCP	0.015	36	36	36	0.50	40.9	5.8	88	6.5	26.0	0.1	10.1	48	102.94	97.16	96.92	5.8	29.4
UGB 54	MH-513	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	4.08	RCP	0.015	15	15	15	1.34	6.5	5.3	63	5.5	8.6	0.1	10.1	37	103.10	99.50	99.00	3.6	25.9
MH-513	MH-353	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	40.21	RCP	0.015	36	36	36	1.81	77.8	11.0	52	11.1	18.4	0.4	10.4	256	102.44	96.92	92.29	5.5	26.2
UGB 18	MH-353	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	9.85	RCP	0.015	18	18	18	2.19	13.5	7.6	73	8.3	11.3	0.1	10.1	43	98.61	95.25	94.31	3.4	19.8
MH-353	MH-344	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	50.06	RCP	0.015	36	36	36	2.49	91.2	12.9	55	13.2	19.0	0.3	10.3	247	97.13	92.30	86.15	4.8	18.0
UGB 2	MH-344	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	6.93	RCP	0.015	24	24	24	0.50	13.9	4.4	50	4.4	12.0	0.1	10.1	22	91.71	86.25	86.14	5.5	38.5
MH-344	MH-345	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	56.99	RCP	0.015	42	42	42	0.54	64.1	6.7	89	7.5	30.7	0.3	10.3	155	91.83	86.14	85.31	5.7	21.8
MH-345	BASIN 12	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	56.99	RCP	0.015	42	42	42	0.52	62.9	6.5	91	7.4	31.3	0.0	10.0	11	89.39	85.31	85.25	4.1	2.5

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA												DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																	
BASIN 58	BASIN 59	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	13.28	RCP	0.015	24	24	24	0.50	13.9	4.4	96	5.1	18.8	0.3	10.3	83	109.98	106.40	105.99	3.6	16.0
I-129	I-130	0.13	0.37	0.05	0.05	10.0	10.0	25	5.74	0.28	0.28	RCP	0.015	15	15	15	1.09	5.8	4.8	5	2.4	2.1	1.0	11.0	141	109.07	106.15	104.60	2.9	17.8
I-130	I-131	0.31	0.46	0.14	0.19	10.0	10.0	25	5.74	0.82	1.10	RCP	0.015	15	15	15	0.50	4.0	3.2	28	2.7	5.4	0.2	10.2	32	107.08	104.60	104.44	2.5	12.5
I-131	BASIN 59	0.69	0.74	0.51	0.70	10.0	10.0	25	5.74	2.93	4.03	RCP	0.015	15	15	15	0.52	4.0	3.3	100	3.8	12.3	0.2	10.2	35	107.07	104.44	104.25	2.6	14.3
I-124	MH-125	0.22	0.70	0.15	0.15	10.0	10.0	25	5.74	0.89	0.89	RCP	0.015	15	15	15	0.30	3.1	2.5	29	2.1	5.5	0.4	10.4	48	107.76	104.88	104.74	2.9	17.3
I-128	MH-125	0.47	0.46	0.22	0.22	10.0	10.0	25	5.74	1.26	1.26	RCP	0.015	15	15	15	0.30	3.1	2.5	41	2.4	6.7	0.1	10.1	11	108.09	104.77	104.74	3.3	22.6
MH-125	MH-126	0.00	0.00	0.00	0.85	10.0	10.0	25	5.74	0.00	1.26	RCP	0.015	15	15	15	0.38	3.5	2.8	36	2.6	6.2	0.3	10.3	44	109.21	104.74	104.57	4.5	36.4
MH-126	FES 127	0.00	0.00	0.00	0.37	10.0	10.0	25	5.74	0.00	1.26	RCP	0.015	15	15	15	0.38	3.5	2.8	36	2.6	6.2	0.1	10.1	18	109.21	104.57	104.50	4.6	38.4
I-134	MH-435	0.24	0.64	0.15	0.52	10.0	10.0	25	5.74	0.87	3.02	RCP	0.015	15	15	15	0.79	5.0	4.1	61	4.2	8.4	0.5	10.5	138	107.72	104.10	103.01	3.6	26.2
MH-435	BASIN 52	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.87	3.02	RCP	0.015	15	15	15	0.79	5.0	4.1	61	4.2	8.4	0.1	10.1	21	106.07	103.01	102.84	3.1	19.5
I-138	I-137	0.42	0.46	0.19	0.19	10.0	10.0	25	5.74	1.11	1.11	RCP	0.015	15	15	15	0.50	4.0	3.2	28	2.7	5.4	0.5	10.5	79	103.54	100.62	100.23	2.9	17.8
I-137	FES 136	0.43	0.62	0.27	0.46	10.0	10.0	25	5.74	1.54	2.65	RCP	0.015	15	15	15	0.46	3.8	3.1	70	3.3	9.2	0.1	10.1	27	104.74	100.22	100.10	4.5	37.0
I-362	I-140	0.33	0.67	0.22	0.22	10.0	10.0	25	5.74	1.28	1.28	RCP	0.015	15	15	15	0.50	4.0	3.2	32	2.8	5.8	0.2	10.2	32	104.95	101.83	101.67	3.1	20.2
I-140	BASIN 51	0.10	0.88	0.08	0.31	10.0	10.0	25	5.74	0.49	1.77	RCP	0.015	15	15	15	0.38	3.5	2.8	51	2.8	7.6	0.3	10.3	45	104.97	101.67	101.50	3.3	22.4
I-144	MH-356	0.27	0.74	0.20	0.20	10.0	10.0	25	5.74	1.14	1.14	RCP	0.015	15	15	15	0.50	4.0	3.2	29	2.8	5.5	0.5	10.5	85	106.93	104.01	103.59	2.9	17.8
MH-356	BASIN 35	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.14	RCP	0.015	15	15	15	0.50	4.0	3.2	29	2.8	5.5	0.2	10.2	26	108.22	103.59	103.46	4.6	38.3
BASIN 59	BASIN 35	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	17.49	RCP	0.015	36	36	36	0.71	48.7	6.9	36	6.3	14.9	0.4	10.4	136	107.28	104.36	103.39	2.9	-5.0
BASIN 35	MH-350	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	18.58	RCP	0.015	30	30	30	1.08	36.9	7.5	50	7.5	15.0	0.1	10.1	30	107.19	102.43	102.11	4.8	23.6
MH-350	MH-369	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	18.58	RCP	0.015	30	30	30	1.20	38.9	7.9	48	7.8	14.6	0.4	10.4	174	108.71	102.11	100.02	6.6	45.7
BASIN 51	MH-369	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	9.03	RCP	0.015	24	24	24	0.50	13.9	4.4	65	4.7	14.0	0.7	10.7	195	104.59	101.50	100.53	3.1	10.1
MH-369	UGB 3	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	27.61	RCP	0.015	30	30	30	2.68	58.2	11.9	47	11.6	14.4	0.3	10.3	216	108.63	100.02	94.23	8.6	69.8
MH-369	UGB 3	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	27.61	RCP	0.015	30	30	30	2.70	58.4	11.9	47	11.7	14.4	0.4	10.4	275	108.63	94.24	86.82	14.4	139.2
UGB 3	BASIN 14	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	22.41	RCP	0.015	30	30	30	1.23	39.4	8.0	57	8.3	16.2	0.1	10.1	41	97.58	85.75	85.25	11.8	108.5
BASIN 14	MH-508	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.42	RCP	0.015	15	15	15	0.50	4.0	3.2	36	2.9	6.2	0.2	10.2	40	90.00	85.25	85.05	4.8	39.8
MH-508	MH-371	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.42	RCP	0.015	15	15	15	0.50	4.0	3.2	36	2.9	6.2	2.1	12.1	363	88.00	85.05	83.24	3.0	18.2

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA												DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																	
MH-371	BASIN 1	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	1.42	RCP	0.015	15	15	15	0.50	4.0	3.2	36	2.9	6.2	0.4	10.4	63	84.82	83.24	82.92	1.6	1.7
BASIN 1	EX MH	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	109.59	RCP	0.015	36	36	36	2.75	95.9	13.6	114	15.5	29.5	0.1	10.1	111	87.00	76.95	73.90	10.1	80.6
I-147	I-149	0.13	0.99	0.13	0.13	10.0	10.0	25	5.74	0.76	0.76	RCP	0.015	15	15	15	1.27	6.3	5.1	12	3.4	3.4	0.3	10.3	64	121.59	117.94	117.13	3.7	26.6
I-149	MH-591	0.19	0.69	0.13	0.26	10.0	10.0	25	5.74	0.77	1.53	RCP	0.015	15	15	15	0.41	3.6	2.9	43	2.8	6.8	0.9	10.9	144	121.57	117.13	116.54	4.4	36.0
MH-591	I-150	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.77	1.53	RCP	0.015	15	15	15	0.41	3.6	2.9	43	2.8	6.8	0.5	10.5	83	123.38	116.54	116.20	6.8	64.8
I-158	I-150	0.25	0.99	0.25	0.25	10.0	10.0	25	5.74	1.43	1.43	RCP	0.015	15	15	15	0.38	3.5	2.8	41	2.7	6.7	1.1	11.1	176	121.07	116.07	115.40	5.0	42.8
I-153	I-150	0.05	0.99	0.05	0.05	10.0	10.0	25	5.74	0.29	0.29	RCP	0.015	15	15	15	0.54	4.1	3.4	7	1.9	2.6	0.7	10.7	73	120.49	116.66	116.27	3.8	28.7
I-150	I-451	0.32	0.67	0.22	0.78	10.0	10.0	25	5.74	1.26	4.51	RCP	0.015	18	18	18	0.42	5.9	3.3	76	3.7	11.6	1.0	11.0	218	120.62	114.97	114.05	5.7	47.3
I-454	I-451	0.56	0.95	0.54	0.54	10.0	10.0	25	5.74	3.10	3.10	RCP	0.015	15	15	15	0.46	3.8	3.1	82	3.4	10.2	0.3	10.3	64	117.13	114.18	113.89	2.9	18.1
I-451	I-452	0.40	0.87	0.35	0.88	10.0	10.0	25	5.74	2.01	5.12	RCP	0.015	18	18	18	0.33	5.2	3.0	98	3.4	14.4	0.4	10.4	80	117.18	113.89	113.63	3.3	19.0
I-455	I-452	0.16	0.94	0.15	0.15	10.0	10.0	25	5.74	0.88	0.88	RCP	0.015	15	15	15	0.50	4.0	3.2	22	2.5	4.7	0.5	10.5	74	117.75	114.78	114.41	3.0	18.4
I-452	I-163	0.16	0.95	0.15	1.19	10.0	10.0	25	5.74	0.88	6.88	RCP	0.015	18	18	18	0.60	7.1	4.0	98	4.6	14.4	0.5	10.5	133	115.99	113.62	112.82	2.4	7.9
I-168	I-163	0.10	0.94	0.09	0.09	10.0	10.0	25	5.74	0.55	0.55	RCP	0.015	15	15	15	0.48	3.9	3.2	14	2.2	3.7	0.6	10.6	78	117.75	113.19	112.82	4.6	37.5
I-163	I-164	0.20	0.95	0.19	1.48	10.0	10.0	25	5.74	1.12	8.54	RCP	0.015	24	24	24	0.30	10.7	3.4	80	3.8	16.1	0.5	10.5	124	117.74	112.32	111.95	5.4	38.0
I-264	I-265	0.10	0.92	0.09	0.09	10.0	10.0	25	5.74	0.51	0.51	RCP	0.015	15	15	15	0.50	4.0	3.2	13	2.2	3.5	0.4	10.4	50	116.73	113.46	113.21	3.3	22.0
I-265	I-169	0.03	0.61	0.02	0.11	10.0	10.0	25	5.74	0.11	0.62	RCP	0.015	15	15	15	0.50	4.0	3.2	16	2.3	4.0	0.4	10.4	52	116.68	113.21	112.95	3.5	24.4
I-169	I-164	0.26	0.95	0.25	0.35	10.0	10.0	25	5.74	1.43	2.05	RCP	0.015	15	15	15	0.50	4.0	3.2	52	3.3	7.7	0.3	10.3	50	116.51	112.95	112.70	3.6	25.5
I-164	I-165	0.18	0.83	0.15	1.98	10.0	10.0	25	5.74	0.84	11.44	RCP	0.015	24	24	24	0.38	12.1	3.8	95	4.4	18.6	0.8	10.8	208	116.45	111.95	111.16	4.5	27.0
I-170	I-165	2.63	0.97	2.55	2.55	10.0	10.0	25	5.74	14.76	14.76	RCP	0.015	24	24	24	0.60	15.2	4.8	97	5.5	19.0	0.2	10.2	74	116.45	112.35	111.91	4.1	22.2
I-165	I-166	0.95	0.91	0.86	5.39	10.0	10.0	25	5.74	4.99	31.19	RCP	0.015	36	36	36	0.50	40.9	5.8	76	6.3	23.3	0.8	10.8	305	116.44	110.16	108.64	6.3	35.4
I-166	I-171	0.82	0.93	0.76	6.15	10.0	10.0	25	5.74	4.41	35.60	RCP	0.015	36	36	36	0.50	40.9	5.8	87	6.5	25.8	0.2	10.2	87	116.57	108.64	108.23	7.9	55.2
I-171	MH-469	1.24	0.95	1.18	7.34	10.0	10.0	25	5.74	6.85	42.45	RCP	0.015	36	36	36	0.56	43.3	6.1	98	7.0	28.8	0.2	10.2	74	116.18	108.23	107.82	8.0	55.4
I-3	UGB 17	0.53	0.73	0.39	0.39	10.0	10.0	25	5.74	2.24	2.24	DIP	0.013	15	15	15	0.50	4.6	3.7	49	3.7	7.4	0.1	10.1	18	114.26	111.59	111.50	2.7	14.8
I-4	UGB 17	0.40	0.72	0.29	0.29	10.0	10.0	25	5.74	1.67	1.67	RCP	0.015	15	15	15	0.50	4.0	3.2	42	3.1	6.8	0.0	10.0	9	115.90	111.54	111.50	4.4	35.1
UGB 17	I-176	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.43	RCP	0.015	15	15	15	0.50	4.0	3.2	87	3.6	10.7	0.2	10.2	46	115.26	111.50	111.27	3.8	27.9

STORM SEWER CALCULATIONS

PRINCETON NURSERIES

MADE BY: JRB DATE: 05/28/24

REV. BY: BM DATE: 09/18/24

RAINFALL CURVE - TRENTON

PROJECT **Princeton Nurseries**

PROJ. NO. WRNUL23001

SUBAREA DATA						DESIGN DATA												DESIGN FLOW							PIPE DATA					
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)
								25					0.015																	
MH-449	I-176	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	3.43	RCP	0.015	15	15	15	0.50	4.0	3.2	87	3.6	10.7	0.7	10.7	152	115.25	111.27	110.51	4.0	30.5
I-175	I-176	0.16	0.58	0.09	0.09	10.0	10.0	25	5.74	0.53	0.53	RCP	0.015	15	15	15	0.50	4.0	3.2	13	2.2	3.5	0.2	10.2	32	114.78	110.67	110.51	4.1	32.1
I-176	MH-466	0.22	0.78	0.17	0.26	10.0	10.0	25	5.74	1.00	4.96	RCP	0.015	15	15	15	0.56	4.2	3.4	118	3.9	12.3	0.4	10.4	97	114.78	110.26	109.72	4.5	37.0
MH-466	MH-469	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	4.96	RCP	0.015	15	15	15	0.55	4.2	3.4	119	3.9	12.3	0.3	10.3	72	116.12	109.72	109.32	6.4	59.6
MH-469	I-296	0.00	0.00	0.00	7.34	10.0	10.0	25	5.74	0.00	47.41	RCP	0.015	36	36	36	0.70	48.4	6.8	98	7.9	28.8	0.7	10.7	311	116.08	107.82	105.64	8.3	59.1
I-296	MH-580	0.48	0.66	0.32	7.65	10.0	10.0	25	5.74	1.82	49.23	RCP	0.015	36	36	36	1.00	57.8	8.2	85	9.2	25.2	0.1	10.1	69	110.90	105.64	104.95	5.3	23.1
I-581	I-582	0.40	0.83	0.33	0.33	10.0	10.0	25	5.74	1.91	1.91	RCP	0.015	15	15	15	0.50	4.0	3.2	48	3.2	7.3	0.4	10.4	74	111.00	107.98	107.61	3.0	19.0
I-582	I-167	0.08	0.72	0.06	0.39	10.0	10.0	25	5.74	0.34	2.24	RCP	0.015	15	15	15	0.50	4.0	3.2	57	3.3	8.1	0.4	10.4	73	110.86	107.61	107.25	3.3	21.8
I-167	MH-580	0.08	0.84	0.06	0.45	10.0	10.0	25	5.74	0.37	2.61	RCP	0.015	15	15	15	0.50	4.0	3.2	66	3.4	8.8	0.0	10.0	10	110.83	107.24	107.19	3.6	25.8
MH-580	EX BASIN 6	0.00	0.00	0.00	8.10	10.0	10.0	25	5.74	0.00	51.84	RCP	0.015	36	36	36	0.99	57.5	8.1	90	9.2	26.6	0.4	10.4	244	112.00	99.95	97.53	12.1	104.6
I-271	I-272	0.12	0.82	0.10	0.10	10.0	10.0	25	5.74	0.59	0.59	RCP	0.015	15	15	15	0.50	4.0	3.2	15	2.3	3.8	0.2	10.2	32	115.14	112.23	112.07	2.9	17.7
I-272	I-273	0.11	0.87	0.10	0.20	10.0	10.0	25	5.74	0.58	1.17	RCP	0.015	15	15	15	0.50	4.0	3.2	29	2.8	5.5	0.9	10.9	156	115.14	112.07	111.29	3.1	19.6
I-273	I-274	0.11	0.81	0.09	0.29	10.0	10.0	25	5.74	0.53	1.70	RCP	0.015	15	15	15	0.50	4.0	3.2	43	3.1	6.8	0.2	10.2	32	115.47	111.29	111.13	4.2	32.9
I-274	I-275	0.11	0.85	0.10	0.39	10.0	10.0	25	5.74	0.56	2.26	RCP	0.015	15	15	15	0.50	4.0	3.2	57	3.3	8.1	0.3	10.3	67	115.47	111.13	110.80	4.3	34.8
I-280	I-281	0.43	0.96	0.41	0.41	10.0	10.0	25	5.74	2.40	2.40	RCP	0.015	15	15	15	0.50	4.0	3.2	61	3.4	8.4	1.5	11.5	302	115.00	112.08	110.57	2.9	17.8
I-281	I-275	0.15	0.62	0.09	0.51	10.0	10.0	25	5.74	0.54	2.94	RCP	0.015	15	15	15	0.50	4.0	3.2	74	3.5	9.5	0.6	10.6	128	115.33	110.57	109.93	4.8	39.9
I-275	I-276	0.26	0.70	0.19	1.08	10.0	10.0	25	5.74	1.07	6.27	RCP	0.015	24	24	24	0.35	11.6	3.7	54	3.7	12.5	0.8	10.8	172	115.61	109.18	108.58	6.4	50.2
I-276	MH-585	0.19	0.72	0.14	1.22	10.0	10.0	25	5.74	0.78	7.05	RCP	0.015	24	24	24	0.35	11.6	3.7	61	3.9	13.5	0.3	10.3	75	116.50	108.58	108.32	7.9	68.0
MH-585	I-295	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	7.05	RCP	0.015	24	24	24	0.35	11.6	3.7	61	3.9	13.5	0.5	10.5	122	114.16	108.32	107.89	5.8	43.1
I-295	I-294	0.17	0.44	0.07	1.29	10.0	10.0	25	5.74	0.43	7.49	RCP	0.015	24	24	24	0.35	11.6	3.7	65	3.9	14.0	0.1	10.1	32	112.28	107.89	107.78	4.4	25.7
I-294	BASIN 25	0.05	0.62	0.03	1.33	10.0	10.0	25	5.74	0.19	7.68	RCP	0.015	24	24	24	0.50	13.9	4.4	55	4.5	12.7	0.3	10.3	73	112.28	107.78	107.41	4.5	27.0
I-187	I-186	1.45	0.57	0.82	0.82	10.0	10.0	25	5.74	4.77	4.77	RCP	0.015	18	18	18	0.50	6.4	3.6	74	4.0	11.4	0.1	10.1	32	95.15	91.98	91.82	3.2	17.5
I-186	EX MH	0.22	0.66	0.14	0.97	10.0	10.0	25	5.74	0.84	5.60	RCP	0.015	18	18	18	0.50	6.4	3.6	87	4.1	12.9	0.4	10.4	89	95.15	91.82	91.39	3.3	19.5
OCS-589	FES 588	0.00	0.00	0.00	0.00	10.0	10.0	25	5.74	0.00	5.32	RCP	0.015	18	18	18	2.00	12.9	7.3	41	6.9	8.0	0.1	10.1	51	104.28	98.02	97.00	6.3	54.6

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/18/2024
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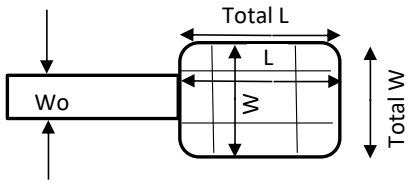
Structure: FES 127
25 Year Storm

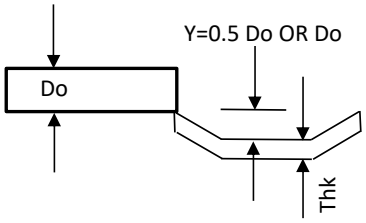
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	1.26	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.39	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 105.89

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

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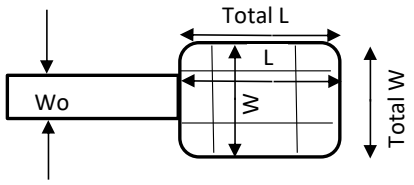
Structure: FES 136
25 Year Storm

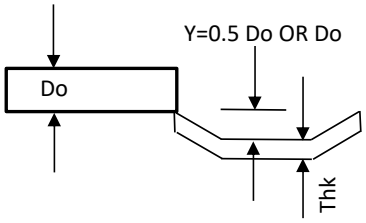
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	2.65	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.02	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 101.12

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 9/19/2024
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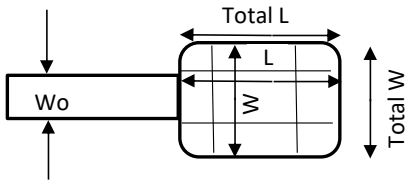
Structure: FES 141
25 Year Storm

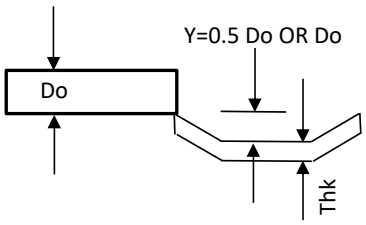
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	1.77	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.31	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 103.31

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

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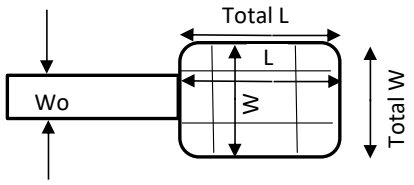
Structure: FES 146
25 Year Storm

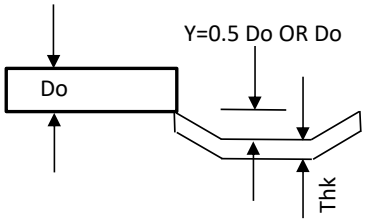
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	1.14	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.95	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 105.35

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
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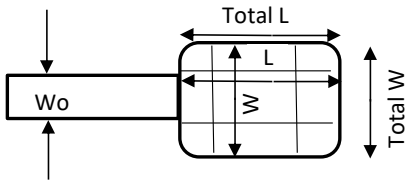
Structure: FES 181
25 Year Storm

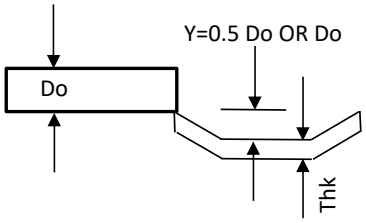
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	5.98	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.76	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm el. 98.76

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
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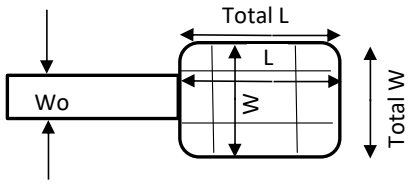
Structure: FES 183
25 Year Storm

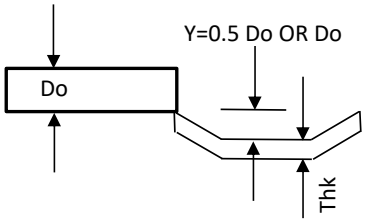
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	2.27	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.76	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm el. 98.76

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
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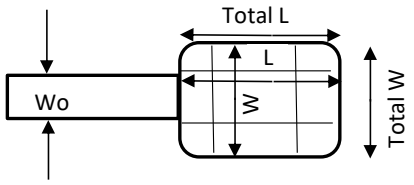
Structure: FES 192
25 Year Storm

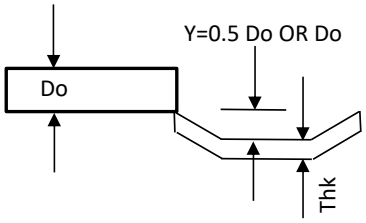
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	3.12	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.90	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm el. 94.90

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

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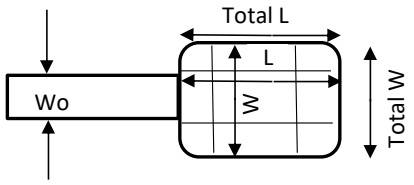
Structure: FES 195
25 Year Storm

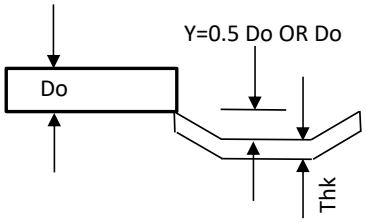
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	5.38	CFS
Culvert Horiz Dim.=	1.92	Ft
Tailwater Depth=	1.32	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.16	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	3.48	Ft
Width of Bottom (W)	3.84	Ft
Total Length of Scour Hole	9.48	Ft
Total Width of Scour Hole	9.84	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW = 2 year storm el. 92.32

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

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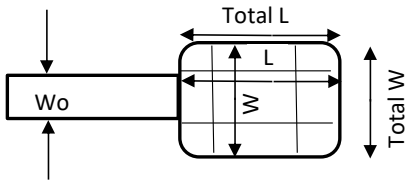
Structure: FES 203
25 Year Storm

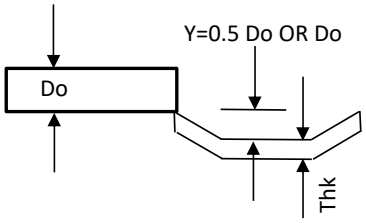
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	4.69	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.69	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW = 2 year storm el. 93.09

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

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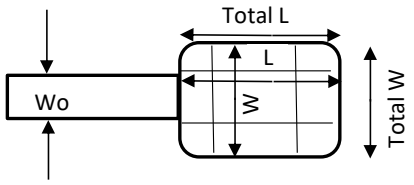
Structure: FES 207
25 Year Storm

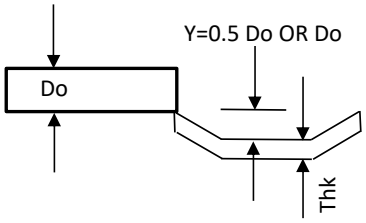
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	80.95	CFS
Culvert Horiz Dim.=	5.00	Ft
Tailwater Depth=	1.69	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	3.16	Ft
Depth of Hole (Y)	1.50	Ft
Length of Bottom (L)	9.48	Ft
Width of Bottom (W)	10.00	Ft
Total Length of Scour Hole	18.48	Ft
Total Width of Scour Hole	19.00	Ft
D(50) calc.	4	in
D(50) to be used	4	in
Thickness (Thk.)	9	in



TW = 2 year storm el. 93.09

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
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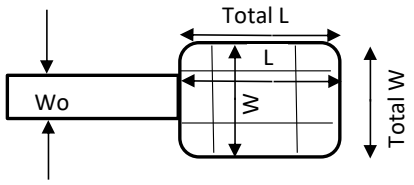
Structure: FES 213
25 Year Storm

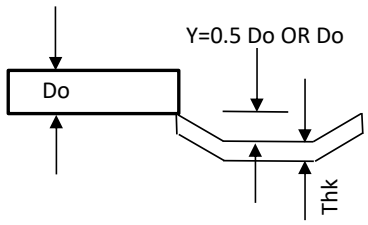
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	24.20	CFS
Culvert Horiz Dim.=	4.00	Ft
Tailwater Depth=	2.26	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	4.00	Ft
Depth of Hole (Y)	2.00	Ft
Length of Bottom (L)	12.00	Ft
Width of Bottom (W)	8.00	Ft
Total Length of Scour Hole	24.00	Ft
Total Width of Scour Hole	20.00	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 98.76

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
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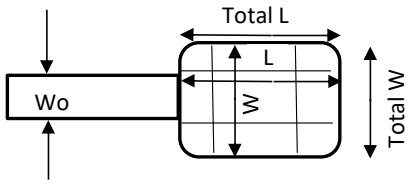
Structure: FES 226
25 Year Storm

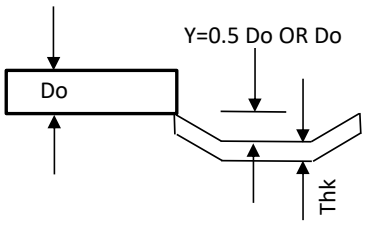
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	6.14	CFS
Culvert Horiz Dim.=	1.50	Ft
Tailwater Depth=	2.26	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.50	Ft
Depth of Hole (Y)	0.75	Ft
Length of Bottom (L)	4.50	Ft
Width of Bottom (W)	3.00	Ft
Total Length of Scour Hole	9.00	Ft
Total Width of Scour Hole	7.50	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 98.76

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
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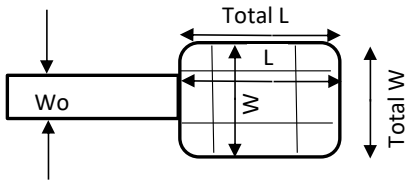
Structure: FES 237
25 Year Storm

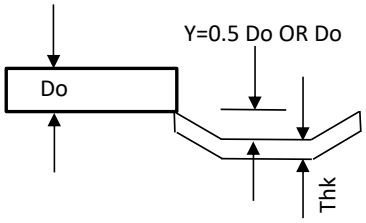
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	1.99	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.58	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW = 2 year storm el. 99.58

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
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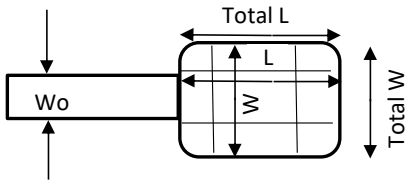
Structure: FES 329
25 Year Storm

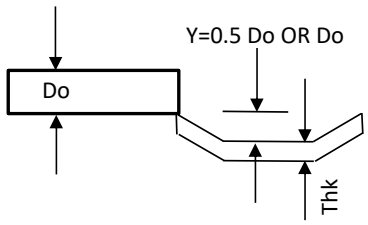
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	2.05	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.90	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	9.75	Ft
Total Width of Scour Hole	8.50	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm el. 94.90

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

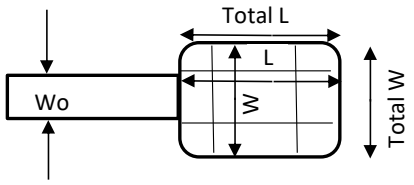
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/19/2024
Page:
By:

Structure: FES 346
25 Year Storm

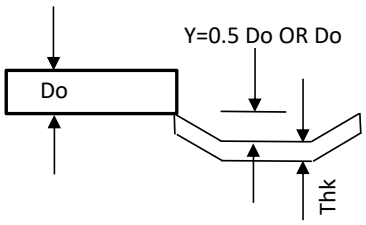
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	56.99	CFS
Culvert Horiz Dim.=	3.50	Ft
Tailwater Depth=	2.36	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	3.50	Ft
Depth of Hole (Y)	1.75	Ft
Length of Bottom (L)	10.50	Ft
Width of Bottom (W)	7.00	Ft
Total Length of Scour Hole	21.00	Ft
Total Width of Scour Hole	17.50	Ft
D(50) calc.	2	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 87.61

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

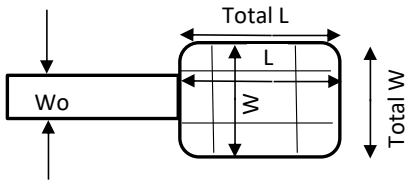
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/19/2024
Page:
By:

Structure: FES 352
25 Year Storm

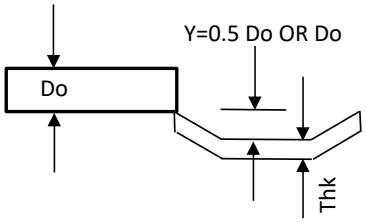
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	8.10	CFS
Culvert Horiz Dim.=	2.50	Ft
Tailwater Depth=	2.36	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.50	Ft
Depth of Hole (Y)	1.25	Ft
Length of Bottom (L)	7.50	Ft
Width of Bottom (W)	5.00	Ft
Total Length of Scour Hole	15.00	Ft
Total Width of Scour Hole	12.50	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 87.61

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

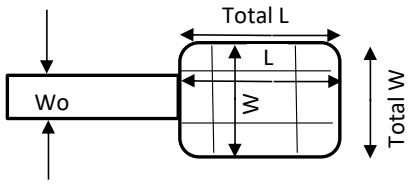
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/19/2020
Page:
By:

Structure: FES 359
25 Year Storm

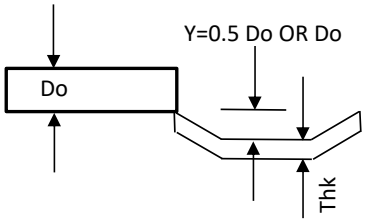
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	21.70	CFS
Culvert Horiz Dim.=	2.00	Ft
Tailwater Depth=	1.95	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.00	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	6.00	Ft
Width of Bottom (W)	4.00	Ft
Total Length of Scour Hole	12.00	Ft
Total Width of Scour Hole	10.00	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 84.51

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev:
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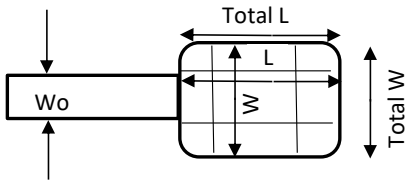
By:

Structure: FES 361
25 Year Storm

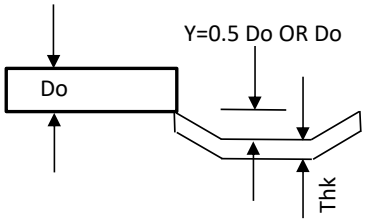
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	13.28	CFS
Culvert Horiz Dim.=	2.00	Ft
Tailwater Depth=	1.00	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.00	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	6.00	Ft
Width of Bottom (W)	4.00	Ft
Total Length of Scour Hole	12.00	Ft
Total Width of Scour Hole	10.00	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

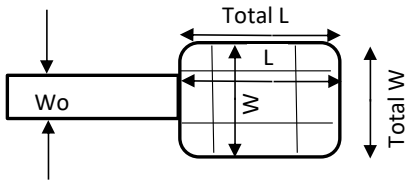
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev:
Page:
By:

Structure: FES 365
25 Year Storm

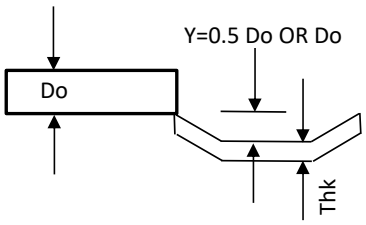
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	7.15	CFS
Culvert Horiz Dim.=	1.50	Ft
Tailwater Depth=	0.75	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.50	Ft
Depth of Hole (Y)	0.75	Ft
Length of Bottom (L)	4.50	Ft
Width of Bottom (W)	3.00	Ft
Total Length of Scour Hole	9.00	Ft
Total Width of Scour Hole	7.50	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

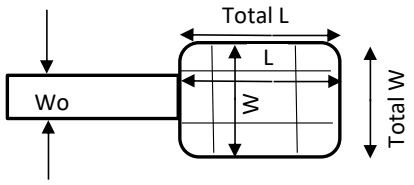
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev:
Page:
By:

Structure: FES 367
25 Year Storm

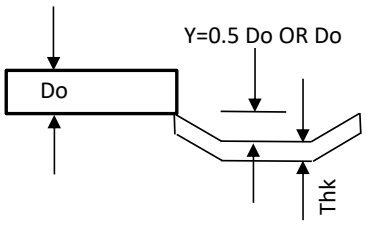
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	12.37	CFS
Culvert Horiz Dim.=	1.50	Ft
Tailwater Depth=	0.75	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.50	Ft
Depth of Hole (Y)	0.75	Ft
Length of Bottom (L)	4.50	Ft
Width of Bottom (W)	3.00	Ft
Total Length of Scour Hole	9.00	Ft
Total Width of Scour Hole	7.50	Ft
D(50) calc.	2	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

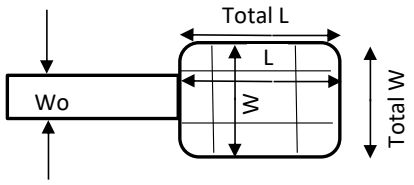
PROJECT: Princeton Nurseries

Date: 9/19/2024
Rev:
Page:
By:

Structure: FES 372
25 Year Storm

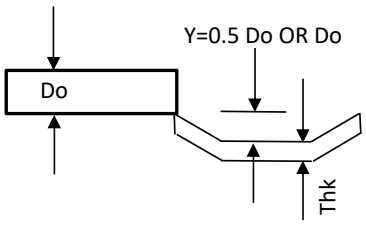
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	62.20	CFS
Culvert Horiz Dim.=	2.50	Ft
Tailwater Depth=	7.50	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.50	Ft
Depth of Hole (Y)	1.25	Ft
Length of Bottom (L)	7.50	Ft
Width of Bottom (W)	5.00	Ft
Total Length of Scour Hole	15.00	Ft
Total Width of Scour Hole	12.50	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 84.51

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

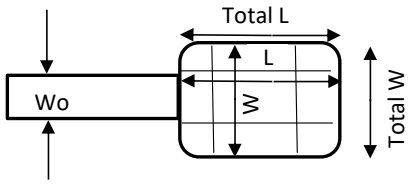
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev:
Page:
By:

Structure: FES 408
25 Year Storm

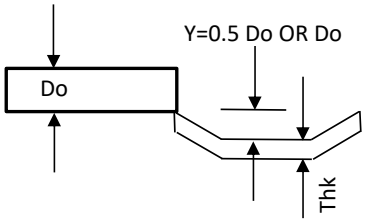
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	21.90	CFS
Culvert Horiz Dim.=	2.50	Ft
Tailwater Depth=	1.25	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.50	Ft
Depth of Hole (Y)	1.25	Ft
Length of Bottom (L)	7.50	Ft
Width of Bottom (W)	5.00	Ft
Total Length of Scour Hole	15.00	Ft
Total Width of Scour Hole	12.50	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

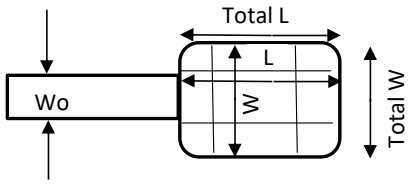
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/18/2024
Page:
By:

Structure: FES 418
25 Year Storm

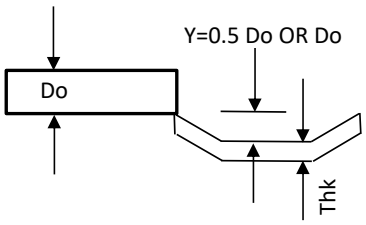
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	49.82	CFS
Culvert Horiz Dim.=	3.00	Ft
Tailwater Depth=	1.69	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	3.00	Ft
Depth of Hole (Y)	1.50	Ft
Length of Bottom (L)	9.00	Ft
Width of Bottom (W)	6.00	Ft
Total Length of Scour Hole	18.00	Ft
Total Width of Scour Hole	15.00	Ft
D(50) calc.	2	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW = 2 year storm el. 93.09

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

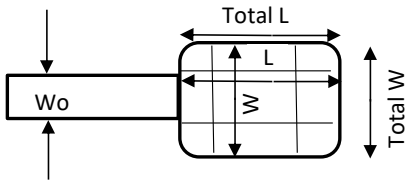
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/19/2024
Page:
By:

Structure: FES 436
25 Year Storm

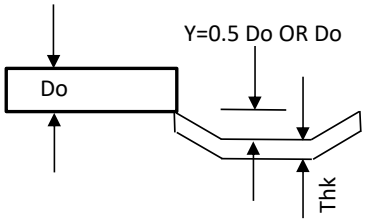
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	3.02	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	1.02	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.62	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.47	Ft
Total Width of Scour Hole	6.22	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 101.12

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

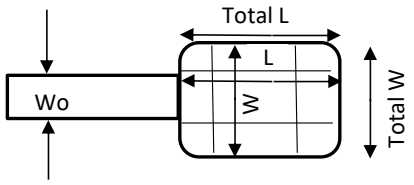
PROJECT: Princeton Nurseries

Date: 9/14/2024
Rev:
Page:
By:

Structure: FES 463
25 Year Storm

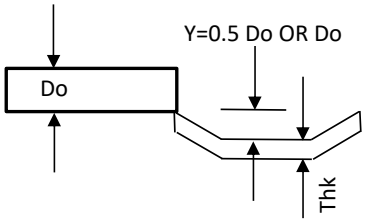
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	30.70	CFS
Culvert Horiz Dim.=	2.50	Ft
Tailwater Depth=	7.51	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.50	Ft
Depth of Hole (Y)	1.25	Ft
Length of Bottom (L)	7.50	Ft
Width of Bottom (W)	5.00	Ft
Total Length of Scour Hole	15.00	Ft
Total Width of Scour Hole	12.50	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 84.51

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/18/2024
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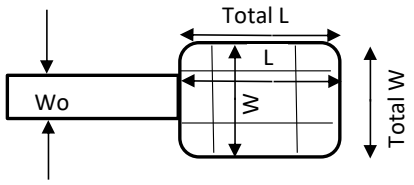
By:

Structure: FES 541
25 Year Storm

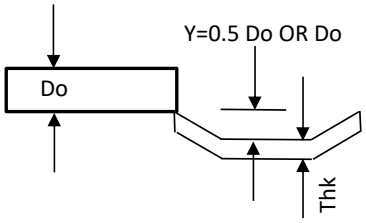
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	12.59	CFS
Culvert Horiz Dim.=	2.00	Ft
Tailwater Depth=	1.32	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.00	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	6.00	Ft
Width of Bottom (W)	4.00	Ft
Total Length of Scour Hole	12.00	Ft
Total Width of Scour Hole	10.00	Ft
D(50) calc.	1	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW = 2 year storm el. 92.32

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/18/2024
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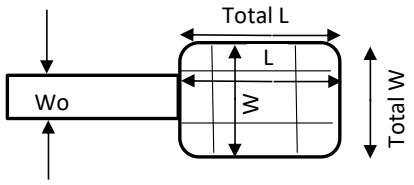
By:

Structure: FES 551
25 Year Storm

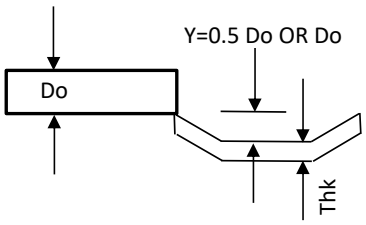
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	6.22	CFS
Culvert Horiz Dim.=	1.50	Ft
Tailwater Depth=	1.72	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.50	Ft
Depth of Hole (Y)	0.75	Ft
Length of Bottom (L)	4.50	Ft
Width of Bottom (W)	3.00	Ft
Total Length of Scour Hole	9.00	Ft
Total Width of Scour Hole	7.50	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 108.12

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/18/2024
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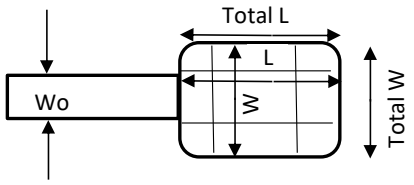
By:

Structure: FES 586
25 Year Storm

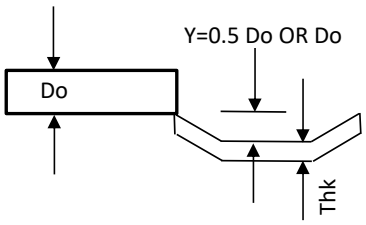
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	6.69	CFS
Culvert Horiz Dim.=	2.00	Ft
Tailwater Depth=	1.31	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	2.00	Ft
Depth of Hole (Y)	1.00	Ft
Length of Bottom (L)	6.00	Ft
Width of Bottom (W)	4.00	Ft
Total Length of Scour Hole	12.00	Ft
Total Width of Scour Hole	10.00	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm elev. 101.31

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

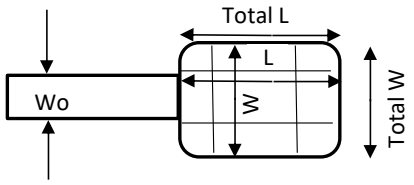
PROJECT: Princeton Nurseries

Date: 6/14/2024
Rev: 9/18/2024
Page:
By:

Structure: FES 588
25 Year Storm

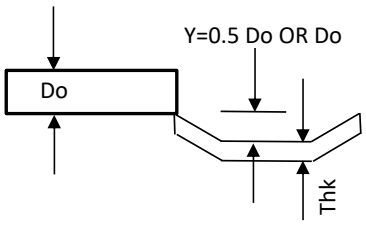
DESIGN CRITERIA:

Design Storm	25	yr
Flow Rate, Q=	2.27	CFS
Culvert Horiz Dim.=	1.50	Ft
Tailwater Depth=	1.76	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.50	Ft
Depth of Hole (Y)	0.75	Ft
Length of Bottom (L)	4.50	Ft
Width of Bottom (W)	3.00	Ft
Total Length of Scour Hole	9.00	Ft
Total Width of Scour Hole	7.50	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in



TW= 2 year storm el. 98.76

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS

FOR

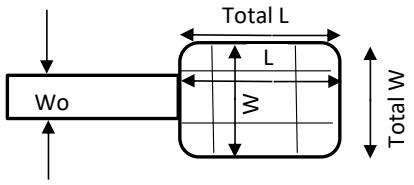
CONDUIT OUTLET PROTECTION - SCOUR HOLE

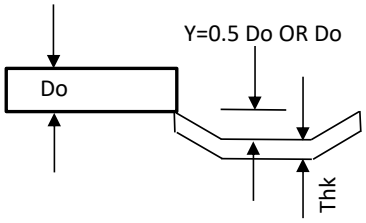
PROJECT: Princeton Nurseries

Date: 9/18/2024
Rev:
Page:
By:

Structure: FES 595
100 Year Storm

DESIGN CRITERIA:		
Routed Outflow Design Storm	100	yr
Flow Rate, Q=	6.69	CFS
Culvert Horiz Dim.=	1.25	Ft
Tailwater Depth=	2.54	*Ft
Filter Fabric Used?	y	(Y/N)
D(50) min.	3	in
SCOUR HOLE DIMENSIONS:		
Culvert Vert Dim. (Do)	1.25	Ft
Depth of Hole (Y)	0.63	Ft
Length of Bottom (L)	3.75	Ft
Width of Bottom (W)	2.50	Ft
Total Length of Scour Hole	7.53	Ft
Total Width of Scour Hole	6.28	Ft
D(50) calc.	0	in
D(50) to be used	3	in
Thickness (Thk.)	6	in

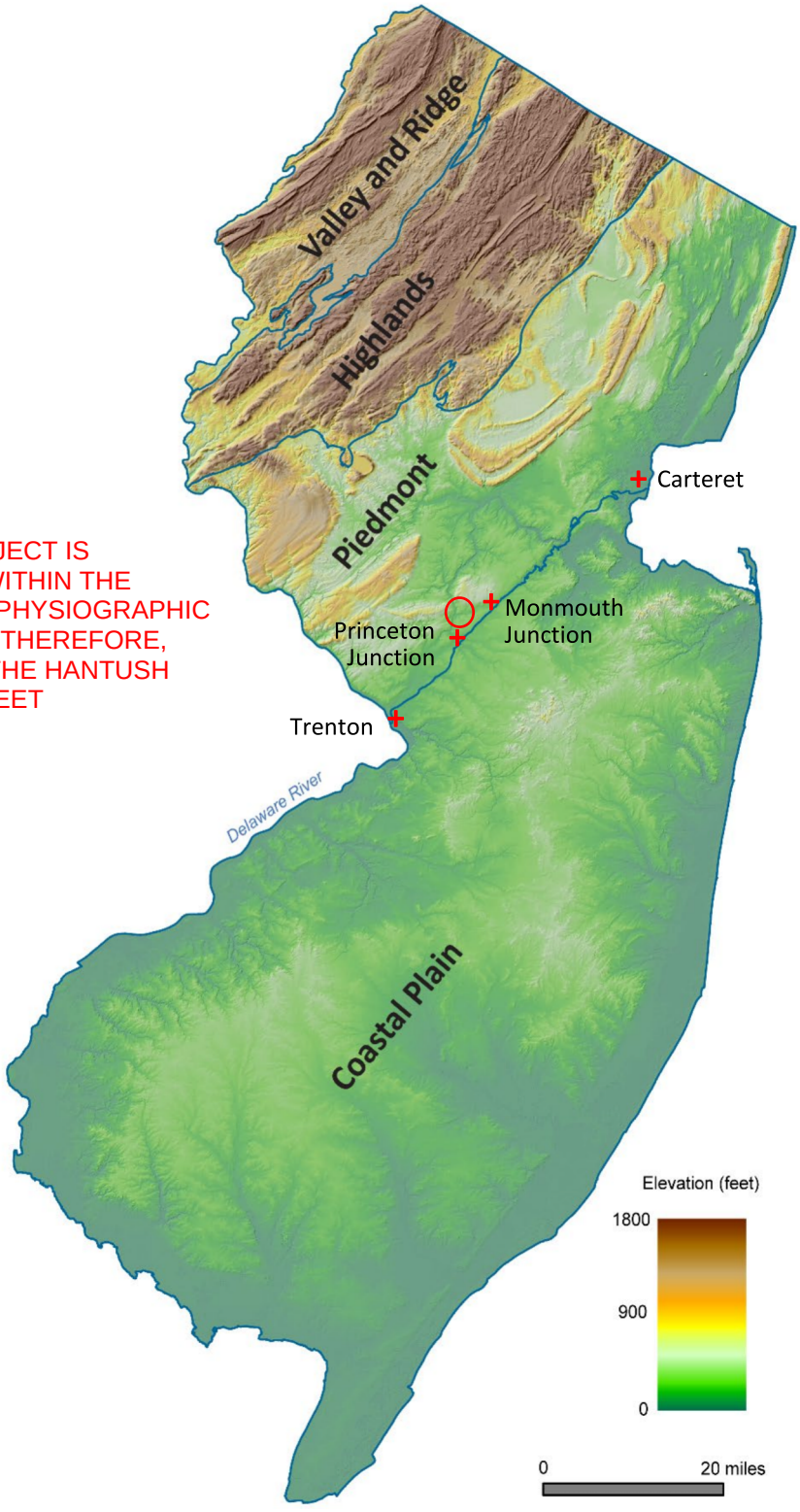




TW= 2 year storm el. 91.54

Appendix G

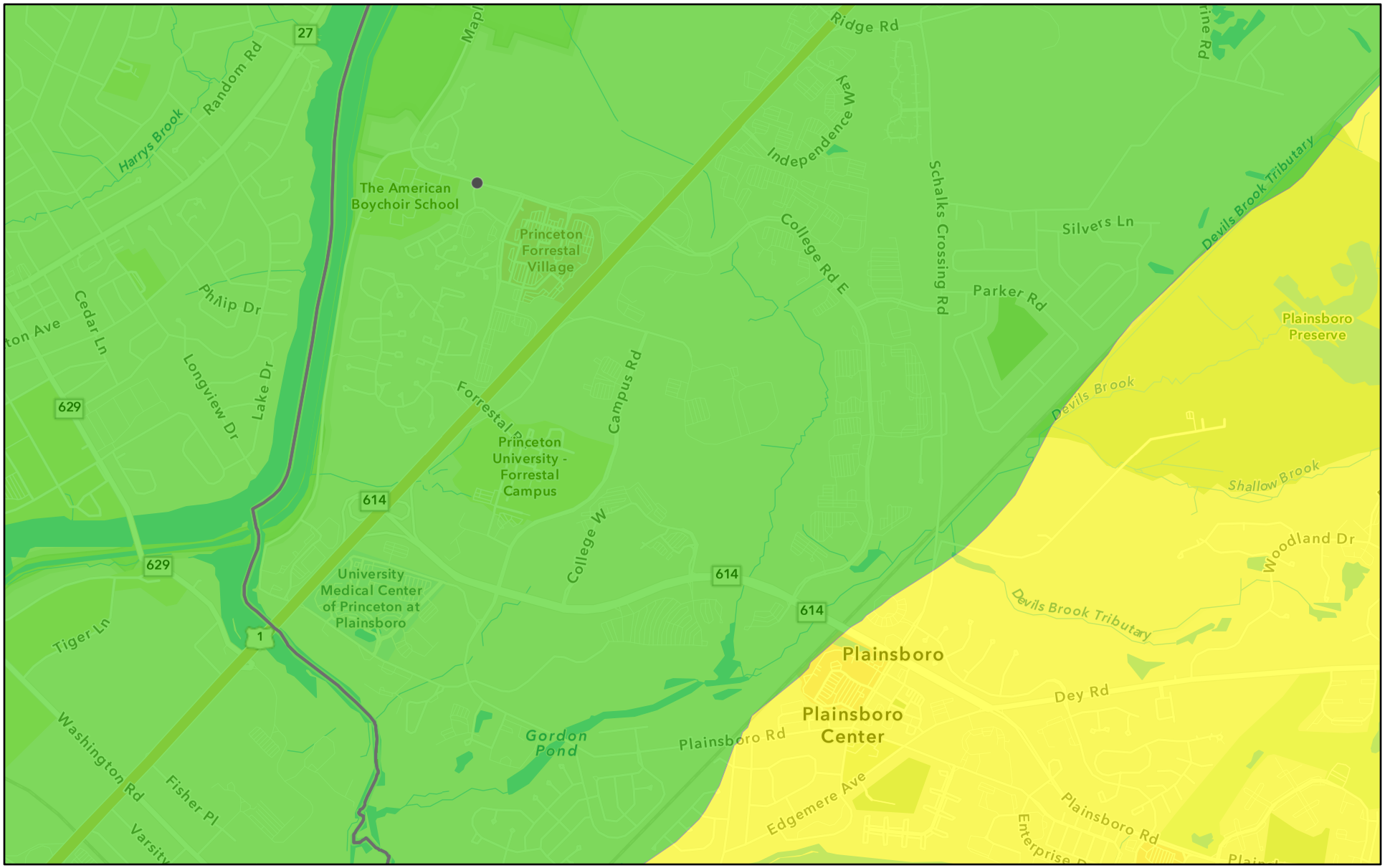
Physiographic Provinces of New Jersey.



NOTE: PROJECT IS LOCATED WITHIN THE PIEDMONT PHYSIOGRAPHIC PROVINCE. THEREFORE, Kh=R FOR THE HANTUSH SPREADSHEET

Imagery modified from New Jersey Geological Survey Information Circular, "Physiographic Provinces of New Jersey," 2006 and used with permission

NJ-GeoWeb



6/11/2024, 3:35:37 PM

1:36,112

0 0.23 0.45 0.9 mi

0 0.38 0.75 1.5 km

County Boundaries

Piedmont

Physiographic Provinces

Coastal Plain

Monmouth County NJ GIS, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US

New Jersey Department of Environmental Protection

Monmouth County NJ GIS, New Jersey Office of GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS | NJDEP | NJ Department of Community Affairs, Local Planning Services

ii. N.J.A.C. 7:8-5.7(c)2 and N.J.A.C. 7:8-5.7(d)2 both allow an alternative to calculating the current and projected rainfall precipitation depths by using separate rainfall totals for each county. The 24-hour county rainfall amount provided by NRCS is duplicated here and can be found online at:

https://www.nrcs.usda.gov/sites/default/files/2022-09/NJ%2024%20Hour%20Rainfall%20Data.pdf.

Table 5-1: County-Specific, New Jersey 24-Hour Rainfall Frequency Data

NEW JERSEY 24 HOUR RAINFALL FREQUENCY DATA

Rainfall amounts in Inches

County	1 year	2 year	5 year	10 year	25 year	50 year	100 year
Atlantic	2.72	3.31	4.30	5.16	6.46	7.61	8.90
Bergen	2.75	3.34	4.27	5.07	6.28	7.32	8.47
Burlington	2.77	3.36	4.34	5.18	6.45	7.56	8.81
Camden	2.73	3.31	4.25	5.06	6.28	7.34	8.52
Cape May	2.67	3.25	4.22	5.07	6.34	7.47	8.73
Cumberland	2.69	3.27	4.25	5.09	6.37	7.49	8.76
Essex	2.85	3.44	4.40	5.22	6.44	7.49	8.66
Gloucester	2.71	3.29	4.24	5.05	6.29	7.36	8.55
Hudson	2.73	3.31	4.23	5.02	6.19	7.20	8.31
Hunterdon	2.80	3.38	4.26	5.00	6.09	7.02	8.03
Mercer	2.74	3.31	4.23	5.01	6.19	7.20	8.33
Middlesex	2.76	3.35	4.30	5.12	6.36	7.43	8.63
Monmouth	2.79	3.38	4.38	5.23	6.53	7.66	8.94
Morris	2.94	3.54	4.47	5.24	6.37	7.32	8.35
Ocean	2.81	3.42	4.45	5.33	6.68	7.87	9.20
Passaic	2.87	3.47	4.42	5.23	6.43	7.47	8.62
Salem	2.69	3.26	4.20	5.00	6.22	7.28	8.45
Somerset	2.76	3.34	4.25	5.01	6.15	7.13	8.21
Sussex	2.68	3.22	4.02	4.70	5.72	6.60	7.58
Union	2.80	3.39	4.35	5.17	6.42	7.49	8.69
Warren	2.78	3.34	4.18	4.89	5.93	6.83	7.82

Notes: The average point rainfall amounts listed above were developed from data contained in NOAA Atlas 14 Volume 2.

Point rainfall estimates for specific locations may be obtained from the Precipitation Frequency Data Server located at http://www.nws.noaa.gov/ohd/hdsc/

For most hydrologic design procedures, the rainfall amounts listed above may be rounded to the nearest tenth of an inch.

b. N.J.A.C.7:8-5.7(c) requires the precipitation depths of the current 2-, 10- and 100-year storm events be determined by multiplying the NOAA rainfall data with the current precipitation adjustment factors in Table 5-5 at N.J.A.C.7:8-5.7(c)2. N.J.A.C.7:8-5.7(d) requires the precipitation depths of the projected 2-, 10- and 100-year storm events be determined by multiplying the NOAA rainfall data with the future precipitation change factors in Table 5-6 at N.J.A.C.7:8-5.7(d). Table 5-5 and Table 5-6 from the Rules are reproduced below.

Current Precipitation Adjustment Factors at N.J.A.C. 7:8-5.7(c) as Table 5-5

County	Current Precipitation Adjustment Factors		
	2-year Design Storm	10-year Design Storm	100-year Design Storm
Atlantic	1.01	1.02	1.03
Bergen	1.01	1.03	1.06
Burlington	0.99	1.01	1.04
Camden	1.03	1.04	1.05
Cape May	1.03	1.03	1.04
Cumberland	1.03	1.03	1.01
Essex	1.01	1.03	1.06
Gloucester	1.05	1.06	1.06
Hudson	1.03	1.05	1.09
Hunterdon	1.02	1.05	1.13
Mercer	1.01	1.02	1.04
Middlesex	1.00	1.01	1.03
Monmouth	1.00	1.01	1.02
Morris	1.01	1.03	1.06
Ocean	1.00	1.01	1.03
Passaic	1.00	1.02	1.05
Salem	1.02	1.03	1.03
Somerset	1.00	1.03	1.09
Sussex	1.03	1.04	1.07
Union	1.01	1.03	1.06
Warren	1.02	1.07	1.15

Future Precipitation Change Factors at N.J.A.C. 7:8-5.7(d) as Table 5-6

County	Future Precipitation Change Factors		
	2-year Design Storm	10-year Design Storm	100-year Design Storm
Atlantic	1.22	1.24	1.39
Bergen	1.20	1.23	1.37
Burlington	1.17	1.18	1.32
Camden	1.18	1.22	1.39
Cape May	1.21	1.24	1.32
Cumberland	1.20	1.21	1.39
Essex	1.19	1.22	1.33
Gloucester	1.19	1.23	1.41
Hudson	1.19	1.19	1.23
Hunterdon	1.19	1.23	1.42
Mercer	1.16	1.17	1.36
Middlesex	1.19	1.21	1.33
Monmouth	1.19	1.19	1.26
Morris	1.23	1.28	1.46
Ocean	1.18	1.19	1.24
Passaic	1.21	1.27	1.50
Salem	1.20	1.23	1.32
Somerset	1.19	1.24	1.48
Sussex	1.24	1.29	1.50
Union	1.20	1.23	1.35
Warren	1.20	1.25	1.37

Appendix H

POI-1
(TO BASIN)

POI-2

POI-3
(OVERLAND)

EDA-1
TOTAL AREA = 43.51 AC.
IMPERVIOUS = 0.50 AC.
PERVIOUS = 43.01 AC.

EDA-2
TOTAL AREA = 42.2 AC.
IMPERVIOUS = 0.50 AC.
PERVIOUS = 41.7 AC.

EDA-3
TOTAL AREA = 3.89 AC.
IMPERVIOUS = 0 AC.
PERVIOUS = 3.89 AC.

LOT 3.211
BLOCK 99
N/F TOWNSHIP OF SOUTH BRUNSWICK

LOT 3.212
BLOCK 99
N/F TOWNSHIP OF SOUTH BRUNSWICK

LOT 14.04
BLOCK 99
N/F WRV NURSERIES SOUTH BRUNSWICK OWNER L.L.C.

N/F WRV NURSERIES SOUTH BRUNSWICK OWNER L.L.C.
Containing 6,223,734 Sq. Ft.±
Or 142.877 Ac.±

WOOD BARN

ZONE-R-1

ZONE-PL

ZONE-PMUD

HEATHCOTE BROOK TRIBUTARY
(AKA "HARRY'S BROOK PER VARIOUS REFERENCE PLANS")

LOT 1
BLOCK 102

BASIN #8 (PER VINHAL RECORD PLAN)
(NOT CONSTRUCTED)

N/F BARCLAY SQUARE AT FORRESTAL, LLC.
D.B. 5063 PG. 843

LOT 1
BLOCK 106
N/F WRV NURSERIES PLAINSBORO OWNER, L.L.C.
Containing 2,706,631 Sq. Ft.±
Or 62.136 Ac.±

LOT 5
BLOCK 102
N/F WRV NURSERIES PLAINSBORO OWNER, L.L.C.
Containing 1,871,101 Sq. Ft.±
Or 42.955 Ac.±

LOT 6
BLOCK 102
N/F WRV NURSERIES PLAINSBORO OWNER, L.L.C.
Containing 163,154 Sq. Ft.±
Or 3.746 Ac.±

LOT 2
BLOCK 104

LOT 1.05
BLOCK 104

LOT 1.07
BLOCK 104

LOT 4.01
BLOCK 105

LOT 2.02
BLOCK 105

LOT 3
BLOCK 105

LOT 2.03
BLOCK 105

LOT 5
BLOCK 201

LOT 1.06

SEMINARY DRIVE
(VARIABLE WIDTH R.O.W. PER TAX MAP)

PRINCETON-HIGHTSTOWN ROAD

RESIDENTIAL HOUSING

To PATH

R32.0' R38.0'

REV.	DESCRIPTION	DATE	DFT.BY	CKD.BY
2	PER TOWNSHIP REVIEW	9/27/24		
1	PER CLIENT REVISIONS	7/19/24		

6/14/24
DATE OF SIGN.

CHAD GAULRAPP
N.J. PROFESSIONAL ENGINEER LIC. NO. GE 41350

van note-harvey division of pennoni
103 College Road East • Princeton, NJ 08540 • 609-987-2323
211 Bayberry Drive • Cape May Court House, NJ 08210 • 609-465-2600
www.vannoteharvey.com www.pennoni.com
Certificate of Authorization No. 24GA28033300

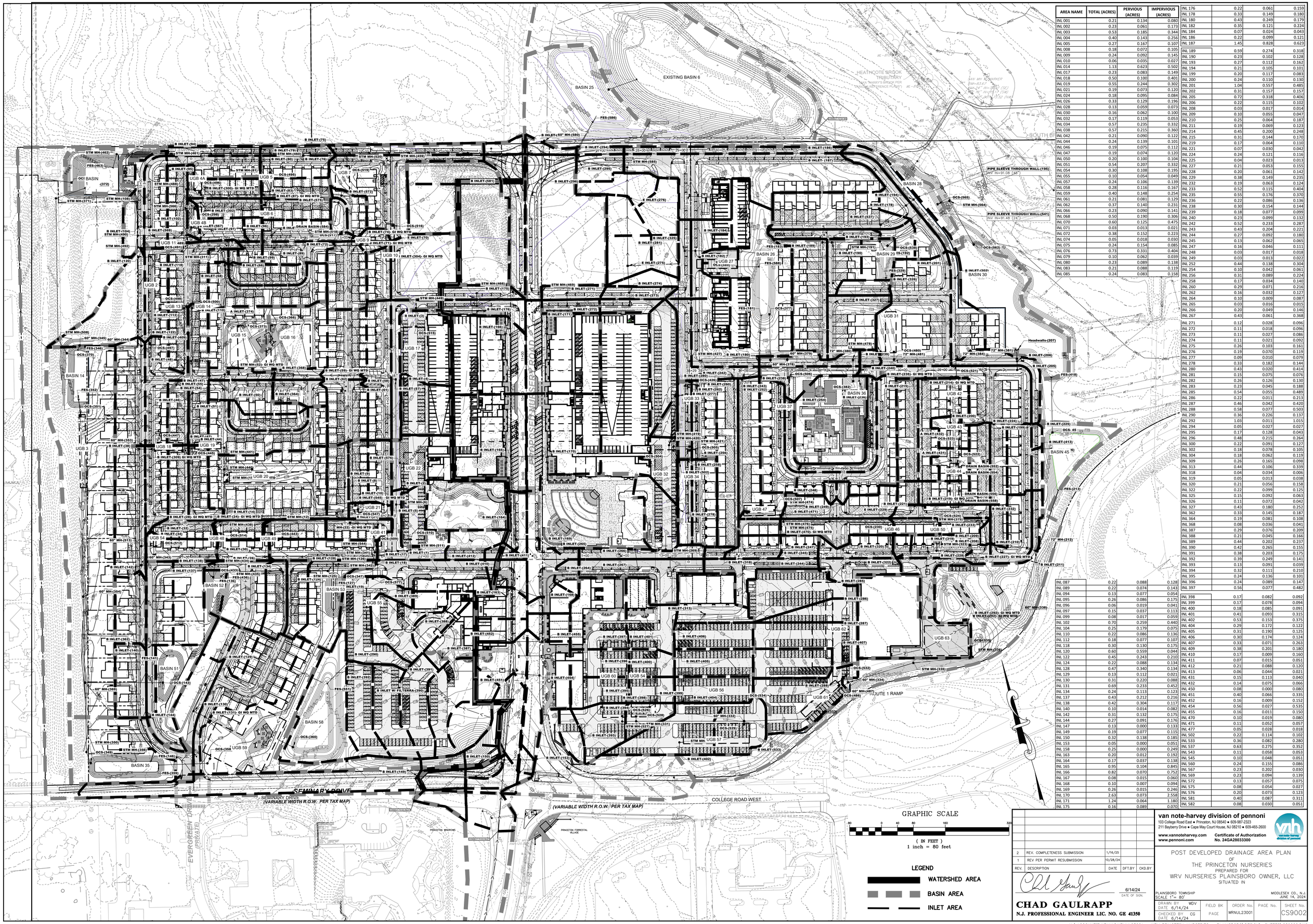
PRE-DEVELOPED DRAINAGE AREA PLAN
OF
THE PRINCETON NURSERIES
PREPARED FOR
WRV NURSERIES PLAINSBORO OWNER, LLC
SITUATED IN

PLAINSBORO TOWNSHIP
SCALE 1"= 100'

MIDDLESEX CO., N.J.
JUNE 14, 2024

DRAWN BY	FIELD BK	ORDER No.	FILE No.	SHEET No.
WDV				
DATE 6/14/24				
CHECKED BY CG	PAGE	WRNUL23001		CS9001
DATE 6/14/24				

U:\ACCOUNTS\WRNUL\WRNUL23001 - WRV PRINCETON NURSERIES - PLAINSBORO\DESIGN_SHEETS\CS9001 - ED.DWG



AREA NAME	TOTAL (ACRES)	PERVIOUS (ACRES)	IMPERVIOUS (ACRES)
INL 001	0.21	0.134	0.080
INL 002	0.23	0.061	0.173
INL 003	0.53	0.185	0.344
INL 004	0.40	0.143	0.256
INL 005	0.27	0.167	0.107
INL 008	0.18	0.072	0.105
INL 009	0.24	0.092	0.145
INL 010	0.06	0.035	0.027
INL 014	1.13	0.623	0.502
INL 017	0.23	0.083	0.149
INL 018	0.50	0.100	0.401
INL 019	0.55	0.244	0.302
INL 021	0.19	0.073	0.120
INL 024	0.18	0.095	0.084
INL 026	0.33	0.129	0.196
INL 028	0.13	0.059	0.073
INL 030	0.16	0.062	0.100
INL 032	0.17	0.119	0.053
INL 034	0.57	0.235	0.332
INL 038	0.57	0.215	0.360
INL 042	0.21	0.090	0.122
INL 044	0.24	0.139	0.101
INL 046	0.19	0.075	0.112
INL 047	0.19	0.074	0.120
INL 050	0.20	0.100	0.104
INL 051	0.54	0.207	0.332
INL 054	0.30	0.108	0.195
INL 055	0.10	0.054	0.049
INL 057	0.24	0.106	0.139
INL 058	0.28	0.116	0.167
INL 059	0.40	0.148	0.254
INL 061	0.21	0.081	0.129
INL 062	0.37	0.140	0.231
INL 066	0.23	0.090	0.141
INL 068	0.50	0.190	0.306
INL 070	0.60	0.125	0.475
INL 071	0.03	0.013	0.021
INL 072	0.38	0.152	0.223
INL 074	0.05	0.018	0.030
INL 075	0.24	0.154	0.085
INL 076	0.73	0.331	0.405
INL 079	0.10	0.062	0.039
INL 080	0.23	0.089	0.138
INL 083	0.21	0.088	0.119
INL 085	0.24	0.083	0.158
INL 087	0.22	0.088	0.128
INL 089	0.22	0.074	0.143
INL 094	0.13	0.077	0.054
INL 095	0.26	0.086	0.175
INL 096	0.06	0.019	0.041
INL 097	0.15	0.037	0.113
INL 099	0.08	0.017	0.059
INL 102	0.70	0.259	0.440
INL 104	0.25	0.179	0.075
INL 110	0.22	0.086	0.136
INL 112	0.18	0.077	0.107
INL 118	0.30	0.130	0.175
INL 120	0.60	0.559	0.044
INL 122	0.45	0.243	0.210
INL 124	0.22	0.088	0.134
INL 128	0.47	0.340	0.134
INL 129	0.13	0.112	0.021
INL 130	0.31	0.220	0.088
INL 131	0.69	0.233	0.452
INL 134	0.24	0.113	0.123
INL 137	0.43	0.212	0.216
INL 138	0.42	0.304	0.117
INL 140	0.10	0.014	0.082
INL 142	0.31	0.132	0.175
INL 144	0.27	0.091	0.176
INL 147	0.13	0.000	0.133
INL 149	0.19	0.077	0.115
INL 150	0.32	0.138	0.185
INL 153	0.05	0.000	0.051
INL 158	0.25	0.000	0.249
INL 163	0.20	0.012	0.192
INL 164	0.17	0.037	0.138
INL 165	0.95	0.104	0.845
INL 166	0.82	0.070	0.752
INL 167	0.08	0.015	0.060
INL 168	0.10	0.007	0.094
INL 169	0.26	0.015	0.246
INL 170	2.63	0.073	2.558
INL 171	1.24	0.064	1.180
INL 175	0.16	0.089	0.070
INL 176	0.22	0.061	0.159
INL 178	0.33	0.149	0.180
INL 180	0.43	0.249	0.179
INL 182	0.35	0.121	0.224
INL 184	0.07	0.024	0.043
INL 186	0.22	0.099	0.121
INL 187	1.45	0.828	0.623
INL 189	0.59	0.274	0.318
INL 190	0.23	0.102	0.128
INL 193	0.27	0.112	0.162
INL 194	0.21	0.105	0.101
INL 199	0.20	0.117	0.083
INL 200	0.24	0.110	0.130
INL 201	1.04	0.557	0.485
INL 202	0.31	0.157	0.157
INL 205	0.72	0.318	0.406
INL 206	0.22	0.115	0.102
INL 208	0.03	0.017	0.014
INL 209	0.10	0.055	0.047
INL 210	0.25	0.064	0.187
INL 211	0.19	0.069	0.123
INL 214	0.45	0.200	0.248
INL 215	0.31	0.144	0.170
INL 219	0.17	0.064	0.110
INL 221	0.07	0.030	0.042
INL 224	0.24	0.121	0.116
INL 225	0.04	0.023	0.013
INL 227	0.21	0.053	0.155
INL 228	0.20	0.061	0.142
INL 229	0.38	0.149	0.235
INL 232	0.19	0.063	0.124
INL 233	0.52	0.115	0.404
INL 235	0.55	0.176	0.370
INL 236	0.22	0.086	0.136
INL 238	0.30	0.154	0.144
INL 239	0.18	0.077	0.099
INL 240	0.23	0.099	0.132
INL 242	0.52	0.233	0.287
INL 243	0.43	0.204	0.221
INL 244	0.27	0.092	0.180
INL 245	0.13	0.062	0.065
INL 247	0.16	0.046	0.111
INL 248	0.03	0.017	0.018
INL 249	0.03	0.013	0.022
INL 252	0.44	0.138	0.304
INL 254	0.10	0.042	0.061
INL 256	0.31	0.089	0.224
INL 258	0.17	0.034	0.140
INL 260	0.29	0.071	0.216
INL 262	0.16	0.032	0.127
INL 264	0.10	0.009	0.087
INL 265	0.03	0.016	0.015
INL 266	0.20	0.049	0.146
INL 267	0.43	0.061	0.368
INL 271	0.12	0.028	0.096
INL 272	0.11	0.018	0.096
INL 273	0.11	0.027	0.086
INL 274	0.11	0.021	0.092
INL 275	0.26	0.103	0.161
INL 276	0.19	0.070	0.119
INL 277	0.09	0.010	0.079
INL 278	0.33	0.182	0.144
INL 280	0.43	0.020	0.414
INL 281	0.15	0.075	0.076
INL 282	0.26	0.126	0.130
INL 283	0.23	0.045	0.188
INL 285	0.54	0.055	0.489
INL 286	0.22	0.011	0.213
INL 287	0.46	0.042	0.420
INL 288	0.58	0.077	0.503
INL 290	0.36	0.226	0.137
INL 292	1.03	0.011	1.015
INL 294	0.05	0.027	0.027
INL 295	0.17	0.128	0.043
INL 296	0.48	0.215	0.264
INL 300	0.22	0.091	0.127
INL 302	0.18	0.078	0.105
INL 304	0.18	0.062	0.119
INL 309	0.26	0.165	0.098
INL 313	0.44	0.106	0.339
INL 318	0.04	0.034	0.006
INL 319	0.05	0.013	0.038
INL 320	0.21	0.056	0.158
INL 322	0.22	0.099	0.125
INL 325	0.15	0.092	0.063
INL 326	0.11	0.072	0.042
INL 327	0.43	0.180	0.252
INL 362	0.33	0.145	0.187
INL 364	0.19	0.081	0.108
INL 368	0.08	0.036	0.041
INL 387	0.29	0.076	0.209
INL 388	0.21	0.045	0.166
INL 389	0.44	0.202	0.237
INL 390	0.42	0.265	0.155
INL 391	0.38	0.203	0.175
INL 392	0.39	0.249	0.141
INL 393	0.13	0.091	0.039
INL 394	0.32	0.111	0.210
INL 395	0.24	0.136	0.101
INL 396	0.24	0.089	0.147
INL 397	0.56	0.077	0.482
INL 398	0.17	0.082	0.092
INL 399	0.17	0.078	0.094
INL 400	0.18	0.085	0.091
INL 401	0.41	0.093	0.315
INL 402	0.53	0.153	0.375
INL 404	0.29	0.172	0.122
INL 405	0.31	0.190	0.125
INL 406	0.30	0.174	0.124
INL 407	0.33	0.071	0.263
INL 409	0.38	0.201	0.180
INL 410	0.17	0.009	0.160
INL 411	0.07	0.015	0.051
INL 412	0.21	0.088	0.120
INL 413	0.06	0.044	0.021
INL 431	0.15	0.113	0.040
INL 432	0.14	0.075	0.066
INL 450	0.08	0.000	0.080
INL 451	0.40	0.066	0.335
INL 452	0.16	0.009	0.152
INL 454	0.56	0.027	0.535
INL 455	0.16	0.011	0.150
INL 470	0.10	0.019	0.080
INL 471	0.11	0.052	0.057
INL 477	0.05	0.028	0.018
INL 502	0.22	0.114	0.102
INL 533	0.36	0.082	0.280
INL 537	0.63	0.275	0.352
INL 543	0.11	0.058	0.053
INL 545	0.10	0.048	0.051
INL 560	0.24	0.155	0.086
INL 567	0.23	0.202	0.030
INL 569	0.23	0.094	0.139
INL 572	0.13	0.057	0.075
INL 575	0.08	0.054	0.027
INL 576	0.20	0.073	0.123
INL 581	0.40	0.087	0.311
INL 582	0.08	0.030	0.051

GRAPHIC SCALE

-80 0 40 80 160 320

(IN FEET)
1 inch = 80 feet

LEGEND

WATERSHED AREA

BASIN AREA

INLET AREA

REV.	DESCRIPTION	DATE	DFT.BY	CKD.BY
2	REV. COMPLETENESS SUBMISSION	1/16/25		
1	REV PER PERMIT RESUBMISSION	10/28/24		

van note-harvey division of pennoni
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www.pennoni.com
Certificate of Authorization No. 24GA28033300

POST DEVELOPED DRAINAGE AREA PLAN
OF
THE PRINCETON NURSERIES
PREPARED FOR
WRV NURSERIES PLAINSBORO OWNER, LLC
SITUATED IN

PLAINSBORO TOWNSHIP
SCALE 1"= 80'

MIDDLESEX CO., N.J.
JUNE 14, 2024

6/14/24
DATE OF SIGN.

CHAD GAULRAPP
N.J. PROFESSIONAL ENGINEER LIC. NO. GE 41350

DRAWN BY	MDV	FIELD BK	ORDER No.	PAGE No.	SHEET No.
DATE	6/14/24				
CHECKED BY	CG	PAGE	WRNUL23001		CS9002
DATE	6/14/24				

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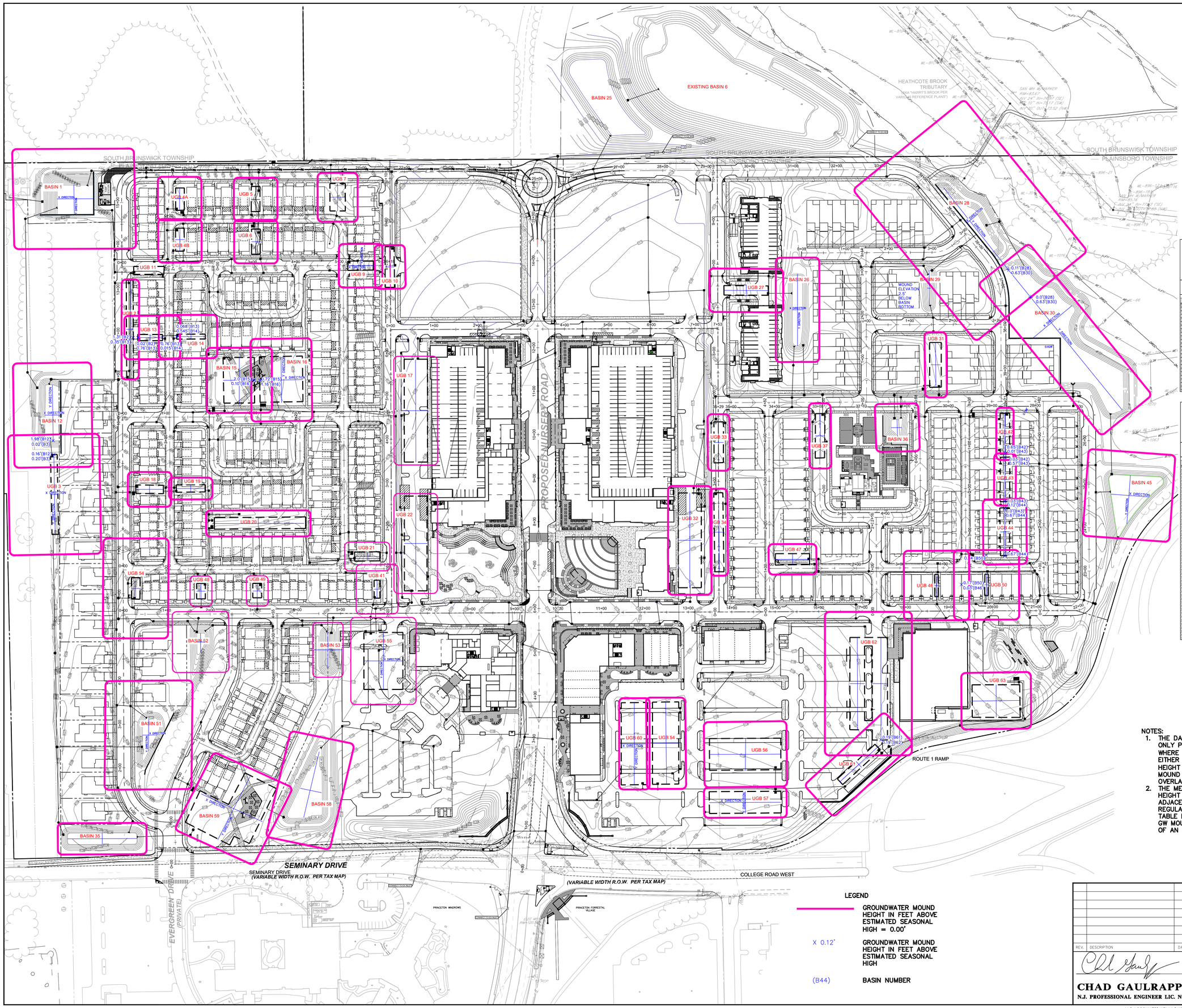

ESTIMATED DRAIN TIME CALCULATIONS AND INTERACTIVE GW MOUNDING EVALUATION

Name of Facility: Princeton Nurseries
Location: Township of Plainsboro, Middlesex Co

Duration of Infiltration Period, t = volume of runoff to be infiltrated (cf) / infiltration area (sf) x in/hr x 1

Basin	Input Variables			Output Drain Time	Adjusted Rate	Mound Height by Hantush Spreadsheet	Estimated Seasonal High Water	Groundwater Mound	Bottom of Basin	Interactive Groundwater Mound Height*
Basin	Volume (CF)	Infiltration area (SF)	Permeability rate (in/hr)	Drain Time (hr)	Y/N	Ft.	ESHW (Elev)	GWM (ELEV)	Bottom of Basin (Elev)	Int. GWM (ELEV)
BIO 1	4792	4356	6.67	1.38	N	7.26	67.50	74.76	77.00	
BIO 1**	4792	4356	3.00	13.20	Y	5.98	67.50	73.48	77.00	
INFIL 8	392	4135	4.39	0.26	N	0.63	107.00	107.63	109.50	
BIO 10	4922	5706	9.09	1.14	N	5.66	79.50	85.16	85.25	85.18
BIO 11**	4922	5706	1.50	6.90	Y	4.34	79.50	83.84	85.25	83.88
BIO 25	19819	13504	3.88	4.54	N	9.69	93.50	103.19	100.00	
BIO 25**	19819	13504	0.25	69.16	Y	6.86	93.50	99.36	100.00	
BIO 26	4138	4356	15.00	0.76	N	5.27	87.30	92.57	97.00	
BIO 26**	4138	4356	0.20	57.00	Y	3.93	87.30	91.23	97.00	92.95
BIO 28**	2134	4138	0.20	30.94	N	6.83	89.00	95.83	91.00	90.56
BIO 29	392	218	33.00	1.44	N	9.23	90.10	99.33	93.00	
BIO 29**	392	218	0.30	71.93	Y	6.40	90.10	96.50	93.00	
INFIL 30	2047	19602	2.28	0.55	N	0.70	90.20	90.90	91.40	91.01
BIO 35	3313	3520	1.64	4.68	N	6.08	94.70	100.78	103.40	
BIO 36	653	740	3.00	3.53	N	6.45	87.30	93.75	98.00	
BIO 45	4356	12197	2.31	2.49	N	6.25	93.00	99.25	96.50	
BIO 45**	4356	12197	0.50	12.43	Y	3.44	93.00	96.44	96.50	
BIO 51	3045	3613	1.64	8.54	N	6.70	97.80	104.50	102.00	
BIO 51**	3049	3613	0.25	56.01	Y	3.87	97.80	101.67	102.00	
BIO 52	1961	2178	3.00	7.51	N	6.48	97.60	104.08	100.50	
BIO 52**	740	1263	1.00	7.01	Y	5.48	97.60	103.08	100.50	
BIO 53	436	930	1.54	5.57	N	2.65	98.70	101.35	104.50	
BIO 58	4356	6534	1.00	8.60	N	6.43	102.80	107.23	106.40	
BIO 58**	4356	6534	0.13	61.54	Y	3.57	102.80	106.37	106.40	

ESTIMATED DRAIN TIME CALCULATIONS AND INTERACTIVE GROUNDWATER MOUNDING EVALUATION

Name of Facility: Princeton Nurseries
Location: Township of Plainsboro, Middlesex Co

Duration of Infiltration Period, t = volume of runoff to be infiltrated (cf) / infiltration area (sf) x in/hr x 1

Basin	Input Variables			Output Drain Time	Adjusted Rate	Mound Height by Hantush Spreadsheet	Estimated Seasonal High Water	Groundwater Mound	Bottom of Basin	Interactive Groundwater Mound Height*
Basin	Volume (CF)	Infiltration area (SF)	Permeability rate (in/hr)	Drain Time (hr)	Y/N	Ft.	ESHW (Elev)	GWM (ELEV)	Bottom of Basin (Elev)	Int. GWM (ELEV)
UGB2	1306	4014	9.67	0.59	N	1.95	67.50	69.45	85.25	69.80
UGB 3	500	1680	1.50	13.20	Y	2.68	79.50	82.18	85.50	82.54
UGB4	1263	2050	4.39	1.68	N	3.50	67.50	71.00	85.10	
UGB5	436	1154	1.94	1.30	N	2.37	86.00	88.37	94.50	
UGB6	653	1154	1.94	1.50	Y	3.28	86.00	89.28	94.00	
UGB6**	653	1154	0.50	13.58	Y	2.27	86.00	88.27	94.00	
UGB7	871	2128	1.33	3.63	N	2.72	94.30	97.02	99.00	
UGB8	871	2128	1.33	3.63	N	2.72	94.30	97.02	99.00	
UGB9	784	1380	1.50	5.79	N	5.32	94.90	96.50	100.90	
UGB10	596	2068	1.33	2.47	N	1.78	94.90	96.68	106.00	
UGB11	566	1260	0.67	5.61	N	2.72	67.50	70.22	84.00	
UGB13	697	881	0.14	47.61	N	1.57	67.50	69.07	86.00	69.05
UGB14	392	739	0.10	63.65	N	2.01	80.50	81.51	86.50	81.58
UGB 15**	4263	7660	0.09	71.99	Y	3.58	67.10	90.68	92.00	90.78
UGB 16	8077	10505	0.59	3.53	N	3.85	88.30	92.15	94.00	92.87
UGB17	653	13960	0.50	1.24	N	0.34	101.50	101.84	103.50	
UGB18	1132	1697	1.50	4.44	N	2.25	87.30	89.55	94.50	
UGB19	392	1132	1.50	1.84	N	2.25	87.30	89.55	94.50	
UGB20	1132	1697	1.50	4.44	N	2.97	95.10	98.07	98.00	
UGB21	653	1154	1.94	1.50	N	2.37	86.00	88.37	94.00	
UGB22	653	11356	1.50	0.30	N	0.38	95.10	95.48	107.00	
UGB26	2018	2218	1.00	5.39	N	5.67	99.00	104.67	99.00	
UGB31	1002	2769	1.00	4.34	N	2.19	87.30	89.49	92.60	
UGB32	1306	4014	0.67	5.89	N	2.72	67.50	70.22	84.00	
UGB33	348	3586	0.50	1.09	N	1.03	96.70	99.73	109.82	
UGB34	392	3706	0.50	2.54	N	0.69	107.50	108.19	109.50	
UGB37	392	2218	0.50	0.27	N	1.17	87.30	88.47	103.50	
UGB41	175	552	0.06	63.41	N	0.81	95.10	95.91	104.00	
UGB42	305	2043	2.31	0.78	N	1.08	93.00	94.09	95.00	94.02
UGB43	392	2218	2.31	0.92	N	1.17	93.00	94.17	98.00	94.20
UGB44	392	2697	0.06	32.44	N	1.14	95.10	96.24	101.00	96.28
UGB46	523	422	0.22	69.24	N	1.50	94.7	96.20	103.00	
UGB47	1002	2018	1.00	4.34	N	3.16	94.7	97.86	100.00	
UGB48	218	336	1.83	0.47	N	1.05	97.60	98.65	100.90	
UGB49	218	336	1.83	0.47	N	1.05	97.60	98.65	100.90	
UGB50	740	422	1.54	14.00	N	5.79	98.70	102.49	102.00	
UGB50**	740	422	0.50	43.51	Y	2.14	98.70	100.84	102.00	
UGB54	392	927	1.83	0.65	N	1.51	98.70	101.21	99.00	
UGB54**	392	927	0.50	10.15	Y	1.09	97.60	98.69	99.00	
UGB55	4007	11200	0.75	4.46	N	2.03	102.80	104.83	106.00	
UGB56	3528	21859	0.75	2.64	N	0.97	101.95	102.92	110.00	
UGB57	1655	11405	0.75	2.32	N	1.21	102.80	104.01	111.10	
UGB59	12451	17576	0.20	42.50	N	4.70	98.00	102.70	104.00	
UGB60	3316	11405	0.75	3.88	N	1.21	106.00	107.21	111.10	
UGB61	1960	2128	0.26	42.53	N	2.02	103.70	105.72	107.75	
UGB62	1961	2178	0.26	42.53	N	2.02	103.70	105.72	107.75	
UGB63	1263	8253	0.63	2.91	N	1.02	92.50	93.52	104.00	

NOTES:

1. THE DATA PROVIDED ON THIS INTERACTIVE GW MOUNDING PLAN IS ONLY PROVIDED FOR BASINS WITH OVERLAPPING GW MOUND ZONES WHERE THE MOUND HEIGHT IS GREATER THAN 0.10' AT THE EDGE OF EITHER BASIN. THE DATA IS NOT SHOWN FOR BASINS WITH A MOUND HEIGHT OF LESS THAN 0.10' AS THE IMPACT OF THE OVERLAPPING MOUND ZONES WILL BE DE MINIMIS AT THE CENTER OF THE OVERLAPPING BASINS.
2. THE METHODOLOGY FOR CALCULATING THE INCREASE IN MOUND HEIGHT AT THE CENTER OF A BASIN DUE TO AN INTERCEPTING, ADJACENT GW MOUND HAS NOT BEEN SPECIFIED BY THE REGULATIONS. THE LAST COLUMN OF THE INTERACTIVE GW MOUNDING TABLE PROVIDES A CONSERVATIVE ESTIMATION OF THE RISE IN THE GW MOUND AT THE CENTER OF THE BASIN RESULTING FROM OVERLAP OF AN ADJACENT GW MOUND.

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 feet

LEGEND

- GROUNDWATER MOUND HEIGHT IN FEET ABOVE ESTIMATED SEASONAL HIGH = 0.00'
- X 0.12' — GROUNDWATER MOUND HEIGHT IN FEET ABOVE ESTIMATED SEASONAL HIGH
- (B44) — BASIN NUMBER

REV.	DESCRIPTION	DATE	DFT.BY	CKD.BY

11/7/24
DATE OF SIGN.

CHAD GAULRAPP
N.J. PROFESSIONAL ENGINEER LIC. NO. GE 41350

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Certificate of Authorization No. 24GA28033300

INTERACTIVE GROUNDWATER MOUNDING PLAN
OF
THE PRINCETON NURSERIES
PREPARED FOR
WRV NURSERIES PLAINSBORO OWNER, LLC
SITUATED IN

PLAINSBORO TOWNSHIP — MIDDLESEX CO., N.J.
SCALE 1"=80' — NOVEMBER 7, 2024

DRAWN BY	WDV	FIELD BK		ORDER No.		PAGE No.		SHEET No.
DATE	11/7/24							
CHECKED BY	CG	PAGE		WRNUL23001				CS9005
DATE	11/7/24							

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