Nelson Engineering Associates, Inc.

444 Neptune Boulevard, Suite 4 • Neptune, NJ 07753
(732) 918-2180

Drywell Sizing Report

Ryal Holding LLC
3324 Route 33
Block 3001, Lot 6

Township of Neptune
Monmouth County, New Jersey

Date:
November 3, 2023

Prepared By:

(SEAL)
Matthew R. DuBois, PE
File Number: 230607

Scope of Project:

The subject property, 3324 Route 33, is a 65,482 square feet (1.50 acre) lot within the C-5 Route 33W Commercial Zone in the Township of Neptune, Monmouth County, New Jersey. There are a number of structures and vehicle and material storage areas on the site, which is operated by a Landscaping and property maintenance company (Jersey Shore Landscaping).

The Web Soil Survey indicates the subject property is located in a zone of Evesboro series soils (EveC), which has a hydrologic soil group classification of 'A'. The hydrograph generation uses the NRCS[1] method, the Time of Concentration calculations use TR-55[2], and the calculations use the NRCS precipitation values for Monmouth County, New Jersey.

Applicability of Stormwater Regulations:

"Major Development" is defined in the ordinance as "any "development" that provides for ultimately disturbing one or more acres of land. Disturbance for the purpose of this rule is the placement of impervious surface or exposure and/or movement of soil or bedrock or clearing, cutting, or removing of vegetation." The project proposes to disturb approximately 4,175 square feet (0.10 acres) through the installation of a roof drain collection piping system, drywell, and the removal of a fabric covered pipe frame shelter used to store equipment and material.. Therefore the project is not a "Major Development" and will comply with the requirements of the Township of Neptune Stormwater Management Ordinance.

Stormwater Runoff Summary:

The project captures runoff from the existing office roof surfaces and northwest parking area and conveys the run-off to a drywell located near the southeast corner of the property. This report provides the calculations and analysis that the drywell has the capacity to contain and recharge the stormwater volume from the office roof and parking area for the entirety of the 2 and 10 year return frequency design storms.

The following summaries show the changes in the rates and volumes of overland flow from the property to the adjacent catch basins and roadways.

Existing Conditions – Roof & Parking To be directed to Drywell

Impervious Surfaces Area: 0.10 acres
Impervious CN value: 98
ToC: 6 minutes
2 Year Storm Runoff Volume: 985t^3
2 Year Storm Peak Runoff Rate: 0.30 cfs
10 Year Storm Runoff Volume: 1,697 ft^3
10 Year Storm Peak Runoff Rate: 0.52 cfs

Proposed Conditions – Roof & Parking Routed through Drywell

Impervious Surfaces Area : 0.10 acres
Impervious CN value: 98
ToC: 6 minutes
2 Year Storm Runoff Volume: 985 ft^3
2 Year Storm Peak Runoff Rate: 0.0 cfs
10 Year Storm Runoff Volume: 1,697 ft^3
10 Year Storm Peak Runoff Rate: 0.0 cfs

Conclusion:

The containment and infiltration of run-off from the office building roof and parking area results in the reduction in storm water run-off peak rate and overland flow run-off volume for all storm events for those site features.

---

[1] United States National Resources Conservation Service, formerly the United States Soil Conservation Service
[2] *Urban Hydrology for Small Watersheds* by the United States Department of Agriculture

HYDROGRAPHS

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.24

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	SCS Runoff	------	-------	0.080	-------	-------	0.123	-------	-------	-------	PAVERS
2	SCS Runoff	------	-------	0.124	-------	-------	0.191	-------	-------	-------	ROOF
3	SCS Runoff	------	-------	0.096	-------	-------	0.206	-------	-------	-------	GRAVEL
4	Combine	1, 2, 3	-------	0.300	-------	-------	0.520	-------	-------	-------	TO DRYWELL
5	Reservoir	4	-------	0.109	-------	-------	0.141	-------	-------	-------	ROUTE SMALL

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.24

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.080	2	724	269	------	------	------	PAVERS
2	SCS Runoff	0.124	2	724	420	------	------	------	ROOF
3	SCS Runoff	0.096	2	724	295	------	------	------	GRAVEL
4	Combine	0.300	2	724	985	1, 2, 3	------	------	TO DRYWELL
5	Reservoir	0.109	2	738	985	4	49.39	137	ROUTE SMALL

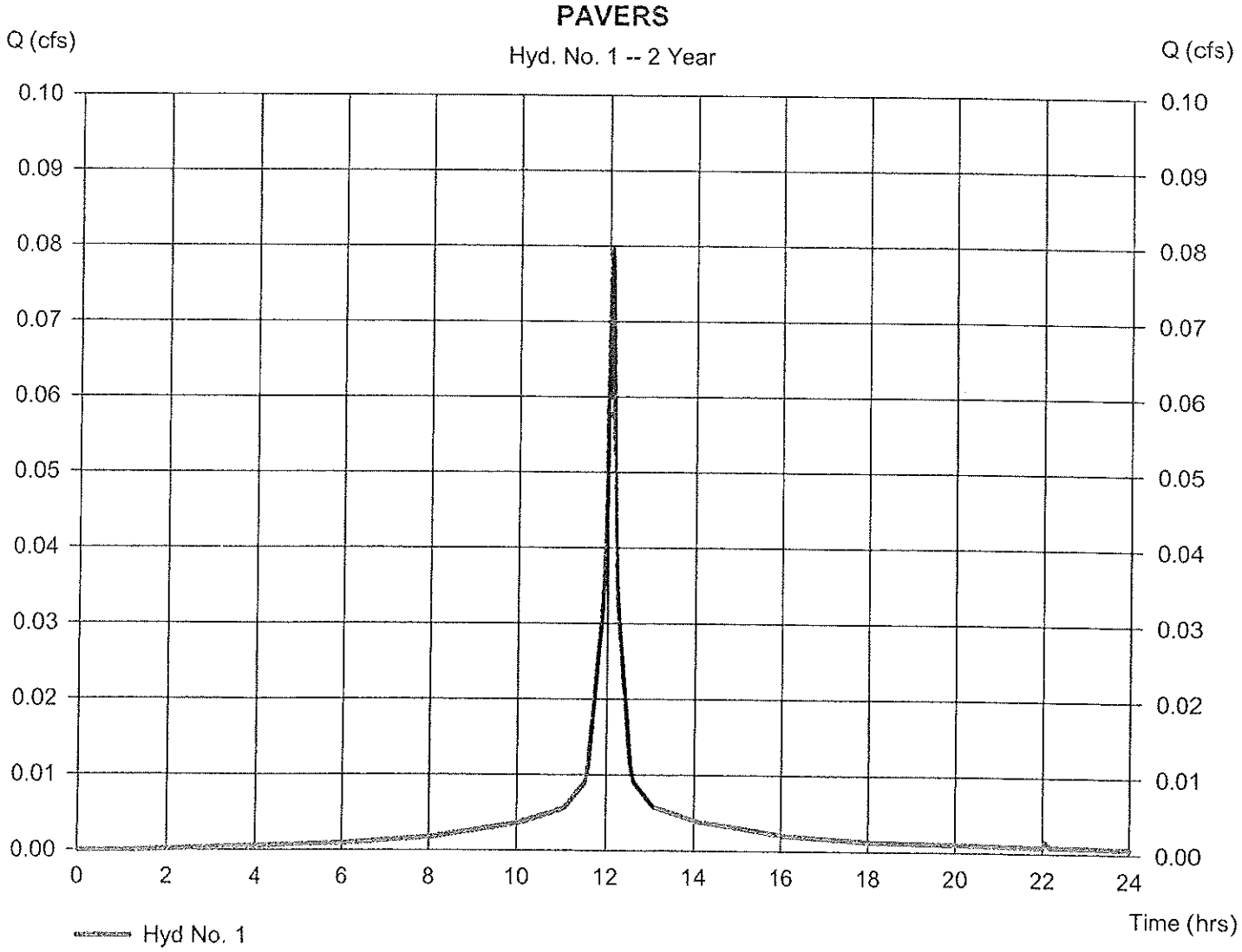
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 1

PAVERS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.080 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 269 cuft
Drainage area	= 0.025 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 1

PAVERS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.080 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 269 cuft
Drainage area	= 0.025 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 3.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
11.40	0.008	12.63	0.009
11.43	0.008	12.67	0.009
11.47	0.009	12.70	0.008
11.50	0.009	12.73	0.008
11.53	0.009	12.77	0.008
11.57	0.010		
11.60	0.012	*...End*	
11.63	0.014		
11.67	0.017		
11.70	0.019		
11.73	0.021		
11.77	0.024		
11.80	0.026		
11.83	0.028		
11.87	0.031		
11.90	0.033		
11.93	0.037		
11.97	0.046		
12.00	0.061		
12.03	0.076		
12.07	0.080 <<		
12.10	0.071		
12.13	0.056		
12.17	0.043		
12.20	0.036		
12.23	0.032		
12.27	0.030		
12.30	0.028		
12.33	0.025		
12.37	0.023		
12.40	0.021		
12.43	0.018		
12.47	0.016		
12.50	0.014		
12.53	0.012		
12.57	0.010		
12.60	0.009		

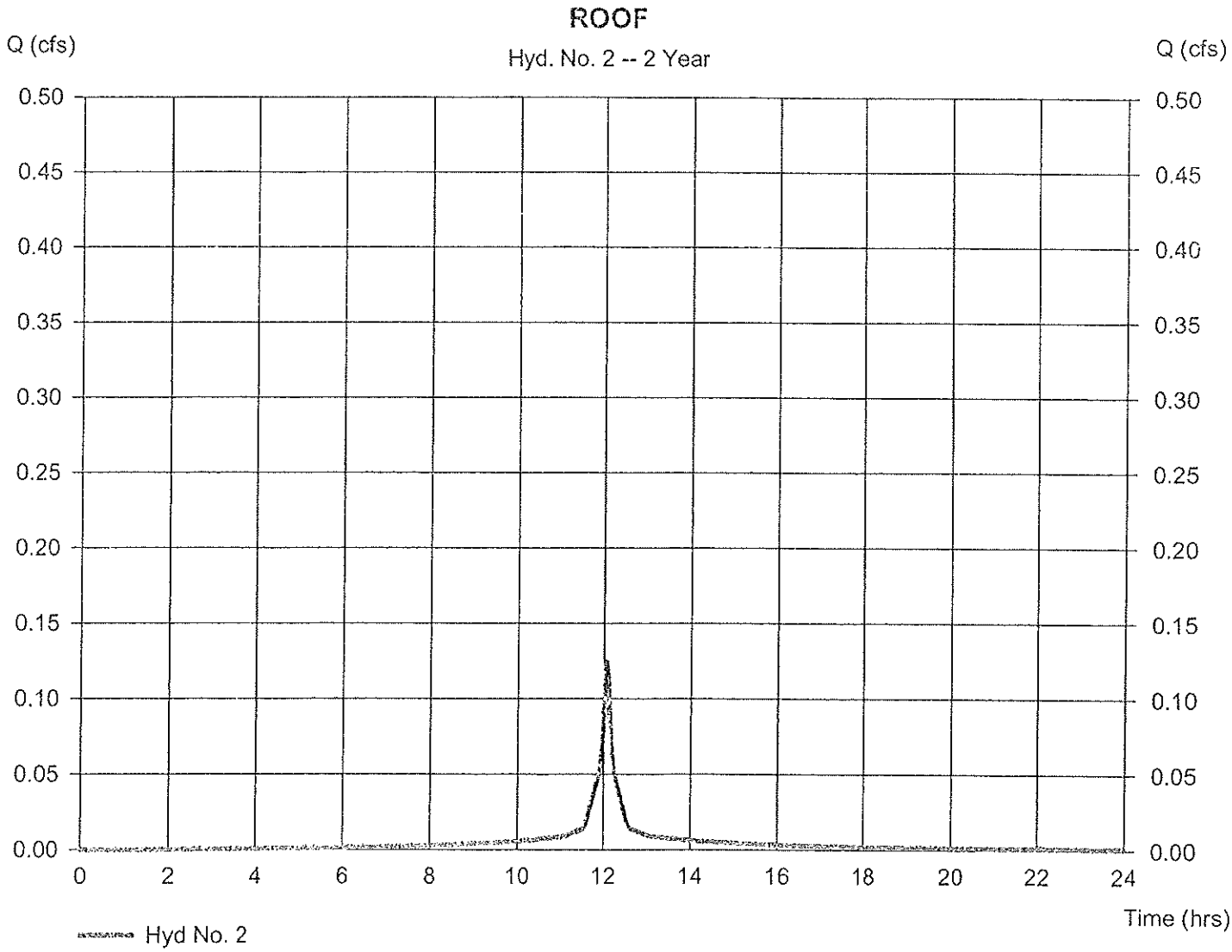
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 2

ROOF

Hydrograph type	= SCS Runoff	Peak discharge	= 0.124 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 420 cuft
Drainage area	= 0.039 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 2

ROOF

Hydrograph type	= SCS Runoff	Peak discharge	= 0.124 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 420 cuft
Drainage area	= 0.039 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 3.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Discharge Table

{ Printed values >= 10.00% of Qp.}

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
11.40	0.013	12.63	0.014
11.43	0.013	12.67	0.014
11.47	0.013	12.70	0.013
11.50	0.014	12.73	0.013
11.53	0.014	12.77	0.012
11.57	0.016		
11.60	0.019	*...End*	
11.63	0.022		
11.67	0.026		
11.70	0.029		
11.73	0.033		
11.77	0.037		
11.80	0.040		
11.83	0.044		
11.87	0.048		
11.90	0.051		
11.93	0.058		
11.97	0.072		
12.00	0.095		
12.03	0.118		
12.07	0.124 <<		
12.10	0.110		
12.13	0.087		
12.17	0.067		
12.20	0.056		
12.23	0.051		
12.27	0.047		
12.30	0.043		
12.33	0.040		
12.37	0.036		
12.40	0.032		
12.43	0.029		
12.47	0.025		
12.50	0.022		
12.53	0.018		
12.57	0.016		
12.60	0.015		

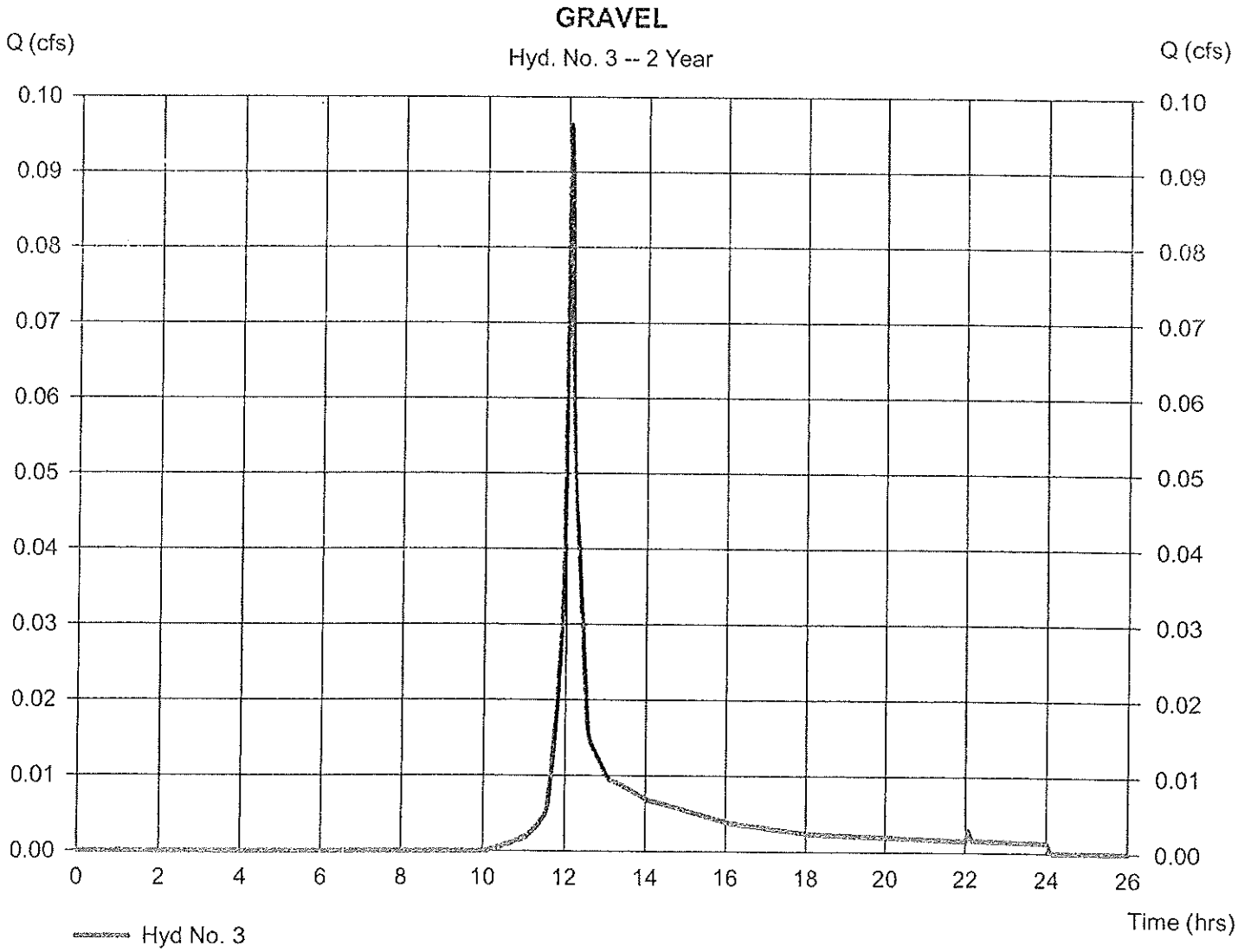
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 3

GRAVEL

Hydrograph type	= SCS Runoff	Peak discharge	= 0.096 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 295 cuft
Drainage area	= 0.067 ac	Curve number	= 76
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 3

GRAVEL

Hydrograph type	= SCS Runoff	Peak discharge	= 0.096 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 295 cuft
Drainage area	= 0.067 ac	Curve number	= 76
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 3.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
11.67	0.011	12.90	0.011
11.70	0.013	12.93	0.011
11.73	0.015	12.97	0.011
11.77	0.017	13.00	0.010
11.80	0.020	13.03	0.010
11.83	0.023	13.07	0.010
11.87	0.026		
11.90	0.029	*...End*	
11.93	0.035		
11.97	0.046		
12.00	0.066		
12.03	0.086		
12.07	0.096 <<		
12.10	0.090		
12.13	0.073		
12.17	0.059		
12.20	0.051		
12.23	0.047		
12.27	0.044		
12.30	0.041		
12.33	0.038		
12.37	0.035		
12.40	0.032		
12.43	0.029		
12.47	0.025		
12.50	0.022		
12.53	0.018		
12.57	0.016		
12.60	0.015		
12.63	0.014		
12.67	0.014		
12.70	0.014		
12.73	0.013		
12.77	0.013		
12.80	0.013		
12.83	0.012		
12.87	0.012		

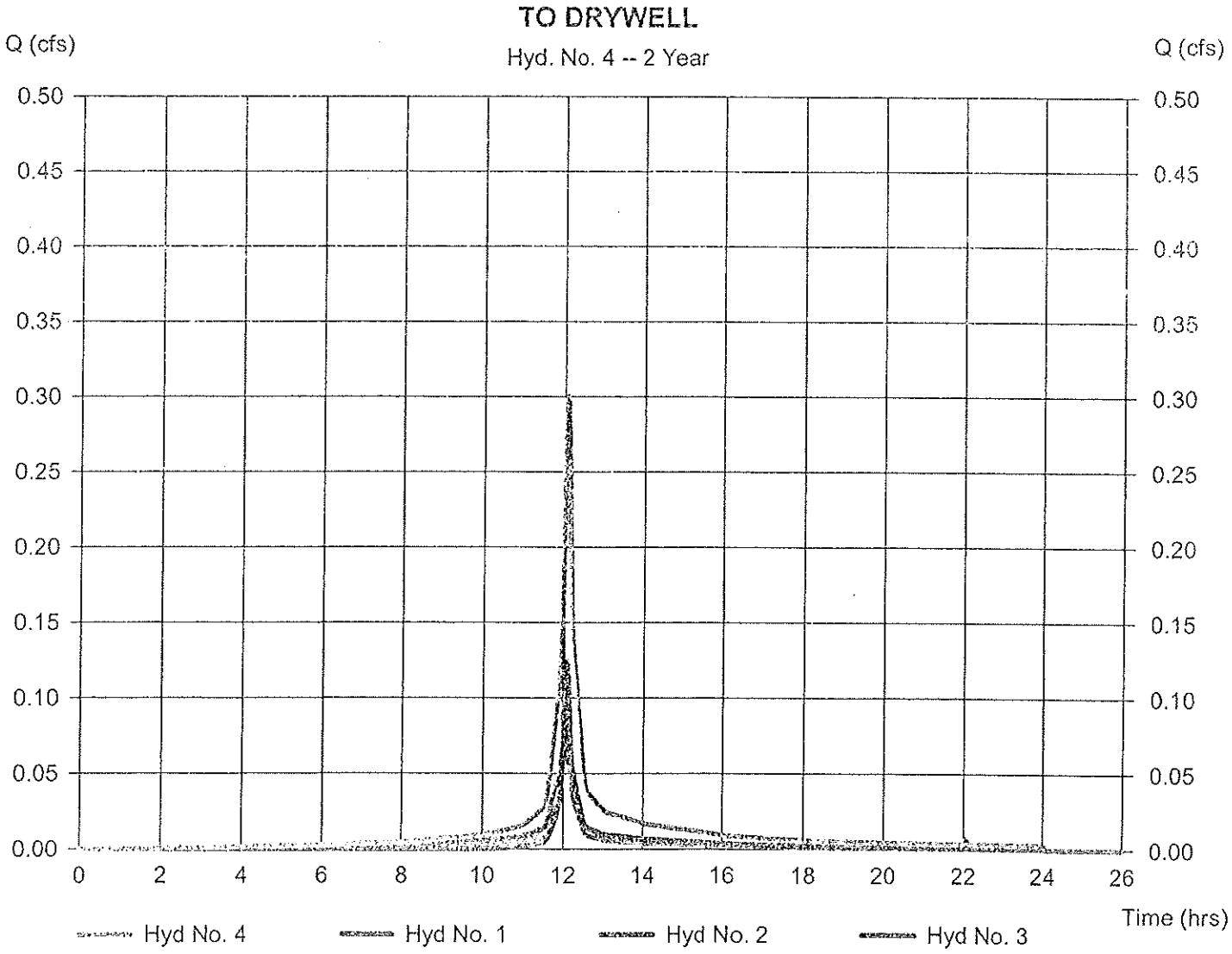
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 4

TO DRYWELL

Hydrograph type	= Combine	Peak discharge	= 0.300 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 985 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.131 ac



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 4

TO DRYWELL

Hydrograph type	= Combine	Peak discharge	= 0.300 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 985 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.131 ac

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 + (cfs)	Hyd. 3 = (cfs)	Outflow (cfs)
11.57	0.010	0.016	0.006	0.032
11.60	0.012	0.019	0.007	0.038
11.63	0.014	0.022	0.009	0.045
11.67	0.017	0.026	0.011	0.053
11.70	0.019	0.029	0.013	0.061
11.73	0.021	0.033	0.015	0.069
11.77	0.024	0.037	0.017	0.078
11.80	0.026	0.040	0.020	0.086
11.83	0.028	0.044	0.023	0.095
11.87	0.031	0.048	0.026	0.104
11.90	0.033	0.051	0.029	0.114
11.93	0.037	0.058	0.035	0.130
11.97	0.046	0.072	0.046	0.165
12.00	0.061	0.095	0.066	0.222
12.03	0.076	0.118	0.086	0.280
12.07	0.080 <<	0.124 <<	0.096 <<	0.300 <<
12.10	0.071	0.110	0.090	0.270
12.13	0.056	0.087	0.073	0.216
12.17	0.043	0.067	0.059	0.169
12.20	0.036	0.056	0.051	0.143
12.23	0.032	0.051	0.047	0.130
12.27	0.030	0.047	0.044	0.121
12.30	0.028	0.043	0.041	0.112
12.33	0.025	0.040	0.038	0.103
12.37	0.023	0.036	0.035	0.094
12.40	0.021	0.032	0.032	0.085
12.43	0.018	0.029	0.029	0.076
12.47	0.016	0.025	0.025	0.066
12.50	0.014	0.022	0.022	0.057
12.53	0.012	0.018	0.018	0.048
12.57	0.010	0.016	0.016	0.042
12.60	0.009	0.015	0.015	0.039
12.63	0.009	0.014	0.014	0.037
12.67	0.009	0.014	0.014	0.036
12.70	0.008	0.013	0.014	0.035
12.73	0.008	0.013	0.013	0.034
12.77	0.008	0.012	0.013	0.033
12.80	0.008	0.012	0.013	0.032
12.83	0.008	0.012	0.012	0.031
12.87	0.007	0.011	0.012	0.030

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24

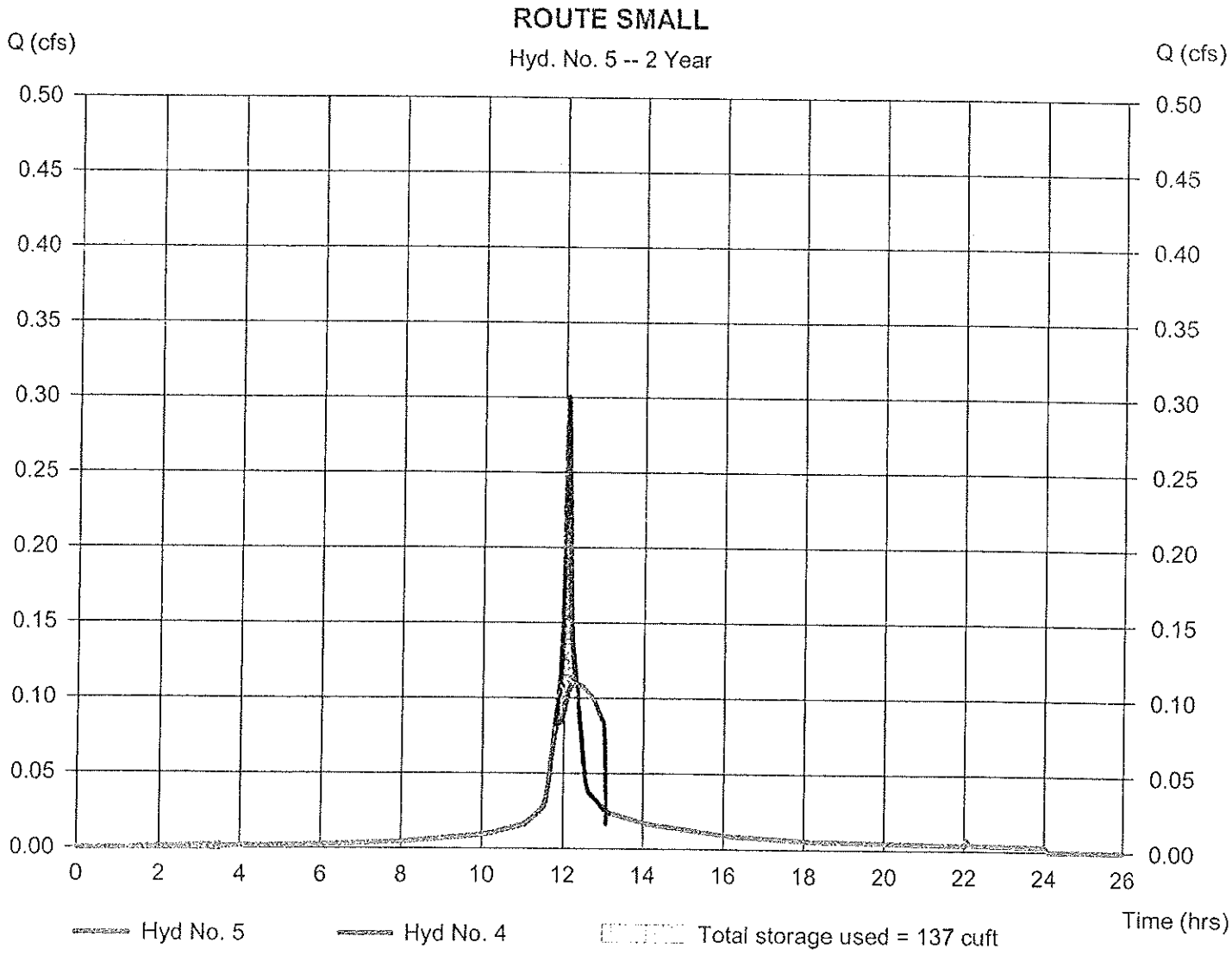
Tuesday, Dec 5, 2023

Hyd. No. 5

ROUTE SMALL

Hydrograph type	= Reservoir	Peak discharge	= 0.109 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.30 hrs
Time interval	= 2 min	Hyd. volume	= 985 cuft
Inflow hyd. No.	= 4 - TO DRYWELL	Max. Elevation	= 49.39 ft
Reservoir name	= STORMTECH 310	Max. Storage	= 137 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 5

ROUTE SMALL

Hydrograph type	= Reservoir	Peak discharge	= 0.109 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.30 hrs
Time interval	= 2 min	Hyd. volume	= 985 cuft
Inflow hyd. No.	= 4 - TO DRYWELL	Reservoir name	= STORMTECH 310
Max. Elevation	= 49.39 ft	Max. Storage	= 137 cuft

Storage Indication method used. Outflow includes exfiltration.

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
10.30	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011
10.33	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011
10.37	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011
10.40	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
10.43	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
10.47	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
10.50	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
10.53	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
10.57	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
10.60	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
10.63	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
10.67	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
10.70	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
10.73	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
10.77	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
10.80	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
10.83	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
10.87	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
10.90	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
10.93	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
10.97	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
11.00	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
11.03	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
11.07	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
11.10	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
11.13	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
11.17	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
11.20	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
11.23	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
11.27	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
11.30	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
11.33	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
11.37	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
11.40	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
11.43	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
11.47	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026
11.50	0.027	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
11.53	0.029	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
11.57	0.032	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.031	0.031
11.60	0.038	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.036	0.036

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
11.63	0.045	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.043	0.043
11.67	0.053	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.050	0.050
11.70	0.061	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.058	0.058
11.73	0.069	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.066	0.066
11.77	0.078	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.075	0.075
11.80	0.086	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
11.83	0.095	48.70	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
11.87	0.104	48.72	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
11.90	0.114	48.74	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
11.93	0.130	48.77	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
11.97	0.165	48.82	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
12.00	0.222	48.91	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
12.03	0.280	49.05	-----	-----	-----	-----	-----	-----	-----	-----	0.096	0.096
12.07	0.300 <<	49.17	-----	-----	-----	-----	-----	-----	-----	-----	0.101	0.101
12.10	0.270	49.25	-----	-----	-----	-----	-----	-----	-----	-----	0.104	0.104
12.13	0.216	49.31	-----	-----	-----	-----	-----	-----	-----	-----	0.106	0.106
12.17	0.169	49.35	-----	-----	-----	-----	-----	-----	-----	-----	0.108	0.108
12.20	0.143	49.37	-----	-----	-----	-----	-----	-----	-----	-----	0.108	0.108
12.23	0.130	49.38	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
12.27	0.121	49.39	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
12.30	0.112	49.39 <<	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109 <<
12.33	0.103	49.39	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
12.37	0.094	49.39	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
12.40	0.085	49.38	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
12.43	0.076	49.37	-----	-----	-----	-----	-----	-----	-----	-----	0.108	0.108
12.47	0.066	49.35	-----	-----	-----	-----	-----	-----	-----	-----	0.108	0.108
12.50	0.057	49.33	-----	-----	-----	-----	-----	-----	-----	-----	0.107	0.107
12.53	0.048	49.31	-----	-----	-----	-----	-----	-----	-----	-----	0.106	0.106
12.57	0.042	49.28	-----	-----	-----	-----	-----	-----	-----	-----	0.105	0.105
12.60	0.039	49.26	-----	-----	-----	-----	-----	-----	-----	-----	0.104	0.104
12.63	0.037	49.23	-----	-----	-----	-----	-----	-----	-----	-----	0.103	0.103
12.67	0.036	49.20	-----	-----	-----	-----	-----	-----	-----	-----	0.102	0.102
12.70	0.035	49.17	-----	-----	-----	-----	-----	-----	-----	-----	0.101	0.101
12.73	0.034	49.14	-----	-----	-----	-----	-----	-----	-----	-----	0.099	0.099
12.77	0.033	49.09	-----	-----	-----	-----	-----	-----	-----	-----	0.098	0.098
12.80	0.032	49.04	-----	-----	-----	-----	-----	-----	-----	-----	0.095	0.095
12.83	0.031	48.98	-----	-----	-----	-----	-----	-----	-----	-----	0.093	0.093
12.87	0.030	48.93	-----	-----	-----	-----	-----	-----	-----	-----	0.091	0.091
12.90	0.029	48.88	-----	-----	-----	-----	-----	-----	-----	-----	0.089	0.089
12.93	0.028	48.83	-----	-----	-----	-----	-----	-----	-----	-----	0.087	0.087
12.97	0.027	48.78	-----	-----	-----	-----	-----	-----	-----	-----	0.085	0.085
13.00	0.026	48.73	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
13.03	0.025	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.066	0.066
13.07	0.025	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
13.10	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026
13.13	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
13.17	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
13.20	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
13.23	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
13.27	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
13.30	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
13.33	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
13.37	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
13.40	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
13.43	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
13.47	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
13.50	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
13.53	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
13.57	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
13.60	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
13.63	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
13.67	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
13.70	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
13.73	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
13.77	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
13.80	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
13.83	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
13.87	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
13.90	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
13.93	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
13.97	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
14.00	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
14.03	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
14.07	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
14.10	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
14.13	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
14.17	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.20	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.23	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.27	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.30	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.33	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.37	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.40	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
14.43	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.47	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.50	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.53	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.57	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.60	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.63	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.67	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
14.70	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.73	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.77	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.80	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.83	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.87	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.90	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.93	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
14.97	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
15.00	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
15.03	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
15.07	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
15.10	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
15.13	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
15.17	0.013	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013
15.20	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.013	0.013

Continues on next page...

ROUTE SMALL

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
15.23	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
15.27	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
15.30	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
15.33	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
15.37	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
15.40	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
15.43	0.012	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.012	0.012
15.47	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011
15.50	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011
15.53	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011
15.57	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011
15.60	0.011	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.011	0.011

...End

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.24

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	SCS Runoff	0.123	2	724	422	------	------	------	PAVERS
2	SCS Runoff	0.191	2	724	659	------	------	------	ROOF
3	SCS Runoff	0.206	2	724	616	------	------	------	GRAVEL
4	Combine	0.520	2	724	1,697	1, 2, 3	------	------	TO DRYWELL
5	Reservoir	0.141	2	744	1,697	4	50.20	359	ROUTE SMALL

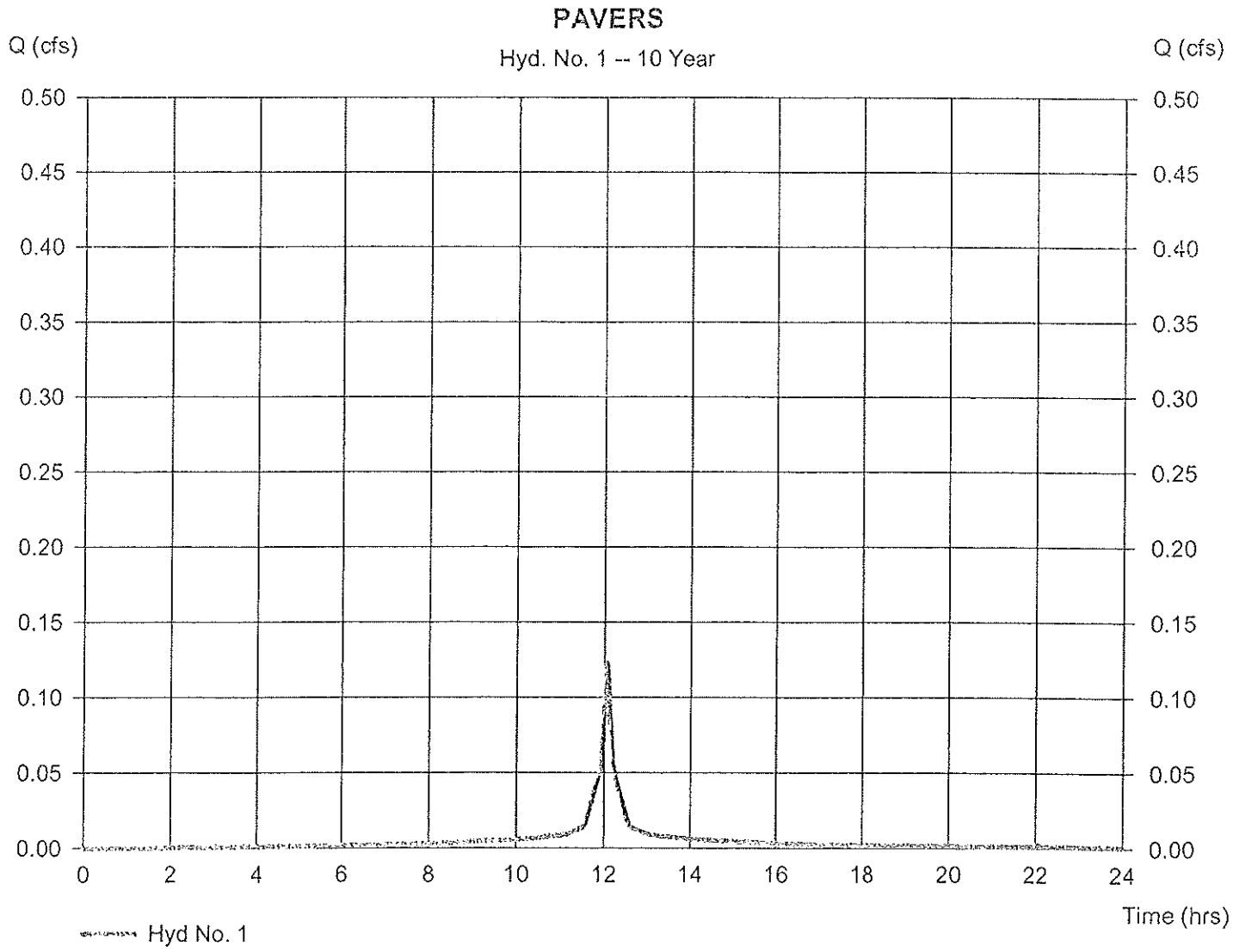
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 1

PAVERS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.123 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 422 cuft
Drainage area	= 0.025 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.20 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hyd. No. 1

PAVERS

Hydrograph type	= SCS Runoff	Peak discharge	= 0.123 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 422 cuft
Drainage area	= 0.025 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 5.20 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Outflow cfs)	Time (hrs)	Outflow cfs)
11.40	0.013	12.63	0.014
11.43	0.013	12.67	0.013
11.47	0.013	12.70	0.013
11.50	0.014	12.73	0.013
11.53	0.014	12.77	0.012
11.57	0.016		
11.60	0.019	*...End*	
11.63	0.022		
11.67	0.026		
11.70	0.029		
11.73	0.033		
11.77	0.036		
11.80	0.040		
11.83	0.044		
11.87	0.047		
11.90	0.051		
11.93	0.057		
11.97	0.071		
12.00	0.094		
12.03	0.117		
12.07	0.123 <<		
12.10	0.109		
12.13	0.085		
12.17	0.066		
12.20	0.055		
12.23	0.050		
12.27	0.046		
12.30	0.043		
12.33	0.039		
12.37	0.036		
12.40	0.032		
12.43	0.028		
12.47	0.025		
12.50	0.021		
12.53	0.018		
12.57	0.016		
12.60	0.014		

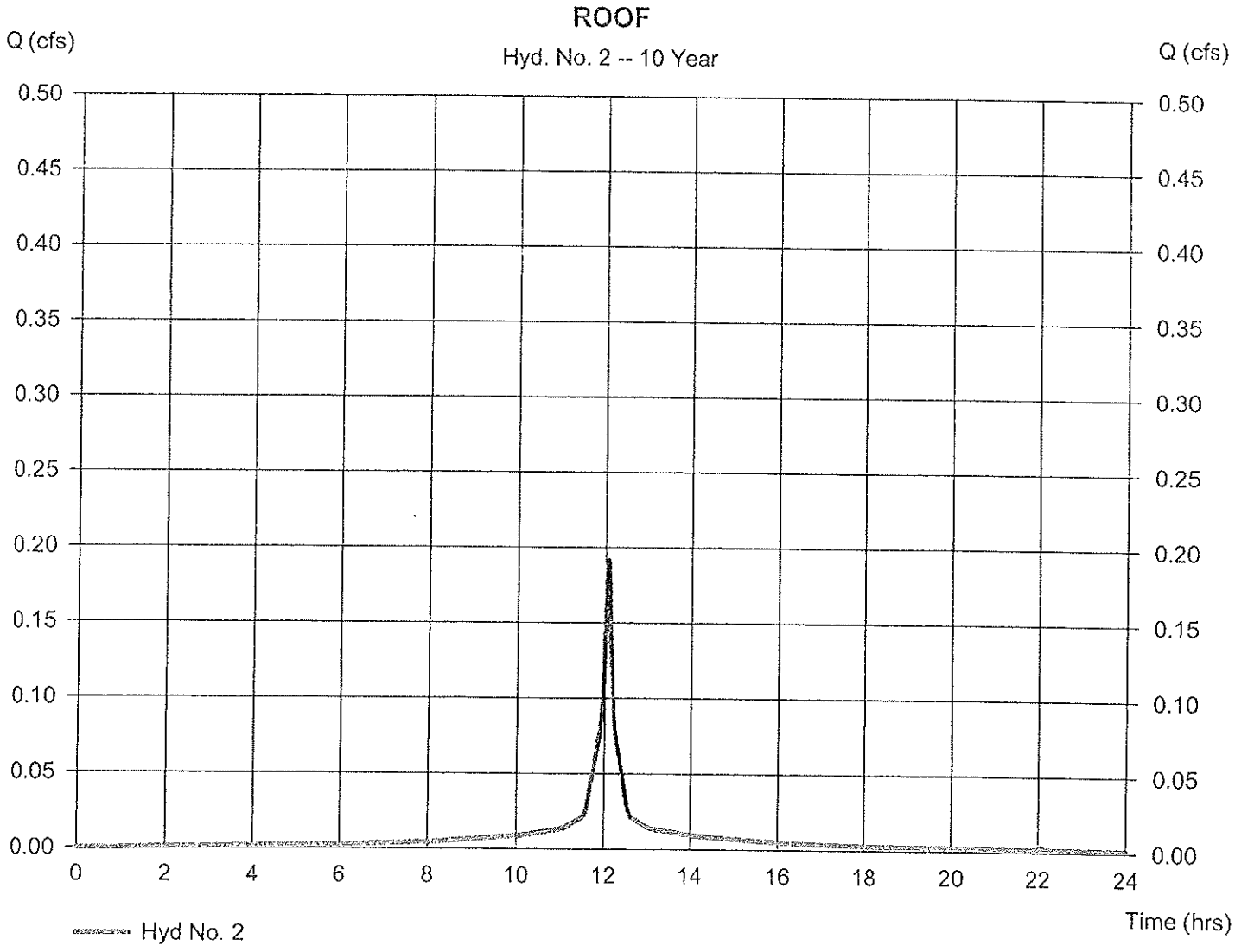
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 2

ROOF

Hydrograph type	= SCS Runoff	Peak discharge	= 0.191 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 659 cuft
Drainage area	= 0.039 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.20 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hyd. No. 2

ROOF

Hydrograph type	= SCS Runoff	Peak discharge	= 0.191 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 659 cuft
Drainage area	= 0.039 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 5.20 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
11.40	0.020	12.63	0.021
11.43	0.020	12.67	0.021
11.47	0.021	12.70	0.020
11.50	0.021	12.73	0.020
11.53	0.022	12.77	0.019
11.57	0.025		
11.60	0.029	*...End*	
11.63	0.035		
11.67	0.040		
11.70	0.046		
11.73	0.051		
11.77	0.057		
11.80	0.062		
11.83	0.068		
11.87	0.074		
11.90	0.079		
11.93	0.089		
11.97	0.111		
12.00	0.147		
12.03	0.182		
12.07	0.191 <<		
12.10	0.170		
12.13	0.133		
12.17	0.103		
12.20	0.086		
12.23	0.078		
12.27	0.072		
12.30	0.067		
12.33	0.061		
12.37	0.055		
12.40	0.050		
12.43	0.044		
12.47	0.039		
12.50	0.033		
12.53	0.028		
12.57	0.024		
12.60	0.022		

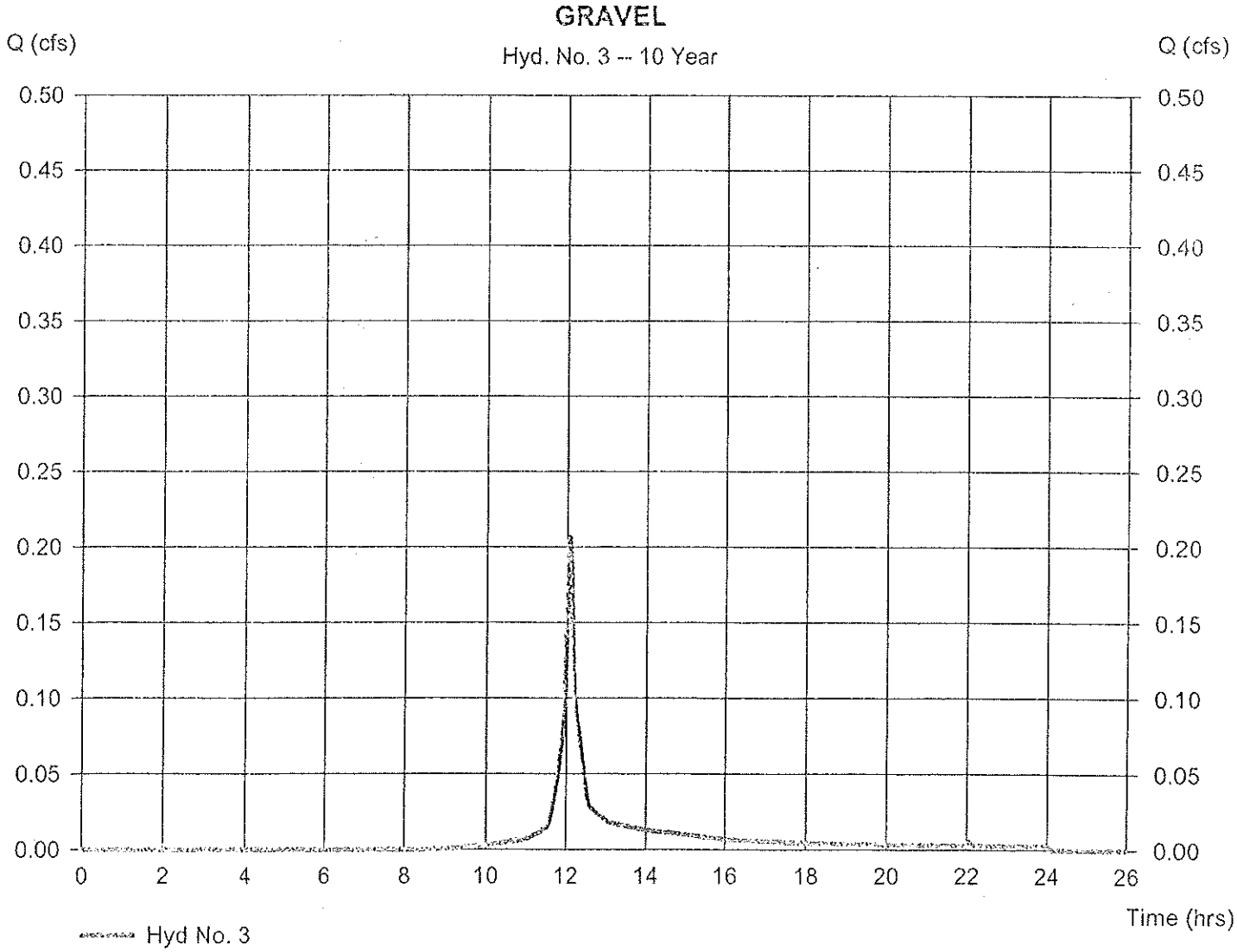
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 3

GRAVEL

Hydrograph type	= SCS Runoff	Peak discharge	= 0.206 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 616 cuft
Drainage area	= 0.067 ac	Curve number	= 76
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.20 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 3

GRAVEL

Hydrograph type	= SCS Runoff	Peak discharge	= 0.206 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 616 cuft
Drainage area	= 0.067 ac	Curve number	= 76
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 5.20 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
11.60	0.021	12.83	0.023
11.63	0.025	12.87	0.023
11.67	0.030	12.90	0.022
11.70	0.035	12.93	0.021
11.73	0.040		
11.77	0.046	*...End*	
11.80	0.052		
11.83	0.058		
11.87	0.064		
11.90	0.071		
11.93	0.083		
11.97	0.107		
12.00	0.147		
12.03	0.189		
12.07	0.206 <<		
12.10	0.188		
12.13	0.152		
12.17	0.120		
12.20	0.102		
12.23	0.093		
12.27	0.087		
12.30	0.081		
12.33	0.075		
12.37	0.069		
12.40	0.062		
12.43	0.055		
12.47	0.049		
12.50	0.042		
12.53	0.035		
12.57	0.031		
12.60	0.029		
12.63	0.027		
12.67	0.027		
12.70	0.026		
12.73	0.025		
12.77	0.025		
12.80	0.024		

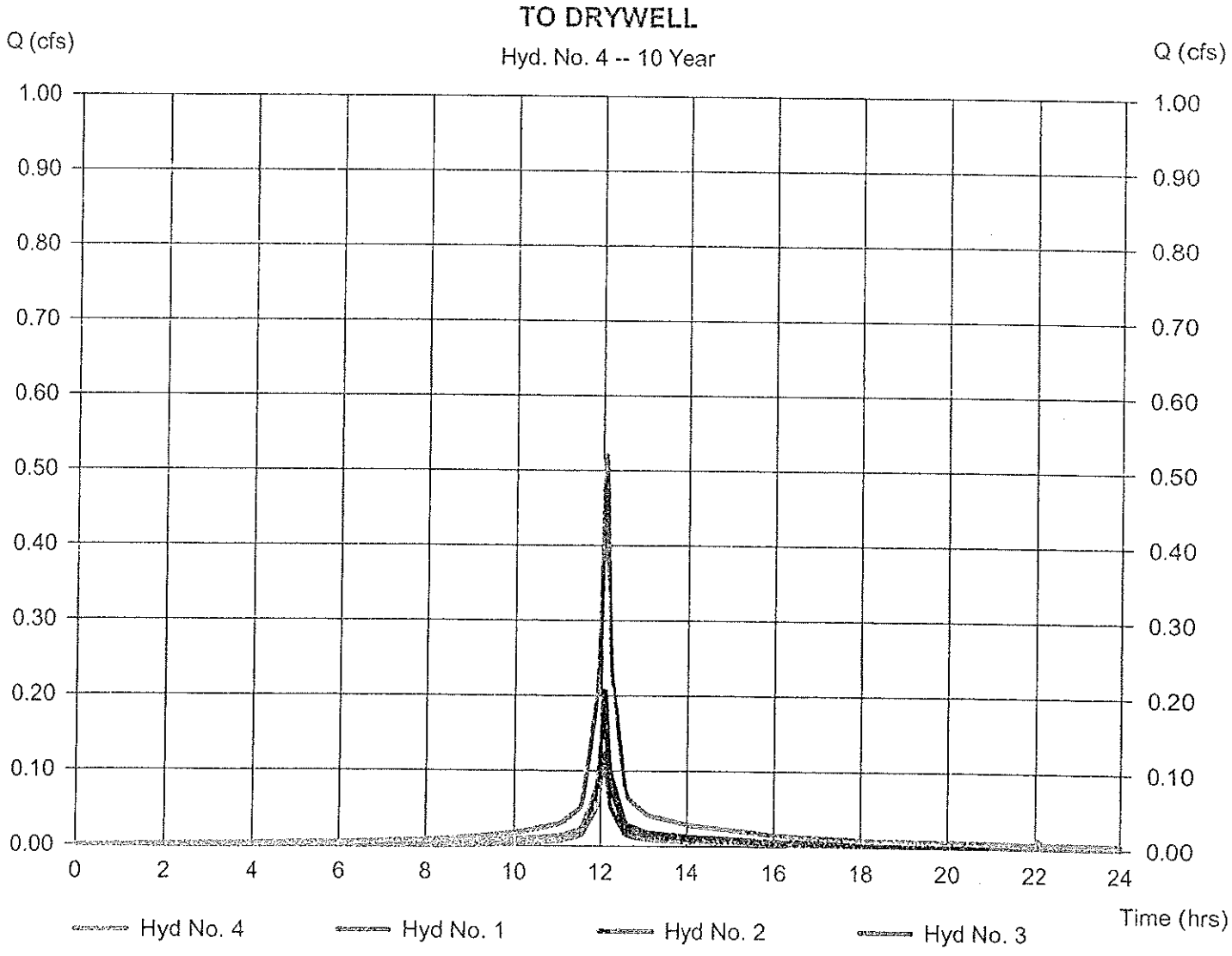
Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 4

TO DRYWELL

Hydrograph type	= Combine	Peak discharge	= 0.520 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,697 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.131 ac



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 4

TO DRYWELL

Hydrograph type	= Combine	Peak discharge	= 0.520 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 1,697 cuft
Inflow hyds.	= 1, 2, 3	Contrib. drain. area	= 0.131 ac

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp)

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 + (cfs)	Hyd. 3 = (cfs)	Outflow (cfs)
11.53	0.014	0.022	0.015	0.052
11.57	0.016	0.025	0.018	0.059
11.60	0.019	0.029	0.021	0.069
11.63	0.022	0.035	0.025	0.082
11.67	0.026	0.040	0.030	0.096
11.70	0.029	0.046	0.035	0.110
11.73	0.033	0.051	0.040	0.124
11.77	0.036	0.057	0.046	0.139
11.80	0.040	0.062	0.052	0.154
11.83	0.044	0.068	0.058	0.170
11.87	0.047	0.074	0.064	0.185
11.90	0.051	0.079	0.071	0.201
11.93	0.057	0.089	0.083	0.229
11.97	0.071	0.111	0.107	0.290
12.00	0.094	0.147	0.147	0.389
12.03	0.117	0.182	0.189	0.488
12.07	0.123 <<	0.191 <<	0.206 <<	0.520 <<
12.10	0.109	0.170	0.188	0.466
12.13	0.085	0.133	0.152	0.370
12.17	0.066	0.103	0.120	0.289
12.20	0.055	0.086	0.102	0.244
12.23	0.050	0.078	0.093	0.221
12.27	0.046	0.072	0.087	0.206
12.30	0.043	0.067	0.081	0.191
12.33	0.039	0.061	0.075	0.175
12.37	0.036	0.055	0.069	0.160
12.40	0.032	0.050	0.062	0.144
12.43	0.028	0.044	0.055	0.128
12.47	0.025	0.039	0.049	0.112
12.50	0.021	0.033	0.042	0.096
12.53	0.018	0.028	0.035	0.081
12.57	0.016	0.024	0.031	0.071
12.60	0.014	0.022	0.029	0.065
12.63	0.014	0.021	0.027	0.063
12.67	0.013	0.021	0.027	0.061
12.70	0.013	0.020	0.026	0.059
12.73	0.013	0.020	0.025	0.058
12.77	0.012	0.019	0.025	0.056
12.80	0.012	0.019	0.024	0.054
12.83	0.012	0.018	0.023	0.053

...End

Hydrograph Report

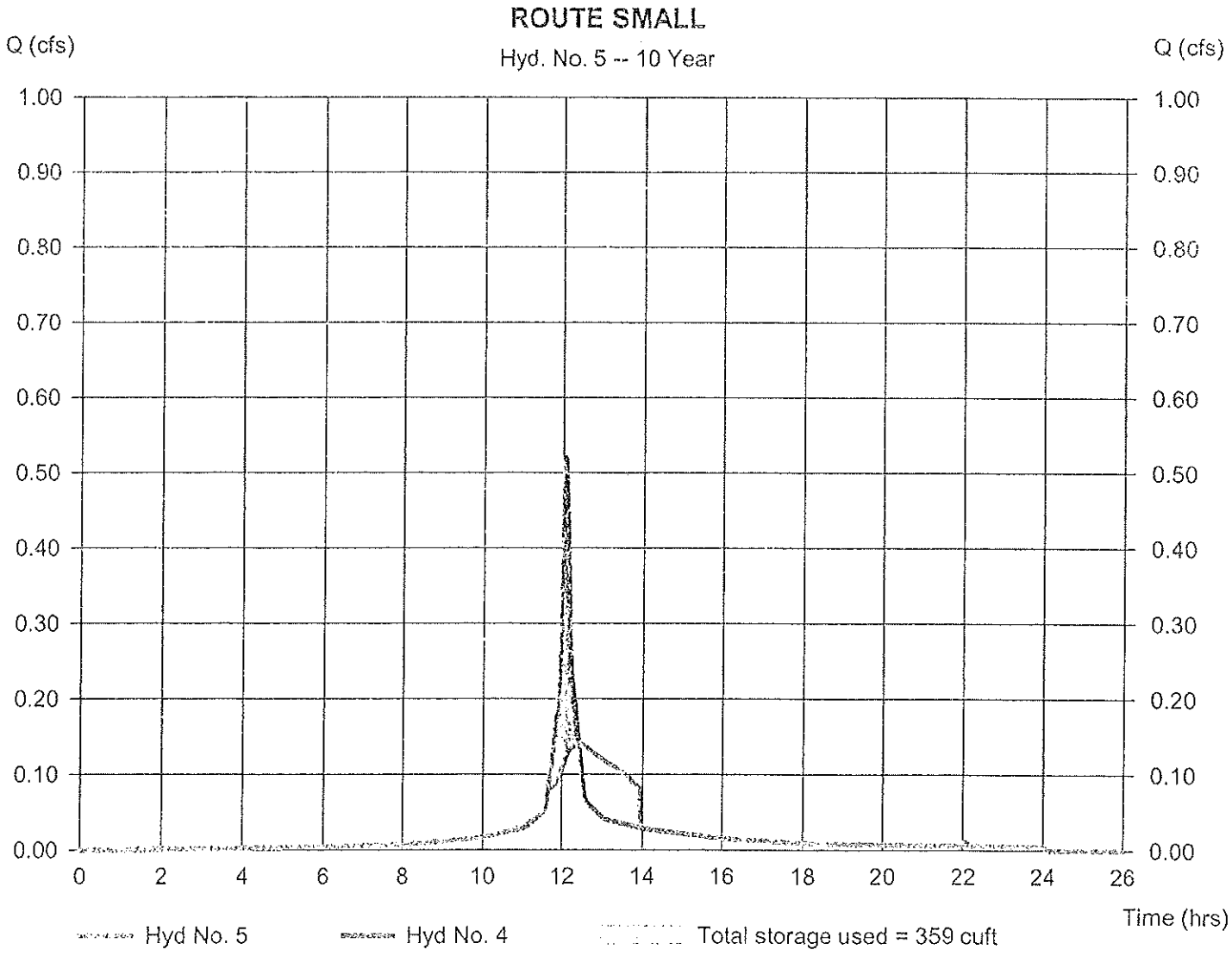
Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 5

ROUTE SMALL

Hydrograph type	= Reservoir	Peak discharge	= 0.141 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.40 hrs
Time interval	= 2 min	Hyd. volume	= 1,697 cuft
Inflow hyd. No.	= 4 - TO DRYWELL	Max. Elevation	= 50.20 ft
Reservoir name	= STORMTECH 310	Max. Storage	= 359 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Hyd. No. 5

ROUTE SMALL

Hydrograph type	= Reservoir	Peak discharge	= 0.141 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.40 hrs
Time interval	= 2 min	Hyd. volume	= 1,697 cuft
Inflow hyd. No.	= 4 - TO DRYWELL	Reservoir name	= STORMTECH 310
Max. Elevation	= 50.20 ft	Max. Storage	= 359 cuft

Storage Indication method used. Outflow includes exfiltration.

Hydrograph Discharge Table

(Printed values >= 10.00% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
9.43	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
9.47	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
9.50	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
9.53	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
9.57	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
9.60	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
9.63	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
9.67	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
9.70	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
9.73	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
9.77	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
9.80	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
9.83	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
9.87	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
9.90	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
9.93	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
9.97	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
10.00	0.018	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
10.03	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
10.07	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
10.10	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
10.13	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
10.17	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
10.20	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
10.23	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
10.27	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
10.30	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
10.33	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
10.37	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
10.40	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
10.43	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
10.47	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
10.50	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
10.53	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
10.57	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
10.60	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
10.63	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
10.67	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
10.70	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
10.73	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
10.77	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026
10.80	0.027	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
10.83	0.027	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
10.87	0.028	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
10.90	0.028	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
10.93	0.028	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
10.97	0.029	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.029	0.029
11.00	0.029	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.029	0.029
11.03	0.030	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.030	0.030
11.07	0.031	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.030	0.030
11.10	0.032	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.031	0.031
11.13	0.033	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.033	0.033
11.17	0.035	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.034	0.034
11.20	0.036	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.036	0.036
11.23	0.038	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.037	0.037
11.27	0.039	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.039	0.039
11.30	0.040	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.040	0.040
11.33	0.042	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.041	0.041
11.37	0.043	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.043	0.043
11.40	0.045	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.044	0.044
11.43	0.047	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.046	0.046
11.47	0.048	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.048	0.048
11.50	0.050	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.049	0.049
11.53	0.052	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.051	0.051
11.57	0.059	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.056	0.056
11.60	0.069	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.065	0.065
11.63	0.082	48.69	-----	-----	-----	-----	-----	-----	-----	-----	0.077	0.077
11.67	0.096	48.70	-----	-----	-----	-----	-----	-----	-----	-----	0.082	0.082
11.70	0.110	48.72	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
11.73	0.124	48.75	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
11.77	0.139	48.79	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
11.80	0.154	48.84	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
11.83	0.170	48.90	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
11.87	0.185	48.97	-----	-----	-----	-----	-----	-----	-----	-----	0.093	0.093
11.90	0.201	49.06	-----	-----	-----	-----	-----	-----	-----	-----	0.096	0.096
11.93	0.229	49.15	-----	-----	-----	-----	-----	-----	-----	-----	0.100	0.100
11.97	0.290	49.22	-----	-----	-----	-----	-----	-----	-----	-----	0.102	0.102
12.00	0.389	49.32	-----	-----	-----	-----	-----	-----	-----	-----	0.106	0.106
12.03	0.488	49.46	-----	-----	-----	-----	-----	-----	-----	-----	0.112	0.112
12.07	0.520 <<	49.61	-----	-----	-----	-----	-----	-----	-----	-----	0.118	0.118
12.10	0.466	49.77	-----	-----	-----	-----	-----	-----	-----	-----	0.124	0.124
12.13	0.370	49.90	-----	-----	-----	-----	-----	-----	-----	-----	0.129	0.129
12.17	0.289	49.99	-----	-----	-----	-----	-----	-----	-----	-----	0.132	0.132
12.20	0.244	50.04	-----	-----	-----	-----	-----	-----	-----	-----	0.135	0.135
12.23	0.221	50.09	-----	-----	-----	-----	-----	-----	-----	-----	0.136	0.136
12.27	0.206	50.13	-----	-----	-----	-----	-----	-----	-----	-----	0.138	0.138
12.30	0.191	50.16	-----	-----	-----	-----	-----	-----	-----	-----	0.139	0.139
12.33	0.175	50.18	-----	-----	-----	-----	-----	-----	-----	-----	0.140	0.140
12.37	0.160	50.19	-----	-----	-----	-----	-----	-----	-----	-----	0.140	0.140
12.40	0.144	50.20 <<	-----	-----	-----	-----	-----	-----	-----	-----	0.141	0.141 <<
12.43	0.128	50.20	-----	-----	-----	-----	-----	-----	-----	-----	0.140	0.140
12.47	0.112	50.19	-----	-----	-----	-----	-----	-----	-----	-----	0.140	0.140
12.50	0.096	50.17	-----	-----	-----	-----	-----	-----	-----	-----	0.139	0.139
12.53	0.081	50.14	-----	-----	-----	-----	-----	-----	-----	-----	0.138	0.138

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
12.57	0.071	50.11	-----	-----	-----	-----	-----	-----	-----	-----	0.137	0.137
12.60	0.065	50.08	-----	-----	-----	-----	-----	-----	-----	-----	0.136	0.136
12.63	0.063	50.05	-----	-----	-----	-----	-----	-----	-----	-----	0.135	0.135
12.67	0.061	50.01	-----	-----	-----	-----	-----	-----	-----	-----	0.133	0.133
12.70	0.059	49.98	-----	-----	-----	-----	-----	-----	-----	-----	0.132	0.132
12.73	0.058	49.95	-----	-----	-----	-----	-----	-----	-----	-----	0.131	0.131
12.77	0.056	49.92	-----	-----	-----	-----	-----	-----	-----	-----	0.130	0.130
12.80	0.054	49.88	-----	-----	-----	-----	-----	-----	-----	-----	0.128	0.128
12.83	0.053	49.85	-----	-----	-----	-----	-----	-----	-----	-----	0.127	0.127
12.87	0.051	49.82	-----	-----	-----	-----	-----	-----	-----	-----	0.126	0.126
12.90	0.049	49.79	-----	-----	-----	-----	-----	-----	-----	-----	0.125	0.125
12.93	0.048	49.76	-----	-----	-----	-----	-----	-----	-----	-----	0.123	0.123
12.97	0.046	49.72	-----	-----	-----	-----	-----	-----	-----	-----	0.122	0.122
13.00	0.044	49.69	-----	-----	-----	-----	-----	-----	-----	-----	0.121	0.121
13.03	0.043	49.66	-----	-----	-----	-----	-----	-----	-----	-----	0.120	0.120
13.07	0.041	49.63	-----	-----	-----	-----	-----	-----	-----	-----	0.118	0.118
13.10	0.041	49.59	-----	-----	-----	-----	-----	-----	-----	-----	0.117	0.117
13.13	0.040	49.56	-----	-----	-----	-----	-----	-----	-----	-----	0.116	0.116
13.17	0.040	49.53	-----	-----	-----	-----	-----	-----	-----	-----	0.115	0.115
13.20	0.039	49.50	-----	-----	-----	-----	-----	-----	-----	-----	0.113	0.113
13.23	0.039	49.47	-----	-----	-----	-----	-----	-----	-----	-----	0.112	0.112
13.27	0.038	49.44	-----	-----	-----	-----	-----	-----	-----	-----	0.111	0.111
13.30	0.038	49.41	-----	-----	-----	-----	-----	-----	-----	-----	0.110	0.110
13.33	0.038	49.38	-----	-----	-----	-----	-----	-----	-----	-----	0.109	0.109
13.37	0.037	49.36	-----	-----	-----	-----	-----	-----	-----	-----	0.108	0.108
13.40	0.037	49.32	-----	-----	-----	-----	-----	-----	-----	-----	0.107	0.107
13.43	0.036	49.29	-----	-----	-----	-----	-----	-----	-----	-----	0.105	0.105
13.47	0.036	49.26	-----	-----	-----	-----	-----	-----	-----	-----	0.104	0.104
13.50	0.035	49.24	-----	-----	-----	-----	-----	-----	-----	-----	0.103	0.103
13.53	0.035	49.21	-----	-----	-----	-----	-----	-----	-----	-----	0.102	0.102
13.57	0.035	49.18	-----	-----	-----	-----	-----	-----	-----	-----	0.101	0.101
13.60	0.034	49.15	-----	-----	-----	-----	-----	-----	-----	-----	0.100	0.100
13.63	0.034	49.10	-----	-----	-----	-----	-----	-----	-----	-----	0.098	0.098
13.67	0.033	49.05	-----	-----	-----	-----	-----	-----	-----	-----	0.096	0.096
13.70	0.033	49.00	-----	-----	-----	-----	-----	-----	-----	-----	0.094	0.094
13.73	0.032	48.95	-----	-----	-----	-----	-----	-----	-----	-----	0.092	0.092
13.77	0.032	48.90	-----	-----	-----	-----	-----	-----	-----	-----	0.090	0.090
13.80	0.031	48.85	-----	-----	-----	-----	-----	-----	-----	-----	0.088	0.088
13.83	0.031	48.80	-----	-----	-----	-----	-----	-----	-----	-----	0.086	0.086
13.87	0.031	48.75	-----	-----	-----	-----	-----	-----	-----	-----	0.084	0.084
13.90	0.030	48.71	-----	-----	-----	-----	-----	-----	-----	-----	0.083	0.083
13.93	0.030	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.038	0.038
13.97	0.029	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
14.00	0.029	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.029	0.029
14.03	0.028	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
14.07	0.028	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
14.10	0.028	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
14.13	0.028	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.028	0.028
14.17	0.027	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
14.20	0.027	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
14.23	0.027	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
14.27	0.027	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
14.30	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.027	0.027
14.33	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
14.37	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026
14.40	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026
14.43	0.026	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.026	0.026
14.47	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
14.50	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
14.53	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
14.57	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
14.60	0.025	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.025	0.025
14.63	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
14.67	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
14.70	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
14.73	0.024	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
14.77	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.024	0.024
14.80	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
14.83	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
14.87	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
14.90	0.023	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.023	0.023
14.93	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
14.97	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
15.00	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
15.03	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
15.07	0.022	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.022	0.022
15.10	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
15.13	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
15.17	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
15.20	0.021	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
15.23	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.021	0.021
15.27	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
15.30	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
15.33	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
15.37	0.020	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.020	0.020
15.40	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
15.43	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
15.47	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
15.50	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
15.53	0.019	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.019	0.019
15.57	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
15.60	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
15.63	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
15.67	0.018	48.68	-----	-----	-----	-----	-----	-----	-----	-----	0.018	0.018
15.70	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
15.73	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
15.77	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
15.80	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
15.83	0.017	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.017	0.017
15.87	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
15.90	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
15.93	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
15.97	0.016	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
16.00	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.016	0.016
16.03	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
16.07	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
16.10	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
16.13	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16.17	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
16.20	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
16.23	0.015	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.015	0.015
16.27	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
16.30	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
16.33	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
16.37	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014
16.40	0.014	48.67	-----	-----	-----	-----	-----	-----	-----	-----	0.014	0.014

...End

APPENDIX

Form 3b. Tube Permeameter Test Data for Lot # _____ Soil Log # 1

TOM ROSS REAR OF SITE BORING RC ASSOC. #2006.56
#3324 HWY. 33 EAST NEPTUNE TWP.

1. Test Number 1 Replicate (Letter) A Date Collected 12-15-06
2. Material Tested: _____ Fill ✓ Test in Native Soil-Depth 5.0'+/-
3. Type of Sample: ____ Undisturbed ✓ Disturbed ____ Soil Replacement

4. Sample Dimensions: Inside Radius of Sample Tube {R} 3.49 cm
   Length of Sample {L} in inches 4.75 in.
5. Standpipe Used: NO X YES - Indicate Internal Radium {r} 1.27 cm

6. Height of Water Level Above Rim of Test Basin, in inches:
   At the Beginning of Each Test Interval, H_1 6.625
   At the End of Each Test Interval, H_2 5.625

7. Rate of Water Level Drop (Add additional lines if needed):

TIME, START OF TEST	TIME, END OF TEST	LENGTH OF TEST INTERVAL (MIN.)
00:00:00	00:00:14	0.2333
1:00	1:15	0.25
2:00	2:15	
3:00	3:15	
TEST T=4:00	4:15	

8. Calculation of Permeability:
   K (in/hr) = 60 min/hr x r^2/R^2 x L (in)/T (min) x ln (H_1/H_2)
   = 60 min/hr x 1.6129 / 12.1801 x 4.75 / 0.25
   x ln (6.625 / 5.625) = 24.7 in/hr (K= 5)
   60 x 0.1324 x 19.00 x 0.1636 = 24.69

9. Defects in the Sample (Check appropriate items):
   _____ CRACKS _____ WORM CHANNELS _____ ROOT CHANNELS _____
   _____ SOIL/TUBE CONTACT _____ LARGE GRAVEL _____ LARGE ROOTS
   _____ OTHER - (specify) _____

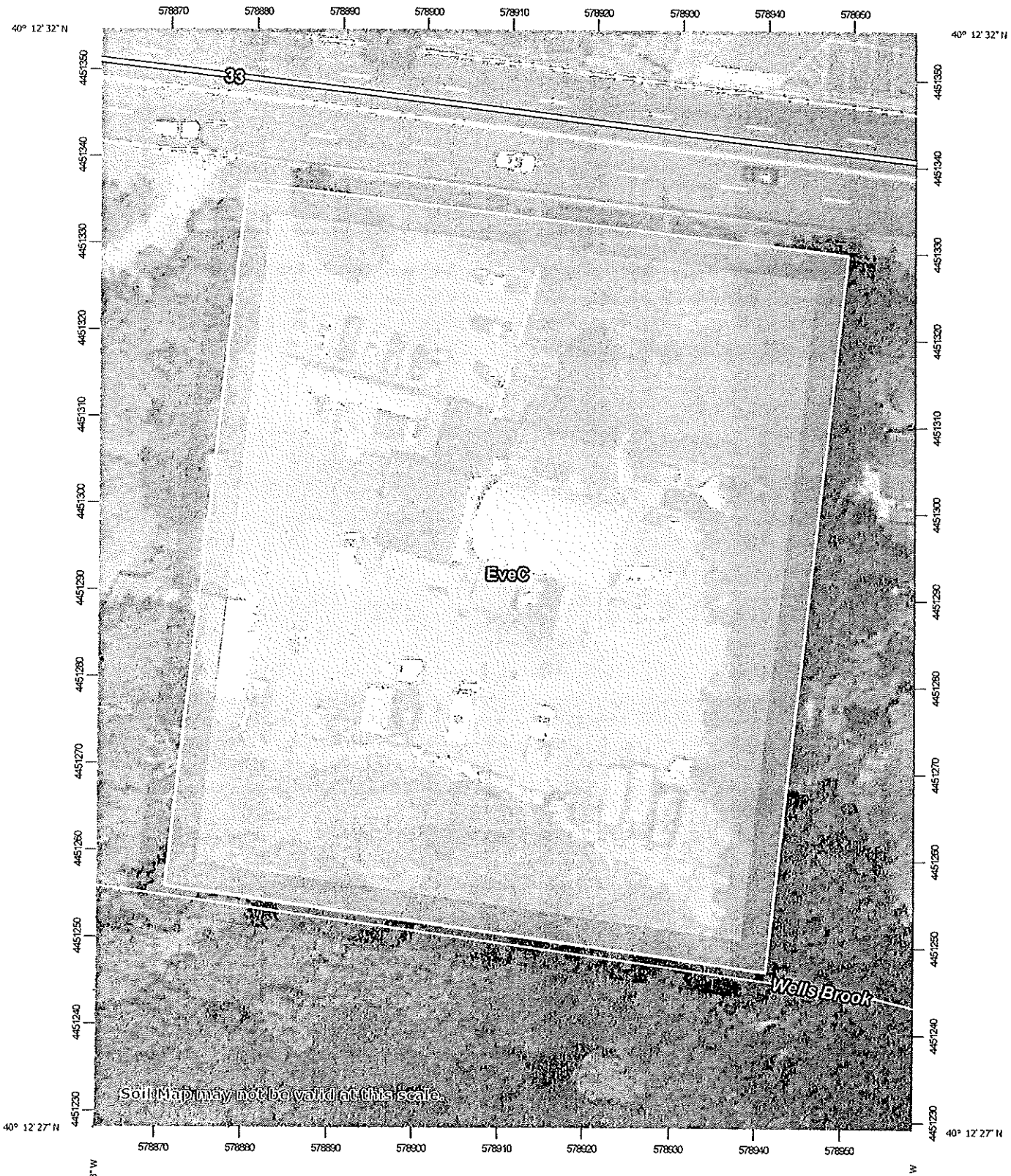
10. I hereby certify that the information furnished on Form 3b of this application is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (NJSA 58:10A-1 et seq.) and is subject to penalties as prescribed in NJSA 7:14-3.

SIGNATURE OF SOIL EVALUATOR _____ DATE 12-20-06

SIGNATURE OF PROFESSIONAL ENGINEER _____

NEW JERSEY LICENSE # _____

Hydrologic Soil Group—Monmouth County, New Jersey
(Ryal Holdings LLC - Neptune, NJ)



Map Scale: 1:617 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Monmouth County, New Jersey
Survey Area Data: Version 17, Aug 29, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 4, 2022—Jul 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EveC	Evesboro sand, 5 to 10 percent slopes	A	1.4	100.0%
Totals for Area of Interest			1.4	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Pond Report

Hydraflow Hydrographs by Intelisolve v9.24 — Tuesday, Dec 5, 2023

Pond No. 3 - STORMTECH 310

Pond Data

UG Chambers - Invert elev. = 49.17 ft, Rise x Span = 1.33 x 3.17 ft, Barrel Len = 28.00 ft, No. Barrels = 3, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 48.67 ft, Width = 4.17 ft, Height = 2.33 ft, Voids = 40.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	48.67	n/a	0	0
0.23	48.90	n/a	33	33
0.47	49.14	n/a	33	65
0.70	49.37	n/a	64	130
0.93	49.60	n/a	69	198
1.17	49.84	n/a	67	265
1.40	50.07	n/a	63	328
1.63	50.30	n/a	57	384
1.86	50.53	n/a	44	428
2.10	50.77	n/a	33	461
2.33	51.00	n/a	33	493

Culvert / Orifice Structures

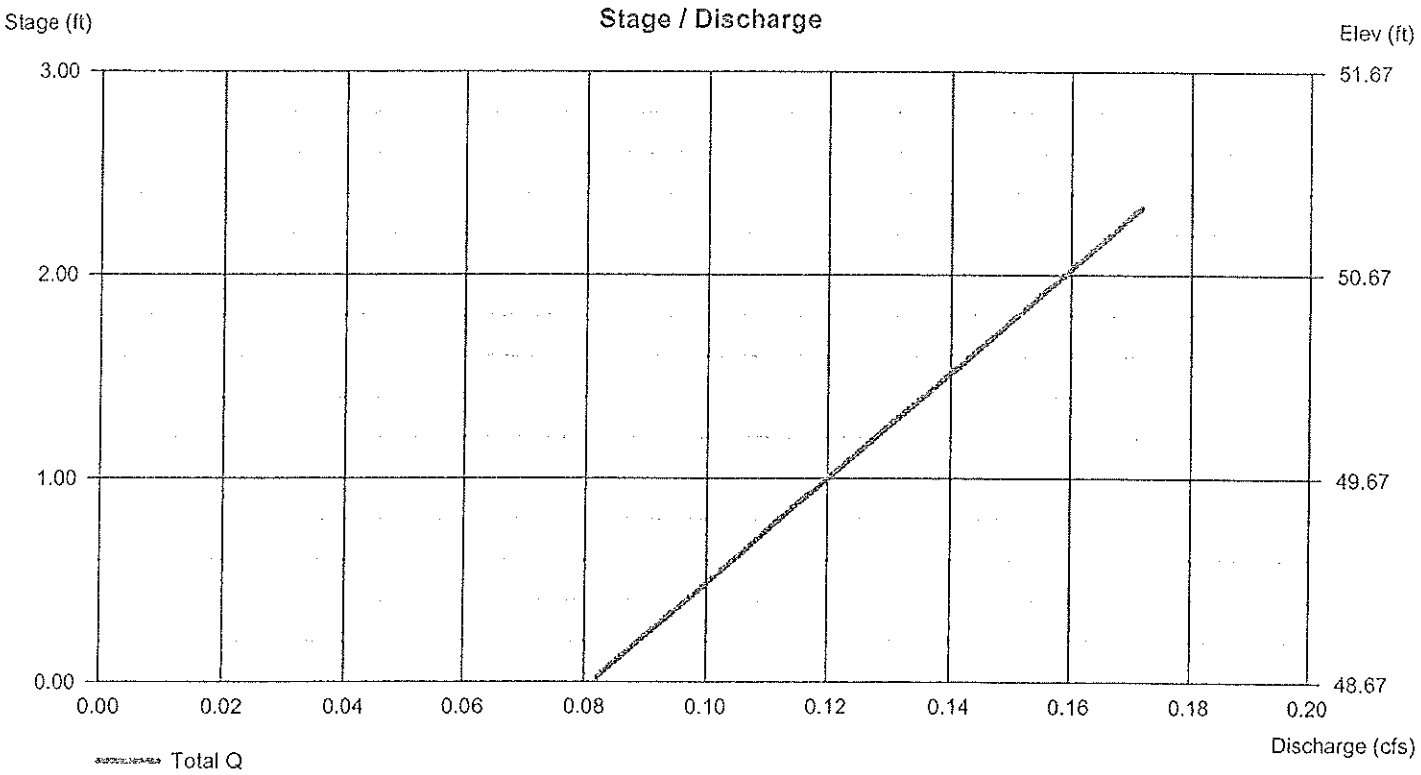
	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 10.000 (by Wet area)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydraflow Rainfall Report

Hydraflow Hydrographs by Intelisolve v9.24

Tuesday, Dec 5, 2023

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	9.7593	0.1000	0.5221	--------
2	10.8385	0.1000	0.5273	--------
3	0.0000	0.0000	0.0000	--------
5	15.8614	0.8000	0.5510	--------
10	21.9951	1.6000	0.6074	--------
25	52.1270	10.0000	0.7245	--------
50	18.3455	0.1000	0.4866	--------
100	28.4205	1.4000	0.5762	--------

File name: SandyHook.idf

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	4.17	2.92	2.37	2.04	1.81	1.65	1.52	1.42	1.34	1.26	1.20	1.15
2	4.59	3.20	2.59	2.23	1.98	1.80	1.66	1.55	1.45	1.38	1.31	1.25
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	6.02	4.28	3.47	2.98	2.65	2.40	2.21	2.06	1.93	1.82	1.73	1.65
10	6.99	4.96	3.99	3.40	3.00	2.70	2.47	2.28	2.13	2.00	1.89	1.80
25	7.33	5.95	5.06	4.43	3.97	3.60	3.31	3.06	2.86	2.68	2.53	2.40
50	8.30	5.95	4.90	4.26	3.82	3.50	3.25	3.04	2.87	2.73	2.61	2.50
100	9.75	6.99	5.67	4.86	4.31	3.90	3.58	3.33	3.11	2.94	2.78	2.65

Tc = time in minutes. Values may exceed 60.

Precip. file name: Monmouth County.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.90	3.40	0.00	4.40	5.20	6.60	7.70	8.90
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10